

# Trading Arguments: Opinion Updating in the Context of International Trade Agreements

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Public opinion can often become a key challenge to international cooperation efforts. In their attempt to garner support for their position, stakeholders fight for the hearts and minds of the public based on arguments about the consequences of different policy options. But to what extent do individuals' preferences change when exposed to such information? And how does this depend on the information being congruent or contradictory to pre-existing preferences? We address these questions in the context of the negotiations on the potentially largest regional trade agreement in history: the Transatlantic Trade and Investment Partnership (TTIP). Based on a two-waves-panel-survey-experiment fielded in Germany and the United States, we examine how individuals' prior opinion influences the way they process new information. We argue that individuals' existing priors about how they generally think about economic openness interact with new information to inform their opinion about the specific policy proposal at hand. Our experimental results show that while prior opinion constrains opinion updating to some degree, overall, citizens update their existing beliefs in line with new information. This updating process can even result in respondents changing their opinion, although only in one direction: namely to turn from a TTIP supporter to a TTIP opponent.

## Aim of Research Note

In recent years, numerous international cooperation efforts were not only subject to fierce criticism but have been completely challenged by the general public in different countries, as illustrated by the Brexit referendum or protests against the Trans-Pacific Partnership in the United States and against the Transatlantic Trade and Investment Partnership (TTIP) in various European countries. Confronted with massive public backlash against these cooperation efforts, policymakers and other stakeholders—including NGOs, labor unions and business groups—have launched extensive public information campaigns to convince voters of their respective causes. In doing so, these actors offer differing arguments on what the economic, political, social, or other consequences of particular policy choices are likely to be.<sup>1</sup> As the current state of affairs of some of these examples show, certain arguments seem to fall on more fertile ground

than others, rendering it crucial to understand how individuals react to different types of argumentation.

In this research note, we evaluate how individuals perceive different types of argumentation in the realm of trade policy—one of the subfields of international cooperation that was confronted with a lot of public backlash in recent years. Specifically, we shed light on processes of opinion updating in response to new information, contingent on prior opinions and the type of information citizens encounter. The empirical focus is on the TTIP agreement. The outcome of the negotiations to the TTIP is a good example of the influence of public opinion on trade policy. Examining the drivers of the public opposition in Germany, where the protest movement against TTIP was most intense, Chan and Crawford note: “This movement enabled the public to successfully exercise influence on German foreign economic policy-making, which had long been protected from public pressure. As a result (...), German leaders changed their position in TTIP negotiations.” (2017, 683).

Our research is based on a survey experiment conducted in two waves in Germany and the United States, the two largest countries in the TTIP negotiations.<sup>2</sup> As part of our experimental manipulation, we randomly assigned respondents to information treatments highlighting either positive or negative potential consequences with respect to three different facets of the TTIP agreement: economic growth, standard harmonization, and investor-state dispute settlement (ISDS).

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<sup>1</sup>See, e.g., [Dir and Mateo \(2016\)](#) on how NGOs, labor and business form and lobby for their interests in the trade policy realm.

<sup>2</sup>While the negotiations are currently on hold and the US is threatening further tariffs on EU goods, especially on cars, discussions are underway to potentially revitalize the TTIP talks ([Bravo, Leonard, and Donnan 2018](#)).

Overall, we find that individuals adjust their prior opinions about TTIP in accordance with the information treatments. However, the extremity of respondents' existing opinions, i.e., how much they are in favor or against TTIP, and the type of information they are exposed to have a significant effect on the degree to which they update their opinions. In other words, our results indicate that individuals who hold more pronounced prior opinions about TTIP are less likely to update their opinion in response to new information. Furthermore, individuals react less strongly to congruent information, suggesting a decreasing marginal effect of information: a person who already has a strong positive (negative) view about TTIP cannot be convinced to adopt a much more positive (negative) opinion in light of a positive (negative) framing. However, despite respondents updating their opinion in general after reading information about TTIP, negative information emphasizing potential losses elicits much stronger reactions than positive information. This strong negativity bias can even result in complete opinion change as someone holding a slightly positive prior opinion can be induced to express a slightly negative opinion after reading about negative consequences of TTIP. Finally, the level of comprehensiveness of new information does not seem to have an effect on persuading respondents to update their prior opinion.

The research reported here contributes to two strands of literature. First, we broaden the focus of existing studies on individual trade preferences.<sup>3</sup> Most of this literature aims to explain citizens' trade policy preferences in general. We examine whether individuals update these general policy preferences, as reflected in their prior opinion, in light of new information. Second, given this emphasis on new information, our research also speaks to the (re-)emerging literature on biased information updating, or "motivated reasoning." While a number of studies find that new information reinforces individuals' prior beliefs (e.g., [Kahan 2012](#); [Nyhan and Reifler 2015a, b](#)), especially when individuals oppose a certain policy, the results from our panel survey-embedded experiments in Germany and the United States show that respondents adjust their prior opinion in light of new information. Even for respondents receiving incongruent information, our empirical evidence does not support the existence of a polarization or backfire effect.

### Problem Formation

While the research question we pursue is quite fundamental to all areas of politics and public policy-making, i.e., whether and how citizens update their opinion on policy issues, we believe it is most fruitful to address it in a specific policy context. This is why we focus on the TTIP agreement, a major episode in contemporary international trade policy. Deadlock in the World Trade Organization's Doha round and the Great Recession starting in 2008 motivated the United States and the European Union to initiate negotiations in summer 2013 on a new preferential trade agreement. If ratified, TTIP would liberalize trade in a combined market of 800 million consumers. Besides its economic importance, TTIP has widely been seen as a blueprint for a "new generation" of trade agreements; notably because it not only deals with trade liberalization in the traditional sense (such as reducing tariffs and quotas), but also with a broad range of trade-related policy subjects, such as environmental, health, and safety standards, and ISDS ([Elvire 2014](#)).

