



Article

Evaluations of the Authenticity of News Media Articles and Variables of Xenophobia in a German Sample: Measuring Out-Group Stereotypes Indirectly

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Abstract: Xenophobic and right-wing attitudes have become a major issue in Western societies. The present study investigated how such attitudes and stereotypes influence media perception in terms of identifying manipulated news articles. In a fake news paradigm, N = 326 participants provided self-report measures of xenophobia and conservatism, and were presented with real news media articles describing crimes that were committed either by putative German (i.e., in-group) or putative immigrant (i.e., out-group) perpetrators. Half of the articles were manipulated, and the participants were asked to rate the articles with respect to the perceived veracity of the article and the reprehensibility of the described criminal offences. Xenophobia, but not conservatism, was associated with poorer news discernment and higher perceived veracity in the immigrant offender condition, but not in the native German offender condition. Reprehensibility was not differentially associated with xenophobia in the two origin-of-offender conditions. The fake news paradigm revealed an out-group bias with respect to the perceived veracity of media news, and this result offers an alternative to measure stereotypes about immigrants more subtly than by explicit self-report. Xenophobia seems to make people less sensitive to hints that could inform them about the falsehood of information.



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1. Introduction

Within the past decade, an increase in xenophobic attitudes has become a significant societal issue in Western societies. Xenophobia is characterized by prejudices against people perceived as foreign. It includes hostile and sometimes fearful attitudes, affects, and behaviors toward (supposed) foreigners (Van Der Veer et al. 2011). The reinvigoration of stronger and more hostile out-group stereotypes manifests itself in the fact that right-wing populist parties have become relevant driving political forces once again (Grevén 2016). The refugee crisis in 2015 further promoted dissent regarding this topic in Europe, both in the media and the public discourse. A recent study showed that xenophobic attitudes in Germany are on the rise again, with birth cohorts after 1970 showing increasingly more xenophobia (Beller 2020). The rise of both overt and covert right-wing attitudes is currently a substantial issue for modern societies (Zick et al. 2019).

Prominent theories of intergroup conflict often distinguish between different types of bias, varying in their degree and prevalence (Noon 2018). Direct and blatant forms of bias, such as overt discrimination, are thought to be espoused by a small minority of the population. In contrast, more “subtle” biases, such as rating in-group members more positively (e.g., more trustworthy) or stereotyping out-group members, are thought to be automatic, unconscious, and indirect. Such “subtle” biases are thought to be broadly distributed (Noon 2018; Zick et al. 2019), for example, in the case of empathy (e.g., Miralles et al. 2019; De Waal and Preston 2017; see also Plieger et al. 2022). The social identity theory (SIT; Tajfel and Turner 2004), which posits that the feeling of belongingness to in-groups is an important driver for a positive self-concept, provides an explanation for this phenomenon.

The positive group-based self-concept is achieved by differentiation from out-groups that results in negative out-group biases and in-group favoritism. However, xenophobia and stereotypes are prone to social desirability tendencies (e.g., [Weber et al. 2014](#)), which is why the present study aimed to measure such attitudes in a subtler way.

One ecologically valid way to uncover covert negative stereotypes about foreigners could be the way in which one perceives news media reports and their veracity. Linking media perception with attitudes toward out-groups is particularly interesting because it has been shown that members of out-groups are overrepresented in news media articles describing crimes ([ter Wal et al. 2005](#)), and overrepresentation of certain groups in such news reports leads to stereotypes against these groups ([Jabold 2020](#)). Substantial scientific efforts have recently been invested in the issue of so-called fake news. Fake news can be defined as fabricated or inaccurate news content that resembles well-researched mainstream media content. Such false news can be deliberately or accidentally misleading to its consumers. Thus, the term fake news has substantial overlaps with misinformation and disinformation ([Lazer et al. 2018](#); [Pennycook and Rand 2021](#); for a more detailed discussion of this topic see [Van Der Linden 2022](#)). Accordingly, fake news does not adhere to the news media's quality standards and practices that ensure accuracy and credibility of the information presented ([Lazer et al. 2018](#)). Fake news has become such a serious issue, because it has been shown to contribute to the formation of certain beliefs and attitudes ([Roets 2017](#)). Notably, exposure to falsified news can also modify individual behavior unconsciously, which stresses its ability to shape public opinion ([Bastick 2021](#)).

