Do political or ethnic and historical borders affect values and beliefs more? Some evidence from Central Europe

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Abstract
The paper uses data from the World Values Survey on individuals in Hungary and its neighbouring countries to break down the estimated cross-country differences of individual beliefs into two effects: one explained by the difference in ethnicity or history and one explained by the difference in political community. The breakdown is made possible by the fact that parts of the Hungarian ethno-linguistic community can be found in all these countries. The results show that border effects are often amplified by the same ethnicity or history, that within-country differences in beliefs are often larger than cross-country differences, and that it is not the case that beliefs concerned with ‘economic questions’ are less influenced by history or ethnicity than others concerned with ‘deeper’ questions. These results, the paper argues, are in line with an alternative (Austrian) view of culture in economics that understands culture as a heterogeneous context of human actions.*

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1. Introduction

It is now more or less accepted among economists that ‘culture matters’, by which they mean that countries have different economic outcomes because they have different values and beliefs. But why do countries have different values and beliefs? Is it because different nations (ethno-linguistic groups) have different values and beliefs? Or, is it because the common experience of a political community (a country) leads its members to have similar values and beliefs? This paper is meant to provide some insights to better understand this question, focusing on Hungary and its neighbouring countries.

There are several reasons why Hungary, Serbia, Romania, and Slovakia might be interesting places to consider for an empirical investigation of differences in values and beliefs. The main reason is that (current and historical) political, religious, and ethnic borders do not coincide with each other in this area. Current political borders are relatively new (about 100 years old), and there are substantial Hungarian minorities in all the three countries. Ethnic borders and political borders, that is, are not the same. In addition to current political borders, the border of the former Habsburg Empire (Austria-Hungary), whose significance for present-day beliefs has been shown (Becker, Boeckh, Hainz, and Woessmann, 2016; Grosjean, 2011), and that of the Kingdom of Hungary, goes through Serbia and Romania. Religious differences are also present in the region as Eastern and Western Christianity, including Protestantism and Catholicism are all represented.

The paper is concerned with the survey results used by economists to quantify values and beliefs. The main idea is to break down the differences between two individuals from two different countries (‘belief distance’), after accounting for individual characteristics and religion, into an effect explained by common ethnicity or history (culture effect) and another explained by the common current political community (border effect). The breakdown is made possible by the fact that parts of the Hungarian ethno-linguistic community and of the former Kingdom of Hungary can be found in all the four countries mentioned, and therefore one can estimate the effect of the border for Hungarians only or for the region of the Kingdom of Hungary. This effect is then understood as the effect of the border holding culture constant, which makes it possible to estimate the extent to which differences in ethnicity or history are responsible for the cross-country belief differences.

The reason why the breakdown of the belief distance has something to add to the debate on the economic importance of culture will be explained in section 2. As we will see, mainstream and ‘Austrian’ approaches to culture give different answers to the question as to how and why ethno-linguistic and historical community and values and beliefs are related.
The two different approaches will be contrasted with quantitative evidence on beliefs with the help of a ‘cultural gravity model’ (Grosjean, 2011) with belief distances as dependent variables in the regressions. Beliefs distances are calculated from the World Values Survey – European Values Study (EVS, 2011; WVS, 2015) for several beliefs that are usually used in the ‘culture and institutions’ literature (Alesina and Giuliano, 2015). The empirical model, the data, and the main results will be presented in sections 3 and 4. The conclusion (section 5) is that it is rather the Austrian theory of culture, which de-emphasises ‘cultural nationalism’, that is in line with the results.

2. Literature review: why different ‘values and beliefs’?

In the brief literature review that follows I will confine myself only to the question: Is culture as understood by economists, which refers to a set of values and beliefs, a characteristic of a political or an ethnic and historical community? I will contrast the mainstream view (section 2.1) with the ‘Austrian’ one (section 2.2), and argue that ‘Eastern Central Europe’ is an interesting place to consider for insights on this question (section 2.3).

2.1. Culture is a sticky, homogenous, and deep factor

The ethnic group is referred to in one of the widely used definitions of culture in economics (Guiso, Sapienza, and Zingales, 2006: 36) as one type of those groups, in addition to religious and social ones, that transmit those beliefs and values that are culture. There are at least two reasons why such values and beliefs are deep and slow-moving (Roland, 2004): the persistence of ethnicity and religion.

The importance of ethnicity is supported by the literature on how ancestry affects current institutions, values and beliefs, and economic development. Spolaore and Wacziarg (2009) find that the barriers to technology adoption are so deeply rooted that, with countries as observations, it correlates with genetic distance from the technology leader. Genetic distance, however, correlates well (and positively) with measures of linguistic, religious, and cultural distance (Spolaore and Wacziarg, 2016), and with ‘cultural distance along the individualism-collectivism dimension’ (Gorodnichenko and Roland, 2017: 408). If cultural differences have such deep-seated roots, it is not countries or any other geographical locations whose cultures are different but those of the populations that inhabit them, as suggested by Putterman and

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1 For a more wide-ranging review of the field of ‘culture and institutions’ or ‘culture and economic development’ see, for example, Alesina and Giuliano (2015) or Mokyr (2018: 3-15).

2 In this section, therefore, the word ‘culture’ is meant in the same way.
Weil’s (2010) results. The United States seems to fit this story well (Easterly and Levine, 2016; Putterman and Weil, 2010: 1651), yet it is an outlier in the regressions (Caplan and Weinersmith, 2019: 123–125).

Some elements of culture might be less deep than others, but it is not totally clear which ones. Those that change faster might be the ones that ‘generate larger transaction gains from assimilation’ (Giavazzi, Petkov, and Schiantarelli, 2019: 121) or the ‘possibly contingent ideas about the appropriate macroeconomic policy framework’ (Alesina, Tabellini, and Trebbi, 2017: 172). Beliefs as regards how the economy works fit the latter description but probably do not fit the former.

Another reason for the depth and slow-changing nature of culture is that ‘many norms are rooted in religions’ (Roland, 2004: 117). Christianity and Judaism might be exceptional by providing an ethical basis for human freedom (Gregg, 2019; Hill, 2019), but Christianity’s political–economic history is also different from Islam in a way that creates a fertile soil for political freedom and for thinking about it (Rubin, 2017). Anyway, the economic beliefs of individuals are indeed influenced by religion and religiosity (Guiso, Sapienza, and Zingales, 2003).