The agreement itself as well as its consequences, however, have been strongly disputed. Some groups have claimed that TTIP would provide a major impetus for the economy, increase consumer safety, and enhance environmental protection. Others have been convinced that TTIP would cause the exact opposite. Accordingly, during the TTIP negotiations, policymakers and other stakeholders—including NGOs, labor unions, and business groups—launched extensive public information campaigns to convince voters of their respective claims. Confronted with these differing views and arguments about the advantages and disadvantages of TTIP, respectively, how do citizens react to this information? Specifically, for those with a prior opinion about the trade agreement, once formed, do they update their opinion when confronted with new information or rather harden their prior opinion instead?

In the following, we provide a theoretical framework on information updating in the context of international trade policy. We regard opinion updating as constituting an observable change in a person's opinion according to new information. Depending on whether a person is a TTIP supporter or a TTIP opponent, we expect to observe several cases of opinion updating in response to new information. First, an individual's prior opinion may be reinforced in reaction to new information that corresponds to her prior opinion. Second, an individual may change her opinion in accordance with new information that challenges her prior opinion. For instance, a TTIP supporter may express less support for the TTIP agreement upon receiving anti-TTIP information. Third, opinion updating may also occur in situations in which an individual who was neither for nor against TTIP adopts the opinion suggested by the new information. [Table 1](#) summarizes the possible scenarios of opinion updating in our context.<sup>4</sup> We argue that the extent to which an individual updates her existing opinion depends on the extremity of the person's prior opinion, how strongly she opposes or supports the TTIP agreement, and the nature and type of the new information.

#### *Extremity of Prior Opinion*

Existing research shows that individuals with strong prior opinion on the issue at hand, i.e., more extreme prior opinions, are less likely to change their opinion when exposed to new information ([Taber and Lodge 2006](#); [Nyhan and Reifler 2015a, b](#)). As a consequence, they will often disregard or misconceive of diverging arguments ([Johnson and Eagly 1989](#)). Other studies assert that the strength of an individual's prior opinion also increases the likelihood of backfire or polarization effects. Strongly opinionated individuals may thus become even more extreme in their attitudes when reading contrary arguments because of the high cost of holding inconsistent views ([Festinger 1962](#); [Lord, Ross, and Lepper 1979](#)). For instance, based on results from two experiments, [Taber and Lodge \(2006\)](#) show that when respondents are presented with an equivalent set of arguments for and against positive discrimination and gun control, those who care most strongly about the subject even strengthen their opinions in a way not justified by the presented facts.

However, the extremity of a person's prior opinion may affect the likelihood of opinion updating also in a second

<sup>3</sup>For an overview of this literature, see [Nguyen and Spilker \(2019\)](#).

<sup>4</sup>Note that the table only documents potential scenarios of opinion updating as defined in this study. Accordingly, the table does not document any instances of backfire effects, i.e., when new information leads to a stronger manifestation of a person's prior opinion in a way not warranted by the new information.

Table 1. Scenarios of Opinion Updating

Respondents' prior opinion	Information frame	Expected posterior opinion
Pro TTIP (+)	Pro TTIP (+)	Pro TTIP (++)
Anti TTIP (-)	Anti TTIP (-)	Anti TTIP (--)
Pro TTIP (+)	Anti TTIP (-)	Anti TTIP (-)
Anti TTIP (-)	Pro TTIP (+)	Pro TTIP (+)
Neutral (+/-)	Pro TTIP (+)	Pro TTIP (+)
Neutral (+/-)	Anti TTIP (+)	Anti TTIP (-)

Random assignment to:

way. In particular, we expect a decreasing marginal effect of information if this information is consistent with an individual's prior opinion. This means that someone who is already strongly in favor of TTIP should not become much *more* positive when reading about positive consequences of TTIP, simply because she is already very positive about the agreement. Similarly, new information emphasizing negative implications of TTIP is unlikely to make a strong TTIP opponent view TTIP in an even *more* negative light. Hence, we expect that *the more extreme a person's prior opinion, the smaller the likelihood of opinion updating—Hypothesis 1.*

#### Information Type

A substantial amount of research suggests that opinion updating also depends on the type of information. We focus on two information characteristics and their impact on opinion updating: negative versus positive information and the degree of detail inherent in the information.

First, numerous studies show that people assign greater importance to negative information than to equivalent positive information (Campbell et al. 1960; Nannestad and Paldam 1997; Fridkin and Kenney 2004; Soroka 2006). Cobb and Kuklinski (1997), for example, confronted respondents with arguments about several policy issues. When showing respondents either a pro argument or a contra argument for the respective policy, they find that “con arguments win the day” (Cobb and Kuklinski 1997, 115). Similarly, Kahneman and Tversky (1979) observe that individuals exhibit loss aversion when making decisions in various areas of their lives. Individuals' decisions tend to be guided more strongly by the desire to avoid potential losses than making potential gains. Thus, they have the tendency to pay greater attention to negative information, especially information that emphasizes the possibility of losing something.

Nonetheless, some studies also show that negative information does not always have a greater impact on opinion formation (Miller and Fagley 1991, Takemura 1994). Specifically, Takemura (1994) argues that the negativity bias in information processing is unlikely to hold when individuals consciously evaluate available considerations.

