Reliable Sources?

Correcting Misinformation in Polarized Media Environments

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Abstract

Various pressing issues at the center of today's politics–such as immigration, climate change, or the recent coronavirus pandemic–are imbued with misinformation. A growing body of research therefore explores the potential impact of providing corrective information. However, while such interventions appear to reduce people's factual misperceptions, they have little to no effect on their underlying attitudes. This study examines how the impact of corrective information on beliefs and attitudes is moderated by media choice. In our survey experiment, participants are asked to read a news article published by Fox News or MSNBC, each highlighting the positive economic impact of legal immigration in the United States. While the news content is held constant across sources, our treatment manipulates whether participants are allowed to freely choose a media outlet or are randomly assigned to one of them. Our results illustrate how people's media choice moderates the effectiveness of corrective information: While factual misperceptions are easily corrected regardless of how people gained access to the information, subsequent opinion change is conditional on people's prior willingness to seek out alternative sources. As such, encouraging people to broaden their media diet may be more effective to combat misinformation than disseminating fact-checks alone.

Citizens in western democracies hold wide-ranging and systematic misperceptions about immigrants to their home countries. For example, people usually overestimate the total number of immigrants or the proportion of immigrants that are dependent on social welfare (e.g., Alesina, Miano, and Stantcheva 2019). Given this extensive spread of misinformation, various studies examined how corrective information may affect people's underlying attitudes towards immigration, albeit with limited success. Although corrective information may alleviate factual misperceptions, it rarely affects people's underlying attitudes (see for example Hopkins, Sides, and Citrin 2019).

A possible explanation for this apparent disconnect could be that factual information is simply irrelevant for attitude formation and—if anything—serves as a mere justification for people to rationalize their existing predispositions towards immigrant populations. However, the extent to which people engage such motivated reasoning is not without limits—as people have been shown to update their prior beliefs after reaching a "tipping point" of counter-attitudinal information (Redlawsk, Civettini, and Emmerson 2010). Furthermore, recent research on immigration attitudes demonstrate the persuasiveness of certain interventions such as canvassing (Kalla and Broockman 2020).

Why do researchers frequently fail to find evidence of attitude change after providing respondents with corrective information? We argue that most experimental designs in this area are inconclusive because they omit a crucial mechanism: people's discretion over whether to engage with a given information source or not. Specifically, studies usually employ simple random assignment of informational treatments without considering people's selective exposure. Unfortunately, such a set-up does not allow us to estimate the quantity of interest that is ultimately of key interest: the effect of misinformation corrections among *people who would have chosen to access the information in the first place* (see also De Benedictis-Kessner et al. 2019; Knox et al. 2019).

We address these shortcomings of previous research by implementing an experimental design that varies both, the source of misinformation corrections as well as the process through which people access the information. Specifically, we conduct an online survey experiment on the effectiveness of corrective information about immigration. Depending on the experimental condition, participants are either able to freely choose–or are assigned to–an article published by different news channels (Fox News vs. MSNBC), which discusses the economic impact of legal immigration. Crucially, our

design allows us to differentiate how the information treatment impacts factual beliefs, how they are interpreted, as well as broader attitudes towards immigration. The results indicate that while the correction of factual misperceptions is does not depend on media choice, subsequent attitude change is conditional on people's willingness to seek out alternative sources.

Taking into account endogenous information search in studies of misinformation corrections is crucial in our rapidly changing media environment where people have unprecedented control over their information diets (see also Iyengar and Hahn 2009). While people can access an ever-growing set of news outlets of varying quality, we only have a limited understanding how these systemic changes in information channels moderate the effectiveness of corrective information itself. Past research mostly focused on the effect of different *types* of misinformation corrections. This study contributes to the literature by shifting the focus to the question of *how* and *from where* corrective information reaches people.

Why misinformation corrections (often) fail

To the extent that people rely on inaccurate factual beliefs to form their opinions, misinformation can severely impede democratic representation by inducing collective preferences that systematically diverge from a more informed public (Kuklinski et al. 2000). For instance, earlier studies focusing on aggregate opinion estimated that increasing individual information levels results in altered preferences of the electorate (e.g., Bartels 1996; Althaus 1998). Experimental studies examining change in individual attitudes, however, only found scant evidence for information treatments impacting peoples underlying opinions (see Flynn, Nyhan, and Reifler 2017 for an overview).

