The effects of thinking styles and news domain on fake news recognition by social media users: Evidence from Russia

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Abstract. The development and deployment of new technologies have influenced the media environment by enabling quick and effective dissemination of false news via social networks. Several experimental studies have highlighted the role of thinking style, social influence, source credibility and other factors when it comes to fake news recognition. Our study makes several contributions to existing knowledge. We b introduce a measure of conspiracy thinking, a comparison between politics and business news recognition, and we investigate the effects of sensationalist headlines on users' abilities to differentiate between false and true news. 228 university students (203 completed the entire survey) from three departments (Humanities, Management, and Economics) took part in an online experiment. The results of a regression analysis demonstrate that double-checking of news online has a significant effect on individuals' overall ability of differentiating between true and false news. Thinking styles, prior experience, and such control variables as age and gender have no significant effect on the overall level of accuracy. We also discuss the effects of different factors responsible for the accuracy of fake news recognition in business and political news, as well as several limitations of the study.

Keywords: Fake News, Conspiracy Thinking, Rational Mentality, Magical Beliefs, Trust.

1   Introduction

The development and deployment of new technologies have changed the media environment by enabling quick and effective dissemination of false news via social networks. The rate of false news propagation depends on individuals' ability to differentiate between lies and truth in the information stream. Recent studies have identified several factors affecting the accuracy of fake news recognition by social network users. Among these are the credibility of the source [1, 2], the readers' thinking style [3–6], and social influence [7]. Exploring the influence of the style of thinking, researchers differentiated between two dimensions: rational thinking (as the ability to solve logical problems) and magical thinking (associated with beliefs in the extraordinary [8]). The belief in conspiracy theories and the tendency to use implausible ex-

planations when interpreting significant social or political events [9] may also influence individuals' ability of fake news detection. Recent research has also shown a relationship between the level of conspiracy thinking and the degree to which people's trust the police, their neighbors, or their relatives [9]. In addition, a number of studies looked at the interactions between conspiracy thinking and people's trust in existing medical paradigms [10], climate change [11], and right-wing authoritarianism [12]. At the same time, the effects of conspiracy theological thinking on people's ability to recognize fake news has not been investigated.

Furthermore, previous studies have identified such linguistics factors and stylistic features as the title [13] or the number of typographical errors [2, 14] as important predictors in fake news recognition.

It is worth mentioning that, to the date, experimental studies on fake news recognition have been focused predominantly on the assessment of political news. In our study, we are broadening this focus by including news from the sphere of business.

Thus, this study is guided by the following research questions: 1) What are the factors that influence the accuracy of fake news recognition; 2) To what extent are there differences in fake news recognition between news from different spheres? To answer our research questions, we will analyze the effects of such factors as rational thinking, conspiracy thinking, generalized trust, and role of the sensationalist headlines on the accuracy of fake news recognition when looking at a selection of political and business news.

2 The role of cognitive factors and personal traits in news assessment

2.1 Related Studies

Thinking styles.
An analysis of the literature shows that one of the most important factors in determining the quality of fake news detection is the style of thinking. Studies by Bronstein and colleagues have shown that rational thinking largely determines the ability of fake news detection. At the same time, dogmatism and belief in extrasensory phenomena reduce people's ability to differentiate between truth and lies [4–6]. Coe found that magical thinking heightens the susceptibility of a person towards fake news [8].

Considering the literature related to thinking patterns and people's abilities to evaluate the trustfulness of information, we propose to include the concept of conspiracy thinking, which has recently attracted considerable attention of f political scientists, psychologists and sociologists. In 2018, an entire issue of the European Journal of Social Psychology was devoted to the concept of conspiracy theory and its impact on decision-making processes [15]. In their studies, Edelson and coauthors showed the influence of conspiracy thinking on decision-making mechanisms during elections [16].

Several studies have demonstrated a negative relationship between belief in conspiracies and interpersonal trust or trust in the police [9, 17, 18]. Uscinski and Olivella revealed a connection between conspiracy and authoritarian thinking [11].

Thus, we decided to investigate the effects of different thinking styles (rational, magical, and conspiratorial) on the accuracy of fake news recognition. Consequently, we have formulated the following hypotheses:

Hypothesis 1. Rational thinking increases the accuracy of news recognition in any domain
Hypothesis 2. Magical thinking decreases the accuracy of news recognition in any domain
Hypothesis 3. Conspiracy thinking decreases the accuracy of news recognition for the political domain only.