Recent studies have aimed to identify the variables associated with the individual tendency to fall for Fake News. It has been found, quite consistently, that cognitive reflection, analytical thinking, and basic knowledge about the respective topic (e.g., COVID-19, political news, or climate) helps to differentiate fake from real news ([Amazeen and Bucy 2019](#); [Bago et al. 2020](#); [Calvillo et al. 2020](#); [Pennycook and Rand 2019](#); [Van Der Linden 2022](#); [Vegetti and Mancosu 2020](#)). Notably, whether people tend to believe news that is in accordance with their own political ideology is still a matter of debate (see [Kahan 2012](#); [Pennycook and Rand 2019](#); [Pennycook and Rand 2021](#); [Sindermann et al. 2020](#)). Some studies suggest that it is not the match between political beliefs and the content of news articles that has a modulating influence on the ability to make correct judgments, but rather the political attitude itself. [Calvillo et al. \(2020\)](#) found conservatism and conspiracy beliefs to be negatively correlated with the ability to correctly classify true and false COVID-19-related news in a US sample. Although this was fully mediated by the extent to which participants approved of Donald Trump as president, other studies found similar results with regard to an association between believing or spreading fake news and conservatism or right-wing ideologies (see [Allcott and Gentzkow 2017](#); [Baptista and Gradim 2020](#); [Roozenbeek et al. 2022](#); [Van Der Linden 2022](#); [Wright and Duong 2021](#)). [Baptista et al. \(2021\)](#) reported that right-wing people in Portugal tended to believe in the authenticity of fake news regardless of whether the content of the presented political news headlines was pro-left or pro-right. This leads to questions regarding confirmation bias in the evaluation of news headlines and suggests that right-wing attitudes might go along with the perception of (fake) news in general.

Beyond the ability to correctly identify false information, the perceived credibility of presented news might also reveal covert stereotypes about certain groups of people. As already mentioned, xenophobia is subject to social desirability issues. Therefore, we aimed to introduce an indirect way to measure negative out-group bias. The most prominent existing paradigm that measures stereotypes indirectly is the Implicit Association Test (IAT). The IAT works under certain conditions, but is also subject to debate with respect to its validity ([Kurdi et al. 2021](#); [Schimmack 2021](#)). Furthermore, it takes place under artificial laboratory conditions; thus, we aimed to develop a more ecologically valid way of measuring stereotypes indirectly and subconsciously. In the present study, participants were presented with short news articles reporting crimes committed by supposed members of the sample's in-group (i.e., Germans) or by a supposed out-group (i.e., refugees and

Islamic-read persons), and were asked to rate the credibility of the news articles and the reprehensibility of the described acts. Therefore, we aimed to learn not only about the association between xenophobia and news discernment itself, but also to test whether the evaluation of the presented news articles could serve as a less direct, subtler measure of xenophobia. To test this, we correlated the evaluations of the news articles with self-report measures of xenophobia.

Consequently, we strived to test whether stereotypes about foreigners (i.e., xenophobia) would be associated with the ability to differentiate between fake and true news or with the evaluations of news content credibility and reprehensibility depending on the supposed origin of the perpetrator.

2. Methods

2.1. Participants and Procedure

Our sample comprised $N = 326$ participants (89 males, 231 females, and 6 identifying as “other”) with a mean age of $M = 31.4$ years ($SD = 13.39$). A total of 76 participants reported having a migrant background, meaning that they or (one of) their parents were born outside of Germany (most frequently Turkey, Palestine, Egypt, Morocco, and Syria). We asked our participants whether or not they read the news on a regular basis in order to test how experienced our participants would be with media consumption. This may have an effect on the ability to successfully identify manipulated news articles (Calvillo et al. 2021). The majority of our sample reported that they read the news on a regular basis ($n = 238$).

In order to detect associations between xenophobia and evaluations of the news articles with a medium effect size ($r = 0.3$) and power of $1 - \beta = 0.80$, we would have needed 84 participants per group (168 participants in total) (G*Power Version 3.1.9; Faul et al. 2007, 2009). We recruited as many participants as possible, which resulted in a higher number of participants without a migration background ($n = 250$) and a slightly smaller sample size in the group reporting a migration background ($n = 76$). Apart from that, the group of participants who reported to have a familial history of migration was very heterogeneous in terms of their specific origins of migration. For these reasons, we decided to exclude all participants who reported to have a migration background, although our initial idea was to use this group as a test of whether the perceptions of in-groups and out-groups would be reversed in this second sample. The decision to drop all participants with a migrant background resulted in a final sample of $n = 250$ German participants without any migration background (of themselves or their parents).

