Four Rhetorical Styles of Persuasive Geocommunication: An Initial Taxonomy

Ian Muehlenhaus

Department of Geography and Earth Science, University of Wisconsin – La Crosse, United States (www.ian.muehlenhaus.com)

Abstract. In this paper I present and discuss the preliminary results of a longitudinal study on persuasive geocommunication. Using a two-step cluster analysis of different design and cartographic variables found in 200 years of persuasive maps, four different rhetorical styles of persuasive geocommunication have emerged (Muehlenhaus, 2010). This paper outlines the key components defining these four styles and explains what separates each from one another. Future directions of research and implications are also briefly reviewed.

Keywords: persuasive maps, geocommunication, map style, map design, map rhetoric

1. Introduction

Maps are tools for geocommunication that make specific arguments about the state of a spatial environment (Brodersen, 2008). As is true with any form of communication, different methods, or rhetorical styles, of geocommunication can be employed to persuade an audience to view an argument from a particular perspective in a given context (Muehlenhaus, 2012a). The goal of this paper is to outline an initial taxonomy of persuasive map styles. Essentially, it is argued here that persuasive maps can be categorized based on their composition – i.e., the rhetorical and data model methods used in their design to try to convince an audience to see things from a particular perspective.

2. Background and Methods

In the past, Muehlenhaus (2010) created a database of 251 "political cartographic manipulations" (i.e., maps created to persuade) produced in the

United States, Canada, and Western European countries post-1800. Using the database, he conducted a 192-variable quantitative content analysis (QCA) to explore different graphic design, data model, layout, and contextual characteristics of persuasive maps. QCA is increasingly being used by cartographers to study and compare the composition of large map samples and to test for change in map design over time (Edsall, 2007; Kessler & Slocum, 2010; Muehlenhaus, 2011a).

Using the results from this particular QCA, Muehlenhaus (2011b) explored how persuasive maps have evolved over time – arguing that persuasive maps have a distinct genealogy from other map types. Muehlenhaus (2013) also analyzed how persuasive maps are composed and which particular map design elements are significantly correlated with one another and indicate the likelihood of other types of data manipulation (e.g., lack of a legend generally correlates with more extreme data simplification).

Using the same dataset, it is proposed here that four broad design, or rhetorical, styles representing an initial taxonomy of persuasive geocommunication may exist. These unique styles differ from one another in the following realms: (1) data model manipulation; (2) symbology and representation; and (3) graphic design and layout.

3. Anatomy of Persuasive Geocommunication

As already mentioned, Muehlenhaus (2013) has highlighted how the persuasive maps in the sample were constructed and which types of data model, symbol, and graphic design manipulation significantly correlate with one another. Of particular importance to understanding the forthcoming taxonomy of persuasive geocommunication, however, are several of the design and layout characteristics coded for in his QCA.

Muehlenhaus (2010, 2011b, 2013) argues that the rhetorical manipulations of all maps, although particularly persuasive ones, can be analyzed by breaking down their graphic design and layout using Likert scales. Specifically, he embraces the arguments laid out by the graphic theory of Dondis (1973) to propose that maps can be dissected into at least 14 dimensions of design and manipulation and be compared to one another (see Figure 1).

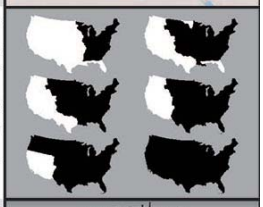
It turns out that in this longitudinal study these dimensional characteristics were the most indicative and determinative variables when it comes to determining rhetorical styles. The maps in Muehlenhaus (2010) QCA clustered into four distinct groups based on how they scored in these 14 dimensions. The styles have been given names based on their core characteristics: *authoritative, sensationalist, propagandist,* and *understated.*

UNEVEN LAYOUT
A mapped area that is not placed near the optical center of the entire map's layout.

BALANCED LAYOUT
A map that concentrates the core of the mapped area near the optical or layout center.

SINGLE MAP
A map that shows everything in a single mapped area or presentation.

MAP SERIES
A map that unifies its message via a series of sequantial mapped areas or using a variety of map insets.



FRAGMENTED LAYOUT
A map comprised of many components that stand out as independent entities within the map.

FLUID LAYOUT
A map comprised of components that blend together well and do not visually distract from the map or spatial data.

