# The Prevalence and Correlates of Residential School Denialism in Canada *

**Edana Beauvais**
Assistant Professor
Simon Fraser University
edana_beauvais@sfu.ca

**Mark Williamson**
PhD Candidate
New York University
mark.williamson@nyu.edu

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**Abstract**

In 2021, news that hundreds of suspected unmarked graves had been identified at former residential schools for Indigenous children sparked an outpouring of collective grief in Canada. However, since then, misinformation denying the harmful legacies of residential schools has begun circulating. What is the extent of residential school denialism among the Canadian public? Can education help counter denialist misinformation? In this study, we develop and test a novel scale measuring residential school denialism. We find that nearly one in five non-Indigenous Canadians are willing to endorse denialist claims, while an equal share state that they do not know enough to offer an opinion. Denialist beliefs are more common among men, conservatives, those with anti-Indigenous attitudes and White Canadians who strongly identify with their racial in-group. Using an experimental intervention, we also show that providing educational information about residential schools increases the likelihood a respondent rejects denialist claims and reduces non-opinions.

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# Introduction

For a period of more than 150 years, nearly 140 government-funded and church-operated Indian Residential Schools (hereafter, "residential schools") operated across Canada. During this time, approximately 150,000 Indigenous children attended residential schools. Conditions at the schools were poor and many children died from disease, neglect, or abuse. Canada's National Centre for Truth and Reconciliation (NCTR) and the Truth and Reconciliation Commission (TRC) have officially documented 4,117 deaths of Indigenous children at residential schools (Deer, 2021), but the true figure is likely higher (Puxley, 2015).

In 2021, hundreds of suspected unmarked graves were identified at former residential schools across the country using ground-penetrating radar technology. News of the suspected unmarked graves initially led to an outpouring of collective grief among the Canadian public (Williamson, 2023). However, denial and misinformation regarding the schools' history gradually emerged in online circles, the media, and among certain political and academic elites. Contrary to the findings of the TRC and statements from experts, this "residential school denialism" casts doubt on the number of deaths at the schools, questions the existence of unmarked graves at former school sites, and denies that the schools were designed to forcibly assimilate Indigenous children into Euro-Canadian, Christian society.

Concerns about denialism have sparked policy debates. New Democratic Party (NDP) Member of Parliament Leah Gazan has called on the federal government to criminalize residential school denialism as hate speech (Stefanovich, 2023). Kimberly Murray, the Special Interlocutor appointed to investigate unmarked graves at former residential schools, has similarly advocated for legal mechanisms to counter residential school denialism (Murray, 2023). However, others question the effectiveness of criminalizing speech that promotes residential school denialism. Sean Carleton, Assistant Professor in the departments of History and Indigenous Studies at the University of Manitoba, argues that criminalizing residential school denialism could backfire (Stefanovich, 2023). Instead, Carleton advocates for countering misinformation and ignorance about residential schools through effective information dis-

semination and education (see also Dufour, 2023). Unfortunately, this debate is hamstrung by a lack of understanding about the nature and extent of residential school denialism among the Canadian public, and by limited evidence of the effectiveness of interventions to address this misinformation.

In this study, we offer the first empirical investigation into denialist beliefs among Canadians. Using an original survey of nearly 2,000 non-Indigenous Canadians, we develop a novel nine-item scale of residential school denialism, which measures attitudes toward the searches for unmarked graves, deaths at the schools, and the purpose of the residential school system. We find that a sizeable proportion of respondents do not reject denialism: on average, just under one in five Canadians are willing to endorse denialist claims outright, while another one in five indicate that they do not know enough to express an opinion on these issues. Endorsement of denialist claims is far higher than other forms of denialism (only 3 percent of our respondents were willing to deny the Holocaust), and ignorance on the topic of residential schools is widespread.

In line with prior research on misinformation and racial attitudes, we find that denialist beliefs are more common among men, conservatives, those with negative attitudes toward Indigenous peoples, those with a tendency toward believing in conspiracy theories and White Canadians who identify strongly with their racial in-group. Prior knowledge about the residential school history is a significant predictor of whether respondents are willing to express an opinion about denialist claims.

We also experimentally test whether an educational intervention can counter denialism. We randomly assigned half of our survey respondents to read a short text describing the history and harms of the residential school system, as well as details about the searches for unmarked graves, before asking them about their attitudes toward denialist claims. Respondents who read the text reported nearly 15 percent of a standard deviation greater disagreement with denialist claims and were also over six percentage points less likely to indicate that they don't know enough to express an opinion. Subgroup analyses reveal no

evidence of a backlash after exposure to the educational intervention among those who might be expected to be more resistant to anti-denialist information; in fact, our treatment was more effective among those who reported worse attitudes towards Indigenous peoples at baseline. These results suggest that denialism is not driven solely by animus toward Indigenous peoples, but also by a widespread lack of awareness, and that efforts to educate the public can counter both ignorance and denialist attitudes.

# Background and Theory

## Canada's Residential Schools

Canada's "Indian residential schools" were modelled on the American system of industrial schools, and particularly the overnight "Indian boarding schools" (Koester, 1980). The goal of the U.S. Indian boarding schools was to "kill the Indian in him [the Indigenous student], and save the man" (Pratt, 1964). While the objectives of the schools were framed in terms of helping language (i.e., "saving"), the goal of the schools was explicitly to assimilate Indigenous children, which is internationally recognized as a violation of basic rights (see United Nations, 2007). In 1879, the Canadian federal government hired Nicholas Flood Davin to investigate the American industrial schools and make recommendations for a similar system in Canada (Koester, 1980). Drawing on the American experience, Davin's report recommended overnight boarding schools instead of day schools. According to Davin (1879), only overnight boarding schools would achieve full assimilation by avoiding the issue of Indigenous children whose "tastes were fashioned at home."

Indigenous children who were forced to attend American industrial schools and Canadian residential schools were forbidden from speaking their Indigenous languages, given European names, and proselytized into Christian beliefs (Miller, 1996; Milloy, 1999). Approximately 150,000 Indigenous children attended one of the more than 130 residential schools that operated in Canada between the 1800s and 1990s. For most of this period, the institutions

were funded by the federal government and run by missionary churches. The schools were perpetually under-funded and under-supervised and, as a result, death, disease and abuse by staff were commonplace. The NCTR has confirmed the deaths of 4,117 children at residential schools based on existing records, although poor recordkeeping meant that many deaths went unreported and these numbers do not include many severely ill children who were sent home or to sanatoriums where they subsequently died (NCTR 2021). Experts suspect the true number is likely higher, at an estimated 6,000 (Puxley, 2015).

Policy-makers became aware of the high mortality rates at the schools early into the system's operations. In 1904, Dr. Peter Henderson Bryce was appointed as the Department of the Interior and Department of Indian Affairs' Chief Medical Officer. At the request of the Minister of the Interior, Bryce investigated 35 Indian residential schools in western Canada and published a 1907 report outlining the shocking number of deaths among pupils at the schools (Bryce, 1907). Bryce's report recommended immediately closing the schools, but it was shelved by policy-makers and his recommendations went largely ignored.

Residential schools became a national political issue in the early 2000s, when thousands of survivors launched civil litigation cases against the Canadian government for abuse they suffered at the schools (Miller, 2017). After these cases were eventually combined into a class action lawsuit, the federal government agreed to a settlement in 2006 that would pay several billion dollars in compensation to survivors and establish a Truth and Reconciliation Commission (TRC) to gather testimony from survivors and document the history of the schools. The TRC began its work in 2008 and released a final report in 2016 along with 94 "calls to action" for governments, churches and other institutions to promote reconciliation.

The TRC's final report reveals that, in most cases, the bodies of children who died at residential schools were not returned to their families (TRC, 2015). Instead, pupils' remains were typically buried at the schools, sometimes without the knowledge of their parents. The burial grounds at the schools were often neglected once the schools were closed. In 1914, when the Battleford school in Saskatchewan closed, the school's principal, E. Matheson,

reminded Indian Affairs that the cemetery contained burial sites of 70 to 80 individuals, mostly former students. Matheson "worried that unless the government took steps to care for the cemetery, it would be overrun by stray cattle" (TRC, 2015, p. 3). The TRC's report (2015, Vol. 4) outlines examples where such recommendations were ignored, leading to burial site neglect. For instance, in 2001, water erosion near the High River Residential School − which closed in 1922 − exposed the remains of students who had been buried at the school. According to the TRC, "many, if not most, of the several thousand children who died in residential schools are likely to be buried in unmarked and untended graves" (TRC, 2015, p. 134).

While the TRC raised the profile of the residential school history, most non-Indigenous Canadians remained unaware of the depth of this issue. A 2020 survey found that nearly half of all non-Indigenous Canadians who attended school in Canada were never taught about residential schools, and a third of those that did learn about residential schools described their teachers' assessments of the program as positive (Research Co., 2020). This ignorance was interrupted in the summer of 2021 when, over the course of six weeks, several First Nations across the country separately announced what are suspected to be hundreds of unmarked graves at former residential school sites (Deer, 2021; Williamson, 2023). The announcements were based on results from ground-penetrating radar (GPR) surveys of the land where the schools were situated that revealed disturbances in the soil consistent with unmarked burials. This technology, in combination with archival research of former residential schools' official records, has corroborated testimony from survivors whose oral history first drew attention to the possibility of graves at the former school sites. In the years since the initial announcements, suspected unmarked graves have been identified at more than 15 other former school sites.

## Residential School Denialism

Since Canada began taking official steps to address the harmful legacy of residential schools, residential school denialism has consistently emerged as a counternarrative among right-wing academics, media and political actors. In 2013, a former speechwriter for Prime Minister Stephen Harper and Alberta Premier Jason Kenney wrote an article rejecting the "unchallenged narrative" and "bogus genocide story" of residential schools (von Scheel, 2020). In 2018, the Frontier Centre for Public Policy, a right-wing think tank, aired a two-minute advertisement on private radio stations in Saskatchewan claiming to debunk the "myths" of residential schools (Meloney, 2018).

Since the announcements of suspected unmarked graves, this rhetoric has intensified. In 2022, on the one year anniversary of the first announcement of suspected unmarked graves near Kamloops, British Columbia, *The New York Post* ran a headline quoting political scientist Tom Flanagan, who called the unmarked graves "the biggest fake news story in Canadian history" (Kennedy, 2022). In the same year, a group of academics and journalists created the Indian Residential Schools Research Group to ostensibly address "misconceptions" about residential schools; in reality the group's aims are to cast doubt on the residential schools' harmful legacy. Maxime Bernier, the leader of the right-wing, populist People's Party of Canada, tweeted his support for the endeavour, arguing it was "time to stop vilifying Canadian history and society" (Bernier, 2023). Soon after, Danielle Smith, Alberta Premier and leader of the United Conservative Party, decried the "fake news" of the unmarked graves on her social media (Carleton, 2023).

Justice and Carleton (2021) note that residential school denialism generally does not involve the outright denial of the residential school system's existence, but "rather the rejection or misrepresentation of basic facts about residential schooling to undermine truth and reconciliation efforts." These authors highlight a number of rhetorical techniques used by residential school denialists to cast doubt on the harms of residential schools and the need for redress. One of the most common counter-arguments is that the schools provided

a rewarding education for Indigenous children, a claim that flies in the face of the schools' explicit assimilationist goals as well as the extensive evidence that there was little real academic or vocational training (Milloy, 1999). For instance, Frances Widdowson, a professor at Mount Royal University, drew controversy after repeatedly expounding the educational benefits of residential schools (CBC News, 2022).

Denialism also surfaces in arguments that church officials and staff at the schools had good intentions and that any harms were incidental. For example, just minutes after he was sworn in as Manitoba's new minister of Indigenous reconciliation in 2021, Progressive Conservative Member of the Legislative Assembly Alan Lagimodiere argued that "in retrospect, it's easy to judge in the past, [b]ut at the time, they really thought that they were doing the right thing ... the residential school system was designed to take Indigenous children and give them the skills and abilities they would need to fit into society as it moved forward" (Petz, 2021). Comments to a university conservative club by then federal Conservative leader Erin O'Toole in 2020 struck a similar chord (Zimonjic and Cullen, 2020).

In another high profile case, Senator Lynn Beyak was removed from the Conservative caucus after giving a speech in the Senate defending the "abundance of good" that had come out of residential schools (Brake, 2018). Her comments emboldened anti-Indigenous sentiment, as her office received numerous letters of support that were published to her website and posters appeared on university campuses calling on Canadians to "reject the anti-white narrative being pushed in media and academia" (Carleton, 2021). Residential school denialist arguments also routinely seek to "balance" the few positive experiences reported by some survivors against the more extensive evidence of trauma suffered at the schools. For example, residential school denialists often point to how Cree writer Tomson Highway has credited his time at residential school for his career success, while ignoring the passages in his memoir describing the sexual abuse he and hundreds of other boys experienced while they were pupils at Guy Hill Residential School (Cyca, 2023; Highway, 2021). This selective choice of evidence also ignores many other survivors' first hand accounts of negative

experiences at the schools and the intergenerational trauma they endured as a result (e.g. Fontaine, 2010; Knockwood and Thomas, 1992; Sellars, 2013).

Since searches for suspected unmarked graves have come to dominate media coverage of the residential school history, residential school denialism has expanded to include questioning the credibility of the searches and the existence or extent of the unmarked graves. Residential school denialists argue that radar technology is unreliable in identifying human burial sites and, even if there are in fact remains at these sites, we cannot be sure they are Indigenous children, because the grave markers are missing. Statements from professional archaeology associations have pointed out the flawed logic in these claims (CAA, SAA, CABA-ACAB & CPA, 2022). However, denialists continue to demand excavations of burial sites as proof the graveyards at former school sites contain the bodies of Indigenous children, often against the wishes of Indigenous communities. At the former Kamloops Indian Residential School, denialists entered the grounds of the school site at night without permission and attempted to dig up suspected unmarked graves (Murray, 2023, p. 98).

