

The Ocean of Possible Truth. Drivers and Consequences of News Accuracy Judgements Online

ONLINE APPENDIX*

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*This describes the raw data. Some of the data were post-weighted for analysis in related published commentary.

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APPENDIX A: Sample and population statistics

Tables 1 and Table 2 show the sample's distribution on age, gender and education in comparison with the population distribution, as measured in the 2011 census. Table 3 compare the sample's distribution across German states with the population distribution. Table 4 compare the sample's voting intentions with the 2017 electoral outcome.

Table 1: Gender and age of sample ($N = 418$) and population

Gender	Age group				Total
	18-29	30-49	50-69	>65	
Male	39 (9.3%)	76 (18.2%)	45 (10.8%)	43 (10.3%)	203 (49.0%)
	<i>8.6%^a</i>	<i>17.2%</i>	<i>12%</i>	<i>10.5%</i>	<i>48.3%</i>
Female	44 (10.5%)	81 (19.4%)	51 (12.2%)	39 (9.3%)	215 (51.4%)
	<i>8.4%</i>	<i>16.9%</i>	<i>12.3%</i>	<i>14.2%</i>	<i>51.7%</i>
Total	83 (19.8%)	157 (37.6%)	96 (23%)	82 (19.6%)	415 (100%)
	<i>17.0%</i>	<i>34.1%</i>	<i>24.3%</i>	<i>24.6%</i>	<i>100%</i>

^a Population percentages in italics, source: accessible at <https://www.zensus2011.de>

Table 2: Education statistics of sample ($N = 418$) and population

Degree	Sample		Population
None	11	2.7%	<i>5.0%^a</i>
Lower school (Hauptschule)	74	17.8%	<i>36.6%</i>
Middle school (Realschule)	110	26.5%	<i>29.0%</i>
Technical high school (Fachabitur)	35	8.4%	<i>8.3%</i>
High school (Abitur)	78	18.8%	<i>21.1%</i>
University	107	25.8%	
Total	415	100.0%	<i>100%</i>

^a Source: 2011 census, accessible at <https://www.zensus2011.de>

Table 3: State residence of raw sample and population
($N = 390$)

State	Sample		Population
Baden-Württemberg	52	13.3%	13.2% ^a
Bayern	56	14.4%	15.3%
Berlin	23	5.9%	4.2%
Brandenburg	9	2.3%	3.1 %
Bremen	1	0.3%	0.8%
Hamburg	12	3.1%	2.2%
Hessen	34	8.7%	7.4%
Mecklenburg-Vorpommern	6	1.5%	2%
Niedersachsen	38	9.7%	9.7%
Nordrhein-Westfalen	83	21.3%	21.8%
Rheinland-Pfalz	12	3.1%	4.9 %
Saarland	7	1.8%	1.2%
Sachsen	23	5.9%	5.1 %
Sachsen-Anhalt	8	2.1%	2.9%
Schlewig-Holstein	14	3.6%	3.5%
Thüringen	12	3.1%	2.7%
Total	390	100.0%	100.0%

^a Source: Bundeszentrale für Politische Bildung, accessible at:
<http://www.bpb.de/nachschlagen/zahlen-und-fakten/soziale-situation-in-deutschland/61535/bevoelkerung-nach-laendern>

Table 4: Sample and population statistics of voting intention/vote ($N = 402$)

Party	Sample		Population
	(intention)		(outcome)
CDU/CSU	91	27.0%	32.9% ^a
SPD	73	21.7%	20.5%
AfD	45	13.4%	12.6%
Linke	44	13.1%	9.2%
FDP	19	5.6%	10.7%
Greens	12	3.6%	8.9%
Other	12	3.6%	5.0%
Going to vote, but undecided	41	12.2%	-
Total	337	100.0%	100%

^a Source: Bundewahlleiter, accesible at:
<https://www.bundeswahlleiter.de/bundestagswahlen/2017/ergebnisse.html>