Focusing on misinformation in the context of immigration, Hopkins, Sides, and Citrin (2019) conducted multiple survey experiments informing participants about the size of the foreign-born population in the US—a statistic that is systematically overestimated by people in the absence of corrective information. In other words, many Americans are systematically misinformed, and this misinformation is associated with attitudes towards minority groups. Across seven separate survey experiments, the authors find that "accurate information does little to affect attitudes toward immigration, even though it does reduce the perceived size of the foreign-born population. [...]

Misperceptions about the size of minority groups may be a consequence, rather than a cause, of attitudes toward those groups" (Hopkins, Sides, and Citrin 2019, 315). The authors therefore suggest that attitudes towards immigration resist change because they are grounded in more fundamental predispositions that are independent of the factual premise (see also Hainmueller and Hopkins 2014).

In sum, changing people's minds by providing corrective information is far from easy—especially when it comes to deeply held beliefs that are connected to people's identities (Nyhan et al. 2019). However, this does not imply that new facts are bound to have no attitudinal consequences whatsoever. Although people engage in motivated reasoning and resist counter-attitudinal evidence (Taber and Lodge 2006), there is some evidence that they are not completely immune to it (Redlawsk, Civettini, and Emmerson 2010). Before turning our discussion to a potential mechanism that may facilitate such attitude change, we need to begin by developing a clear conceptualization of different types of updating that may result from exposure to corrective information.

Differentiating factual beliefs, interpretations, and opinions

First, we define factual *beliefs* as assessments of the state of the world that are (at least in principle) intersubjectively observable and can therefore be either true or false. Using the study by Hopkins, Sides, and Citrin (2019) as an illustrative example, the statement "12 out of every 100 people living in the United States are immigrants who were born outside of the U.S." describes a factual belief that is objectively verifiable and–importantly–completely void of evaluative components. As mentioned above, it turns out that people are systematically misinformed about the size of the foreign-born population in the sense that they consistently overestimate this statistics. Corrective information in this example simply consists of providing the accurate value of this statistic and Hopkins, Sides, and Citrin (2019) show that such an intervention is effective in reducing (factual) misperceptions.

Corrective information targets the misinformation itself!

Even though people update their factual beliefs as conditions change, individuals can interpret the same factual beliefs differently depending on characteristics such as their partisanship. Many

times interpretations, rather than factual beliefs drive opinions (Gaines et al. 2007).

Interpretations afford leeway to align factual beliefs with undeniable reality and continue to justify partisan preferences.

Why don't people update their related attitudes? One explanation is that they first have to be interpreted either by individuals themselves or by letting others do it for them (Gaines et al. 2007).

1. **Complete Updating:** reality $\rightarrow$ beliefs $\rightarrow$ interpretations $\rightarrow$ opinions
2. **Fact Avoidance:** reality $\|$ $\|$ beliefs $\rightarrow$ interpretations $\rightarrow$ opinions
3. **Meaning Avoidance:** reality $\rightarrow$ beliefs $\|$ $\|$ interpretations $\rightarrow$ opinions
4. **Opinion Avoidance:** reality $\rightarrow$ beliefs $\rightarrow$ interpretations $\|$ $\|$ opinions

Changing beliefs is the most trivial aspect. What is more interesting, and ultimatelz more important when thinking about the issue of democratic representation is whether these changes in beliefs ultimately result in changing interpretations and/or opinions. Unfortunately, the we know very little about the underlying mechanisms that drive these aspects.

News reports contain interpretations, and these interpretations are more dependent on source credibility.

The role of media choice, source credibility, and selective exposure

Mass media is by far the most regular used information source. Dalton, Beck, and Huckfeldt (1998) found that perception of news is shaped as much by a person's political views as by objective content. Even if an individual perceives their news source as unbiased, they will perceive their daily news source to report biased information. They found that regardless of the paper's actual stance it was viewed as skewed toward the opposite political beliefs of the reader. Individuals with strong partisan beliefs are more skeptical that "neutral" media reports with accuracy and believe the media as biased against their beliefs (Little 2019).

