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# The dynamics of EU attitudes and their effects on voting

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**Abstract** In referendums on issues of European integration, it is often unclear how important attitudes toward Europe are and whether these attitudes change during the campaign. Extant research showing the importance of EU attitudes particularly in salient and contested referendums has often had to rely on static data and limited conceptualizations of EU attitudes. This potentially underestimates the role of (different types of) EU attitudes and hampers the ability to assess the dynamics of them. For the analysis of dynamics in EU attitudes, we mainly rely on pre- and post-waves for the Dutch Ukraine–European Union Association Agreement referendum, which extends a panel study leading back to the EP14 elections. This allows us to assess both long-term changes of EU attitudes since the last EP elections and also during the referendum campaign. We examine the effect of campaign-induced attitude changes for the referendum vote, while controlling for other relevant determinants. Our findings first show significant changes in EU attitudes during the referendum campaign, and second, highlight the relevance of some of these changes for the referendum vote. Both strengthening and especially emotional attitudes play respective significant roles, with the latter being in part dependent on media exposure.

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## Introduction

Understanding the dynamics of referendum campaigns on matters of European integration has only become more salient in the recent period. The Danish No (2015), the Dutch No (2016), and the British Leave (2016) have sparked a renewed interest in fundamental questions such as why some citizens have preferences for voting against the EU, how attitudes toward the EU matter for actual referendum voting, and what the role of the campaign is in affecting the outcome.

Our current understanding of voting behavior in EU-related referendums is very much tied into the ‘second order national election’ paradigm (Reif and Schmitt 1980). This paradigm assumes that factors beyond the EU (such as the popularity of the national government and the state of the economy) matter more for citizen’s voting behavior than actual attitudes toward the EU. This notion has been challenged and refined by studies suggesting that EU attitudes can matter significantly in EU-related referendums, alongside other explanations (e.g., Hobolt 2009; Schuck and de Vreese 2008). By now, most research acknowledges that both perspectives matter for voting, and recent works highlight that citizens might hold *differentiated* attitudes toward the EU (e.g., Boomgaarden et al. 2011; de Vreese et al. 2018; Hobolt and Brouard 2010).

Given that referendum campaigns can be volatile and unpredictable (LeDuc 2002a), we are interested in understanding the dynamics of the campaign for different EU attitudes and their eventual impact on actual voting behavior. Referendum campaigns can range from being low key events that generate very limited public attention to campaigns that are highly salient and approximate campaign activities in national elections (de Vreese 2007). We explicitly link the interest in understanding the impact of different dimensions of EU attitudes to a dynamic perspective looking at a referendum campaign. Going one step further than existing studies that examined already the influence of different attitude dimensions in a static perspective, we assess whether and how much change an EU referendum campaign can induce on these dimensions and how this affects the voting decision. In a final step, we further analyze whether the effects are conditioned by the degree of exposure to the campaign in the news media.

Taking the 2016 Dutch national referendum on the Ukraine–European Union Association Agreement as a research context, this study relies on a repeatedly measured multidimensional operationalization of EU attitudes, which enables us to disentangle which of the potential changes during the campaign matter for EU referendum voting. We collected two-wave panel survey data (pre- and post-referendum) which was part of a larger seven-wave data collection from the European Parliament elections in 2014. This allows us to first assess how the different dimensions of Dutch EU attitudes developed over the long run and the shorter specific campaign period, and how these latter changes affect voting preferences.



## Theory

### EU attitudes and voting

Issues of European integration are amongst the most voted on issues in the world in referendums. Yet we only still have a modest body of knowledge about how much ‘Europe’ matters for the vote. In works from the 1990s, most notably related to the referendums on the Maastricht Treaty, two schools emerged: one is the ‘proxy’ or second-order school, the other the issue or ‘attitude school’. In a nutshell, the second-order school, on the one hand, suggests that citizens do not hold strong attitudes toward the EU and therefore rely on proxies, most notably national politics, when voting in European Parliament elections and referendums (Reif and Schmitt 1980). Hobolt (2009, p. 30) summarized it with “voters who are dissatisfied with the performance of the government, may use EU referendums to punish the government by voting against the proposals.” This model has received ample support and has been applied both to referendum voting (e.g., Franklin et al. 1994) and EP voting (e.g., Hix and Marsh 2011).

The attitude school on the other hand suggests that citizens rely on their attitudes toward the EU when voting in an EU context. Citizens’ attitudes toward the EU are translated into their voting behavior when judging for example new proposals or treaties in referendums. This model corroborated Downs’ (1957) proposition that voters will take the position which is closest to their own position. Svensson (2002) provided evidence in support of the attitude or issue-voting model in referendums and de Vries and Hobolt (2016) provided evidence in EP elections.

Research (e.g., Garry et al. 2005) has emphasized the differences and distinct nature of the models. However, more recent studies provided evidence for both perspectives in the same referendum (de Vreese and Semetko 2004; Hobolt 2005, 2009). Hobolt (2005) suggests that the more intense an EU referendum campaign is, the more issue positions on the EU will matter for the actual vote.

Despite the available evidence of the relevance of EU attitudes, most studies investigating the importance of EU attitudes are somewhat limited in their conceptualization of what ‘Europe’ means. Most studies by necessity rely on one or a few indicators while it may very well be that different dimensions of EU attitudes and their changes over a (referendum) campaign have varied impact on voting. To our knowledge, this study is the first to unravel the importance of different EU dimensions in a referendum context, their changes over a referendum campaign and the subsequent effect on EU referendum voting.

### EU attitudes: a multidimensional concept

The question why some citizens like the EU more than others has captured scholarly and public attention for a while. Already a decade ago Szczerbiak and Taggart (2008) made the distinction between hard and soft euroscepticism. In the last decade, it has become clear that citizen’s attitudes toward the EU are not unidimensional



(Hobolt and de Vries 2016). Part of the challenge has been the reliance on extant measures in e.g., Eurobarometer or other ‘standardized’ surveys. This has inhibited the ability to delve deeper into the nature of citizen’s EU attitudes. For the puzzle of referendum voting, this lacuna is of course of great importance to further understand not only if, but also which, EU attitudes matter for referendum voting.

Boomgaarden et al. (2011) derived five dimensions of EU attitudes, including both cognitive, evaluative, and emotional aspects. Their work in part reflects that the EU is no longer the same as it was decades ago. It now encompasses many more countries, policy areas, and institutions which have changed in nature and power. Boomgaarden et al. (2011) conceptualize public opinion toward the European Union in terms of citizen’s evaluation of the EU’s performance, people’s European identity, attitudes toward a preferable strengthening of the Union, utilitarian considerations, and individual’s feelings of negative affect toward the EU. While the original study focused on the Netherlands, a recent study has validated this five dimensional nature of EU attitudes across 21 countries (de Vreese et al. 2018).

Unlike the empirical evidence that confirms the importance to distinguish several dimensions of EU support in different countries and at different occasions, much less is known about the stability of these dimensions over time and the related influence on voting. To a similar degree that EU support, as a one-dimensional measure, is varying over time (e.g., Hobolt and de Vries 2016), we may assume that different dimensions of EU attitudes also vary over time. One study that looked at changes over time of different EU attitudes by de Vreese et al. (2017) showed that between EP elections, i.e., in a 5-year period, all dimensions changed significantly on the aggregate level. For the period between 2009 and 2014, the biggest changes were found in the EU’s performance evaluation and negative affect. In this study, the changes were larger in non-election periods than during the 2014 EP election campaign. As far as we know, there are no other studies that analyzed EU attitude changes during an election or referendum campaign, so that we do not know the general potential of a campaign to influence EU attitudes. One major goal of this study is to help in filling this research gap by examining whether the context of the Dutch–Ukraine referendum resulted in significant changes in different EU attitude dimensions and how this affected the final vote.

