Routledge
Taylor & Francis Group

Journal of Elections, Public Opinion and Parties

ISSN: (Print) (Online) Journal homepage: www.tandfonline.com/journals/fbep20

Public misperceptions of European integration in the UK

Florian Stoeckel, Benjamin A. Lyons & Jason Reifler

To cite this article: Florian Stoeckel, Benjamin A. Lyons & Jason Reifler (2023) Public misperceptions of European integration in the UK, Journal of Elections, Public Opinion and Parties, 33:4, 623-643, DOI: 10.1080/17457289.2021.1945612

To link to this article: https://doi.org/10.1080/17457289.2021.1945612

Published online: 12 Jul 2021.

JOURNAL OF ELECTIONS, PUBLIC OPINION AND PARTIES
2023, VOL. 33, NO. 4, 623–643
https://doi.org/10.1080/17457289.2021.1945612

Routledge
Taylor & Francis Group

Public misperceptions of European integration in the UK

Florian Stoeckel [a], Benjamin A. Lyons [b] and Jason Reifler [a]

[a]Department of Politics, University of Exeter, Exeter, UK; [b]Department of Communication, University of Utah, Salt Lake City, UT, USA

ABSTRACT

We analyse public perceptions and misperceptions of European integration in the context of the Brexit referendum in the UK. Erroneous information about the EU was salient in the public domain before the referendum, but the prevalence of EU related misperceptions among voters has not yet been examined much. We use a population based survey that was conducted before the referendum to measure misperceptions in two domains: the role of the EU for the British economy and EU related costs. Hypotheses to explain misperceptions are derived from the public opinion literature and political psychology. Most voters hold misperceptions and this includes Euroskeptics as well as individuals who support the EU. Yet, misperceptions vary in systematic ways. Individuals with more education are less ill informed. In line with motivated reasoning, citizens' perceptions are also biased by their predispositions: while many voters hold misperceptions, the magnitude of misperceptions that portray the EU negatively is greater among Euroskeptics.

ARTICLE HISTORY Received 13 November 2020; Accepted 15 June 2021

Introduction

How do public perceptions of European integration relate to the objective state of affairs in the European Union (EU)? Who holds misperceptions in regard to the process of European integration and how are misperceptions linked to support for the EU? These are crucial questions in a political context in which facts might play a minor role for public opinion (Hahl, Kim, and Zuckerman Sivan 2018) and in which voters are not merely uninterested or uninformed, but instead are often resistant to information that challenges or corrects erroneous beliefs (Flynn, Nyhan, and Reifler 2017).

CONTACT Florian Stoeckel F.Stoeckel@exeter.ac.uk

Supplemental data for this article can be accessed https://doi.org/10.1080/17457289.2021.1945612.

Given the complex nature of the political system of the EU and the low salience of EU issues for most of the last decades, it might be unrealistic to expect many citizens to have a good understanding of EU related facts. This seems to be fertile ground for the spread of erroneous information and "Euro myths". "Euro myths" include trivial issues, such as incorrect stories on the reasons for EU regulation on the curvature of cucumbers, but also less trivial topics related to the costs of the European Commission bureaucracy or its authority vis- à-vis the EU member states. The Euro myth website of the EU – an attempt of the European Commission to debunk myths – lists more than 700 different false claims about the EU (European Commission 2020). Such myths can play a particularly important role when they are mobilised in a populist fashion. For instance, prior to the Brexit referendum in the UK, the Leave campaign gained great attention with the claim that Britain's contribution to the EU budget would be 350 million pounds, even though this figure was criticised as flawed by the British Statistics Authority because it is the gross contribution of the UK rather than the net amount.[1]

Despite a wealth of websites and newspaper articles trying to debunk common misperceptions related to the EU, though, there is limited systematic research on the extent to which Europeans are knowledgeable about the EU, the prevalence of misperceptions, and how misperceptions are related to views on European integration. Accounts from focus group research reveal that citizens perceive the European Commission as an institution with almost unconstrained decision making powers vis-à-vis the member states of the EU (Duchesne et al. 2013). Even focus groups that include only citizens with high levels of education see the European Parliament as a "fig leaf" that has virtually no powers in the process of EU law making (Baglioni and Hurrelmann 2016). Hobolt and Tilley (2014) find that citizens are often able to attribute responsibility correctly though, which is amplified among citizens with more political sophistication. They also report an interesting "group serving bias": "EU enthusiasts are more likely to attribute responsibility to the EU when conditions are improving, whereas Euroskeptics tend to deny the EU any responsibility for positive outcomes" (2014, 810). Carl, Richards, and Heath (2019) conducted a survey in the UK in 2018, i.e. two years after the Brexit referendum, which included a knowledge quiz about the EU. They found that knowledge about the EU is equally low among Leavers and Remainers. Respondents from each side were however better at answering questions correctly that could be described as ideologically convenient for them.

We build on the American public opinion and political psychology literatures, as well as on the findings from recent research on EU public opinion to theorize how citizens form perceptions on the EU. Our theoretical starting

[1] https://fullfact.org/europe/350-million-week-boris-johnson-statistics-authority-misuse/

point is Zaller's Receive-Accept-Sample model (Zaller 1992): citizens generate survey responses on EU related matters based on those (few) considerations that are salient at a particular moment when they are asked about an issue. In the absence of precise information that might be stored in their memory, individuals rely on heuristics and, in turn, group serving biases are likely to play an important role. In this way, survey responses are biased in a systematic way by relevant predispositions, in our case whether individuals support European integration. We hypothesize that education increases the accuracy of perceptions. We also expect that Euroskeptics are more biased against the EU than citizens who support European integration.

We test these conjectures with population-based data that was collected shortly before the British referendum on the EU in 2016. We use a novel set of measures to test our hypotheses: perceptions that citizens have about the share of the EU investment into the UK, UK exports to other EU member states, the share of the EU budget that is allocated to bureaucracy, and the share of UK child benefits that goes to recipients living in the European Economic Area (EEA). The results reveal that both voters who support the EU and those who oppose it hold considerable misperceptions. Voters underestimate the economic role of the EU for the British economy. They overestimate expenses related to the EU, such as the costs for the EU administration or the British child benefits paid to EEA recipients. These patterns exist among Euroskeptics and EU supporters alike and in the same direction. We still find that motivated reasoning plays an important role. It is the magnitude of misperceptions that is larger among Euroskeptics, which is something that our continuous measures can capture in a different way than true/false questions (Carl, Richards, and Heath 2019).