APPENDIX B: Treatment balance

Table 5: Balance of demographic covariates across treatments

	Averages/Proportions (SD) per treatment				p >F or ^a p > χ^2
	Left story / unprof. source	Left story / prof. source	Right story / unprof. source	Right story / prof. source	
Age					
<i>Topic 1</i>	47.6 (19.0)	46.2 (17.9)	45.8 (18.3)	46.0 (17.2)	0.88
<i>Topic 2</i>	46.8 (18.6)	46.3 (18.1)	46.8 (18.3)	45.8 (17.6)	0.97
<i>Topic 3</i>	48.6 (18.7)	46.2 (18.0)	44.1 (17.5)	46.7 (18.0)	0.34
<i>Topic 4</i>	45.2 (17.8)	46.9 (17.1)	46.4 (17.9)	47.1 (19.6)	0.88
% Female					
<i>Topic 1</i>	0.51 (0.50)	0.51 (0.50)	0.53 (0.50)	0.51 (0.50)	0.98
<i>Topic 2</i>	0.55 (0.50)	0.47 (0.50)	0.55 (0.50)	0.49 (0.50)	0.57
<i>Topic 3</i>	0.53 (0.50)	0.47 (0.50)	0.50 (0.50)	0.56 (0.50)	0.56
<i>Topic 4</i>	0.52 (0.50)	0.49 (0.50)	0.55 (0.50)	0.50 (0.50)	0.80
% College degree ^b					
<i>Topic 1</i>	0.25	0.23	0.28	0.25	0.38
<i>Topic 2</i>	0.21	0.24	0.28	0.28	0.67
<i>Topic 3</i>	0.19	0.25	0.29	0.27	0.56
<i>Topic 4</i>	0.26	0.28	0.22	0.24	0.73
% Median Income ^b					
<i>Topic 1</i>	0.19	0.12	0.20	0.13	0.74
<i>Topic 2</i>	0.15	0.16	0.23	0.12	0.56
<i>Topic 3</i>	0.15	0.16	0.15	0.18	0.23
<i>Topic 4</i>	0.17	0.23	0.08	0.16	0.26
% German citizen					
<i>Topic 1</i>	0.94 (0.23)	0.96 (0.19)	0.95 (0.22)	0.96 (0.19)	0.90
<i>Topic 2</i>	0.96 (0.20)	0.95 (0.23)	0.98 (0.14)	0.93 (0.25)	0.45
<i>Topic 3</i>	0.96 (0.19)	0.97 (0.17)	0.94 (0.24)	0.94 (0.23)	0.73
<i>Topic 4</i>	0.95 (0.22)	0.94 (0.23)	0.95 (0.22)	0.97 (0.17)	0.83

^a For continuous covariates, analyses of variances were applied using the anova command in Stata 15.1. For categorical variables, chi-squared tests were applied using Stata's chi2 command. The null hypothesis tested is that observations across treatments were drawn from the same population.

^b For the sake of lucidity, the share of only one category is displayed for variables with more than two categories. Chi-squared tests were applied to the distribution of all categories.

APPENDIX C: Stimulus and fact manipulations

For each topic, the main stimulus was a Facebook post containing a news story to be judged by subjects. The Facebook post was built after a typical news post and included a headline, a photo, a teaser, the name and logo of the source as well as the URL of the source. Figure ?? shows an example post. Subjects were randomly assigned to one of two stories who each contained opposing facts. For the topics of distributive justice and domestic security, the information only consisted of a Facebook post that varied the headline and the teaser. For the topics of migration and European integration, the information consisted of a Facebook post with headline and teaser, and an excerpt of the constructed story, introduced by the words: “For this story, we will show you a few paragraphs of the linked text (Source: [source])”. The stories were the following (translated from German):

Figure C1: Example of Facebook post



Welfare state

Pro-welfare state story

- Headline: “Hartz IV benefit cuts: Sanctions push unemployed into ill-paid jobs”
- Teaser: “Benefit cuts for those who violate Hartz IV requirements fall short of desired effects: Our data show that sanctioned move into ill-paid jobs. The risk of becoming a working poor increases.”

Anti-welfare state story

- Headline: “Hartz IV benefit cuts: Sanctions speed up entry into regular employment”

- Teaser: “Benefit cuts for those who violate Hartz IV requirements are effective: Our data suggest that sanctioned unemployed move more often and more quickly into regular employment.”