For the more detailed discussions of campaign influences in the next section and the subsequent presentation of our hypotheses for the different EU dimensions, we briefly have to introduce some background information about the specific referendum context we are looking at. This has implications for our expectations regarding the importance of changes in certain EU attitude dimensions on the voting decision. The Ukraine–European Union Association Agreement, on which the Dutch population voted on April 6, 2016, included a wide array of issues. To mention some of the content, the Ukraine committed itself to reforms in the economic, judicial, and financial sectors with the aim of conformity to EU standards and regulations. The EU committed itself to provide political and financial supports and the required knowledge to achieve these aims. As further bigger goals, the two parties agreed to aim for convergence toward EU’s Common Security and Defence Policy and to establish a Free Trade Area between the Ukraine and the EU. Despite the many other issues being part of the agreement, the Association Treaty was often discussed



in the latter context, namely as a Trade Agreement only (see also Introduction to this Special Issue). Hence, a special focus lay on the economic, utilitarian aspect of the treaty.

### **EU attitudes: campaign influence leading to change**

Before presenting the expectations for different EU attitude dimensions, we first need to theorize why change should occur during a referendum campaign, i.e., why are voters becoming more positive or negative on certain dimensions. First of all, and as broadly acknowledged, campaign effects in direct-democratic votes matter (e.g., Schmitt-Beck and Farrell 2002; Hobolt 2007; Kriesi 2005, 2011; LeDuc 2002a; de Vreese 2007). Although referendum campaigns on the one hand share the dynamics and characteristics of campaigns in general, they also have a number of distinct features. Some scholars even argue that “referendum campaigns are likely to influence more voters than are election campaigns” (Schmitt-Beck and Farrell 2002, p. 193). Whereas election campaigns stand in stark competition with rather stable and important factors such as core beliefs, cleavages or party identification that potentially predetermine a certain vote (though see Geers and Bos 2017) in referendum campaigns, these factors often play a less important role, which thus leaves more room for influence by the actual campaign.

This campaign influence on citizens may occur in different ways. First, a campaign may increase or decrease the salience of the referendum topic (LeDuc 2002b). Second, a campaign may affect the framing of the referendum issue and the public understanding of it, i.e., which issues and attitudes does it affect (de Vreese and Semetko 2004). Third, provided that a referendum issue increases in salience, it might become an important yardstick for evaluating political performance, also known as priming (de Vreese 2004). Especially the second and third influences include more than a direct link to the referendum topic as such, namely also possible effects on corresponding opinions and attitudes. In the case of an EU referendum, a related campaign may then not only alter the opinion about the specific topic to be voted about, but also other EU attitudes (e.g., Schuck and de Vreese 2008).

Regarding the impact of the campaign in EU-related referendums, the punch line is that the more salient and contested the referendum, the more important EU attitudes are for voting. Hobolt (2009, p. 107) aptly summarizes: “Campaigns with vigorous debate and arguments tend to induce higher levels of popular participation and more sophisticated decision-making, but they do not necessarily result in an affirmative vote. Exposure to campaign information also makes citizens feel more knowledgeable about the issue at stake. Moreover there is some indication that more intense campaigns foster more issue voting.” Focusing on change in EU performance evaluations, the study by de Vreese et al. (2016) showed significant changes in this more specific EU dimension during the EP elections 2014 campaign. The authors could explain these changes by media effects, even though the salience of



the EU in the media during the election campaign was modest. A similarly rather modest EU salience in the media during the Dutch–Ukraine referendum campaign<sup>1</sup> thus still allows us to find significant changes in attitudes toward the EU.

In sum and in contrast to election campaigns, in referendum campaigns, other important factors such as specific events during the campaign, the state of the economy and the media coverage of the referendum lead to less predefined decisions (LeDuc 2002b). This general argument may hold even more in contexts where citizens have limited experience with the referendum as an instrument, so that citizens are especially prone to campaign influence. The referendum campaign may not only activate citizens' EU attitudes for their final voting decision, but also change these attitudes over the course of the campaign. For instance, the discussion of the Association Treaty in terms of a trade agreement may alter citizens' utilitarian considerations of being in the EU, i.e., people may become more positive by seeing further opportunities and economic gains through this new agreement. Other people, though, may become more negative toward the EU, particularly emotionally, by seeing the EU further integrating more countries, although several people already dislike the current EU and would rather want a reduction of EU activities.

### EU attitudes: the unexplored importance of individual change on voting

Coming back to the earlier discussed multidimensionality in more detail, of the five EU attitude dimensions developed by Boomgaarden et al. (2011) the most obvious dimension to be subject to change over the referendum campaign (and subsequently important for the vote) are *utilitarian* considerations. This dimension covers EU citizens' perceptions of a personal or country's benefit resulting from a Union membership. Studies examining EU support have commonly included utilitarian measures (e.g., Anderson and Reichert 1995). Besides attitudes that measure perceived gains and losses in materialistic terms, the dimension also covers post-materialistic attitudes such as "The European Union fosters peace and stability" and "The European Union fosters the preservation of the environment" (Hobolt and Brouard 2010). Because of the strong portrayal of the Ukraine-EU Association Agreement as a *trade* agreement, we expect significant changes in this dimension over the campaign period.

A second dimension that we expect to be activated and changed during the referendum campaign considers attitudes toward the *strengthening* of the EU. This dimension may cover different aspects comprising an enlargement to include more member countries (widening), integration toward one big European entity (deepening), or an increasing transfer of policy competences from the national level to European institutions. To measure this dimension, citizens are asked about their attitudes

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<sup>1</sup> We compared the salience of the EU in the media for the 2014 EP elections and the Dutch–Ukraine referendum in the five months prior to both events. The amount of general EU news items in the major Dutch newspapers and TV shows is just slightly lower in 2016. We want to thank Jan Kleinnijenhuis for having provided us with this information. The analysis to retrieve this media data was performed using the Amsterdam Content Analysis Toolkit (AMCAT) (van Atteveldt 2008).



regarding their “desired speed of European integration” or whether “The European Union should become one country.” Positive views on a strengthening of the European Union represent a more specific than diffuse support. Although the Association Treaty does not foresee a future EU membership of the Ukraine, it still points into the direction of having stronger ties with another country and eventually, in some years or decades the treaty may be seen as one step toward full membership. Thus, we also expect an activation of this dimension during the referendum campaign and related attitude changes for the citizens.

As a third dimension for which we expect significant influence, emotional attitudes such as feeling threatened by European unification measure *negative affect* toward the European Union. This dimension has a rather diffuse character and measures whether individuals are “afraid of,” “angry about,” or sometimes even “disgusted by” the European Union. Negative affect is typically also linked with strong anti-immigration attitudes or a dislike of the national government. In that sense, changes in negative affect are not necessarily linked to the specific referendum, but may express more general emotions that may have been activated by any other EU referendum as well. Respondents may thus both express EU specific negative affect and simply consider the Dutch–Ukraine referendum as their mouthpiece during which they could express their more general emotions.