When confronted with highly complex issues, such as the TTIP agreement, citizens are, however, unlikely to immerse themselves in elaborate conscious evaluations of the relevant issues and arguments. Rather, they are likely to act as passive receivers of contrasting arguments presented in mass media and by interest groups. In such an informational environment, we expect the negativity bias in information processing to prevail. Thus we expect that *individuals are more likely to update their prior opinion in response to negative information emphasizing adverse consequences of TTIP than to positive arguments stressing the agreement's advantages—Hypothesis 2a.*

The degree of detail of the information may also influence the likelihood of opinion updating. In particular, Nyhan and Reifler (2015a) find that providing individuals with a causal explanation rather than simply trying to correct false information can lead people to change their opinion. Similarly, distinguishing between framing effects—the result of emphasizing salience on some aspects of a topic—and the provision of object-relevant information on people's likelihood to change their opinion, Leeper and Slothuus (2016) find that providing information shifts people's opinions far more and far more consistently than simply placing emphasis on a particular dimension of consideration. This suggests that moving citizens to reevaluate their prior opinions on an issue may require providing arguments and evidence in support of a position. In particular, when it comes to complex issues such as the proposed standard harmonization, citizens may be more willing to reevaluate their prior opinions when presented with an explanation of why this may be a good or a bad thing. Thus, we expect that *individuals are more likely to update their prior opinions in response to new information that includes a causal explanation—Hypothesis 2b.*

#### Data Collection

To test our hypotheses, we implemented an online survey experiment consisting of different informational frames, which presented respondents either with positive or negative information with regards to one of the three selected issue areas of the TTIP agreement—economic growth, standard harmonization, and ISDS. Our experimental design thus allows us to identify the causal effect of different arguments about TTIP, conditional on individuals' prior opinion.

While most survey experiments on policy preference formation and opinion updating are based on a survey at one point in time, we use a two-wave design. That is, we measured respondents' prior opinion on TTIP in the first wave and then implemented the experiment in the second survey wave. This approach allows us to mitigate common concerns about potential priming of respondents when we ask about prior trade beliefs and then administer the experimental intervention before measuring trade opinion again within the same survey. As a downside, however, this comes at the cost of not being able to observe the stability of the opinion update over time. Since our primary aim was to identify the mechanisms underlying the opinion updating process, we were more concerned about potential contamination of our treatments due to priming effects from the pre-treatment items asking respondents about their attitudes toward trade. Hence, we opted for a two-waves survey design, which allows us to separate the measurement of pre-treatment and post-treatment trade opinions.

**Table 2.** Overview of empirical design

Wave 1: outcome	Issue 1			Issue 2			Issue 3		
	Elapsed time between Wave 1 and Wave 2: 4 weeks								
Wave 2: treatment	Pos	No	Neg	Pos	No	Neg	Pos	No	Neg
Wave 2: outcome		Issue 1			Issue 2			Issue 3	

We implemented our online survey experiment in two waves between May and June 2016.<sup>5</sup> The samples are based on nationally representative web-based household panels provided by leading survey research companies in Germany and the United States.<sup>6</sup> Only panel members who were eligible to vote<sup>7</sup> at the time of the survey were allowed to participate. The samples were stratified by geographic region, education, gender, and age in accordance with the two countries' most recent census data. In Wave 1, we surveyed 1,800 respondents in each country. Of these respondents, 1,600 people also participated in Wave 2. The high participation rate in both survey waves should therefore alleviate concerns about attrition bias, a common worry in panel survey designs.

Germany and the United States were selected for their economic size and for their prominent role in the TTIP negotiation process. Furthermore, results from two earlier surveys conducted by the Pew Research Center in the United States and Germany reveal that while there is a similar level of support for the TTIP agreement in these countries, there is significant divergence over details. This includes the proposed standard harmonization and ISDS provisions (Pew Research Center 2015).

We selected the following three issue areas included in the TTIP agreement: (1) economic benefits, (2) standard harmonization, and (3) ISDS for various reasons. First, we wanted to ensure that the issue areas are relevant to respondents. The selection of these three issues was a result of an online pilot survey<sup>8</sup> in which we asked respondents to indicate the three issues discussed in the TTIP negotiations that were most important to them personally. Nevertheless, as shown below, there is still considerable variation in salience across the three issues and across the two countries. Second, Guisinger and Saunders (2017) show that individuals tend to update their opinion in response to new information in certain issue contexts, but not in others. Including multiple issues allows us to assess whether the proposed mechanisms are at work across different issue contexts.

#### Experimental Procedure

In Wave 1, respondents were randomly assigned to one of the three selected issue areas of the TTIP agreement. We assessed all participants' general attitudes towards international trade, towards the TTIP agreement in particular and their opinion with regard to their assigned issue area. Additionally, the survey asked respondents a standard set

of demographic items and questions concerning their economic beliefs. The same respondents also took part in Wave 2, which was administered one month after the first survey. In Wave 2, each respondent was assigned to the same issue area she was randomly assigned to in Wave 1. After a brief introduction, respondents were randomly assigned to one of the treatment conditions containing positive, negative or no additional information about potential impacts of TTIP with respect to the assigned issue area. In addition, we randomly assigned half of the participants from the negative and the positive condition to receive an additional justification.

To ensure that respondents understood the information treatments and engaged with the message in a meaningful way, we asked them to report the main finding from the information treatment as a comprehension check.<sup>9</sup> Respondents then submitted their opinion on their assigned issue area, the TTIP agreement and international trade in general as well as their willingness to participate in a collective online petition to voice their support for or opposition against TTIP to the country's political leadership. This setup allows us to compare respondents' opinion on TTIP after they read their respective treatment information to their responses submitted in Wave 1 in order to measure any potential opinion change. After each survey, respondents were debriefed. Table 2 summarizes our survey design.

Our two-waves survey setup allows us to determine how respondents process congruent or incongruent information and to assess how their prior opinion submitted in Wave 1 compares to their opinion reported in Wave 2 upon receiving the treatment stimuli. It is important to note that for all our analyses, except for the results displayed in Table A7 in the Appendix, we do not include those respondents who do not have a prior opinion on TTIP, i.e., those who answered "don't know" in Wave 1. The reason is simply that the concept of opinion update as conceived of in this paper requires an existing prior opinion to be updated.

