

Cartographic Image vs. Reality: Spatial Overlay Analysis of Maps Depicting the Czech-German Ethnic Border (1840s–1930s)

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Abstract:

Ethnolinguistic maps represent a crucial visual tool in the study of nationalism, propaganda, and state formation, especially in Central and Eastern Europe, where they reached particular prominence between the mid-19th and mid-20th centuries. One of the most highly contested and frequently mapped ethnic borders in Central Europe was the Czech-German divide. Although the Czech-German language borderline changed very little during the examined period (1840s–1930s), neutral cartographic depictions of it were rare. On the contrary, nationalist mapmakers on both sides actively sought to reshape and reinterpret its course in line with political and territorial agendas. The principal battleground for Czech, German, and Austrian mapmakers was the relatively narrow, ethnically mixed belt between two largely homogeneous regions, together with several language enclaves (or language islands).

Prior to the availability of regular statistical data, mapmakers relied heavily on subjective interpretations, private surveys, and localised knowledge, particularly in ethnically ambiguous regions. The introduction of regular censuses from 1880 onwards provided a new empirical basis, yet their implementation and interpretation were far from neutral. In the Czech-German context, maps based on the same census data could differ dramatically depending on the national orientation of their authors. The selective use (or rejection) of census data became a powerful cartographic tool, especially during periods of escalating political tension. The most overt distortions emerged during the Paris Peace Conference, when maps were weaponised as persuasive instruments in support of competing territorial claims. The Czech-German conflict intensified once again in the 1930s, in conjunction with the growing Nazi threat and Germany's escalating territorial ambitions. Mapmakers on both sides engaged in the selective representation, suppression, or exaggeration of data, aiming to portray contested territories as ethnically homogeneous and historically legitimate extensions of their respective nations (Holubec and Močíčková, 2023).š

Our research introduces a GIS-based analytical approach to the study of ethnolinguistic maps as instruments of political and ideological negotiation, demonstrated through a case study of the Czech-German ethnic border in Bohemia between the mid-19th and mid-20th centuries. Spatial overlay analysis tools were applied to a representative set of Czech, German, and Austrian maps, including both typical cartographic outputs and exceptional examples illustrating the broader spectrum of ethnolinguistic mapmaking practices. Differences in the cartographic representation of the ethnic border were analysed across four key historical periods (1845–1850, 1890–1905, 1918–1926, and 1934–1939) reflecting both the intensity of ethnolinguistic map production and key phases in the Czech-German ethnic conflict. In each phase, the delineation of the ethnic border was compared with a reference boundary reconstructed from population census data (1880–1930). By combining spatial statistics with qualitative interpretation, the proposed methodology enables new insights and reveals previously unseen spatial patterns in the study of ethnolinguistic mapping, nationalist territorial claims, and the broader visual construction of contested spaces.

The analysis confirmed several key findings. First, it demonstrated that Czech, German, and Austrian mapmakers consistently portrayed the same territories differently, often in order to advance political or ideological claims. Second, it confirmed the hypothesis that the highest degree of manipulation occurred during the period surrounding the Paris Peace Conference (1918–1926), when over a quarter (25.3%) of Bohemia appeared as disputed territory. By contrast, surprisingly limited manipulation was observed during the period 1890–1905 (only 9.6%), despite heightened Czech-German tensions. Finally, the analysis confirmed that many maps either selectively used older statistical data or disregarded census results entirely in favour of national narratives (Močíčková and Justová, 2025). These findings

confirm that the Czech-German ethnic border functioned not merely as a geographic demarcation, but also as a powerful symbol within the nationalist visual discourse of the period.

The results of the analysis are presented through a series of thematic maps visualising (1) the territories depicted as predominantly German or Czech, together with the so-called ‘disputed territories’, where the selected maps diverged most significantly, and (2) the differences in the delineation of the ethnic boundary as revealed through three in-depth case studies. These case studies focus on the regions of České Budějovice, Jihlava, and Most as distinct typological examples of disputed areas, where the ethnic composition evolved dynamically over time (see Fig. 1).

Some of the research outcomes have been also released as an open-access thematic map database and an interactive web application, allowing users to explore and compare ethnolinguistic maps and their spatial narratives. The web map application is available at: <https://arcg.is/1i80yW0>.

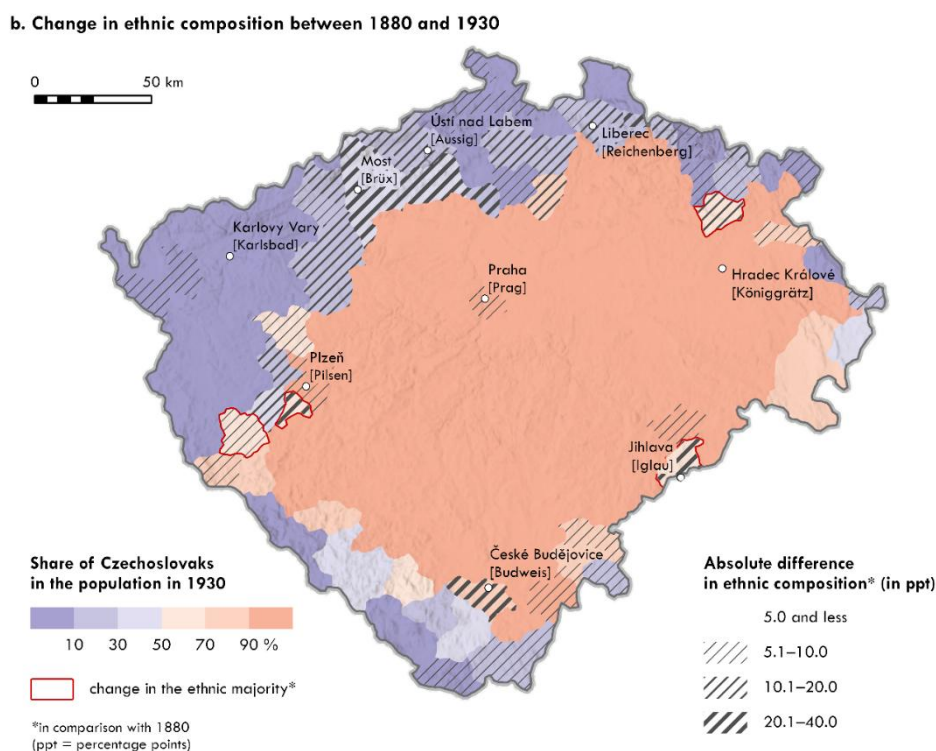


Figure 1. A map showing the change in ethnic composition between 1880 and 1930 in Bohemia based on census data.

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