Not only are members of Canada's political and academic elite engaging in denialism, debates over the existence and legacy of residential schools are increasingly taking place among members of the public, especially in online fora. To illustrate the rise in online denialism-related debates, we collected nearly 40,000 comments posted to over 600 residential schools-related threads on several major Canadian Reddit communities between 2021 and 2024. We then identified comments that included words commonly appearing in denialist rhetoric, such as "cover up" and "hoax," and calculated the proportion of all comments that included these words in each month (see Supplementary Materials SM1 for details). As Figure 1 shows, the prevalence of denialism-related terms has increased more than threefold during this time, from just over three percent in the period immediately after suspected unmarked graves first became a national news story in May 2021, to more than ten percent at the end of 2023. While not all of these comments are endorsing denialism − in fact, many are accusing other users of denialism − these data demonstrate that online debates

about the veracity of the unmarked graves and the history of residential schools have become increasingly common in the last three years.

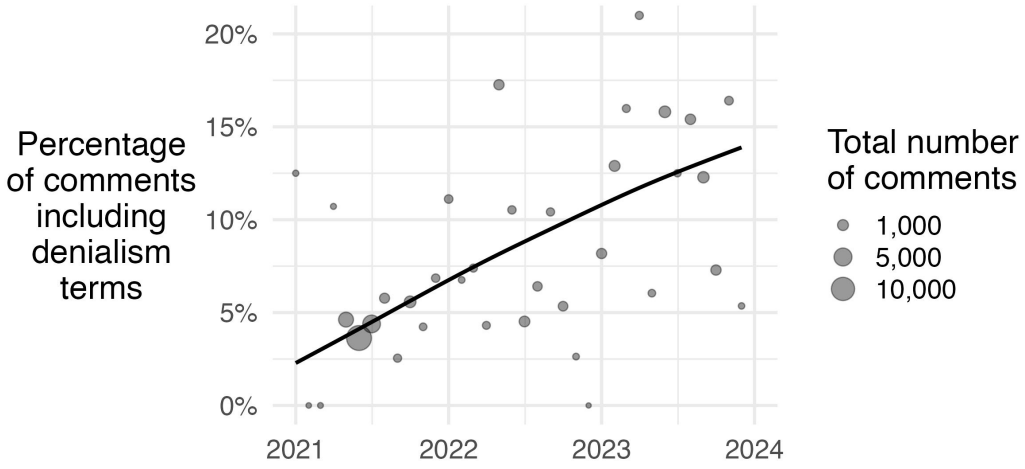


**Figure 1:** Prevalence of denialism-related terms in Reddit comments, 2021 to 2024

This figure reports the percentage of comments including denialism-related words on Reddit posts related to residential schools that appeared on eight Canadian general and political subreddits for each month between 2021 and 2023 (see SM1 for details). Note that the first suspected unmarked graves were announced in May 2021. The line of best fit is estimated from a generalized additive model weighted by the number of comments in each month.

The former chair of the TRC, Murray Sinclair, argues that misinformation represents one of the greatest obstacles to confronting the residential school history (Forester, 2021). Accordingly, concerns about residential school denialism have triggered discussions about possible policy reforms. In response to the TRC's Calls to Action related to updating educational curricula across Canada, most provinces have begun integrating the residential school history into elementary and high school education, which may serve as a bulwark against misinformation later in life. There have also been calls to criminalize residential school denialism as hate speech (Dufour, 2023; Stefanovich, 2023). Missing from the debates over these proposals is empirical evidence regarding the nature and extent of residential school denialism among the Canadian public, as well as evidence assessing the effectiveness of interventions to counter denialist claims.

In this study, we conceptualize residential school denialism as a type of belief in political

misinformation (Jerit and Zhao, 2020).[1] As Kuklinski et al. (2000) note, believers of misinformation do not simply lack information, but rather "firmly hold the wrong information" (p. 792).[2] In Canada, public school curricula historically either failed to teach students about residential schools or else taught a sanitized account of this history (Bennett, 2021). As a result, we anticipate that many Canadians are uninformed about the issues underlying denialist claims and many others have been exposed to inaccurate information, which increases their propensity to endorse denialist misinformation. By extension, we expect that educating people with the true, factual history of Canada's residential schools can reduce both ignorance and denialism. This expectation is in line with recent evidence showing that informational interventions can positively change attitudes towards Indigenous peoples in Canada (e.g. Efimoff and Starzyk, 2023; Neufeld et al., 2022; Siemens and Neufeld, 2022).

Besides a lack of exposure to history education, there are other reasons why individuals may adopt and retain denialist beliefs. A large literature in political science demonstrates that voters tend to adopt the policy positions espoused by politicians from their preferred party (e.g. Broockman and Butler, 2017; Zaller, 1992), with some suggestive evidence that a similar dynamic may apply to belief in misinformation (Berinsky, 2023; Van Duyn and Collier, 2019). Because denialist claims have been articulated more frequently by right-wing groups and opinion leaders in Canada, we expect that denialist beliefs will correlate with right-wing ideology and Conservative partisanship.

There are also reasons to suspect that denialism correlates with individuals' pre-dispositions toward beliefs in conspiracy theories. Much of the language appearing in denialist claims is suggestive of secretive and malevolent motives for presenting the public with allegedly fraudulent information about the searches for unmarked graves at former residential schools (e.g.

[1]Some may argue that denialism is in fact *dis*information, in that it involves the deliberate dissemination of false information (see Freelon and Wells, 2020; Tucker et al., 2018). However, this classification requires assumptions about the intentions of those who spread denialist claims.

[2]In our empirical analysis we distinguish between the wrongly informed and the uninformed in two ways: first, by including and encouraging the use of a "don't know" option; and, second, by evaluating the prevalence of denialist beliefs *after* an experimental intervention providing information that contradicts those beliefs, thus distinguishing those who hold firmly to misinformation in the face of contrary evidence.

"hoax", "scam"). Denialists also regularly accuse the mainstream media of intentionally misrepresenting the truth behind residential schools and the unmarked graves (Gerbrandt and Carleton, 2023). Social scientists have shown that some people are more prone to believe in conspiracy theories, where those who have a tendency toward conspiratorial thinking are more likely to endorse specific conspiracies, such as those related to 9/11, the moon landing, or U.S. President Barack Obama's place of birth (Berinsky, 2023; Brotherton, French and Pickering, 2013; Bruder et al., 2013; Uscinski and Parent, 2014). While not all residential school denialists are conspiracy theorists (and vice versa), we expect that a predisposition toward conspiratorial thinking will correlate positively with beliefs in denialist misinformation.

Denialism may also be distinct from beliefs in other forms of misinformation because of its close association with individuals' intergroup attitudes and identity attachments. For one, attitudes toward Indigenous peoples may shape how non-Indigenous Canadians interpret the facts around Canada's residential school history. Those who express greater Indigenous resentment may be more willing to endorse denialist claims, because Indigenous resentment is a strong predictor of opposition to policies that benefit Indigenous peoples (Beauvais, 2022; Beauvais and Stolle, 2022*a*). Residential school denialism, by minimizing the harms of residential schools, is tied to efforts to undermine reconciliation and weaken support for policies that would redress this history.[3]

Previous research has shown that one's attachment to their racial in-group is distinct from their attitudes toward a racial out-group, with in-group identification exerting its own independent influence on political views (Beauvais and Stolle, 2022*a*; Jardina, 2019). Social Identity Theory argues that one reason for the importance of in-group attachments is that individuals derive at least some of their self-esteem from the status of the groups to which they belong (Tajfel and Turner, 1986). Among members of perpetrator groups (e.g. White

[3]In line with this account, our dataset of Reddit comments from Figure 1 shows that denialism is often linked to concerns over intergroup resource distribution. Terms like "money" and "spend" appear with significantly greater frequency in comments containing denialism terms than those that do not ($p < 0.01$).

Canadians), the invocation of historical injustices can create a significant threat to the esteem of one's identity group (Branscombe et al., 1999; Doosje et al., 1998). Denying those historical injustices can assuage uncomfortable group-based emotions like guilt or shame (Iyer, Leach and Pedersen, 2004; Knowles et al., 2014; Rotella and Richeson, 2013; Wohl, Branscombe and Klar, 2006). This psychological motivation to minimize harms against an out-group may help explain the persistence of "White ignorance" about past wrongdoing (Mills, 2007). To the extent that residential school denialism allows White Canadians to ignore uncomfortable truths about their group's historical treatment of Indigenous peoples, we should expect to see a greater endorsement of denialist claims among those that hold strong attachments to their White identity.

People of colour (POC) also differ in the strength of their identity attachments. Importantly, among POC, attachment to a racial identity (such as Asian or Black) is a strong predictor for whether an individual also identifies in solidarity with POC in general (Sanchez, 2008; Pérez, 2021). A sense of commonality or "linked fate" among POC is in turn associated with political attitudes and behaviours in support of other POC (Chan and Jasso, 2023; Gershon et al., 2019; Merseth, 2020; Pérez, 2021). In our study, we do not directly measure POC respondents' perceived commonality with Indigenous people. But we do expect that a strong attachment to one's own racial identity among POC can motivate solidarity with other marginalized communities, leading to lower endorsement of denialist claims among POC.

# Methods

## Measuring Residential School Denialism

To develop our measures of residential school denialism, we drew on arguments appearing in online communities and media articles, and consulted secondary material describing common denialist claims (e.g Carleton, 2021). We also consulted with two representatives from

the National Centre for Truth and Reconciliation (NCTR). Based on the NCTR staff's recommendations, [AUTHOR 1] met with [ANONYMIZED], an Indigenous Elder and survivor of the residential school system, to listen to his experiences at residential school and with residential school deniers.

We sought to tap into two common types of denialism: (1) claims that the deaths or number of unmarked graves and deaths at former residential schools are false or exaggerated; and (2) claims that the schools were well-intentioned and had broadly positive impacts on students' lives. We aimed to present a single denialist claim per item and to make the statements as simple as possible. Our nine items contain an average of 12.5 words per statement and, according to Flesch-Kincaid metrics, are readable at an $8^{\text{th}}$ to $10^{\text{th}}$ grade level. All items are measured using a five-point Likert scale (Strongly disagree, Somewhat disagree, Neither agree nor disagree, Somewhat agree, Strongly agree) and are (reverse) coded so that higher values indicate greater residential school denialism. For each item, respondents were able to respond with "don't know" or "I haven't thought too much about this."[4] The nine items are as follows:

1. "Radar technology can reliably locate Indigenous children's graves at former residential schools." (reversed)
2. "Indigenous children died as a result of attending residential schools." (reversed)
3. "The residential schools did more harm than good." (reversed)
4. "The suspected graves at former residential schools are probably tree roots or other debris, not graves."
5. "The unmarked graves at former residential schools may not even contain Indigenous people."
6. "Indigenous children attending residential schools died at higher rates than other children because the conditions at residential schools were worse." (reversed)

[4]In a pilot study, we did not include this option and concluded this was an inappropriate design. While there are some differences in wording between the full and pilot surveys, allowing respondents to express a lack of knowledge likely had important effects on how we measure prevalence (see SM2.5 for details). For two out of the three items that appeared in both surveys, the proportion of respondents agreeing with denialist claims is notably higher when "don't know" is not an option. For this reason, we recommend future users of this scale to include the "don't know" option to ensure their estimates of denialism are not inflated. In the analyses below, we investigate the correlates of non-responses empirically.

7. "People saying that there are hundreds of unmarked graves at former residential schools are exaggerating."
8. "The people running Canada's residential schools had good intentions." (reversed)
9. "The purpose of residential schools was to help Indigenous people." (reversed)

We construct an additive index measuring residential school denialism from our nine items tapping into this concept. The items comprise a highly reliable scale (Cronbach's $\alpha = 0.89$) and supplementary analyses reveal that dropping any of the items would lower the overall reliability of the scale (see Table S4 for full results). A scree plot, presented in Figure 2, demonstrates that a single factor should be retained, and thus the scale items are tapping into a unidimensional latent concept. This visual test is confirmed by parallel analysis (also presented in Figure 2), which involves comparing the eigenvalues from the observed data to eigenvalues generated from a Monte-Carlo simulated data matrix (Horn, 1965). This simulation method is based on the idea that observed eigenvalues higher than their corresponding randomly-generated eigenvalues are more likely to represent meaningful factors. In our case, just one eigenvalue exceeds its simulated counterpart, which confirms that a single factor should be retained.

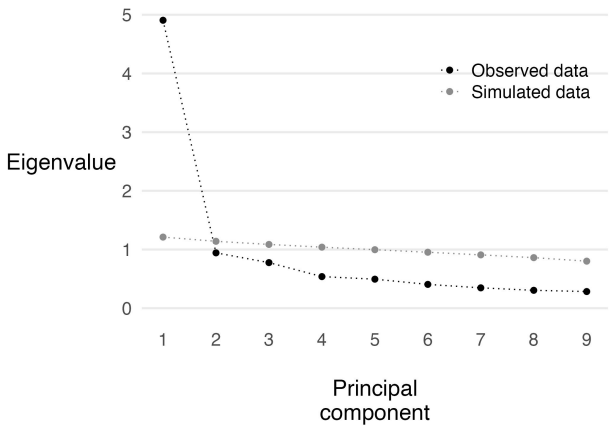


**Figure 2:** Scree plot of residential school denialism items.

A scree plot orders the eigenvalues for each principal component from largest to smallest to visually identify the number of eigenvalues to the left of the point where the eigenvalues level off (the "scree" of the graph). There is one point to the left of the scree for the observed data, suggesting a single factor best captures variation in the items. The graph also compares the eigenvalues from the observed data to eigenvalues generated from a Monte-Carlo simulated data matrix. Only one eigenvalue exceeds its simulated counterparts, confirming that a single factor should be retained.

Finally, Principal Component Analysis (PCA) shows that the items load meaningfully on a single factor, with the first principle component explaining over 50 percent of the variation in the items (see SM3).