For the remaining two dimensions, we expect no or little changes during the referendum campaign. First, there are citizen’s attitudes toward the functioning of the EU in terms of an evaluation of the democratic, political, and financial *performance* of EU institutions like the European Parliament or the Council. Particularly important for Easton’s (1965) notion of regime support are procedural performance evaluations; however, this dimension also includes aspects such as the perceived transparency in political decision-making. The performance dimension is conceptualized as rather specific support that may vary considerably over time due to specific events or policy outcomes (Boomgaarden et al. 2011). In the present case, though, the Dutch–Ukraine referendum is not really about internal decision-making in the EU, but rather considers the output of such a process involving a third country. Hence, we do not expect a (strong) impact on performance evaluations by the campaign.

Finally, the fifth and last dimension again captures more diffuse support of the EU project and measures citizens’ perception of their European *identity* (Ceka and Sojka 2016).<sup>2</sup> European identity is tapped by statements such as “I am proud to be a European citizen” or “Being a citizen of the EU means a lot to me.” This, importantly, does not necessarily imply feeling less attached to their home country. Often the difference between feeling a European identity as part of one’s personality or not is linked to a presumably opposing national identity. However, several scholars have shown that both concepts—European and national identity—are not mutually exclusive (e.g., Hooghe and Marks 2005), but contrarily are often positively correlated (e.g., Haesly 2001). More important for the present purpose, though, is the

<sup>2</sup> In the literature, there is some discussion as to the sense of identity being an attitude, but as Hooghe and Marks (2005) argue what is tapped here is a sense of identification with an additional entity and not an exclusive sense of identity.



fact that the concept is said to be relatively stable over time, meaning that specific events should not affect one's identity in a significant way. In line with that, we do not expect a (strong) effect of the referendum campaign on changes in EU identity.

In sum, we expect the referendum campaign to trigger and change attitudes especially on three of the five dimensions and less so on the remaining two. This results in our first hypothesis:

**H1** The referendum campaign leads to stronger changes in the utilitarian, strengthening, and negative affect dimension compared to the performance and identity dimension.

So far, we have only considered the effect of the referendum campaign on *changes* in the different EU attitude dimensions. As our main interest is the final voting decision, i.e., voting for or against the Association Treaty, changes in EU attitudes are a precondition for an effect of these on the referendum vote. We have straightforward expectations here, in the sense that attitude dimensions that change more strongly during the specific referendum campaign also affect the subsequent referendum voting in a stronger way. Given the expected link between the referendum campaign and larger changes in three of the five dimensions, we expect especially these changes to affect the voting. The voting should be affected in the same direction as the changes occurred, i.e., if citizens become more negative on a dimension, this should contribute to a vote against the Association Treaty and changes in a positive direction should lead to a vote in favor of the treaty. Based on the previous hypothesis H1, we cannot yet know on which dimensions we actually find the largest and most significant changes, so we formulate a more general hypothesis that captures the effect, *ceteris paribus*:

**H2** Stronger changes indicating a more (less) favorable EU attitude result in a higher probability for a 'Yes' ('No') vote.

### Linking EU attitudes to the media

Besides the mentioned campaign factors that may lead to change in EU attitudes, a campaign can affect the actual vote also directly due to for example elite cues, campaign engagement or media or advertising exposure. According to earlier studies (Bowler and Donovan 1998; Kriesi 2005; Sciarini and Tresch 2011), campaign effects for the voting decision increase with the intensity of the campaign messages. For the prime example of a direct-democratic country—Switzerland, Sciarini and Tresch (2011) analyze whether the intensity of the campaign influences the outcome of 25 popular votes on foreign, European and immigration policy. Their results strongly confirm the effect of the media campaign, which even outweighs the commonly found partisan effect. In general terms, LeDuc (2002b) examines average shifts in 23 referendums across Western countries (from 1980s to 1990s) and finds a change of around 17 per cent between polls early in campaign and the actual result (excluding undecided persons, so real difference probably even higher). Again, such



a change can come both in response to political elites who often find themselves in unlikely coalitions (e.g., profiled left and right parties campaigning with the same message), in response to political (ad) campaigns (which vary a lot by context), or in response to exposure to the media (who are challenged in the coverage of a referendum by finding the right topics, frames, and balance (de Vreese and Semetko 2004)). We will thus control for direct campaign and media effects in the later analyses.

In addition to direct effects on vote choice by the (media) campaign and by changes in the five EU dimensions, as explicated before, there could be also a moderation effect between media exposure and change in EU attitudes. If the media, for example, focuses on news that relates in particular to one or more of the EU attitude dimensions, it is conceivable that the effect is augmented for those being exposed to the media and changing the EU attitudes. This leads to the expectation of an interaction between change in EU attitudes and media exposure. Indeed, previous studies have shown that media can cause a change in EU attitudes such as support for enlargement (e.g., Maier and Rittberger 2008), but we also expect that media exposure can augment the impact of change in EU attitudes. This leads to the expectation of a positive interaction between change in EU attitudes and media exposure.

**H3** The effect of changes in EU attitudes is augmented by media exposure.

## Data and method

The main analysis is based on the two last waves from a seven-wave panel study from the Netherlands. The panel started at the end of 2013 and includes several waves up to and including the European Parliament elections in May 2014 (de Vreese et al. 2014). The last two panel waves were collected one month before (1.–9.03.16) and right after (7.–18.04.16) the April 6 Dutch Ukraine–European Union Association Agreement referendum.

The original sample was drawn from the TNS NIPO Netherlands database. The database consists of 200 000 individuals that were recruited through multiple recruitment strategies, including telephone, face-to-face, and online recruitment. Quotas (on age, gender, and education) were enforced in sampling from the database. The subsequent survey was conducted using Computer Assisted Web Interviewing (CAWI). Of the original 2189 respondents who participated in wave one in 2013, 979 respondents are left in the seventh wave. This means that around 45 per cent of the panel remained from the beginning to the last wave.<sup>3</sup> In the two waves of interest for this paper, the re-contact rate was 96 per cent, and only very few respondents ( $n = 40$ ) dropped out after the pre-referendum wave.

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<sup>3</sup> We tested for potential bias in sociodemographic variables due to panel attrition. All three variables age, gender and education are stable throughout all waves by displaying only minor changes with one percentage points more women (52% in wave 7) and two percentage points more higher educated respondents (36% in wave 7).



## Operationalization

Our main DEPENDENT VARIABLE is the *voting decision at the referendum*, i.e., voting for or against the Ukraine–EU Association Agreement. Respondents who did not turn out or who voted “blank” are excluded from the analysis. This reduces the number of respondents used in the corresponding models to 495. As a second vote variable, we use the *vote intention* indicated before the referendum, i.e., in the pre-wave survey. Here, we again excluded people indicating a “blank” vote or who answered “don’t know.”<sup>4</sup>

AS INDEPENDENT VARIABLES, we are especially interested in the *attitudes toward the EU* and related changes in these during the referendum campaign. To this end, we rely on the five attitude dimensions developed by Boomgaarden et al. (2011) and confirmed for 21 countries by de Vreese et al. (2018). These five dimensions comprise attitudes in terms of *performance* of the EU, *identity* as a European citizen, *utilitarianism* toward the EU, *negative affect* toward the EU, and *strengthening* of the EU. For each attitude, we combined three or four survey items into a scale measure ranging from –3 to +3. The exact items per dimension can be found in Table 5 in the appendix together with the results of a factor analysis.<sup>5</sup> In order to measure changes in these attitudes, the respective questions are included in both the pre- and post-referendum waves. This allows us to determine the development between the pre- and post-waves of the referendum for all five dimensions. For some more general and longitudinal descriptives, we also use the values from four of the earlier five waves in which EU attitudes were also included.