#### Information Treatments

Our information treatments highlight potential effects of the TTIP agreement in each of the three issue areas. The treatment conditions mirror actual arguments by TTIP opponents and supporters and are adapted from a wide spectrum of actors, such as interest groups, research institutes, labor unions, and non-governmental organizations. This results in a high degree of realism of the experimental stimuli and increases external validity. In the positive-effect treatment condition, respondents learned about positive whereas in the negative-effect treatment condition respondents learned about negative consequences of TTIP in the specific issue area. Respondents assigned to the no-information group did not receive any additional

<sup>5</sup> Our survey experiment was reviewed and approved by the ETH Zurich's Ethics Committee. Respondents were also informed of the IRB approval in their consent form prior to taking the survey.

<sup>6</sup> YouGov in the US and Infratest Dimap in Germany.

<sup>7</sup> In the United States, this refers to individuals who are eligible to register to vote.

<sup>8</sup> In the United States, the pilot survey was administered via the crowdsourcing platform *Amazon Mechanical Turk* in September 2015. In Germany, we conducted the pilot survey using the online panel of Research Now in December 2015. We employed a sample size of 700 respondents in each country.

<sup>9</sup> Respondents who did not answer this question correctly were re-directed to the information treatment before they could continue with the survey. Since we did not find any systematic differences between respondents who answered the comprehension check correctly at first attempts and respondents who did not, we included all respondents in the analysis.

**Table 3.** Overview of experimental treatments

<i>Issue area</i>	<i>Positive</i>	<i>Negative</i>
(1) Economic rationale	<ul style="list-style-type: none"> <li>•Foster economic growth</li> <li>•Create new jobs</li> </ul>	<ul style="list-style-type: none"> <li>•Hamper economic growth</li> <li>•Lead to job losses</li> </ul>
(2) Standards	<ul style="list-style-type: none"> <li>•Harmonization of consumer protection (e.g., in food safety) at a high level</li> <li>•Harmonization of environmental protection at a high level</li> </ul>	<ul style="list-style-type: none"> <li>•Harmonization of consumer protection (e.g., in food safety) at a low level</li> <li>•Harmonization of environmental protection at a low level</li> </ul>
(3) ISDS	<ul style="list-style-type: none"> <li>•Improve legal protection of foreign investors</li> <li>•Increase the attractiveness of <i>Country</i> for foreign investment</li> </ul>	<ul style="list-style-type: none"> <li>•Undermine sovereignty of <i>Country's</i> government</li> <li>•Create a foundation for legal abuse by foreign investors</li> </ul>

information. We ensured that the information provided in both conditions (positive and negative) was equivalent and that the “complexity” of the information was about the same, i.e., the number of words and sentences was held constant. Table 3 provides an overview of our treatments and the Appendix lists the exact treatment wording (Table A1).

#### *Opinion Updating*

Our outcome variables consist of three opinion-based measures and one behavioral measure. The three opinion-focused variables measure respondents' evaluation of the overall impact of international trade, the TTIP agreement as well as the effect of the TTIP agreement with respect to the specific issue area. The responses were captured on a 7-point scale that ranges from very negative (1) to very positive (7).<sup>10</sup> For each issue area, we provided a short introduction that highlights the issue area's connection to the TTIP agreement and its controversy among the general public. Table A2 in the Appendix shows the item wordings for each issue area. These items were employed in identical form in both survey waves.

To capture respondents' level of support for TTIP in a behavioral manner, we asked them whether they would like their opinion to be part of a petition to either Chancellor Merkel in Germany or President Obama in the United States. For this petition, respondents could write something to support or oppose TTIP or write something for both petitions (pro and contra). We collected all of these opinions and sent a pro and a contra petition to the chancellor and president respectively after the survey had ended. In our analysis, we coded those voicing a clear pro statement with the value 1 for our pro TTIP behavioral measure and everyone else with 0. Those voicing a clear contra statement were coded with the value 1 for our contra TTIP behavioral measure and everyone else with 0. If we were in doubt as to whether a statement was meant to be positive or negative, we applied a more conservative approach by coding the variable as 0. This potentially biases our results towards a non-result and it is therefore possible that we underestimate behavioral support for/opposition against TTIP.

We use the responses to the items submitted in Wave 1 to identify whether the respondent supports, opposes or is neutral vis-à-vis the TTIP agreement. Respondents who selected one of the negative response categories (1, 2, or 3) were classified as opponents. Those indicating that TTIP will have positive effects on their country (5, 6, or 7) were counted as TTIP supporters. A respondent was classified as neutral if

<sup>10</sup>In our survey, we randomized whether the 1–7 response scale ranged from very negative to very positive or very positive to very negative.

she selected the middle response category (4). We provide a detailed discussion of the descriptive results pertaining to our outcome measures in the Appendix (pp. 4–6) and illustrate support/opposition to the TTIP agreement as well as the three sub-issues in Figure A1.<sup>11</sup>

#### **Results**

Figure 1 displays our experimental findings, differentiated by treatment type—i.e., positive versus negative information—and respondents' previously reported opinion when evaluating the three sub-issues addressed in the TTIP agreement. Specifically, it shows the differences in means between opinions reported in Wave 2 by respondents who received a positive or negative information treatment and opinions submitted by respondents who received no such treatment text, but expressed the same prior opinion in Wave 1.<sup>12</sup> We therefore assess whether providing someone with information leads to opinion updating when compared with someone who shares the same prior opinion on that issue, but who has not received such information.<sup>13</sup> Comparing respondents with the same prior beliefs accounts for the possibility that opinions may shift between the two survey waves.