OBLIQUE VIEW
A map illustrating multi-dimensional spatial data and exhibiting spatial perspective and vertical depth.

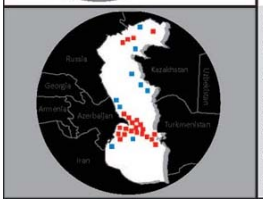
TOP-DOWN VIEW
A map representing data from a vertical, straight-down perspective. Map components are placed on top of each other with no sense of vertical depth.

NON-CARTOGRAPHIC
A map lacking scientific merit, that does not emphasize the accurate location of data, and is loaded with more iconic symbols than spatial data.

CARTOGRAPHIC
A map adhering to the principles of academic cartography, emphasizing the accurate and detailed location of spatial data over the Earth's surface.

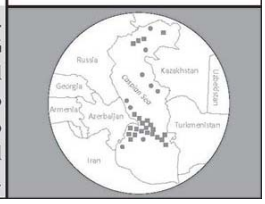
DYNAMIC / ACTIVE
A map that visually implies change, motion, and/or movement of certain spatial variables.

STABLE / STATIC
A map that visually implies the permanency and immobilitiy of what is being shown.



HIERARCHICAL ACCENTING
A map extensively promoting particular spatial data and map elements over others in the visual hierarchy.

HIERARCHICAL FLATTENING
A map that flattens spatial data and map elements so that they all appear to share the same level in the visual hierarchy.