Participants were recruited via online advertisements posted to several social networks (e.g., Facebook, WhatsApp) and word-of-mouth advertising. The advertisements consisted of a short paragraph of information about the study and a link to the online questionnaire. In the study advertisement, we refrained from using the terms “xenophobia” or “right-winged attitudes” to avoid any reactance or social desirability effects. All participants received the study information and provided informed consent before proceeding to the online questionnaire. To avoid priming effects, the participants were presented with the news articles (see below for description) prior to filling in several questionnaires and providing demographic information. At the end of the study, the participants received a short debriefing and feedback on their achieved score in the fake news detection task, and were offered a link to learn which articles had been manipulated. To incentivize participation, all participants received brief, automated feedback on their Big Five personality scores that was based on a short version of the Big Five Inventory (BFI; Rammstedt and John 2007), which was presented at the beginning of the study (i.e., before the Fake News paradigm and the questionnaires of relevance). Notably, the BFI was included to be used in a bachelor’s thesis, but was not of interest for the actual study. Furthermore, the participants were given the opportunity to take part in a raffle for Amazon vouchers. For the lottery, the participants were forwarded to another domain so that participation in our study remained anonymous. The local ethics committee of the University of Bonn, Department of Psychology approved this study (#20-05-15).

2.2. Fake News Paradigm

We asked participants to read and evaluate 30 short news stories that consisted of a headline, a subheader, and three to five short sentences describing a more or less severe crime (e.g., sexual assault or violence). Twelve stories suggested that the perpetrator(s) were of German origin, whereas twelve articles suggested that the described crime was committed by an immigrant. The remaining six news stories served as distractor items with other content (i.e., no description of crimes).

All stories were taken from the two most successful populist newspapers in Germany, and some of them were shortened in order to keep the articles fairly equal in length and depth of detail. Half of the news stories were then deliberately manipulated by incorporating small violations of the press code. This involved the use of names, mentioning of addresses, naming brands (“surreptitious advertising”), and putative justifications of the crime. Violations of the press code were equally distributed over both conditions (i.e., in-group vs. out-group perpetrators). Moreover, we chose the news articles with respect to fairly comparable basic aspects (e.g., number of perpetrators or attack with a knife) in all conditions.

We asked the participants to rate the news articles with respect to whether or not they believed that the articles were manipulated on a 6-point Likert scale (1 = sure that this is fake, 6 = sure that this is true). Furthermore, we asked “Regardless of whether the article is real or fake, how reprehensible do you find the events depicted?” which was also answered on a 6-point Likert scale (1 = not at all reprehensible, 6 = very reprehensible). The articles, as well as the instruction of the task, are available via https://osf.io/a7gjq/?view_only=51bc883e74934b54a4f1de7b2bb5ed53. Furthermore, we informed the participants that they would receive feedback on their ability to successfully recognize fake news. We also added a trigger warning that the articles the participant was about to read would contain explicit descriptions of physical, psychological, and sexual violence and listed links to websites providing help for people affected by domestic or sexual violence or abuse of any kind.

2.3. Self-Report Measures

Because we wanted to test how our fake news paradigm would relate to explicit self-report measures, we included several measures of conservatism and right-winged attitudes with slightly different foci.

Xenophobia was measured by the fear-based xenophobia scale (FBX; Van der Veer et al. 2013) and a German questionnaire on right-wing extremist attitudes (“Fragebogen zur rechtsextremen Einstellung–Leipziger Form”, FR-LF; Decker et al. 2013). The FBX is a one-factorial scale comprising 9 items to be answered on a 6-point Likert scale (1 = strongly disagree, 6 = strongly agree). The internal consistency proved to be good, with a Cronbach’s $\alpha = 0.89$. As the name of the questionnaire suggests, the FBX is mainly concerned with alleged threats that are imposed by immigration and immigrants, whereas the FR-LF focuses on hostile and chauvinistic attitudes. The FR-LF comprises six subscales with three items each. We only used the subscales *chauvinism*, *hostility to foreigners*, and *social Darwinism* (leaving out three scales: *trivialization of national socialism*, *anti-Semitism*, and *approval of right-winged dictatorship*). We shortened the scale not only for time economic reasons, but also to avoid reactant behavior. For a more parsimonious and comprehensible depiction of the results, the subscales were grouped together, as they were substantially associated with each other (all $r > 0.5$). This resulted in 9 items, with a Cronbach’s $\alpha = 0.85$, that were answered on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree).

The participants’ political ideologies were assessed with a single item asking the participants to indicate their political orientation on a 7-point Likert scale (1 = left, 7 = right). We refrained from scaling this item from “conservative” to “liberal”, because the term “liberalism” in particular is used differently in the German political environment as compared to other countries, e.g., the U.S. (Grünhage and Reuter 2020a, 2020b). However, it has been shown that these two methodological approaches to the measurement of conservatism are very highly correlated (see Grünhage and Reuter 2020a, 2020b). Additionally,

we assessed right-wing authoritarianism (RWA) and social dominance orientation (SDO), as these are the two constructs predominantly used to assess conservatism (for a more detailed explanation, see, e.g., Duckitt and Sibley 2010 or Grünhage and Reuter 2020b). RWA was measured using the balanced short scale of authoritarian attitudes (B-RWA-6; Aichholzer and Zeglovits 2015). It consists of six items to be answered on a 5-point Likert scale. The internal consistency was weak, but acceptable considering the shortness of the scale ($\alpha = 0.67$). SDO was assessed by the social dominance orientation scale (Pratto et al. 1994). The 16 items were answered on a 7-point Likert scale and showed a good internal consistency ($\alpha = 0.87$).