General trust

The accuracy of differentiation between true and false news is usually associated with the credibility of the source [2] or with the degree of trust in a particular media outlet [8]. Even though, given the fact that on social media platforms, a news item can be presented without a link to the original source or with a misleading link, we decided to exclude this factor from our analysis and to provide all news without mentioning where they come from. Also, we assume that general trust in people may influence people's ability to recognize fake news. Consequently, we formulated the following hypothesis:

Hypothesis 4. General trust in people decreases the accuracy of fake news recognition.

User experience and media literacy

Students from different departments have different literacy skills, interests, and patterns of news consumption. These three factors may influence their ability to recognize fake news [19]. This leads to the following two hypotheses:

Hypothesis 5. Interest in a particular type of news (e.g. politics) increases the accuracy of news recognition in this particular domain.
Hypothesis 6. Studying in a particular field (e.g. business or humanities) increases the accuracy of news recognition in this particular domain (business or humanities respectively).

We also expect that people's ability to remember certain news (their prior experience) may influence the accuracy of fake news recognition. At the same time, some experiments have shown that people's memory may be inaccurate when it comes to news recollection and the very fact that certain news items (fake or real) may be repeated multiple times make them more believable [3]. Thus, we formulated the following hypothesis:

Hypothesis 7. Ability to recall the news will have no influence on the accuracy of news recognition.

Fact checking behavior

Fact-checking procedures are some the most powerful tools that individuals have at their disposal when it comes to fake news recognition. In our online experiment, participants operate in natural conditions and, thus, we cannot prevent them from double-checking certain news for accuracy. When it comes to fact checking, we have formulated the following hypothesis:

Hypothesis 7. Fact checking increases the accuracy of news recognition in each domain.
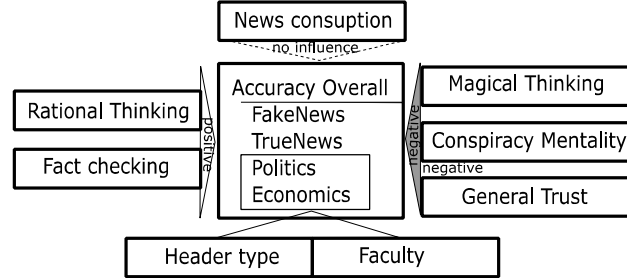
Fig. 1. News accuracy recognition model.

Thus, by studying the factors affecting the accuracy of news recognition (Figure 1), we assume that the nature of their influence depends on the news section and the nature of its presentation (sensationalist headlines or not).

3   Methodology

3.1   Experiment design

We used a 2x2x2 design in our experiment. Students were offered 8 news items that varied by the following conditions: section - politics or business; type - false or true; with sensationalist (true) or neutral (false) headlines. Respondents were asked to indicate the degree of their trust in each news item on a 6-level Likert scale (from "absolutely false" to "absolutely true"). Control variables included: gender, age, level of education, university faculty, news consumption patterns, generalized trust, and political interests.

News selection
The selection of news for this experimental study turned to be a challenge as fake and real news stories can differ in style, source, domain, and in their attractiveness to readers. This is why we decided against creating fake news stories ourselves and, instead, we used a series of existing fake news from a known fact-checking site – snopes.org. We selected four recent stories covering well-known persons (for politics) or international companies (for business) respectively. Our condition was that both companies and politicians should be widely known in Russia. Political news were about Donald Trump (2), Arnold Schwarzenegger (1), and climate change (1). Business news were about IKEA, Starbucks, Boston Dynamics, and the global bottled water industry.The full list of news items is presented in Appendix 1. Table A.1.
 All news items were accompanied by two manually created titles. In all cases, one title was neutral and the other one – sensationalized. For example, the two titles for information about an IKEA advertisement campaign were: 1) "Test from IKEA" ("Тест от ИКЕА") and 2) "IKEA shock" ("Шок от ИКЕА"). All news items was equalized in terms of their length and style to reduce the effect of wording and complexity. We also checked all news items for typographical errors.

