# Border between West and East of Europe in the mental maps of European university students

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## Abstract

The paper addresses the issue of dividing Europe into two sub-regions, West and East, which are monitored and defined through the method of cognitive mapping. The first section reviews basic approaches to this division of Europe, focusing on the concept of duality, analysing its causes, manifestations and perception in the form of the West-East division. The following empirical part presents the results of an international research conducted in the form of a questionnaire survey distributed among university students from nine European countries. Respondents were asked to define the border between the European West and East based on their subjective perceptions. The results were subsequently analysed and aggregated into map outputs using GIS tools. Although the respondents were young, the findings show that the perceived boundary between West and East still largely aligns with the Cold War-era division of Europe, with Central Eastern European countries, except Slovenia and Czechia, often classified as East. The mental maps also showed partial differences in the views of individual nations. The final part of the study is devoted to the interpretation of the results and their reflection in terms of the presented theoretical concepts and assumptions.

**Keywords:** Europe, West, East, mental maps, spatial perception, boundaries, delimitation, GIS analysis

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## Introduction

The terms West and East are often used in the context of Europe, or even the world, but they are typically understood in varying ways, whether as historical or civilizational entities (Huntington, S. 1996; Nováček, A. 2012a; Murphy, A.B. *et al.* 2020), geopolitical groupings (Ikenberry, G.J. 2024), or socio-economic macro-regions (Cole, J. 1996; Anděl, J. *et al.* 2019). Consequently, there is a significant inconsistency in the definition and spatial delimitation of these terms and regions. In fact, the same problem occurs in many other cases of geographical regions commonly referenced in literature, media, but also people's thinking in general (Jordan, P. 2005).

One of geography's key tasks while studying regions is their definition and spatial delimitation, i.e. regionalisation. Multiple methods exist for this purpose, addressed in geography by a number of authors, such as Grigg, D. (1965), Hampl, M. and Marada, M. (2015) and others. In this regard, two basic approaches can be distinguished. The first, traditional approach defines regions *on the basis of more or less objective criteria*, such as the spatial occurrence of the phenomena in question (homogeneity principle) or spatial links between the centre and its surroundings (nodality principle). However, this method encounters limits with regions that do not form homogeneous or closed units. Hartshorne, R. (1939) argued that regions are mental constructs and

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that any attempt to divide the world involves subjective decisions. Ambiguously defined concepts – regions "West" and "East" – are examples of such constructs.

In response, new approaches in regional geography propose using *subjective perceptions of space* (perceptual regions) to define regions, often tied to regional identity (e.g. Siwek, T. 2011; Johnston, R. and Sidaway, J.D. 2016). These approaches can often provide a better account of the intangible and cognitive dimensions of space and regional identity, and the relationship between region and society (Paasi, A. 1986; Eder, K. 2006; Semian, M. and Chromý, P. 2014). Cognitive mapping is a key method for the delimitation of regions and studying spatial perception, where respondents transfer their cognitive experiences and ideas into a drawn map, either analogue or digital.

The authors of this study have followed this approach. The main aim was to determine where the inhabitants of Europe perceive the border dividing their territory into West and East. *The research* was carried out in the form of a questionnaire survey with the participation of 352 students from 21 universities in nine European countries (Austria, Czechia, Germany, Hungary, Lithuania, Poland, Slovakia, Ukraine, and the UK). Their task was to draw the border between the European West and East on an outline map based on their subjective perceptions, and to indicate in which sense they dominantly perceive this duality. The findings were analysed and aggregated using GIS tools into clear map outputs intended for interpretation. The interface between Western and Eastern Europe is usually referred to as the broad area of Central or Central Eastern Europe (Cabada, L. 2020, and others), and more recently, the eastern borders of the European Union. Thus, one could expect a high spatial de-concentration of the dividing lines drawn by respondents on the maps.

The main findings are based on the comparison of cognitive mapping results with existing theoretical concepts. The interpretation was focused on how much they are identical to each other and how is the influence of regional identity manifested here. Therefore, the study aimed to detect and explain differences in perceptions among respondents from different countries. Based on other studies relying on the cognitive mapping (Saarinen, T. 1999; Schenk, F.B. 2013; Bláha, J.D. and Nováček, A. 2016; Didelon-Loiseau, C. *et al.* 2018; Nieścioruk, K. 2023), it was possible to assume a significant influence of the respondent's origin or location in this respect.

## West and East in the concepts of the division of Europe

The theoretical concepts dealing with the regionalisation of Europe can be divided into the following *categories based on the number of territorial parts* into which they divide its space:

*The 'pluralist' view* divides Europe into numerous more or less distinct regions (Jordan, P. 2005; Delanty, G. 2012). Thus, Europe tends to be divided in various parts, into Northern, Western, Southern (or Mediterranean), Central (or Central Western and Central Eastern), Eastern and Southeastern (i.e. the Balkan states). It is often used for statistical purposes (The World Factbook 2024; UNSTAT 2024) and in textbooks and school settings to simplify and clarify the teaching of the regional geography of Europe.