## Sample, Experimental Design, and Estimation

We contracted with Leger Opinion to recruit a sample of non-Indigenous adult Canadian citizens and permanent residents to complete an online survey in November 2023. The survey was available in both English and French. Leger uses quota-based sampling to generate samples that are representative of the population in terms of gender, age, educational attainment, language, and what the Canadian census refers to as "visible minority status" (although we refer to "visible minorities" as people of colour (POC) in our present work). In addition to Leger's internal efforts to ensure data quality, we excluded duplicate survey takers and likely bots. We also conducted data quality checks on less attentive respondents and find that our results are not sensitive to their inclusion in the sample (see SM2.3). Our final

sample ($n = 1,915$) is broadly representative of the adult Canadian population, although our respondents skew slightly older on average (see SM2.1). We report results weighted by age, gender and region in SM2.2, finding that our results are nearly identical to those presented in the main text below.

In order to assess the effect of an educational intervention on residential school denialism, we randomly assigned equal proportions of respondents to either receive factual information about the residential school history (the treatment group), or not (the control group), before subsequently asking about their attitudes toward denialist arguments. Respondents assigned to the treatment condition were tasked with reading a 250-word text describing the goals of the residential school system, conditions at the schools, facts about pupils' deaths, and details about the ongoing searches for unmarked graves (see SM5.1 for the full text). This information was accompanied by photos of a residential school and Indigenous children attending classes, as well as a link to the Canadian Encyclopedia page on residential schools, from which much of the language for the intervention was borrowed. The median respondent spent 42 seconds engaging with the content. We hypothesize that the educational treatment will reduce both "don't know" responses and expressions of residential school denialism. Balance tests reveal that the treatment and control groups resemble one another on average across all pre-treatment covariates (see SM5.2).

The first portion of our analysis, which considers the prevalence and correlates of residential school denialism, is conducted strictly on the portion of the sample in the control group ($n = 960$). Responses in this condition capture the baseline attitudes of the Canadian public. At the end of the survey, we debriefed all respondents on the purpose of the study. To address ethical concerns, participants in the control group were given the same factual information as the treatment group as part of their debrief (i.e. after they had responded to the denialism items).

The second portion of the analysis, which identifies the effect of education about residential schools on denialist attitudes, uses the full sample. We estimate average treatment effects

(ATEs) using OLS regression, which allows us to increase the precision of our estimates by controlling for covariates and to conduct subgroup analyses.

In the experimental analysis, and our investigation into the correlates of residential school denialism, we rely on a number of pre-treatment sociodemographic and attitudinal variables, including age, gender, region, income, religion, partisanship, language, education, political knowledge, trust in media, racial in-group identification (Jardina, 2019), Indigenous resentment (Beauvais, 2021), conspiratorial thinking (Uscinski and Parent, 2014), and factual knowledge about the residential school system (Boese, Neufeld and Starzyk, 2017). Full coding rules for these variables can be found in SM2.4. To improve statistical efficiency in the estimation of treatment effects, we impute missing covariate values, first using the sample mode for categorical variables and then using multiple imputation by chained equations for continuous variables (King et al., 2001). Approximately 31 percent of our respondents had one covariate value imputed; covariate missingness is most significant for the religion variable, which appeared towards the end of the survey.[5] Imputed values are not used in the analysis of correlates.

# Results

## The Prevalence of Residential School Denialism

Figure 3 reports the proportion of respondents agreeing and disagreeing with each of the nine denialism items. A large proportion of respondents indicated that they do not know enough to provide a judgement on the denialism claims, indicating either "don't know" or "I haven't thought much about this." Across all items, 19 percent of the sample provided this response. By comparison, survey questions asking about denial of the Holocaust typically find that the proportion that is unsure about this issue is around five percent (e.g. Smith,

[5]While this variable was asked post-treatment in a "sensitive questions" block, treated respondents were no more likely to opt out of this question than control respondents ($\chi^2$ test $p$-value=0.87).

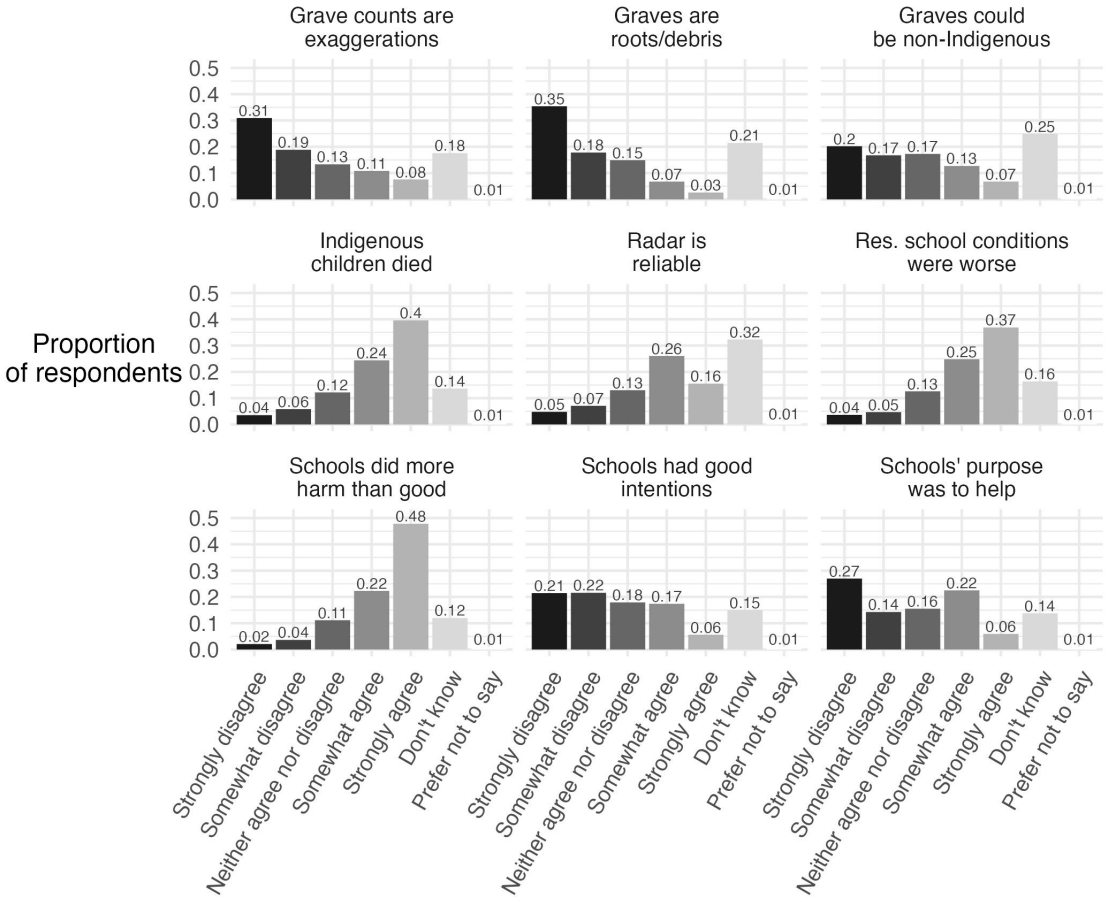


**Figure 3:** Prevalence of residential school denialism in Canada

This figure reports the proportion of respondents in the control group providing each response level for the nine denialism items. ($n = 960$)

1995). As we show in our analysis below, this pattern is driven in part by the Canadian public's lack of prior knowledge about the residential school history (see also Boese, Neufeld and Starzyk, 2017; Schaefli et al., 2018).

Despite the large number of non-opinions, a sizeable percentage of Canadians are willing to endorse claims that deny the residential school system's legacy. On average, across the nine items, 17 percent of respondents either somewhat or strongly agree with residential school denialist arguments. By comparison, only three percent of our survey respondents endorsed Holocaust denialism. Similarly, at the height of its popularity, just five to ten percent of Americans expressed a belief in the QAnon conspiracy (Rogers, 2021). Levels of

residential school denialism are thus more comparable to beliefs in misinformation related to climate change and vaccine hesitancy (Gravelle et al., 2022; Monopoli, 2022; Pew Research Center, 2016; Schwartzberg, Stevens and Acton, 2022).[6]

Beliefs in certain types of denialist claims are more common than others. Only six and ten percent of our sample deny that residential schools "did more harm than good" and that "Indigenous children died as a result of attending residential schools," respectively. By contrast, items related to the goals of the residential school system were more likely to be endorsed: 28 percent of Canadians believe that the purpose of the schools was to help Indigenous people, while 23 percent agreed that those running the schools had good intentions. Statements questioning the accuracy of identifying unmarked graves at former school sites or the number of graves were endorsed by between 10 to 19 percent of respondents; these items also saw notably higher rates of non-opinions.

## The Correlates of Residential School Denialism

To investigate which Canadians are more likely to endorse denialism, the left panel of Figure 4 plots average scores on our denialism scale across a range of pre-treatment covariates. The right panel reports the percentage of "don't know" responses to each of the denialism items for different covariate values.

The plots reveal that men are significantly more likely to agree with denialist claims, and less likely to indicate that they "don't know." This finding is consistent with research in other domains on a gender gap in both racial attitudes and propensity to select "don't know" on political knowledge-type questions (e.g Miller, 2019; Pratto, Stallworth and Sidanius, 1997).

Second, partisanship is an important correlate of denialist beliefs. Supporters of conservative parties are significantly more willing to endorse denialist claims compared to partisans of all other parties, especially those on the left. The average difference in scores on the denialism scale between Conservative Party and NDP supporters, for example, is around 0.9

[6]Nyhan and Zeitzoff (2018*a*; 2018*b*) report high levels of historical denialism in the Middle East, but their measures do not include a "don't know" option, so it is difficult to directly compare the estimates.

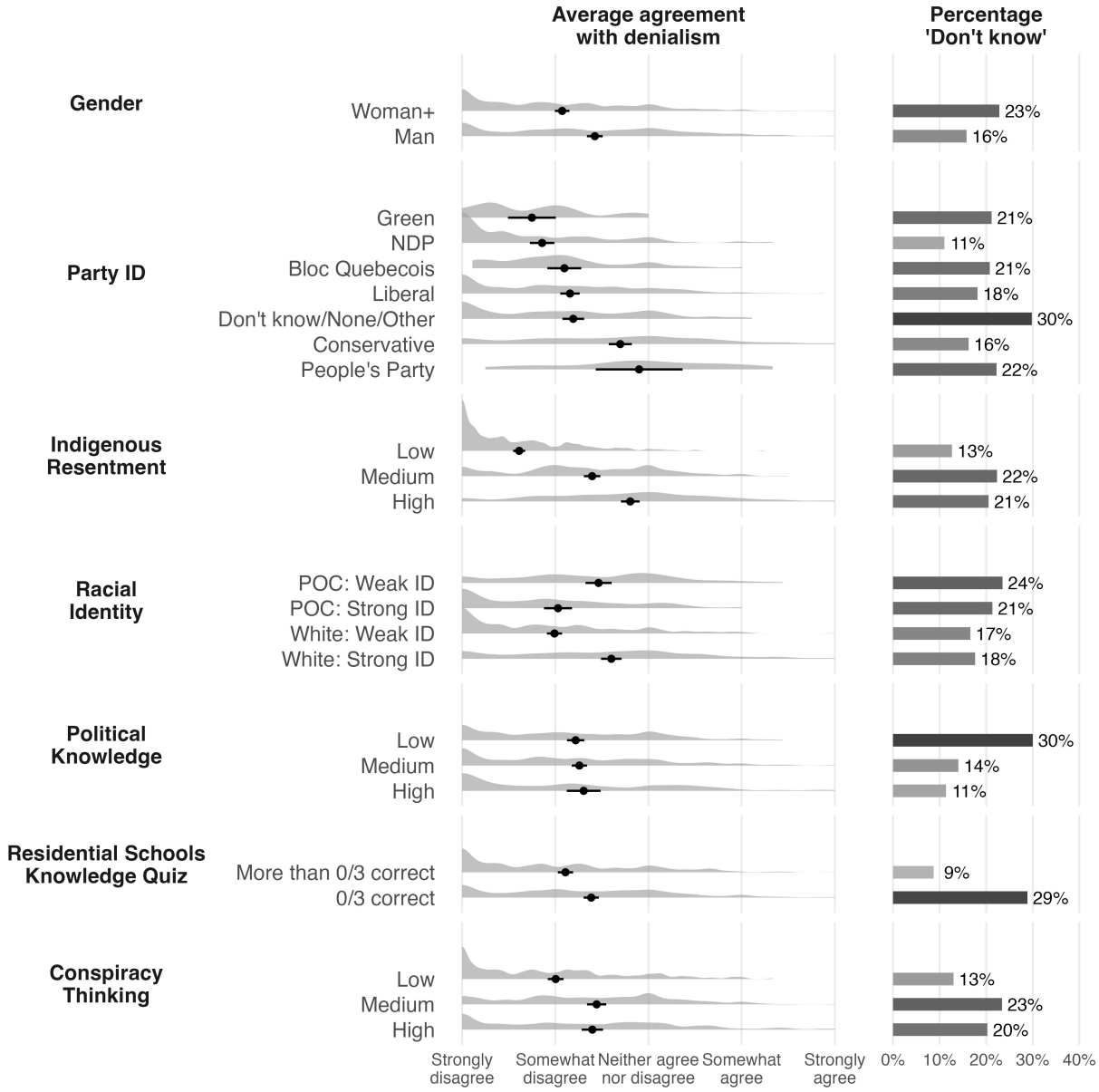


**Figure 4:** Correlates of residential school denialism

This figure shows the distribution of denialism and "don't know" responses among respondents in the control group ($n = 960$). In the left panel, the shading shows the distribution of denialism and the points indicate the mean denialism score (with 95 percent confidence intervals) among non-missing responses for each covariate. The right panel reports the percentage of "don't know" responses. For continuous variables, respondents are grouped into "low," "medium" and "high" categories based on tercile. For the racial identity variable, strong and weak identification with one's racial group is measured based on whether a respondent's racial attachment score is above or below the median in their respective racial category (i.e. White or POC). See SM2.4 for additional details on covariate measurement.

standard deviations (or, equivalently, 0.8 points on the five-point scale in Figure 4). Independents and those who did not provide a specific party report denialist beliefs similar to Liberal partisans, but are significantly less likely to provide an opinion on these issues.

