FULL PAPER

Susceptibility to mis- and disinformation and the effectiveness of fact-checkers: Can misinformation be effectively combated?

Anfälligkeit für Fehl- und Desinformationen und die Effektivität von Faktenprüfern: Können Fehlinformationen wirksam bekämpft werden?

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Abstract: The online dissemination of mis- and disinformation may pose vexing problems on democracy. The factual basis of (political) information may be challenged by opposed partisans or issue publics, and misinformation may impact decision-making as confirmation biases may outweigh accuracy motivations. In this setting, fact-checkers that refute the false claims of misinformation may be regarded as an important tool to combat misinformation. Yet, the effectiveness of corrective information may be contingent upon partisan lenses, or the framing used in misinformation. In this study, the effectiveness of fact-checkers that refute different forms of misinformation on the polarizing issue of crime rates related to anti-immigration framing was assessed in the US and Netherlands. The main findings indicate that exposure to fact-checkers can correct misperceptions on immigration, and lowers the credibility of misinformation. Fact-checkers are more effective in the Netherlands than the US. These findings have important ramifications for understanding citizens’ susceptibility to (partisan) misinformation and rebuttals.

Keywords: anti-immigration framing; confirmation bias; fact-checkers; disinformation; misinformation; rebuttals


Schlagwörter: Anti-Immigrations-Framing, Confirmation bias, Faktenprüfer, Disinformation, Misinformation, Richtigstellung

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1. Introduction

It has been argued that we currently live in a post-factual or post-truth communication era, where verified knowledge and empirical evidence are not taken at face value, but doubted or trusted depending on the resonance of information with pre-existing views, ideologies or attitudes (e.g., Lewandowsky, Ecker, Seifert, Schwarz, & Cook, 2012; Van Aelst et al., 2017). In this setting, mis- and disinformation may flourish. In line with this, evidence on the effectiveness of journalistic initiatives that aim to counter mis- and disinformation is still mixed. Although some studies indicate that fact-checkers can effectively discredit misinformation (e.g., Hameleers & van der Meer, 2019; Nyhan, Porter, Reifler, & Wood, 2019) – other research points to a backfire effect, which indicates that misinformation that resonates with existing attitudes and partisan lenses is hard to correct (e.g., Thorson, 2016). Although previous research has offered important first insights into the effects of corrective information, we know too little about its effects outside of the US, or the conditions under which people accept different types of misinformation or corrective information presented in fact-checkers.

This paper aims to contribute to our understanding of the effects of misinformation and corrections in at least three important ways. First of all, following the definition of misinformation as information that is “not supported by clear evidence and expert opinion” (Nyhan & Reifler, 2010, p. 305) – we aim to compare the effects of misinformation that lacks any empirical evidence or expert sources versus misinformation that does include doctored or fabricated facts and empirical research, and hereby presents itself as authentic and verified journalistic content. Second, we empirically assess under which conditions misinformation and rebuttals are credible – what political perceptions predict the effectiveness of different forms of mis- or disinformation and corrective information presented in fact-checkers? Third, we compare the effects of misinformation and rebuttals in two (most) different countries: the Netherlands and the US. Together, this paper aims to contribute to our understanding of the potential effect of journalistic routines and practices that can combat misperceptions among the electorate – specifically by indicating which parts of the audience are most receptive to fact-checkers as journalistic tools. As the uncontrolled dissemination of mis- and disinformation in digital and high-choice media settings can be regarded as an important challenge for democracy (van Aelst et al., 2017), it is crucial to understand how its political consequences can be remedied.

2. Defining misinformation beyond Fake News

Although Fake News has frequently been used to denote communicative untruthfulness, recent empirical and conceptual endeavors have emphasized that we need to move beyond this term to fully comprehend its dissemination and consequences (e.g., Wardle, 2017). Misinformation can be conceptualized as inaccurate information that is not intentionally misleading (Thorson, 2016; Tandoc Jr. et al., 2018; Wardle, 2017). Hence, misinformation refers to the dissemination of inaccurate or untrue information that has been communicated without the intention to mislead. Misinformation may be contingent upon verification: when scruti-
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nized by empirical evidence and expert opinion, some statements in the news or in politicians’ communication can be found to be inaccurate – and therefore untrue. Misinformation has also been defined as information that is not supported by empirical evidence and expert knowledge (Nyhan & Reifler, 2010). We define misinformation as any form of communicative untruthfulness that is inaccurate or false, but not necessarily spread with the intention to mislead. Although misinformation may be characterized by information that is not supported by empirical evidence and expert opinion, it may rely on the legitimacy of quality journalism by referring to doctored or fabricated evidence and experts.

Misinformation has oftentimes been distinguished from disinformation (Tandoc Jr., Lim, & Ling, 2018). The most important difference between mis- and disinformation is the goal-directed nature of communicative untruthfulness in disinformation (Wardle, 2017). This means that disinformation refers to the spread on untrue, dishonest, and inaccurate information by actors to achieve a goal-directed outcome (e.g., Jackson, 2017; Marwick & Lewis, 2017). Disinformation may strongly resonate with political ideologies and partisan issue positions: agents of disinformation may aim to achieve electoral gains by discrediting opposing partisans and attacking and refuting accusations addressed to their own party. Although the distinction between mis- and disinformation is conceptually relevant, it reaches beyond the scope of this empirical endeavor to investigate the differential effects of intentional versus incidental communicative untruthfulness. Therefore, we do not directly distinguish between mis- and disinformation, but indirectly conceptualize different formats used in communicative untruthfulness that may correspond to intentional manipulation to different extents. We use the terms mis- or disinformation interchangeably as it reaches beyond the scope of our empirical endeavor to emphasize the intentions of the communicator. Yet, as the discourse around misinformation central in this paper revolves around the manipulation of information on a right-wing populist issue position, it may resonate strongly with the politics of disinformation (e.g., Marwick & Lewis, 2017).