*The 'triality' view* divides the European space into three sub-regions, most often Western, Central, and Eastern Europe. This view correlates to some extent with the West–East division of Europe, but treats Central Europe as a separate and distinct entity. The triality view is especially represented in historically and (politico)geographically oriented works by authors often from Central and Central Eastern Europe, such as Naumann, F. (1915), Kundera, M. (1984), Szűcs, J. (1988), Kłoczowski, J. (2005), or Křen, J. (2005).

The third view is based on the principle of '*duality*', dividing Europe into two sub-regions: West and East, or historically also North and South. This concept represents the main theoretical basis of our research and more details about it are given in the next chapter.

Several aspects are reflected in the mentioned concepts of the divisions of Europe:

a) *The geopolitical aspect*, represented before WWII, e.g. by the German concept of 'Mitteleuropa' (Naumann, F. 1915), was completely linked to the West-East bipolar division of Europe and the world during the Cold War (e.g. Heffernan, M. 1998);

b) *The economic aspect*, on which the neo-Marxist Modern World-System (Wallerstein, I. 1974) and the associated concept of core – semi-periphery – periphery are based. In this sense, the aspect of differences in development proves to be particularly important for the regionalisation of Europe (Chirot, D. 1991);

c) *The cultural* or *historical aspect* dividing Europe into regions based on the common historical development of their territories (Szűcs, J. 1988; Halecki, O. 2000; Delanty, G. 2012; Schenk, F.B. 2013, 2017), or according to the development and occurrence of cultural phenomena and traditions (Hajnal, J. 1983; Murphy, A.B. *et al.* 2020);

d) *The physical-geographical aspect* of the west-eastern division of Europe is represented, for example, by the differences between areas with predominantly oceanic or continental climates.

In addition to these single-aspect approaches, there are several authors preferring a *more complex view* combining and interconnecting these aspects (e.g. Nováček, A. 2012b, and others).

*Duality of Europe: West and East*

The concept of the division of Europe into *West and East*, the main theoretical basis for our study, has been a part of geographical thinking for a long time. This idea gained importance mainly due to the geopolitical bipolarity after WWII. Although the dual vision of Europe is strongly influenced by this legacy, it is far from being a modern construct of the 20th century and has deep historical roots. Lemberg, H. (2000) notes that until the early 19th century, the contemporary perception of Europe was predominantly viewed through a North-South division over a West-East one.

The first indications of a West-East division of Europe trace back to ancient times (Latin versus Greek world). Throughout the Middle Ages, it was consistently reinforced both by the rivalry between the Frankish and Byzantine empires and, more significantly, by the division of Christianity and its associated culture (Davies, N. 2006). While the term 'Western Europe/West' began to solidify during the reign of Emperor Charlemagne in the late 8th and early 9th centuries, 'Eastern Europe/(European) East' only emerged as a designation in the early 19th century (Heffernan, M. 1998).

In the 19th and 20th centuries, Europe's awareness of the fundamental differences in values, culture and socio-economics between the West and East (historically linked to Russia and the Balkans) increased. Initially viewed as a boundary between Europe and Russia (the USSR) before WWII, the post-war division shifted westwards deep into Central Europe for four decades (Pounds, N.J.G. 1969).

The fall of the Iron Curtain and the Eastern Bloc in 1989 and the integration of Central Eastern European countries into Western European or transatlantic structures prompt questions about how these changes have affected the West-East border perception, especially among younger generations who did not experience the period before 1989. Our research aims to address this question.

Our study understands the discussed concepts of *West* and *East* in the context of duality as collective designations of two parts of Europe. They can be characterized by their identities, typical attributes (political, socio-economic, cultural or ethnic) and distinguished by their mutual polarity and difference. To define them, reference can be made to publications that have addressed this issue in the past, e.g. Maxwell, A. (2011), and Nováček, A. (2012a). Most of the above-mentioned authors understand the current form of the west as a more modern, advanced, richer, liberal, democratic region, integrated into Western European (or transatlantic) economic and military-political structures (EU and NATO) and standing on a long tradition of western values of humanism, individualism,

capitalism and free civil society. Conversely, the East is usually perceived as less developed, poorer, less free and democratic region, standing outside Western European integration structures, drawing historically on Orthodox tradition and partly on Oriental influences, along with Western influences (Chirot, D. 1991). In an extreme sense, this concept is often identified with the area of Russian civilizational influence (Neumann, I.B. 1999).

*Boundary between West and East in literature*

Only a few studies that have touched on the issue of the division of Europe into West and East have attempted to draw a concrete dividing line between the two regions. Mostly they do so on the basis of some selected aspect of duality.