Following the line of research first initiated by Weber (1904–5/2001), several authors (Arruñada and Krapf, 2019; Arruñada, 2010; Nelson, 2012) conclude that the Protestant–Catholic divide is still relevant today and is partially responsible for cultural and institutional differences within Europe, including the North–South division in the capitalist spirit of the continent (Bruni and Milbank, 2019). Protestantism has also been shown to matter for economic freedom worldwide (Hillman and Potrafke, 2016).

In addition to ethnicity, culture might be the result of a very long-run accumulation of values within a certain political community. In one of the seminal papers, Tabellini (2010) presents evidence that cultural differences measured as differences in various values observable in the World Values Survey (trust, respect, obedience, control over life) are able to predict differences in economic development between regions of Western Europe, and these values are predicted by the civic history of the regions. Cultural differences are thus persistent (Guiso, Sapienza, and Zingales, 2016), suggesting that a ‘nation’s psyche’ is linked to ‘historical events’ (p. 1434).

Some doubts have been raised about the ‘deep culture matters’ story. Desmet, Ortuño-Ortí, and Wacziarg (2017) find that ethno-linguistic diversity does not correlate with cultural diversity. Murphy (2019) concludes, in the context of the debate of the effect of immigration on institutions, that deep, ethnicity-based culture might not be as important for the institutions of countries as it first seems. The roots of the difference concerning the right economic policy,
such as ‘French’ and ‘German’ thinking about free markets, government or personal responsibility (Brunnermeier, James, and Landau, 2016; Guiso, Herrera, and Morelli, 2016), are usually not found in the very distant past.

In sum, this literature finds that culture is a deep, mainly unconscious determinant of behaviour that can therefore be one factor among the many that explain institutional and economic development. Its depth is derived from the long history of an ethnic group or from a long-run political history of a certain region.

2.2. Culture is an elusive and heterogeneous context

A starting point of an alternative view of culture in economics to what was reviewed in section 2.1 could be the Buchananite notion of moral communities (Buchanan, 1987; Munger, 2020), several of which everyone identifies with. The identification with several communities provides those shared meanings which Storr and John (2020) argue is the proper understanding of culture: ‘culture is the lens through which [people] interpret and make sense of their actions, opportunities, and environment’ (p. 30). In this approach, culture can be seen as a constitution (John, 2015), or at least like (Stein, 2014) a constitution³.

This culture is also a result of a discussion (Emmett, 2020) which must take place within some rules and constraints: the formation of beliefs must have their own institutions (Mike, 2017). National culture may become national in the process of discussions taking place within country-specific institutions.

There are at least three conclusions from this ‘Austrian’ understanding of culture that are worth emphasizing here. First, it is far from obvious that one national culture exists (Lavoie and Chamlee-Wright, 2001, pp. 5960; Aligica and Matei, 2015) and even if there is one, it is much less linked to ethnicity than is suggested by the mainstream view. There are several moral communities within a society, and only one of them is that of people with common ethnic roots. There might be different cleavages (Runst, 2015) and ‘competing economic spirits’ (Storr, 2013: 95) within the same society.

Second, what is measured by surveys is not culture but some result of it. Answers to surveys reflect what people think, not how they think. It is, however, the how that culture is (John, 2015:

³ Buchanan (2001) himself seems to include culture in the notion of a constitution when defining it ‘as being the set of rules, conventions, traditions, within which a society more or less operates and which people empirically sort of accept as guidelines or framework within which they carry on their ordinary activities, both private and public.’
234–235) while it is the what that surveys reflect. Answers to survey questions (values and beliefs) are therefore a result of a process of interpreting the world with the help of culture.

Third, values and beliefs may change as a result of one spirit among the many becoming dominant, but not necessarily as result of a change in the culture itself. Values and beliefs may be less ‘sticky’ than culture, properly understood. Such a change is an outcome of the discussion framed by the country’s institutions, such as the constitution, which are confined by explicit borders, while the culture people have may cross these borders (Stein, 2014). In these circumstances, do their values and beliefs then change?

In sum, the ‘Austrian’ view of culture I have just briefly sketched allows us to conclude that the culture of moral communities, including those created by common ethnicity and common history, and the institutions of a country – those rules that frame the discussion in which values and beliefs are formed – interact in producing values and beliefs, values and beliefs which are then captured by surveys.

### 2.3. Eastern Central Europe as a testing ground

One region of the world where one can test the conclusions of section 2.1 and 2.2 is ‘Eastern Central Europe’, that part of Central and Eastern Europe which has been influenced the most by the West (Foldvari, 2018). Having a closer look at this region of small nations and diverse histories might help us see the consequences of cultural heterogeneity without large differences in climate, geography or economic development. Ethno-linguistic differences are large, but genetic differences are small.

Several authors, implicitly or explicitly, have come up with the idea that what is responsible for the different institutional and development paths in the region is values and beliefs. Although Beck and Laeven (2006) use the time spent in socialism by the country as a proxy for the entrenchment of the old elite, it can quite plausibly stand for the influence of communist rule on culture (Runst, 2015, p. 321), which does not seem to go away very easy (Alesina and Fuchs-Schündeln, 2007; Runst, 2013). Attitudes toward the market economy then predict the institutional paths (Runst, 2014)

As in the more general literature (see section 2.1), religion appears here, too, as an explanation for different beliefs (Runst, 2014). The border between ‘Latin’ and Eastern Christianity cuts through the region – a fact with economic significance (Hodgson, 2006; Spolaore & Wacziarg, 2016, p. 196).

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4 Even Hungarians, speaking a Non-Indo-European language are genetically hardly different from the people living in the neighbouring countries (Spolaore & Wacziarg, 2016, p. 196).
Zweynert and Goldschmidt, 2006). Using survey data, Minarik (2014, 2019) shows that religiosity and religious affiliation is one of the factors that shape beliefs in the post–communist region, too.