Regarding the referendum campaign, we use two variables. First, we measure the (potential) *exposure or consumption of news* regarding the referendum. To this end, we merge six variables that ask how many days a week the respondent watches, reads, or checks media outlets. This includes three major newspapers, two TV news shows, and one internet website. For the exact coding and used news outlets, see Table 6 in the appendix. As a second variable, we include the personal *interest in the referendum*. This is a simple scale measure ranging from “not at all interested” (0) to “very interested” (6).

Further independent variables that tap the second-order perspective regard the state of the economy and the satisfaction with the national government. For *economic evaluations*, we combine two variables that ask respondents for the (future) economic situation of the Netherlands and of the EU. *Satisfaction with the national*

<sup>4</sup> In general, we have a slight overestimation of turnout in our sample that is typical for post-election surveys (see, e.g., Sciarini and Goldberg 2016). However, our sample is very precise regarding the actual outcome of the referendum.

<sup>5</sup> We ran this factor analysis to double check the presence of the five dimensions in our dataset. In both the pre- and post-waves, the four dimensions of negative affect, utilitarianism, performance, and strengthening load as separate factors. Only the identity dimension loses somewhat its standing as a separate factor and loads partly with performance and/or strengthening. One reason for this may be the fewer items that were used compared to Boomgaarden et al. (2011). Instead of the original 25 items, our dataset includes only 18 items. For theoretical reasons, we decided to still include identity as a separate dimension, also given the unclear loadings with two of our other dimensions in both waves. Table 5 displays the pattern matrix for a five-factor solution, with identity as a separate dimension.



*government* is a combination of five variables. In addition to asking if the government is doing a good job, this measure includes the government's handling of the economy, the environment, immigration, and Europe. We also control for common socioeconomic controls such as *sex* (female dummy), *age* (linear), and *education* (low/middle/high). These variables are generally identified as key explanatory factors in, e.g., Franklin et al. (1994), Svensson (2002), and Hobolt (2009).

Finally, as a robustness check we will test effects particularly for switchers and undecided people. *Switchers and undecided* respondents are those that have either switched their vote from their indicated intention in the pre-wave to the actual vote, have answered "don't know" or indicated a blank vote in the pre-wave, or those that were not completely certain about their vote intention in the pre-wave. For more details, see Table 6 in the appendix.

## Analysis

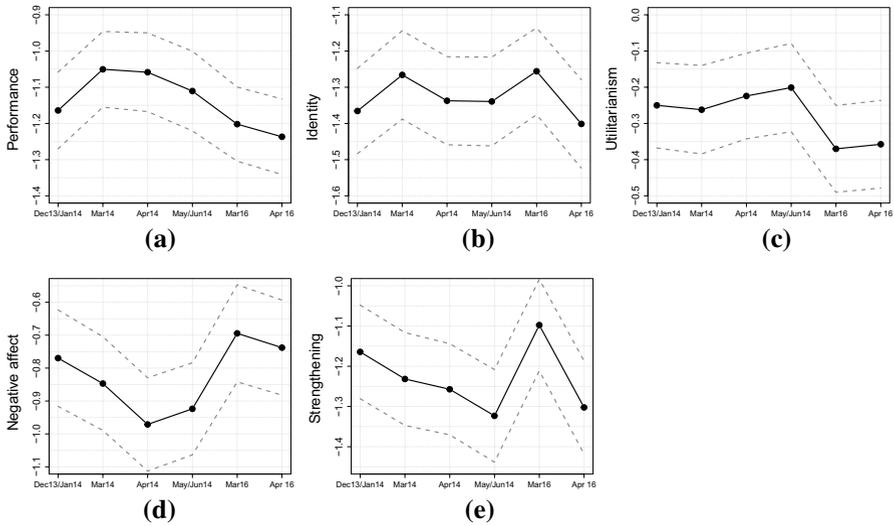
With our dependent variable being dichotomous (voting yes or no at the referendum), we fit a logistic model with the just mentioned independent variables predicting the vote choice. We run models with different combinations of independent variables and also using both the vote intention in the pre-wave and the actual vote choice in the post-wave as dependent variables. Regarding the interaction between the referendum campaign and the change in the five EU attitudes, we also include interaction terms between the respective variables. Due to collinearity, we run these interaction models separately for each attitude dimension with the measures of media exposure and perform a Bonferroni correction. Given the nonlinearity of the logistic curve, coefficients in logistic regressions are in general difficult to interpret, and even more so in the mentioned interaction models (e.g., Friedrich 1982). According to several authors (e.g., Brambor et al. (2006) and Berry et al. (2012)), an easier interpretation of significant interaction effects is possible by looking at marginal effects and especially a graphical presentation of them.

## Results

### Descriptives

Before we analyse the effects of (potentially) changing EU attitudes on the referendum vote using regression models, we first examine the development of the five dimensions over time and particularly during the referendum campaign. Figure 1 displays aggregate changes in the five EU attitude dimensions. For a better grasp of the overall volatility, we plotted the aggregate EU attitudes in six panel waves including as the two last time points the pre-referendum wave in March 2016 and post-referendum wave in April 2016. All five dimensions show some volatility already before the Dutch–Ukraine referendum campaign started in 2016. None of the dimensions displays a uniform up- or downward trend, but for several dimensions we can observe significant differences of partly up to 0.3 points between the





**Fig. 1** Aggregate changes in EU attitudes over time. The same subsample of respondents were used for all time points (referendum voters who participated in all survey waves  $n = 495$ ). **a** Performance, **b** Identity, **c** Utilitarianism, **d** Negative affect and **e** Strengthening

**Table 1** Amount of individual changes in EU attitudes (in%) during referendum campaign

	$\leq -1$	$-1 > X > 0$	0	$0 < X < 1$	$\geq 1$	$\Sigma$
Performance	13.5	26.1	21.8	27.7	10.9	100
Identity	19.0	22.4	28.7	19.2	10.7	100
Utilitarianism	11.9	26.1	20.2	31.7	10.1	100
Negative affect	20.0	22.8	18.0	21.8	17.4	100
Strengthening	19.6	26.7	21.4	21.2	11.1	100

As a reading example, for 13.5% of respondents (only actual voters  $n = 495$ ) the performance attitude has decreased at least one point during the referendum campaign, for 26.1% the decrease was smaller with values between zero and one and 21.8% displayed a stable attitude. For 27.7%, the performance dimension slightly increased (between zero and one point) and for 10.9%, an increase of at least one point is observable

minimum and maximum values measured. Between the EP 2014 elections (May 2014) and March 2016, especially the last three displayed dimensions have changed with people on aggregate being more negative regarding utilitarianism (c), showing a stronger negative affect (d) and being more positive regarding strengthening (e).