Among the authors who have relied on *the historical and cultural aspect* are Cahnman, W.J. (1949), or Davies, N. (2014), who trace this border through the territory of the present-day states of Central Eastern Europe and Germany, highlighting its temporal variability. Rupnik, J. (1992) as well as Cox, H.E. and Hupchick, D.P. (2001) move it further east to the western borders of present-day Russia, Belarus and Ukraine and into the areas that once formed the southern border of Hungary. This aligns with the boundary between western and Orthodox civilization used by Huntington, S. (1996). Hajnal, J. (1983) provided an interesting duality example by drawing a line from Sankt Petersburg through the Baltic, Poland, Moravia, and Trieste, based on the prevailing historical model of the family.

*The socio-economic aspect* is often applied when defining the world's macro-regions. Within this regionalisation, De Blij, H.J. and Muller, P.O. (1988) divide the European space into two parts, with the interface running through the territory of Belarus and Ukraine. More recent studies by Anděl, J. *et al.* (2018a) or Fellmann, J.D. *et al.* (2008), shift this line to the western border of Russia, Belarus, Ukraine and Moldova.

*(Geo)politically oriented works* usually view the West and the East as two competing enti-

ties. Most studies based on Cold War realities accepting the Iron Curtain line as the dividing line belonged to this group (e.g. Pounds, N.J.G. 1969). More recent works then see this boundary more between Russia (and Belarus) on the one hand, and the NATO states on the other (Ikenberry, G.J. 2024). Other contemporary studies derive this division from differences in political views within the European Union (Cabada, L. 2020), or on issues of national identity and migration (Bartasevicius, V. 2022; Lewicki, A. 2023). In this context, the aforementioned authors draw attention to the dichotomy between old and new EU member states, thus, placing the boundary of duality de facto back to the line of the former Iron Curtain.

*A more comprehensive view of the* boundary between West and East was applied by Stehlík, J. (1996), who, in addition to the states west of the Iron Curtain, also included the territory of Czechia and Slovenia in the west. Based on a comprehensive analysis, Nováček, A. (2012a), in contrast to Stehlík, also includes the territories of the Baltic states, Poland, Slovakia and Hungary, i.e. the whole Central Eastern Europe, in the west. Hampl, M. (2009) went even further in his demarcation of global systems, leaving only Russia, Belarus and Ukraine to the east of this main dividing line.

The delimitation of the boundary between macro-regions *based on cognitive mapping* was used by Polonský, F. *et al.* (2010) or Didelon-Loiseau, C. *et al.* (2018). Both studies focused on the division of the world into macro-regions through the eyes of university students. In the first study, Czech students most often divided Europe into two macro-regions, with the dividing line running dominantly beyond the western border of Russia, Belarus and Ukraine. A slightly smaller proportion of respondents identified the interface with the eastern border of Germany and Austria. Similar to the smaller group of respondents in the first study, the respondents in the second, more internationally focused study approached the division in the same way.

These perceptual probes effectively confirm the conclusions drawn from the previous discussion of the literature. That is, that the defini-

tion of the boundary between the West and the East is not uniform, with two views prevailing. The first sees it roughly at the border between the German-speaking countries and the other Central European countries, while the second pushes it to the eastern border of the EU.

## Cognitive mapping and methodology

*Cognitive mapping,* defined by Downs, R.M. and Stea, D. (1973, 9) as "a process composed of a series of psychological transformations by which an individual acquires, codes, stores, recalls, and decodes information about the relative locations and attributes of phenomena in space," enables the transfer of mental models of space onto paper or other recording media. In general, the effectiveness of cognitive mapping studies relies heavily on respondent selection, task wording, the method of collecting the mental maps, and their subsequent processing, including aggregation.

With regard to the objectives of this study (an effort to collect the subjective opinions of respondents regarding regional geography), *the selection of respondents* was aimed at university students of geography or related fields, e.g. international relations. This group was chosen for their likely interest in European affairs and basic knowledge of European regional geography. It was also important that the respondents' knowledge of the history and conditions of European dualism was not too deep. For this reason, as far as possible, mainly students in their first or second year of undergraduate studies were contacted. Thus, the research serves as a probe into the views of a younger generation lacking direct experience of the era preceding the fall of the Iron Curtain.

To compare the opinions of respondents of different nationalities, the questionnaire was provided in multiple languages (English, German, Polish and Czech). The distribution of the questionnaires was carried out either personally by the authors during their numerous internships abroad or online through contacts with lecturers or students working at these universities.

The questionnaire featured an outline map of Europe with state borders and names, along with a form for collecting respondent information (age and nationality) and a task statement reading*: "According to your subjective opinion, define a line in the map dividing Europe into parts: West and East. The line does not have to follow existing state borders. If you decide to fill it out online, you may use MS Paint (or another software)."* This wording allowed respondents freedom in drawing the line, without restrictions regarding state borders or map format (analogue vs. digital).