Establishing a relationship between EU related misperceptions and support for European integration touches on important question of causality. For instance, voters might be Euroskeptic precisely because they are unaware of the role of the internal market for the British economy or because they perceive EU membership to be more costly than it actually is. Our cross-sectional data do not allow us to make a strong causal argument. Yet, misperceptions are widespread among both, Euroskeptics and Europhiles, albeit to different degrees. This seems inconsistent with a situation in which misperceptions exert a strong causal effect on support for the EU. This interpretation is supported in recent work on fact-checking, which finds effects on belief accuracy but not candidate support (Nyhan et al. 2020).

This paper makes several contributions to the literature. Carl, Richards, and Heath (2019, 96) conclude that "Britons' beliefs about the EU may be systematically wrong" and that therefore "[f]urther research is needed to establish the extent of this error, and the mechanisms behind it". Our contribution seeks to further probe the nature of EU related misperceptions. To our knowledge, our study is based on the only survey on citizens' perceptions and

misperceptions of the EU that was fielded in the context of the Brexit referendum in 2016. We also contribute to the growing literature that helps us to understand the result of the Brexit referendum (Hobolt 2016; Curtice 2017; Clarke, Goodwin, and Whiteley 2017). The erroneous facts that were salient in the referendum campaign garnered much public debate, but their prevalence among voters has been analysed rarely. Finally, while we use the case of the UK, we believe that the mechanisms we test are general in nature and expand our understanding of the way how citizens perceive complex political issues.

Citizens' factual understanding of European integration

Europeans' factual understanding of European integration has not directly been the focus of much scholarly attention. The vast majority of work on public attitudes towards European integration deals with support for European integration and how we can explain it. Recent contributions do not support the notion that a correct understanding of European integration matters particularly much for attitudes towards the EU. Instead of factual knowledge, a set of three different mechanisms is more relevant to explain citizens' attitudes towards the EU (Hooghe and Marks 2005; Hooghe and Marks 2009; Stoeckel 2013; Armingeon and Ceka 2014; De Vries 2018): (1) citizens follow cues from their party and the national political system to make up their mind on European integration; (2) citizens with a cosmopolitan position on a non-economic dimension of political conflict, i.e. those with some sort of European identity and cultural openness, support European integration; and (3) citizens who benefit from European integration in a material way, because of their incomes, skills, or occupations, are more likely to support the EU.

Research with the specific goal of mapping citizens' misperceptions of the EU is largely missing.[2] The rich data of focus group-based research is an exception (Duchesne et al. 2013; Hurrelmann, Gora, and Wagner 2015; Baglioni and Hurrelmann 2016). Focus groups have been conducted in a diverse set of countries and with respondents who differ in their occupations and educational backgrounds. Three insights from this work stand out. First, the focus group discussions reveal a generally limited understanding of the EU, and quite a lot of these conversations have unearthed misperceptions. For instance, in several focus groups that were conducted by different projects, the European Parliament is perceived as an institution "that doesn't have any real power" (Duchesne et al. 2013, 143) or is "a fig leaf" (Baglioni and Hurrelmann 2016, 114), whereas the EU Commission is

[2]Karp, Banducci, and Bowler (2003) measure EU related factual knowledge among citizens and relate this measure to satisfaction with democracy. Armingeon (2021) examines the role of political knowledge for citizens' attitudes toward fiscal transfers between EU member states.

perceived as institution with "all the power" (Duchesne et al. 2013, 143). Second, limited knowledge and misperceptions are voiced by both "low education" groups and "high education" groups (Duchesne et al. 2013, 62). Third, some focus group participants were aware of their very limited understanding of the EU (Duchesne et al. 2013; Hurrelmann, Gora, and Wagner 2015; Baglioni and Hurrelmann 2016). Yet, Hurrelmann, Gora, and Wagner (2015, 53) point out that this "lack of knowledge did not prevent participants from passing judgment about the quality of the EU's constitutional arrangements," in particular with regard to criticisms directed at the democratic deficit of the EU.

Hobolt and Tilley (2014) break new ground by examining how voters perceive political authority to be distributed between national governments and the EU in five policy fields. Respondents in their study perceive authority to rest mostly at the national level, except when it comes to interest rates and climate change, where voters, on average, believe power is equally shared between the two levels. Indeed, it is difficult to determine misperceptions in this domain because authority in the EU is often shared between EU level institutions and national institutions. However, at least for Eurozone members, the notion of shared authority regarding interest rates is a misperception, because the European Central Bank is responsible for interest rates exclusively. Notably, Hobolt and Tilley (2014, 810) also find that citizens' perception of who is responsible for policy outcomes is heavily biased by predispositions towards European integration: "EU enthusiasts are more likely to attribute responsibility to the EU when conditions are improving, whereas Eurosceptics tend to deny the EU any responsibility for positive outcomes." Thus, EU related predisposition seem to function like party identities, which is a common perceptual screen through which voters view politics at the national level (Gaines et al. 2007).

Analyses of Brexit voting have also unearthed general perceptual gaps between Leavers and Remainers. Vastly different perceptions of the effect of Brexit on Britain are associated with how people voted (Curtice 2017, 31). For instance, nine out of ten remain voters believed that Brexit would have a negative effect on the British economy, but nine out of ten leave voters expected the British economy would benefit from Brexit.[3] Finally, Carl, Richards, and Heath (2019) put forth a comprehensive analysis of British citizens' knowledge of the EU in 2018. Knowledge about the EU is limited, but on average not significantly different between Leavers and Remainers. The authors further show how ideological convenience matters. For instance, one question is about whether the UK pays in more into the

[3]Hobolt's analysis (2016, p. 10) finds differences in the perceptions of the EU between leave and remain voters. Leave voters do not think that the EU helped prevent a war or that it contributed too British prosperity in general and trade in particular.

budget of the EU than it gets back. If motivated reasoning plays a role, one could expect Leavers to prefer this question to be true more so than Remainers, because it portrays the EU as costly. The result suggest that Remainers are indeed better at answering items correctly that are convenient for their notion of the EU and, vice versa, Leavers are better at answering items that are convenient for them.