More specifically, we distinguish between two types of communicative untruthfulness: (1) misinformation that relies on common sense and the people’s experience whilst bypassing empirical evidence or expert opinion and (2) misinformation that relies on doctored or manipulated evidence and/or non-existing experts. As false evidence and references to non-existing expert knowledge are used in this form of misinformation, it is closer to the definition of dis- than misinformation (Wardle, 2017). In other words, misinformation that avoids expert analyses and empirical evidence does not report on false or doctored evidence, whereas evidence-based mis- or disinformation inherently involves manipulation and dishonesty by using false sources and statistics, hereby profiting from the legitimacy of quality journalism to come across as more trustworthy and credible. But how can we explain the credibility of both formats of misinformation?

Exemplification theory can be used to illustrate the effects of misinformation that relies on the people’s experiences without using (verified) empirical evidence. Exemplars rely on statements of individuals or cases that illustrate a specific position instead of exclusively using base-rate information (i.e., facts and statistics) (e.g., Zillmann & Brosius, 2000). The individual statements or references to people’s experiences used in exemplars could be seen as representative of a larger
group (e.g., Lefevere, De Swert, & Walgrave, 2011). Importantly, empirical research has demonstrated that exemplars in the news can, in some cases, be more effective than base-rate information (e.g., Lefevere et al., 2011). Exemplars may be effective as they cultivate a strong sense of similarity with the audience, whilst offering vivid stories that people may engage with emotionally (Busselle & Shrum, 2003).

Yet, the credibility of information is not only determined by the vividness of exemplars and the trustworthiness of sources that people feel similar to. Expertise is another crucial factor that should enhance the credibility and effectiveness of information (e.g., Hovland, Janis, & Kelly, 1953). Exemplars typically lack expertise, and expert knowledge should be perceived neutral in order to be trustworthy (e.g., Hovland et al., 1953). This also means that although members of the general public may be effective when it comes to illustrating a case or problem, they may be less credible in analyzing the situation, or offering treatment recommendations to deal with the issue at hand. Extrapolating these findings to the types of misinformation conceptualized in this paper, extant research offers support for the effectiveness and credibility of both types of framing. Hence, misinformation that relies on the people’s experiences and exemplars may be credible as it relies on vivid sources that are similar to receivers, whereas the reliance on evidence and expert knowledge should be credible because it signals neutrality and objectivity. Different ways of framing truthfulness (i.e., similar sources versus experts) can thus be perceived as credible by the news audience.

In this study, we look at crime rates within an anti-immigration framework – which is a topic that should be credible when statistics and experts are used as a source. In addition, as we look at a news story by a journalistic source instead of communication by politicians, we believe that the reliance on facts and statistics may be perceived as a credible way to talk about the development of the crime rate – especially as base-rate information is directly related to the statements made in the news story (i.e., increasing numbers). Yet, based on exemplar research, we also expect that people-centric coverage without base-rate information may be credible. Comparing both forms of information, however, we expect that statistical evidence and expert knowledge overall result in higher levels of credibility than information that circumvents these sources of information. Hence, exemplars are more likely to outweigh the impact of base-rate information when non-expert knowledge is conveyed or when individual, vivid exemplars are used that resemble the composition of the audience (e.g., Lefevere et al., 2011). In our experiment, however, people-centric misinformation without expert knowledge and empirical evidence does not contain (multimodal) or vivid references to individual stories of members of the public (i.e., references are more generally made to the ordinary people). We therefore hypothesize that evidence-based misinformation is perceived as more credible than misinformation that avoids empirical evidence and expert knowledge (H1). But for whom may such untrue communication be credible, and how can we combat its potential negative consequences?

3. The effects of fact-checkers on message credibility and issue agreement

Online fact-checkers, such as PolitFact.com and FactCheck.org in the US and News Checkers in the Netherlands, have been regarded as potentially successful ways to correct misperceptions (e.g., Amazeen, Thorson, Muddiman, & Graves,
Fact-checkers may be an efficient tool to correct the (political) claims of misinformation as they directly respond to the (false) claims by verifying it with empirical evidence. As the content of fact-checkers is typically short, factual and easy to comprehend, it may be an efficient way to inform media consumers on the veracity of information (e.g., Hameleers & van der Meer, 2019; Lewandowsky et al., 2012).

In support of this, empirical research in the US has indicated that fact-checkers can correct misperceptions (e.g., Hameleers & van der Meer, 2019; Nyhan et al., 2019). Yet, some studies indicate that misinformation can be hard to refute when it supports people’s ideological leanings or issue positions (Thorson, 2016). Some studies even point to a backfire effect (Nyhan & Reifler, 2010). A backfire effect implies that exposure to a fact-checker that attacks pre-existing views could result in reactance. More specifically, a backfire effect would be identified when people who are exposed to a fact-checker find mis- or disinformation more credible than people who are not exposed to a fact-checker.