Looking specifically at the last two time points, i.e., the change during the referendum campaign, we can see mostly stable patterns for performance, utilitarianism, and negative affect. Identity and especially strengthening show a negative pattern, meaning the referendum campaign led to a more skeptical position toward the EU for these two dimensions. When interpreting aggregate changes, though, one



has to be careful as there may be more change going on at the individual level. For instance, a stable pattern at the aggregate level may also represent similarly strong changes in the positive and negative directions canceling each other out. Thus, we also calculated change at the individual level. Table 1 displays the percentages of respondents with stable attitudes (0), with minor changes between zero and one and with bigger changes equal or greater than one in the positive and negative direction (on a 7-point scale).<sup>6</sup>

Unsurprisingly, the identified negative aggregate changes for identity and strengthening are confirmed by the individual descriptives. For both attitudes, there is more change happening in the negative direction compared to positive changes. Although we expected the referendum campaign to affect strengthening attitudes, the strong changes for the identity dimension are unexpected. Although European identity includes the largest proportion of unchanged attitudes (28.7%), there is a great amount of negative change in that dimension as well, with similar magnitude to the strengthening and negative affect. Similar to the aggregate results, the stable patterns for utilitarianism and performance are confirmed at the individual level with only few changes bigger than one and equally distributed among positive and negative developments. Again, the stable pattern for performance is in line with our expectation; however, we expected more changes in the utilitarian dimension. Very interesting is the development for negative affect. Although the aggregate pattern shows a stable situation, there is a great amount of change happening at the individual level, but almost equally divided between respondents getting more or less negatively affected toward the EU.

In order to test the descriptive differences and hence our first hypothesis in a statistical way, we ran paired *t* tests for mean comparisons of the absolute level of change, i.e., independent of its direction, for each dimension. For two of the three dimensions, we find the expected stronger changes during the campaign. Both changes in negative affect ( $M = 0.84$ ,  $SD = 0.90$ ) and strengthening ( $M = 0.74$ ,  $SD = 0.76$ ) are significantly ( $p < 0.001$ ) larger than for identity ( $M = 0.67$ ,  $SD = 0.72$ ) and performance ( $M = 0.61$ ,  $SD = 0.64$ ). Only the expected strong changes in utilitarianism are not confirmed as this dimension in fact displays the lowest level of change ( $M = 0.60$ ,  $SD = 0.60$ ). Overall, we can thus confirm that the campaign has varying influence on our five dimensions, although not entirely as we expected in H1. The *t* tests prove the expected larger changes for negative affect and strengthening, but surprisingly also for identity compared to the two more stable dimensions of performance and utilitarianism. To what extent these found larger changes for negative affect, strengthening, and identity influenced the referendum vote will be answered in the later regression models.

In a next step, we briefly regard the amount of volatility between the reported vote intention before the referendum (campaign) and the actual vote in the referendum. A certain volatility or uncertainty in vote intentions is needed for the expected effects from changing EU attitudes on the final vote. Table 2 presents the corresponding

<sup>6</sup> The exact distribution of individual changes is displayed in Fig. 3 in the appendix.



**Table 2** Comparison of vote intention and actual referendum vote

Vote intention	Actual vote		Row totals
	Against	For	
Against	88.4 (167)	11.6 (22)	100 (189)
For	24.8 (26)	75.2 (79)	100 (105)
Don't know	59.8 (95)	40.3 (64)	100 (159)
Total	63.6 (288)	36.4 (165)	100 (453)

Numbers represent row percentages with number of respondents in parentheses

figures.<sup>7</sup> As seen from the table, not many of the 294 (189 “against” + 105 “for”) respondents who indicated a vote intention in the pre-wave changed their decision before the actual referendum. Only 48 (26 + 22) respondents (around 16 percent) changed their opinion in this strict sense. However, for several of the respondents with a seemingly stable voting preference, the campaign may have strengthened their early expressed intention. Only around 50 (“against”) and 40 (“for”) percent of the respondents who mentioned a voting intention have said to be absolutely sure about their choice (numbers not displayed in table). In addition, the table also includes undecided voters who answered “don’t know” in the pre-wave to the question of their likely vote decision ( $n = 159$ , around 35 percent). Especially for those people the referendum campaign and related attitude changes may have played an important role in their decision-making process. The comparatively large number of uncertain and undecided respondents thus shows the potentially important influence of changing EU attitudes on the final vote choice.

### Regression models

Turning to our logistic regression models, we first want to test the relevance of EU attitudes in comparison to the second-order election argument. Table 3 shows four different models which include only the five EU attitudes (at  $t_2 = \text{post-wave}$ ) (1), adding the sociodemographic controls (2), a second-order model including economic evaluations, satisfaction with the government and sociodemographic controls (3) and finally a full model (4). As a first result and comparing the  $R^2$  of models 2 and 3, we can see a relevance of both the attitude school and the second-order school, with a higher explanatory power of EU attitudes. A more detailed analysis of the latter is thus important for the study of EU referendum voting. As a second finding, most of the effects stemming from the five EU dimensions are stable throughout the models, albeit partly weakened by the inclusion of sociodemographic controls and the measures of the second-order school in the final model. Utilitarianism and negative affect display highly significant effects, only the effect of strengthening

<sup>7</sup> Respondents with a “blank” vote intention in the pre-wave have been excluded from the table.



**Table 3** Effect of EU attitudes on referendum vote (1 = Yes)

	(1)	(2)	(3)	(4)
Performance $t_2$	0.11 (0.17)	0.19 (0.18)		0.05 (0.20)
Identity $t_2$	-0.07 (0.13)	0.01 (0.14)		-0.02 (0.14)
Utilitarianism $t_2$	0.65*** (0.15)	0.55*** (0.16)		0.44*** (0.17)
Negative affect $t_2$	-0.64*** (0.11)	-0.60*** (0.12)		-0.55*** (0.12)
Strengthening $t_2$	0.32*** (0.12)	0.25* (0.13)		0.24* (0.13)
Woman		-0.39 (0.25)	-0.31 (0.23)	-0.43* (0.26)
Age		0.02*** (0.01)	0.02*** (0.01)	0.02** (0.01)
Low education		-0.58 (0.42)	-0.63 (0.40)	-0.47 (0.43)
High education		0.62** (0.27)	0.90*** (0.25)	0.59** (0.28)
Economy			0.71*** (0.15)	0.42** (0.17)
Satisfaction			0.67*** (0.14)	0.21 (0.17)
Constant	-0.74*** (0.24)	-0.67** (0.32)	-0.16 (0.23)	-0.59* (0.33)
$N$	495	494	494	494
Pseudo $R^2$	0.340	0.371	0.292	0.389

Standard errors in parentheses

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ 

loses its significance with the addition of more number of variables. Performance and identity show no significant influence.<sup>8</sup>

After having established the importance of EU attitudes for the referendum vote and notwithstanding the already interesting effects stemming from some, but not all five dimensions, we are now even more interested whether the previously displayed *change* of EU attitudes during the referendum campaign affects the final voting decision. To test this, the regression models in Table 4 include the five change variables while still controlling for the absolute level of each dimension at  $t_1$ , i.e.,

<sup>8</sup> As a robustness check, we ran the same models (Table 7 in the appendix) with the reported vote intention before the referendum as dependent variable and using the attitude dimensions from the pre-wave ( $t_1$ ). We find mostly similar effects, particularly the highly significant effects of utilitarianism and negative affect, with only the significant effect of strengthening that vanishes.