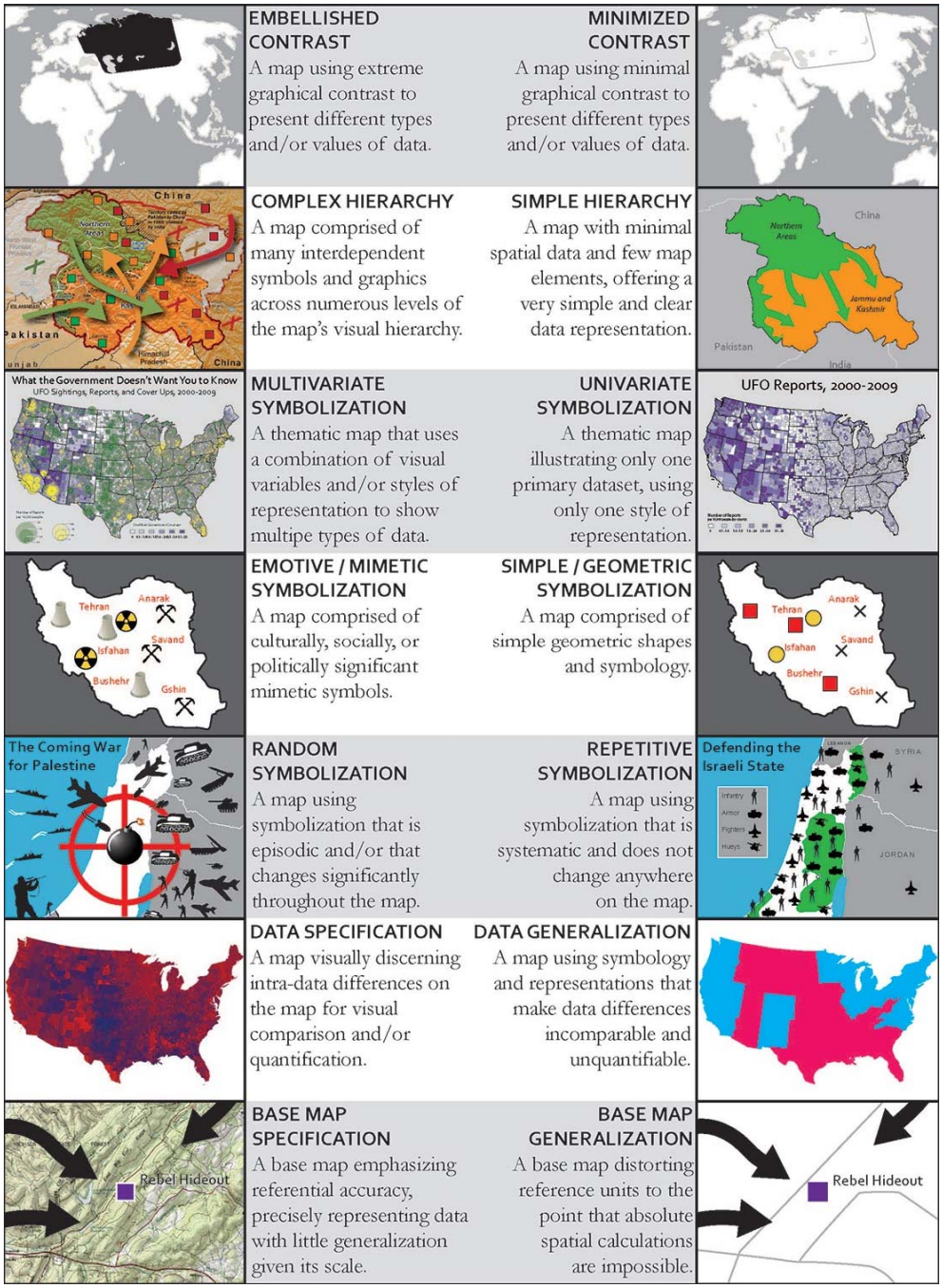


Figure 1. *Muehlenhaus' (2011b, 2013) 14 dimensions of map design and manipulation. Each pair of images represents a dimension of design, with either image representing two extremes. Most maps fall closer to one or other extremes in each*

of these dimensions. By coding maps using a Likert-scale with these dimensions, you can compare and analyze how the maps differ from one another in rhetorical style and argumentation. Used with permission from Muehlenhaus (2011b). Copyright University of Toronto Press.

4. A Taxonomy of Persuasive Geocommunication

The persuasive maps used in the Muehlenhaus' (2010) study clustered into four different groups. These groups can be broken down into a two-by-two matrix (Figure 2). The main differences among these four rhetorical styles are that they are either data-light or data-rich and extremely objective or extremely rhetorical and emotive in appearance.

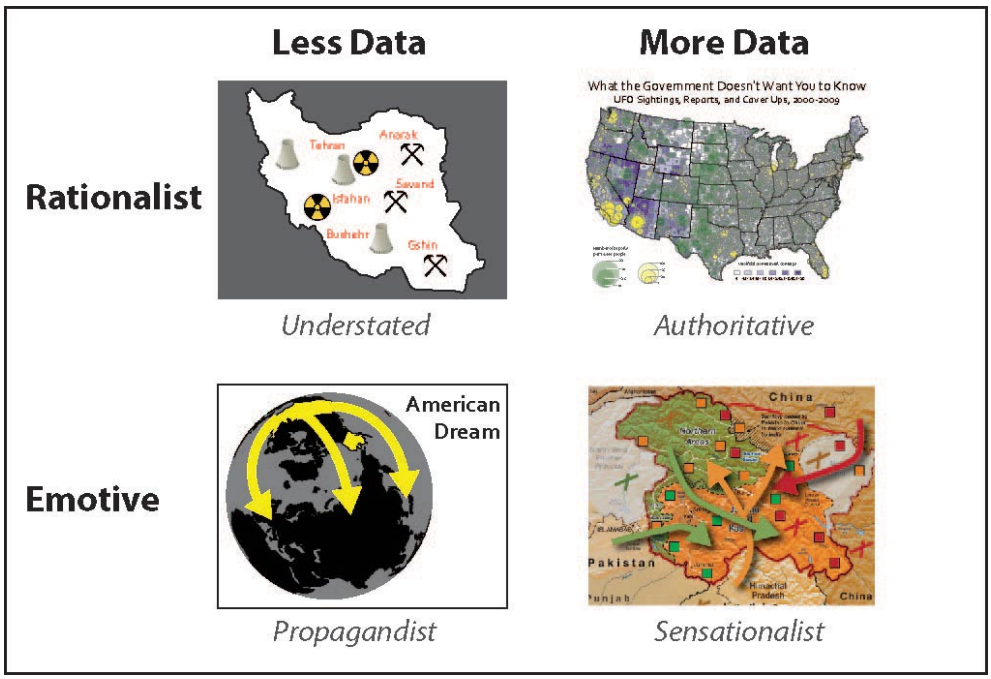


Figure 2. *The persuasive geocommunication matrix.*

4.1. Authoritative Style

> ***Authoritative:*** *(a) having or proceeding from authority: official; (b) clearly accurate or knowledgeable* (Merriam-Webster 2009).