Denialism is linked to intergroup and racial attitudes. Looking at these measures specifically, we find that denialism is strongly related to Indigenous resentment. Those with the highest levels of anti-Indigenous attitudes express 1.3 standard deviations more denialism on average than those that score the lowest on the resentment variable. Identification with one's racial in-group is also a significant predictor of denialism, but in a nuanced way. On average, White Canadians are no more receptive to denialist arguments than POC, but White Canadians who strongly identify with their racial in-group score much higher on the denialism scale (0.7 standard deviations) than those without a strong attachment to their White identity. For POC, the relationship is reversed: those that identify strongly with their racial in-group are much less willing to endorse denialism.

We find that prior knowledge – measured using a series of factual questions – is also related to expressions of denialism. While general political knowledge does not covary with respondents' opinions on the denialism items, scores on a three-item residential schools-specific quiz weakly predict denialist attitudes. Respondents who did not answer a single question correctly on this quiz (54 percent of the sample) reported roughly 0.3 standard deviations less denialism on average than those who scored better on the quiz.[7] At the same time, both of these measures have a strong negative relationship with whether respondents answered with "don't know": non-opinions were about 20 percentage points more likely among those who failed to provide a correct answer on the residential schools quiz.[8]

Finally, denialist beliefs are weakly associated with conspiratorial thinking. Those who

[7]There is little variation in average denialism scores among those who score 1, 2, or 3/3 on the quiz. Scores on the residential school quiz are themselves predicted by other relevant covariates not shown in Figure 4, including race, education, personally knowing an Indigenous person, and whether respondents reported learning about residential schools during their education (see SM4.2.2). Those without a university education, those who have no contact with Indigenous people, and those who never learned about residential schools as a student are all less knowledgeable about the residential school history.

[8]These results hold if we focus our analysis on respondents' own self-reported familiarity with the residential school history.

express medium and high levels of agreement with statements in this scale, such as "much of our lives are being controlled by plots hatched in secret places," tend to agree around 0.45 standard deviations more with the denialism items. Similarly, in supplementary analyses, we find that those who least trust the mainstream media and those who deny that The Holocaust occurred are both more likely to endorse denialism. In this sense, residential school denialism is similar to other types of misinformation in its positive relationship with individuals' predisposition to believe in conspiracy theories, but these associations are smaller in magnitude than those related to partisanship or racial attitudes.

We also conduct a multivariate regression analysis of denialist beliefs (see SM4.2). Many of the bivariate correlations summarized in Figure 4 are statistically significant after controlling for other demographic and attitudinal covariates, with the exception of the residential schools knowledge quiz scores and the conspiratorial thinking scale. We also find that the ostensibly strong relationship between Indigenous resentment and non-response rates is attenuated after controlling for these other variables, suggesting that the expressive use of the "don't know" option among those with greater anti-Indigenous attitudes is minimal. The "don't know" response category thus appears to be primarily related to a genuine lack of exposure to the relevant information and, to a much lesser extent, negative views of Indigenous peoples. Finally, our supplementary models do not reveal any notable associations between denialism and age, region or language, although religious adherents of all denominations do agree more with denialist claims than atheists and agnostics.

## Educational Intervention

In Table 1, we present OLS estimates of the average treatment effect (ATE) of the educational intervention on residential school denialism and the proportion of responses indicating a non-opinion. For the expressed denialism outcome, we take the average of all responses to the denialism items (excluding "don't know" responses), focusing only on respondents who offered an opinion on at least one of the items. We present estimates both with and without

controlling for pre-treatment variables.

**Table 1:** Average treatment effects of educational intervention

| | Expressed denialism | | "Don't know" | |
|---|---|---|---|---|
| | No controls | With controls | No controls | With controls |
| | (1) | (2) | (3) | (4) |
| Educational intervention | −0.131* | −0.140* | −0.068* | −0.065* |
| | (0.046) | (0.036) | (0.012) | (0.011) |
| Observations | 1,822 | 1,822 | 1,915 | 1,915 |
| $R^2$ | 0.004 | 0.415 | 0.015 | 0.191 |

Table reports estimates from OLS models with HC2 standard errors. The outcome in the first two models is the average expressed denialism score (scaled in terms of control group standard deviations) among respondents who expressed an opinion on at least one of the denialism items. The outcome for the third and fourth models is the proportion of a respondent's denialism items that were responded to with a "don't know" response. In models two and four, the following covariates are included in the model specification but not reported here: age, gender, Party ID, region, language, visible minority status (and its interaction with racial identity attachment), Bachelor's degree, religion, household income, Indigenous resentment, conspiratorial thinking, political knowledge, residential school factual knowledge, trust in media and whether the respondent knows an Indigenous person. *p<0.05

Our estimates suggest that the intervention reduces agreement with residential school denialism by just over 13 percent of a standard deviation. The treatment also reduces the probability of non-opinions by nearly 7 percentage points, a large effect given the baseline rate of non-opinion is almost 20 percent. These effects are statistically significant at conventional confidence levels, regardless of whether we control for pre-treatment covariates. The estimates are also substantively meaningful: studies that focus on the persuasive effects of historical information on intergroup attitudes typically report effects of a similar magnitude (e.g. Efimoff and Starzyk, 2023; Fang and White, 2022; Nyhan and Zeitzoff, 2018*b*; Williamson, 2023).[9][10]

[9]In SM5.4, we re-run our analyses separately for each item in the scale. In general, the reductions in expressed denialism were larger for items related to related to the unmarked graves than for those related to the intentions and legacies of residential schools.

[10]The effects of the treatment are slightly larger for those who spent more time reading the text, although these differences are confounded by respondents' self-selection into engagement with the informational intervention (see SM5.3).

The results in Table 1 are therefore encouraging, but given the interdependence between non-opinions and endorsements of residential school denialism, it is also informative to examine these two outcomes simultaneously. In Figure 5, we plot the average prevalence of each response category across all nine denialism items separately for treated and control respondents (all items have been reversed as necessary so that greater agreement indicates greater endorsement of denialism). Figure 5 clarifies the relationship between the two sets of effects in Table 1: the intervention reduced the proportion of non-opinions and increased the number of respondents who strongly rejected residential school denialist statements. The percentage increase of the respondents strongly disagreeing with residential school denialism ($6 - 7$ percent) was matched by an almost equal percentage decline in non-opinions.[11] Of course, because respondents cannot be observed under both treatment and control conditions, we cannot say with certainty that the intervention caused those who otherwise would have said "don't know" to shift directly to "strongly disagree." The treatment may have, for example, also induced movement from those in the middle of the scale toward strong disagreement. Nonetheless, among those who are willing to offer an opinion on these issues, the proportion disagreeing with denialist claims is significantly greater in treatment condition.

That being said, in the aggregate, roughly equal proportions of respondents in the treated and control conditions agreed with residential school denialist claims. Our experimental results therefore offer suggestive evidence that the beneficial effects of information largely function by reducing non-opinions, rather than persuading those who have already formed an opinion. The fact that the treatment does not reduce the overall percentage of respondents agreeing with denialism also suggests that our baseline estimates of the prevalence of denialism in the control group are fairly accurate. As discussed earlier, Kuklinski et al. (2000) note that misinformation believers "firmly hold the wrong information." In our study, 18 percent of treated respondents read the factually correct information and *still* endorsed denialism, indicating that they are indeed willing to stand firm in their commitment to this

[11] In SM4.3, we conduct a more formal analysis of these patterns using multinomial logistic regression and reach a similar conclusion.

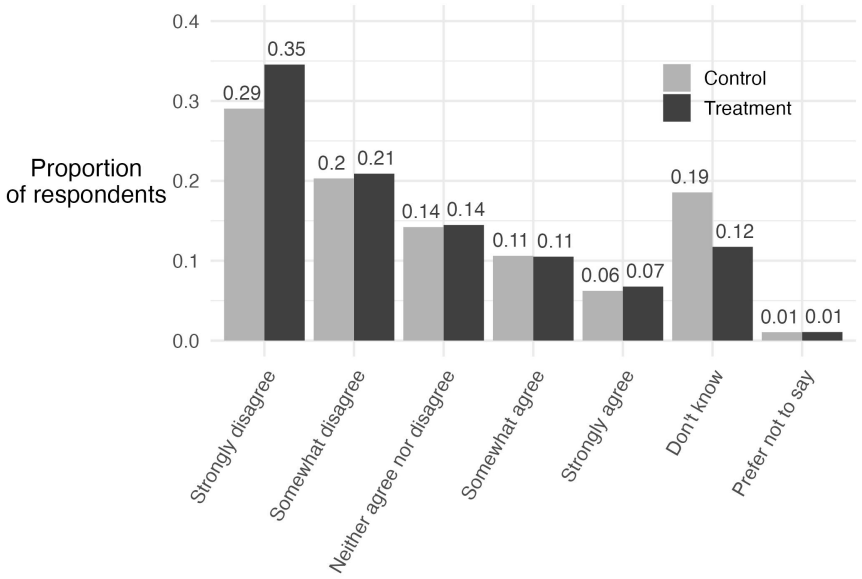


**Figure 5:** Responses to denialist claims by treatment condition

Plot presents the average proportion of respondents, by treatment condition, providing each response type across all nine denialism items. ($n = 1,915$)

misinformation.

To further investigate the patterns driving our main effects, we also consider conditional average treatment effects (CATEs). We focus on those who were more likely to endorse residential school denialism at baseline, including those who report greater anti-Indigenous resentment and who identify as Conservatives and People's Party (PPC) supporters. We re-estimate our models with an interaction between the treatment indicator and each of these moderators. The CATEs are summarized in Figure 6 for both residential school denialism and the likelihood of offering a non-opinion.

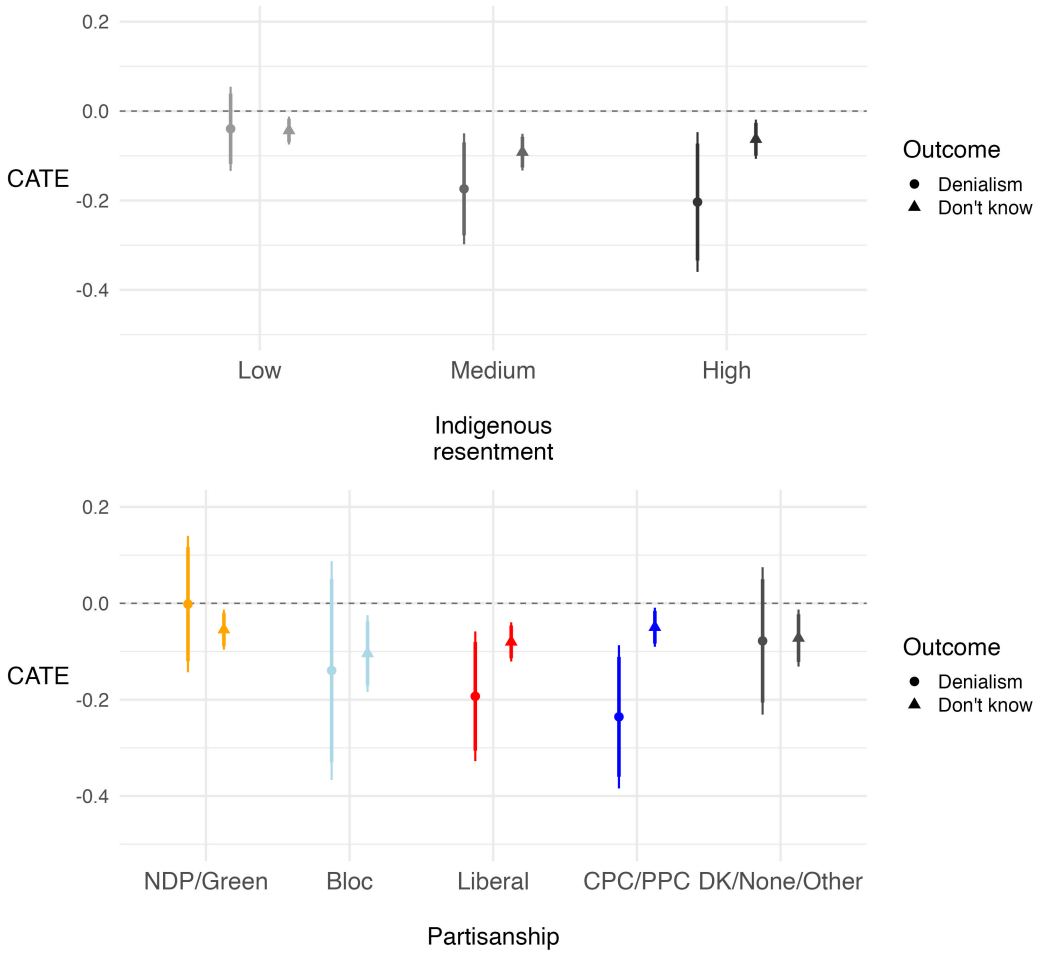


**Figure 6:** Conditional average treatment effects by Indigenous resentment and partisanship

These plots summarize four OLS models (two for each moderator) in which the treatment indicator is interacted with the Indigenous resentment indicator (binned by tercile) and the Party ID variable. Effect estimates for the denialism outcome ($n = 1,822$) are scaled in terms of control group standard deviations. The "don't know" outcome ($n = 1,915$) is measured as the probability of giving that response type to a given denialist item. The models control for all covariates listed in the notes to Table 1.

We find that the CATEs on denialism scores are larger for those who expressed medium and high levels of Indigenous resentment (a difference of roughly 0.15 standard deviations versus those with low resentment). Effects are also substantively larger among Conservative and PPC identifiers than among non-partisans and supporters of more left-leaning parties. Most importantly, these plots demonstrate that the treatment does not induce backlash: even among those who might be most likely to redouble their endorsement of denialism after reading the treatment text, there is no evidence of effects in a counter-informational

direction. However, the treatment had no conditional effect on non-opinions: information reduced the probability of offering a non-opinion by around seven percentage points across all levels of Indigenous resentment and for all partisan types (for additional tests see SM5.5).