3.2   Sample

We sent out our survey invitations by e-mail to students in three departments (Economics, Management, and Humanities) situated on a single campus of one of Russia's leading universities. 228 students (Response Rate: 12.25%) accessed the link to the study, and 203 completed both experimental and survey parts. 91 (44.82%) students were from the Faculty of Humanities, 37 (18.22%) from Management, and 75 (36.94%) from Economics. The majority of the sample were female students (female - 76.35%, male – 20.19%, other – 3.44%). The average age of participants was 20.3 years (Median = 20, SD = 2.63). In all faculties, the ratio of male to female respondents was similar. The students in Russia are characterized by low age dispersion, and we observe a similar trend in our sample – the mean age of respondent was 20 years (the minimum was 18 years and the maximum – 36). Two participants indicated that they were 51and 109 years old respectively and were considered to be outliers and, thus, removed from further analysis.

By analyzing the time spent by our respondents on recognizing fake news, we were able to determine a group of participants who were either extremely quick or extremely slow in their responses. It is worth noting that the respondents, who spent a lot of time on this task, did not spend it on news checking. Instead, they used these time on other tasks unrelated to this study. Hence, this may be related to these respondents' overall distractedness and low motivation, which means that their results may have not been reliable. Similarly, there were students who we were extremely fast in answering questions.

Following a standard procedure, we excluded from further analysis all participants who did not answer our control questions and 5% from extremely fast and 5% from extremely slow respondents

3.3   Control variables

Double-checking of information.

By administering the questionnaire online, we could not prevent our participants from using the Internet to double-check the news, so we included an information check question. For each news item, we asked participants whether they had checked this news during the experiment. Based on this information, we created the "News_checked" variable. It is worth mentioning that the majority of participants (167 – 93.82%) did not check a single news item. One news was checked by 2 respondents, 2 by 5, 3 by 2, 4 by 1 and 5 news items by 1 participant (Table 1). In total participants performed 27 double-checked acts (for political news – 15 (55.55%) , business -12 (44.44%). News with sensationalist headlines were checked almost the same time (14, 51.85%), as with neutral titles (13, 48.14%).

News seen.

All news items selected for the experiment originated from publicly available sources and these news have been in circulation for a while, so it was possible that they had already been seen by our respondents. For each news item, we asked participants whether they had already seen this information. Based on these data, we created the

"News_seen" variable. It is worth mentioning that the majority of participants (91 – 51.12%) never saw a single news item prior to the experiment (Table 1).

Table 1. Frequency distribution for "News checked" and "News seen" variables.

Number of news	0	1	2	3	4	5	Total
News seen	91	41	25	16	2	3	178
News checked	167	2	5	2	1	1	178

News consumption

Questions about news consumption included the following options: TV, Paper newspapers and journals, Radio, SNS and Forums, Bloggers, News sites and News aggregators, Friends, Other. Participants were asked to indicate their top three options All options were recoded as individual dummy variables. We present descriptive statistics in Appendix 1. Table A.2.

The top three sources of information for participants in our study were: SNS and forums – 164 (92.13%), news sites and aggregators – 101 (56.74%), and friends – 89 (50%) .

Accuracy

We created seven accuracy coefficients. First, we calculated the overall accuracy (Acc) based on all news items included in the study (see Table 2). Next, we created one accuracy index for true (Acc_{truth}) and one for false news (Acc_{fake}). Then, we calculated accuracy indicies for the two news sections (Acc_{bussn}, Acc_{polit}) and for news with sensationalist (Acc_{sens}) and neutral headlines (Acc_{neutr}). Descriptive statistics for the different dimensions of accuracy presented in Appendix 1. Table A.3.

Table 2. Descriptive statistics for Overall Accuracy

Levels									Mean Accuracy
	1	2	3	4	5	6	7	8	
Number of participants	7	20	33	40	50	24	2	2	4.10

The majority of participants were able to determine fewer than five news items correctly (84.26%). Six news were accurate recognized by 24 (13.48%) and only four participants were able to achieve higher accuracy (2.24%).

The accuracy of recognition for each news section was similar. At the same time, accuracy for true stories was lower than for fake ones, and participants, on average, were less accurate in deciphering political news compared to business news (see Appendix 1. Table A.3).

Rational thinking.

The standard procedure for measuring the rationality of thinking is the Cognitive Reflection Test created by Shane Frederick, however, as it was shown that women demonstrate significantly lower scores [20]. CRT is also routinely used as an pop-psychology test on the Internet and it was shown that participants who had already

encountered these tasks obtained higher CRT scores [21]. This is why instead of CRT we decided to use the CRT-2 questionnaire created by Thompson and Openheim [22]. This questionnaire had only four questions, that we used in our study.