Numerical estimates, unintentional biases, and intentional biases

To build on the existing research into perceptions of the institutional structure of the EU and abstract perceptions of economic effects, we examine citizens' perceptions of the economic relationship between the EU and their national economy as well as perceptions of costs related to EU membership. In this section we lay out our theory regarding citizens' survey response generation for these numerical estimates. Numerical estimates are of course just one way of mapping misperceptions (for an alternative approach related to the EU, see Carl, Richards, and Heath 2019). We believe that they are helpful because they allow us to go beyond a binary measure which is important for assessing the magnitude of misperceptions while at the same time there is a correct value that can be pin pointed.

Average citizens have limited political knowledge on basic topics (Carpini and Keeter 1996). Understandably, then, the public's knowledge is especially poor when it comes to accurate numerical understanding of issues relating to trade, budgeting, employment, public benefits and other complex issues (Thorson 2015), and the institutional structure of the EU is no exception (Duchesne et al. 2013; Baglioni and Hurrelmann 2016). The average citizen is unlikely to either encounter or remember specific data points. Instead, people fall back on heuristics when formulating mental images of the political-economic world beyond their personal experience (Ahler and Sood 2018). Therefore, we can expect not just generally limited knowledge, but bias in estimates.

These biases occur in a variety of situations and they are predictable and systematic. For instance, perceiving an organisation or group as a threat can increase one's perception of size, share of benefits, or other qualities relating to the disliked group (Nadeau et al.,1993; Sides and Citrin 2007). When generating survey responses, individuals in part rely on information they have had access to (Iyengar 1990), which might bias their responses despite their best efforts "to get it right". This is because the most accessible information is not always a suitable basis for correct estimates (e.g. Romer, Jamieson, and Aday 2003). Citizens who consume mostly partisan news may have even greater accessibility bias, with personally accessible policy information skewed by their broader attitudes (McCombs and Stroud 2014).

If accessibility bias suggests incorrect estimates can be the result of elite communication indirectly driving misinformation (Ahler and Sood 2018), disinformation effects, in contrast, are the result of the public being directly misled. Cynical "post-truth" politics, in which political actors intentionally spread falsehoods to influence the public, are not new, but have becomes especially prominent in recent elections and referendums (Hahl, Kim, and Zuckerman Sivan 2018). Some incorrect estimates may therefore be due to trust respondents have in disingenuous figures from their political cause (e.g. Flynn, Nyhan, and Reifler 2017). In the case of Brexit, this disinformation may have skewed numerical estimates for respondents on both sides.

Finally, individuals may also intentionally report overly small or large numerical estimates to express their feelings about the groups and policies in question (Bullock et al. 2015; Khanna and Sood 2018). For example, when asked to estimate the size of administrative staffs, a UK citizen who dislikes the EU may intentionally report a massive number of estimated EU administrators and a minuscule number of UK administrators.

In the context of Brexit, UK citizens' numerical estimates regarding comparisons of UK-EU administrative staff, trade, and industry regulations are likely influenced by their support for the EU (Hobolt and Tilley 2014). Prior work shows that attributions of responsibility in the multilevel EU system are driven by group-serving biases, which include party attachments, but most importantly, enthusiasm or skepticism toward the EU (Hobolt and Tilley 2014). This same heuristic may serve as a route to generating numeric responses that cast the respondent's favored institution in a better light. The prior attitude in this case would either overwhelm relevant, accurate information the respondent had come across, or serve as a substitute in its absence.

Hypotheses

Average citizens are unlikely to remember specific data points about their country's relationship with the EU, and tend to rely on heuristics when providing numerical estimates. On average, then, it would be reasonable to expect that respondents will be incorrect in their numerical estimates. Our hypotheses are about the way how education and predispositions towards the EU relate to these perceptions. Education tends to reduce reliance on heuristic processing (Chaiken 1980; Petty and Cacioppo 1986), and also serves as a proxy for attention to news and interest in politics (Hwang and Jeong 2009). Therefore, we first propose the following role for education:

> Hypothesis 1: Individuals with higher levels of education hold more accurate perceptions than individuals with lower levels of education.

Respondents are likely to be biased in systematic ways, however. This is because estimates are constructed from the top of the head (Zaller 1992).

Individuals must rely on the cognitive resources they have available, like for example broader ideological predispositions most closely related to the issue at hand (Hobolt and Tilley 2014). Based on cognitive shortcuts (Ahler and Sood 2018), individuals may end up with numerical estimates that systematically favor their ideological predisposition when it comes to quantities related to the EU. Therefore, we also hypothesize that citizens' attitudinal predispositions on the EU bias perceptions. Specifically, we expect that levels of support for European integration will affect perceptions in an ideologically convenient direction:

> Hypothesis 2a: Individuals who want Britain to leave the EU perceive the EU as economically less relevant for the UK than voters who support the EU.

> Hypothesis 2b: Individuals who want Britain to leave the EU perceive the EU as more costly than voters who support the EU.

Data and method

The data for the empirical analysis comes from an online survey conducted by Ipsos MORI in the UK in April and May 2016, before the EU membership referendum.[4] Measuring perceptions and determining the specific properties that constitute a misperception is notoriously difficult (Flynn, Nyhan, and Reifler 2017). We use issues that are quantifiable and allow us to determine misperceptions with more certainty. We select citizens' perceptions of the economic relationship between the UK and the EU, perceptions of the costs of the EU administration, and the amount of UK child benefits[5] that are paid to children residing outside of the UK in other EEA member states.[6] Notably, these items are highly technical, and it is unrealistic to expect a high degree of accuracy from the average voter. However, we should reiterate that this allows us to quantify the degree of bias, which other items do not. Further, our research questions do not center on whether voters are incorrect, but rather the direction and magnitude of systematic biases.

> Question wording for perceptions:
>
> (a) the EU investment into the UK:
>
> In 2014, international investment in the UK was 1034 billion Pounds. To the best of your knowledge, what share [in percent] of this total amount do you think comes from the following?

[4]Respondents were randomly selected from iOmnibus, which is Ipsos MORI's standing online panel. Ipsos MORI acknowledges the ESRC as co-owner of the data.

[5]Child benefits paid to families overseas because of Britain's membership in the EEA have received sensational coverage in the UK media (e.g., Jowit 2012; Buchanan 2017).