To understand the reasoning behind the drawn boundaries, the final part of the questionnaire asked: *"On what basis did you dominantly define the line? (For example: economic, natural, political, historical, cultural, religious, complex or something else)".*

The research included 21 institutions from 18 locations across Austria, Czechia, Germany, Hungary, Lithuania, Poland, Slovakia, Ukraine, and the United Kingdom. The locations and countries were selected to prioritize mental maps from Central Europe, supplemented by data from two western countries (Germany, UK) and two eastern countries (Lithuania, Ukraine) for comparison. The distribution method ensured that the origin of the sample was embedded in the final maps, serving as a key parameter for subsequent analysis. As shown in *Table 1*, the number of resulting maps obtained was not the same in all countries, however, previous studies by the authors (i.e. Bláha, J.D. and Nováček, A. 2016) have suggested that a sample of approximately 25 maps from each target country can be considered representative for the purposes at hand. Most of the 352 completed questionnaires were collected during the main wave of the research, i.e. from April 2021 to January 2022.

*Processing of mental maps*

All operations for processing the digitized mental maps were performed in ArcGIS Pro. The maps were first georeferenced and then the drawn boundaries between West

and East were vectorized. The individual boundary drawings were aggregated in two steps: 1) Based on respondents' affiliation with each of the nine states; 2) Overall for all respondents, but with relativized results for each state. This ensured equal weight for each state in the final aggregation, despite varying numbers of respondents.

To interpret the aggregated results, it was necessary to perform a spatial analysis. For the sake of clarity, the following software, i.e. tools of extended Spatial Statistics and visualization, was used to perform the analysis of perceived boundaries between Western and Eastern Europe by individual groups of respondents.

To aggregate results, contour lines marking 25, 50, 75, and 100 percent of the volume surface were used and graphically adjusted, i.e. using the Smooth Polygon tool. This approach clearly identifies territories perceived by a certain percentage of respondents as West (blue shades), East (red shades), and transitional zones (white). Additionally, the line method was applied, with lines of varying thickness corresponding to the percentage of respondents (intervals 5–20–40–60–80–100%) who drew the boundary between the West and the East of Europe in this line. This way of visualising the aggregated results in turn allows to better see the dominance of the course of each border. This is also why this visualization method was chosen for the individual national views and their effective comparison.

### Results and discussion

*Delimitation of the perceptual boundary between West and East*

In analysing the aggregated mental maps, the authors looked at a) the degree of variability of the perceptual boundary between West and East; b) its dominant course; c) the predominant classification of a country as West or East; d) the dominant aspect for defining duality; e) the identification of "national" views and their differences.

When drawing the perceptual boundary between West and East, about two-thirds of respondents largely followed existing state borders. The others either drew the dividing line as a straight line or deliberately bisected a state whose classification they were unsure of in this way. Some accepted specific natural or historical borders (the western border of the former East Germany, the western border of Moravia, the eastern border of the German Empire, etc.). The *most cited aspects in defining the border* were economic (17% of respondents), complex (14%), and, to a lesser extent, political (11%). Cultural and historical aspects were the main factor in 8 percent of cases, while natural aspects were cited by 5 percent. A total of 29 percent of respondents did not take the opportunity to express themselves at all. This suggests that current socio-economic differences – developed West vs. underdeveloped East – are favoured over historical factors when defining the border.

The aggregated map of all respondents *(Figure 1)* shows a *high variability in opinions on the border's course, especially in the Central European region*. Conversely, in the north and partly in the south, the consensus was significantly higher. In the North, over 60 percent of respondents identified the border with the border between Finland and Russia and over 70 percent with the Baltic Sea. Similarly, in the south, the Adriatic and Ionian seas were seen as boundaries. The higher variability in Central Europe may stem from the greater number of countries and potential border options, as well as the concentration of respondents from this region. Most respondents identified the dividing line with the German eastern border (in the section with Poland about 60%, with Czechia 40%) and with the Austrian eastern (55%) and southern borders (30%). Although only a portion agreed on the entire border, it can be considered the most dominant. The reason for placing the border here likely relates to significant developmental differences, particularly felt by Central European respondents. Although this was a younger generation of people with no direct personal experience of the Cold War division

of Europe, the relic Iron Curtain effect continues to manifest itself in various forms. As Domański, B. (2004) and Lewicki, A. (2023) suggest, the influence of the political profiling of the EU's eastern wing (the Visegrad Group countries – V4) is also involved. A similar de-

marcation of the dividing line within Europe can be seen in a number of cultural-geographic studies (Fellmann, J.D. *et al.* 2008; partly Murphy, A.B. *et al.* 2020).