After checking the psychometric properties of the scale, we determined that this set of questions could not be considered as a single scale (Cronbach alpha = 0.37). For questions 1-3, most respondents were able to recognize the right answer, but for question 4 majority of participants selected the first intuitive (wrong) answer. It is worth mentioning that there are weak positive correlations between questions 1, 2, and 4 (min = 0.112, max =22.3). Questions 3 and 4 are not correlated (-0.004). It is evident that there are significant differences in answers to these questions. Hence, these questions were used as separate variables (Descriptive statistics presented in Appendix 1. Table A.4)

Conspiracy thinking
Conspiracy thinking was measured by using four questions: three were adapted from the Conspiracy Mentality Scale [9] and one from the Conspiracy Mentality Questionnaire [23]. Even though these questions showed acceptable Cronbach alpha (0.69) in our sample, since they represented different beliefs of participants, we decided to use them separately (Descriptive statistics presented in Appendix 1. Table A.5).

Magical thinking
To measure magical thinking, we selected top four items with the highest factor loading [24] adapted from the Magical Ideation Scale proposed by Eckblad and Chapman [25]. Selected items showed low reliability (Cronbach alpha = 0.59) and we decided to use these questions separately in our analysis. Descriptive statistics are presented in Appendix 1. A.7

General Trust
News perception may be related to the general trust in people. To measure general trust, we used three questions adapted from the World Values Survey [26]. The results of combining three questions into a single scale showed low psychometric characteristics (Cronbach alpha = 0.55). Therefore, during the analysis, we did not combine these questions into a scale and, instead, considered them separately. Descriptive statistics are presented in Appendix 1. A.6.

3.4   Strategy of analysis

The questions that we have selected to evaluate different thinking styles were not suitable for the creation of a reliable scale, so during the analysis we treated each question separately. First, we ran a correlation analysis of the variables, and then we conducted a dominance analysis [27] based on generalized linear model regressions (GLM). This allowed us to define the most influential items. Then, we conducted a dominance analysis for each factor (general trust, rational thinking, etc.), and after that the most influential factors from each dimension were used in a GLM regression to model the overall accuracy of fake news recognition (R core package stats). Next, we reproduce the same approach to analyze all the dimensions of accuracy. If several

items from one dimension contributed the most to the different aspects of accuracy, we selected the one with the highest impact (average contribution). Finally, we performed regression modeling using GLM regressions (R core package stats).

4 Results

The results of the GLM regression modeling for general accuracy showed (Table 3) that the only variable significantly affecting the accuracy of fake news recognition is "News_check" (the number of news checked by respondents).
Table 3 shows that the constructed model does not have high accuracy, which, on the one hand, may indicate that factors are weak, and on the other hand, may be associated with the difficulty of the task (as we selected plausible false news and implausible real stories).

Table 3. Regression model for overall accuracy (main variables)

	Accuracy	
Predictors	*Estimates*	*p*
(Intercept)	5.04	**<0.001**
Conspiracy thinking: C.2 "Government agencies closely monitor all citizens"	-0.12	0.171
Magical thinking: "MT.4 I have felt that I might cause something to happend just by thinking too much about it"	-0.11	0.167
General trust: Trust.1 "Most of the time people try to be helpful"	-0.08	0.447
CRT2.4 "How many cubic feet of dirt are there in a hole that is 3' deep x 3' wide x 3' long?"	-0.43	0.125
who [humanities]	0.35	0.149
who [managers]	0.08	0.789
TV	0.36	0.180
News_checked	0.46	**0.006**
Observations	178	
R^2 Nagelkerke	0.220	

Next, we conducted a dominance analysis of variables for each dimension of accuracy (See Appendix 1.Table 8). An analysis of the variables showed that "News seen" dominate among socio-demographic control variables (gender, age, faculty, news seen), and News check among behavioral control variables (news checked, interest in politics, interest in business) (Appendix 1. Table A.8). Also the analysis reveal existence of the differences in factors influences business and politics news recognition

(Table 4). For example, conspiracy thinking is especially significant (Est. = -0.17, p<0.05) for a business news accuracy model. It can be noted that some variables (Trust.3, News_checked) turned out to be significant for all dimensions of accuracy.

Regression modeling for each accuracy dimension showed that Magical Thinking, as expected, had a negatively effect on the accuracy of news perception. At the same time, this effect was significant only for news with sensationalist headlines (Est. = -0.15, p = 0.003).