[6]The Ipsos MORI survey used a forced choice format for questions a, b, and c. While this can affect levels of misperceptions, our robustness checks suggest that this issue does not affect the relationships we examine. For instance, question "d" (child benefits) includes a "don't know" category. All substantive results for question "d" resemble those we find for the other ones. See section "robustness checks".

1) the EU, 2) the US, 3) China, 4) Japan, 5) Switzerland, 6) rest of the world

(b) UK exports to the EU:

In 2014, the UK exported a total of 515.2 billion pounds. To the best of your knowledge, what share [in percent] of the total UK exports do you think were sold to each of the following?

1) the EU, 2) the US, 3) China, 4) Japan, 5) Switzerland, 6) rest of the world

(c) the share of the EU budget spent on administration:

In 2014, the EU budget was around 140 billion Euros. To the best of your knowledge, what share [in percent] of this budget do you think was spent on staff, administration and maintenance of buildings?

(d) child benefits

What proportion of all child benefit claims awarded in the UK do you think were for children living outside the UK in other countries in the European Economic Area?

Answer categories: 0.03%, 0.3%, 3%, 13%, 30%, don't know

The dependent variable in our regression models is the extent of the misperception of each respondent. To arrive at this figure, we subtract the correct value from the value given by a respondent.[7] Hence, the value of the dependent variable is zero for respondents whose responses are correct and who do not hold misperceptions. The values of the dependent variables are large for responses that are far away from the correct value. These responses indicate misperceptions.[8]

Our goal is to examine the correlates of misperceptions. Although there are other factors that likely influence responses (e.g. media exposure or interest, see Flynn, Nyhan, and Reifler 2017), these are not the focus of our analysis given the available data.

We measure education with a four-point scale (cf. Hobolt 2016). The four categories relate to: (1) respondents without formal qualification, (2) respondents with who completed the GCSE (a school certificate issued around the age of 16), (3) respondents who completed A-levels, and (4) respondents who possess a university degree.

We measure citizens' attitudes towards the EU using vote intentions in the Brexit referendum. This variable takes on the value of zero for respondents

[7]See the appendix for a detailed description of the coding.

[8]A small share of respondents believes that the EU is more important economically for the UK than it actually is or that the share spend by the EU on administration is smaller than it is in reality. These responses have negative values on our dependent variable. We do not discard these responses in our main analyses, but we account for them in our robustness checks. The results indicate that including them does not affect the substantive results.

whose intention is for Britain to "Leave the EU", 1 for respondents who are undecided, and 2 for respondents who want Britain to stay in the EU.

We also include a partisanship measure, because it is an important "lens through which individuals view the political world" (De Vries, Hobolt, and Tilley 2017, 2). Party identities affect the information that citizens select to digest in fundamental ways and hence how they form preferences (Zaller 1992). Partisanship could also play a role in how British citizens perceive European integration, in particular because party cues are often important for citizens' attitudes towards the EU (Hooghe and Marks 2005; Stoeckel and Kuhn 2018; Carl, Richards, and Heath 2019). Yet, party cueing effects might be limited because the two biggest parties – Labour and the Conservatives – were internally split before the referendum, albeit to different degrees (Curtice 2017). We rely on a proxy for partisanship: the party that respondents voted for in the preceding General elections (which took place in 2015). We also account for age and gender.

Results

We begin by examining descriptive statistics based on weighted data.[9] Figure 1 shows the pattern of responses for the four issues that we examine, along with the correct numeric response. We find that citizens hold considerable misperceptions with regard to the economic relationship between the EU and the UK, the share of the budget that the EU spends on administration, and the British child benefits that are paid to recipients who live in other EEA countries.

When it comes to the economic relationship, most respondents underestimate the role of the EU for the British economy. For instance, the share of the total international investment into the UK that comes from other EU member states is 48 percent (ONS 2015). The median response among all respondents is 30 percent. Respondents who want Britain to leave the EU believe that the investment from EU countries amounts to only 25 percent. However, even those respondents who want to vote remain underestimate the role of the EU; the median among Remainers is 40 percent. Misperceptions are less pronounced when it comes to the share of British exports that is sold to other EU member states, which amounts to 44 percent (ONS 2015a). The median response among all respondents is 40 percent. While Leave voters underestimate the role of the EU again, the median on the remain side is in fact 45 percent: some respondents slightly overestimate the role of the EU, rather than underestimating it.

Respondents also hold considerable misperceptions regarding the share of the EU budget that is being used for the EU administration and the

[9]See the appendix for more detailed descriptive statistics of all variables.

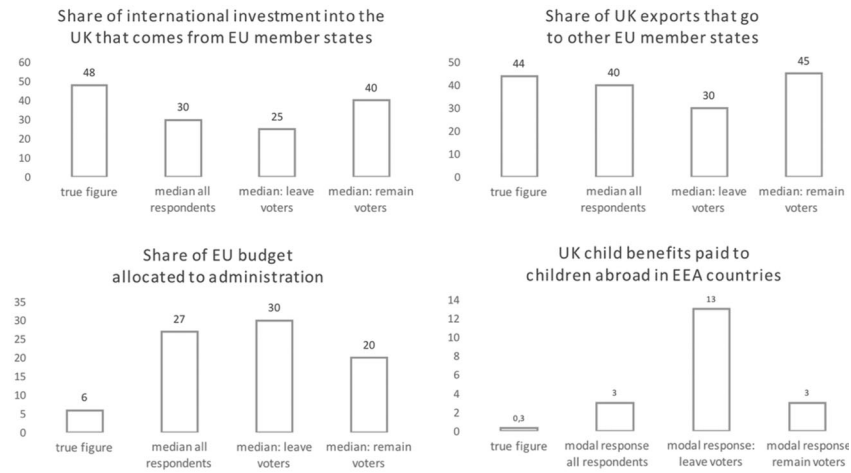

Figure 1. Descriptive statistics and true figures. Data: Ipsos-Mori 2016, own calculation.

percentage of British child benefit payments that are disbursed to recipients who do not live in the UK but in other EEA countries. Respondents overestimate both quantities considerably. The EU spends about 6 percent on administration.[10] The median response among all respondents is 27 percent. Respondents who want to vote remain believe that the EU spends about 30 percent of its budget on administration, but even respondents who support the EU membership of Britain believe that the EU spends about one fifth of its budget on bureaucracy. Misperceptions with regard to British child benefits that are paid to recipients abroad are even more severe. While the actual share is only 0.3 percent[11], the most common response among all respondents is 3 percent. Leave voters even believe that about 13 percent of British child benefits are paid to recipients who live in other EEA countries.