The countries of the region were cut through by different empires, whose significance for current economic, institutional, and cultural developments has also been shown (Becker et al., 2016; Dimitrova-Grajzl, 2007; Grosjean, 2011). These authors conjecture that the effects of these old political communities have a lasting effect because they shaped the beliefs of the people living in them, and these beliefs, through a mechanism which is not very clear, have managed to live on up to the present. For the countries that will be examined in the rest of this paper, it is the Habsburg Empire (Austria – Hungary) and the Kingdom of Hungary that are relevant.

To study the effect of overlapping moral communities, I will focus on Hungary, Romania, Slovakia, and Serbia. Borders changed here quite abruptly after WWI, which is an historical event linked - again - to these nations’ ‘psyche’, to quote Guiso, Sapienza, and Zingales (2016: 1434), and which made historical, ethnic and religious borders cross current political borders. Substantial numbers of ethnically and linguistically Hungarian people live in Slovakia, Ukraine, Romania, Croatia, Serbia, and even Austria.

To use the terminology of section 2.2, this exogenous change of borders led Hungarians to identify with an ethno-linguistic moral community that does not overlap with their political moral community. As demonstrated by Veres’s (2015) analysis of the ‘Karpat Panel’ survey of Hungarians in 2007, members of the Hungarian minorities in these countries identify with the ‘pan-Hungarian nation’ (p. 97) but also, to a somewhat lesser extent, with their home country, too, producing an identity of ‘regional “Hungarianness” ’, which is ‘primarily ethnoculturally Hungarian, with certain elements of Romanian/Slovakian etc. civic identity’ (p. 104). If the political moral community (‘country’) is different from the ethno-linguistic and the historical one (‘culture’), which one is more important in determining values and beliefs?

3. The effect of culture versus the effect of borders on beliefs

I will use data found in the World Values Survey – European Values Study (WVS, 2015; EVS, 2011) for Hungary, Romania, Slovakia, and Serbia to answer the question: to what extent can belief differences between countries be explained by different ethnicity or history and to what extent by country-specific factors? The fact that this database includes observations of the respondent’s ethnicity or language makes it possible to check the effect of current political borders controlling for ethnic or linguistic identity. While the authors of the literature discussed
in section 2 are usually interested in the effect of ethnic differences within a country (Desmet et al., 2017), in this case it is possible to examine the effect of country differences within an ethnic group.

3.1. Data on beliefs from Hungary, Slovakia, Serbia, and Romania

The data come from wave 3 (1994-1998) of the World Values Survey as can be found in the World Values Survey—European Values Study combined database (WVS, 2015; EVS, 2011), an often used source of data on values and beliefs. The reason for choosing this wave is that all the three countries that have the most substantial Hungarian minorities - Romania, Serbia, and Slovakia - are included. The samples from Croatia, and Ukraine do not include any Hungarians, while Austria is not included in any WVS wave (only in the EVS, which does not provide information on ethnicity).

Being Hungarian is defined by ethnicity as reported in the WVS-EVS database (variable X051) or, if ethnicity is not reported, by language used at home (variable G016). The use of the Hungarian language, being somewhat special in Europe is almost exclusively restricted to those who are ethnically or culturally Hungarians.

The dependent variables are differences between two people’s beliefs regarding those topics often used in the literature to measure deep beliefs or economic ideas. The basic results will be concerned with the question of control over life (variable A173), the answer to which can be placed on a 10-point scale with the extremes being the beliefs of having a ‘great deal of choice’ and ‘no choice at all over the way your life turns out’. This variable, being one of Tabellini’s (2010, pp. 683–686) cultural variables, is usually considered as a measure of deep culture (Williamson, 2009). The other independent variable is the one concerned with private property (variable E036) which is rescaled to also run between 1 and 10. The question on property rights is seen as one of the main variables reflecting beliefs about ‘capitalism’ (Bjørnskov and Paldam, 2012; Czeglédi and Newland, 2018; Davis and Williamson, 2020). Some other variables, such as the other three of Tabellini’s (2010) variables and the question concerned with the responsibility of the government, will also be used to check the basic results and will be described later.

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5 A proverb, very often used in Hungary according to which ‘nations exist in their own language’ (Péter, 2012, p. 184) is obviously false in general but seems to be right for Hungary in particular. According to the survey results presented by Veres (2015, p. 95), an overwhelming majority of Hungarian minorities define their national identity by ‘my mother tongue, my culture’.

6 The wording of all the WVS–EVS questions I use are from Inglehart et al. (2014).
The independent variables will be of three categories: differences in individual characteristics, differences in religious denominations, and country pairs and Hungarian ethnicity. The choice of individual variables is based on previous studies on the determinants of beliefs (Koster, 2010; Migheli, 2010, 2016) and includes sex (X001), the importance of God (F063), birthyear (X002), education (X025), size of town (X049), being religious, and being an atheist (both derived from F034). The self-reported income group is not included because there is no observation on it in the Hungarian sample of wave 3.

Following the literature reviewed in section 2, data on religious denomination (variable no. F025) are also included as independent variables. These independent variables account for all the 15 possible pairs\(^7\) of denominations that can be chosen from among the following five: Catholic\(^8\), Protestant\(^9\), Eastern Christian\(^10\), other religion\(^11\), and non-religious\(^12\).

The third group of independent variables, and the main interest of this paper, are those accounting for country pairs and the Hungarian ethno-linguistic group. Again, these are dummies accounting for all the 10 pairs of countries that can be created from the four countries – Hungary, Romania, Serbia, and Slovakia – included in the database. In addition, the set of independent variables includes the cross-variable of these and the dummy accounting for the possibility that both individuals, the difference between whose beliefs the dependent variable refers to, are Hungarian.

3.2. A border effect versus a culture effect

To separate differences between two countries into a border effect and a culture effect I will run the following regression to estimate the difference in some belief between individual \(i\) and individual \(j\):

\[
d_{ij} = x_i \beta_i' + \sum_{\xi} \sum_{\gamma} \beta_{2i} \xi \gamma R_{ij} + \sum_{k_i} \sum_{k_j} \beta_{3i}^{k_i} C_{k_j} + \sum_{k_i} \sum_{k_j} \beta_{4i}^{k_i} C_{k_j} \times H_{ij} + \varepsilon_{ij}
\]

(1)

In equation (1) \(d_{ij}\) is the absolute value of the difference between individual \(i\) and \(j\). These differences are calculated by taking all possible combinations of individuals and considering

\(\text{Footnotes:}\)

\(^7\) Minus one for the reference dummy.