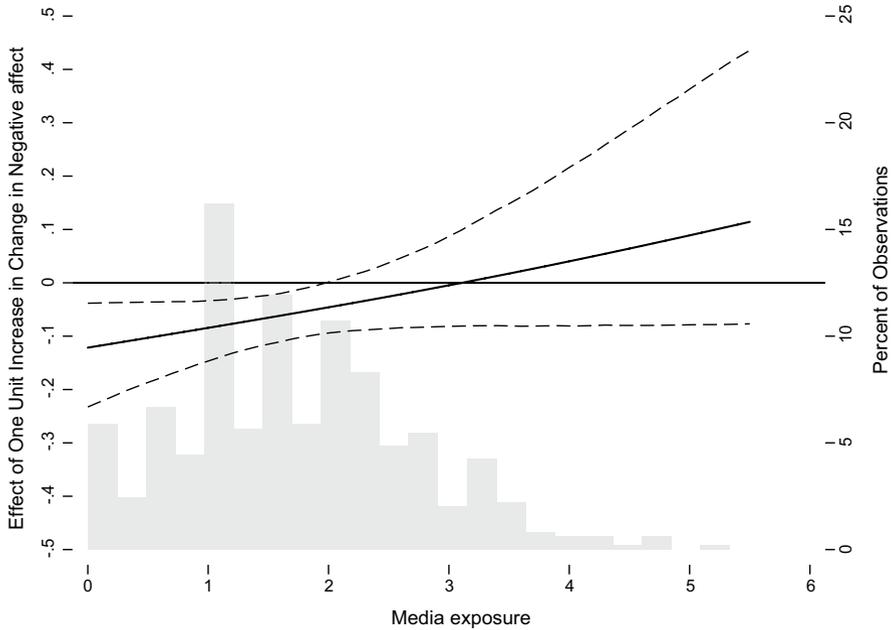
**Table 4** Complete model(s) controlling for base level of attitudes

	(1)	(2)	(3)	(4)
$\Delta$ Performance	0.05 (0.21)	0.07 (0.22)	- 0.02 (0.24)	- 0.08 (0.24)
$\Delta$ Identity	0.04 (0.16)	0.07 (0.17)	0.05 (0.17)	0.10 (0.18)
$\Delta$ Utilitarianism	0.13 (0.19)	0.11 (0.20)	- 0.01 (0.20)	- 0.01 (0.20)
$\Delta$ Negative affect	- 0.58*** (0.14)	- 0.53*** (0.14)	- 0.50*** (0.15)	- 1.08*** (0.29)
$\Delta$ Strengthening	0.40** (0.16)	0.35** (0.16)	0.31* (0.17)	0.32* (0.17)
Performance $t_1$	0.13 (0.20)	0.20 (0.22)	0.01 (0.24)	- 0.00 (0.24)
Identity $t_1$	- 0.22 (0.16)	- 0.05 (0.17)	- 0.07 (0.18)	- 0.03 (0.18)
Utilitarianism $t_1$	1.10*** (0.19)	0.95*** (0.21)	0.85*** (0.22)	0.91*** (0.22)
Negative affect $t_1$	- 0.59*** (0.14)	- 0.58*** (0.14)	- 0.50*** (0.15)	- 0.49*** (0.15)
Strengthening $t_1$	0.28* (0.15)	0.17 (0.16)	0.17 (0.16)	0.15 (0.16)
Mediaexp		- 0.01 (0.15)	- 0.08 (0.15)	- 0.12 (0.15)
Refinterest		- 0.23** (0.09)	- 0.23** (0.09)	- 0.24*** (0.09)
Woman		- 0.36 (0.27)	- 0.42 (0.27)	- 0.38 (0.28)
Age		0.02*** (0.01)	0.02** (0.01)	0.02*** (0.01)
Low education		- 0.34 (0.43)	- 0.26 (0.44)	- 0.37 (0.45)
High education		0.63** (0.29)	0.62** (0.29)	0.63** (0.30)
Economy			0.37** (0.18)	0.38** (0.18)
Satisfaction			0.25 (0.18)	0.20 (0.18)
$\Delta$ Negative affect*mediaexp				0.34* (0.14)
Constant	- 0.82*** (0.27)	- 0.02 (0.51)	0.20 (0.53)	0.28 (0.54)
$N$	495	494	494	494
pseudo $R^2$	0.385	0.416	0.430	0.439

Standard errors in parentheses. The significance level of the interaction term was Bonferroni corrected for five parallel interactions tested

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$





**Fig. 2** Marginal effect of change in negative affect on probability of referendum vote (in favor of Association Treaty) conditional on level of media exposure. The dotted lines represent the 95% confidence interval after Bonferroni correction for five tested interactions

in the pre-wave, as the baseline of a given attitude. In model 2, we additionally add media exposure, referendum interest, and sociodemographic controls, and in model 3, also economic evaluations and government satisfaction. From our previous analysis regarding change in EU attitudes during the campaign (Table 1), we might expect effects particularly from negative affect, strengthening, and maybe also identity, but not from performance and utilitarianism, given the latter's comparatively stable patterns. Indeed, Table 4 does not display any effect on the referendum vote by changes in performance and utilitarianism. Neither do we find an influence of changes in identity attitudes despite the surprisingly unstable pattern of this dimension. For the remaining two variables, we find the expected influence, with both changes in negative affect and strengthening having an impact on the final vote, albeit the effects of change in strengthening attitudes are at a lower level of statistical significance. Both effects are also in line with our expectation that positive attitude changes lead to a Yes-vote and negative changes to a No-vote. H2 is thus supported for two attitude dimensions, but the general mechanism is not as straightforward as we expected as



changing attitudes do not per se influence the referendum vote, but attitude changes are a precondition for a potential influence on the vote.

The effects of our campaign measures introduced in model 2 show mixed influence. Respondents' interest in the referendum has a significantly negative effect, which means that people who were highly interested in the actual topic of the referendum had a significantly higher likelihood to reject the proposal. The exposure to media during the campaign shows no direct effect. However, as we theorized in our third hypothesis, media exposure may reinforce the effect of a change in attitudes and thus may be still relevant in terms of interaction effects. We tested such effects with five interaction models, one of them displayed in model 4. This model is the only one with a significant interaction term, namely between change in negative affect and media exposure. For a more facile interpretation, Figure 2 plots the marginal effect of the change in negative affect conditional on the respondents' level of media exposure. The plot shows the effect of a one unit increase in the change variable of negative affect, i.e., becoming more negatively affected, on the probability to vote for the association agreement (y-axis) as a function of the level of media exposure (x-axis).

The graph confirms the interaction effect between change in negative affect and media exposure. The marginal effect rises significantly from low levels of media exposure to higher levels. For respondents without any media exposure, the effect of getting more negatively affected, leads to a significantly lower probability to vote "for" the referendum of around 12 percent. This negative effect becomes weaker the more exposed people are to media, and loses its significance at a level of media exposure of around 2 days per week. For all those being exposed to media for more than 2 days per week, a change in negative affect has no effect on the referendum decision. Although we could thus illustrate a significant interaction between change in EU attitudes and media exposure, albeit only for one of the five dimensions, the found effect runs against our third hypothesis. Increasing media exposure does not augment the negative effect, but rather weakens the effect resulting in a nonsignificant effect of change in negative affect. We will revert back to this in the conclusion.

Finally, as a robustness check, we tested the same models for respondents without a (certain) voting decision before or early in the referendum campaign and respondents who switched during the campaign. Potentially, the so far found effects may be even stronger for this specific subgroup. The results in Table 8 in the appendix are largely similar to the models including the whole sample. In terms of attitude change, negative affect still stands out with a highly significant negative effect. Changes in strengthening are slightly weaker and show statistically significant effects only in the first model without control variables (to a lesser extent also in the second model). The interaction term in model (4) shows the same pattern, but loses its significance. We could thus not find more pronounced effects by focusing on the subsample of undecided voters and switchers, which could be also due to the (even) smaller number of respondents in these models, but we could confirm the main findings from our previous full models.



