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Perceived Exposure to Misinformation and Trust in Institutions in Four Countries Before and During a Pandemic

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Misinformation could undermine trust in institutions during a critical period when people require updated information about a pandemic and credible information to make informed voting decisions. This article uses survey data collected in 2019 (n = 6,300) and 2021 (n = 6,000) in the United States, the United Kingdom, France, and Canada to examine the relationship between perceived exposure to misinformation and trust in national news media and the national/federal government. We do not find that perceived exposure to misinformation undermines trust. We test whether these relationships differ for those with left-wing versus right-wing views, by country, period, or electoral context.

Keywords: social media, media trust, political trust, cross-national, political ideology

Misinformation is "a claim that contradicts or distorts common understandings of verifiable facts" (Guess & Lyons, 2020, p. 10). This information competes with more credible news sources such as the news media, government officials, health professionals, or scientists. Many have expressed concerns that misinformation could "destabilize political institutions and delegitimize media organizations" by undermining trust in these information sources (Ognyanova, Lazer, Robertson, & Wilson, 2020, p. 2). However, others have proposed that trust in these institutions could build resilience to disinformation by limiting exposure to and sharing of this false information (Humprecht, Esser, & Van Aelst, 2020; Humprecht, Esser, Aelst, Staender, & Morosoli, 2021). Determining the relationship between misinformation and trust is critical in understanding the state of democracy and compliance (or noncompliance) with public health measures to address the COVID-19 pandemic or future crises.

In this article, we consider trust in the national or federal government and trust in national news media. By trust, we mean expectations that an institution will act in citizens' best interests; those expectations are tied to assessments of past performance (Uslaner, 2015). This article examines perceived exposure to misinformation and trust in social institutions using survey data collected in 2019 (n = 6,300) and 2021 (n = 6,000) in the United States, the United Kingdom, France, and Canada. We build on existing research that uses surveys to assess exposure to misinformation, but we move past the contentious debate

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about what misinformation is and is not; instead, we focus on people's reactions or views in response to perceptions about exposure to misinformation. We measure perceptions of exposure rather than actual exposure. The distinctiveness of our measure can be explained using the political science concept of political efficacy. Political efficacy measures whether people think they can influence the government rather than whether they can influence government. The concept measures perceptions, just as our measure of misinformation assesses perceptions about being exposed to misinformation. Despite the subjectivity of our measure and the measure of political efficacy, the concepts have value in predicting outcomes—how do people react? Our conception differs from political efficacy in that the concept of political efficacy has been extensively used without questioning whether these perceptions match actual influence on politics or some external criteria of political influence. In contrast, the scholarship on misinformation has tried to objectively measure exposure through Web tracking and other efforts. We use theories and cite findings based on both objective and subjective measures of exposure to misinformation.

We find little evidence to suggest a negative relationship between perceived exposure to misinformation and trust. Although most people see what they think to be misinformation, this exposure does not change their views about the news media and government. This finding is supported by dozens of null-effect estimates using our cross-national and cross-sectional data as well as many multi-wave panel studies on this topic. We offer an original take on claims about citizens' resilience to misinformation: People demonstrate resilience to misinformation by not changing their views about government or national news media. We also present the results of a simultaneous equation model that offers an alternative explanation for the null effects observed in this field: Two competing processes are present that cancel each other out. Prior institutional trust can reduce perceived exposure to misinformation; perceived exposure to misinformation can reaffirm faith in these social institutions.

Right-wing citizens are a distinctive subgroup in this field of research. We find that positive correlation between political trust and perceived exposure to misinformation is the strongest for this subgroup, which we explain as a conservative tendency to defer to authorities. This subgroup reacts to perceived misinformation by reaffirming their trust in authoritative and credible sources of information. Our article makes several contributions to the existing literature by examining (1) the relationship between institutional trust and perceived exposure to misinformation in a cross-national context to understand how the relationship may differ, (2) how the COVID-19 pandemic may have changed the relationship between exposure to misinformation and institutional trust, (3) how the relationship between misinformation and trust differs in high-stakes electoral versus non-electoral contexts, and (4) how the relationship may differ by political ideology.

Misinformation and Media Trust

In making a case for a relationship between misinformation and media trust, scholarship offers two theoretical claims that differ with respect to which variable is the cause and which is the effect. One line of research suggests preexisting trust in news media may build resilience against disinformation (Humprecht et al., 2020). If people trust news media, they will be more likely to use these credible sources instead of fake news sites; if they trust news media and see misinformation, they will not believe false information and will not share it (Boulianne, Tenove, & Buffie, 2022; Hopp, Ferrucci, & Vargo, 2020; Humprecht et al., 2020, 2021; Valenzuela, Halpern, Katz, & Miranda, 2019).

Another line of research suggests the causal flow works in the other direction. Seeing misinformation that contradicts credible news sources may raise doubts about the accuracy of news media and undermine trust in this institution (Stubenvoll, Heiss, & Matthes, 2021; Valenzuela, Halpern, & Araneda, 2022). Fake news sources can target more mainstream media sources, accusing them of spreading biased or inaccurate information (Humprecht, 2019; Ognyanova et al., 2020). This causal flow is often tested in experimental settings, with researchers showing fake news stories and assessing the effects of such exposure on people's beliefs (Vaccari & Chadwick, 2020). The causal relationship between trust and exposure to misinformation has not yet been fully explored, but Frischlich and Humprecht (2021) argue it is a self-reinforcing cycle in which media-skeptical citizens turn to content that further reinforces their doubts. As a result, it becomes increasingly difficult to reach these citizens with factual information.

The research does not agree about the causal ordering (see Table 1), which has led to different findings and conclusions. Table 1 outlines the results from multi-wave panel data, which are the ideal data to establish causal flow. Within this body of research are many different measures of misinformation and trust in institutions. However, most research suggests weak relationships.

Valenzuela and colleagues (2022) use three-wave panel data in Chile to examine the relationship between the credibility of false stories and media trust. They offer bivariate correlations in their appendix (see Table 1 below) and multivariate analysis in their article. Their three-wave data offer multiple data points to test the connection between misinformation and media trust; most of the estimates are negative but not statistically significant (six of the nine tests). In their two-wave panel exploring sharing of misinformation and media trust, they report that the relationship is negative and not statistically significant (Valenzuela et al., 2019).