*Other alternatives to the perceptual border* between the West and the East have in some
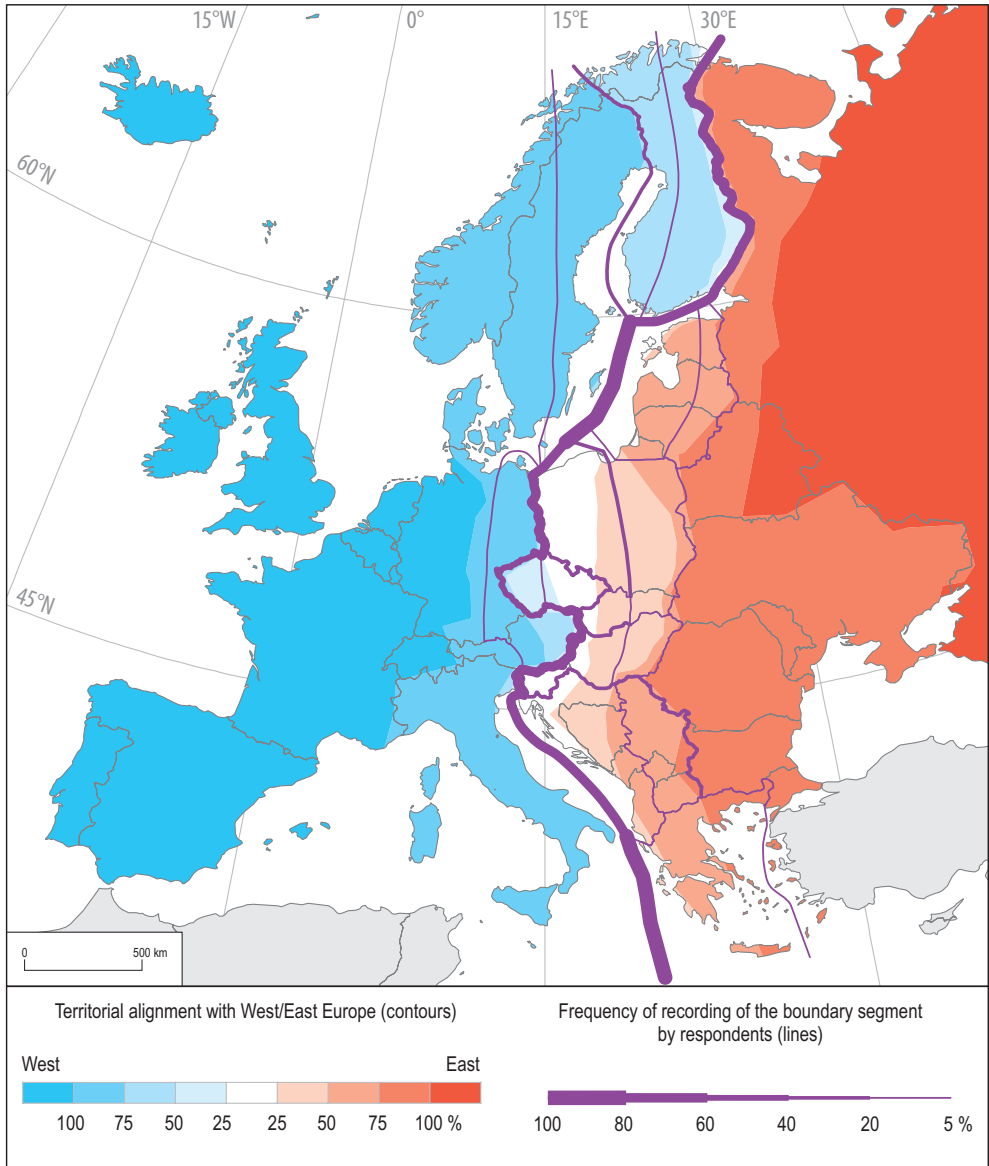


*Fig. 1.* Aggregation of all the respondents' mental maps. *Source:* Authors' own research and processing.

cases also included an attempt to run it in the Baltic and Central Europe along the eastern border of the EU, possibly passing through the Baltic states and the V4 countries in various ways. However, the overall consensus for these lines was only between 10 and 25 percent depending on the particular section. This delimitation can be justified on historical and cultural grounds (e.g. Western Christianity vs. Orthodoxy; Cox, H.E and Hupchick, D.P. 2001; Davies, N. 2006) as well as the current geopolitical division of the world – NATO vs. Russia (Ikenberry, G.J. 2024). A similarly localized boundary can most often be found in works devoted to the delimitation of the world's macroregions (Huntington, S. 1996; Hampl, M. 2009; Anděl, J. et al. 2018a, b). These results align partly with earlier cognitive mapping studies among Czech geography students by

Polonský, F. et al. (2010). However, in contrast to our study, they found the eastern border of the EU to be the dominant dividing line of both variants.

As shown by the values in *Table 1* and the colour shades in *Figure 1*, more than 90 percent of all respondents agreed on the inclusion of Sweden, Germany (including former East Germany), most of Italy and all countries west of these in the West. Slightly fewer agreed on Austria (88%) and the south or north-east of Italy (89%), followed by Finland (67%) and Slovenia (56%). Half of the respondents placed the Czech territory in the West and half in the East. Countries east of these were more likely classified as East (in order: Croatia, Poland, Slovakia, Hungary, Bosnia and Herzegovina) or clearly in the east (Greece, the remaining Balkan states and the rest of Eastern Europe).