2.4. Statistical Analyses

The news discernment accuracy in our fake news paradigm was calculated by the deviation between the given and the correct answers in order to obtain a weighted score (0 to 5 points per item). For a fake article, the participant received the maximum score of 5 points if they rated the credibility as “sure that this is fake” and the minimum score of 0 points if they rated the news story as “sure that this is true”. Similarly, 5 points were given for an unmanipulated news story if the participant rated the credibility of the respective item as “sure that this is true” and 0 points were given if they rated the news story as “sure that this is fake”. The distractor items were excluded from the analyses, and we built two separate scores for the two “origin-of-perpetrator” conditions (i.e., German vs. immigrant). Therefore, the maximum score that could be reached was 2 (condition) * 12 (news items per condition) * 5 (maximum score per item) = 120. The means of the credibility and the reprehensibility evaluations of the news stories as possible indicators of implicit xenophobic stereotypes were also calculated separately for the two conditions.

After controlling for age, education, and gender, we assessed correlations between the variables extracted from the fake news paradigm and the measures of political ideology (i.e., political orientation and xenophobia).

All analyses were performed with SPSS 27 (IBM) and G*Power (Faul et al. 2007, 2009).

3. Results

3.1. Control Analyses

First, we tested whether age and gender had an influence on the subjective evaluation of the news articles and the actual accuracy in discerning fake from true news. Gender was not related to any of the dependent variables. Age and educational level correlated weakly ($-0.120 < r < 0.180$) with some of the variables of the fake news paradigm (credibility ratings in the immigrant condition and accuracy scores), so we decided to control for both variables in the subsequent analyses¹. Furthermore, we checked for any influence of regular news reading, because it is conceivable that reading the news on a regular basis helps with recognizing manipulations in news articles due to a higher level of expertise regarding the style of normal news articles. Participants who reported to read the news on a regular basis were not significantly more accurate in fake news identification ($F_{1, 324} = 2.87, p = 0.091$); thus, we did not control for this variable in the subsequent analyses.

Next, we calculated the correlations between the different self-report variables measuring conservatism and xenophobia (Table 1). As expected, RWA and SDO were positively correlated with the self-placement item of political orientation (indicating higher values in more conservative persons). Both xenophobia scales were also moderately associated with political orientation. Furthermore, there was a close association between the two xenophobia measures, FBX and FR-LF.

In order to test whether there was a general effect of in-group favoritism, such that news stories describing in-group perpetrators would be perceived as being manipulated more often and the crime would be seen as less reprehensible, we conducted ANOVAs with repeated measures. Experimental condition (i.e., German vs. immigrant offender) served as a within-subject factor. Credibility ratings ($F_{1, 249} = 203.27; p < 0.001; \eta^2 = 0.449$) were higher for the in-group offender condition compared to the out-group offender condition, whereas

reprehensibility ratings were higher in the out-group condition ($F_{1, 249} = 8.01; p = 0.005; \eta^2 = 0.031$) (see Figure 1). Thus, there was no overall negative out-group bias.

Table 1. Correlations between measures of conservatism and xenophobia.

	FBX	FR-LF	RWA	SDO	Political SP	Age
FR-LF	0.780 (<0.001)					
RWA	0.415 (<0.001)	0.454 (<0.001)				
SDO	0.653 (<0.001)	0.656 (<0.001)	0.418 (<0.001)			
Political SP	0.422 (<0.001)	0.394 (0.001)	0.318 (<0.001)	0.378 (<0.001)		
Age	0.019 (0.764)	−0.057 (0.372)	−0.028 (0.664)	−0.158 (0.012)	−0.004 (0.944)	
Gender *	−0.186 (.004)	−0.220 (<0.001)	−0.041 (.521)	−0.267 (<0.001)	−0.210 (<0.001)	0.050 (0.440)

Note: N = 250 (* N = 245); FBX = fear-based xenophobia; FR-LF = right-wing extremist attitudes; RWA = right-wing authoritarianism; SDO = social dominance orientation; Political SP = political self-placement (1 = left, 7 = right); gender (1 = male; 2 = female; n = 5; "other" excluded for this analysis because of nominal scaling).