In a two-wave panel in the United States, Ognyanova and colleagues (2020) too affirm the negative effect of visiting fake news sites on media trust (see Table 1) but also offer evidence that the relationship depends on which institution is the focal point. Stubenvoll and colleagues (2021) use two-wave data in Austria and find small negative relationships that differ in statistical significance depending on which variable is treated as the cause and which as the effect. They use a measure of misinformation that is based on self-assessed exposure.

Although these four studies use very different measures (Web browser history, credibility of false stories, self-assessed exposure, sharing misinformation), they collectively suggest that the findings depend on which variable is the cause and which is the effect and that the relationships are small and close to zero (null relationships).

The results may also differ by country (Chile vs. Austria vs. the United States). A set of studies in Germany offers similar findings that indicate trust predicts beliefs in misinformation. In a three-wave panel in Germany, Zimmermann and Kohring (2020) report that trust in traditional news media decreases the likelihood of believing disinformation, but the estimates are not significant when modeled as beliefs predicting trust. They posted replication files; from these files, the first author computed bivariate correlations of their key variables (see Table 1), affirming the significant negative correlations among the variables. Using an online survey experiment, Bauer and Clemm von Hohenberg (2021) show in another study of German citizens that distrust in mainstream media increases belief in misinformation. The two studies from Germany show that media trust decreases beliefs in misinformation.

Table 1. Summary of Multi-Wave Panel Studies on Misinformation and Trust.

Study	Design	Measure of Misinformation	Measure of Trust	Relationship			
Ognyanova and colleagues (2020)	The United States, 2-wave, 2018, Tables B2 & B3	IV: Fake news sites using browser history	DV: Confidence in media	Negative*			
		IV: Fake news sites using browser history	DV: Confidence in White House U.S. Congress Supreme Court Military Justice system Combined 5	Negative, ns Positive*** Positive* Negative, ns Positive* Positive*			
Stubenvoll and colleagues (2021)	Austria, 2-wave, 2017, Table 1	DV: Self-assessed exposure	IV: Pol coverage is fair, fact-based, and trustworthy	Misinfo wave 1 to media trust wave 2: Negative** Media trust wave 1 to misinfo wave 2: Negative, ns			
Valenzuela and colleagues (2019)	Chile, 2-wave, 2017, Figure 2	DV: Sharing 10 misinfo stories	IV: Professional news media are trustworthy/I trust the news they deliver	Negative, ns			
Valenzuela and colleagues (2022)	Chile, 3-wave, 2017, 2018, 2019, Table A3	Misinfo (credibility of 7 false stories)	News media coverage is balanced, honest, and current/I share it		Misinfo 2017	Misinfo 2018	Misinfo 2019
				Media trust 2017	−.047ns	−.080ns	−.045ns
				Media trust 2018	−101*	−.109*	−.143**
				Media trust 2019	−039ns	−.058ns	−.076ns

Zimmerman and Khoring (2020)	Germany, 3-wave	Disinfo (credibility of 6–7 false stories)	News media cover important pol topics and report information that can be verified	Disinfo wave 1	Media trust wave 1	Media trust wave 2	Media trust wave 3
					−.235***	−.218***	−.231***
				Disinfo wave 2	−.313***	−.324***	−.316***
				Disinfo wave 3	−.357***	−.345***	−.369***
			Politicians find appropriate solutions, make the right decisions, and address important issues		Pol trust wave 1	Pol trust wave 2	Pol trust wave 3
				Disinfo wave 1	−.261***	−.216***	−.188***
				Disinfo wave 2	−.323***	−.313***	−.293***
				Disinfo wave 3	−.334***	−.323***	−.318***

Note. IV = independent variable; DV = dependent variable; Misinfo = misinformation; Disinfo = Disinformation (labelled based on the original authors' terminology); Pol = political; ns = not significant at .05 level.
*p < .05, **p < .01, ***p < .001.

Moderated Effects of Misinformation and Media Trust

The different findings may be explained by different media and political systems (Humprecht et al., 2020). Each study is based on a single country, and thus the results may differ based on its specific media, economic, and political contexts (Humprecht et al., 2020). Table 2 describes the media context of the four countries under study to understand country differences in the relationship between misinformation and media trust. The United States is distinctive as a media system—with a strongly partisan media but without a strong public service media outlet (Brüggemann, Engesser, Büchel, Humprecht, & Castro, 2014; Hallin & Mancini, 2004; Nechushtai, 2018). Individuals in countries with higher levels of trust and lower levels of polarization are expected to report less exposure to misinformation (Humprecht et al., 2020).

The Edelman Trust Barometer (2021) shows distinctive patterns in the United States for trust in institutions based on partisanship. Trump voters experienced a dramatic drop in trust from November 2020 to December 2020 (the aftermath of the election), especially trust in news media. Is the United States context distinctive given its media system and high ideological polarization? Or does the downward trend reflect a normalization process, that is, trust in the media increased at the beginning of the COVID-19 pandemic and adjusted as it progressed, as it did in many countries (Newman et al., 2021)? This U.S. example raises two other questions. How does ideological position alter the relationship between misinformation and institutional trust, that is, news media and politics? Does the relationship differ for high-stakes electoral contexts versus nonelectoral contexts?

There are also cross-national differences in levels of trust in government and news media between the United Kingdom, the United States, France, and Canada (Table 2). According to the Edelman Trust Barometer (2021), Canada is distinctive in terms of higher levels of trust in these institutions compared with the other countries (Table 2). The *Digital News Report* (Newman et al., 2021) affirms that Canadians have greater trust in news (Table 2). We use our cross-sectional, cross-national data to examine the following research question:

RQ1: How does the relationship between perceived exposure to misinformation and trust in national news media differ by the following:

A) Political ideology?
B) Country?
C) Prepandemc versus during the pandemic?
D) Electoral context versus nonelectoral context?

Table 2. Differences by Country.