Domestic security

Anti-law-and-order story

- Headline: “Europe-wide comparison: Arrest of endangerers does not decrease risk of terrorism”
- Teaser: “Is the pre-emptive arrest of endangerers reasonable? European countries with stricter measures have not experienced less terrorist attacks in the last ten years, as a study shows.”

Pro-law-and-order story

- Headline: “Europe-wide comparison: Fewer terrorist attacks in countries with strict arrest of endangerers”
- Teaser: “Is the pre-emptive arrest of endangerers reasonable? European countries with stricter measures have experienced less terrorist attacks in the last ten years, as a study shows.”

Migration

Pro-migration story

- Headline: “Traineeships: Completion rates in craft as high for refugees as for natives”
- Teaser: “Refugees complete their craft traineeships by now as often as other trainees, as numbers by the Chamber of Crafts show.”
- Excerpt: “Refugees complete their traineeships German handicraft businesses as often as native trainees. About three quarter of trainees who had fled from Syria, Afghanistan and Iraq and had started a traineeship since the beginning of 2013 have by now completed or are still in training, as a Germany-wide investigation by [source] revealed. Their completion rate (74.8 percent) corresponds roughly to that of all other trainees (73.5 percent). For the investigation, data from the Chambers of Craft of all German states were analysed. The Chambers have initiated various programmes for the integration of refugees into the labour market and recorded the numbers of allocated and successfully trained refugees. The dropout rates are not equally high for all states and fluctuate between 85 percent (Saarland) and 65 percent (Lower Saxony). On average, the rate is 74.8 percent. Anecdotal numbers from earlier periods had painted a much worse picture. When asked for the reasons for the apparent rise of completion rates, several representatives of businesses and Chambers refer to more realistic expectations of refugees. ‘In the beginning, many have the idea of earning lots of money in Germany quickly and send it back home’, said Lothar Semper from the Chamber Munich and Upper Bavaria. Now they understand, he said that in the long run opting for a traineeship is a better decision. The majority accepts the comparably low wage during the traineeship and show a particularly high motivation.”

Anti-migration story

- Headline: “Craft: Nine out of ten refugees cancel their traineeship”
- Teaser: “Refugees discontinue their craft traineeships more often than average, as numbers by the Chamber of Crafts show.”
- Excerpt: “Refugees discontinue their traineeships in German handicraft businesses more often than average. Almost 90 percent of trainees who had fled from Syria, Afghanistan and Iraq and had started a traineeship since the beginning of 2013 have dropped out without finishing, as a Germany-wide investigation by [source] revealed. For all other trainees, the dropout rate is substantially lower at around 25 percent. For the investigation, data from the Chambers of Craft of all German states were analysed. The Chambers have initiated various programmes for the integration of refugees into the labour market and recorded the numbers of allocated and successfully trained refugees. The dropout rates are not equally high for all states and fluctuate between 60 percent (Saarland) and 95 percent (Lower Saxony). On average, the rate is 89.5 percent. When asked for the reasons, several representatives of businesses and Chambers refer to unrealistic expectations on the refugees’ part. ‘Many have the idea of earning lots of money in Germany quickly and send it back home’, said Lothar Semper from the Chamber Munich and Upper Bavaria. It is necessary to communicate to them, he said, that in the long run it is worth opting for a traineeship and earn less at the start. Given the comparably low wage during the traineeship much persuasion is necessary to bring young people to start a traineeship in the first place.”

European integration

Pro-integration story

- Headline: “EU programme to reduce regulations shows effects”
- Teaser: “Since two years ago, a programme of the EU Commission is meant to repeal unnecessary legislation. With success: Over 60 pieces of regulation have been abolished, which financially relieved small enterprises in particular.”
- Excerpt: “A EU programme for more efficiency in legislation has led to less regulation and financial relief for citizens and businesses. This is the result of an investigation by [source]. In the years of 2015 and 2016, the working group ‘Refit’ made 119 proposals to the Commission how EU regulations could be repealed or modified. Both of the 53 proposed modifications and the 66 pieces of regulation to be abolished, most were already followed through. Only eight pieces of regulation remain to be repealed. According to the Commissions estimations, the ‘Refit’ changes could mean yearly savings for citizens and enterprises of 1.5 billion Euros alone. In comparison, the programme ‘Refit’ has only produced costs of 5 million Euros. Small and medium business owners interviewed by [source] have confirmed that many of the repealed rules could mean financial relief. The programme ‘Refit’ was born in 2015 to make EU law ”simpler and less costly”. Regulation can be regularly examined and changed or repealed as needed. This is meant to cut red tape and reduce costs for small enterprises in particular. Through an online platform, citizens, business and member states can make proposals on modifications and repeals.