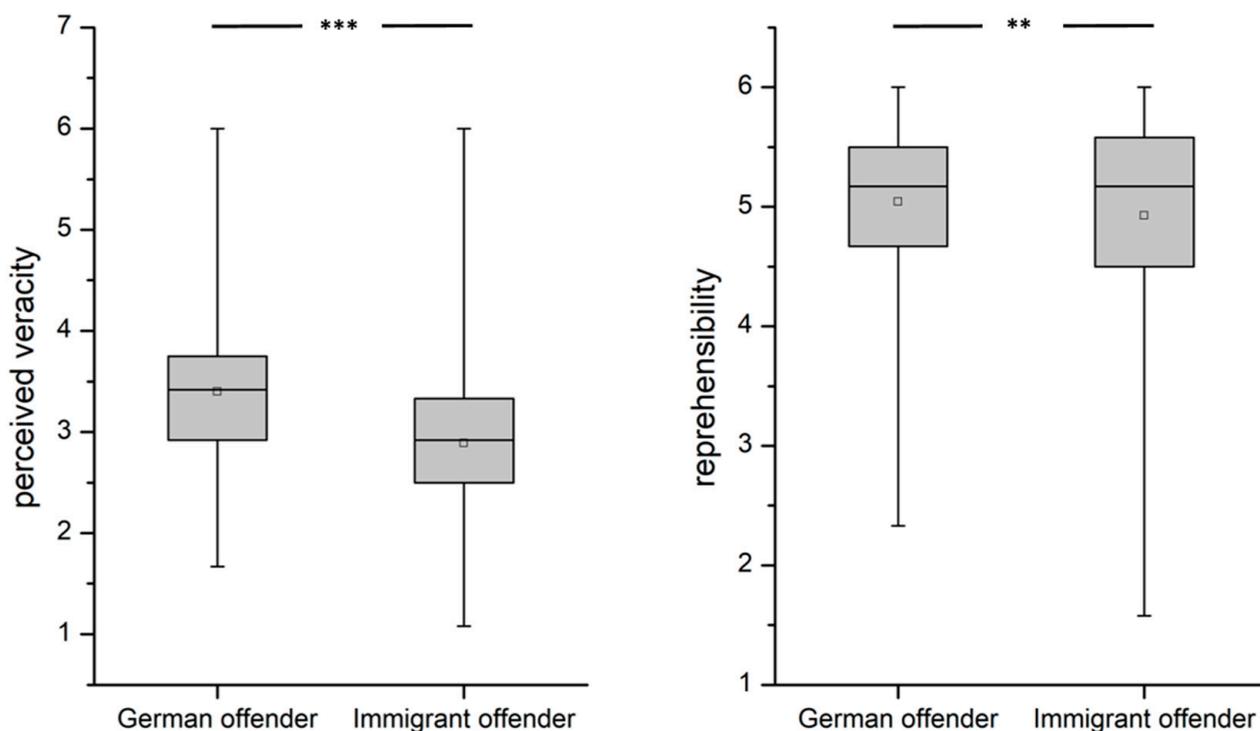


Figure 1. Ratings of the fake news paradigm. The participants rated news stories mentioning German offenders as more credible, but less reprehensible than news stories mentioning migrant offenders. Note: square = M, line = md, box = 25–75%, whiskers = min, max. ** $p < 0.01$; *** $p < 0.001$.

Table 2 provides the means and standard deviations for all of our variables.

Table 2. Mean scores of xenophobia, measures of conservatism, and the dependent variables of the fake news paradigm.

(N = 250)	M (SD)
Age	31.95 (14.22)
Educational level	5.25 (1.33)
FBX	2.04 (0.87)
FR-LF	1.48 (0.52)
RWA	2.48 (0.66)
SDO	2.07 (0.82)
Political orientation	2.98 (1.03)

Table 2. *Cont.*

(N = 250)	M (SD)
Correct classifications (all articles)	65.71 (9.62)
Correct classifications (German)	32.92 (5.96)
Correct classifications (immigrant)	32.78 (5.23)
Credibility (German)	3.40 (0.63)
Credibility (immigrant)	2.89 (0.67)
Reprehensibility (German)	4.93 (0.89)
Reprehensibility (immigrant)	5.04 (0.69)

Note: Significant differences ($p < 0.01$) in bold; FBX = fear-based xenophobia; FR-LF = right-wing extremist attitudes; RWA = right-wing authoritarianism; SDO = social dominance orientation; political orientation (1 = left, 7 = right). The terms “German/Immigrant” refer to the suggested origin of the offender in the news story.

3.2. Associations between Measures of Xenophobia, Conservatism, and News Article Discernment

Regarding our first hypothesis that higher levels of xenophobia would lead to worse news discernment, partial correlations (controlling for age and educational level) revealed significant associations (see Table 3). Both measures of xenophobia were negatively associated with the overall accuracy score. Thus, participants with more pronounced xenophobic attitudes tended to be less accurate in identifying the presented news articles as real or manipulated. Political conservatism in terms of left- and right-wing attitudes was only weakly associated with news discernment. Similarly, RWA and SDO (typically constituting conservatism) showed some weak negative associations with successful news discernment.