	Canada	France	The United Kingdom	The United States
Population (millions)	37	65	67	327
Internet penetration	90%	92%	95%	96%
Use online news	79%	67%	74%	66%
Trust news overall	45%	30%	36%	29%
Facebook	69%	60%	65%	58%
Recent electoral outcomes	Liberal party to Liberal party (as a minority) (Left to Left)	Socialist party to En Marche! (Left to Left)	Conservatives (as a minority) to Conservatives (Right to Right)	Republican to Democrat (Right to Left)
Last federal/presidential /national election	October 2019*	May–June 2017	November 2019	November 2020
Political organizations	Party-centered	Candidate-centered	Party-centered	Candidate-centered
Mass media system	Liberal	Polarized pluralist	Liberal	Liberal
Publicly funded broadcasting system	Yes	Yes	Yes	No
Trust in news media	54%	37%	37%	45%
Trust in government	59%	50%	45%	42%

Note. Sources are Edelman Trust Barometer (2021); Humprecht and colleagues (2021); Newman et al. (2021); Vaccari and Valeriani (2021; with the first author filling in the details for Canada).
*An additional Canadian election was held in September 2021, but our data were collected in February, so we do not consider these data to be collected during an electoral context.

Trust in Government

Trust in the news media is closely linked to the way the public views political institutions. Hanitzsch, Van Dalen, and Steindl (2018) show that the connection between trust in the press and trust in politics is particularly strong in politically polarized societies. In a three-wave panel in Germany, Zimmermann and Kohring (2020) find political trust decreases the likelihood of believing disinformation, but disinformation does not impact political trust in their analysis. Political trust may shield citizens from misinformation, similar to the process described in relation to media. Again, the findings differ based on which variable is treated as the cause and which as the effect.

Humprecht (2019) documents that compared with media outlets, politicians and political institutions are more often the targets of campaigns to spread disinformation. In particular, disinformation

campaigns are expected to undermine trust in democratic institutions. Studies demonstrate that exposure to misinformation may increase cynicism (Jones-Jang, Hee Kim, & Kenski, 2021). This assumed causal flow is popular in experiments in this field. For example, Jennings and Stroud (2021) presented false stories on Facebook about Clinton and Trump; citizens were more likely to believe the false story when it was about the side they did not support. Ognyanova and colleagues (2020) find the connection between misinformation and trust depends on which branch of government is considered (see Table 1). For example, exposure to misinformation, as measured by visiting fake news websites, did not relate to trust in the White House but had positive relationships with other branches of government.

Moderated Effects of Misinformation and Political Trust

In a two-wave panel in the United States, Ognyanova and colleagues (2020) find the effect of visiting fake news sites on political trust depends on ideology: For conservatives and moderates, exposure to misinformation increased political trust; for liberals, exposure to misinformation decreased political trust. They argue that although

> a citizen decline in political trust can be harmful, an unwarranted increase in public confidence based on false stories would be similarly problematic. An unrealistically optimistic view of the government, for instance, can be dangerous if it convinces citizens that no further action or mobilization is needed. (Ognyanova et al., 2020, p. 3)

The findings illustrate the need to consider the ideological alignment between the respondent and the country's political leader. Table 2 describes the political contexts of the four countries studied to understand differences by country.

Do the findings about ideology, misinformation, and political trust replicate elsewhere, or are they distinctive to the highly polarized, Trump-led American context? In the context of the 2020 election, did Trump's misinformation about voter fraud dampen political trust and decrease trust in the news media that are trying to correct misinformation? Berlinski and colleagues (2021) tested the effects of exposure to false claims about electoral fraud in the 2018 midterm elections. They found that this exposure to false claims decreased trust in the electoral system, with the effect stronger among Republicans and Trump supporters.

Early discourse about misinformation relates to election campaigns and concerns about foreign influences (e.g., U.S. 2016 election). We might expect more misinformation to flow in election campaigns because of the salience of ideological debates and the high stakes of winning or losing. Our first data collection period occurred immediately before the 2019 U.K. general election and the 2019 Canadian federal election; our second data collection period occurred immediately after the U.S. 2020 election. As such, we can continue a line of research about the role of misinformation during election campaigns.

Furthermore, the COVID-19 pandemic represents a special case for misinformation and trust in government. The pandemic created a context with high levels of misinformation as well as a great need for trust in social institutions (Frischlich & Humprecht, 2021; Ognyanova et al., 2020). Governments must be trusted to invoke public health measures to reduce the spread of the virus; the news media must be trusted to provide updated and accurate information about the spread of the virus and public health measures. The pandemic forced social media companies to develop policies to deal with COVID-19 misinformation. YouTube

and Facebook both implemented practices to help ensure COVID-19 information adheres to the World Health Organization information (BBC News, 2020; Google, 2020). As such, we examine whether the relationship between misinformation and trust is distinctive in 2021 compared with 2019.

The Edelman Trust Barometer (2021) shows that in the early stages of the pandemic, government trust increased in the United Kingdom and Canada, and, to a lesser extent, in France and the United States. However, from May 2020 to January 2021, trust in the government decreased in all countries except France. Environics Canada (2019) examined confidence in the national government in the four countries under our study. From 2007 to 2018, Canadians had distinctively higher levels of confidence, ranging from 55% to 63%, whereas confidence in the United States ranged from 33% to 41%, France ranged from 34% to 41%, and the United Kingdom ranged from 41% to 42%. However, there are few theoretical explanations for these differences because these studies are all descriptive studies.

Dalton (2017) compares the United States and Canada in terms of institutional trust, affirming that Canadians are more trusting than Americans. Both countries experienced declines in institutional trust, which he explains in terms of the rise of postmaterialist values that are more critical of authorities. He argues the differences within North America may be related to critical events that undermined trust in the United States, such as Watergate and other political scandals, racial conflicts, and conflicts about the war in Vietnam. In contrast, Canada did not experience these specific scandals and conflicts, according to Dalton (2017). Given these past studies, we might expect to see different patterns for Canadians versus Americans in terms of misinformation and institutional trust.

We present a series of research questions about the relationship between misinformation and trust in government, before and during the COVID-19 pandemic. We use our cross-sectional, cross-national data to examine the following research questions:

RQ2: How does the relationship between perceived exposure to misinformation and trust in national/federal governments differ by the following:

A) Political ideology?
B) Country?
C) Pre-pandemic versus during the pandemic?
D) Electoral context versus nonelectoral context?