The results reveal that misperceptions are not unique to those who oppose the EU, which is in line with Carl, Richards, and Heath (2019). It is particularly noteworthy however that Leavers and Remainers can hold misperceptions in the same direction. Voters who support the EU membership of the UK might want the EU to be economically important though not costly. As a result, Remainers could overestimate the economic importance of the EU for the UK and underestimate costs. We do not find this. On average, most respondents underestimate the role of the EU for the British economy, while costs related to EU membership are overestimated. At the same time, the magnitude of misperceptions differs in a systematic, group

[10] http://ec.europa.eu/budget/figures/interactive/index_en.cfm
[11] http://researchbriefings.parliament.uk/ResearchBriefing/Summary/SN06561#fullreport

serving way: misperceptions among individuals who support the EU are smaller than misperceptions of Euroskeptics.

We now analyse the same data with multivariate regression models. The dependent variable in each of the models is the extent of misperceptions held by respondents regarding each of the four questions. All models include the same co-variates: education, support for the EU, age, and gender (note that age and gender are included as demographic controls and we do not interpret them, given our theoretical framework). The full models additionally include dummies for party attachment; the reference category are respondents who voted for the Conservatives in the General elections of 2015.

We begin with Table 1, which includes OLS regression models for misperceptions about the economic relationship between Britain and the EU. To calculate our dependent variable, we subtract the correct value from each respondents' answer. Respondents who underestimate the role of the EU for the British economy therefore have a high negative value. For instance, respondents who believe this share is about 30 percent thus have a value of −18 on the dependent variable (30 percent minus the actual investment of the EU into the UK, namely 48 percent). The regression coefficients indicate whether and to what extent a particular variable decreases the gap between perception and the true figure.

Education correlates positively with accuracy, which supports our first hypothesis. Respondents with more education exhibit smaller misperceptions about the EU investments into the EU and with regard to British exports to other EU member states. Support for the EU also has a positive effect. Most respondents underestimate the role of the EU for the British economy. The positive coefficient means that respondents who support European integration find the EU economically more relevant for the UK than Leavers, even though Remainers also underestimate the role of the EU. In turn, Leavers perceive the EU as less relevant economically for the UK than voters who support the EU, which supports hypothesis 2a.

The regression results in Table 2 report the correlates of misperceptions regarding costs. On average, respondents overestimate how much money is spent on administration in the EU and on British child benefits paid out to recipients abroad. For our dependent variable, we subtract the actual figure from each response. In this case, a negative regression coefficient indicates whether a variable is correlated with a decrease of a misperception. We find that citizens with more education hold smaller misperceptions about the share of the funds that the EU spends on administration and the child benefits that are disbursed to recipients abroad. This is additional support for hypothesis 1. EU support has a statistically significant negative effect as well. While most respondents overestimate costs related to the EU, this negative coefficient means that individuals who support the EU overestimate the

Table 1. Regression results: misperceptions of the role of the EU for the British economy.

	EU Investment into UK				UK exports going into EU			
	Model 1		Model 2		Model 3		Model 4	
Education	1.58**	(0.60)	1.32*	(0.61)	2.16***	(0.65)	1.95**	(0.66)
EU support	4.40***	(0.67)	4.25***	(0.73)	4.65***	(0.72)	4.44***	(0.79)
Age	0.06	(0.04)	0.03	(0.04)	0.01	(0.04)	−0.01	(0.04)
Female	−4.03***	(1.15)	−4.00***	(1.15)	−1.80	(1.24)	−1.76	(1.25)
Labor			−1.70	(1.58)			−2.13	(1.71)
LibDem			2.37	(2.19)			0.64	(2.37)
UKIP			−2.42	(2.19)			−3.71	(2.36)
Green			2.93	(2.80)			−0.82	(3.03)
SNP			−4.74	(3.27)			−4.70	(3.53)
Other party			−0.73	(2.23)			−5.39*	(2.41)
Did not vote			−5.64**	(2.18)			−1.56	(2.36)
Constant	−25.78***	(2.93)	−22.61***	(3.28)	−16.72***	(3.16)	−13.53***	(3.55)
Adj-R^2	0.06		0.07		0.06		0.07	
Observations	956		956		956		956	

OLS regressions, standard errors in parantheses. *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$. Reference: Conservative party, male

Table 2. Regression results: misperceptions of costs related to the EU.

	Costs of EU Administration				Child Benefits Paid to Recipients Abroad			
	Model 5		Model 6		Model 7		Model 8	
Education	−3.94***	(0.72)	−3.58***	(0.73)	−0.33***	(0.06)	−0.29***	(0.06)
EU support	−3.12***	(0.80)	−2.53**	(0.87)	−0.25***	(0.07)	−0.22**	(0.07)
Age	0.05	(0.05)	0.05	(0.05)	−0.01***	(0.00)	−0.01**	(0.00)
Female	3.57**	(1.37)	3.80**	(1.38)	0.36**	(0.12)	0.35**	(0.12)
Labor			0.01	(1.89)			−0.03	(0.16)
LibDem			−1.27	(2.61)			−0.44*	(0.22)
UKIP			3.91	(2.61)			0.08	(0.21)
Green			−9.58**	(3.35)			−1.10***	(0.28)
SNP			−2.77	(3.90)			0.43	(0.35)
Other party			4.53	(2.66)			0.83***	(0.23)
Did not vote			−0.28	(2.61)			0.40	(0.22)
Constant	36.04***	(3.50)	34.44***	(3.92)				
Cut1					−4.51***	(0.33)	−4.33***	(0.37)
Cut2					−3.11***	(0.31)	−2.91***	(0.35)
Cut3					−1.86***	(0.30)	−1.61***	(0.34)
Cut4					−0.81**	(0.30)	−0.53	(0.34)
Cut5					−0.03	(0.30)	0.27	(0.34)
Adj-R^2	0.06		0.07					
Log-Likelihood					−1604.6911		−1582.1125	
Observations	956		956		956		956	

Models 5 & 6: OLS, Models 7 & 8: Ordered Logit, standard errors in parantheses. *$p < 0.05$, **$p < 0.01$, ***$p < 0.001$. Reference: Conservative party, male

costs of the EU administration or those related to child benefits less so than Leavers. Leavers on the other hand perceive the EU as even more costly than Remainers, which supports hypothesis 2b. We do not find a consistent pattern with regard to the effects of other variables. For instance, party preferences are not consistently correlated with misperceptions.