Table 3. Partial correlations (corrected by age and educational level) between xenophobia, conservatism, and news article discernment.

	Correct Classifications, German	Correct Classifications, Immigrant	Correct Classifications, All Articles
	r (p)		
FBX	−0.163 (0.010)	−0.156 (0.014)	−0.188 (0.003)
FR-LF	−0.203 (0.001)	−0.162 (0.011)	−0.216 (0.001)
RWA	−0.170 (0.007)	−0.062 (0.332)	−0.141 (0.017)
SDO	−0.138 (0.031)	−0.157 (0.014)	−0.172 (0.007)
Political Orientation	−0.100 (0.115)	−0.139 (0.029)	−0.139 (0.029)

Note: N = 250; The terms “German/Immigrant” refer to the suggested origin of the offender in the news story. FBX = fear-based xenophobia; FR-LF = right-wing extremist attitudes; CMS = conspiracy mentality scale; RWA = right-wing authoritarianism; SDO = social dominance orientation; political orientation (1 = left, 7 = right).

3.3. Associations between Measures of Xenophobia, Conservatism, and Subjective News Article Evaluation

As our second hypothesis, we predicted that participants with higher levels of xenophobia would perceive news articles describing crimes committed by an out-group member as true more often and would rate these crimes as more reprehensible. Importantly, we expected that this would only be the case in the out-group condition, but not the in-group condition.

Both measures of xenophobia (FBX and FR-LF) predicted higher credibility ratings in the migrant offender condition, but not the German offender condition (see Table 4). Comparisons of the correlation coefficients revealed significantly stronger correlations in the immigrant condition for FBX ($z = 2.19, p = 0.028$) and FR-LF ($z = 2.17, p = 0.030$), but not for RWA ($z = 1.30, p = 0.194$) or SDO ($z = 1.21, p = 0.225$). Thus, people with more pronounced xenophobic attitudes, indeed, more often believed news stories reporting crimes committed by out-group persons to be true. Surprisingly and contrary to our hypothesis, the reprehensibility ratings were not associated with xenophobia in the expected direction. In fact, there was a weak positive correlation between FBX and subjective reprehensibility in the German offender condition ($r = 0.147, p = 0.02$), which contradicted

our expectations. RWA and SDO also correlated positively with the credibility ratings in the migrant offender condition, but not in the German offender condition. However, the actual political ideology item did not show any correlations with credibility or reprehensibility in any of the conditions.

Table 4. Partial correlations (corrected by age and educational level) between xenophobia, conservatism, and news article evaluation.

	Credibility, German	Credibility, Immigrant	Reprehensibility, German	Reprehensibility, Immigrant
	r (p)			
FBX	0.039 (0.538)	0.232 (<0.001)	0.151 (0.018)	0.063 (0.322)
FR-LF	0.071 (0.263)	0.260 (<0.001)	0.108 (0.089)	0.030 (0.641)
RWA	0.123 (0.053)	0.236 (<0.001)	0.046 (0.471)	−0.015 (0.816)
SDO	0.044 (0.491)	0.152 (0.017)	0.076 (0.233)	−0.001 (0.984)
Political orientation	−0.039 (0.538)	0.024 (0.712)	0.116 (0.068)	0.034 (0.592)

Note: N = 250; The terms “German/Immigrant” refer to the suggested origin of the offender in the news story. FBX = fear-based xenophobia; FR-LF = right-wing extremist attitudes; RWA = right-wing authoritarianism; SDO = social dominance orientation; political orientation (1 = left, 7 = right).

4. Discussion

The present study attempted to relate measures of xenophobia to different aspects of the perception of news articles. First, we wanted to test whether xenophobic stereotypes and conservatism would be associated with the ability to correctly identify false information in the presented news articles. Second, we aimed to test whether xenophobic attitudes and conservatism would be reflected in the evaluations of reported crimes committed by immigrants as credible and reprehensible.

In fact, people with more pronounced xenophobic attitudes showed a poorer ability to correctly differentiate between manipulated and true news (see Table 3). This questions the idea that news discernment is driven by a confirmation bias in that people tend to believe in the veracity of news that is in accordance with their own beliefs. Instead, our results support the hypothesis that xenophobic and right-wing attitudes are associated with poor news discernment in general (e.g., [Baptista et al. 2021](#)). Interestingly, political orientation was only weakly associated with the ability to identify fake news, although social dominance orientation (and, to a lesser extent, right-wing authoritarianism) tended to result in lower discernment accuracy scores. Apparently, particularly extreme right-wing attitudes were associated with the ability to successfully discern real from fake news, whereas moderate political conservatism had a low predictive value in our sample. Nonetheless, our results point in the same direction as other recent findings (e.g., [Calvillo et al. 2020](#)).