Such a backfire effect is not consistently demonstrated in more recent research. Indeed, although people’s evaluation of politicians may not be affected by exposure to incongruent information presented in fact-checkers, factual misperceptions can be corrected by fact-checkers, even if corrective information runs counter to receivers’ views (e.g., Nyhan et al., 2019; Wood & Porter, 2019). Based on the mixed-evidence on the effectiveness of corrective information, we expect that fact-checkers may be less effective among participants that agree with mis- or disinformation. However, focusing on the overall effect of corrective information among news consumers, we follow more recent research that indicates that fact-checkers are able to combat misinformation, even among issue publics and strong partisans (e.g., Nyhan et al., 2019). Against this backdrop, we introduce the following hypothesis: Exposure to fact-checkers lowers issue agreement (H2a) and credibility of misinformation (H2b).

In the next step, we aim to assess how different forms of communicative untruthfulness can be combated by exposing people to fact-checkers. As we distinguish between two types of framing in mis- and disinformation, we can assess whether communication without expert knowledge is easier to correct than evidence-based communication. Although the reliance on exemplars and ordinary citizens may be effective for some citizens, we expect that mis- or disinformation that profits from the legitimacy of traditional journalistic reporting, such as verification, relying on evidence and expert opinion, is harder to correct than misinformation that does not rely on these facts. More specifically, the factual correction of evidence-based information can lead to more confusion of media consumers in a post-truth information setting, where the epistemic status of truthfulness is no longer taken at face value (Van Aelst et al., 2017).

Exemplars in media coverage may enhance identification and may therefore be persuasive (e.g., Brosius & Bathelt, 1994). However, when empirical evidence and experts are circumvented, the factual basis of anti-immigration news may be less resistant to the attacks of fact-checkers. Thus, when mere opinions and emotions are contrasted to empirical evidence presented by corrective information in fact-checkers, the credibility of misinformation that avoids empirical evidence and expert knowledge may reduce substantially. We therefore hypothesize: Fact-
checkers are more effective in combating mis- or disinformation that lacks empirical evidence and expert knowledge than evidence-based mis- or disinformation, specifically in lowering credibility (H3a) and issue agreement (H3b).

4. Susceptibility to misinformation and rebuttals: Populist attitudes and political cynicism

It may be argued that not all people are equally susceptible to misinformation – or rebuttals that aim to counter-argue falsehoods. In line with the mechanism of motivated reasoning (Taber & Lodge, 2006), people may be biased in the processing of (political) information – seeking for the confirmation of existing attitudes and identities (e.g., Knobloch-Westerwick, Mothes, & Polavin, 2017). Applied to the effects of misinformation and rebuttals in the US, this mechanism has frequently been referred to as a so-called backfire effect of rebuttals (Nyhan & Reifler, 2010; Wood & Porter, 2018). More specifically, fact-checkers may fail to correct misperceptions when misinformation confirms the existing beliefs of partisans – who may demonstrate a stronger tendency to be consistent with their prior beliefs than to make the most accurate decision based on an elaboration of the available facts.

In this study, we focus on mis- or disinformation in a populist framework. Based on the alleged affinity between populism and disinformation (e.g., Waisbord, 2018), we focus on the right-wing populist connection between anti-immigration issue positions and the cultivation of the populist opposition between the ordinary people and the corrupt elite (e.g., Aalberg, Esser, Reinemann, Strömbäck, & de Vreese, 2017). In a comparative US-Europe setting, we expect that mis- or disinformation is harder to correct when false anti-immigration news resonates with people’s perceptual screens. We understand these perceptual screens or frames of reference as prior anti-immigration attitudes, populist attitudes, and political cynicism. Populist attitudes can be defined as perceptions of a binary societal divide between the ordinary people and the corrupt elite (e.g., Akkerman, Mudde, & Zaslove, 2014; Schulz et al., 2017). Political cynicism relates to a cynical outlook on politics and the political system (e.g., Bos, van der Brug, & de Vreese, 2013). Anti-immigration attitudes tap agreement with the specific statements of mis- or disinformation used in this paper: immigrants as a threat to the ordinary (native) people. Together, these attitudinal filters correspond to an issue-specific confirmation bias. In other words, higher levels of anti-immigration, populist and politically cynical attitudes are congruent with the central arguments of misinformation that reflect an explicit anti-immigration stance. We therefore hypothesize that misinformation is more credible when it resonates with prior levels of anti-immigration attitudes (H4a), populist attitudes (H4b) and political cynicism (H4c).

Although empirical evidence on the effectiveness of fact-checkers in a partisan, polarized setting is mixed – some experimental studies show that fact-checkers that refute political claims can correct (factual) misperceptions – and that the backfire effect does not occur even among strong partisans (Hameleers & van der Meer, 2019; Nyhan et al., 2019). However, although corrections can be accepted...
when partisans are asked for factual evaluations (i.e., is this message true?) they are less likely to change ratings of political candidates (e.g., Nyhan et al., 2019). In this paper, we therefore look at the effects of mis- or disinformation and fact-checkers on two different levels: the extent to which people find the statements made in political communication credible, and their actual level of agreement with these statements. Hence, as indicated by extant research, there may be a difference between credibility or factual beliefs and actual political attitudes and evaluations (e.g., Nyhan et al., 2019; Wood & Porter, 2018).