There is a significant negative correlation between conspiracy theological thinking and the accuracy of recognition of business news (Est. = -0.17, p = 0.0018).

It is worth noting that if the respondents believed that they had already seen a particular news, that reduced their accuracy in determining the accuracy of news items with sensationalist headlines (Est. = -0.22, p = 0.001).

Surprisingly, respondents who indicated "TV" as one of the main sources of information were more accurate in determining the accuracy of news with neutral headlines (Est. = 0.39, p = 0.030). At this stage of our research, we do not know how to explain this pattern, which seems counterintuitive to the prevailing perception of Russian TV.

Another surprising finding the negative correlation between rational thinking and the accuracy of recognition of business news (Est. = -0.34, p = 0.038), which, in our opinion, is associated with the particular strategy of news selection in our study (plausible false news and implausible truthful ones were selected). News checking has a significant effect only for business-related news and for news with sensationalist headings. We can not speculate that this is due to the fact that participants have a tendency of checking business news and news with sensationalist heading more often, as number of double-checking acts are almost the same both for business and political news, and for sensationalist and neutral headlines.

Table 4. Regression models for accuracy (Business and politics domains, neutral and **sensationalist** titles)/

Predictors	Business		Politics		Neutral		Sensationalist	
	Est.	p	Est.	p	Est.	P	Est.	p
(Intercept)	4.59	**<0.001**	2.63	**<0.001**	2.77	**<0.001**	4.45	**<0.001**
Conspiracy mentality:	-0.17	**0.018**	-0.00	0.989	-0.10	0.159	-0.07	0.360
C.1 "Many so called "coincidences" are in fact clues to how things really happened"								
Magical thinking:	-0.07	0.117	-0.03	0.565	0.05	0.297	-0.15	**0.003**
MT.1 "I sometimes have a feeling of gaining or losing energy when certain people look at me or touch me").								
General trust:	-0.06	0.307	0.07	0.329	0.10	0.078	-0.10	0.119
Trust.3 "Most of the time people try to be helpful"								
Rational Think-	-0.34	**0.038**	0.26	0.158	-0.02	0.895	-0.06	0.745

ing:	CRT2.1 "If you're running a race and you pass the person in second place, what place are you in?"							
News_seen	-0.02	0.767	-0.13	0.063	0.07	0.262	-0.22	**0.001**
TV	0.16	0.355	0.18	0.364	0.39	**0.030**	-0.04	0.830
News_check	0.28	**0.010**	0.18	0.159	0.17	0.115	0.29	**0.016**
Observations	178		178		178		178	
R^2 Nagelkerke	0.163		0.078		0.133		0.221	

Thus, we can conclude that the new domain is a significant factor that influences the perception of news. We can not see any universal factors as we predicted in hypothesis H.1,H.2,H.3. At the same time, the results do not allow us to fully rejected the hypothesis that thinking style influences fake news recognition. We also found no influence of trust (H.4), interest in politics or business (H.5) or faculty (H.6), so we can safely reject these hypotheses. The *"ability to recall the news will have no influence on the accuracy of news recognition"* is the only hypothesis we can partially confirm in our study .

Our research has demonstrated that the domain of political news is the least predictable area, as none of tested variables contribute to accuracy in this sphere. The use of sensationalist headlines attracts the readers' attention, but, at the same time, these headlines increase the likelihood of double-checking these news items in other information sources (Table 4).

5 Discussion

The results raise two important questions. First, can we interpret results as influence of a factors, as all developed and adapted scales (conspiracy mentality, trust and rational thinking) at Russian sample have low psychometric features and we used items separately. Hence, we could not conclude that these factors have any relationship with the accuracy of fake news recognition. Consequently, we need to conduct further research on the role of these factors.

The second question is about the criteria of news selection. This is an important matter because it may potentially affect the results. If the selected news cannot be distinguished by rational thinking, it is evident why the news checking behavior is the main significant factor.

It worth mentioning that in the experiments conducted by Pennycook and coauthors, the CRT and CRT2 demonstrated high correlation (0.57), but they didn't report the Cronbach alpha- coefficient for CRT2, which may be a sign of low reliability of this construct. Moreover, Pennycook and coauthors did not use the CRT2 measurement in their regression analysis [5].

