How Do GIS Improve Working With Religious Statistics

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Parish registers and details provided for bishop visitations are a mine of statistical information that French scholars have been using for decades. This data has been displayed as maps from the very beginning, long before 1947 and the first issue of Fernand Boulard's famous map of French rural Catholicism (Ross 1954). The early 1980s can be seen as a climax: Isambert and Terrenoire 1980, Boulard 1982, Hilaire 1987, Hilaire and Cholvy 1992, Hilaire 1977.

These tools are less attractive nowadays: the last volume of *Matériaux pour l'histoire religieuse du peuple français* (Prudhomme 2011) was only released in 2011. A conference held in 2013 can be seen as a attempt to give this tradition a second life (Sorrel 2013). Hence the paradox: scholars produced a lot of maps at a time when GIS were hardly available, computing resources quite expensive and involved team work. Nowadays, when GIS can be used by anyone, French religious studies do not praise them. It is a pity, since GIS can renew religious practice mapping.

My GIS learner experience can be used as an example. As a beginner, I just aimed at copying traditional map practises, which indeed influenced my choice to study „Workers Religiosity in French-Belgian and Upper Silesian Coal Areas (1922–Spring 1939)". I managed to map whatever could be displayed this way: mass attendance, communions, altars and statues, Catholic press distribution, Catholic Action... The trouble was I ignored that GIS are much more than a convenient way to produce maps. GIS steep learning curve did not help: I lacked the time to learn basic rules and for the design of my PhD maps, I even had to ask a colleague, who kindly agreed to help me.

Being a more aware GIS user now, I can stress things I overlooked several years ago. How can we use GIS to make those maps speak in a much broader way? What can we expect from geometrical analysis or geostatistics? To what extent can they help us to discover things that could not be described with the tools used some 40 years ago? Are they just too powerful to get more from fragmentary sources?

An obvious improvement we should expect from GIS is connected with their visual layer. GIS give us opportunities to show our results in a much more convincing way. Accumulating flat maps can be boring and have side-effects: ten maps may be less relevant than one, as far as long term memory is concerned. We should then look for more variety. As an example, I will show the benefits of turning parish density maps (i.e. how many believers per parish or priest) into a 3D model. My aim is to emphasize both inter- and intraregional contrasts and mid-war evolution. One of the reasons that this approach has been preferred to traditional area cartograms is that people are not familiar with the geography of those Coal areas. Moreover, area cartograms are designed for internal comparison and are less effective when we aim to describe contrasts between regions.
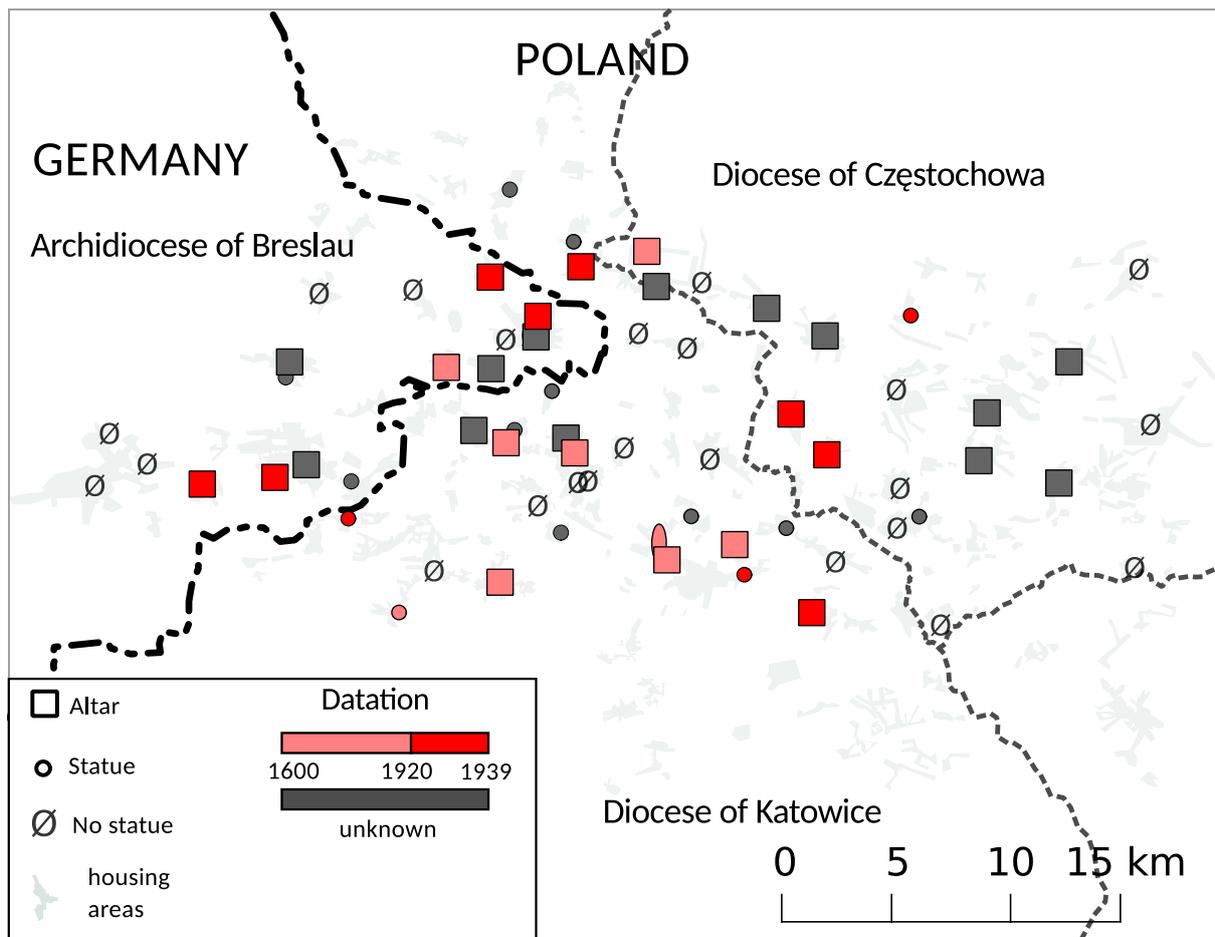
Figure 1: Simple SQL query: St. Barbara in Upper Silesia parishes