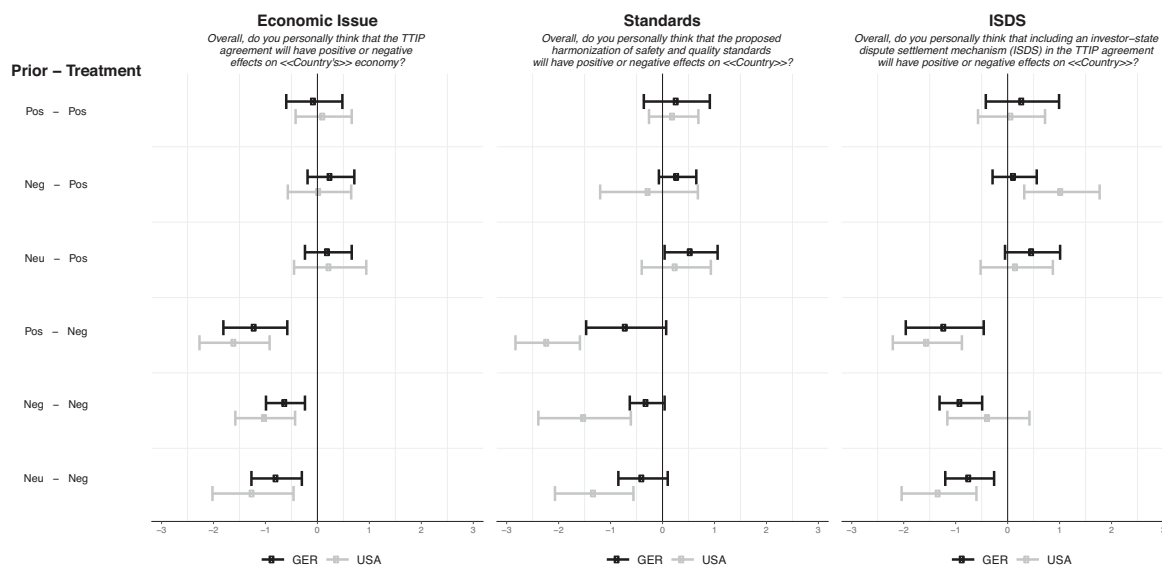
Overall, across the three issues, we do not observe instances of backfire effects, i.e., respondents adopting a more extreme opinion in response to an information treatment inconsistent with their prior attitude. While some studies find that providing individuals with information that is incongruent with their prior beliefs on a given issue can lead to so-called opinion polarization or so-called backfire effects (Lord, Ross, and Lepper 1979; Nyhan et al. 2014; Peter and Koch 2015; Nyhan and Reifler 2015a, b), we find that respondents update their opinion in accordance with the information provided in the treatment.

Although the results are very similar between the United States and Germany, we also observe some interesting differences. For example, in the US sample, respondents with a positive prior opinion about TTIP and people who reported to have neither a positive nor a negative prior opinion on TTIP reacted more strongly to the negative treatment

<sup>11</sup>Table A.12 provides a descriptive overview of the German and US samples along regular demographic variable.

<sup>12</sup>In addition to the differences in means as displayed in Figure 2a, Table A.9 in the Appendix lists the exact mean values for the different groups in Wave 2.

<sup>13</sup>In the Appendix, we also provide the within-subject changes per group. This implies that for all prior opinion and treatment group combinations, we display the opinion as stated in Wave 1 and then again in Wave 2. Furthermore, we provide the corresponding *t*-tests whether this opinion change is significantly different from zero. The corresponding results can be found in Table A.3 and Figure A.1.



**Figure 1.** Treatment effects using issue-specific questions.

*Notes:* Dots display mean difference in opinion stated in Wave 2 between respondents who received and those who did not receive the treatment but hold the same prior belief. Corresponding horizontal lines show 95 percent confidence intervals.

than their German counterparts. In both instances, the treatment effect in the US sample is almost double the size as in the German sample. In addition, US respondents who indicated a positive prior opinion on standard harmonization in Wave 1 and who received the negative information treatment in Wave 2 show a decrease from 5.7 to 3.3, on our 7-point scale. In contrast, US respondents who held the same positive prior opinion but did not receive such negative information still held a similar positive opinion in Wave 2 (5.5 on our 7-point scale). Hence, on average, the negative treatment led to a reduction of two points on our 7-point scale in this specific context. In contrast, in the German case, the difference between respondents who received negative information on standard harmonization and those who did not is much less pronounced: 4.09 for those who received the treatment and 4.79 for those who did not. The corresponding means for the respective treatment and control groups can be found in Table A9 in the Appendix.

To further illustrate the magnitude of our effect sizes, Table A11 in the Appendix lists the difference in means if we combine all sub-issues and dichotomize our dependent variable. In particular, we coded all respondents who indicated a positive opinion after having read the treatment information as 1, all respondents who indicated a negative opinion after having read the treatment information as 0. All respondents who indicated a neutral opinion after having read the treatment information were dropped from this analysis. The results for this dichotomized dependent variable indicates, for instance, that providing respondents with a prior positive opinion on TTIP with negative information results in a decrease of 42 percentage points in support in the German sample and a staggering 55 percentage points drop in the US sample. Hence, as already discussed in the paragraph above, the effect size for our negative information treatments are indeed substantial.