Sources that are deemed credible are more influential than sources with low credibility. Credibility includes both expertise and trustworthiness and studies have found that source credibility impacts whether individuals will correct misinformation (Guillory and Geraci 2013). One would assume

that non-partisan authorities would be a trusted source of information. However, in a time when partisanship colors how people perceive new information, even neutral sources might be less credible than is often presumed (see Berinsky 2018). Neutral sources such as the AMA and the AARP lack authority at time because they are overridden by politicized ones. It is rare for Republicans and Democrats to find a independent source therefore many sources of information lack credibly. This partisan lens extends to how individuals process fake news. Error correction of fake news is mostly likely to be effective when coming from a co-partisan w/ whom one might expect to agree (Berinsky 2017).

The idea of source credibility extends to the individual political actor. Kuklinski and Hurley (1994) connected the use of ideological heuristics and source cues. They argued that by focusing their attention on the individual political actor, citizens make quick judgments of the information presented to them based largely on the reputation of the speaker. Experimental subjects presented with a message evaluated that message based largely on their opinion of the speaker. In this way the messenger overwhelms the message.

Source credibility profoundly affects social interpretations of information (Lupia and McCubbins 1998).

Hypotheses

1. Misinformation corrections have stronger effects on people's factual **beliefs** than their related **interpretations** or **opinions**.
2. Misinformation corrections have stronger effects if people are able to **choose** their information source. These differences are more pronounced for opinions and interpretations than for beliefs.
3. Misinformation corrections have stronger effects if the information source is **consistent** with people's media preferences. These differences are more pronounced for opinions and interpretations than for beliefs.

Empirical Questions:

- Does the ability to **choose** always imply **consistent** exposure?
- If choice $\neq$ consistency, how do their effects differ?

Research Design

Previous research examining the effectiveness of corrective information showed that it does not always lead to attitude change even if misperceptions are reduced (Hopkins, Sides, and Citrin 2019; Swire-Thompson et al. 2019). However, others find that media exposure can persuade people to change their attitudes under certain conditions (e.g., De Benedictis-Kessner et al. 2019). Our study explores how the way people access corrective information influences the likelihood of its success in reducing misperceptions. In general, we expect that those who were able to choose a news agency are more likely to pick a source similar to their usual media diet. Additionally, we expect those who read a news story from a trusted news source (and who are able to pick the news agency) are more inclined to evaluate the article positively and change their attitudes in the direction of the news article.

Overview

Our study builds on the Preference-Incorporating Choice and Assignment Design proposed by De Benedictis-Kessner et al. (2019) and Knox et al. (2019). Participants are randomly assigned to a free choice treatment condition, a forced exposure treatment condition, or a control group. Participants in the free choice condition are asked to choose whether they want to see a recent breaking news tweet from either FoxNews or MSNBC. After viewing the tweet, which links to a news story focusing on immigrant-owned businesses in the US, participants are asked to read the corresponding article. In the forced exposure condition, participants do not have the option to choose a news organization (FoxNews or MSNBC), but are randomly assigned to one or the other. In either condition, the content of the news article is held constant across sources. By holding the content constant, our design has the additional advantage of more clearly differenting the effects of the choice vs assigned group by ensuring that the differences are not a result of the structure,

content, or tone of different stories. Finally, participants who are randomly assigned to the control group skip the tweet and article entirely and move directly from the pre-treatment battery (questions on media usage, stereotyping, and political attitudes/behavior) to the post-treatment battery (questions on attitudes toward immigrantion and trust in different media sources). For more details on the design, see Figure 1 below as well as the full questionnaire, including all treatment conditions, in our pre-registered analysis on EGAP.