Methods

Sample

Lightspeed Kantar Group administered a survey to an online panel from September to November 2019, and again in February 2021 to a new group of respondents. In total, 12,359 respondents are included in the analysis. Age and sex quotas were in place to ensure the online panel matched census data for each country. The sample sizes are similar across the four countries: Canada (n = 3,107), France (n = 3,010), the United Kingdom (n = 3,042), and the United States (n = 3,200). The survey was conducted in English and French. Lightspeed Kantar uses a weighting efficiency, rather than a response rate, to report on sample quality. This metric measures the match between the census profile and sample characteristics. The weighting efficiencies were between 97% and 99% for each country and each year. Due to the close match

between the census profiles and sample characteristics, we did not weight the data. The large sample size enables us to analyze subgroups while maintaining sufficient statistical power. In particular, for an effect size of .15 (two-tailed, .80 threshold), we would need a minimum sample size of 346 to detect an effect (Ellis, 2010). This threshold should be kept in mind when reviewing the subgroup analysis presented. Using the smallest coefficient reported in Valenzuela and colleagues' (2022) work, which is −.039 (see our summary in Table 1), we would need 5,158 respondents to detect an effect that small. We had 12,291 respondents (see Tables 4 and 5 as well as Figures 1 and 2).

Ethics

This research was reviewed and approved for ethical considerations by MacEwan University (101662 and 101856) in accordance with Canada's *Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans*. The anonymous data and replication files are posted on https://doi.org/10.6084/m9.figshare.21936372.v1. The 2019 survey was funded by a Social Sciences and Humanities Research Council Insight Grant (435-2019-04-94), and the 2021 survey was funded by the Digital Citizenship Initiative (Canadian Heritage).

Measures

Before asking respondents about misinformation on social media in the past month, we defined *misinformation* as "we mean false or misleading information." We asked, "In the past month, how often on social media have you seen someone share misinformation?" Response options were never, rarely, from time to time, and often. The average was 2 on a 4-point scale, corresponding to an answer of "rarely" (see Table 3 for yearly and country differences). As noted, we measured perceived exposure to misinformation. However, in other work (Boulianne et al., 2022), we compare responses and predictors for a subjective (self-assessed) measure of exposure to misinformation about COVID-19 with more objective measures of exposure (awareness of false stories) about COVID-19. In this article, we use an all-encompassing measure of any false or misleading information, moving beyond COVID-19. This broader measure is expected to capture all the different types of false information that could impact trust in news media and government.

Borrowing from the U.S. General Social Survey, World Values Survey, and the Gallup World Poll (Uslaner, 2015), we asked about trust using a line of questions about confidence in institutions. We asked, "How much confidence, if any, do you have in each of the following to act in the best interests of the public?" Response options were not at all, a little, a moderate amount, a lot, and a great deal. For national/federal governments, the average was 2 on a 5-point scale. For national news media, the average was 2 on a 5-point scale. Table 3 presents country-specific statistics, replicating the findings that Canadians have higher levels of institutional trust compared with people of other countries.

For political interest, we asked, "How interested would you say you are in politics?" Respondents could choose: Not at all interested, not very interested, fairly interested, and very interested. The averages are reported in Table 3. For *ideology*, we used an 11-point scale and coded the four lowest categories as "left-wing" ideology and the four highest categories as "right-wing."

For education, we asked about the highest level of education completed. We provided country-specific categories but recoded these into four categories: High-school diploma or less, some college, bachelor's degree, and more than a bachelor's degree. For the pooled sample, the average was 2 (some college). Across the four countries, the sample includes similar portions of males and females. For age, we asked people's birth year and then compared this number with the year of data collection to determine age.

Table 3. Descriptive Statistics by Country.

	Range	Year	All	The United States	The United Kingdom	France	Canada
Females	0,1	2019	51.24%	51.80%	49.22%	50.53%	53.34%
		2021	51.02%	51.34%	49.30%	51.14%	52.24%
Education	1–4	2019	1.95	2.15	1.86	1.80	1.95
			(1.05)	(1.10)	(1.05)	(1.05)	(0.97)
		2021	1.93	2.10	1.86	1.77	1.97
			(1.04)	(1.09)	(1.06)	(0.99)	(0.99)
Age in years	18–100	2019	48.45	48.05	47.70	49.02	49.07
			(17.32)	(17.71)	(17.09)	(16.97)	(17.41)
		2021	48.33	48.36	48.11	48.50	48.37
			(17.37)	(18.69)	(17.03)	(16.30)	(17.40)
Left-wing ideology	0,1	2019	21.04%	22.09%	18.80%	21.90%	21.20%
		2021	20.48%	18.66%	17.96%	21.21%	24.00%
Center	0,1	2019	51.32%	42.41%	53.94%	52.68%	57.59%
		2021	50.89%	44.32%	53.72%	51.07%	54.58%
Right-wing ideology	0,1	2019	27.64%	35.51%	27.26%	25.41%	21.20%
		2021	28.64%	37.03%	28.32%	27.72%	21.42%
Political interest	1–4	2019	2.61	2.78	2.63	2.40	2.61
			(0.97)	(1.00)	(0.92)	(0.97)	(0.95)
		2021	2.52	2.73	2.51	2.29	2.54
			(0.96)	(0.99)	(0.94)	(0.97)	(0.91)
Trust in national news media	1–5	2019	2.30	2.36	2.21	2.18	2.46
			(1.13)	(1.23)	(1.06)	(1.09)	(1.09)
		2021	2.29	2.35	2.25	2.12	2.44
			(1.14)	(1.26)	(1.10)	(1.06)	(1.12)
Trust in national/federal government	1–5	2019	2.19	2.27	2.02	2.13	2.34
			(1.10)	(1.14)	(1.03)	(1.11)	(1.07)
		2021	2.19	2.30	2.04	2.05	2.36
			(1.14)	(1.20)	(1.06)	(1.12)	(1.13)
Misinformation on social media	1–4	2019	2.09	2.28	1.91	2.03	2.13
			(1.09)	(1.15)	(1.02)	(1.06)	(1.07)

		2021	2.33	2.49	2.22	2.18	2.43
			(1.06)	(1.10)	(1.02)	(1.03)	(1.05)
Facebook use (instrumental variable)	1–4	2019	2.98	2.99	2.95	2.88	3.11
			(1.21)	(1.22)	(1.24)	(1.23)	(1.13)
		2021	2.97	2.87	2.88	3.00	3.11
			(1.18)	(1.20)	(1.22)	(1.17)	(1.10)

