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Discovering Stories using Visual GISting

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ABSTRACT

Nowadays, journals and newspapers describe events happened all over the world, taking into consideration from the smallest village to the biggest and crowded city of a Country. From these articles it is possible to identify two different narrative levels: the first one is related to the content of the journalistic story and it is the more immediate and accessible level; the second one is more complex and it allows to extract more transversal information on the characteristics of the place itself, going beyond the simple reading of the text to analyse the spatial and cultural factors that led to the event described. To access to this second level, in this paper is proposed an approach based on the Visual GISting method. The aim is to demonstrate how the geo-visualization is able to provide important and substantial contributions to the Humanities, extracting data which are not directly deductible from the literary text.

1. INTRODUCTION

Space and narrative have always been intrinsically linked, and they continuously receive reciprocal influences. In fact, the space provides the context for the stories and, at the same time, it is possible to understand its core by knowing the stories which are embodied in that place (Cresswell, 2015). Nowadays, the reading of these hidden contents, which are not easily accessible, is simplified by modern geographic information systems (GIS), which help to rediscovery the physical space through a transversal reading which involves the humanities (Cooper and Gregory 2015, Gregory et al. 2015, Earley-Spadoni 2017). Indeed, Visual GISting provides an essential contribution in the field of Digital Humanities, and it allows to place a literary phenomenon within a specific space. In the project here described, Visual GIS is applied to Digital Humanities to perform a more in-depth reading of newspaper articles, rediscovering the stories and habits of a Country.

2. USING VISUAL GIS

The main question that this paper wants to investigate is whether there is a connection between places mentioned in newspapers' articles and the topics they are nominated for. Furthermore, this research aims to find out if the size of a city is the only element which influences the frequency of appearance of a place or if there are even other components to consider. To answer to these research questions, I selected ten articles per six different topics (*politics, current news, economy, sport, culture,* and *health & nature*) from the English newspaper "The Guardian", for a total of 60 articles. From these articles, the names of each geographic place together with their frequency of appearance were extracted; then, they were geolocalized within a map of the United Kingdom using QGIS (available here: https://www.qgis.org/it/site/).

Thanks to the visualization of the coordinates of the places mentioned in the articles of The Guardian, it was possible to move from a corpus of journalistic texts to the creation of a spatial database. Using QGIS, it was assigned a different coloured indicator for each topic (**green** for current news, **red** for politics, **orange** for business, **blue** for health & nature, **purple** for sport and **indigo** for culture) and it was visualized on the map the position of those places cited according to the frequency with which they appear in the text; the higher the frequency, the bigger the size of the indicator was (Fig. 1). From this analysis emerged a strong connection between the frequency of appearance of a city in articles and the city's population density. Moreover, as can be easily understood, wider spatial territories, like England, resulted to be more cited than smaller areas, like the Northern Ireland.

Nevertheless, the analysis performed showed that it was necessary to take other elements into consideration since the presence of sports infrastructures, political and cultural centres, natural parks had influence on how frequently the place was mentioned in the newspaper. For example, for the *business* topic, most of the indicators located in England, Scotland and Wales coincided with the presence of shipyards and industrial centres (such as Port Talbot, Redcar, Stockport). Similarly, for the *health* topic a great number of indicators were in the south-east area of England, where there are counties (Surrey, Sussex, Kent and so on) with a great number of coastal localities, wildlife centres and natural parks.

In addition to this first geo-visualization analysis and in order to discover which was the topic most widely spread for each Country, there have been made some spatial queries whose results were graphically represented with convex hulls. Thanks to this second investigation emerged, for example, that while in England the most spread topic was the *health & nature*'s one, in Wales it was the *current news*'s one (hull in green in Figure 2).
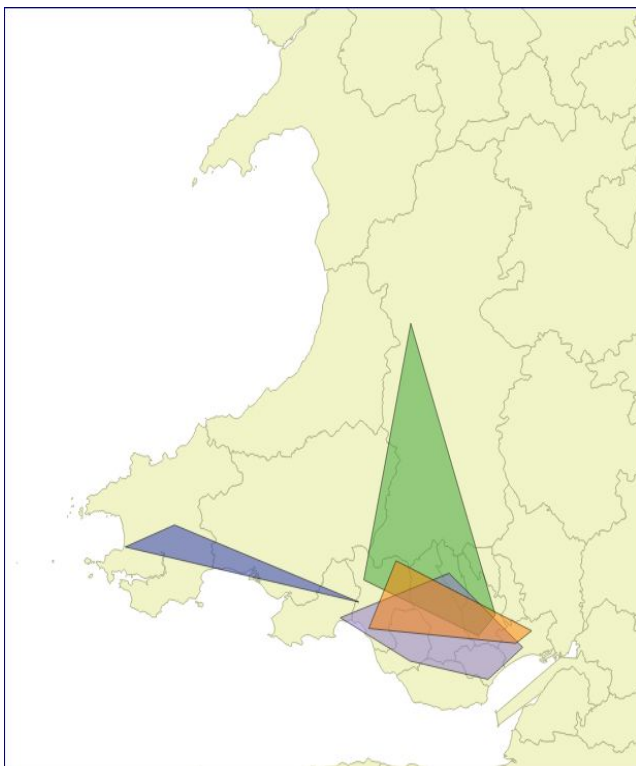

Figure 1: Example of geo-visualization of the business articles based on the frequency of appearance of UK cities

Figure 2: Example of geo-visualization of the articles related to Wales, realized using convex hulls (for the color legend, see Sec. 2)

3. CONCLUSION

With the present research project, that could be surely implemented and improved in the future, it was demonstrated that there is a strong connection between traditional disciplines and Digital Humanities. Indeed, the adoption of GIS's tools was proved to be extremely useful for digital journalism. The geo-visualization of the articles from The Guardian allowed to shift from a simple question such as "what places is the text discussing" to more complicated questions such as "what is the text saying about these places" (Gregory & Hardie, 2011). In fact, from the data processed using QGIS emerged pieces of information that could not be deduced from a simple reading of the newspaper's articles.

In conclusion, it was possible to answer the initial questions thanks to a combination of both quantitative and qualitative data and, doing so, it was also demonstrated the enormous potential of geo-visualization systems and how these can be effectively applied to the Humanities.

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