

Content analysis of existing design strategies in map-based storytelling

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Abstract:

Visual storytelling is a process of documenting, explaining, and sharing meaningful experiences and knowledge with images and typography. Likewise, map-based storytelling achieves this goal by combining maps with other visual media. This research aimed at finding design strategies behind the most compelling visual stories published between 2014 – 2021 by the five international newsrooms leading in storytelling practices: The New York Times (USA), The South China Morning Post (Hongkong), Die Zeit Online (Germany), The Pudding (USA) and Kontinentalist (Singapore).

To study the prevalent storytelling design patterns, a reverse-engineering approach of quantitative content analysis (QCA) was chosen. The analytical process started with a systematic collection of representative stories and development of codes – mutually exclusive and exhaustive definitions of design implementations. The codebook made use of the codes that were already established in the cartographic storytelling research (e.g., Muehlenhaus 2011, Roth 2020), as well as introduced new codes matching the practice of map-based storytelling in news media (e.g., narrative journalistic structures, map framing, and story layout). The updated codebook (Figure 1) was then used to analyse 215 map-based stories by examining the frequency and co-occurrence of codes.

The QCA resulted in multiple actionable insights into contemporary story map design. The most popular story themes were Science (34%) and Politics (20%), especially between 2020 – 2021. One third of map-based stories read as Inverted Pyramid, starting with story summary, and consequently reporting on more details. Slightly less popular was Inverted Martini Glass structure (29%) that also began with a short introductory text, but then followed a chronological event sequence.

When a map appeared in the visual story, it was usually used as a visual argument (76%) and a story teaser (32%). Almost half of the stories (45%) used one map to support the key story message, but it was also common to deliver it through multiple maps – 40% of stories contained between 2-5 maps. These maps were either variations of the initial primary map or they presented a new thematic depiction. Maps were mostly coupled with static graphics (e.g., drawings, illustrations, 34%), followed by photographs (29%), and increasingly popular motion graphics such as video or animations (25%).

Majority of stories (58%) was arranged in vertical order, where the story content was placed in a column (Figure 2a). The second popular layout group consisted of asymmetrical arrangements with floating text containers (20%), and fixed sidebars (12%). Interactive techniques used to reinforce the story flow closely followed these layouts (Figure 2b), with scrolling being the most prevalent interaction (79%). Less common were entry points (13%) and paginations (4%). This contributed to Longform Infographics being the most popular genre of stories (53%), followed by Multimedia Visual Experiences (31%). Active maps with user-controlled interaction were used in only 42% of stories. Yet, these interactive maps offered very limited possibilities to change the extent of presented data (Figure 2c). Panning was supported 64 times, zooming 59 times, and rotating 6 times. Only 69 stories allowed for accessing the underlying geodata through map interactions. The selection result was mostly indicated by highlighting (61 maps) and displaying additional information in tooltip (45 maps) or map pop-up (32 maps).

The analysis revealed two main drawbacks of data-driven visual stories: (1) omnipresence of generic, content agnostic map designs with interchangeable data and (2) lack of map-driven interactive experiences tailored to story content.