\(^8\) Greek Catholic, Roman Catholic.

\(^9\) Baptist, Christian Reform, Evangelical, Free church/Non-denominational church, Hussite, Jehovah’s Witnesses, Pentecostal, Protestant, Seven Day Adventist, Unitarian.

\(^10\) Orthodox.

\(^11\) Buddhist, Hindu, Jew, Muslim, Other.

\(^12\) No religious denomination.
that \( d_{ij} = d_{ji} \), so a pair of the same two individuals should not be included twice. Also, no individual is allowed to create a pair with herself (\( i \neq j \)). \( \mathbf{x}_{ij} \) is a vector of differences of different individual variables between individual \( i \) and \( j \), as mentioned above. \( \mathbf{R}_{r_i r_j} \)'s are the dummies accounting for pairs of religious denominations. That is, \( \mathbf{R}_{r_i r_j} = 1 \) if individual \( i \) is reported to belong to religious denomination \( r_i \) while individual \( j \) is reported to belong to religious denomination \( r_j \); and \( \mathbf{R}_{r_i r_j} = 0 \) otherwise. The upper indices \( r_i \) and \( r_j \) denote two of the five religious denominations defined in section 3.1 with the exception of the case when both would mean 'non-religious', which is the reference dummy.

\( \mathbf{C}_{k_i k_j} \)'s are dummies of country-pairs: \( \mathbf{C}_{k_i k_j} = 1 \) if individual \( i \) lives in country \( k_i \) and individual \( j \) lives in country \( k_j \) with \( k_i, k_j \in \{ \text{HUN, ROU, SRB, SVK} \} \), and \( \mathbf{C}_{k_i k_j} = 0 \) otherwise.

\( \mathbf{H}_{ij} \) accounts for the Hungarian ethno-linguistic group: \( \mathbf{H}_{ij} = 1 \) if both individual \( i \) and individual \( j \) are ethno-linguistically Hungarian, and zero otherwise.

As my main concern is the difference in beliefs between two countries, not two individuals, let us introduce the notation \( d(k_i, k_j, H) \) to describe the difference between two individuals who are identical in every respect that is controlled for (each element in \( \mathbf{x}_{ij} \) is zero and \( r_i=r_j \)) with the exception of which country they live in \( (k_i, k_j) \) and whether \( (H=1) \) or not \( (H=0) \) both of them are Hungarian. That is to say that they can have different beliefs for two reasons only: because of the country each lives in or because both might be Hungarian.

The idea is to separate the effect of culture and the effect of borders based on the regression estimation above:

\[
\text{total effect} = \text{border effect} + \text{culture effect}
\]

or

\[ d(k_i, k_j, 0) = d(k_i, k_j, 1) + \text{culture effect} \]  \hspace{1cm} (2)

To be able to calculate the culture effect from the regression results, I will consider a transformed version of equation (2):

\[
\text{relative total effect} = \text{relative border effect} + \text{culture effect}
\]

or

\[ d(k_i, k_j, 0) - d(k_j, k_i, 0) = d(k_i, k_j, 1) - d(k_j, k_i, 1) + \text{culture effect} \]  \hspace{1cm} (3)

which allows the effects to be written in terms of the coefficients of equation (1). The relative total effect is then
\[ d(k_i, k_j, 0) - d(k_j, k_j, 1) = \beta_3^{k_i} - \beta_3^{k_j} - \beta_4^{k_i} \]

while the relative border effect is
\[ d(k_i, k_j, 1) - d(k_j, k_j, 1) = \beta_3^{k_i} + \beta_4^{k_i} - \beta_3^{k_j} - \beta_4^{k_j} \]

The relative total effect shows how much larger (or smaller) the difference will be between two people if one of them lives in country \( k_i \) while the other lives in country \( k_j \), and at most only one of them is Hungarian as compared to both being Hungarian and both living in country \( k_j \). The relative border effect compares the difference between two Hungarians in two different countries \((k_i \text{ and } k_j)\) and the difference between two Hungarians in the same country \((k_j)\).

Equation (3) implies, then, that
\[
\text{culture effect} = \text{relative total effect} - \text{relative border effect} = d(k_i, k_j, 0) - d(k_i, k_j, 1) = -\beta_4^{k_j}
\]

All this means that, having data from four countries, we can calculate the relative border effect and the relative total effect for twelve country pairs\(^{13}\) and the relative culture effects for six, in addition to the four ‘own country’ culture effects\(^{14}\).

### 3.3. Relative border and culture effects estimations

Tables 1, 2, 3, and 4 present the effects defined in section 3.2 for the two beliefs described in section 3.1: property and life control. To save space the relative total effects are not presented because the sum of the culture and the relative effects give the relative total effects. The two tables together, therefore, also provide information on the share of the total effects that is explained by these two effects.\(^{15}\)

In addition to the culture and border effects the tables that follow show three kinds of averages. The first and the second are the relative total \((H=0)\) and relative border effect \((H=1)\)
\[
d(k_i, k_j, H) - d(k_j, k_j, 1)
\]

which can be understood in two ways. As an ‘outward’ difference for country \( k_j \), it is the effect of one person of the pair being ‘moved out’ from country \( k_j \) to country \( k_i \). As an ‘inward’

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\(^{13}\) The relative total and border effects between \( k_i \) and \( k_j \) are not the same as the same effects between \( k_j \) and \( k_i \). This is because, although \( d(k_i, k_j, 0) = d(k_j, k_i, 0) \), we have no reason to suppose that \( d(k_i, k_i, 0) = d(k_j, k_j, 0) \).

\(^{14}\) \( \beta_4^{k_i} = \beta_4^{k_j} \) by definition and \( \beta_4^{k_i} \) is typically non-zero, too. In accordance with equation (5), the relative border effects are zero by definition, if \( k_i = k_j \).