Anti-integration story

- Headline: “EU programme to reduce regulations unsuccessful, but costly”

- Teaser: “Since two years ago, a programme of the EU Commission is meant to repeal unnecessary legislation. This has not happened: Not a single regulation has been abolished, but the programme has created additional costs.”
- Excerpt: “A EU programme for more efficiency in legislation has not led to less regulation, but higher costs. This is the result of an investigation by [source]. In the years of 2015 and 2016, the working group ‘Refit’ made 119 proposals to the Commission how EU regulations could be repealed or modified. Of these, only the 53 proposed modifications were implemented. Those 66 pieces of regulation that were supposed to be abolished exist until today. The working group, however, produced additional costs for staff and technical infrastructure of 25 million Euros. Via the EU budget, Germany contributed 3.8 million. The programme ‘Refit’ was born in 2015 to make EU law ”simpler and less costly”. Regulation can be regularly examined and changed or repealed as needed. This is meant to cut red tape and reduce costs for small enterprises in particular. Through an online platform, citizens, business and member states can make proposals on modifications and repeals. Why the Commission has not repealed a single legislation during the first two years of Refit’s existence although there is a choice of over 60 pieces of regulation is unclear. The Commission declined to comment questions on the investigation from [source].

Unconstructed control story

- Headline: “State parliament election in North Rhine-Westphalia: The Free Democratic Party gains 28 seats”
- Teaser: “The official final result is confirmed: Free Democratic Party gets 28 out of 199 seats in North Rhine-Westphalia parliamentary elections.”

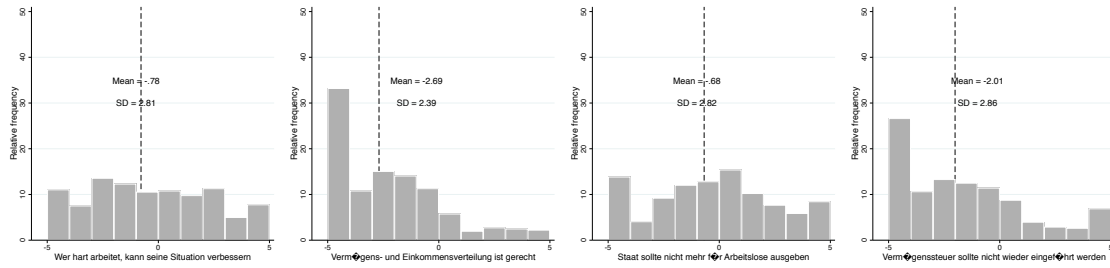
APPENDIX D: Attitude measures

For each of the four topics, subjects were asked to indicate their agreement to four statements on a 10-point scale.

Distributive justice

- “Someone working hard nowadays can improve his life situation without much difficulty.”
- “The current wealth and income distribution in Germany is unjust.”
- “The state should do more for the support of the unemployed even if that means raising taxes or incurring public debt.”
- “Wealth tax should be re-introduced.”