Authoritative persuasive geocommunications are characterized by rich datasets and extremely objective, scientific, and magisterial looking presentations. This style is named authoritative because of the manner in which these maps attempt to persuade – they look official and very detailed. The maps themselves may be loaded with inaccuracies, but numerous map elements will be included to make one infer that scientific rigor and measurement are being adhered to. They are data rich as well, which likely lends them a certain amount of legitimacy and credibility when being viewed. With many layers of data, often inundated with inset maps showing even more nuanced data, the authoritative style lends legitimacy to almost any data being displayed. An example of an authoritative style map is shown below in Figure 3.

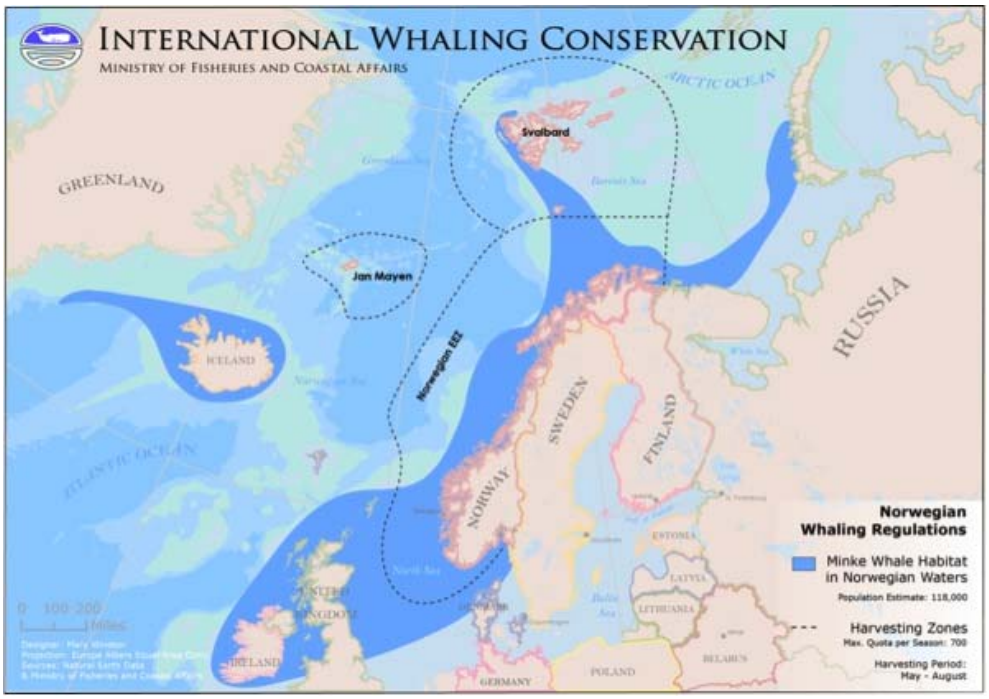


Figure 3. *An example of an authoritative persuasive map, using a more complex dataset and formal title and layout. Copyright: Mary Windsor. Used with permission.*

4.2. Understated Style

> ***Understated:*** *avoiding obvious emphasis or embellishment (Merriam-Webster 2009).*

Understated maps are characterized by their paucity of data and their sleek, clean look that lends them legitimacy (Figure 4). They are minimalist; they seem to present just the facts – nothing more, nothing less – in a very straightforward, unbiased and objective manner. They tend to use simple thematic representations, rarely present more than one piece of data, and tend to omit most map elements. The elements they do include are not very ornate and generally quite simple.