In line with the mechanisms of defensive motivated reasoning and confirmation biases (e.g., Knobloch-Westerwick et al., 2017; Taber & Lodge, 2006), we expect that the influence of corrective information presented in fact-checkers may be moderated by the extent to which fact-checkers defend or attack prior beliefs. In other words, when fact-checkers attack statements in mis- and disinformation people already agree with, corrections should be less effective than when they reinforce existing beliefs. As indicated above, as we are looking at mis- or disinformation on a topic strongly aligned with (right-wing) populist issue positions, we believe that the message mostly appeals to people with more pronounced populist attitudes and a more cynical view on politics. We raise the following hypotheses: Fact checkers are less effective among people with more pronounced anti-immigration (H5a) cynical (H5a) or populist attitudes (H5c).

Finally, as comparative research on the effects of misinformation and corrective information is lacking, we aim to investigate whether misinformation has the same impact in a bipartisan political system associated with the rise of misinformation (the US) and a country with a multiparty system in which the debate on communicative untruthfulness and accusations of Fake News are less mainstream, and only partially adopted by the radical right-wing party family (the Netherlands). We raise the following research question: Do the effects of misinformation and fact-checkers differ between the US and the Netherlands?

5. Method

This paper reports the findings of a comparative experiment on the most-different cases of the Netherlands and the US. These two countries were regarded as different as the Netherlands has a multiparty political system with a less salient discourse around misinformation, whereas the US represents a bipartisan political setting in which debates on communicative untruthfulness and accusations of Fake News have been more visible in recent years – both in the political domain and in public opinion.

In both countries, the design was a 2 (framing of mis-disinformation: evidence-based versus anti-experts and empirical evidence) x 2 (fact-checker: absent versus present) between-subjects factorial design. In both countries, quota samples were collected by the same international polling firm (Dynata). 917 participants were retained in the final analysis. The mean age of participants was 43.67 years (SD = 14.14); 51.4% was female; 22.5% was lower educated, 28.1% higher educated and 49.5% had a moderate level of education.
5.1 Independent variables

Misinformation was manipulated into two levels: evidence-based information on immigration (doctored and fabricated facts and expert knowledge were used to construct a manipulated anti-immigration stance) and people-centric misinformation devoid of empirical evidence and expert knowledge (this condition ties in with a more populist worldview in which the ordinary people’s experiences and opinions were used as argumentation, whereas elitist sources of knowledge were circumvented). The US versions of the stimuli are included in Appendix A.

Both types of misinformation describe a fake negative development in which violent crime rates were increasing, especially among immigrants (in reality, all crime levels are in decline in the period described). In the misinformation condition without expert knowledge and empirical evidence, the ordinary people and an opinion panel were used as the source of information, whereas empirical evidence and/or expert opinion supporting the anti-immigration statements were circumvented. Yet, to enhance the realism of the article and comparability to the other conditions, references to research were not completely removed, but rather mentioned without backing them up by an actual source of empirical research or facts resulting from research. The same anti-immigration claims and developments were used in the evidence-based misinformation condition, but country-level statistics and a fictional empirical research report was used as evidence, and a non-existing professor was used as an expert source to discuss the empirical evidence. All other information was identical across conditions: the same negative development of increasing crime rates, the same causes, and the same solutions were mentioned. The conditions thus differed in the type of evidence (the people and their opinions versus experts and empirical evidence). The messages were equal in length. Controlling for the number of words did not change the results. The Dutch stimuli were largely similar to the U.S conditions, but the name of the university and country were changed to reflect the Dutch setting (Leiden University was used in the Dutch conditions).

The fact-check factor had two levels: presence versus absent. The fact-checker directly followed both types of misinformation, and systematically refuted all claims of the anti-immigration news item (see Appendix A, Figure A3). The problem definition (rising crime rates, causal interpretation (the political elites and immigrants) and treatment recommendation (elites/immigrants should be stopped) were thus all corrected, and empirical evidence was used to correct the false statements in the original article. The corrective information in the fact-checker reflected the lay-out and line of argumentation typically used in existing fact-checkers, such as Factcheck.org or PolitiFact.com.

5.2 Measures

Dependent variables. To measure issue agreement, a nine-item scale was computed ($M = 4.23, SD = 1.42$, Cronbach’s alpha $= .93$). Items include statements as ‘immigrants are responsible for most violent crimes’ and ‘our borders should be closed for migrants’ (all measured on 7-point disagree-agree scales). A four-item scale was used for the perceived credibility of misinformation ($M = 3.87, SD =$
1.58, Cronbach’s alpha = .88). This scale consisted of statements such as ‘the message is completely accurate’ and ‘the message is completely made up’ (reverse-coded). To assess that both dependent variables measured different perceptions, a Confirmatory Factor Analyses (CFA) was used to compare the fit of a one-dimensional model and a two-dimensional model in which the dependent measures were separated. The one-dimensional model fitted significantly and substantially worse, indicating that both dependent scales should be analyzed separately, which is confirmed by the moderate correlation between scales ($r = .41$).

**Moderators: prior attitudes related to the confirmation bias.** First of all, the resonance of the anti-immigration news item with participants’ prior anti-immigration beliefs was assessed with a four-item, 7-point disagree-agree scale (i.e. migrants pose a threat to the safety of our people, migrants are inclined to commit more crimes than native people). The items form a reliable scale ($M = 4.22$, $SD = 1.45$, Cronbach’s alpha = .79).

Populist attitudes were measured on a 4-item scale ($M = 4.63$, $SD = 1.36$, Cronbach’s alpha = .84). This scale was based on existing measurement efforts (see e.g., Akkerman et al., 2014; Schulz et al., 2017) and included item measures such as ‘politicians in government are corrupt’ and ‘ordinary people should have more influence in political decision-making than the elites in government’.