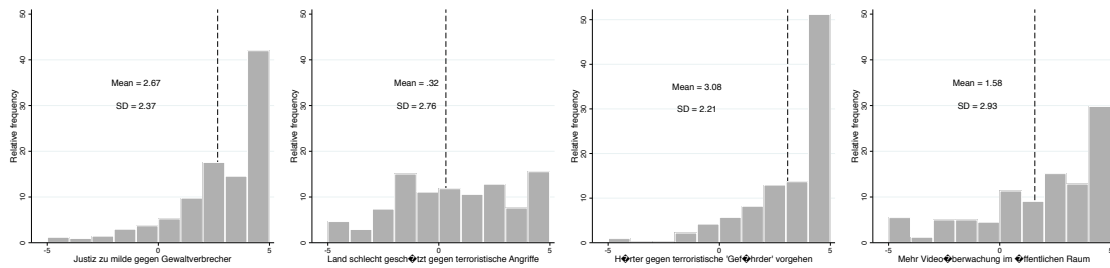
Figure D1: Attitude distributions for welfare state topic



Domestic security

- “Courts treat violent criminals too leniently.”
- “Overall, our country is well protected against terrorism.”
- “The state should take a tougher stance on endangerers.”
- “State should implement more CCTV in the public space.”

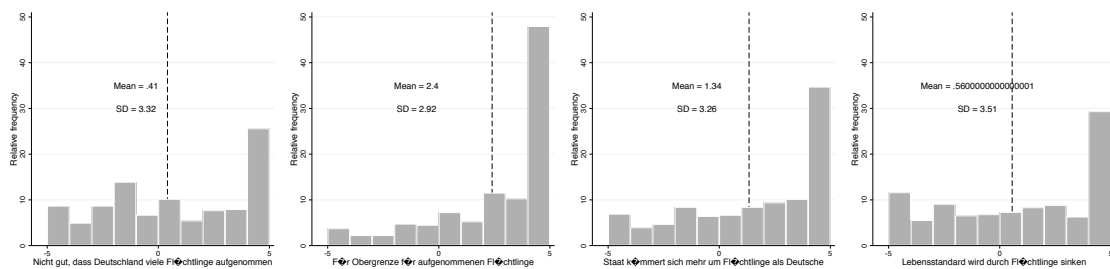
Figure D2: Attitude distributions for domestic security topic



Migration

- “I appreciate that Germany has taken in many refugees.”
- “There should be an upper limit for number of refugees taken in.”
- “The German state is more concerned about refugees than Germans in need.”
- “The living standard of Germans will decrease because of the reception of refugees.”

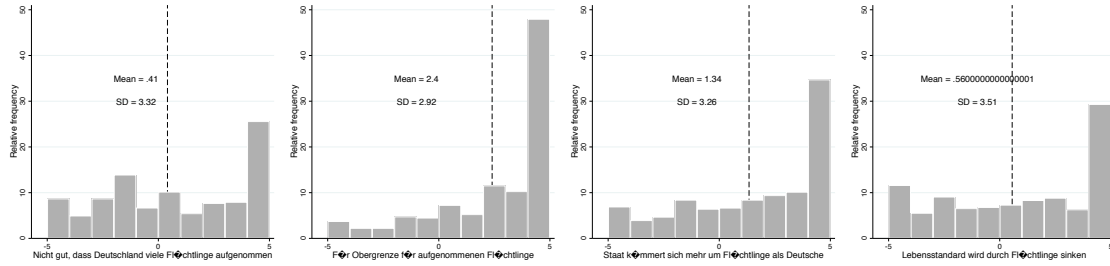
Figure D3: Attitude distributions for migration topic



European integration

- “Germany should have a referendum on its EU membership”
- “The EU interferes too much with Europeans’ lives.”
- “Germany should pay less into the EU budget.”
- “Countries with financial problems should be excluded from the Euro zone.”

Figure D4: Attitude distributions for European integration topic



APPENDIX E: Accuracy judgement model choice

Tables 6 to 9 report all models tested through a backward exclusion procedure. In case of the European integration topic, this leads to only one exclusion because there is only one reduce model including the source-media trust interaction.