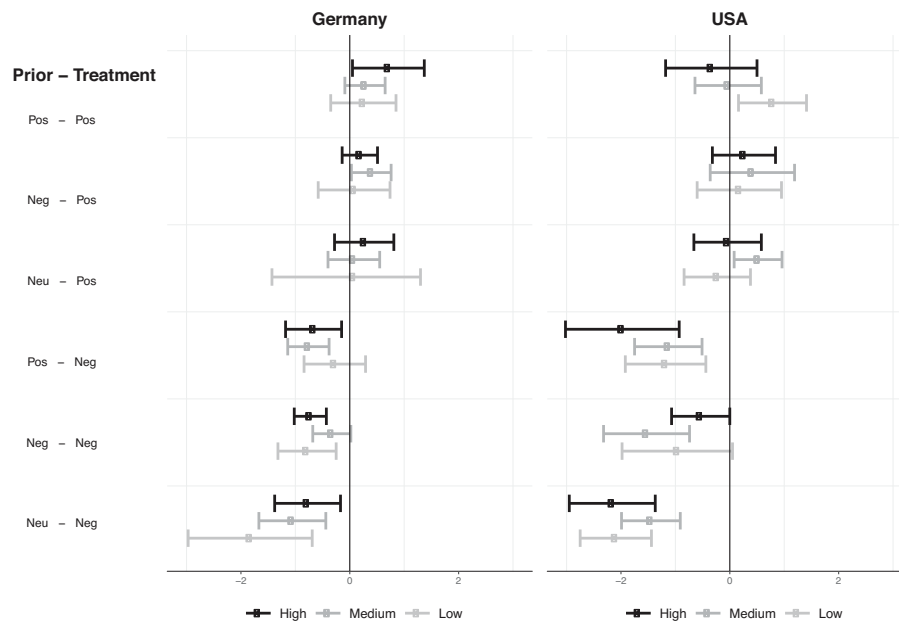
Part of our rationale for selecting three issue areas was to study the possibility that citizens respond more to information frames on certain issue areas than others (Guisinger

and Saunders 2017). In particular, we expected respondents to be more likely to update their prior opinion on issues that were less in the focus of public debate, i.e., less salient, such as the economic impact of TTIP. However, despite potential differences in the level of salience across the three issue areas, we find that treatment effects—with a few exceptions<sup>14</sup>—are very similar across the three issue areas. This suggests that our results are not idiosyncratic to a particular issue area.

To assess how the extremity of a person’s prior opinion affects her likelihood to engage in opinion updating (*Hypothesis 1*), we compare respondents who had neither a positive nor negative opinion on TTIP prior to their assignment to an information treatment with respondents who reported a strong prior attitude—negative or positive—toward TTIP. At a minimum, if extremity of one’s prior opinion was to reduce the likelihood of opinion updating, we should observe neutral respondents without a prior attitude to update most, compared to respondents who have a strong prior opinion. However, Figure 1 indicates that people with neutral prior opinion are not significantly more likely to update their opinion in response to new information than people who had a strong prior opinion on TTIP. To the contrary, we find that respondents with a strong positive prior opinion toward TTIP reported a more negative opinion on TTIP in response to the negative information frame than neutral respondents.

To further probe *Hypothesis 1*, we examine the impact of the treatment effects across respondents with different levels of prior interest in TTIP, which we asked respondents to report in Wave 1 on a 1–7 points scale. According to *Hypothesis 1*, we expect that respondents who care more

<sup>14</sup>For example, we find that reading about the positive impact of TTIP with respect to the agreement’s economic effects and in the area of standards harmonization did not significantly increase respondents’ support for TTIP with regards to the specific issue areas. However, in the US, respondents who received information about positive implications about TTIP’s ISDS system, evaluated the impact of ISDS significantly more positively than respondents who did not receive the positive information frame.



**Figure 2.** Treatment effects using issue-specific questions by level of interest.

*Notes:* Dots display mean difference in opinion stated in Wave 2 between respondents who received and those who did not receive the treatment but hold the same prior belief. Corresponding horizontal lines show 95 percent confidence intervals. We asked respondents on a 1 (None) to 5 (A great deal) points scale: “How much do you care about the policies of the German/US government with respect to the TTIP agreement?” Respondents who selected categories 1 and 2 are coded as displaying low interest, respondents who selected category 3 are coded as having medium interest. High-interest respondents are those who selected categories 4 and 5.

strongly about TTIP are less likely to update their opinion. However, the results in Figure 2 show that there are no statistically significant differences across respondents with different levels of prior interest in TTIP.

At the same time, the results displayed in Figure 1 point to a decreasing marginal effect of information, with respondents receiving congruent information reacting least to this type of information. In other words, confronting a person who is already in favor of (against) TTIP with more positive (negative) news, has the weakest impact on opinion updating. Thus, taken together, we find partial empirical evidence in support of *Hypothesis 1*.

Figure 1 also shows clear differences between the type of information and the likelihood in inducing opinion updating. While the positive information treatment rarely engenders a significant change in respondents' opinion, the negative information frame almost consistently leads respondents to adjust their prior opinion. This negativity bias is striking as reading about negative consequences of the TTIP agreement can even turn someone with a positive prior opinion to adopt a negative opinion in Wave 2, i.e., strong opinion change. This is illustrated in Table A3 and Figure A2 in the Appendix. Overall, the empirical findings thus lend support to *Hypothesis 2a*.