*Table 1. Ranking of selected territories according to respondents from each country*

| Country (territory) | Country of respondents* | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | UK | GE | AT | CZ | SK | PL | HU | LT | UA | *Total* |
| Number of respondents | 32 | 36 | 24 | 88 | 68 | 25 | 31 | 25 | 23 | *352* |
| Share of respondents who classified the country (all or most of its territory) to the West | | | | | | | | | | |
| Territory of respondents' own country | 100 | 100 | 96 | 50 | 32 | 36 | 10 | 28 | 0 | *41* |
| East of Germany (former GDR/Bavaria) | 91 | 89 | 96 | 94 | 99 | 100 | 97 | 92 | 100 | *95* |
| Sweden | 75 | 92 | 87 | 94 | 97 | 98 | 100 | 84 | 87 | *91* |
| Italy (south/north-east) | 87 | 92 | 92 | 94 | 88 | 96 | 81 | 88 | 100 | *89* |
| Austria | 66 | 86 | 96 | 95 | 91 | 96 | 90 | 80 | 74 | *88* |
| Finland | 43 | 78 | 67 | 70 | 81 | 68 | 87 | 52 | 21 | *67* |
| Slovenia | 50 | 19 | 88 | 61 | 49 | 68 | 65 | 72 | 43 | *56* |
| Czechia | 34 | 19 | 83 | 50 | 50 | 52 | 61 | 68 | 45 | *50* |
| Croatia | 31 | 19 | 79 | 31 | 31 | 48 | 35 | 60 | 35 | *37* |
| Poland | 22 | 6 | 58 | 34 | 28 | 36 | 19 | 44 | 30 | *30* |
| Slovakia | 19 | 0 | 54 | 31 | 32 | 32 | 10 | 48 | 32 | *28* |
| Hungary | 22 | 0 | 50 | 27 | 32 | 36 | 10 | 48 | 30 | *27* |
| Bosnia and Herzegovina | 22 | 3 | 67 | 18 | 18 | 44 | 10 | 44 | 35 | *24* |
| Greece | 28 | 6 | 46 | 13 | 15 | 20 | 3 | 40 | 13 | *18* |
| Other western Balkans | 16 | 3 | 38 | 11 | 13 | 24 | 3 | 40 | 30 | *16* |
| Baltic states | 6 | 3 | 54 | 15 | 15 | 20 | 6 | 24 | 0 | *15* |

*UK = United Kingdom, GE = Germany, AT = Austria, CZ = Czechia, SK = Slovakia, PL = Poland, HU = Hungary, LT = Lithuania, UA = Ukraine. *Source:* Authors' own research and processing.

*National views*

If we compare the aggregated maps produced by merging the mental maps from respondents in a given country *(Figure 2)*,

we can observe both some similarities and differences between these "national views".

The greatest *variability* within national view in drawing the dividing line occurred among respondents from the UK, Austria, Poland,
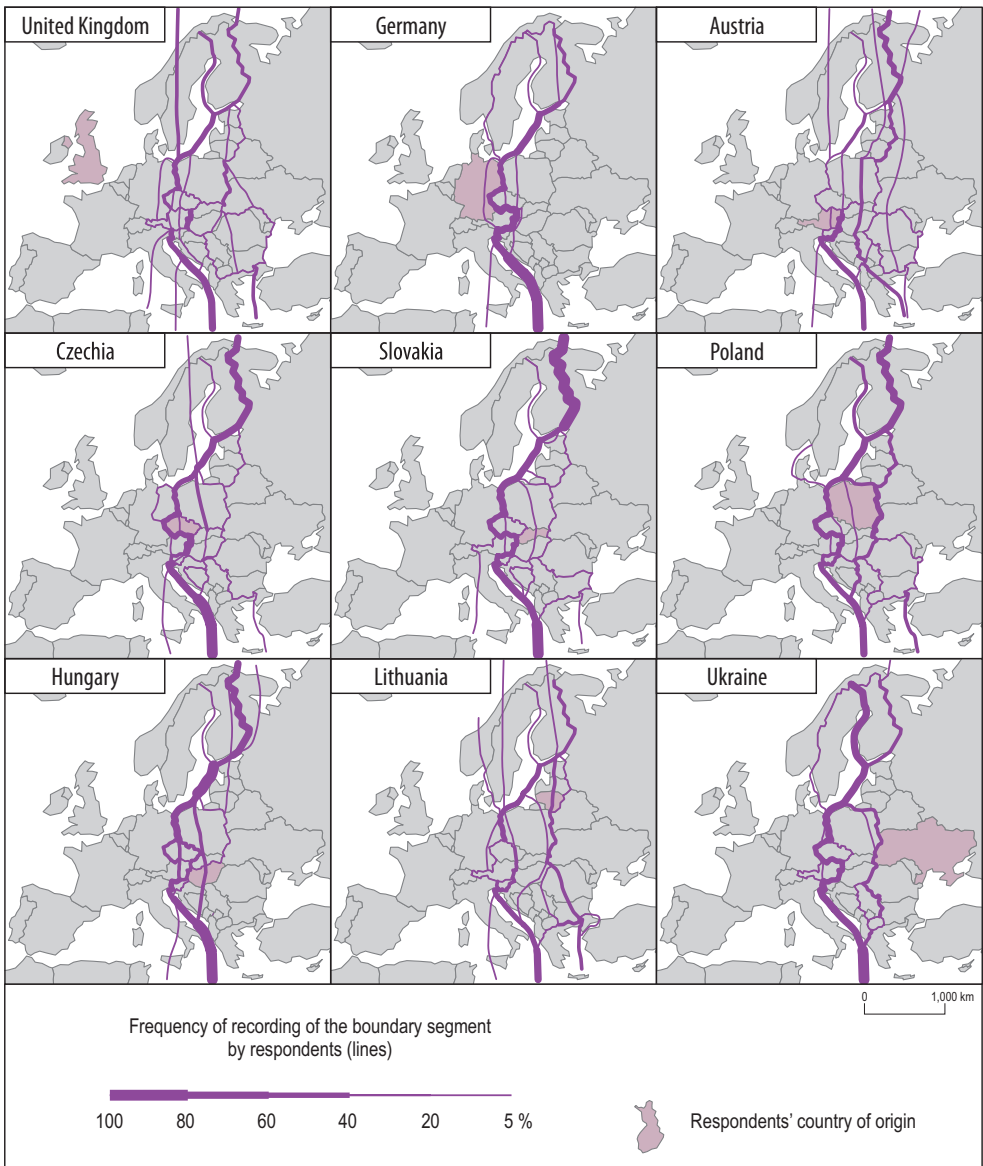