The actual score of correctly classified news articles aside, we tested how news media articles would be evaluated in terms of the perceived veracity and reprehensibility of the described crimes depending on the perpetrators’ origin (see Table 4). Notably, veracity scores were higher for German offenders compared to alleged immigrant offenders, whereas news stories were rated as slightly more reprehensible in the out-group condition. Thus, we were only able to observe a slight in-group favoritism effect for reprehensibility, whereas there was an opposing effect in terms of the credibility of news stories in the two conditions. The latter diverges from several other studies that found, for example higher empathy for pain in in-group members ([Chiao and Mathur 2010](#); [Miralles et al. 2019](#); [Cao et al. 2015](#)). According to the social identity theory, we expected a negative out-group bias as well: Reading about misbehaviors (i.e., crimes and assaults) of members of an out-group is thought to serve as a reason to devalue the out-group, and enhances self-esteem. Therefore, participants were expected to believe in the veracity of articles describing out-group offenders. In contrast, they were expected to refuse to believe in reports of crimes committed by in-group members to maintain their self-esteem. However, the SIT also posits that individuals must have internalized their group membership, and that it is

not sufficient if objective criteria or others assign them to a group. Thus, the description of perpetrators being (or not being) immigrants may not have been a salient criterion for defining the in-group and the out-group. This may be because our sample was quite liberal with respect to political orientation, as persons that are more liberal tend to have fewer negative stereotypes toward ethnic or cultural out-groups (Beyer 2020). Fittingly, a recent study of our workgroup was also unable to detect empathy bias in suffering individuals from the in-group vs. the out-group (Plieger et al. 2022). The perceived veracity was even higher in the German offender condition. The black sheep hypothesis (Marques et al. 1988) may serve as an explanation. It posits that judgments of in-group members tend to be more extreme than judgments of out-group members, such that likeable in-group persons are judged extremely positively, whereas unlikeable in-group members are judged extremely negatively (with people from the out-group being judged in between). Obviously, individuals who commit crimes, as was the case in our news presentation paradigm, should be valued as unlikeable and might be evaluated more negatively than persons from the out-group showing the same negative behavior. However, according to this idea, crimes committed by in-group offenders should also have been rated as more reprehensible, which was not the case. Therefore, it is conceivable that our participants had in mind that the proportion of immigrants in the population was lower than that of native Germans. This may have led to the (more or less conscious) assumption that more stories describing native German perpetrators must have been true.

As we were particularly interested in individual differences in xenophobia and whether these would be associated with the evaluations of the news stories, we also considered whether any of our independent variables had predictive value for the individually perceived credibility of the news articles. Thus, we found that our participants rated the stories in the immigrant (i.e., out-group) condition as more credible when they scored higher for xenophobia and right-wing authoritarianism. In contrast, no such associations were found in the German (i.e., in-group) offender condition. Therefore, the approach of presenting news articles that describe criminal activity by immigrants vs. natives may indeed be able to measure xenophobic attitudes.

With respect to the reprehensibility ratings, we did not find any meaningful associations with xenophobia or conservatism. This was contrary to our expectation that more xenophobic participants would rate crimes committed by immigrants as more severe and reprehensible. Therefore, it must be considered that this rating dimension did not work well, which may be due to ceiling effects, as the mean reprehensibility ratings were quite high for all of the presented news stories ($M = 4.97$, $SD = 0.77$, maximum score = 6).

Fake news often contains negative or scandalous information. Therefore, the tendency of extreme right-wing persons to believe in fake news might be driven by the higher scores for conspiracy beliefs and interpersonal and institutional distrust that are typically found in this group (Halapuu et al. 2013; Van der Linden et al. 2017). Furthermore, Sindermann et al. (2021) found that interpersonal trust is a more relevant predictor of media discernment abilities than other personality variables (e.g., openness or consciousness) or cognitive ability. We found that people with higher xenophobia scores were less accurate in news discernment because they tended to overestimate the veracity of the presented news articles in the immigrant offender condition. Hence, in terms of signal detection theory, they were prone to false alarms rather than misses. It would be interesting to see whether our results would be reversed if the presented news articles reported on positive events (e.g., a passenger protecting someone being violated by an offender) instead of reporting on crimes, or, more generally,, negative events, as we did in the present study.