In comparison to the study of Pennycook and coauthors, our participants showed less accuracy in recognizing true news (Acc_{true} = 1.86, instead of 2.76 [5]) and they were more accurate in recognizing false news (Acc_{fake} = 2.24 , instead of 1.83 [5]).

Our data analysis shows that conspiracy thinking has an effect only on the accuracy in business-related news. This goes contrary to our initial expectation that would have an effect on respondents' ability to differentiate between true and fake news in the political domain. However, once we took a deeper look at the composition of our news, we discovered that the business news that we selected (for example, the news about bottled water or IKEA) could have be explained from a conspiracy beliefs angle, while selected political news could not be explained by any conspiracy ideas.

Thus, we can conclude that certain methodological limitations have impacted our abilities to fully explore our initial hypotheses.

Limitations.

Our research has three main limitations. The first limitation has to do with the type of news selected for the study, where the relatively low accuracy in news recognition may be associated with the difficult task of recognizing fake news that in fact look credible.. Second, since our participants were university students who are probably more rational than the average in Russia, the results obtained from this sample may not be generalized for the whole population of the Russian Federation.

Third limitation arises from the low psychometric features of proposed thinking scales and do not allow us to make final conclusion about the role of thinking style in fake news recognition.

6   Conclusion

The main questions of our study were the following: what are the main factors that influence the accuracy of fake news recognition and do they differ for news from different spheres?

Our analysis of the dominance and indices of accuracy shows that the main factor responsible for the quality of news recognition is the number of news checked from external sources. Other factors, such as thinking style, have a significant influence on the accuracy of business news recognition or on news with sensationalist headlines. It is interesting that such major factors as general trust and such control variables as gender and faculty proved to be insignificant when it comes to fake news recognition.

Our analysis raises several further questions, such as our limitation to generalize our findings beyond the walls of an advanced university in Russia. We would also like to research the role of experimental settings in investigating different factors responsible for fake news recognition.

7   Acknowledgements

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Appendix 1.

Table A.1 Amount of participants indicated the information source as main source of information

Domain	True	Title	Text
P	T	Neutral:Пожары в Калифорнии Sensationalist: Гори, Калифорния!	Трамп подверг критике действия властей Калифорнии по ликвидации пожаров. «Каждый год, как только огонь начинает полыхать в Калифорнии, <...> он [губернатор Калифорнии] приходит к федеральному правительству за финансовой помощью. Хватит!»
P	T	Neutral: На Шварценеггера напали Sensationalist: Терминатора избили	На Арнольда Шварценеггера напали в ЮАР. И это попало на видео — на кадрах мужчина разбегается и в прыжке бьет 71-летнего актера ногой в спину. Железный Арни такого не ожидал и не удержал равновесие.
P	F	Neutral: Отчет о климате Sensationalist: Глобальная подделка	NASA и межправительственная группа экспертов по изменению климата (NOAA) подделали данные в глобальном температурном отчете GISTEMP, чтобы преувеличить проблему глобального потепления. В докладе были найдены ошибки.
P	F	Neutral: Трамп и Маттарелла Sensationalist: Трамп отжигает!	Президент США Дональд Трамп назвал лидера Италии «президентом Моцареллой». Это произошло на пресс-конференции после официальной встречи глав двух государств. В действительности итальянского коллегу Трампа зовут Серджо Маттарелла.
E	T	Neutral: Вода в бутылках Sensationalist: Лохотрон в бутылке	Исследователи американской Environmental Working Group подчеркивают: половина производителей бутилированной воды признают, что это та же самая водопроводная вода, "прошедшая дополнительную очистку".
E	T	Neutral: Тест от IKEA Sensationalist: Шок от IKEA!	Компания IKEA предложила женщинам пройти тест на беременность с помощью специальной рекламной страницы в шведском журнале Amelia. Если беременная женщина помочится на нее, то на странице появится новая цена.
E	F	Neutral: Робот угрожал человеку Sensationalist: Робот взбесился!	На испытаниях инженерной компании Boston Dynamics робот, управляемый искусственным интеллектом, угрожал человеку оружием. Он напал на сотрудников компании, проводивших тестирование устройства.
E	F	Neutral: Новые стаканы Starbucks Sensationalist: «Сатанинские» стаканы	Акции компании Starbucks упали после того, как генеральный директор Говард Шульц представил новый дизайн стаканов. Пользователи сети сочли их облик «сатанинским».