Finally, political cynicism was measured with three items ($M = 5.01$, $SD = 1.44$, Cronbach’s alpha = .86). These items tapped people’s evaluation of cynicism toward the political system in more general terms (i.e., ‘politicians are primarily interested in my vote, not my opinion’ and ‘politicians generally act out of self-interest’). Although the measures for the three moderators are related as they all describe a particular level of the perceptual screen that may drive the effects of misinformation and fact-checkers, we empirically assessed whether they tapped into different perceptions using a CFA. Similar to the dependent variables, all scales tapped into different dimensions of the perceptual screen. The highest correlation was observed between populist attitudes and political cynicism ($r = .68$). Yet, a CFA model in which both dimensions were merged did not fit the data well.

**Manipulation checks.** The stimuli were pre-tested among a convenience sample of international students ($N = 145$). In the pre-test, participants rated the credibility of different messages – including the message connecting crime rates to immigration used in the main study. In total, we included misinformation on three topics: climate change (i.e., it is a hoax), crime rates and immigration (the topic used in the main study) and immigration and welfare (i.e., immigrants profit from our resources). We decided to select the topic of immigration and crime rate as this was rated as the most credible topic, and as students with different nationalities (recoded into Dutch and non-Dutch) did not systematically differ in their rating. In the pre-test, we also asked participants to rate the credibility of the corrective information. The findings show that the corrections were perceived as credible, and perceived as relatively similar to content people see in their digital media environments.

In the main study, manipulation checks for the type of misinformation (i.e., the framing of communicative untruthfulness as anti-expert versus factual misinformation) and the corrective effort were included. The manipulation for the type of misinformation succeeded. Evidence-based information, statistics and expert
knowledge were more likely to be correctly identified as the source of the statements among participants in the evidence-based misinformation condition \((M = 5.03, SD = 1.62)\) than participants in the condition that circumvented these sources of expert and empirical knowledge \((M = 2.33, SD = 1.17)\). Participants in the fact-check condition were significantly more likely to recognize counter-argumentation and refutation \((M = 4.97, SD = 1.72)\) than participants that were not exposed to a fact-check \((M = 2.90, SD = 1.84)\). Both manipulations thus succeeded.

6. Results

6.1 The credibility of misinformation and the effects of corrective information

First of all, we expected that evidence-based misinformation would be perceived as more credible than misinformation that relies on the people’s experiences without referring to hard-facts or expert knowledge (H1). The results do not support this hypothesis (see Table 1). Although misinformation that circumvents expert and empirical evidence is perceived as slightly less credible \((M = 2.73, SD = 1.45)\) than misinformation that relies on (fake) expert knowledge and evidence \((M = 2.83, SD = 1.31)\), the difference is small and not significant. In addition, the two types of misinformation yield similar levels of agreement with the anti-immigration message (Table 2) Taken together, H1 is not supported by the data: Misinformation that relies on (doctored/misleading) evidence is not perceived as more credible than misinformation that refers to the experiences of ordinary citizens whilst bypassing expert knowledge.

Second, we expected that fact-checkers lower the issue agreement (H2a) and perceived credibility of misinformation (H2b). These hypotheses find support in the data (Table 1 and 2, Model II). More specifically, exposure to a fact-checker lowers both the perceived credibility of misinformation and agreement with falsehoods related to the immigration news. Even when we control for participants’ existing anti-immigration attitudes, the significant and negative effect of exposure to fact-checkers on agreement and credibility holds. This indicates that fact-checkers can successfully counter misinformation – both in terms of the perceived credibility and issue agreement with the false statements made in mis- or disinformation.

Although we expected that evidence-based misinformation would be harder to refute than news coverage without references to expert knowledge or empirical evidence (H3), our results indicate that the two types of mis- or disinformation can be refuted to the same extent (see Table 1 and Table 2, Model III). More specifically, fact-checkers are not more or less effective in correcting fake anti-immigration news when facts instead of the ordinary people’s opinions are emphasized. These effects hold for both the credibility of mis- and disinformation (H3a) and the level of agreement with the statements foregrounded in anti-immigration news (H3b). Fact checkers are thus effective in correcting misinformation, irrespective of the type of argumentation or framing used to signal truthfulness.

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Table 1. The effects of (refuted) misinformation on the credibility of anti-immigration news

<table>
<thead>
<tr>
<th></th>
<th>Model I (n = 917)</th>
<th>Model II (n = 917)</th>
<th>Model III (n = 917)</th>
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<td>B</td>
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<td>(Constant)</td>
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<td>.22</td>
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<tr>
<td>Populism</td>
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<td>.05</td>
<td>-.12*</td>
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<td>Cynicism</td>
<td>-.06</td>
<td>.04</td>
<td>-.06</td>
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<tr>
<td>Country (NL)</td>
<td>.09</td>
<td>.10</td>
<td>.03</td>
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<tr>
<td>Anti-immigration</td>
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<td>.04</td>
<td>.27***</td>
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<tr>
<td>Anti-expert</td>
<td>-.06</td>
<td>.09</td>
<td>-.02</td>
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<tr>
<td>Fact-checker</td>
<td>-.50</td>
<td>.09</td>
<td>-.17***</td>
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<td>Anti-expert × fact-checker</td>
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<td>Anti-expert × anti-immigration</td>
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<td>Anti-expert × populism</td>
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<td>Anti-expert × cynicism</td>
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<td>Fact-checker × anti-immigration</td>
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<td>Fact-checker × cynicism</td>
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<td>Anti-expert × country</td>
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<td>Adjusted R²</td>
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<td>F</td>
<td>8.80***</td>
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<td>F for change in R²</td>
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*p<0.05; **p<0.01; ***p<0.001