\(^{15}\) Every detailed statistic not presented here, including the descriptive statistics of the variables and the detailed results of the regressions, are available from the author.
difference for country $k_i$, it is the effect of one person of the pair being moved ‘in’ to country $k_i$ from country $k_j$. That is why the weighted average of a column is called the average outward effect, while the same for a row is called the average inward effect. For the culture effects in Tables 1 and 3 the average outward and inward effects are not based on the culture effect for country pairs directly but calculated as the difference between the relative total and the relative border averages. The third average is the weighted average of any one of these two kinds of averages\textsuperscript{16} that are in the right lower corner of the tables.

What at first seems strange about Tables 1, 2, 3, and 4 is the significant number of negative values. Equation (5) says that a negative border effect means that the difference between two Hungarians in two different countries is estimated to be smaller than the difference between two Hungarians within the same country. A negative culture effect means, according to equation (6), that the estimated difference between two Hungarians is larger than the estimated difference between any two individuals, except for two Hungarians across the same borders.

Negative values in the diagonals of Tables 1 and 3 mean that the difference among the Hungarians in the country in question is larger than the difference between any two individuals (but not two Hungarians). This is understandable in the case of Hungary where there are hardly any non-Hungarians in the sample. The Hungarian majority of the country have more diverse views than do the members of the small non-Hungarian minority.

The negative relative border effects in Tables 2 and 4 seem puzzling at first, but they are in line with the conclusion of Alesina et al. (2017) that within country heterogeneity of beliefs is not smaller than international heterogeneity. This is possible, for example, if members of the Hungarian population in country $k_i$ have views that lie between the extremes of the Hungarian population of country $k_j$.

Negative values in the diagonals other than the HUN-HUN values and the negative values outside the diagonals do not mean that ethnicity does not matter. Instead it might show a more complicated interaction between institutions and beliefs than what is usually supposed, as suggested by the ‘Austrian’ approach discussed in section 2.2.

For instance, take the case in which members of the Hungarian minority in Serbia have moderate views on private property as compared to Hungarians in Hungary, and therefore there is a negative border effect:

\[
d(\text{SRB,HUN,1}) - d(\text{HUN,HUN,1}) < 0. \tag{8}
\]

\textsuperscript{16} See the Appendix for a formal derivation of these averages.
Whether this leads to the population of the two countries having different views depends on the views of the Serbian majority population. A positive culture effect, as indeed is the case (see the (SRB, HUN) element of the matrix in Table 1), means that the views of the majority in Serbia are more different from those of the Hungarians than are those of minority Hungarians in Serbia:

\[ d(SRB,HUN,0) - d(SRB,HUN,1) > 0. \] (9)

The culture effect is larger than the relative total effect. An interpretation of this fact is that Serbian institutions interact with Serbian culture differently than they do with Hungarian culture. The same country-specific institutions seen through the lens of different cultures produce different beliefs. Thus the border effect moderates the culture effect.

When it is the culture effect that is negative, as in the case of the (SRB, HUN) country pair for the life control variables (see Table 3 and 4), the interpretation is very similar: the fact that the border sets Hungarians more apart than non-Hungarians might shows the effect of culture as interacting with different country-specific institutions. It is now the culture effect that moderates the relative border effect.

The size of the culture effects in Table 1, not considering the ‘own-country effects’, are between –8.6 and 18.5 percent of the standard deviation of the distance in the property variable. For a comparison, an increase in the difference in the education level from its minimum (0) to its maximum (7) is predicted to increase the difference by 7.03 percent of the standard deviation. The same numbers for the life control variable are –8.05 and 4.17, and 3.07 percent17.

A look at Tables 1 – 4 allows the conclusion that although views on private property differ more across countries than do views on the control over life, a larger part of the differences in the former can be attributed to culture. The reason why this may surprise us is that it is the life control variable that is usually thought to be deeper. On average, the relative border effect is positive for the life control variable while the culture effect is negative, which means that ethnic difference moderates the effect of the border on the views on the control of life and it amplifies the border effects on views on private property.

\[ \] 17 Though with the life control variable as the dependent one the p-value of the coefficient of the education difference is only 0.117.
The left-hand panel of Table 5 summarizes these estimations for the property rights and life control variables, and it adds the end results of similar estimations with four further variables. One of the latter, responsibility, reflecting opinions about the role of government\(^{18}\), can be seen as another ‘economic’ belief. The remaining three, trust, respect, and obedience are three other of Tabellini’s (2010) variables that reflect opinions on whether people generally can be trusted\(^{19}\) and on which kind of values should be taught to children\(^{20}\). These three are binary variables but I estimate equation (1) for them, too, using the same simple OLS method to make the interpretation of the results easier.

There are two main conclusions from Table 5. One is that the culture effects are often negative or have the opposite sign than the relative border effects. The other is that with the exception of the obedience variable it is not those variables that are thought to be deep that are significantly affected by culture. Economic variables, property and responsibility are more ‘cultural’ than are the other four variables on average. Even trust, a variable very often used and attributed to cultural differences (Graafland, 2020), is shaped by borders, not by ethnicity. Responsibility has a negative culture effect on average, meaning that ethnic differences interact with country differences in a way that mitigates the border effect.

4. The effect of minority status, survey wave, or history?
One concern we might have over the results of section 3.3 is that relatively large border effects arise because of the minority status of Hungarians in the countries neighbouring Hungary. That is to say that border effects are not caused by the different country-specific institutions minority Hungarians live in but by their common experience as minorities. The analysis above might have then erroneously identified this part of the relative total effect as caused by borders when it is in reality caused by minority culture.

Of the beliefs under scrutiny here it is especially trust, responsibility, and private property that seem affected by this concern because they refer to the way a person views his or her relation to the rest of society (trust) or to the government ultimately controlled by the majority (property, responsibility).