True/false outcome measure for costs

Carl, Richards, and Heath (2019) measure misperceptions by using statements that are rated as true or false by respondents. The survey data that we use includes an item which resembles one from their study. It asks respondents if they believe that the UK annually pays in more into the EU budget than it gets back.[12] This item creates a different picture than the one we get from our continuous measures alone: a majority of Remainers (53 percent) and of Leavers (89 percent) does not hold a misperception: these respondents correctly believe that the UK pays more into the EU budget than it gets back. Respondents who hold a misperception are more likely to be supporters of the EU than Euroskeptics. We run a logit model with the same covariates that we used previously to analyse this in a multivariate analysis (1=misperception, 0=correct response; see appendix Table A1 for results). We find that EU support is a statistically significant predictor for

[12]The question was only asked to half of the sample of the survey that we use.

misperceptions, while education is not significant. EU support increases the probability to believe that Britain pays less into the EU budget than it gets back, even though this is not the case. Euroskeptics perceive the EU to be more costly than those who support it, but their predisposition towards the EU means they are more apt to get this question right. We see that the results are affected be the wording of a question and the response format. The commonality across question items and response formats is the evidence for motivated reasoning: in each case, perceptions are biased in the direction of ideological convenience.

European parliament election turnout as reference case

Motivated reasoning is likely to take place because citizens rely on heuristics to answer questions on quantities they interact with rarely and these heuristics are tainted by prior attitudes. If this mechanism holds, we would find different results for a topic that is more salient and that lacks a clear directional bend. To test this, we use a question that asks respondents to report their guess on the 2014 European Parliament election turnout. We believe that this is an item that is ideologically more neutral in the sense of Carl, Richards, and Heath (2019) rather than convenient for Leavers or Remainers. The EP election turnout in the UK was 35.6 percent. The median guess is 30 percent, i.e. most respondents underestimate turnout. It is similar among Leavers and Remainers. For the dependent variable of our regression, we calculate respondents' misperceptions by subtracting the true value from their responses. We use the same covariates as above (appendix, Table A2). Among our key variables, education is statistically significant while EU support is not. Respondents with more education believe that turnout is even lower than it actually is. EU support, on the other hand, is not related to responses. This suggests that motivated reasoning is not driving responses on an ideologically more neutral topic, in line with Carl, Richards, and Heath (2019).

Robustness checks

Our measures for misperceptions rely on data that includes limitations. First, three of our four measures use a forced choice format that does not allow respondents to reply that they do not know the answer, which is a common approach in research on misperceptions (Carl, Richards, and Heath 2019). Yet, this method could bias responses. However, we can have confidence in the effects because the regression results for the measure that offers a don't know category are substantively similar to the results of the measures that do not include a don't know category. To probe the robustness of our results further, we conduct an additional check. We treat respondents who selected the don't know category on the "child benefit" question

as individuals who might have opted for a don't know category also on the other measures that did not include this option. We rerun all regressions while excluding the latter group of respondents (appendix, Tables A3 and A4). The results are similar in all substantive respects.

The most typical misperceptions are the ones where the EU is portrayed in a negative way, that is, it is seen as less important for the British economy or more costly than it actually is. A few respondents hold misperceptions of a different kind. They believe that the EU is more important for the British economy or it is less costly than it actually is. A limitation of our operationalisation is that it does not discriminate well between individuals who get the answers about right and the small share of respondents whose view of the EU is biased in a positive direction. We want to make sure that this limitation does not have an impact on the results. We therefore conduct two additional robustness checks.

These robustness checks require us to discriminate between respondents who (1) get the answers right, (2) respondents with the common misperception that portrays the EU more negatively, and (3) the uncommon misperception according to which the EU is seen as more important economically or less costly than it actually is. We classify respondents into group 1 — those who are correct — if their responses are within the margin of error of our sample, that is, within 3 percent (plus/minus) of the correct answer. Most respondents are in group 2; these are the respondents with the common (negative) misperception.[13] This differentiation allows us to account for those respondents who see the EU as more important economically or less costly than it is. These respondents could bias the results, because the main models treat them as if they had answered correctly. In a first robustness check, we exclude these respondents to check if the results hold (appendix, Tables A3 and A4). The results are substantively similar to the original ones in all respects.

Our second robustness check includes all of the groups mentioned above in multinomial regression models (appendix, Tables A5, A6, A7). Respondents who get the answers about right are the reference group in these regressions. The regression coefficients tell us which covariates are associated with holding misperceptions that portray the EU in a negative way. In contrast to the main models, individuals who believe that the EU is more important for the British economy or less costly are now a separate category. The results support our original conclusion. Additionally, we find that respondents who get the answers about right and those who have a positive bias towards the EU are relatively similar to each other.

[13]We split this group up into two roughly equally sized groups: respondents with minor misperceptions and respondents with large misperceptions.

Conclusion

We find that misperceptions regarding the EU are widespread. Citizens underestimate the importance of the EU for the British economy, but they overestimate costs related with the EU administration and British child benefits paid to recipients abroad. These findings are in line with studies on citizens' political knowledge in other contexts, which highlight that it is difficult for voters to remember abstract figures that have little meaning in their daily lives (Ahler and Sood 2018; Lawrence and Sides 2014). Previous research measured EU related knowledge of Leavers and Remainers using a comprehensive set of true/false items to examine if one side is more prone to misperceptions (Carl, Richards, and Heath 2019). Given the more limited set of question items in our study, we cannot systematically test this. We contribute to the literature by using continuous scales to map misperceptions about two particular issues: the economic relationship of the UK with the EU as well as EU related costs. This perspective allows us to measure the direction of misperceptions among Leavers and Remainers, to gauge their magnitude, and to analyze the factors that correlate with them. Future surveys could include both types of questions as well as more refined ones (e.g. Prior and Lupia 2008).