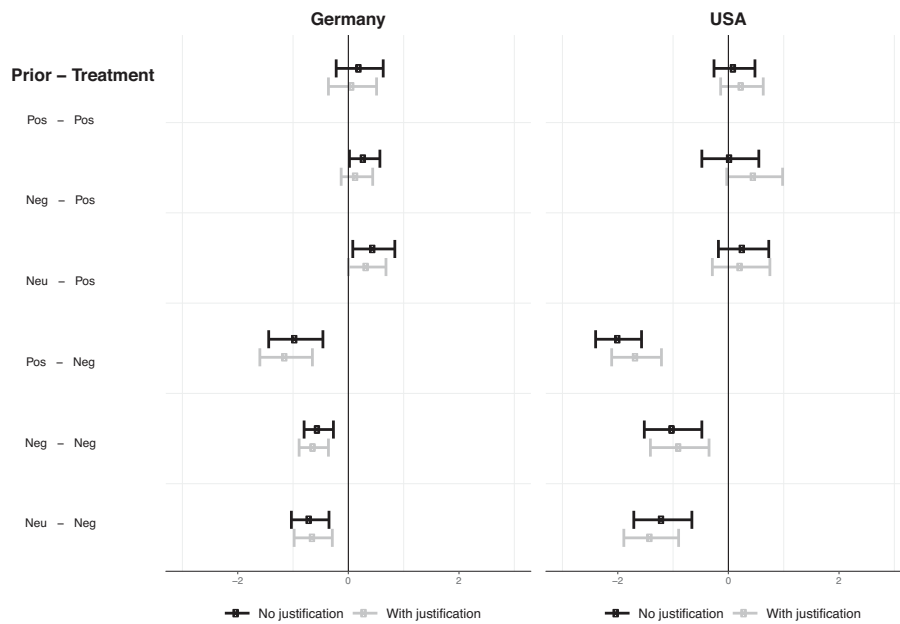
Finally, we test *Hypothesis 2b* stating that individuals who in addition to a pro or contra argument also receive a causal justification should be even more likely to update their opinion. To do so, we split the analysis according to whether the information frames contained an additional justification or not. In contrast to *Hypothesis 2b*, however, the results in Figure 3 show that respondents who received an additional justification are not significantly more likely to update their prior opinion than respondents who did

not. Again, we find that the results are very similar in the US and the German sample. Concerning the reason as to why the results do not lend empirical support for *Hypothesis 2b* we can only speculate. Maybe the wording of our treatments was already precise enough, such that providing an additional justification simply had no further informational content. Or maybe in the context of a rather complicated and abstract policy field, citizens tend to react only to major arguments. Since, however, this finding is in some contrast to existing research (e.g., Leeper and Slothuus 2016; Nyhan and Reifler 2015a) we consider it important for further research to probe in more detail the impact of specific explanations on individuals' attitudes on trade policy.

The results thus far pertain to the specific issue area, but what happens if we ask for respondents' opinion on TTIP more generally? The results as displayed in Figure A3 in the Appendix<sup>15</sup> closely match the results described above. However, the reported effects are no longer as pronounced as when using the issue-specific outcome variables. Due to the more distant relationship between this question and the wording of the treatment texts, however, this is not surprising. Yet, there are also some exceptions to this general pattern: For example, US respondents with a neutral prior opinion who received a positive standard harmonization treatment and German respondents with a neutral prior opinion who received positive information on ISDS are significantly more positive in their evaluation of the TTIP agreement than with regard to the issue-specific questions.

Our design allows us to go one step further and analyze how our treatments affect trade opinion in general. The

<sup>15</sup> In the Appendix, we also provide the corresponding within-subject changes per group (Table A.4 and Figure A.4).



**Figure 3.** Treatment effects for additional justification using issue-specific questions.

*Notes:* Dots display the mean difference in opinion stated in Wave 2 between respondents who received the respective treatment and those who did not receive the treatment but hold the same issue-specific prior belief and the corresponding horizontal lines show 95 percent confidence intervals. The analysis is conducted on responses pooled across the three issue areas.

results shown in Figure A5 in the Appendix match the results based on our earlier items.<sup>16</sup> However, as expected, treatment effects are even less pronounced, as we further increase the distance between treatment and question text.

Finally, Figure 4 shows the results when using the behavioral outcome measure. In this graph, we plot the difference in the proportion of individuals taking part in the online petition between those holding a given prior opinion who received the treatment and those who did not receive the treatment. The results for the pro TTIP behavioral measure (left-hand panel) corroborates the findings based on the attitudinal outcome measure. Again, we do not find any instances of the information frame causing a backfire effect. Rather, we find that the negative information frames significantly decrease people's likelihood to participate in the online petition to support TTIP. This effect is most pronounced among US respondents whose opinions were already negative and, in the second survey wave, received information that emphasize the negative impacts of the TTIP agreement. In contrast, positive information frames do not have any statistical significant effect.

The results for our contra TTIP behavioral measure provides an interesting nuance to the general pattern observed in the previous analyses. We find that respondents in the German sample who saw TTIP negatively in Wave 1 and who received positive information on TTIP were more likely to sign the online petition against TTIP in Wave 2 as compared to respondents with the same prior opinion, but who did not receive a positive information treatment. This instance of backfire effect is striking given that it could not be observed for the less cognitively costly attitudinal outcome measures.<sup>17</sup> However, it needs to be stressed that it is the

only instance in which we observe that information that is incongruent to the respondent's prior opinion leads to a reinforcement of the respondent's prior opinion. Finally, the results for the negative information treatments are in accordance with the results from the previous analysis indicating that respondents update their behavior according to the information provided in the negative frames.

We conducted several robustness checks to increase the confidence in our results. In particular, we define prior opinion in different ways, pool our US and German datasets and examine those respondents who answered "don't know" in Wave 1. The findings (presented in Tables A6–A8 and Figures A7 and A8 of the Appendix) provide further nuances, but are consistent with the findings from our main analysis.

### Conclusions and Avenues for Further Research

This research note contributes to the literature on trade policy preferences by studying whether citizens change (update) their opinions when exposed to new information that may or may not line up with their prior opinions. We do so with a focus on a large-scale and salient trade liberalization effort (TTIP) in order to make the survey experiment as realistic as possible. To test our hypotheses on opinion updating we implemented a two-wave survey experiment in two countries (Germany and United States).