Table 6: Model choice for welfare state topic

	Domain: Welfare state				
	Full	Reduced 1	Reduced 2	Reduced 3	Final
News item (0 = pro-welfare state)	.11(.14)	.01 (.10)	.13 (.14)	.02 (.10)	.02 (.10)
Attitude ^a	-.12 (.10)	-.03 (.07)	-.07 (.10)	-.02 (.07)	-.02 (.07)
News item × Attitude ^a	.34* (.15) ^b	.26* (.10) ^c	.29* (.14) ^b	.26** (.10) ^b	.26** (.10) ^b
Source (0 = unprofessional)	.19 (.14)	.09 (.10)	.23 (.14)	.12 (.10)	
Media trust	.10 (.08)	.09 (.08)			
Source × Trust	.01 (.11)	.03 (.10)			
Content × Source	-.20 (.20)		-.21 (.20)		
Source × Attitude ^a	.17 (.15)		.08 (.14)		
Content × Attitude × Source ^a	-.16 (.20)		-.06 (.20)		
Constant	-.09 (.10)	-.03 (.09)	-.10 (.10)	-.05 (.08)	.01 (.07)
N	384	384	397	397	397

* p < 0.05; ** p < 0.01; *** p < 0.001.

^a Coefficients refer to “working hard” attitude item. Deviations from results as indicated.

^b Coefficient significant at same p-level for “just income distribution” and “wealth tax” items, but not significant for “employment benefits” item.

^c Coefficient significant at same p-level for “wealth tax” items, but only 10%-significant for “employment benefits” and “just income distribution” items.

Table 7: Model choice for domestic security topic

	Domain: Domestic Security				
	Full model	Exclusion 1	Exclusion 2	Exclusion 3	Final model
News item (0 = anti-law-and-order)	-.16 (.15)	-.02 (.10)	-.17 (.15)	.01 (.10)	
Attitude	.10 (.13)	.04 (.10)	.13 (.13)	.13 (.10)	
News item \times Attitude	-.20 (.17)	-.03 (.13)	-.15 (.17)	-.04 (.12)	
Source (0 = unprofessional)	.13 (.15)	.24* (.10)	.08 (.15)	.25* (.10)	.27**(.10)
<i>Media trust</i>	.18* (.07)	.18* (.07)			
Source \times Trust	.06 (.11)	.06 (.10)			
Content \times Source	.29 (.21)		.37 (.21)		
Source \times Attitude	-.14 (.20)		-.01 (.19)		
Content \times Attitude \times Source	.36 (.25)		.24 (.25)		
Constant	-.03 (.10)	-.09 (.09)	-.04 (.10)	-.12 (.09)	-.14* (.07)
N	371	371	383	383	418

* p <0.05; ** p <0.01; *** p <0.001.

Table 8: Model choice for migration topic

	Domain: Migration				
	Full model	Exclusion 1	Exclusion 2	Exclusion 3	Final model
News item (0 = pro-migration)	-.05 (.14)	-.03 (.10)	-.08 (.14)	-.01 (.10)	-.01 (.10)
Attitude ^a	-.23+ (.12)	-.31*** (.08)	-.21 (.11)	-.31*** (.08)	-.31***(.08)
News item \times Attitude	.76*** (.16)	.78*** (.11)	.72*** (.15)	.76*** (.11)	.77*** (.11)
Source (0 = unprofessional)	.00 (.14)	.03 (.10)	.01 (.14)	.08 (.10)	
Media trust	.04 (.07)	.03 (.07)			
Source \times Trust	.15 (.10)	.18+ (.10)			
Content \times Source	.06 (.20)		.14 (.19)		
Source \times Attitude	-.17 (.17)		-.22 (.16)		
Content \times Attitude \times Source	.03 (.22)		.10 (.22)		
Constant	.02 (.10)	.01 (.09)	.02 (.10)	-.02 (.08)	.02 (.07)
N	368	368	383	383	383

* p <0.05; ** p <0.01; *** p <0.001.

Table 9: Model choice for European integration topic

	Domain: European integration	
	Full model	Exclusion 1 & Final model
News item (0 = pro-Europe)	.28 (.15)	.08 (.11)
Attitude	-.06 (.13)	-.09 (.09)
News item \times Attitude	.28 (.18)	.29* (.12)
Source (0 = unprofessional)	-.52 (.34)	-.66* (.32)
Media trust	.03 (.03)	.04 (.03)
Source \times Trust	.14** (.05)	.14** (.05)
Content \times Source	-.38 (.21)	
Source \times Attitude	-.04 (.17)	
Content \times Attitude \times Source	.00 (.25)	
Constant	-.33 (.23)	-.27 (.23)
N	323	323

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.