Analysis

Three conditions are required to make causal claims: (1) temporal order, (2) association, and (3) ruling out spuriousness. As described in relation to Table 1, longitudinal studies have not established the temporal direction of causal flow. In particular, the studies do not agree on whether misinformation is a cause or an outcome. Our cross-sectional analysis (and other similar studies) cannot make claims about causal flows. Instead, we present a correlational analysis (Pearson's correlation). The second condition of causality is a test about the association between the two variables. There are many ways to test these relationships and rule out the null hypothesis (no effects). Capitalizing on the large sample size, we split the cross-sectional survey results into many subgroups to assess the presence of any evidence to support the rejection of the null hypothesis. Finally, we must rule out spuriousness. This issue ties into the first condition of causality. In terms of deciding which variables might cause both trust and perceived exposure to misinformation, we, again, must raise the question about which variables occur before forming opinions about trust in institutions and before perceived exposure to misinformation on social media. Demographic variables (age, sex) may be confounding variables. We also added education and political interest, which may correlate with our key variables. In sum, the focus on correlational analysis allows us to test the net effect or relationship without making claims about the causal ordering of variables. This approach is most appropriate for cross-sectional data where the causal flow among variables is ambiguous, as demonstrated by Table 1 results from longitudinal studies that do not clearly establish causal flow.

In addition, we use Amos to estimate a reciprocal model. This reciprocal model tests the causal flow in both directions although we present this analysis cautiously because reciprocal causality is best tested with multi-wave data (see discussion in Boulianne, 2011). To test a non-recursive model with cross-sectional data requires an instrumental variable to help "specify" the model (Shah, Schmierbach, Hawkins, Espino, & Donavan, 2002). Facebook use is treated as a unique predictor of perceived exposure to misinformation on social media to help "specify" the reciprocal model. In the reciprocal model, we control for age, gender, education, political interest, left-wing and right-wing ideology, year, and country. We present unstandardized coefficients and standard errors, which are the default coefficients for Amos (see Tables A1 and A2 for the full models). Standardized coefficients can be calculated using the standard deviations listed in Table 3.

Results

We begin with a presentation of zero-order correlations (first row) then move on to partial correlations (subsequent rows) controlling for age, sex, education, and political interest. We find a positive correlation between perceived exposure to misinformation and trust in national news media (Table 4). The positive relationship is stronger for those on the right side versus those on the left or in the center (RQ1a). This pattern is evident in the pooled sample (all countries) as well as in the United Kingdom (in 2019 only),

France (in 2019 only), and the United States (both years). Canada is an exceptional case—perceived exposure to misinformation and media trust are not significantly correlated in Canada in any year or for any subgroup defined by ideology (RQ1b).

Table 4. Correlations of Self-Assessed Exposure to Misinformation and Media Trust.

			Misinformation	Left	Center	Right
Pearson's correlation	*r*		.135	.050	.100	.187
	p		<.001	.016	<.001	<.001
	n		12291	2310	5693	3138
Partial correlation	*r*		.042	.010	.028	.064
	p		<.001	.639	.032	<.001
	n		12287	2306	5689	3134
Canada	2019	E	.023	−.018	.032	.055
			.368	.766	.375	.351
			1517	281	772	283
	2021		.023	.015	.016	.003
			.368	.793	.667	.957
			1555	327	752	293
France	2019		.093	.053	.058	.131
			<.001	.362	.116	.014
			1501	300	729	347
	2021		.011	−.031	.013	−.003
			.669	.609	.727	.951
			1490	281	682	368
The United Kingdom	2019	E	.009	−.025	−.050	.120
			.730	.688	.172	.021
			1529	254	739	368
	2021		−.016	−.057	−.038	.041
			.550	.389	.310	.433
			1484	230	704	369
The United States	2019		.052	−.059	.051	.125
			.034	.278	.191	.003
			1684	338	660	554
	2021	E	.079	−.044	.077	.117
			.002	.483	.057	.008
			1485	253	609	510

Note. Listwise deletion of cases. The first set of results: Zero-order correlations. Remaining results: Partial correlations that account for age, gender, education, and political interest; 2019 is pre-pandemic, and 2021 is a pandemic year; E denotes data collection within three months of an election.

In terms of context (RQ1c), we see the correlations are stronger in 2019 in France (pre-pandemic) compared with 2021 (pandemic). However, for other countries, the correlations do not differ much between 2019 and 2021 (see the first column in Table 4). As for electoral context, Canada had a federal election in 2019, and the data were collected during the three weeks leading up to the election. However, the (null) relationship between perceived exposure to misinformation and media trust does not differ for this electoral context versus 2021. The United Kingdom also had an election in 2019, but the correlations in both 2019 and 2021 are not significant, meaning the electoral context did not influence the relationship between media trust and perceived exposure to misinformation. We find little support for the idea that the relationship depends on the electoral context (RQ1d). In terms of pre-pandemic versus pandemic times, we do not see evidence of a significant increase in the correlations between media trust and perceived exposure to misinformation.

As for trust in the national/federal government, we find similar relationships as for media trust: Positive relationships, which are larger for those on the right (RQ2a). In the United States, perceived exposure to misinformation and trust in the national government are strongly correlated in 2019 (partial correlation of .208, $p < .001$), but the coefficient is half the size in 2021 (partial correlation of .094, $p < .05$) among those on the right. We also see stronger positive correlations among right-wing respondents in 2019 (versus 2021) in the United Kingdom and France (Table 5). This pattern replicates the observations for media trust and misinformation. In short, right-wing respondents in 2019 are a distinctive group in terms of the connection between perceived exposure to misinformation and trust. We observe this pattern in multiple national contexts, which suggests that the United States is not a distinctive case.

The pandemic did not increase the correlation between misinformation on institutional trust; the relationships are stronger in 2019 than in 2021 (RQ2b). In addition, data collection occurred after the 2020 U.S. presidential election in the aftermath of the U.S. Capitol riot. We see the correlation between trust in national government and perceived exposure to misinformation is stronger (and positive) among right-wing Americans.