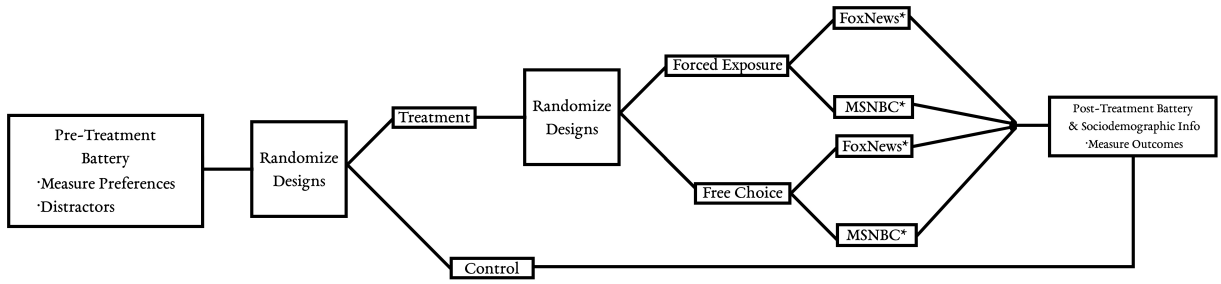

Figure 1: Survey Flow

Information Treatment

- In the following section, we are going to show you a random tweet drawn from the accounts of [two/several] large news organizations. **You can choose from which Twitter account the random tweet will be drawn.** Afterwards, we are going to ask you some questions about the content of the news story.

Figure 2: Test

Table 1: This is the table caption

Belief	Interpretation	Opinion
Across the United States, how many workers–immigrant and US-born–do you think are employed by immigrant-owned businesses?	On average, would you say that people who come to live here from other countries will take jobs away from people already here or add to the economy by creating additional jobs?	Do you think the number of immigrants from foreign countries who are permitted to come to the United States to live should be [increased/left the same/decreased]
Taking your best guess, what was the total amount of sales revenue of immigrant-owned businesses in the last year?	Most people who come to live in the U.S. work and pay taxes. They also use health and social services. On balance, do you think people who come here take out more than they put in or put in more than they take out?	

Measuring Belief, Interpretation, and Opinion

Results

Free Choice Enables Opinion Change

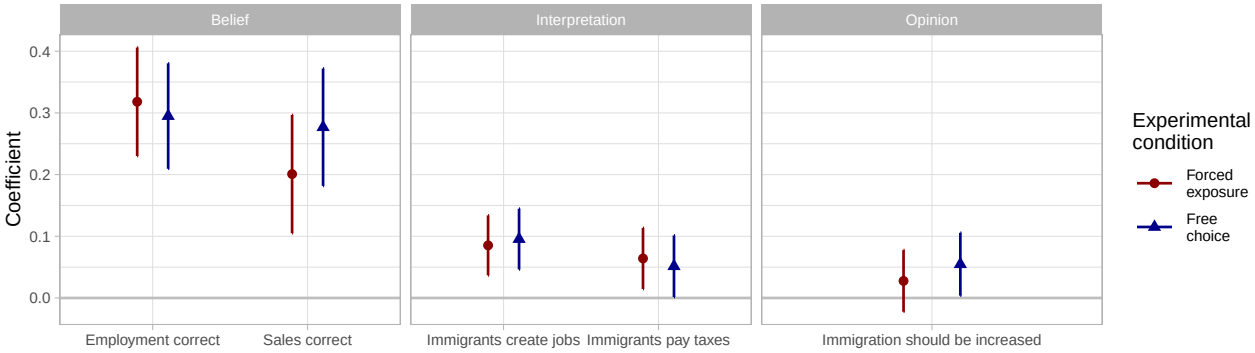

Figure 3: Treatment effects of forced exposure and free choice manipulation (vs. control). Coefficients are based on linear regression models controlling for pre-treatment immigration attitudes, political predispositions, and sociodemographics. Positive coefficients indicate larger probability of correct responses (Belief) or more liberal immigration attitudes (Interpretation & Opinion). 95% confidence intervals based on robust standard errors. Full model results included in the appendix.