## Conclusion

This paper set out to investigate important antecedents of EU referendum voting. We first demonstrated the importance of EU attitudes for EU referendum voting, relative to other antecedents. We next showed how different dimensions of EU attitudes are related to a EU referendum. Instead of looking only at the (stable) levels of these attitudes, we argued that referendums in general and EU referendums in particular are prone to cause changes in EU attitude dimensions. These changes, in turn, are likely to influence the final vote. To test our expectations, we used original seven-wave panel data with a focus on the pre- and post-waves for the Dutch Ukraine-EU Association Treaty referendum.

Our results demonstrate that distinguishing different dimensions of EU attitudes is important, both conceptually and empirically. We expected that especially changes in utilitarian considerations, strengthening, and negative affect toward the EU would help explain the No-vote. A certain level of change in attitudes thus served as a precondition. In line with our expectations were the changes in negative affect and strengthening over the course of the campaign and their subsequent effects to explain the No-vote. Contrary to our expectations were the relatively stable utilitarian attitudes, which thus did not matter for the vote. In contrast, we found strong changes in the identity dimension. One reason could be our more inclusive measurement, i.e., our items measuring feelings of being proud or appreciation, and the meaning of the EU may vary more on a short-term basis than one's overall identification as European. In general, whether identity is the often proclaimed stable concept is still an unsettled issue in the literature. Our results are in line with studies such as the one by Bruter (2003), who found that positive/negative news about European integration significantly change respondents' level of European identity. For the subsequent referendum decision under study here, however, the found identity changes did not matter.

Our findings that—among the EU attitudes—especially changes in strengthening and negative affect toward the EU explained the No-vote corroborates both the topic of the referendum and interpretations of the campaign. The Association Treaty may look like a first step to future membership of the Ukraine, so that strengthening attitudes mattered for the respondents. The affective dimension most likely picked up on a more broadly discussed trend of 'angry' and disenfranchised citizens who also feel emotionally detached from the EU (Wagner 2014). These citizens in part used the referendum to voice their more general refusal of the EU. Interestingly, for the affective dimension we did not only find an effect of the change variable, but also of the absolute attitude level. Hence, whereas for some respondents the campaign first caused a more positive/negative attitude that affected the vote, for others the preexisting level of negative affect was only activated and resulted in a certain vote. A similar finding applies to the utilitarian dimension for which we though did not find the assumed effect of changing attitudes, but strong effects on the voting



decision by the existing attitude levels. This matches the discussion of the Association Treaty as a Trade Agreement and lends support to the importance of the utilitarian component. The detailed examination of why some dimensions matter as changing and others as stable attitudes is an interesting endeavor for future research.

As a final step, we examined whether effects from changing EU attitudes are conditioned by one important aspect of the campaign, namely media exposure. Overall, we could not confirm the expected augmenting effect by a higher media exposure. On the contrary, we found a single significant effect in the opposite direction as a changing negative affect is particularly strong for respondents being not or only modestly exposed to news. This effect wears off for those who are exposed more frequently. One explanation could be that the more informed a person is about the actual referendum, the less important are more general emotional aspects toward the EU and the more important are referendum-specific considerations for the final vote. As has been shown elsewhere, a sizeable group of citizens, also in the Netherlands, only consume news at rather low levels of intensity (Bos et al. 2016). These citizens were the most likely to enter the spiral of low news consumption that in combination with an increasing negative affect resulted in a higher likelihood of No voting.

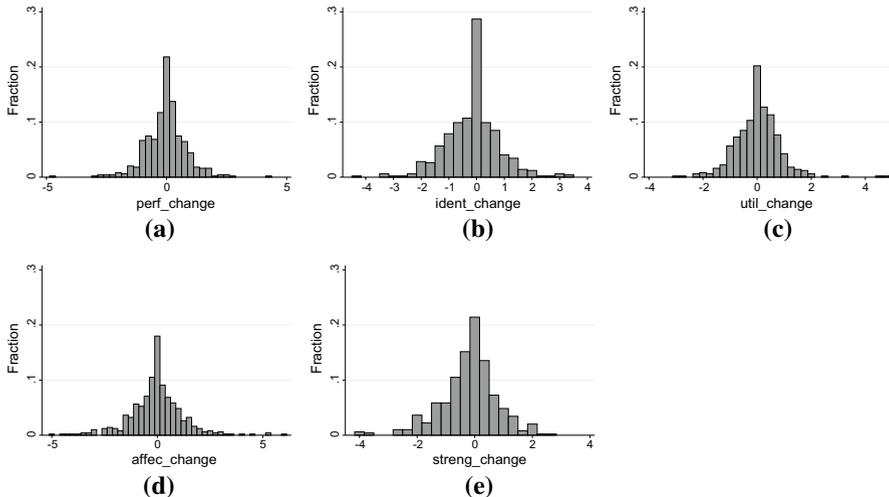
The findings offer interesting anchor points for understanding campaigns and EU referendum voting. On the one hand, we recommend considering different EU attitudes and their changes over time as these may matter differently in different referendums. On the other hand, the EU and campaigns trying to 'inform' themselves to a better debate and a Yes outcome are challenged, because higher levels of exposure, which might lead to interest and knowledge, are no longer uniformly linked to positive attitudes of pro-EU voting. Our study rather adds additional evidence to the mounting claim that No-votes (and negative EU attitudes) are not just results of low interest or political sophistication. There is a group of voters who are interested and knowledgeable, but do not like what they see. This seems to be somewhat of a Catch 22 situation that should prompt pro-EU camps to plan their campaigns early and speak to both a rational and an emotional citizen.

Our study is not without shortcomings. Inherent to studies that examine campaign effects based on post-election survey data, we cannot completely exclude that processes of cognitive dissonance resolution or winner effects influenced reported attitudes in the post-referendum wave, as the referendum outcome was already known by then. However, we tried to reduce this potential problem by an immediate start of the survey wave after the referendum took place and a comparatively short overall field period. Furthermore, the sample, being part of a longer and ongoing data collection effort spanning back from 2013, may not be optimal. However, we still have a good reflection of the Dutch adult population (the vote distribution in the sample was exactly that of the official referendum outcome). Moreover, we



realize that the advantage of a large, longitudinal design with a detailed, repeated measurement of key concepts, in this case come at the expense of the case limitation to one referendum in one country. We are still confident that our results apply also outside the specific case under consideration. First, the Netherlands represent a rather average EU country with at least some experience with EU referendums in the past. Second, the partly very specific referendum content was often portrayed in simpler terms, namely as a free trade agreement, which is understandable for a wider audience. In addition and typical for EU referendums, some (national) parties (mis)use these referendums as a stage to rally against the EU as a whole, so that especially the more emotional effects should be generalizable to other EU referendum contexts. For future, hopefully comparative research, we believe that our study provided sufficient insights to build from since our findings dovetail well with developments in the scholarly literature. Both EU attitudes and the campaign must be considered in depth when we want to understand voting in EU referendums.