# Discussion & Conclusion

This study extends the literature on misinformation and conspiratorial thinking to a substantive topic that has received less attention: intergroup relations. We pioneered a novel survey instrument for measuring residential school denialism that future scholars and practitioners can use to monitor this phenomenon over time. Using our new scale, we estimated the prevalence of denialism in Canada, identified who is most susceptible to believing this misinformation, and demonstrated that providing relevant, educational information can reduce the appeal of these claims.

A significant percentage of non-Indigenous Canadians are willing to endorse denialist claims: on average, 17 percent either somewhat or strongly agree with residential school denialist statements. By contrast, we found that only 3 percent of our respondents were willing to deny the Holocaust, a number that is congruent with previous research and far lower than the percentage endorsing residential school denialism (Smith, 1995; Schoen Consulting, 2019). Denialism in Canada is also equally or more prevalent than beliefs in many other conspiracy theories, including QAnon, climate change denialism, and Covid-19 vaccine-related conspiracies (Gravelle et al., 2022; Monopoli, 2022; Pew Research Center, 2016; Rogers, 2021; Schwartzberg, Stevens and Acton, 2022).

However, residential school denialism differs from beliefs in other conspiracy theories in important ways. In particular, our analysis reveals that residential school denialism is only weakly correlated with conspiratorial thinking, a psychological predisposition that explains variation in beliefs about a range of other types of misinformation and conspiracy theories (Uscinski and Parent, 2014). Partisanship and racial attitudes are much more important

predictors of residential school denialism.

We also tested an experimental intervention designed to combat residential school denialism. We found that a short educational treatment containing factual information about the history and legacy of residential schools reduces residential school denialism by nearly 15 percent of a standard deviation and lowers the probability of expressing a non-opinion ("don't know/haven't thought too much about this") by just under 7 percentage points. The intervention appears to work by simultaneously decreasing non-opinions and increasing the number of respondents who strongly reject residential school denialist statements.

Unfortunately, there appears to be a core group of residential school denialists with firmly held beliefs who are not swayed by our intervention. Nonetheless, we view our treatment as a minimum viable demonstration of the principle that education can counter residential school denialism, at least among those who have not formed strong opinions. Real-world interventions that involve more than a 250-word text may produce stronger effects.

We also analyzed the conditional effect of the treatment among political partisans and across the range of anti-Indigenous attitudes. Although the informational treatment does not have a significant effect on residential school denialist attitudes among those who already express the lowest levels of anti-Indigenous resentment, it does significantly reduce residential school denialism among those expressing medium or high levels of resentment. Similarly, the informational treatment does not have a significant effect in terms of shifting residential school denialist attitudes among NDP and Green Party-identifiers, it significantly reduces residential school denialism among Liberal- and Conservative and PPC-identifiers. These results are notable because they indicate that the intervention was most effective among exactly those respondents who were most likely to endorse denialist claims at baseline. The treatment did not trigger a backlash among those harbouring anti-Indigenous attitudes or those who support centrist and right-of-centre parties.

With respect to the limitations of our study, there are two potential sources of bias in our measures: acquiescence and social desirability. We address the potential problem of

acquiescence bias by explicitly encouraging respondents to use the "don't know/ haven't thought too much about this" response options and by using alternate wording for the items measuring residential school denialism. Our analysis of response patterns shows that respondents do tend to express marginally higher levels of denialism when the items are worded such that greater agreement indicates stronger endorsement of residential school denialism (SM4.1). This pattern may be because the arguments behind these items were inherently more plausible, or it may suggest that these estimates are upwardly biased due to acquiescence. The only technique that could fully dispel any concerns about acquiescence bias involves randomizing the directionality of each item. That is, having positively- and negatively-worded versions of each item and randomly assigning respondents to receive one item or the other (Hill and Roberts, 2023). While holding some appeal, this approach requires assumptions about the logic underlying each statement and would require a much larger sample size, making it more difficult for future researchers to use the scale in subsequent research.

The second potential source of bias, social desirability, could arise if respondents feel uncomfortable revealing their socially undesirable beliefs, leading to under-estimates of prevalence. We find this type of bias less plausible in our case. The survey was administered online and anonymously, which gave respondents freedom to express controversial opinions. In fact, up to 40 percent of respondents were comfortable expressing anti-Indigenous attitudes on the Indigenous resentment scale items. If respondents felt a need to conceal their true opinions about Indigenous peoples, we likely would not observe such a high proportion offering socially undesirable opinions on these measures. There is also little evidence that respondents with stronger anti-Indigenous attitudes were more likely to indicate "neither agree nor disagree" or "don't know" to the questions gauging residential school denialism.[12] Given

[12]We code an alternative categorical outcome variable that scores respondents as "don't know" if they declined an opinion on over half of the items measuring residential school denialism. Otherwise, responses are classified as agreeing, disagreeing or neither agreeing nor disagreeing based on their average score across the items. We then analyze responses in a multinomial logistic regression model with the same covariates as our main analysis. This modelling framework reveals that individuals who report 1 standard deviation higher levels of Indigenous resentment are around 2.3 times more likely to state their agreement with denialist

that these are the responses that would mostly likely be used to hide one's true positions, it seems improbable that social desirability bias is undermining our estimates.

Finally, we recognize a unique ethical concern inherent in our research. We exposed respondents to statements related to residential school denialism that they may not have otherwise encountered in their everyday lives. To address this concern, we debriefed all respondents at the end of the survey on the purposes of the study and presented respondents in the control group with the same text that the respondents in the treatment group received. Because we know that the intervention successfully reduced residential school denialism (largely by reducing non-opinions), we feel confident that sharing this same information with control group respondents should have had the same effect among respondents in the control group.

If left unchecked, residential school denialism could undermine reconciliation efforts between Indigenous and non-Indigenous people in Canada. The former chair of the TRC, Murray Sinclair, argues that counter-narratives and misinformation represent one of the greatest obstacles to confronting the residential school history (quoted in Forester, 2021). Overcoming these barriers begins with an honest appraisal of the attitudes of Canadians toward historical injustices in their country. In her 2023 report, Kimberly Murray, the Special Interlocutor assigned to investigate unmarked graves at former residential schools, wrote that "denialism is a uniquely non-Indigenous problem; it therefore requires non-Indigenous people to actively work to counter denialism and to create and implement strategies to do so" (Murray, 2023, p. 106). Our work provides an essential foundation for addressing the threat of residential school denialism, which we hope future research will build upon to advance reconciliation.

claims rather than express "don't know." These results suggest that individuals who a priori are most likely to endorse residential denialism are not using the "don't know" option to conceal their true opinions. See SM4.3 for details.

**Competing interests**: The author(s) declare none.

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# Supplementary Materials

## Contents

# SM1 Social media analysis

In the main text, we describe the prevalence of terms associated with denialism in comments on popular Canadian Reddit pages. The eight subreddits we focus on are: r/Canada (2.4 million members as of March 2024 and 271 posts related to residential schools), r/CanadaPolitics (217,000 members, 100 posts), r/CanadianPolitics (8,000 members, 4 posts), r/Canada_sub (49,100 members, 19 posts), r/onguardforthee (278,000 members, 157 posts), r/CanadianConservative (7,700 members, 53 posts), r/NDP (32,700 members, 16 posts), r/LPC (1,700 members, 1 post).

We identify threads related to residential schools by searching for "residential schools" within each subreddit and then collecting comments on each post identified by the search. In total, the data includes 35,719 comments from 621 threads. Comments were downloaded as-is in March 2024; comments that had been deleted or removed by moderators before then were not included in the analysis. For the analysis in the main text, we then flag comments as denialism-related if they contain at least one of the following terms or their permutations: "lie", "fake", "hoax", "fraud", "fraudulent", "mislead", "trick", "scam", "phony", "prove", "proof", "debunk", "fakenews", "false", "deceive", "exaggerate", "exaggeration", "hysteria", "falsehood", "sham", "fear mongering", "zero bodies", "no bodies", "one body", "mainstream media", "mass media", "liberal media", "legacy media", "dig", "excavate", "exhume", "shovel", "tree roots", "debris", "no evidence", "denialism", "denialist", "conspiracy", "provide education", "misrepresent", "misinformation", "disinformation", "whitewash", "good intentions", "intentioned", "downplay". These terms were selected based on careful reading of a sample of comments and are intended to capture comments that both espouse denialist arguments and that speak indirectly about denialism. The following are several examples of both kinds of comments that are flagged as denialism-related:

- "You cited a fake news source that's implying the whole thing is a hoax. It's clear you are engaging in genocide denialism."
- "Perhaps its a long process, but until multiple excavations are completed and analyzed, the whole mass grave thing is belief or conspiracy theory."
- "Have they recovered one body from these so called mass graves?"
- "...no one has dug down to see if what's underneath the surface is bones or is brick and old foundation. No one is willing to go dig. It would be very damaging to the cause to go dig and find buildings instead of bones."

In Figure S1, we use a stricter definition of denialism-related terms, and only flag comments if they contain one of the following terms: "fake", "hoax", "fraud", "scam", "phony", "fakenews", "sham", "cover up", "no evidence". As expected, these terms are virtually nonexistent in the discourse before the unmarked graves announcement in May 2021. And while the overall proportion of comments using these terms is lower than that of the longer list used for the plot in the main text, this proportion is similarly increasing over the time period under study. In fact, there is a doubling of these terms' prevalence between May 2021 and the end of 2023.

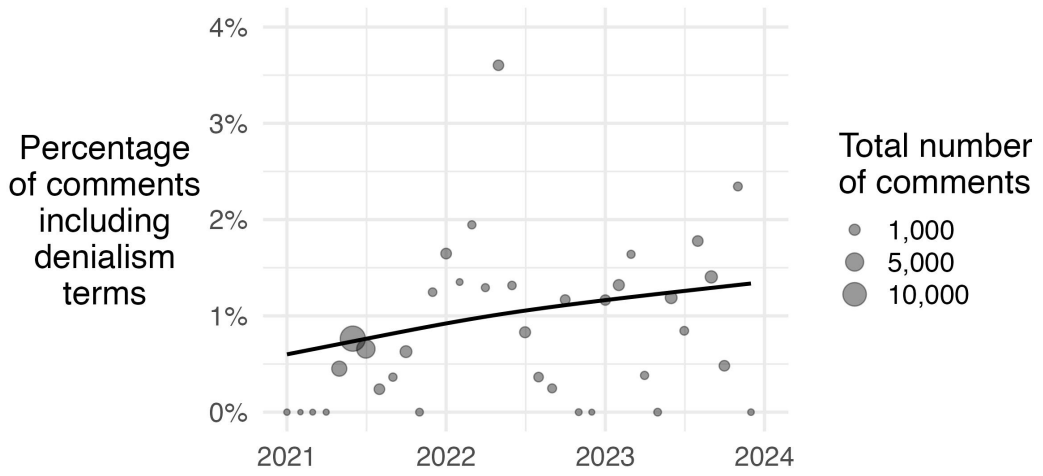


**Figure S1:** Prevalence of strictly denialism-related terms in Reddit comments, 2021 to 2023

Plot presents the proportion of comments including words that are strictly related to denialism on posts related to residential schools that appeared on eight Canadian subreddits between May 2021 (when unmarked graves were first announced in Kamloops) and December 2023. Line is estimated from a generalized additive model weighted by the number of comments in each month.

The prevalence of denialism-related terms varies across Reddit communities. In Figure S2, we plot the proportion of comments on the largest subreddits containing denialism-related words. The plot shows that, while all three subreddits saw similar usage of these terms before the announcement in May 2021, r/Canada and r/CanadaPolitics both saw significant increases in these terms over the following 2.5 years, while r/onguardforthee did not. While ostensibly non-partisan, r/Canada and r/CanadaPolitics are generally seen as conservative-leaning communities, while r/onguardforthee is explicitly left-leaning, with its description specifically identifying it as "the only general Canadian subreddit that doesn't allow bigotry or hate." These results suggest that much of the increase in denialism-related comments is driven by conservative-leaning communities. We do not observe differences in the proportion of comments removed by moderators over time or across subreddits (not shown here), so these differences are more likely driven by user behaviour within these communities rather than differential content moderation practices.

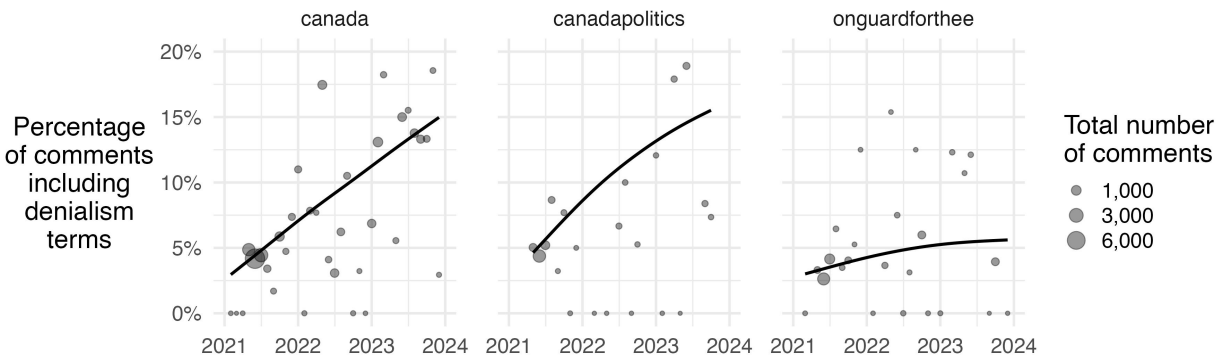


**Figure S2:** Prevalence of denialism-related terms in Reddit comments by subreddit

Plot presents the proportion of comments including denialism-related words on posts related to residential schools that appeared on eight Canadian subreddits between May 2021 (when unmarked graves were first announced in Kamloops) and December 2023. Line is estimated from a generalized additive model weighted by the number of comments in each month.