Limitations

Some limitations must also be mentioned. With respect to the fake news paradigm, the suggested origin of the described offenders was sometimes ambiguous. For example, “the Berlin born man . . . ” was categorized into the German offender condition. However, a person with a migrant background who actually is born in Germany would be classified as

an immigrant (i.e., member of the out-group) rather than a German native (i.e., an in-group member) by many people, because humans are often judged by their outer appearance. We decided to use such ambiguous descriptions of the perpetrators anyway for several reasons. First, we did not want to produce our own news stories, but wanted to use true stories for the sake of ecological validity. Thus, we had to use the most exact hints toward a supposedly German origin that we could obtain. Second, we were confident that subtle hints such German/Western-sounding forenames or “the Berlin born man” would create an implicit idea of the origin of the described offenders in our participants. Finally, this rather subtle and slightly fuzzy way of measuring xenophobia within the evaluation of the news articles was the exact aim of our paradigm. The fact that we did not freely produce fake news on our own, but manipulated real news content instead, should also be addressed. As mentioned, we decided to use original rather than freely produced news articles for reasons of ecological validity. This means that we were not able to exactly parallelize the news articles in the two conditions; thus, we cannot rule out that the differences we found in the evaluation of the media articles may also be due to the differing content of the articles. Thus, the finding that our participants evaluated the articles describing German offenders as more credible and reprehensible may trace back not only to our sample characteristics (as discussed above), but also to differences in the articles. We attempted to combat this by presenting quite a high number of articles in each condition to raise the probability of eliminating unsystematic differences. Furthermore, we chose the news articles in such a way that the characteristics of the described situations were comparable by means of face validity.

Another aspect that relates to our paradigm is an important characteristic of fake news, which is the lack of adherence to “the news media’s editorial norms and processes for ensuring the accuracy and credibility of information” (Lazer et al. 2018; see also Tandoc 2019). However, oftentimes, fake news is intended to appear as if it were produced by serious news media institutions. In contrast, we deliberately added elements (e.g., names or addresses) to our manipulated articles that made it possible to identify them as faked, because serious media providers should refrain from doing so. Even though fake news is often not characterized by such violations, our articles nevertheless gave an indication of how critically and attentively news is consumed. Another possible limitation concerning the study design is that the study was quite time-consuming. Mostly due to the high number of news stories that had to be rated, it took our participants about 30 min in average to complete the study, which may have produced fatigue.

Furthermore, our sample was quite homogeneous, as is often the case in academic samples. Although we observed acceptable variance in our data, the participants were mostly well educated, had a political orientation slightly shifted to the left, and scored low for xenophobia. Obviously, we also tried to reach less educated and more right-wing or conservative people, but this is quite difficult, as is known. Nevertheless, a larger sample that also includes more individuals with these characteristics would be desirable in the future.

5. Conclusions and Outlook

In summary, the present study showed that persons with xenophobic stereotypes are less accurate in terms of recognizing manipulated news articles. Since fake news has been shown to be capable of influencing opinions, attitudes, and behaviors, (Bastick 2021; Roets 2017), it is important to understand which factors may explain a heightened susceptibility to fake news. Thus, future research should aim to identify further variables that predict the tendency to fall for manipulated or false media information in order to combat detrimental effects such as the increase of inter-group conflicts or out-group bias. Several measures to counteract the effectiveness of fake news have been introduced recently. For example, Shams et al. (2021), and Della Vedova et al. (2018) have presented machine-learning solutions for the automated identification of manipulated or false news. For example, these algorithms could help to build an alert system that could be used for

social media platforms. A warning notice presented next to articles or links that likely contain misinformation might create a greater sensitivity to fake news, and could be an important step to protect those persons who are prone to misleading information.

With respect to our fake news paradigm, xenophobic people perceived news stories reporting crimes committed by immigrants as more credible. They seemed to ignore or oversee aspects that could inform them about the falsehood of the presented information, which did not occur in news articles describing German offenders. Therefore, our fake news paradigm was, apparently, able to detect xenophobic attitudes, whereas it was less able to differentiate between liberalism and conservatism (i.e., left- and right-wing political ideologies).

Future research should attempt to replicate these findings in a more heterogeneous sample in terms of political orientation and educational background. Furthermore, modern societies in industrialized nations are multicultural and multiethnic. Therefore, investigating only those without any history of migration can never be representative of an entire society. Future research should strive to overcome this issue by investigating persons with different religions, cultural backgrounds, and ethnic identities. Moreover, a more thorough look at variables influencing the interplay between xenophobia and the evaluation of out-groups is needed as well. Mechanisms related to empathy may be interesting candidates.

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Notes

¹ We considered educational level as a metric variable to keep the results section comprehensible (see Tables 3 and 4). Analyses treating educational level in a dummy-coded manner can be accessed via https://osf.io/a7gjq/?view_only=51bc883e74934b54a4f1de7b2bb5ed53. Notably, the results were essentially the same in both partial correlations with educational level as metric covariate and hierarchic regression models with educational level as dummy-coded predictors.

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