Note. Two-tailed tests. Unstandardized (B) and standardized (β) regression weights.
Table 2. The effects of (refuted) misinformation on agreement with anti-immigration news

<table>
<thead>
<tr>
<th></th>
<th>Model I ($n = 917$)</th>
<th>Model II ($n = 917$)</th>
<th>Model III ($n = 917$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Constant)</td>
<td>1.00 .15</td>
<td>1.21 .16</td>
<td>1.08 .21</td>
</tr>
<tr>
<td>Populism</td>
<td>.06 .04 .06</td>
<td>.05 .04 .05</td>
<td>.04 .05 .04</td>
</tr>
<tr>
<td>Cynicism</td>
<td>.12 .03 .12***</td>
<td>.13 .03 .13***</td>
<td>.18 .05 .18*</td>
</tr>
<tr>
<td>Country (NL)</td>
<td>.23 .07 .08**</td>
<td>.22 .07 .07**</td>
<td>.12 .11 .04</td>
</tr>
<tr>
<td>Anti-immigration</td>
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<td>.63 .03 .62***</td>
<td>.61 .03 .62***</td>
</tr>
<tr>
<td>Anti-expert</td>
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<td>-.12 .27 .04</td>
<td>-.20 .29 -.05</td>
</tr>
<tr>
<td>Fact-checker</td>
<td>-.31 .07 -.13***</td>
<td>-.20 .29 -.05</td>
<td>-.16 .23 -.04</td>
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<tr>
<td>Anti-expert × fact-checker</td>
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<tr>
<td>Anti-expert × anti-immigration</td>
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<tr>
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<td>Fact-checker × populism</td>
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<tr>
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<td>238.72***</td>
<td>166.03***</td>
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<tr>
<td>$F$ for change in $R^2$</td>
<td>10.96***</td>
<td>1.60*</td>
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*p<0.05; **p<0.01; ***p<0.001

Note. Two-tailed tests. Unstandardized (B) and standardized (β) regression weights.

6.2 The role of perceptual screens on the effects of misinformation

The fourth hypothesis postulates that the resonance of misinformation with prior attitudes conditions the effects on credibility and issue agreement. The results offer mixed evidence for H4a-c. First of all, we do see that participants with more pronounced anti-immigration attitudes are more likely to find misinformation credible, and agree with the central statements emphasized in the message (Table 1 and 2, Model I). In addition, participants with stronger anti-immigration beliefs are more likely to perceive misinformation without expert knowledge and empirical evidence as credible, and are more likely to agree with its issue positions,
than participants with less pronounced anti-immigration attitudes. H4a thus finds support in the data.

More cynical participants are more likely to agree with misinformation on anti-immigration (Table 2, Model I) – but there are no differences in perceived credibility between participants with different levels of cynicism. This only provides limited support for H4b. Contrary to the expectations stated under H4c, participants with higher levels of populist attitudes are actually inclined to perceive misinformation as less credible (Table 1, Model I), and pre-existing populist attitudes do not correspond to different levels of issue agreement (Table 2, Model II). It should also be noted that the two-way interaction effects between populist attitudes and political cynicism and misinformation that circumvents experts and empirical evidence are not significant, which indicates that participants with stronger populist attitudes and cynical worldviews do not respond differently to content that circumvents empirical evidence and experts than participants that are less cynical and/or populist.

Overall, beyond populist attitudes and political cynicism, prior levels of anti-immigration attitudes do make communicative untruthfulness that promotes an anti-immigration stance more credible, and yield higher levels of issue agreement among people with congruent anti-immigration attitudes (Table 1 and Table 2). Against this backdrop, we find partial support for H4: people with congruent issue-specific anti-immigration attitudes are more likely to agree with and trust misinformation.

6.3 The conditioning role of prior attitudes on the effectiveness of fact-checkers

In the next step, the effectiveness of the corrective information presented in fact-checkers was investigated whilst taking perceptual screens at different levels into account (H5). We do not find support for H5a and H5b: participants with more cynical or populist attitudes are not more likely to reject or counter-argue the corrective information presented in the fact-checker than participants with lower levels of populist and cynical attitudes. However, we do find some support for H5c. More specifically, as can be seen in Table 1 (Model III), there is a significant two-way interaction effect of exposure to fact-checkers and prior populist attitudes: the more pronounced participants’ populist attitudes are, the less likely they adjust their credibility beliefs based on the corrective information in the fact-checker. In other words, populist participants are more likely to find misinformation credible when it has been corrected by a fact-checker than participants with lower levels of populist attitudes.

Together, our results only partially support H5. Political cynicism and prior anti-immigration attitudes do not condition the effectiveness of the corrective information offered by the fact-checker, but people with higher levels of prior populist attitudes are overall less likely to doubt the credibility of misinformation when it is refuted than people with less pronounced populist priors.

6.4 Country differences in response to misinformation and corrective information

Finally, we aimed to explore differences in the impact of misinformation and the effectiveness of fact-checkers in the two different countries. As can be seen in Table 2 (Model III), there is one significant difference between both countries: Peo-
ple in the Netherlands are significantly more likely to agree with anti-expert versus evidence-based misinformation than U.S. participants. In the US, participants are thus more likely to cast doubts on the veracity of political communication that circumvents factual coverage than participants in the Netherlands.