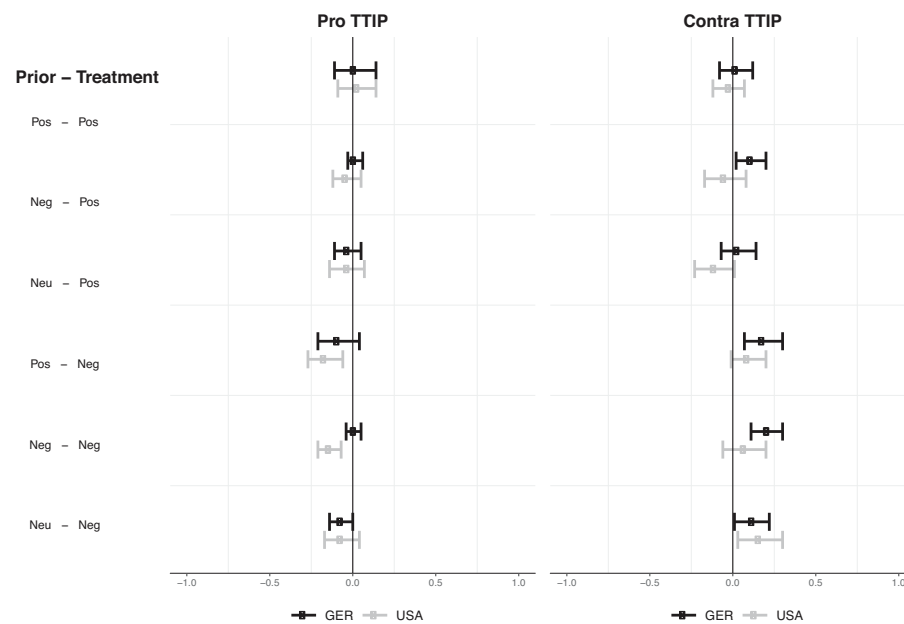
In contrast to findings for other policy areas, such as climate change (Kahan 2012) and vaccination (Nyhan et al. 2014), we hardly find any evidence for backfire effects. Instead, we observe that, overall, individuals update their opinions in accordance with the provided information. Even

<sup>16</sup>We provide the corresponding within-subject changes per group in the Appendix (Table A.5 and Figure A.6).

<sup>17</sup>Table A.10 in the Appendix shows the results split by issue area but without conditioning on prior opinion. While these results show the same pattern

as Figure 4 they additionally allow for the conclusion that the observed backfire effect for German respondents with prior negative opinion and who receive positive information is mainly driven by the economic issue area.





**Figure 4.** Treatment effects using behavioral outcome measure.

*Notes:* Dots display mean differences in the likelihood of taking part in an online petition between respondents who received and those who did not receive the treatment but hold the same prior issue-specific belief. Corresponding horizontal lines show 95 percent confidence intervals.

individuals with strong prior opinions on TTIP do neither discard incongruent information nor do they react by intensifying prior opinions. Furthermore, we find that negative information has a greater impact on the likelihood of opinion updating in line with individuals' tendency towards risk avoidance, as found in previous studies. For respondents holding a weak prior positive opinion on TTIP, negative information can even result in opinion reversal. Finally, we find some, although weak, evidence that opinion updating transcends across different levels of abstraction. Receiving new information on one of the specific issue areas of the TTIP agreement does not only affect individuals' opinion about the issue area at hand, but also their broader views about TTIP and international trade in general, as well as their willingness to take political action in line with their trade preferences.

The policy relevance of our findings derives from the fact that trade liberalization efforts are often contested and policy-makers are struggling to convince their respective electorate of the pros and cons of particular trade policy choices. This is exemplified by a statement by the current WTO Director General Roberto Azevêdo: "We have to work harder to explain why trade matters. [ ... ] The risk of the negative rhetoric is that it will evolve into damaging policies down the road."<sup>18</sup> This statement reflects both our overall finding that citizens' can, and often do update their opinions in response to new information on trade, but also the finding that responses to negative information tends to be more pronounced.

Our findings suggest several avenues for further research. First, in contrast to research on climate change and vaccination policy, we hardly find evidence for backfire effects.

Survey experiments assessing such effects across several policy areas within a homogenous study design could help in clarifying when and under what conditions such effects occur.

Second, we do not find any effect of including causal explanations in treatment conditions. While this is in some contrast to prior research, it might be that respondents in our experiment were overwhelmed by the additional information, resulting in respondent fatigue that limited the likelihood of opinion updating. Hence, future research should investigate the role of providing causal explanations versus respondent fatigue in more detail.

Third, in our study, we chose to evaluate how individuals change their opinion on which they think were the most important issue areas within the TTIP agreement, namely economic issues, standard harmonization and ISDS. In this context, it is noteworthy that our results suggest that individuals do not only update their opinion in the specific issue area for which they received new information. The new information also seems to carry over to trade opinions more generally. For example, someone who learned that TTIP can lead to job losses in certain sectors became more likely to see TTIP and trade liberalization as such in a more negative light. Moreover, we also observed some instances in which our negative information treatments had a significant effect on individual political behavior: Respondents who read about negative implications of the TTIP agreement were more likely to join the collective online petition to revoke the trade deal. Our study therefore contributes to the trade preferences literature that, particularly in the United States, has been criticized as focusing on trade attitudes that are "preferences without politics" (Guisinger, 2009, 2017). While our results help to correct such claims (see also Jensen, Quinn, and Weymouth 2017) further research on trade preferences should focus more on behavioral outcome measures.

<sup>18</sup>DG Roberto Azevêdo in a speech on October 21, 2016: [https://www.wto.org/english/news\\_e/spra\\_e/spra141\\_e.htm](https://www.wto.org/english/news_e/spra_e/spra141_e.htm).

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