Moreover, GIS databases reveal things that would have been overlooked with only basic SQL skills. Standard queries on a database of altars and Saint statues will return no more than an overall geography of the worship of Saint Barbara. Better queries, taking altar hierarchy to consideration (is this saint a main or secondary figure?), introduces us to its symbolism. Combining this data with 1 km buffers around mines and ironwork, I was able to state that in Upper Silesia, almost all saint Barbara statues were close to mines, and the same was true for Saint Florian in regards to ironwork. However, in churches where both saints could be found, there were associated as religious symbols of an industrial region.

Are geostatistical tools helpful when it comes to practising statistics? Clustering is one of the better ways to go further than we could do without GIS (Commenges 2014). A set of data such as communions, mass audience, catholic press diffusion, parish population, Catholic Action and gender practices can be used to build basic clusters. We may then answer one of our main questions: to what extent did the size, and kind of parish community (city district, suburbs, mining cities, villages) influenced the way people lived and demonstrate their faith?

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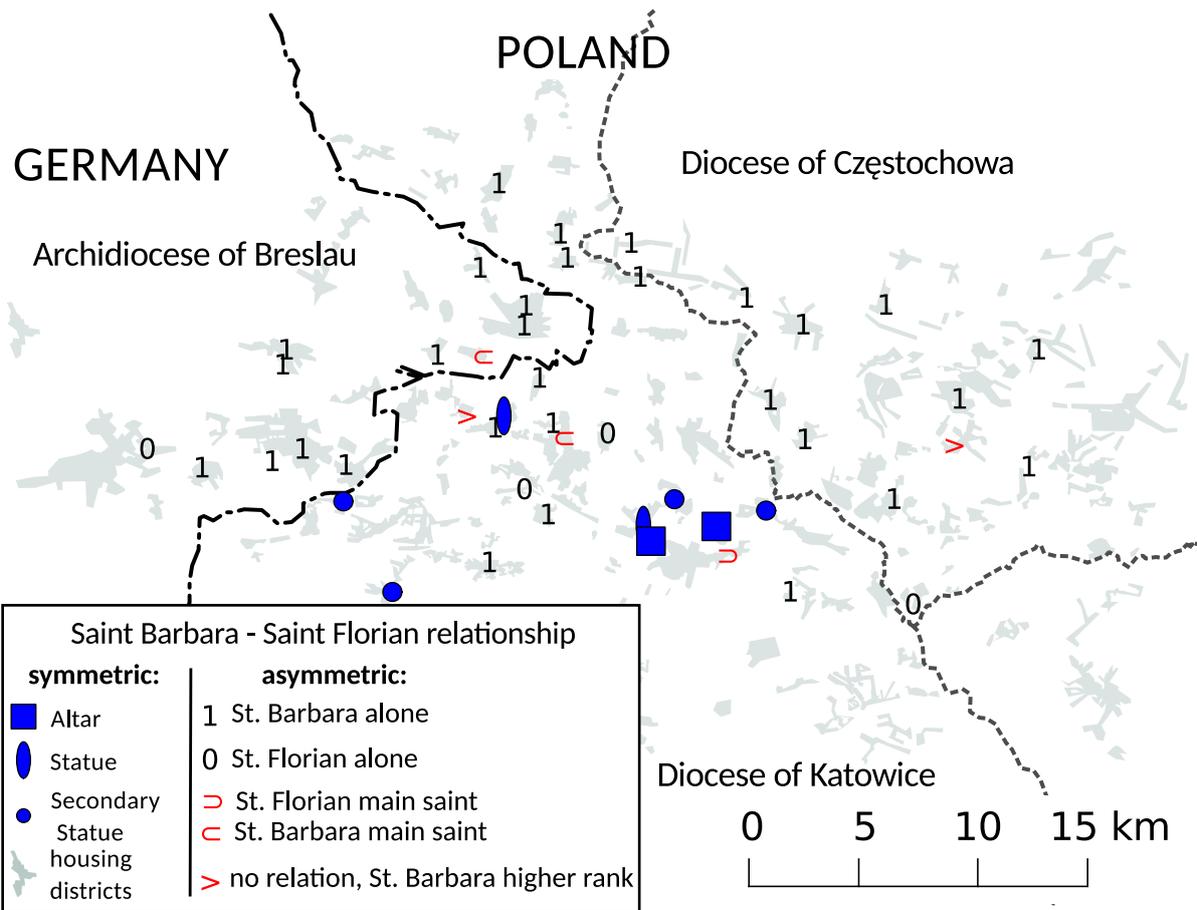
Figure 2: Advanced SQL query: a comparison between St. Barbara's and St. Florian's rank

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