In Figure 1a–d, the most important effects are plotted separately for the two countries. We control for the most salient prior attitudes related to the credibility of, and agreement with, misinformation. First of all, although the effects point in the same direction for both countries, the separate analyses show that, when controlling for prior attitudes, the significance of some effects differs across countries. More specifically, exposure to a fact-checker only significantly lowers credibility and issue agreement in the Netherlands, and not the US (Figure 1b–d). Misinformation that avoids empirical evidence and experts, however, is perceived as significantly less credible in the US compared to the Netherlands (Figure 1a–c). Finally, the interaction effect between prior anti-immigration attitudes and exposure to misinformation without empirical evidence and experts is only significant in the US: people with more pronounced anti-immigration attitudes are more likely to judge such coverage as credible, and agree with its issue positions, than people in the Netherlands (Figure 1a–c). In both countries, however, it can be observed that participants’ prior attitudes most closely related to the misinformation (anti-immigration beliefs) are the strongest predictors of agreement with misinformation. Yet, these prior attitudes do not make it harder to combat misinformation, which contradicts the theoretical notion of the backfire effect or the conditional role of perceptual screens that lower the impact of corrective information.

Figure 1a. The effects of anti-expert/information lacking empirical evidence and fact-checkers on message credibility in the US.
Figure 1b. The effects of anti-expert/information lacking empirical evidence and fact-checkers on message credibility in the Netherlands.

Figure 1c. The effects of anti-expert/information lacking empirical evidence and fact-checkers on issue agreement in the US.
7. Discussion

In light of the current debates on the epistemic status of objective information, mis- and disinformation have been regarded as key threats to deliberative democracy. In this setting, a growing body of research has investigated whether fact-checkers can be used to effectively counter misinformation (e.g., Nyhan et al., 2019; Thorson, 2016). The results of these endeavors are mixed. Some studies point to a backfire effect of rebuttals (e.g., Nyhan & Reifler, 2010) whereas others indicate that factual misperceptions can be effectively corrected (e.g., Hameleers & Van der Meer, 2019). Yet, most research is US-based and has not looked beyond partisan ideologies or issue-specific attitudes that condition the impact of fact-checkers. Against this backdrop, this paper relied on experimental data collected in the US and the Netherlands to investigate (1) the credibility misinformation that relies on different types of evidence, (2) the effectiveness of fact-checkers of misinformation and (3) the extent to which fact-checkers’ effects are conditioned by different perceptual screens.

The main findings indicate that two different formats or frames of misinformation – people-centric/anti-experts and evidence-based information – are equally credible, and yield similar levels of issue agreement. This implies that mis- or information cannot be made more effective when the communicator aims to feed off the legitimacy of objective journalism by using rhetorical tools of truth and objectivity. On a more pessimistic note, this finding indicates that the objective status of (political) information is up for debate, as facts are not more credible than experiences – which ties in with the notion of post-factual relativism (Van Aelst et al., 2017). More specifically, hard facts, objective sources and empirical evidence are not perceived as more credible than the opinions of ordinary citizens. Another key finding is that fact-
checkers can help to correct misinformation, and that they do not result in a backfire effect among participants in the US and Netherlands. This finding corresponds to recent experimental research that has failed to replicate the backfire effect identified in some earlier studies (Hameleers & van der Meer, 2019; Nyhan et al., 2019; Wood & Porter, 2019). As key practical implication, it can thus be emphasized that fact-checkers are an effective journalistic tool to combat misinformation – as they can correct factual beliefs whilst lowering the credibility of mis- and disinformation.

The results of this experiment indicate that there are some noteworthy differences in the effects of mis- and disinformation and fact-checkers between the US and the Netherlands. First of all, fact-checkers are more effective in lowering credibility and issue agreement in the Netherlands. A potential explanation is that news consumers in the Netherlands are less familiar with fact-checkers, and therefore pay more attention to the corrective information offered in the experiment. Moreover, the political sphere, media discourse and public opinion are less polarized in the Netherlands, which could indicate that people are more open to corrective information presented in fact-checkers, whereas people in the US may perceive fact-checkers as part of the biased and partisan media system. Future research should investigate the extent to which prior attitudes toward fact-checkers and the sources of corrective information play a role in the effects of fact-checkers on issue agreement and message credibility. Another interesting country-level difference is that misinformation avoiding empirical evidence and experts results in significantly less credibility and issue agreement in the US, but not the Netherlands. Again, these findings may be connected to the more partisan setting in the US, where hostile media perceptions and Fake News discourses are more salient compared to the Netherlands. More specifically, U.S. news consumers may have less trust in media coverage, signalizing media content without evidence or expert knowledge as less credible than Dutch news consumers who do perceive people-centric coverage as more truthful. Again, future research should indicate whether these explanations also hold empirically.

Despite offering important insights into the effects of different formats of mis- or disinformation and the effects of fact-checkers, this study is not without its limitations. First of all, the distinction between mis- and disinformation is problematic from an empirical perspective. Hence, disinformation implies that the communicator has intentions to mislead citizens (Wardle, 2017; Tandoc Jr et al., 2018), whereas our manipulations did not explicate this intention. However, in deliberately manipulating information to reflect a certain political perspective (a radical right-wing issue position on immigration), we played the role of an agent of disinformation. Future research may further disentangle the difference between mis- and disinformation and its effects, for example by varying information that just gets some facts wrong (statistics on the influx of immigration) and disinformation that explicitly emphasizes polarizing political perspectives without offering evidence to corroborate these positions.