In terms of other countries, France and Canada demonstrate stronger (and positive) correlations in 2019 compared with 2021. Again, Canada had an election in 2019, which provides support for the electoral context making a difference, but France did not have a national election in either of these years. In terms of the United Kingdom, the relationship between misinformation and trust in government does not differ for the electoral context in 2019 versus 2021 (Table 5, column 1). Overall, a country having an election within three months of the data collection period does not influence the correlations (RQ2d). The connection between misinformation and political trust does not differ for periods of high stakes defined as having a national election, but the relationship may be decreasing over time.

Table 5. Correlations of Self-Assessed Exposure to Misinformation and Political Trust.

			Misinformation	Left	Center	Right
Pearson's correlation	*r*		.167	.089	.134	.224
	p		<.001	<.001	<.001	<.001
	n		12291	2310	5693	3138
Partial correlation	*r*		.070	.037	.060	.104
	p		<.001	.073	<.001	<.001
			12287	2306	5689	3134
Canada	2019	E	.084	.025	.114	.075
			.001	.671	.002	.205
			1517	281	772	283
	2021		.039	.092	−.005	.042
			.127	.096	.884	.469
			1555	327	752	293
France	2019		.105	.094	.086	.116
			<.001	.102	.021	.030
			1501	300	729	347
	2021		.035	−.083	.039	.054
			.174	.166	.303	.302
			1490	281	682	368
The United Kingdom	2019	E	.023	−.087	.031	.121
			.370	.165	.403	.020
			1529	254	739	368
	2021		.043	.024	.034	.062
			.096	.719	.369	.231
			1484	230	704	369
The United States	2019		.092	.002	.032	.208
			<.001	.967	.416	<.001
			1684	338	660	554
	2021	E	.063	−.011	.058	.094
			.014	.857	.152	.034
			1485	253	609	510

Note. Listwise deletion of cases. The first set of results: Zero-order correlations. Remaining results: Partial correlations that account for age, gender, education, and political interest; 2019 is pre-pandemic, and 2021 is a pandemic year; E denotes data collection within three months of an election.

Existing scholarship using multi-wave panel data has not established the direction of causal flow. As such, we offer our own test of reciprocal causation using simultaneous equation modeling. When the relationship is modeled as a reciprocal causation model, trust in news media reduces perceived exposure to misinformation, but perceived exposure to misinformation has a positive impact on trust in news media (Figure 1 and Table A1). The reciprocal model controls for age, gender, education, political interest, left-

wing and right-wing ideologies, year, and country (see Figure 1). The strongest relationship in this model is between using Facebook and perceived exposure to misinformation, which validates the use of this measure as an instrumental variable to specify the non-recursive model. This multivariate model affirms that the United States (reference group) is distinctive in terms of higher perceived exposure to misinformation but does not differ from the United Kingdom and France in terms of trust in news media. Canada is distinctive in having higher levels of trust in news media compared with the other countries. In this pooled model, we do not see ideological differences in relation to trust in news media. Compared with respondents at the center of the ideological continuum, those who identify as right- or left-wing are more likely to report seeing misinformation. Perceived exposure to misinformation is higher in 2021 than in 2019, but no time period differences are evident with respect to trust in news media.

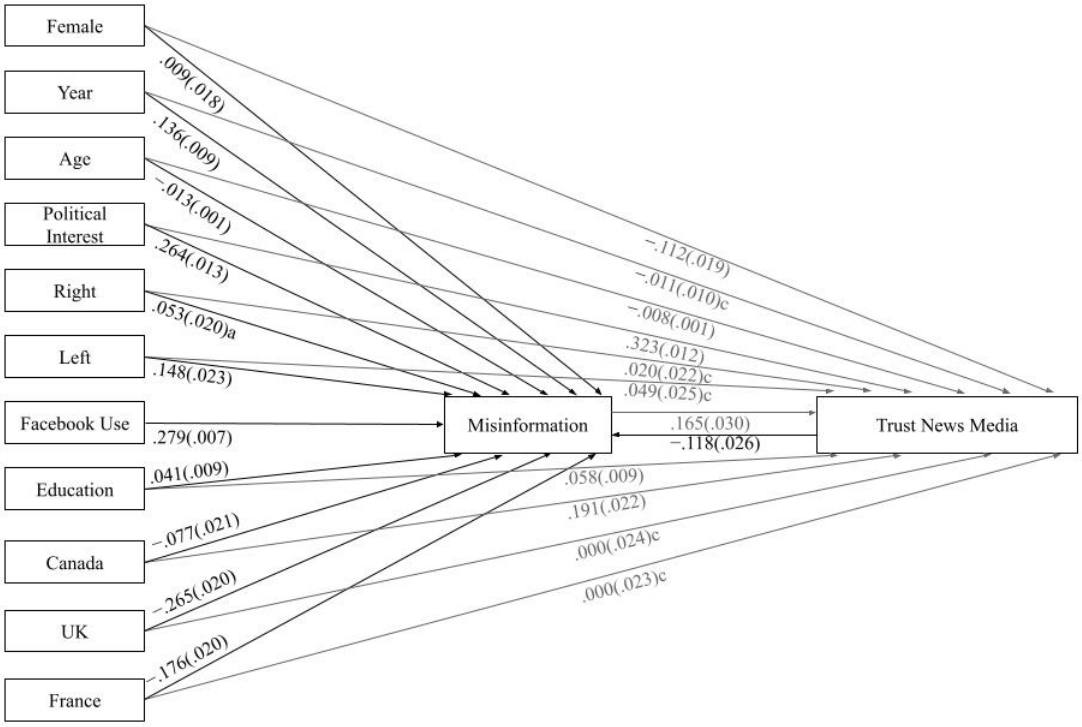

Figure 1. Perceived exposure to misinformation and trust in national news media.

Note. All coefficients are significant unless they include the following notations: "a" denotes not significant at .001, "b" denotes not significant at .01 level, and "c" denotes not significant at .05 level.

Political trust reduces perceived exposure to misinformation, but perceived exposure to misinformation has a positive relationship with political trust, controlling for demographics, political interest, ideology, country, year, and Facebook use (Figure 2, Table A2). This multivariate model affirms (again) that

Canada is distinctive in having higher levels of political trust compared with the United States. The level of political trust in the United Kingdom is lower than in the United States, whereas France and the United States have similar levels of political trust. In this model, we see ideological differences in relation to political trust with those on the left trusting the government less than those who are moderate/in the center of the ideological continuum. Those on the right trust the government more than those in the center. As mentioned, perceived exposure to misinformation is higher in 2021 than in 2019 and is higher in the United States compared with the other countries. Time period differences in political trust are not evident.