# SM2 Data and sample

## SM2.1 Sample representativeness

**Table S1:** Sample versus general population characteristics

| | Averages | |
|---|---|---|
| | Sample | General pop. |
| Man | 0.49 | 0.49 |
| Age | 50.5 | 41.7 |
| White | 0.75 | 0.72 |
| Bachelor's degree | 0.32 | 0.33 |
| Religion: Catholic | 0.33 | 0.30 |
| Religion: Other Christian | 0.20 | 0.23 |
| Religion: Other | 0.10 | 0.12 |
| Religion: None | 0.38 | 0.35 |
| Region: Ontario | 0.37 | 0.38 |
| Region: Quebec | 0.26 | 0.23 |
| Region: Prairies | 0.14 | 0.18 |
| Region: B.C. | 0.16 | 0.14 |
| Region: Atlantic | 0.06 | 0.07 |
| Language: English | 0.60 | 0.56 |
| Language: French | 0.28 | 0.21 |
| Language: Other | 0.12 | 0.23 |

Canadian general population data from 2021 Census. Percentage White in the general population is based on census respondents not identifying as Indigenous.

## SM2.2 Results with survey weights

Table S1 indicates that our sample is generally representative of the Canadian population, with some minor discrepancies. As a robustness check, we re-run our main results using post-stratification survey weights based on age, gender and region population-level percentages from the most recent census data.

Figure S3 shows the prevalence of responses to the denialist items in the unweighted and weighted samples. The results are nearly identical using each sample. In Table S2, we present estimates of the average treatment effects from the experimental intervention, separately for the weighted and unweighted samples. Again, the estimates are very similar, with differences of less than 3% of a standard deviation and less than 0.02 p.p. for the two outcomes.

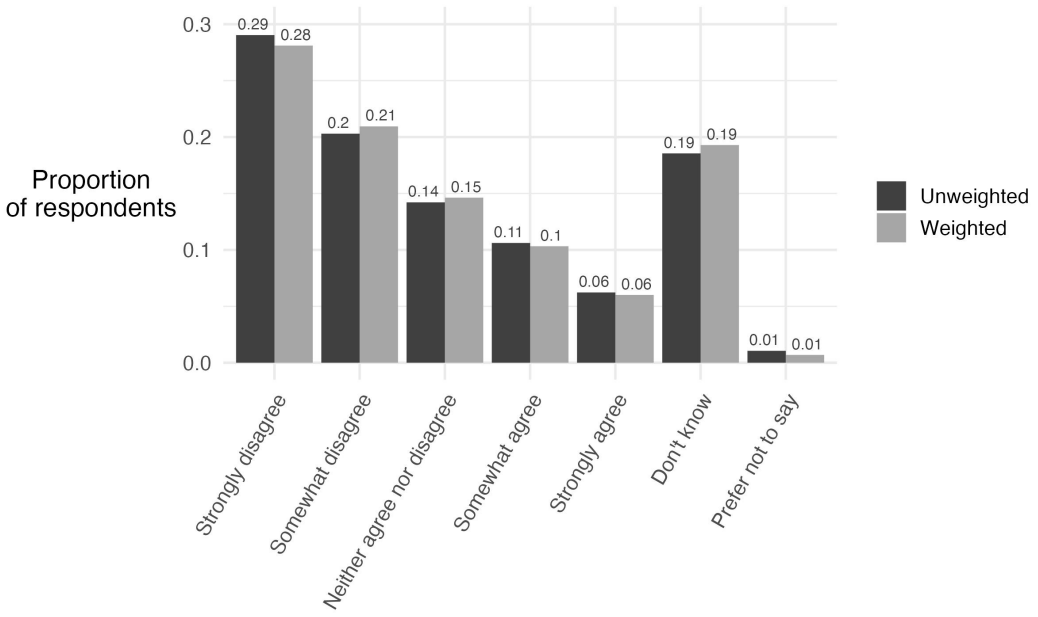


**Figure S3:** Proportion of responses to denialist claims by sample weighting

Plot presents the average proportion of respondents, in the weighted and unweighted samples, providing each response type across all nine denialism items. Sample weights based on age, gender and region. ($n = 1,915$)

**Table S2:** Average treatment effects of informational intervention by sample weighting

| | Unweighted sample | | | |
|---|---|---|---|---|
| | Denialism | | "Don't know" | |
| | No controls | With controls | No controls | With controls |
| Informational treatment | −0.131* | −0.140* | −0.068* | −0.065* |
| | (0.046) | (0.036) | (0.012) | (0.011) |
| Observations | 1,822 | 1,822 | 1,915 | 1,915 |
| $R^2$ | 0.004 | 0.415 | 0.015 | 0.191 |
| Sample weights | No | No | No | No |
| | Weighted sample | | | |
| | Denialism | | "Don't know" | |
| | No controls | With controls | No controls | With controls |
| Informational treatment | −0.105* | −0.128* | −0.070* | −0.071* |
| | (0.051) | (0.040) | (0.014) | (0.013) |
| Observations | 1,817 | 1,817 | 1,907 | 1,907 |
| $R^2$ | 0.003 | 0.415 | 0.016 | 0.191 |
| Sample weights | Yes | Yes | Yes | Yes |

Table reports estimates from OLS models with HC2 standard errors. The outcome in the first two columns is the expressed denialism score (scaled in terms of control group standard deviations) among respondents who expressed an opinion on at least one of the denialism items. The outcome for the third and fourth models is the proportion of a respondent's denialism items were responded to with a "don't know" response. In models two and four, the following covariates are included in the model specification but not reported here: age, gender, Party ID, region, language, visible minority status (and its interaction with racial identity attachment), Bachelor's degree, religion, household income, Indigenous resentment, conspiratorial thinking, political knowledge, residential school factual knowledge, trust in media and whether the respondent knows an Indigenous person. In the bottom panel, sample weights based on age, gender and region are applied. *p<0.05

## SM2.3 Data quality checks

In total, 2,060 respondents fully completed (2,055) or completed more than 85% of our survey (5). After removing duplicate responses from the same IP address and suspected bots, as flagged by Qualtrics' detection software, we arrived at our final sample of 1,915 respondents, 1,024 of which were treated and 1,019 of which were in the control condition.

We investigated three indicators of respondent quality. First, we included two pre-treatment attention checks that instructed respondents to select a specific response; 7 respondents failed to select the correct response on either check. Second, we identified "speeders" as respondents who completed the survey in less than one-third of the median response

time in their respective treatment condition; 46 respondents met this condition. Third, we identified 132 "straight-liners," or those who gave the exact same response on at least two out of five pre-treatment blocks of Likert-scaled questions. (This third condition was not specified in our pre-analysis plan, but its inclusion does not effect the conclusions reached in this section).

In total, because of overlap in these three criteria, 170 respondents were flagged as low quality. Treated respondents are marginally more likely to be low quality than control group respondents (10.5 vs. 7.1%), which is statistically significant using a $\chi^2$-test ($p$=0.01). Given that one of our indicators of quality − speed − is potentially endogenous to treatment status, we opt to include low-quality responses in our main analysis. We find that excluding low quality respondents has virtually no impact on the estimated prevalence of denialism (not shown here). In Table S3, we show that the estimated average treatment effects in our experiment are marginally larger when low-quality respondents are excluded from the sample.

## SM2.4 Description of covariates

In our correlational and experimental analyses, we rely on a number of covariates measured before treatment administration. The coding rules for those variables are as follows:

- Gender: Man (1); Woman or "Trans, non-binary, or another gender identity" (0)
- Region: Ontario; Quebec; British Columbia; Prairies (Alberta, Saskatchewan, Manitoba); Atlantic (Prince Edward Island; Nova Scotia; New Brunswick; Newfoundland and Labrador)
- Party ID: Bloc Quebecois; Conservative; Green; Liberal; NDP; People's Party; "Another party", "Don't know/Prefer not to answer", or "None of these, I think of myself as an independent"
- Language (asked as first language learned as a child): English only; French or "Both French and English"; Neither French nor English (another language)
- Race (asked as single identity): White (1); Asian, Black, Latin/Hispanic, Middle Eastern/Arab, mixed race, South Asian or "another race or ethnicity" (0)
- Bachelor's degree: Completed graduate or professional degree (e.g., MA, PhD, JD, MD) or Completed Bachelor's degree (e.g., BA, BS) (1); Completed technical, community college, CEGEP, College Classique, Some college but no degree, Secondary school (high school) diploma or equivalent, Did not graduate secondary school (high school) (0)
- Religion: Catholic (Roman Catholic); Atheist, agnostic, none; Evangelical Protestant, Mainline Protestant, Non-traditional Orthodox; Muslim, Sikh, Buddhist, Jewish
- Household income: measured categorically and converted to continuous values as follows: \$29,999 or less – \$15,000; \$30,000 to \$59,999 – \$30,000; \$60,000 to \$89,999" –

**Table S3:** Average treatment effects with and without low-quality responses

| | Full sample | | | |
|---|---|---|---|---|
| | Denialism | | "Don't know" | |
| | No controls | With controls | No controls | With controls |
| Informational treatment | −0.131* | −0.140* | −0.068* | −0.065* |
| | (0.046) | (0.036) | (0.012) | (0.011) |
| Observations | 1,822 | 1,822 | 1,915 | 1,915 |
| $R^2$ | 0.004 | 0.415 | 0.015 | 0.191 |
| | High-quality sample | | | |
| | Denialism | | "Don't know" | |
| | No controls | With controls | No controls | With controls |
| Informational treatment | −0.162* | −0.174* | −0.074* | −0.070* |
| | (0.048) | (0.037) | (0.012) | (0.011) |
| Observations | 1,691 | 1,691 | 1,745 | 1,745 |
| $R^2$ | 0.007 | 0.426 | 0.022 | 0.189 |

Table reports estimates from OLS models with HC2 standard errors. The outcome in the first two columns is the expressed denialism score (scaled in terms of control group standard deviations) among respondents who expressed an opinion on at least one of the denialism items. The outcome for the third and fourth models is the proportion of a respondent's denialism items were responded to with a "don't know" response. In columns two and four, the following covariates are included in the model specification but not reported here: age, gender, Party ID, region, language, visible minority status (and its interaction with racial identity attachment), Bachelor's degree, religion, household income, Indigenous resentment, conspiratorial thinking, political knowledge, residential school factual knowledge, trust in media and whether the respondent knows an Indigenous person. In the bottom panel, the sample excludes low-quality respondents. *p<0.05

$75,000; $90,000 to $119,999 – $105,000; $120,000 to $149,999 – $135,000; $150,000 or more – $150,000

- Racial identity attachment: measured as the average score among non-missing observations on a five-point "Strongly Agree" to "Strongly Disagree" scale with the following items:
  - Being [blank] is important to my identity.
  - - [blank] people in this country have a lot to be proud of.
  - - [blank] people in this country have a lot in common with one another.
  - It is important that [blank] people work together to change laws that are unfair to people of [blank] ancestry.
  - Many [blank] people are unable to find jobs because employers are hiring minorities instead. OR Many [blank] people are unable to find jobs because employers are hiring whites instead.
- Indigenous resentment: measured as the average score among non-missing observations on a five-point "Strongly Agree" to "Strongly Disagree" scale with the following items:
  - Irish, Italians, Chinese and many other minorities overcame prejudice and worked their way up. Indigenous people should do the same without any special favours.
  - Indigenous people are getting too demanding in their push for land rights.
  - The government does not show enough respect toward Indigenous people.
  - More must be done to protect Indigenous languages.
  - Indigenous activists are making reasonable demands.
  - Indigenous people get unfair tax breaks.
  - Indigenous people get more favours from the education system than they should have.
- Conspiratorial thinking: measured as the average score among non-missing observations on a five-point "Strongly Agree" to "Strongly Disagree" scale with the following items:
  - Much of our lives are being controlled by plots hatched in secret places.
  - Even though we live in a democracy, a few people will always run things anyway.
  - The people who really "run" the country are not known to the voters.
  - Big events like wars, the current economic troubles, and the outcomes of elections are controlled by small groups of people who are working in secret against the rest of us.
- Trust in media: How much trust do you have in the mass media - such as newspapers, TV and radio - when it comes to reporting the news? The following responses converted to a 5-point scale: "Almost not at all", "A little", "A moderate amount", "A lot", "A great deal"

- Residential school factual knowledge: Measured as the proportion of the following questions for which the respondent selected the correct answer (no response, "Prefer not to answer" and "Unsure/ Don't know" were all treated as incorrect):

    1. In total, how many residential schools were established in Canada?
        - 25
        - 130 (Correct)
        - 640
        - 1180
    2. In all, approximately how many Indigenous children attended residential schools?
        - 10,000
        - 80,000
        - 150,000 (Correct)
        - Over 400,000
    3. When did the last residential school close?
        - 1850
        - 1923
        - 1972
        - 1996 (Correct)

- Political knowledge: Measured as the proportion of the following multiple choice questions for which the respondent selected the correct answer (no response, "Prefer not to answer" and "Unsure/ Don't know" were all treated as incorrect):

    1. Who is the current Minister of Finance? (Chrystia Freeland)
    2. Who is the Chief Justice of the Canadian Supreme Court? (Richard Wagner)
    3. When did the Canadian Charter of Rights and Freedoms become law? (1982)
    4. How many official languages does Canada have? (2)

## SM2.5 Pilot comparison

We fielded a pilot survey in September 2022 that contained three items to measure denialism:

1. "The graves found near former residential schools are probably old cemeteries whose markers have been lost over time. It's not clear whether Indigenous people are buried in these old cemeteries, never mind residential school students."

2. "Ground-penetrating radar has revealed disturbances in the soil near some former residential schools in Canada. But this does not offer convincing evidence that children died at residential schools. Until bodies are excavated from the sites, we cannot be sure that these soil disturbances are even graves."

3. "While some Indigenous people benefited from getting an education at residential schools, these individuals' positive experiences are outweighed by the larger harms caused by the residential school system."

These items are imperfect, but these are most similar to the following items in our full survey:

1. "The unmarked graves at former residential schools may not even contain Indigenous people."
2. "Radar technology can reliably locate Indigenous children's graves at former residential schools." (reversed)
3. "The residential schools did more harm than good."