*Fig. 2.* Definition of the border between West and East by respondents from each country. *Source:* Authors' own research and processing.

and Lithuania. In contrast, respondents from Germany, Hungary, and Ukraine displayed the most unified views. On average, the British, Germans and, surprisingly, Hungarians placed the border the furthest west of the nations surveyed, while Poles and Lithuanians placed it furthest east. The comparison according to where the respondents predominantly *placed the territory of their own* country is also interesting (see *Table 1*). The Germans and Austrians, and unsurprisingly the British, almost unanimously placed their own country (all or most of it) as part of the West, with only 11 percent of German respondents separating the eastern areas of their state (the former East German territory) to the East. By contrast, half of Czech respondents, and only about a third of Poles, Slovaks, and Lithuanians, saw their country as part of the West. With the exception of Lithuanians, the ambivalence of opinion can be partly attributed to their inclination towards Central Europe as a distinct sub-region (Kłoczowski, J. 2005; Bláha, J.D. and Nováček, A. 2016). While it is unsurprising that Ukrainians identified with the East, the strong identification of Hungarians with the East is somewhat striking.

Clear *differences between the different national views* appear in the inclusion of the territories of Finland, the Baltic states, the V4 countries, Slovenia, Croatia, or the Western Balkan countries (see *Table 1*), as noted in various theoretical works (e.g. Cahnman, W.J. 1949; Jordan, P. 2001; Todorova, M. 2009).

Despite these differences, several national views show *notable similarities*. The aggregated *maps from United Kingdom and Germany*, for example, are highly similar, reflecting a typical Western European view. These nations tend to perceive Central Eastern Europe as part of the East, sometimes looking down on them (Domanski, B. 2004). Accordingly, they shift the West-East boundary westward, often aligning it with the former Iron Curtain or the eastern borders of present-day Germany and Austria.

*The Czech and Slovak respondents* also displayed significant similarity, with two main dividing lines dominating. The more common one follows the eastern borders of Finland, Germany,

and Austria, reflecting persistent developmental differences (Stehlík, J. 1996). This economic aspect by Slovak respondents mentioned as the main dividing basis. The other runs along the eastern borders of the Baltic states, Poland, Slovakia, Hungary and Croatia. Interestingly, respondents from eastern Slovakia often drew the dividing line through their country, reflecting the long-standing dichotomy in maturity within (Matlovič, R. *et al.* 2018). The high similarity between Czech and Slovak views can be attributed to a shared tradition of geographic education, media, and awareness of a common history dating back to the Czechoslovak state.

A third significant similarity emerged between *respondents from Poland and Lithuania.* Like the Czechs and Slovaks, the same two conceptions dominated their views. However, Poles and Lithuanians showed a greater tendency to integrate the Baltic states and some Balkan areas into the West. This view may stem from a similar historical experience marked by antagonism toward both Russia, identified here with the East, and Germany, identified with the West, leading to a dilemma about their European classification. In contrast to a number of renowned works by Polish authors who emphasize more on the political and cultural aspects of duality (e.g. Solarz, M.W. 2022), the Polish respondents themselves preferred a border defined by economic differences reminiscent of the Iron Curtain. While the Polish respondents derived their division mainly according to economic aspects, their Lithuanian colleagues do it based on cultural, historical and also natural ones.