Table A.2 Amount of participants indicated the information source as main source of information

Sources of information	Amount of participants indicated source among three top sources	%
SNS and Forums	164	92.13
News sites and News aggregators	101	56.74
Friends	89	50.00
Bloggers	65	36.52
TV	36	20.22
Radio	7	3.93
Other	5	2.81
Paper newspapers and journals	1	0.56

Table A.3. Descriptive statistics for Accuracy dimensions

	Amount of participants by levels					
Levels of accuracy	0	1	2	3	4	Mean
Fake	2	36	73	51	16	2.24
True	15	43	77	38	5	1.86
Business	5	39	69	49	16	2.18
Politics	19	41	62	47	9	1.92
Exclamation	13	43	59	49	14	2.04
Neutral	7	45	67	49	10	2.04

Table A.4. Descriptive statistics for Rational thinking questions

ID	Question	0	1
CRT2.1	If you're running a race and you pass the person in second place, what place are you in? (intuitive answer: first; correct answer: second)	48	130
CRT2.2	A farmer had 15 sheep and all but 8 died. How many are left? (intuitive answer: 7; correct answer: 8)	18	160
CRT2.3	Emily's father has three daughters. The first two are named April and May. What is the third daughter's name? (intuitive answer: June; correct answer: Emily)	21	157
CRT2.4	How many cubic feet of dirt are there in a hole that is 3' deep x 3' wide x 3' long? (intuitive answer: 27; correct answer: none)	145	33

Table A.5. Descriptive statistics for Conspiracy beliefs questions

ID	Question	Mean	SD	Skew	Kurtosis	SE

C.1	Many so called "coincidences" are in fact clues as to how things really happened	4.241	1.026	-0.647	0.394	0.076
C.2	Government agencies closely monitor all citizens	4.314	1.298	-0.500	-0.677	0.097
C.3	The government or covert organizations are responsible for events that are unusual or unexplained	3.606	1.311	0.000	-0.681	0.098
C.4	The alternative explanations for important societal events are closer to the truth than the official story	4.078	1.227	-0.221	-0.7637	0.092

Table A.6. Descriptive statistics for Conspiracy beliefs questions

ID	Questions	Mean	sd	Median	Skew	Kurtosis	se
Trust.1	Most of the time people try to be helpful	3.769	1.093	4	-0.209	-0.49755	0.081
Trust.2	People can be trusted	2.915	1.225	3	0.159	-0.943	0.091
Trust.3	Most people would try to take advantage of you if they got a chance	3.938	1.276	4	-0.160	-0.73096	0.095

Table A.7. Descriptive statistics for Magical thinking questions

ID	Questions	mean	sd	median	skew	kurtosis	se
MT.1	I sometime have a feeling of gaining or losing energy when certain people look at me or touch me	3.387	1.584	4	-0.087	-1.228	0.118
MT.2	Someone can put a jinx on me.	2.089	1.345	2	1.054	0.120	0.100
MT.3	I have wondered whether the spirits of the dead can influence the living	1.882	1.146	2	1.416	1.527	0.085
MT.4	I have felt that I might cause something to happend just by thinking too much about it	3.449	1.445908	3.5	-0.016	-1.084	0.108

Table A.8. Dominant variables from each factor for dimensions of Accuracy (average contribution)

Dimensions	Business	Politics	Neutral	Exclamation	Overall
Conspiracy	**C.1 (0.024)**	consp_monitor (0.002)	consp_truth (0.001)	consp_monitor (0.014)	consp_monitor (0.01)

Magic Thinking	MT.1 (0.01)	magic_spirits (0.018)	magic_eye (0.02)	**MT.1 (0.041)**	magic_think (0.017)
Trust	Trust.3 (0.013)	Trust.3 (0.004)	**Trust.3 (0.017)**	Trust.3 (0.024)	people_help (0.002)
Rational thinking	CRT2.1 (0.011)	**CRT2.1 (0.012)**	CRT2.2 (0.007)	CRT2.4 (0.004)	CRT2.4 (0.01)
Control	Faculty (0.005)	News_seen (0.014)	News_seen (0.016)	**News_seen (0.047)**	who (0.01)
News sources	News aggregators (0.011)	TV (0.01)	**TV (0.029)**	Friends (0.019)	TV (0.015)
Behavioral variables	News_checked (0.034)	News_checked (0.008)	News_checked (0.029)	News_checked (0.011)	**News_checked (0.036)**