While misperceptions are widespread among all voters, our results also suggest that they differ in systematic ways. We find that education is correlated with less severe misperceptions. Individuals with more education hold less biased perceptions of the EU, irrespective of their ideological predisposition. In the absence of precise knowledge, citizens' perceptions are likely to be driven by heuristics, such as ideological predispositions. Predispositions towards the EU are also a strong correlate of misperceptions. Euroskeptic respondents underestimate the importance of the EU for the British economy more so than individuals who support the EU. And while most voters hold misperceptions when it comes to the costs of the EU administration or British child benefits paid to recipients abroad, the magnitude of misperceptions among Euroskeptics is larger. It is worth reflecting also on the fact that there appear to be limited associations of party and perception, as party effects may be overwhelmed by the inclusion of more directly relevant attitudes in the model.

The question remains whether it is Euroskepticism that explains misperceptions or whether the reverse is true, and misperceptions determine citizens' views of the EU. Our results suggest that individuals support European integration irrespective of the misperceptions they hold. This casts doubt on the notion that citizens' misperceptions have a strong causal impact on public opinion towards the EU (as supported in recent US-based findings in Nyhan et al. 2020; Guess et al. 2020). Euroskeptics either put more weight on these perceptions than those who support the EU, or these perceptions are not the reason for their Euroskeptic stance in the first place, but rather a consequence of it.

If the latter is true, Euroskeptic attitudes towards the EU are unlikely to change when misperceptions are corrected (Nyhan and Reifler 2010; Thorson 2016). Yet, facts are not entirely irrelevant and even motivated reasoners can be "hit by the facts" (Wood and Porter 2019). Hence, future research could unravel the precise conditions under which EU related misperceptions can be corrected and whether such corrections matter for citizens' attitudes towards European integration.

Our findings have several implications. From a normative perspective, it is problematic for democratic processes if a large share of the population holds misperceptions, especially when these misperceptions are not due to sheer ignorance but constitute the result of citizens' ideological predispositions. Because misperceptions based on ideological predispositions are difficult to correct, public discourse becomes problematic. Political entrepreneurs can exploit a situation in which ideological predispositions, rather than facts, shape perceptions of European integration. Politicians who voice EU related criticisms that resonate with common misperceptions are perceived as "telling the truth", whereas actors who challenge misperceptions will be met with great mistrust.

Acknowledgements

An earlier version of this manuscript was presented at the meeting of the Standing Group on the EU of the ECPR in Paris in 2018 and at the final conference of the Kolleg-Forschergruppe "The Transformative Power of Europe" (KFG) at Freie Universität Berlin, also in 2018. We are grateful for feedback from Liesbet Hooghe, Peter Katzenstein, Hanna Kleider, Gary Marks, Thomas Risse and the anonymous reviewers. Jason Reifler received funding from the European Research Council (ERC) under the European Union's Horizon 2020 research and innovation program (grant agreement No 682758). We would also like to thank Ipsos-MORI and the ESRC for making the survey data available. All remaining errors are our own.

Disclosure statement

The authors declare that they do not have any conflict of interests.

Data availability statement

The data used in this study is available on request from Ipsos-MORI UK. Ipsos acknowledges the ESRC as co-owner of the data. Ipsos-MORI UK can be contacted using this link: https://www.ipsos.com/ipsos-mori/en-uk/ipsos-mori/en-uk/contact

ORCID

Florian Stoeckel http://orcid.org/0000-0002-8937-5962
Benjamin Lyons http://orcid.org/0000-0001-7096-900X
Jason Reifler http://orcid.org/0000-0002-1116-7346

References

Ahler, D. J., and G. Sood. 2018. "The Parties in Our Heads: Misperceptions About Party Composition and Their Consequences." *The Journal of Politics* 80 (3): 965–981.

Armingeon, K. 2021. "Fiscal solidarity: The Conditional Role of Political Knowledge." *European Union Politics* 22 (1): 133–154.

Armingeon, K., and B. Ceka. 2014. "The Loss of Trust in the European Union during the Great Recession since 2007: The Role of Heuristics from the National Political System." *European Union Politics* 15 (1): 82–107.

Baglioni, S., and A. Hurrelmann. 2016. "The Eurozone Crisis and Citizen Engagement in EU Affairs." *West European Politics* 39 (1): 104–124.

Buchanan, M. 2017. Reality Check: How much Child Benefit goes Overseas? *BBC News*, June 06. https://www.bbc.co.uk/news/election-2017-40061921.

Bullock, J. G., A. S. Gerber, S. J. Hill, and G. A. Huber. 2015. "Partisan Bias in Factual Beliefs About Politics." *Quarterly Journal of Political Science* 10: 519–578.

Carl, Noah, Lindsay Richards, and Anthony Heath. 2019. "'Leave and Remain Voter's Knowledge of the EU After the Referendum of 2016'." *Electoral Studies* 57 (2019): 90–98.

Carpini, M. X. D., and S. Keeter. 1996. *What Americans Know About Politics and Why It Matters*. New Haven: Yale University Press.

Chaiken, S. 1980. "Heuristic Versus Systematic Information Processing and the Use of Source Versus Message Cues in Persuasion." *Journal of Personality and Social Psychology* 39 (5): 752–766.

Clarke, H. D., M. Goodwin, and P. Whiteley. 2017. *Brexit: Why Britain Voted to Leave the European Union*. Cambridge: Cambridge University Press.

Curtice, J. 2017. "Why Leave won the UK's EU Referendum." *JCMS: Journal of Common Market Studies* 55 (S1): 19–37.

De Vries, C. E. 2018. *Euroscepticism and the Future of European Integration*. Oxford: Oxford University Press.

De Vries, C. E., S. B. Hobolt, and J. Tilley. 2017. "Facing up to the Facts: What Causes Economic Perceptions?" *' Electoral Studies* 51: 115–122.

Duchesne, S., E. Frazer, F. Haegel, and V. Van Ingelgom. 2013. *Citizens' Reactions to European Integration Compared: Overlooking Europe*. Basingstoke: Palgrave Macmillan.