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\(^{18}\) ‘People should take more responsibility to provide for themselves’ vs ‘the government should take more responsibility to ensure that everyone is provided for’ (Inglehart et al. 2014)

\(^{19}\) ‘Generally speaking, would you say that most people can be trusted or that you need to be very careful in dealing with people?’ (Inglehart et al., 2014)

\(^{20}\) ‘Here is a list of qualities that children can be encouraged to learn at home. Which, if any, do you consider to be especially important?’ If ‘obedience’ or ‘tolerance and respect’ is mentioned, then the value of the corresponding variable is 1, otherwise 0 (Inglehart et al., 2014).
To check for this concern, in the right-hand panel of Table 5 I recalculate the average relative border and culture effects by excluding Hungary. Calculating the averages in this way I exclude the possibility of comparing minority Hungarians with majority Hungarians as only those Hungarian – Hungarian pairs are considered that are formulated between two minority Hungarians. If part of the border effect was a common ‘minority effect’ in Romania, Serbia, and Slovakia in the left-hand panel, then we would expect larger culture effects now.

As a comparison between the left-hand and right-hand panels of Table 5 shows, it is only in the difference in the life control variable where the culture effect has now increased (from negative to zero). The culture effect as compared to the border effect is smaller in all other cases. The conclusion that differences in ‘deeper beliefs’ are no more ethnicity-driven than economic beliefs has not changed, either.

A second concern is whether the results in Table 5 are dependent on the WVS wave chosen. As wave 3 of the WVS was chosen to make the largest number of countries available, precisely the same calculation cannot be repeated with the data of another wave. A similar calculation can be run for wave 5 of the WVS (2005–2009) in which Hungary, Romania, and Serbia can be included. The results, which are derived in the same way as those in Table 5, are shown in Table 6.

Culture effects are often negative. In each of such cases in the left-hand panel of Table 6 (property, responsibility, trust, respect) the culture effect has the opposite sign of the relative border effect, meaning that cultural difference moderates the between-country difference of the belief in question.

Dropping Hungary from the weighting process again leads to some changes (as in the right-hand panel of Table 6); most importantly now in the case of property and responsibility. The change in the composition of both supports the interpretation according to which there is something common across Hungarian minorities.

The two main conclusions I drew from Table 5 can be drawn again from Table 6: culture effects, as well as border effects, are sometimes negative, and sometimes the two have opposite signs. In addition, Differences in deeper beliefs (life control, trust, respect, obedience) are not systematically better explained by the culture effect.

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21 This means actually excluding the first column and the first row of tables such as Tables 1 and 2, and the numbers of observations that correspond to them, from the calculation.

22 Relative border effects are also increased, but this is rather a statistical artefact than something of theoretical importance. Since Hungarians in Hungary make the most numerous Hungarian population, they are also the most diverse one. Excluding Hungary from the sample will then decrease the average within-country differences between Hungarians ($d(k,k,1)$) and therefore will increase the border and the total effects (see equation (4) and (5)).
Yet another, and much more fundamental, concern with the results in section 3.3 is that being a member of the Hungarian ethno-linguistic community is not the right proxy for a common culture. An alternative one may be, as suggested by the literature review in section 2, a common political community in which the previous generations lived for a substantially long time. For the countries under consideration, it is the Habsburg empire that has been shown to be relevant (Becker et al., 2016; BenYishay and Grosjean, 2014).

I will, however, not use the Empire as a proxy but the Kingdom of Hungary (KOH). Although the authors I cited do not make a difference between the two, I can see some reasons to do so. First, because for four hundred years before 1918, the Kingdom of Hungary was part of the Habsburg Empire but as a political community it had existed well before the Habsburgs, roughly since 1000 AD. If the length of the period is the key, the Kingdom of Hungary should matter more than the Habsburg Empire. Confined to just four countries, two of which (Hungary and Slovakia) were 100 percent a KOH region, this dilemma concerns only Romania and Serbia. In Serbia the KOH and Habsburg borders were the same in the year (1900) for which the results of Becker et al. (2016) are robust. In Romania the former Empire includes one county (Suceava) more than does the former KOH.

In the analysis the results of which are shown in Table 7, common culture is measured by whether individuals $i$ and $j$ both live in a region which used to be part of the Hungarian Kingdom before 1918. For this analysis I am not able to use the same data as for Tables 5 or 6 because for those waves there are no regional data which would help to identify common culture in this way. I will use instead data in the EVS wave 4 within the WVS–EVS database (EVS, 2011; WVS, 2015) which includes NUTS2 level data that allows us to separate former KOH regions in Romania and Serbia, while the full area of Hungary and Slovakia are considered KOH regions. The regression described by equation (1) is then run with the variable $H_{ij}$ meaning a KOH dummy for both individuals living in a former KOH region.

The summary results of the regressions are shown in Table 7. The numbers in the left-hand panel are calculated with effects between all the four countries considered. For the numbers of

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23 According to Becker et al. (2016: 46, footnote 15), ‘of the five countries in our main empirical analysis below, the Hungarian part was active in one country (Romania) only, and we show that results are not sensitive to dropping Romania from the analysis altogether’. BenYishay and Grosjean (2014:898) also refer to the ‘Habsburg Empire’ as ‘what was the Kingdom of Hungary and the Austrian Empire and became the Austria-Hungarian [sic] Empire after the 1867 Ausgleich.’

24 Romania: Macroregiunea unu - Nord-Vest, Macroregiunea unu - Centru, Macroregiunea patru - Vest; Serbia: Vojvodina.

25 Because of missing observations income category and size of town must be left out of the controls.
the right-hand panel I use only the effects between Serbia and Romania, as they are the countries whose territories are cut through by the KOH border.

Of the two conclusions I drew before one clearly stands: quite a few cultural effects are still negative. Considering that the KOH dummy might even be a proxy for geographical proximity this might be a surprise. But it is not so after having seen the previous results. A negative cultural effect means now that two people within the former KOH are estimated to be farther away from each other than when at least one of them is outside of it. The other side of this coin is to say that a pair of individuals are set apart more by the current borders if they both are from a region of the former KOH.

The other conclusion is weakened. It is now trust - and partly obedience - that are more culturally determined, which is more in line with the idea that these beliefs are deeper than property or responsibility, which are now found to be more border-determined. It seems that belonging to the same political community for a long time is a closer proxy of what is seen as deep culture by economists than is a belonging to the same ethno-linguistic community, which affirms the results related to the cultural influence of European empires (Becker et al., 2016; BenYishay and Grosjean, 2014; Dimitrova-Grajzl, 2007; Grosjean, 2011).