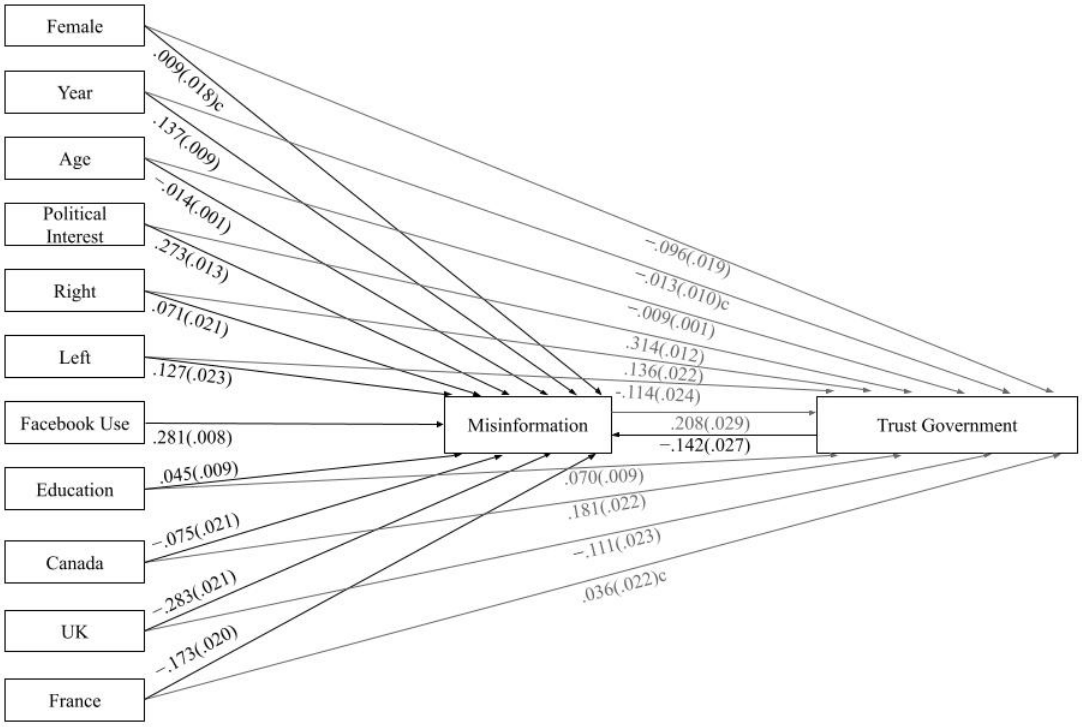

Figure 2. Perceived exposure to misinformation and trust in the national/federal government.
Note. All coefficients are significant unless they include the following notations: "a" denotes not significant at .001, "b" denotes not significant at .01 level, and "c" denotes not significant at .05 level.

Discussion and Conclusion

Overall, we do not find support for the idea that perceived exposure to misinformation undermines trust in government or news media despite ample theorizing about this possibility. Instead, we find an abundance of null effects between perceived exposure to misinformation and institutional trust (Tables 4 and 5). These estimates are supported by many multi-wave studies on this topic (Table 1). On the aggregate, the null effects offer a new perspective on resilience. When people are exposed to what they think is misinformation,

they do not express more negative views about media and government. People do not easily change their views about these long-standing institutions (Tables 4 and 5). Most important, the pandemic did not dramatically alter the relationship between misinformation and trust in institutions. Comparing 2019 data (pre-pandemic) with 2021 data (during the pandemic), we do not see evidence of a significant increase in the correlations between media or political trust and perceived exposure to misinformation.

We do note positive and significant correlations for those on the right side of the ideological continuum. Our findings are consistent with those of Ognyanova and colleagues (2020), which state that for conservatives and moderates, exposure to misinformation (as measured by Web tracking data) increases political trust. These authors argue that consuming pro-government content leads to increased political trust, particularly among those who are already supportive of the government. Their two-wave panel study was based on the United States in November 2018. Instead of asking people about seeing misinformation, they used a browser extension to measure whether people went to fake news sites. Their research design is superior to our cross-sectional design and our measure of perceived exposure to misinformation, but the conclusions are similar. We extend the findings to other countries.

What are the implications of positive correlations? Ognyanova and colleagues (2020) argue that too much trust in government may not be a good thing. Other research supports this conclusion; too much political trust could lead to complacency and a lack of political action (Boulianne, 2019). In the context of elections and the COVID-19 pandemic, we see misinformation spreading, but this exposure does not seem to have dire impacts on levels of trust in various institutions. Instead, a subgroup of citizens (right-wing) seems to be reacting to this misinformation by affirming their trust in these institutions. Indeed, it appears that when faced with perceived exposure to misinformation, this group reaffirms its trust in more traditional sources, including media and the government.

Why would the relationship be stronger for right-wing citizens? In the context of perceived exposure to misinformation, these right-wing citizens may value obedience and respect for authority (government, mainstream news media), reflecting their conservatism (Manson, 2020). Right-wing identity could also tie into populist views or libertarian views, which may lead to more negative views about social institutions. Given the replication of findings in the United States, the United Kingdom, and France in 2019, we argue that the positive correlations relate to conservatism rather than these other right-wing ideas. In sum, in these countries at these two points in time, the positive correlations between institutional trust and misinformation could be explained by traditional conservative values. Indeed, given the patterns of correlations presented in Tables 4 and 5, we should be asking whether the relationships between perceived exposure to misinformation and institution trust are only significant among those on the right side. Other groups of citizens demonstrate resilience by not changing their views about government and media.

Previous research on the topic has used a variety of ways to measure misinformation, including self-assessed exposure, sharing misinformation, the credibility of false stories, Web browsers to track visits to fake news sites, and beliefs in misinformation (Table 1). Aside from the German study (Zimmermann & Kohring, 2020) about beliefs in fake news, this scholarship offers many weak relationships among the various measures of misinformation and institutional trust, that is, many null effects and others that are significant only at the .05 level.