European Commission. 2020. Euromyths A-Z index. https://wayback.archive-it.org/11980/20200131192225/https://blogs.ec.europa.eu/ECintheUK/euromyths-a-z-index/

Flynn, D., B. Nyhan, and J. Reifler. 2017. "The Nature and Origins of Misperceptions: Understanding False and Unsupported Beliefs About Politics." *Political Psychology* 38 (S1): 127–150.

Gaines, Brian J., James H. Kuklinski, Paul J. Quirk, Buddy Peyton, and Jay Verkuilen. 2007. "Same Facts, Different Interpretations: Partisan Motivation and Opinion on Iraq." *Journal of Politics* 69 (4): 957–974.

Guess, A. M., D. Lockett, B. Lyons, J. M. Montgomery, B. Nyhan, and J. Reifler. 2020. ""Fake News" may Have Limited Effects Beyond Increasing Beliefs in False Claims." *Harvard Kennedy School Misinformation Review* 1: 1.

Hahl, O., M. Kim, and E. W. Zuckerman Sivan. 2018. "The Authentic Appeal of the Lying Demagogue: Proclaiming the Deeper Truth About Political Illegitimacy." *American Sociological Review* 83 (1): 1–33.

Hobolt, S. B. 2016. "The Brexit Vote: a Divided Nation, a Divided Continent." *Journal of European Public Policy* 23 (9): 1259–1277.

Hobolt, S. B., and J. Tilley. 2014. "'Who's in Charge? How Voters Attribute Responsibility in the European Union'." *Comparative Political Studies* 47 (6): 795–819.
Hooghe, L., and J. Marks. 2005. "Calculation, Community, and Cues." *European Union Politics* 6 (4): 419–443.
Hooghe, L., and G. Marks. 2009. "A Postfunctionalist Theory of European Integration: From Permissive Consensus to Constraining Dissensus." *British Journal of Political Science* 39 (1): 1–23.
Hurrelmann, A., A. Gora, and A. Wagner. 2015. "The Politicization of European Integration: More than an Elite Affair?" *Political Studies* 63 (1): 43–59.
Hwang, Y., and S. H. Jeong. 2009. "Revisiting the Knowledge Gap Hypothesis: A Meta-Analysis of Thirty-Five Years of Research." *Journalism and Mass Communication Quarterly* 86 (3): 513–532.
Ipsos-Mori. 2016. European Union: The Perils of Perception. https://www.ipsos.com/ipsos- mori/en-uk/perils-perception-and-eu.
Iyengar, S. 1990. "The Accessibility Bias in Politics: Television News and Public Opinion." *International Journal of Public Opinion Research* 2 (1): 1–15.
Jowit, J. 2012. More than 40,000 Children Living abroad Receive UK Child Benefit. *The Guardian*, October 23. https://www.theguardian.com/society/2012/oct/23/child-benefit-payments-outside-uk.
Karp, J. A., S. A. Banducci, and S. Bowler. 2003. "To Know It is to Love it? Satisfaction with Democracy in the European Union." *Comparative Political Studies* 36 (3): 271–292.
Khanna, K., and G. Sood. 2018. "Motivated Responding in Studies of Factual Learning." *Political Behavior* 40 (1): 79–101.
Lawrence, E. D., and J. Sides. 2014. "The Consequences of Political Innumeracy." *Research and Politics* 1 (2): 1–8.
McCombs, M., and N. J. Stroud. 2014. "Psychology of Agenda-Setting Effects: Mapping the Paths of Information Processing." *Review of Communication Research* 2: 68–93.
Nadeau, R., R. G. Niemi, and J. Levine. 1993. "Innumeracy About Minority Populations." *Public Opinion Quarterly* 57 (3): 332–347.
Nyhan, B., E. Porter, J. Reifler, and T. J. Wood. 2020. "Taking Fact-Checks Literally but Not Seriously? The Effects of Journalistic Fact-Checking on Factual Beliefs and Candidate Favorability." *Political Behavior* 42: 939–960.
Nyhan, B., and J. Reifler. 2010. "When Corrections Fail: The Persistence of Political Misperceptions." *Political Behavior* 32 (2): 303–330.
Office for National Statistics. 2015. Foreign direct investment involving UK companies (directional): inward. https://www.ons.gov.uk/businessindustryandtrade/business/businessinnovation/datasets/foreigndirectinvestmentinvolvingukcompanies2013inwardtables
Office for National Statistics. 2015a. United Kingdom Balance of Payments - The Pink Book. https://www.ons.gov.uk/economy/nationalaccounts/balanceofpayments/compendium/unitedkingdombalanceofpaymentsthepinkbook/2015-10-30
Petty, R. E., and J. T. Cacioppo. 1986. *The Elaboration Likelihood Model of Persuasion. In Communication and Persuasion*. New York: Springer.
Prior, M., and A. Lupia. 2008. "Money, Time, and Political Knowledge: Distinguishing Quick Recall and Political Learning Skills." *American Journal of Political Science* 52 (1): 169–183.
Romer, D., K. H. Jamieson, and S. Aday. 2003. "Television News and the Cultivation of Fear of Crime." *Journal of Communication* 53 (1): 88–104.
Sides, J., and J. Citrin. 2007. "European Opinion About Immigration: The Role of Identities, Interests and Information." *British Journal of Political Science* 37 (3): 477–504.

Stoeckel, F. 2013. "Ambivalent or Indifferent? Reconsidering the Structure of EU Public Opinion." *European Union Politics* 14 (1): 23–45.
Stoeckel, F., and T. Kuhn. 2018. "Mobilizing Citizens for Costly Policies: the Conditional Effect of Party Cues on Support for International Bailouts in the European Union." *JCMS: Journal of Common Market Studies* 56 (2): 446–461.
Thorson, E.. 2015. Identifying and Correcting Policy Misperceptions. https://www.americanpressinstitute.org/wp-content/uploads/2015/04/Project-2-Thorson-2015-Identifying-Political-Misperceptions-UPDATED-4-24.pdf
Thorson, E. 2016. "Belief Echoes: The Persistent Effects of Corrected Misinformation." *Political Communication* 33 (3): 460–480.
Wood, T., and E. Porter. 2019. "'The Elusive Backfire Effect: Mass Attitudes' Steadfast Factual Adherence'." *Political Behavior* 41: 135–163.
Zaller, J. 1992. *The Nature and Origins of Mass Opinion*. Cambridge: Cambridge University Press.