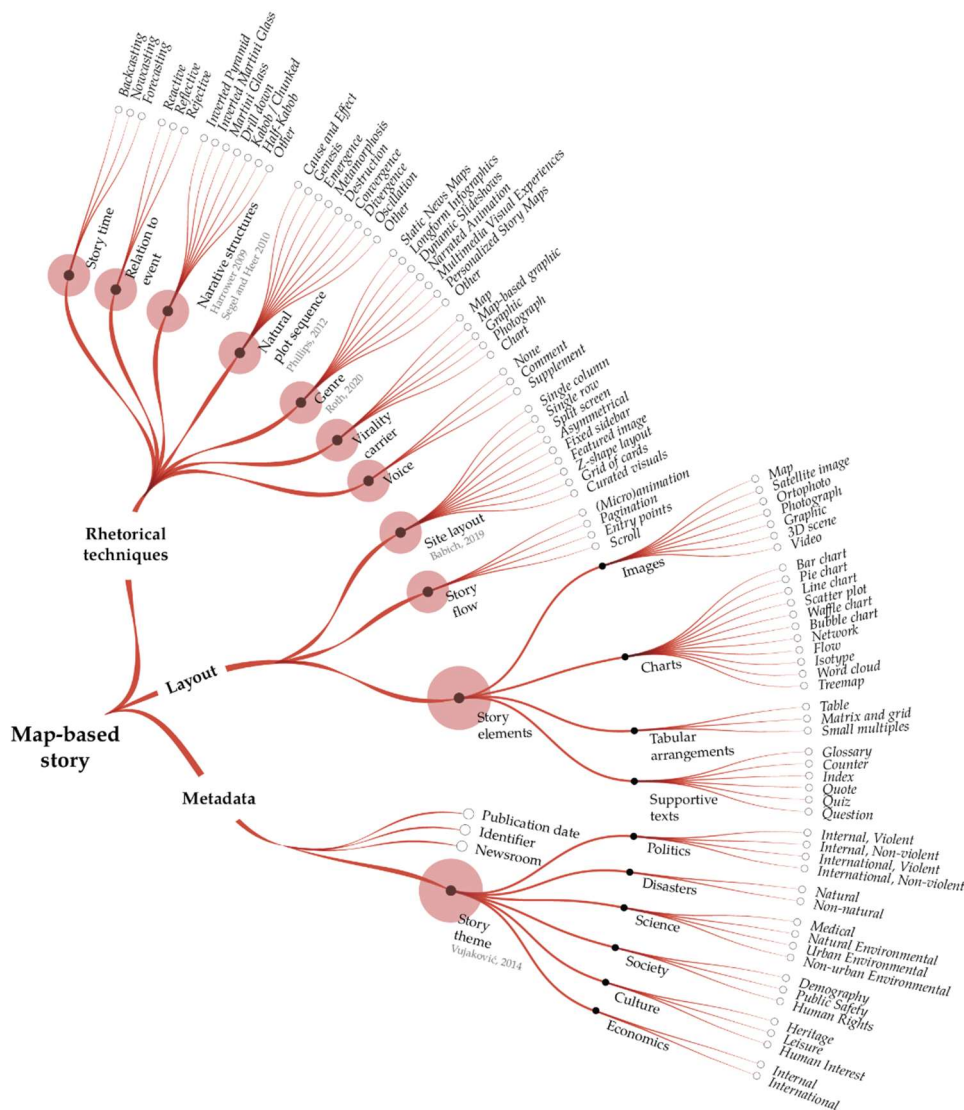


Figure 1. A subset of codes used in the QCA.

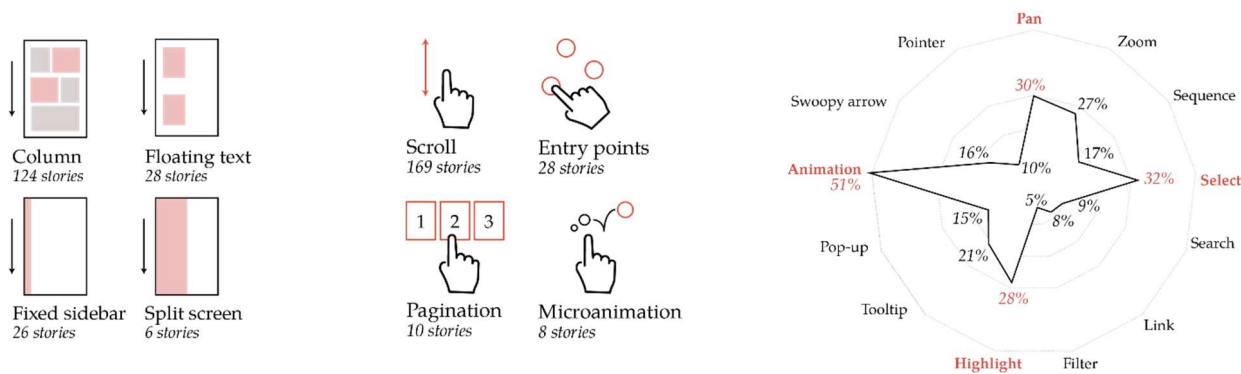


Figure 2. The most prevalent design strategies for story layout (left), story flow (middle) and map interactions (right).

References

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