5. Conclusion

‘Eastern Central Europe’ might be an interesting place to test some conclusions of the ‘culture and institutions’ economics literature. My reason to think so is that ethnic Hungarians do not live only in Hungary but in the neighbouring countries, too, and this situation is the result of the collapse of a political community that had been in place for a long time. Since both ethnicity and long-standing ‘empires’ of the past are seen as determinants of culture in what I call the mainstream view, by using survey data from this region we can test whether these two ‘deep’ factors are more important in shaping values and beliefs than are present-day political communities.

For this small, and perhaps too unique part of the world, however, the results of the ‘cultural gravity regressions’ of sections 3 and 4 support an alternative view, which is the Austrian approach adjusted with Buchanan’s (1987) notion of moral communities. First, the fact that ‘border effects’ within the Hungarian ethnic groups are often larger than otherwise is in line with the idea of ‘culture as lens’: wearing the same lenses we will see different experiences differently. Second, the fact that ‘culture effects’ are often negative is in line with the idea that moral communities overlap. As the ethnic or the historical might not be the communities with which individuals identify most strongly, differences of beliefs might be larger within these
moral communities than between them. Third, the fact that the beliefs that are usually seen as deeper do not turn out to be much more driven by ethnicity or history than do those seen as less deep is in line with the idea that it is not culture that surveys quantify. Surveys quantify beliefs, each of which, be it concerned with a deep or a less deep question, is an outcome of an unavoidably cultural process of interpretation.
Appendix: relative total, relative border, and culture effects

The average relative outward total or border effect for country $k_j$ is calculated as

$$
\delta_{\text{out}}(k_j, H) = \sum_{k, k_j} \frac{n(k_i, k_j, H)}{n(k_j, H)} \left[ d(k_i, k_j, H) - d(k_i, k_j, 1) \right]
$$

where

$$
n(k_j, H) = \sum_{k_i} n(k_i, k_j, H)
$$

and $n(k_i, k_j, H)$ is the number of observations (pairs of individuals) in which individual $i$ is from country $k_i$ and individual $j$ is from country $k_j$. $H = 1$ means that both are Hungarian and $H = 0$ means that only one or none of them is so.

Similarly, the average inward effect for country $k_i$ is calculated as

$$
\delta_{\text{in}}(k_i, H) = \sum_{k_i} \frac{n(k_i, k_j, H)}{n(k_i, H)} \left[ d(k_i, k_j, H) - d(k_i, k_j, 1) \right]
$$

where

$$
n(k_i, H) = \sum_{k_j} n(k_i, k_j, H)
$$

In both cases $H \in \{0, 1\}$ and $H = 0$ gives the relative total effect while $H = 1$ gives the relative border effect. The outward and inward effects of culture are then calculated as the differences between these two:

$$
inward(k_i) = \delta_{\text{in}}(k_i, 0) - \delta_{\text{in}}(k_i, 1)
$$

$$
outward(k_j) = \delta_{\text{out}}(k_j, 0) - \delta_{\text{out}}(k_j, 1)
$$

Finally, the average effects are calculated by averaging out either the relative inward or the outward border and total effects:

$$
\delta(H) = \sum_{k_i} \frac{n(k_i, H)}{n(H)} \delta_{\text{out}}(k_i, H) = \sum_{k_j} \frac{n(k_j, H)}{n(H)} \delta_{\text{in}}(k_j, H) =
$$

$$
= \sum_{k_i} \sum_{k_j} \frac{n(k_i, k_j, H)}{n(H)} d(k_i, k_j, H) - \sum_{k_j} d(k_j, k_j, H),
$$

where

$$
n(H) = \sum_{k_i} \sum_{k_j} n(k_i, k_j, H), \ H \in \{0, 1\}.
$$
The average culture effect of a variable is finally calculated as the difference between these averages:

\[
\text{average culture effect} = \delta(0) - \delta(1).
\]  

(18)
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Tables

Table 1. Culture effects for the property rights variable

| k/kj | HUN  | ROU  | SRB  | SVK  | inward |
|------|------|------|------|------|--------|
| HUN  | -0.862 | -0.208 | 0.319 | 0.191 | 0.096  |
| ROU  | -0.208 | -0.296 | 0.033a | -0.013a | 0.197  |
| SRB  | 0.319  | 0.033a | 0.597  | 0.444  | 0.315  |
| SVK  | 0.191  | -0.013a | 0.444  | 0.104  | 0.336  |
| outward | 0.092 | -0.009 | 0.363  | 0.321  | 0.240  |

Estimated values of $-\beta_{4}^{kk} = -\beta_{4}^{kk}$ in the regression of equation (1). Obs: 6,285,285; Hungarian – Hungarian pairs: 169,071; $R^2$: 0.658. $a$: $p > 0.05$ and is taken as zero when calculating averages. See the text and the Appendix for an explanation of how ‘inward’ and ‘outward’ effects are calculated.

Table 2. Relative border effects for the property rights variable

| k/kj | HUN  | ROU  | SRB  | SVK  | $\delta^{in}(k,1)$ |
|------|------|------|------|------|------------------|
| HUN  | 0.000 | -0.054 | 0.181 | 0.177 | 0.097 |
| ROU  | 0.299 | 0.000 | 0.614 | 0.713 | 0.371 |
| SRB  | -0.228 | -0.148 | 0.000 | -0.033 | -0.200 |
| SVK  | -0.052 | 0.131 | 0.147 | 0.000 | -0.014 |
| $\delta^{in}(k,1)$ | 0.015 | -0.045 | 0.224 | 0.213 | 0.077 |

Estimated values of $\beta_{1}^{kk} + \beta_{1}^{kk} - \beta_{1}^{kk} - \beta_{1}^{kk}$ in the regression of equation 1. Obs: 6,285,285; Hungarian – Hungarian pairs: 169,071; $R^2$: 0.658. Statistically insignificant betas ($p > 0.05$) are taken as zero. Values in the diagonal are zero by definition (equation (5)). See the text and the Appendix for an explanation of how outward and inward effects, $\delta^{in}(k,1)$ and $\delta^{out}(k,1)$ are calculated.