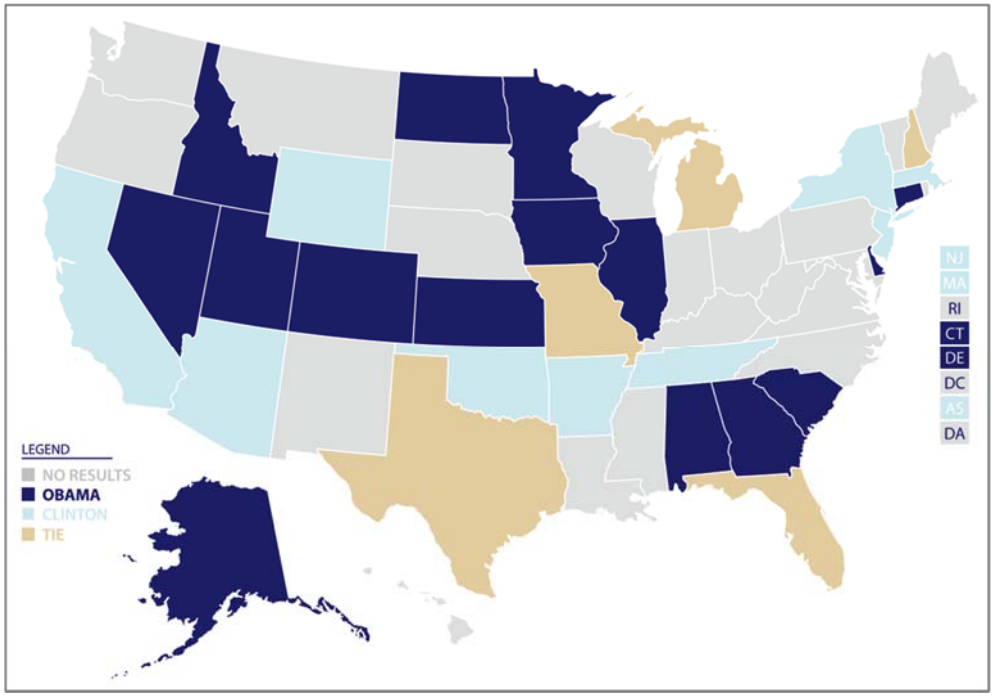


Figure 4. *An example of an understated persuasive map, using a simple dataset and improper visual variables. Recreated from Obama Campaign Website, 2008.*

The simplicity of understated maps is disarming. For example, in the visualization used in Figure 4, what could possibly be manipulative about it? It is just showing which states then-Senator Barack Obama had won compared to then-Senator Hillary Clinton in the Presidential primary of 2008. Of course, the power of convincing in these types of maps often lies in what they do not show. For example, at the time that this map was posted on the Barack Obama campaign Website, he was actually losing in the delegate

vote to Hillary Clinton. Also, understated maps tend to make minute manipulations to visual variables so as to disguise the nature of the minimal data that is shown. On this map, color value is used instead of color hue to represent which states have been won by which candidate. Not surprisingly, seeing as this map came from the Barack Obama Website, dark blue is reserved for Obama and light blue for Hillary Clinton. Inappropriate use of these visual variables indubitably reinforces the idea that Barack Obama is winning the election.

4.3. Propagandist Style

> ***Propaganda:*** *... (3) ideas, facts, or allegations spread deliberately to further one's cause or to damage an opposing cause* (Merriam-Webster 2009).

Figure 5. *An example of a propagandist persuasive map, using a simple dataset. Copyright: Mary Windsor. Used with permission.*

Not all persuasive geocommunications are inherently propagandist. Propagandist style persuasive maps represent only one type of persuasive geocommunication (see Figure 5). The maps that are categorized as propagan-

dist style tend to be data light and extremely rhetorical in nature – bombastic might be the most appropriate word. These types of maps are overtly biased. Their creators do not shy away from conflict and antagonizing potential members of an audience. This map style is typically used to reify certain beliefs among a target audience or cast doubt about an opposing position or group of people.

This persuasive style uses cartographically appropriate representations of data. However, the propagandist style is rarely, if ever, used to represent more than two types of thematic data at once, and generally, only one. This style presents the data in an overtly biased manner, and when well designed well, this data is emphasized to the extreme in the visual hierarchy, making the message impossible to miss.

4.4. Sensationalist Style

> ***Sensationalist:*** *... (2) arousing or tending to arouse (as by lurid details) a quick, intense, and usually superficial interest, curiosity, or emotional reaction* (Merriam-Webster 2009).