## Appendix



**Fig. 3** Individual changes in EU attitudes during referendum campaign. **a** Performance, **b** Identity, **c** Utilitarianism, **d** Negative affect and **e** Strengthening



**Table 5** Pattern matrix and component labels for the 18 EU attitude items

Factors						
		Negative affect	Utilitarianism	Performance	Identity	Strengthening
I am angry about the EU		0.82				
I feel threatened by the EU		0.88				
I am disgusted with the EU		0.73				
I am afraid of the EU		0.87				
Dutch membership of the EU is a good thing			0.81			
NL has benefited from being a member of the EU			0.76			
The EU fosters peace and stability			0.89			
The EU fosters the preservation of the environment			0.61			
The EU functions well as it is				0.75		
The EU functions according to democratic principles			0.42	0.44		
The decision-making process in the EU is transparent				0.71		
I am satisfied with the way democracy works in the EU				0.85		
I am proud to be a European citizen					0.70	
Being a citizen of the EU means a lot to me					0.90	
The European flag means a lot to me					0.69	
The EU should become one country						0.88
I am in favour of efforts to unite Europe						0.63
Desired speed of European integration						0.29
Initial eigenvalue		8.29	2.24	1.07	0.99	0.83
Percent explained variance		46.04	12.43	5.96	5.50	4.60
Rotation sums of squared loadings		5.02	6.67	5.88	5.50	4.51
Scale reliability Cronbach's alpha		0.89	0.87	0.88	0.87	0.72

Principal Axis Factoring with promax rotation (Kaiser normalization) in pre-referendum wave. Rotation converged in five iterations. Factor loadings below .29 were omitted from the table.

Question wording for all 18 items was "How much do you agree with the following statements?" and 7-point answer scales ranged from 1 (completely disagree) to 7 (completely agree) without labeling the intermediate categories



**Table 6** Operationalization of other independent variables

Variable	Operationalization
Mediaexp	<p>Media exposure/consumption</p> <p>7-point scale consisting of 6 variables from pre-referendum wave</p> <p>How many days per week do you watch/read/check:</p> <p>(1) RTL Nieuws</p> <p>(2) NOS Journaal</p> <p>(3) NRC Handelsblad</p> <p>(4) De Volkskrant</p> <p>(5) De Telegraaf</p> <p>(6) nu.nl</p> <p><i>Answer scale: 0–7 days per week</i></p>
Refinterest	<p>Interest in the referendum</p> <p>6-point scale measuring interest</p> <p><i>Answer scale: 0 (not at all interested) 1 2 3 4 5 6 (very interested)</i></p>
Economy	<p>Economic evaluations</p> <p>7-point scale consisting of 2 variables measuring future economic evaluation</p> <p>(1) Economic situation of the Netherlands</p> <p>(2) Economic situation of the EU</p> <p><i>Answer scales: – 3 (much worse) – 2 – 1 0 1 2 3 (much better)</i></p> <p><i>Cronbach's Alpha: 0.84</i></p>
Satisfaction	<p>Satisfaction with national government</p> <p>7-point scale consisting of 5 variables measuring satisfaction with government</p> <p>(1) Government is doing a good job</p> <p>(2) Government's handling of economy</p> <p>(3) Government's handling of environment</p> <p>(4) Government's handling of immigration</p> <p>(5) Government's handling of Europe</p> <p><i>Answer scales: 1 (completely disagree) 2 3 4 5 6 7 (completely agree)</i></p> <p><i>Cronbach's Alpha: 0.90</i></p>
Switcher/ undecided	<p>Vote switchers and undecided/uncertain voters</p> <p>Switchers/undecided (dummy) identified if any of the following applies:</p> <p>(1) switch between vote intention and actual vote</p> <p>(2) "don't know" as answer in vote intention before referendum</p> <p>(3) "blank" as answer in vote intention before referendum</p> <p>(4) not completely certain of vote intention before referendum (1–6 on 7 point scale)</p>



**Table 7** Effect of EU attitudes on referendum vote intention (1 = Yes)

	(1)	(2)	(3)
Performance $t_1$	0.27* (0.16)	0.30* (0.17)	0.18 (0.17)
Identity $t_1$	0.02 (0.15)	0.05 (0.15)	0.03 (0.16)
Utilitarianism $t_1$	0.68*** (0.16)	0.60*** (0.17)	0.57*** (0.17)
Negative affect $t_1$	- 0.54*** (0.12)	- 0.53*** (0.12)	- 0.45*** (0.12)
Strengthening $t_1$	0.13 (0.13)	0.10 (0.13)	0.11 (0.13)
Woman		0.01 (0.27)	0.01 (0.28)
Age		0.01 (0.01)	0.01 (0.01)
Low education		0.39 (0.41)	0.35 (0.43)
High education		0.66** (0.29)	0.67** (0.30)
Economy			0.02 (0.16)
Satisfaction			0.38** (0.16)
Constant	- 0.52** (0.25)	- 0.84*** (0.32)	- 0.71** (0.33)
$N$	431	431	431
Pseudo $R^2$	0.367	0.378	0.392

Note: Standard errors in parentheses

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$



**Table 8** Complete model(s) controlling for base level of attitudes (switchers/undecided only)

	(1)	(2)	(3)	(4)
$\Delta$ Performance	0.05 (0.23)	0.11 (0.26)	- 0.08 (0.28)	- 0.08 (0.28)
$\Delta$ Identity	0.00 (0.18)	0.04 (0.20)	0.06 (0.20)	0.05 (0.20)
$\Delta$ Utilitarianism	0.12 (0.20)	0.07 (0.22)	- 0.03 (0.23)	- 0.04 (0.23)
$\Delta$ Negative affect	- 0.59*** (0.15)	- 0.56*** (0.16)	- 0.52*** (0.17)	- 0.97*** (0.32)
$\Delta$ Strengthening	0.37** (0.18)	0.31* (0.19)	0.28 (0.19)	0.29 (0.19)
Performance $t_1$	0.09 (0.22)	0.15 (0.24)	- 0.11 (0.27)	- 0.10 (0.27)
Identity $t_1$	- 0.32* (0.18)	- 0.11 (0.19)	- 0.13 (0.19)	- 0.11 (0.19)
Utilitarianism $t_1$	1.09*** (0.22)	0.90*** (0.24)	0.82*** (0.25)	0.85*** (0.25)
Negative affection $t_1$	- 0.47*** (0.15)	- 0.44*** (0.15)	- 0.34** (0.16)	- 0.34** (0.16)
Strengthening $t_1$	0.19 (0.17)	0.04 (0.18)	0.05 (0.18)	0.04 (0.18)
Mediaexp		- 0.18 (0.18)	- 0.26 (0.18)	- 0.27 (0.18)
Refinterest		- 0.20** (0.10)	- 0.21** (0.10)	- 0.21** (0.10)
Woman		- 0.49* (0.30)	- 0.56* (0.30)	- 0.57* (0.30)
Age		0.03*** (0.01)	0.03*** (0.01)	0.03*** (0.01)
Low education		- 0.72 (0.49)	- 0.64 (0.51)	- 0.72 (0.51)
High education		0.83*** (0.32)	0.80** (0.33)	0.79** (0.33)
Economy			0.38* (0.20)	0.36* (0.20)
Satisfaction			0.37* (0.21)	0.34 (0.21)
$\Delta$ Negative affect * mediaexp				0.29 (0.17)
Constant	- 0.89*** (0.29)	0.15 (0.56)	0.43 (0.59)	0.50 (0.60)
$N$	339	338	338	338
Pseudo $R^2$	0.272	0.326	0.346	0.353

Standard errors in parentheses

\* $p < 0.10$ , \*\* $p < 0.05$ , \*\*\* $p < 0.01$ 

## References

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