*The Austrian view* can be considered a kind of intersection of all three previous groups. Due to their location and history, the Austrians feel closer to the nations of Central Eastern Europe than Germans do. This may explain their tendency to push the West-East boundary further east, even more so than V4 countries' respondents themselves. The high variability of marked lines also corresponds to the fact that none of the mentioned aspects of duality significantly prevailed among the Austrian respondents.

*Hungarian respondents* demonstrated a relatively specific and homogeneous view. Like others, they mainly referenced the Iron

Curtain, but they more frequently classified Czechia and Slovenia as Western, thus, agreeing with Stehlík, J. (1996). Although Hungarian respondents often mentioned historical and cultural aspects as the main basis of duality, they almost exclusively referred to their own country as a part of the East, a distinction from other V4 countries. This may be due to Hungary's noticeable developmental gap with neighbouring Austria and Slovenia, a sense of belonging to the Danube region of historical Hungary (Rupnik, J. 1992), or domestic media portraying Hungary as politically distancing itself from the EU and the West (Cabada, L. 2020; Bartasevicius, V. 2022).

*Ukrainian respondents* did not show any ambition to place their state in the West, furthermore locating the duality border as far west as the border of Germany and Austria and even Sweden, i.e. further west than the Central Eastern European nations. The Ukrainian point of view corresponds to the fact that cultural-historical and political aspects were mentioned as the most common reason for the division. Their geographical distance from the perceptual border, like the British, may have allowed for a less subjective view than the Central European nations. However, this research was conducted just before Russia's 2022 invasion of Ukraine, raising questions about how the conflict may have subsequently altered Ukrainians' views.

**Conclusions**

The initial discussion of the literature highlighted inconsistencies in the regionalisation of Europe, particularly in the perception and spatial delimitation of West and East. This study, using cognitive mapping, confirmed these inconsistencies. Aggregating mental maps from a larger number of respondents helped objectify individual opinions and enabled comparison across groups, demonstrating the effectiveness of this method applicable in the context of regional and cultural geography.

Most mental maps showed a strong correlation between the West-East boundary and current state borders. Despite considerable variability and spatial dispersion of the marked border lines, the greatest consensus emerged on a line dividing Europe along the eastern border of Finland across the Baltic Sea, along the eastern borders of Germany, Austria and Italy, crossing the Adriatic and Ionian Seas. Although the respondents were young, this result reflects a continuity of perspective reminiscent of the Cold War division of Europe. Most respondents, including those from the V4 countries, thus, perceived the countries of Central Eastern Europe, with the partial exception of Slovenia and Czechia, primarily as part of the East. This finding partly contrasts with the popular claim, narrated in the media especially in the 1990s in post-socialist Central Eastern Europe, that "with the collapse of the Eastern Bloc in 1989, they are once again returning to the West of which they used to be a historical part" (Rupnik, J. 1992). The second highest consensus was on a line running through the Baltic and Central Europe along the eastern border of the EU.

Other marked boundaries mostly fell in the zone between these two lines, creating a space understood as an interpenetration and overlap between West and East (Kundera, M. 1984; Halecki, O. 2000; Jordan, P. 2001; Meinhof, U.H. 2002). The data from the respondents further show that they preferred to look at the current reality of socio-economic differences (more advanced West vs. the lagging East) rather than historical factors when defining the border.

Aggregated results for the states revealed both differences and similarities between different "national" views. Respondents generally tended to push the boundary close to their own country, with those from western states locating it further west and those from eastern states locating it further east. This could possibly happen because of certain tendency of nations clearly identified with the West (respondents from United Kingdom and West Germany) to perceive the East as a less developed and less civilized region (Said, E.W. 1978) and to define themselves against it may play a role in this. On the

contrary, the surprisingly high proportion of respondents from Eastern and Central Europe who assigned their own country to the East may indicate self-deprecation and frustration with their more economically advanced western neighbours. While intra-state differences in views were generally minimal, aggregate views differed for geographically close locations located in different states (such as Passau and České Budějovice, or Vienna and Bratislava). This highlights the strong influence of an individual's origin on the perception of space and the definition of regions. As Saarinen, T. (1999) suggests, these differences can stem from variations in educational systems, i.e. textbooks and atlas conceptions, different historical experiences, politics, and media portrayals of the countries concerned. All of these shape the individuals' cognitive maps and their own subjective regional identities (Paasi, A. 1986).

The authors of the research acknowledge that the results may be influenced by the specific survey conditions, such as the strict requirement to define a single line and the fact that only young geography enthusiasts participated. The results, thus, represent a specific probe that may not fully reflect the views of the general population. It can be assumed that different age groups, influenced by memories of other geopolitical realities and schooling, might produce different results. As a study relying on the cognitive mapping method, it brings a new perspective to the debate on delimitation of regions. The insights generated here may inspire further similar research at different levels of regions.

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