Opinion Change is Driven by Voluntary Exposure to Inconsistent Sources

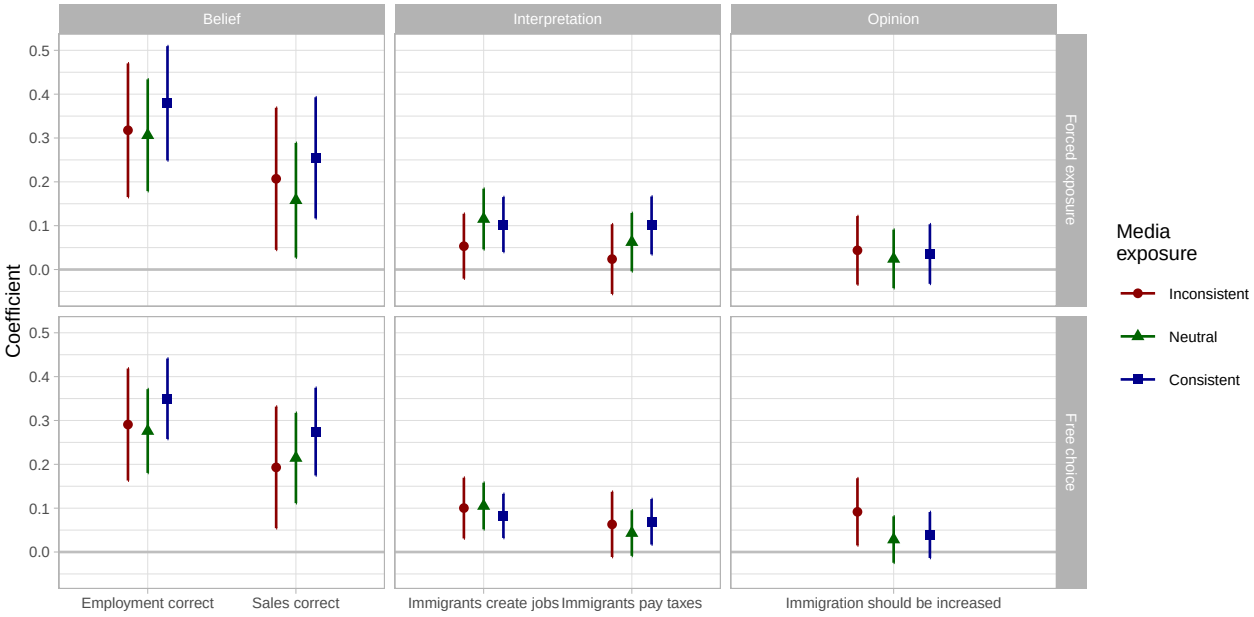

Figure 4: Treatment effects of forced exposure and free choice manipulation (vs. control) conditional on consistency between media preference and information source. Coefficients are based on linear regression models controlling for pre-treatment immigration attitudes, political predispositions, and sociodemographics. Positive coefficients indicate larger probability of correct responses (Belief) or more liberal immigration attitudes (Interpretation & Opinion). 95% confidence intervals based on robust standard errors. Full model results included in the appendix.

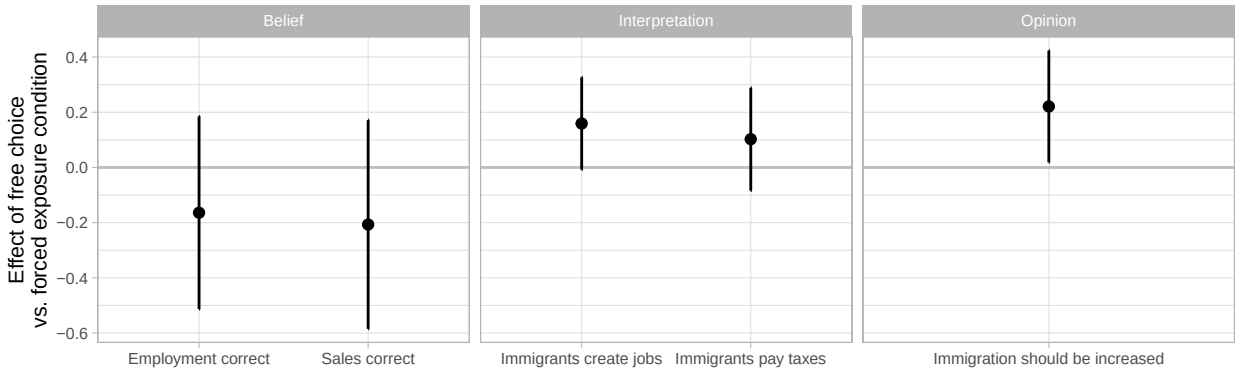

Figure 5: Difference in treatment effects of forced exposure and free choice manipulation conditional on exposure to information source that is inconsistent with media preference. Coefficients are based on linear regression models controlling for pre-treatment immigration attitudes, political predispositions, and sociodemographics. Positive coefficients indicate larger treatment effect for voluntary (vs. involuntary) exposure to inconsistent source. 95% confidence intervals based on robust standard errors. Full model results included in the appendix.

Discussion and Conclusion

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