Another limitation is the selection of types of mis- or disinformation and fact-checkers. More specifically, the experiment simply differentiated between evidence-based mis- or disinformation and information that referred to the people’s opinions without offering empirical evidence. Although this variation captures
different types of coverage in today’s news media environments, future research may rely on more variations, for example by including celebrities as sources, stronger exemplars, or reference to real news sources versus the social media accounts of ordinary people versus politicians. Likewise, different formats and sources of fact-checkers may be used to explore whether the format and source of corrective information matters for its impact on issue agreement and credibility.

Another limitation is that we not directly compared information without any references to research to evidence-based and expert knowledge. More specifically, the misinformation condition without references to factual knowledge and expert sources did refer to the claims of ‘new research.’ However, these claims were not substantiated by evidence or expert opinions – but rather referred to general claims (i.e., the elites are to blame). Most important, the more substantial claims of the news story (the causes of the development) were not backed up by evidence – only the general increasing trend of crime rates was accompanied by a vague reference to research. However, we invite future research to vary the level of facticity in misinformation to investigate how different degrees of evidence-based coverage affect the credibility of information – and the effectiveness of rebuttals.

Finally, we only assessed the effects in two different countries. Although it may be argued that the issues of crime and immigration are relevant in both the US and the Netherlands, more comparative research is needed to explore how credible disinformation is in different settings – and how effective different forms of corrections are in different media systems and public spheres. Related, we used the same storylines in two countries (although, the university’s name and country was translated for the Dutch stimuli). It may be argued that the same storylines presenting similar statistics are not equally credible in completely different countries. Yet, we aimed to strike a balance between optimal comparability and internal validity whilst making the storyline credible in different (political) settings.

Despite these limitations, this study has provided new insights on how mis- or disinformation spread alongside accurate news whilst feeding off different formats of journalistic reporting can have an impact on news consumers’ perceptions of credibility, and even their agreement with anti-immigration news. As key take away point, we show that the corrective information presented in fact-checkers can combat mis- or disinformation, albeit the effects are not identical across countries, we do not identify a backfire effect of fact-checkers.

References


**Appendix**

**Figure A1.** Stimulus for evidence-based misinformation.

Research by Oxford University shows that crime rates in our country are increasing because of influx of migrants – elites are to blame

Published: February 20, 2019 11:01 AM
Last update: February 20, 2019 8:35 PM

By: OUR EDITORIAL RESEARCH TEAM

Crime rates in the US have shown a steep decline in the previous years. According to the United States Census Bureau, the overall crime rate in 2017 even dropped by 30% in some areas. However, new research by Oxford University shows that the most violent crimes are actually increasing in numbers, and that the proportion of less serious crimes is decreasing. The research further shows that non-Western migrants are frequently responsible for increases in violent crimes – models even predict a 60% increase in violent crimes initiated by migrants.

Researchers of Oxford University work on a longitudinal research project to investigate the effects of crime rate developments in the migrant population. Their findings show that the recent increases in violent crimes committed by migrants can be associated with the elite’s failing policies on migration. Migrants are offered too many opportunities to commit violent crimes. As one of the principal investigators, Professor Braltzer, claims: “Our data shows that we need to provide better solutions to deal with the influx of migrants. As long as strong measures are lacking, the influx of migrants can be regarded as a serious threat to the American people.”

The new research clearly illustrates that the development of violent crimes is highly unexpected – especially since reports by the United States Census Bureau offer indicators for an overall decline. New research should try to explain the developments. More information on the crime rate development can be found here: [www.census.gov/news/crime-rates-development](http://www.census.gov/news/crime-rates-development)
Figure A2. Stimulus for misinformation without references to empirical evidence.
Figure A3. Stimulus for fact-check refuting misinformation.

Section Factcheck

‘Crime rates in our country are increasing because of influx migrants – elites are to blame’

This message was recently published on an online news platform. Our fact-check editors checked the claims and reached the conclusion that the message is COMPLETELY FALSE

By: OUR FACT-CHECK EDITORS

February 23, 2019  Three minutes reading time

The story
Crime rates seem to be decreasing in recent years, but further inspection of the numbers casts severe doubts on the overall declining trend. The most violent crimes should be increasing, whereas ‘lighter’ forms of crime are declining. This development is connected to the influx of non-Western migrants who are increasingly involved in violent crimes.

What is the basis for these claims?
An interpretation of recent research and statistics should lead to the conclusions sketched in the article.

Are the claims true?
In the US, crime rates have systematically decreased over the years 2017-2018. Citizens in the US are less likely to be a victim of crimes in 2017-2018 compared to earlier years. This can be confirmed by a detailed analysis of the United States Census Bureau and research by Oxford University. The numbers clearly show that all forms of crime are declining: the rate of property- economic- and violence-related crimes per 100 citizens of 15 years and older are declining steadily. There is also no evidence for the causal relationship between migrants and crime rates. If anything, migrants are less likely to commit violent crimes than U.S. citizens. Based on the numbers of Oxford University, there is no empirical evidence for the elite’s failing policies and increases in crime rates caused by migrants.

Conclusion
There is no empirical evidence to conclude that crime rates, and violent crimes in particular, are increasing among migrants. This message is completely false.