In Figure S4 compares the prevalence of different response levels across the two surveys. The pilot survey did not include a "don't know" option, which had important implications for how we initially estimated prevalence. For example, agreement with denialist arguments is much greater when respondents are forced to provide an opinion on the "radar is not reliable" and "schools did more harm than good" items. (This radar comparison is not perfect because the item was reversed in the full survey, so acquiescence bias may be affecting how respondents interpreted the pilot item). This pattern is less true for the "graves could be non-Indigenous" item, but that comparison also shows that without a "don't know" option, many more respondents opt for the "neither agree nor disagree" category. These results suggest that future users of the denialism scale − and probably many other attitudinal measures related to history and Indigenous peoples in Canada − should incorporate the "don't know" option.

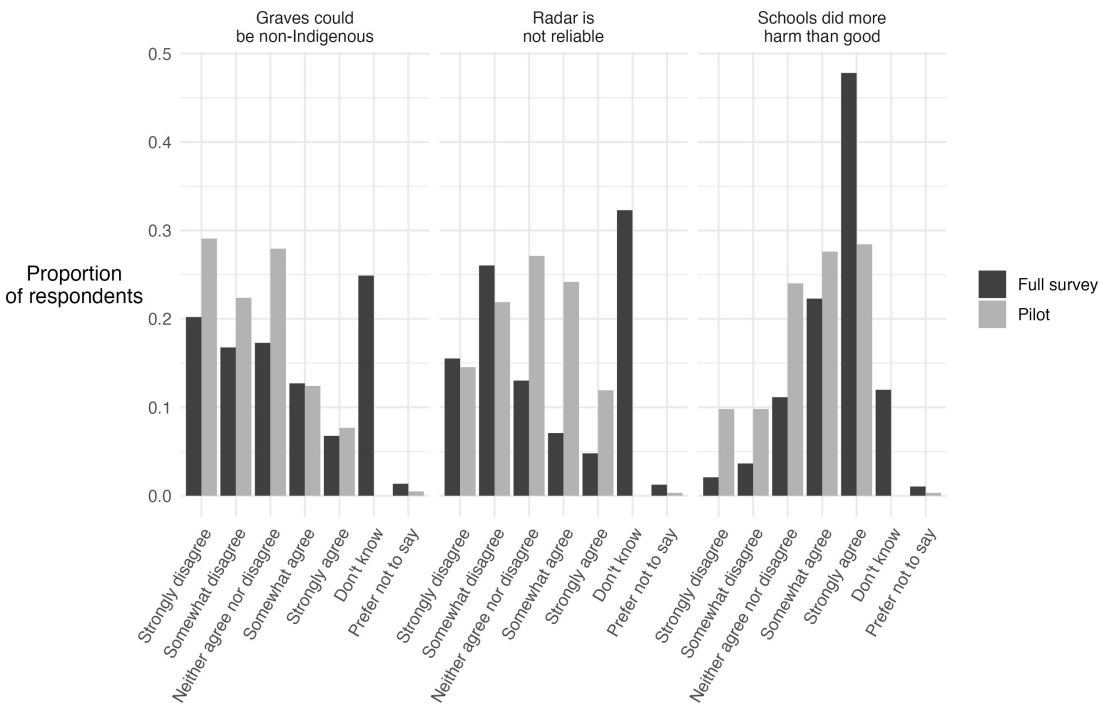


**Figure S4:** Full and pilot survey comparison

Plot reports the proportion of respondents providing each response type for the three items appearing in both the full and pilot surveys. ($n = 612$ and 960 in the pilot and full surveys, respectively).

# SM3 Scale properties

## SM3.1 Dimensionality

We use Principal Component Analysis (PCA) and Factor Analysis to clarify whether our nine items capture a single latent concept. We begin by examining a scree plot in Figure S5, which orders the eigenvalues for each principal component from largest to smallest. This approach involves visually identifying how many factors should be retained in an exploratory factor analysis by locating the point where the eigenvalues level off (i.e. the "scree," or "elbow" of the graph). Standard guidance is that all factors to the left of this point should be retained. In this case, there is one point to the left of the scree for the observed data, which suggests a single factor best captures variation in the items. Our visual test is confirmed by parallel analysis, which involves comparing the eigenvalues from the observed data to eigenvalues generated from a Monte-Carlo simulated data matrix. This simulated method is based on the idea that observed eigenvalues higher than their corresponding randomly-generated eigenvalues are more likely to represent meaningful factors. In our case, just one eigenvalue exceeds its simulated counterpart.

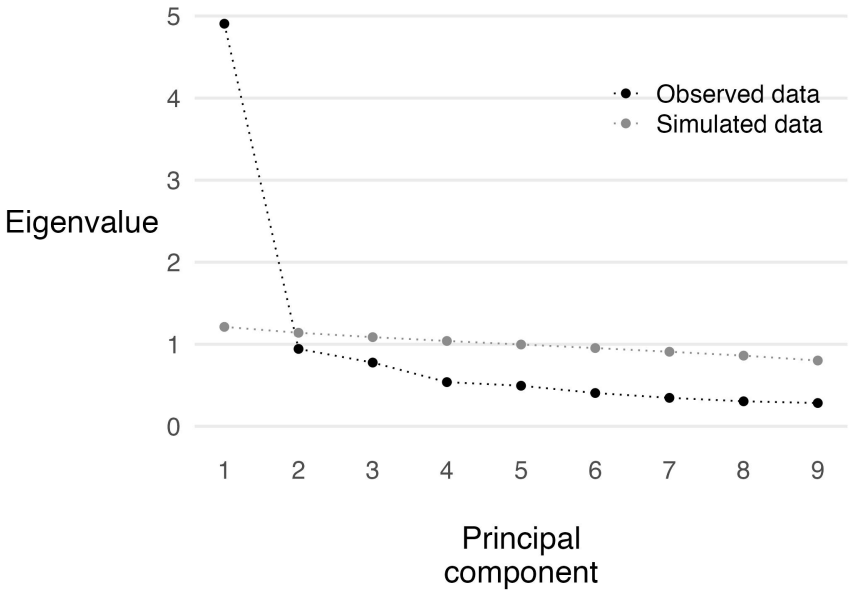


**Figure S5:** Denialism scale scree plot

Plot presents eigenvalues for each principal component from the observed nine-item denialism scale data and a set of simulated eigenvalues.

As is convention, the variables were standardized using $z$-score standardization prior to performing PCA. The benefit of PCA for dimensionality analysis is that PCA is an unsupervised technique that reduces higher-dimensional space without any prior assumptions made by the researchers. The results of the PCA show that the first principal component explains over half (55 percent) of the total variance in the nine variables. As is expected based on the results of the scree test, the second, orthogonal component explains very little (only 10 percent) of the total variation. This confirms the expectation that the items are best summarized by retaining a single component (dimension). The factor loadings presented in Table S4 show that all the items load similarly onto the underlying component (contributing roughly equally) and in the same direction (the items were reverse-coded as necessary prior to conducting PCA).

Factor Analysis is another technique for dimensionality reduction, except it requires the researchers specify in advance how many factors to retain. Based on the results of the scree analysis, a single factor was retained. The FA reveal that most of the items have an "excellent" factor loading (defined as higher than 0.7), with none of the items scoring below a "good" factor loading (0.55 or higher) (Comrey and Lee, 2013). This indicates that all the items contribute well to a single latent factor.

**Table S4:** Principal Component Analysis (PCA) and Factor Analysis (FA) Results

| | **PC Loadings** | **FA Loadings** |
|---|---|---|
| "Radar technology can reliably locate Indigenous children's graves at former residential schools." | -0.28 | 0.57 |
| "Indigenous children died as a result of attending residential schools." | -0.34 | 0.72 |
| "The residential schools did more harm than good." | -0.34 | 0.71 |
| "The suspected graves at former residential schools are probably tree roots or other debris, not graves." | -0.35 | 0.74 |
| "The unmarked graves at former residential schools may not even contain Indigenous people." | -0.34 | 0.72 |
| "Indigenous children attending residential schools died at higher rates than other children because the conditions at residential schools were worse." | -0.33 | 0.70 |
| "People saying that there are hundreds of unmarked graves at former residential schools are exaggerating." | -0.34 | 0.72 |
| "The people running Canada's residential schools had good intentions." | -0.33 | 0.70 |
| "The purpose of residential schools was to help Indigenous people." | -0.34 | 0.72 |

## SM3.2 Reliability

The Cronbach's $\alpha$ for the scale is 0.90, indicating that the scale is highly statistically reliable. To probe the sensitivity of this result, we also present the $\alpha$-if-deleted values for each item in Table S5. The results show that in no case does the $\alpha$ improve by removing an item, suggesting that all of the items should be included in the scale. The drop scores show the

correlation between a given item and the rest of the items (after excluding the given item). All of these correlations are large and positive, ranging from 0.54 to 0.68. In Figure S6, we plot these relationships for each item. The rest scores are all monotonically non-decreasing for each item, offering further evidence that together the items constitute a reliable scale.

**Table S5:** Reliability Analysis Results

| | **$\alpha$-if-deleted** | **Drop Scores** |
|---|---|---|
| "Radar technology can reliably locate Indigenous children's graves at former residential schools." | 0.89 | 0.54 |
| "Indigenous children died as a result of attending residential schools." | 0.88 | 0.68 |
| "The residential schools did more harm than good." | 0.88 | 0.66 |
| "The suspected graves at former residential schools are probably tree roots or other debris, not graves." | 0.88 | 0.70 |
| "The unmarked graves at former residential schools may not even contain Indigenous people." | 0.88 | 0.68 |
| "Indigenous children attending residential schools died at higher rates than other children because the conditions at residential schools were worse." | 0.88 | 0.66 |
| "People saying that there are hundreds of unmarked graves at former residential schools are exaggerating." | 0.88 | 0.68 |
| "The people running Canada's residential schools had good intentions." | 0.88 | 0.66 |
| "The purpose of residential schools was to help Indigenous people." | 0.88 | 0.68 |

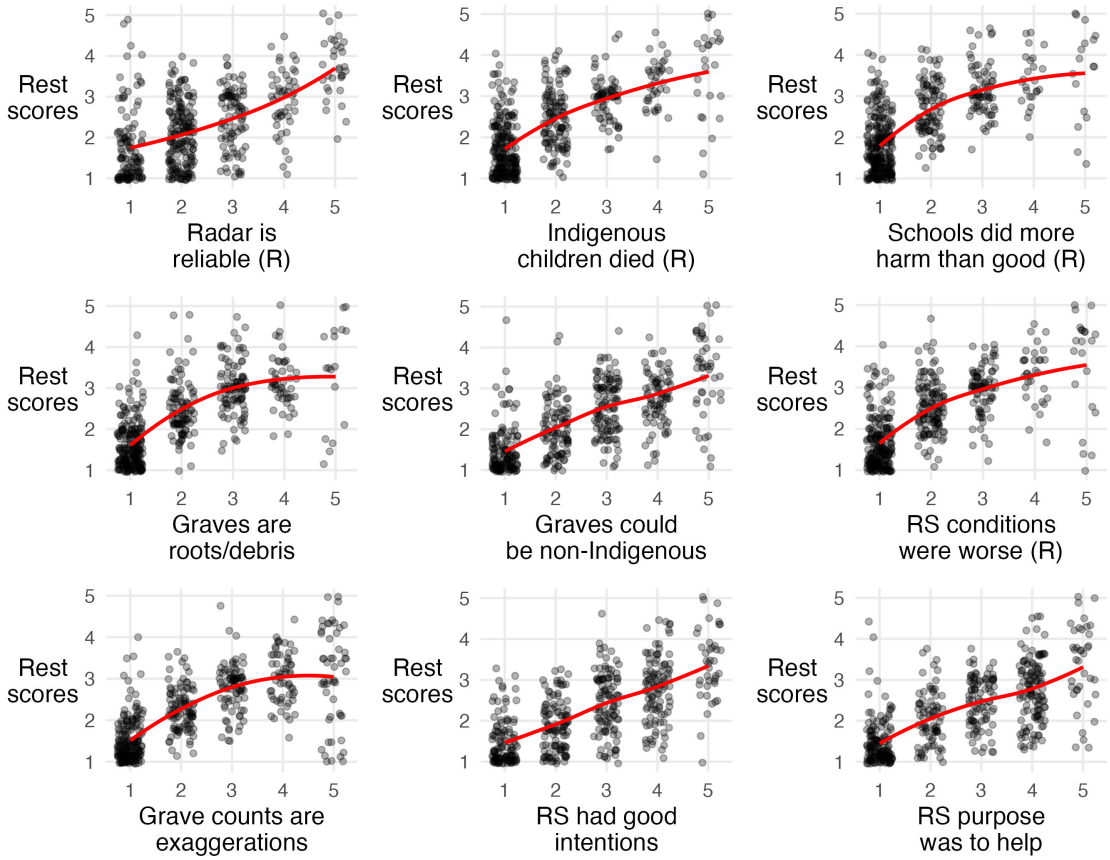


**Figure S6:** Item-rest correlations in denialism scale

## SM3.3 Validity

As a final check on the properties of our denialism scale, we examine its construct validity. The greatest potential threat to our scale's validity is the possibility that denialism is merely a manifestation of other types of anti-Indigenous attitudes, such as prejudice or Indigenous resentment.

It's worth noting, first, that the denialism scale does not correlate overly strongly with these other concepts ($r$ =0.31 and 0.60, respectively). Moreover, the average correlation *within* the denialism scale ($r = 0.49$) and within the Indigenous resentment scale ($r = 0.54$) are considerably higher than the average correlation *between* items from each scale ($r = 0.37$). This suggests that while denialist beliefs are closely related to one another, and Indigenous resentment attitudes are similarly closely interrelated, these associations are much stronger than the relationship between individual indicators of denialist and resentful attitudes.

Beyond these statistical checks, there are also good theoretical reasons to differentiate between the concepts. Denialism involves a belief in misinformation about residential schools, without necessarily entailing an affective dislike of Indigenous peoples or an opposition to all government policies that benefit Indigenous peoples (which tends to represent the bulk of the Indigenous resentment concept, see Beauvais (2021)).