Table 3. Culture effects for the life control variable

| k/kj | HUN  | ROU  | SRB  | SVK  | inward |
|------|------|------|------|------|--------|
| HUN  | -0.361 | -0.123 | -0.165 | 0.085 | -0.072 |
| ROU  | -0.123 | -0.074 | 0.047a | -0.024a | 0.080 |
| SRB  | -0.165 | 0.047a | 0.182 | -0.003a | -0.041 |
| SVK  | 0.085 | -0.024a | -0.003a | 0.193 | 0.061 |
| outward | -0.064 | -0.136 | -0.165 | 0.123 | -0.020 |

Estimated values of $-\beta_{1}^{kk} = -\beta_{1}^{kk}$ in the regression of equation (1). Obs: 6,535,920; Hungarian – Hungarian pairs: 177,310; $R^2$: 0.643. $a$: $p > 0.05$ and is taken as zero when calculating averages. See the text and the Appendix for an explanation of how ‘inward’ and ‘outward’ effects are calculated.

Table 4. Relative border effects for the life control variable

| k/kj | HUN  | ROU  | SRB  | SVK  | $\delta^{in}(k,1)$ |
|------|------|------|------|------|------------------|
| HUN  | 0.000 | -0.038 | 0.263 | 0.358 | 0.188 |
| ROU  | 0.188 | 0.000 | 0.181 | 0.526 | 0.221 |
| SRB  | 0.230 | -0.080 | 0.000 | 0.533 | 0.227 |
| SVK  | -0.316 | -0.374 | -0.107 | 0.000 | -0.302 |
| $\delta^{in}(k,1)$ | 0.037 | -0.075 | 0.218 | 0.392 | 0.112 |

Estimated values of $\beta_{1}^{kk} + \beta_{1}^{kk} - \beta_{1}^{kk} - \beta_{1}^{kk}$ in the regression of equation (1). Obs: 6,535,920; Hungarian – Hungarian pairs: 177,310; $R^2$: 0.643. Statistically insignificant betas ($p > 0.05$) are taken as zero. Values in the diagonal are zero by definition (equation (5)). See the text and the Appendix for an explanation of how outward and inward effects, $\delta^{in}(k,1)$ and $\delta^{out}(k,1)$ are calculated.
Table 5. Culture and relative border effects from WVS wave 3

| dep. var. | obs. | $R^2$ | all four countries | excl. HUN |
|-----------|------|-------|--------------------|-----------|
|           | H=0  | H=1   | culture | border | culture | border |
| property  | 6,116,214 | 169,071 | 0.658   | 0.240  | 0.077 | 0.138 | 0.243 |
| resp.     | 6,500,439 | 180,901 | 0.615   | -0.112 | 0.193 | -0.209 | 0.307 |
| life control | 6,358,610 | 177,310 | 0.643   | -0.020 | 0.112 | 0.000 | 0.111 |
| trust     | 6,272,721 | 176,715 | 0.373   | 0.001  | 0.026 | -0.022 | 0.052 |
| respect   | 6,825,580 | 188,805 | 0.480   | 0.002  | 0.009 | -0.012 | 0.028 |
| obedience | 6,825,580 | 188,805 | 0.404   | 0.015  | 0.004 | 0.015 | 0.006 |

Relative border and culture effects are calculated by running regressions in the form of equation (1), the data are from WVS wave 3 covering the years between 1994 and 1998. Countries: Hungary, Romania, Serbia, and Slovakia. The averages in the right-hand panel are calculated without Hungary.

Table 6. Culture and relative border effects from WVS wave 5

| dep. var. | obs. | $R^2$ | all three countries | ROU, SRB |
|-----------|------|-------|---------------------|----------|
|           | H=0  | H=1   | culture | border | ROU | SRB |
| property  | 5,243,35 | 504,510 | 0.664   | -0.100 | 0.318 | 0.197 | 0.005 |
| resp.     | 5,557,458 | 541,320 | 0.658   | -0.135 | 0.023 | 0.000 | -0.085 |
| life control | 5,442,363 | 548,628 | 0.643   | 0.141  | 0.224 | 0.198 | 0.248 |
| trust     | 5,108,025 | 535,095 | 0.338   | -0.125 | 0.005 | -0.143 | -0.015 |
| respect   | 5,773,365 | 558,096 | 0.455   | -0.024 | 0.031 | -0.028 | 0.028 |
| obedience | 5,773,365 | 558,096 | 0.430   | 0.075  | 0.009 | 0.088 | 0.035 |

Relative border and culture effects are calculated by running regressions in the form of equation (1), the data are from WVS wave 5 covering the years between 2005 and 2009. Countries: Hungary, Romania, and Serbia. The averages in the right-hand panel are calculated without Hungary.

Table 7. Culture and relative border effects from WVS wave 4

| dep. var. | obs. | $R^2$ | all four countries | ROU, SRB |
|-----------|------|-------|--------------------|----------|
|           | KOH=0 | KOH=1 | culture | border | ROU | SRB |
| property  | 4,913,772 | 3,116,256 | 0.654   | -0.214 | 0.340 | -0.311 | 0.486 |
| resp.     | 5,505,150 | 3,451,878 | 0.649   | -0.075 | 0.153 | 0.022 | 0.119 |
| life control | 5,546,694 | 3,423,036 | 0.633   | -0.040 | -0.002 | -0.068 | 0.004 |
| trust     | 5,244,476 | 3,339,820 | 0.276   | 0.030  | 0.008 | 0.043 | 0.000 |
| respect   | 5,204,042 | 3,293,461 | 0.462   | -0.005 | 0.029 | -0.010 | 0.038 |
| obedience | 5,020,244 | 3,178,981 | 0.487   | 0.020  | 0.006 | 0.023 | 0.028 |

Relative border and culture effects are calculated by running regressions in the form of equation (1), the data are from WVS wave 4 covering the year 2008 for these countries. Common culture is accounted for by the KOH (Kingdom of Hungary) dummy. Countries: Hungary, Romania, Serbia, and Slovakia. The averages in the right-hand panel are calculated without Hungary and Slovakia.