While recognizing the limits of estimating reciprocal models with cross-sectional data, we present another explanation for these null effects. Two competing causal processes may cancel or reduce the overall estimated effects. Although perceived exposure to misinformation increases media and political trust, trust in these institutions reduces perceived exposure to misinformation. Simultaneous equation modeling using non-recursive models can reveal these reciprocal causal flows better than a simple regression model with one dependent variable. Further research should build on this analytical approach by using longitudinal data as well as separately analyzing the models for right-wing versus left-wing respondents and by country.

Reciprocal models are better tested in multi-wave panels (Boulianne, 2011). Additional research should expand the three-wave design used in Germany and Chile (Valenzuela et al., 2022; Zimmermann & Kohring, 2020). Additional multi-wave panel studies should be cross-national because the patterns summarized in Table 1 suggest the relationships differ by country. The panel should be large enough to enable a nuanced analysis among those on the right in each of the countries because ideology is an important factor in the relationship between perceived exposure to misinformation and trust in institutions. Finally, the scholarship in Table 1 summarizes a growing body of research about media trust and misinformation, leaving gaps related to political trust. The omission is important because governments have the exclusive authority to create and enforce laws; political trust relates to compliance with these laws (Marien & Hooghe, 2011).

In terms of cross-national differences, a variety of factors could explain differences in the correlation between perceived exposure to misinformation and institutional trust. As mentioned, Canada is distinctive in its higher levels of media trust (our results; Edelman Trust Barometer, 2021; Environics Canada, 2019). We see this distinctiveness play out in relation to media trust. Misinformation and media trust are not significantly related in Canada (in any year or in any subgroup).

In the context of the United Kingdom, respondents are less trusting of the government compared with respondents in the United States, and in both periods of data collection, conservatives led the government. In the case of the United Kingdom, the continuing right-wing government suggests an affirmation of trust in this winning side among those who are on the right, but lower trust among those on the left. However, perceptions about exposure to misinformation did not alter this relationship in the United Kingdom. In the United States, the government changed during the two periods, and polarization might have increased as a result, leading to an environment more conducive to misinformation effects. We did not see differences in the correlations based on electoral versus nonelectoral contexts, but again, perhaps the critical variable is whether the election resulted in a change of government (Table 2). However, ideology combined with the electoral outcomes may explain the distinct patterns of correlations between perceived exposure to misinformation and political trust for the United States versus the United Kingdom.

Many methodological challenges arise when trying to study misinformation in terms of self-assessed or perceived exposure. These types of measures require the identification of misinformation as such. We note the research comparing subjective measures such as self-assessed or perceived exposure and more objective measures such as awareness of specific fake news stories (Boulianne et al., 2022); the existing scholarship on trust and misinformation uses both types of measures (Table 1). Furthermore, we believe people with a higher awareness of the problem of misinformation are more likely to report exposure to misinformation. We recognize limitations in our research design. However, we address a series of gaps in the literature, including consideration of cross-national differences, electoral and nonelectoral contexts, and pre-pandemic versus ongoing pandemic

contexts. We contribute to existing scholarship on the connections among political ideology, misinformation, media trust, and trust in government. The findings help to understand the discrepant findings in the literature about misinformation as well as establish trends in exposure to perceived misinformation and patterns of institutional trust, which reveal the long-term implications of misinformation.

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Appendix

Table A1. Simultaneous Equation Model Amos Output for Figure 1.

			Estimate	**SE**	***p* Value**
Misinfo	<---	FB	.279	.007	***
Misinfo	<---	Females	.009	.018	.620
Conf_news	<---	Females	−.112	.019	***
Misinfo	<---	Year	.136	.009	***
Conf_news	<---	Year	−.011	.010	.281
Misinfo	<---	Education	.041	.009	***
Conf_news	<---	Education	.058	.009	***
Misinfo	<---	Age	−.013	.001	***
Conf_news	<---	Age	−.008	.022	***
Misinfo	<---	Political interest	.264	.013	***
Conf_news	<---	Political interest	.323	.012	***
Misinfo	<---	Right-wing	.053	.020	.009
Conf_news	<---	Right-wing	.020	.022	.383
Misinfo	<---	Left-wing	.148	.023	***
Conf_news	<---	Left-wing	.049	.025	.052
Misinfo	<---	The United Kingdom	−.265	.020	***
Conf_news	<---	The United Kingdom	.000	.024	1.000
Misinfo	<---	Canada	−.077	.021	***
Conf_news	<---	Canada	.191	.022	***
Misinfo	<---	France	−.176	.020	***
Conf_news	<---	France	.000	.023	.991
Conf_news	<---	Misinfo	.165	.030	***
Misinfo	<---	Conf_news	−.118	.026	***

Note. Misinfo = misinformation; Conf_news = confidence in news media; FB = Facebook use.
*** denotes a p value of less than .001.

Table A2. Simultaneous Equation Model Amos Output for Figure 2.

			Estimate	**SE**	***p Value***
Misinfo	<---	FB	.281	.008	***
Misinfo	<---	Females	.009	.018	.630
Conf_govt	<---	Females	−.096	.019	***
Misinfo	<---	Year	.137	.009	***
Conf_govt	<---	Year	−.013	.010	.189
Misinfo	<---	Education	.045	.009	***
Conf_govt	<---	Education	.070	.009	***
Misinfo	<---	Age	−.014	.001	***
Conf_govt	<---	Age	−009	.001	***
Misinfo	<---	Political interest	.273	.013	***
Conf_govt	<---	Political interest	.314	.012	***
Misinfo	<---	Right-wing	.071	.021	***
Conf_govt	<---	Right-wing	.136	.022	***
Misinfo	<---	Left-wing	.127	.023	***
Conf_govt	<---	Left-wing	−.114	.024	***
Misinfo	<---	The United Kingdom	−.283	.021	***
Conf_govt	<---	The United Kingdom	−.111	.023	***
Misinfo	<---	Canada	−.075	.021	***
Conf_govt	<---	Canada	.181	.022	***
Misinfo	<---	France	−.173	.020	***
Conf_govt	<---	France	.036	.022	.102
Conf_govt	<---	Misinfo	.208	.029	***
Misinfo	<---	Conf_govt	−.142	.027	***

Note. Misinfo = misinformation; Conf_govt = confidence in national/federal government; FB = Facebook use.

*** denotes a p value of less than .001.