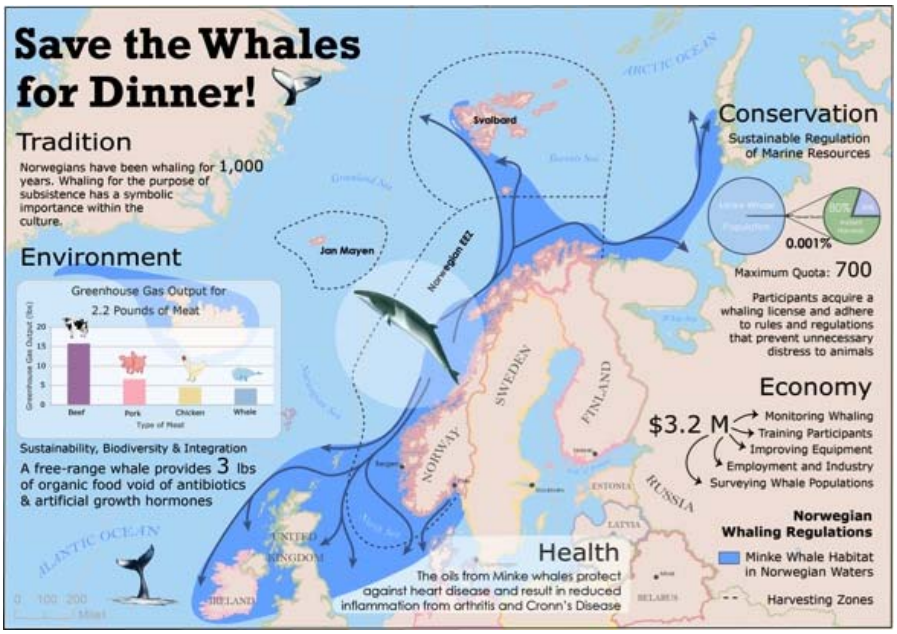


Figure 6. *An example of a sensationalist persuasive map, using numerous datasets and many map elements. Copyright: Mary Windsor. Used with permission.*

Sensationalist style persuasive maps (Figure 6) might better be thought of as ADHD maps. They tend to use a variety of tricks to excite and engage map users, but so many map elements compete for the map user's attention that it is often difficult to focus on merely one part of the map. They are data rich and full of mimetic and dynamic symbology. They almost always make heavy use of rhetorical styling, including outlandish or antagonistic titles.

According to Muehlenhaus' (2010), sensationalist maps typically contain:

- Elevation data, whether it is necessary or not;
- Emotive icons and symbols;
- Dynamic representations that imply movement and action; and
- Illustrations surrounding or over the mapped area.

These maps rarely look scientific and never pretend to be completely objective.

5. Limitations and Future Directions

A limitation of the study is that the sample used in the QCA was not random and was limited. Perhaps a more robust analysis of persuasive maps would yield different results. However, the data used is from one of the most comprehensive analyses of persuasive maps that yet exist.

Finally, the maps involved in this analysis were all static representations. How well these rhetorical styles hold up in the interactive and mobile device era is unknown. More research might be done to explore the evolution of persuasive maps online. Preliminary research on this topic has already begun by Muehlenhaus (http://www.ian.muehlenhaus.com/persuasive/).

With these different styles established, it will be interesting to test what impact the styles actually have on convincing audiences. Two preliminary studies have already been conducted doing just this (Muehlenhaus, 2012; Windsor & Muehlenhaus, 2013). They seem to show that the sensationalist and propagandist maps are assumed to be more overtly biased they remain most effective in changing people's opinions and in being recalled. The two studies used maps that were anti-nuclear power and pro-whale hunting as their persuasive measures.

6. Conclusion

These four rhetorical styles of persuasive geocommunication may not be unique to persuasive maps themselves. In fact, if one thinks of all forms of

geocommunication as arguments, i.e., all maps posit that their data represent something significant, then in reality all maps could be broken down into different rhetorical styles. In fact, these four styles may well apply to many other types of maps; at the same time, additional styles may exist that this initial study did not cover. It is the belief of this author that these four categories may comprise a main taxonomy of map communication and that many sub-categories based on map composition likely exist within each.

Not all maps are made to be accurate, present information clearly, or pretend to be objective. Many maps are used as persuasive forms of communication. These maps are not by default inferior to scientifically and accuracy-obsessed one. It is the hope of this author that this initial taxonomy helps fuel further research and understanding into how geocommunication for convincing people works.

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