To help make these distinctions concrete, we examine the predictive qualities of the de-

nialism scale in Table S6. For each outcome, we treat denialism as a predictor and include a host of relevant control variables, including Indigenous resentment. The first model, focusing on a feeling thermometer towards Indigenous peoples, is instructive about denialism's relationship with affective dislike of the outgroup. While Indigenous resentment is strongly and negatively associated with this measure (a 1 standard deviation increase in resentment is correlated with an 0.5 standard deviation lower feeling thermometer score), denialism has virtually no relationship with this variable after controlling for resentment. Denialism, then, appears to represent something more than mere anti-Indigenous prejudice.

The remaining models investigate spending preferences on issues relevant to Indigenous peoples. First, we see that even after controlling for Indigenous resentment, denialism negatively predicts support for reconciliation. This makes intuitive sense: regardless of one's interpersonal attitudes toward Indigenous peoples, a belief in misinformation that denies the harms of residential schools should predict opposition to reconciliation, which is strongly associated with redress for the residential school history. Yet denialism has no relationship with preferences for spending on the police, while Indigenous resentment strongly and positively predicts support for this spending area. This finding is in line with the idea that resentment taps into support for punitive policies toward Indigenous peoples, but that police spending has less contemporary relevance to the residential schools legacy. Finally, both denialism and Indigenous resentment negatively predict support for welfare spending, which previous work has shown has a racialized connotation in Canada (Beauvais (2022); Harell, Soroka and Ladner (2014)). Welfare is not explicitly tied to the residential schools, but many denialist arguments are motivated by the belief that the unmarked graves announcements were a strategy to divert more government funding to Indigenous communities. This conspiratorial line of thinking helps explain why denialism independently predicts welfare preferences alongside a more general Indigenous resentment. Taken together, these results suggest that our denialism items capture an empirically distinct concept with relevance to several associated political attitudes.

**Table S6:** Denialism, Indigenous resentment and theoretical validity

| | Indigenous | Spending preferences | | |
|---|---|---|---|---|
| | thermometer | Reconciliation | Police | Welfare |
| Denialism | −0.04 | −0.09* | −0.05 | −0.12* |
| | (0.05) | (0.04) | (0.05) | (0.05) |
| Indigenous resentment | −0.46* | −0.62* | 0.22* | −0.22* |
| | (0.05) | (0.04) | (0.06) | (0.06) |
| Observations | 635 | 614 | 628 | 618 |
| $R^2$ | 0.35 | 0.57 | 0.18 | 0.23 |
| Controls | Yes | Yes | Yes | Yes |

Table reports estimates from OLS models with HC2 standard errors. All outcomes are scaled in terms of standard deviations. Sample includes only control group respondents who expressed an opinion on at least one of the denialism items. The following covariates are included in the model specification but not reported here: age, gender, Party ID, region, language, visible minority status (and its interaction with racial identity attachment), Bachelor's degree, religion, household income, Indigenous resentment, conspiratorial thinking, political knowledge, residential school factual knowledge, trust in media and whether the respondent knows an Indigenous person. *p<0.05

# SM4 Prevalence and correlates of denialism

## SM4.1 Acquiescence bias

One potential source of bias in our estimates of the prevalence of denialist beliefs is acquiescence bias. Our items were worded such that some contained denialist claims, while others refuted denialist claims and had their scores subsequently reversed in the analysis stage. A common pattern in survey research is that respondents tend to express positive agreement with items, even if that position does not reflect their true beliefs.

To determine if this type of bias is relevant to our items, we report levels of expressed denialism by the direction of each item in Figure S7. This plot confirms respondents' tendency to agree with statements of either type: anti-denialist items saw weaker expressions of denialism, whereas pro-denialist items saw stronger evidence of denialist beliefs. Of course, we cannot be certain whether this bias is purely due to acquiescence or to differences in respondents' perceptions of the plausibility of each claim. Nonetheless, the amount of bias in favour of each type of item is roughly equal and, since we fielded an almost equal number of pro- and anti-denialist items, should cancel out in the aggregate. If we wanted to take a conservative approach and designate true denialism as disagreement with anti-denialist claims, then the prevalence of denialist beliefs in Canada would stand at around 8%.

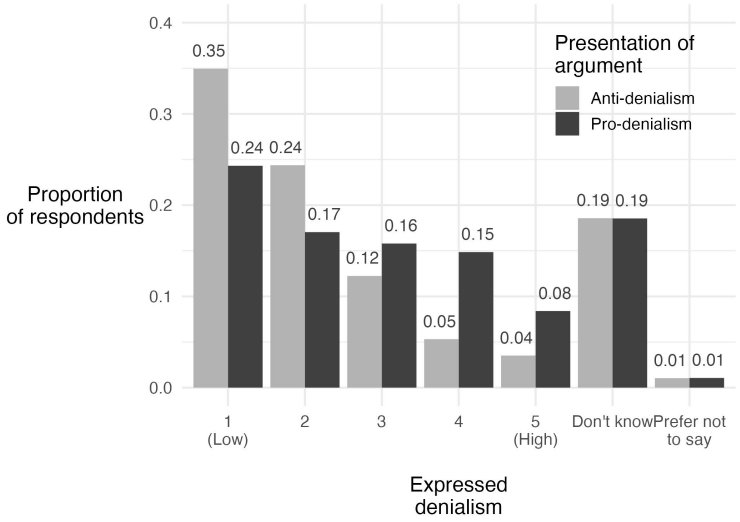


**Figure S7:** Denialism item response type prevalence by item direction

Plot summarizes the control group's levels of reported denialism for the nine items separately by those items that state a denialist claim (pro-denialist) versus contradict a denialist claim (anti-denialist). For both sets of items, expressed denialism is presented such that higher values indicating greater denialism (i.e. anti-denialist item responses have been reversed). ($n = 960$)

## SM4.2 Multivariate analysis of correlates of denialism

In the main text, we examine the prevalence of denialism across relevant subgroups by looking at raw correlations between relevant pre-treatment covariates and the denialism scale. In this section, we use OLS to regress our measure of denialist beliefs on a larger set of demographic and attitudinal covariates.

The coefficient estimates, summarized in Figure S8, show that those with greater animus towards Indigenous peoples are more likely to endorse denialism: a one standard deviation increase in Indigenous resentment is correlated with 0.5 standard deviation greater agreement with residential school denialism, on average. Racial identity also matters: in our model specification, a dummy variable indicating whether a respondent is White was interacted with a standard five-item scale measuring the strength of respondents' attachment to their racial identity (adapted from Jardina (2019)). The estimates on these interactions are present in Figure S8,[13] but are more easily interpretable in Figure S9. Here, we plot the marginal implied effect of being White (relative to a POC) across observed values of racial in-group identity attachments. The results indicate that White respondents who exhibit average levels of attachment to their racial identity are no more or less likely to agree with denialist claims than POC with similar levels of identity attachment. However, White Canadians who strongly identify with their racial in-group are much more likely to endorse denialism than POC who profess strong identity attachments. At the same time, whites who do not identify

[13]In this figure, the coefficient labelled "Race: White" reports that White Canadians with an average level of attachment to their racial identity score 0.2 standard deviations lower on residential school denialism than POC respondents. However, the "Racial ID scale (Whites)" coefficient shows that as the strength of one's racial identity increases, White Canadians become far more willing to express residential school denialism, while POC become less willing to express these beliefs.

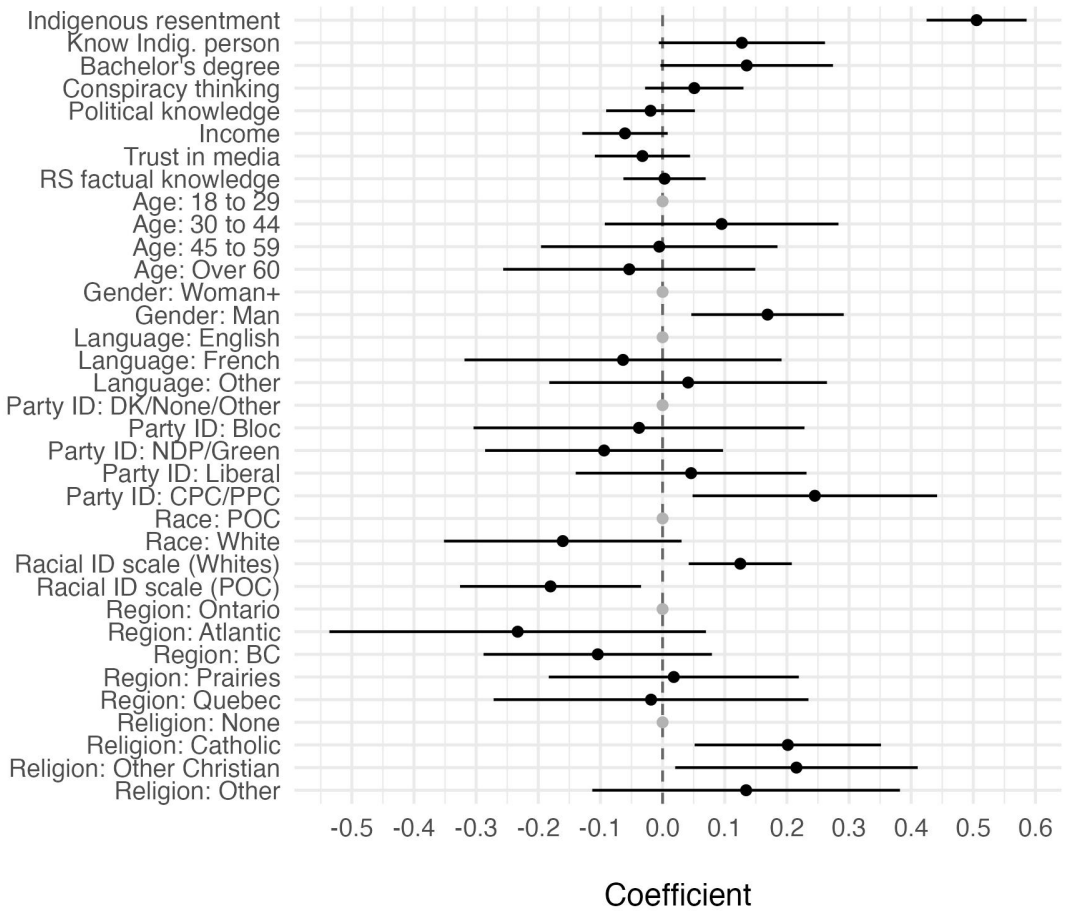


**Figure S8:** Correlates of residential school denialism

Plot reports coefficient estimates and 95% robust confidence intervals from an OLS regression of the denialist beliefs index on the covariates listed on the $y$-axis. All continuous variables are scaled in terms of standard deviation changes. The outcome index is standardized by the control group mean and standard deviation. ($n = 639$)

with their in-group at all are significantly less likely to express denialist beliefs. These results are not sensitive to the use of a linear interaction term; binning the moderator into terciles reveals a similar pattern, indicated by the point and errorbar estimates in Figure S9.

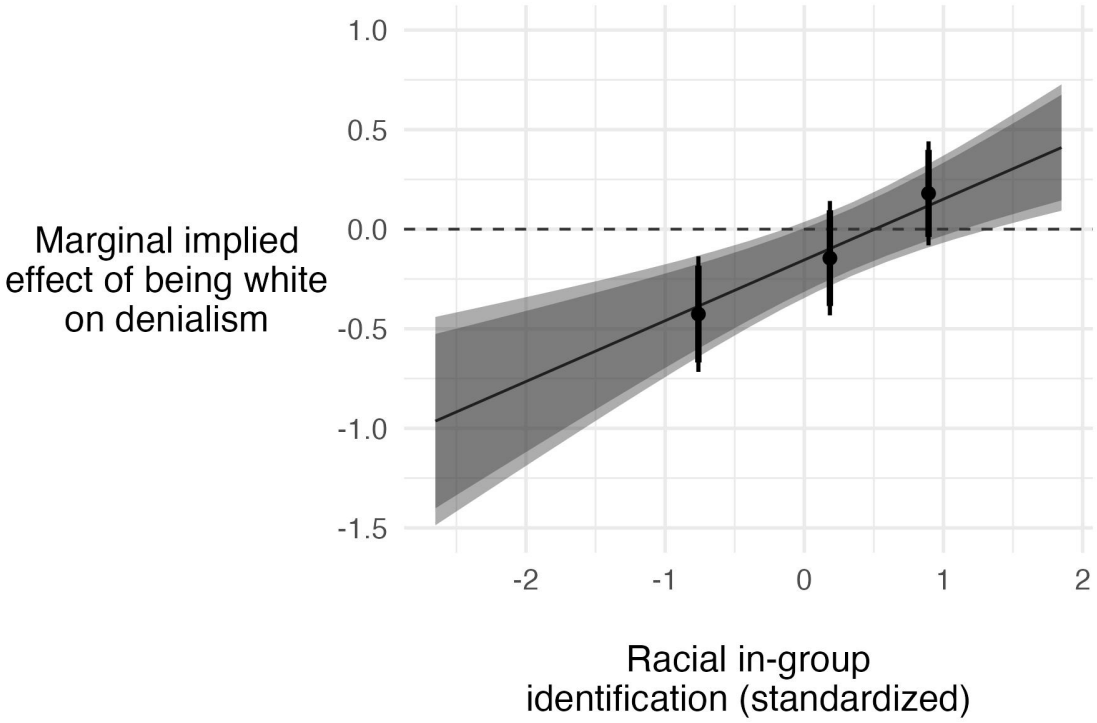


**Figure S9:** Marginal implied effect of race on denialism by racial identity scale

Plot summarizes the conditional association between race and denialism for different levels of racial identity attachments. Linear estimates come from the same OLS model in Figure S8 from the main text, in which racial identity is interacted with the measure of strength of racial attachment. Outcome and moderator are both scaled in terms of standard deviation changes. Binned estimates are from an analogous model in which identity strength is categorized by tercile. ($n = 639$).

Racial identity and anti-Indigenous attitudes share a close association with partisanship (Beauvais and Stolle, 2022*b*), but even after controlling for variables in Figure S8, partisanship is still strongly associated with residential school denialism. Supporters of the Conservative Party (CPC) and People's Party (PPC) report a 0.2 to 0.35 standard deviation stronger agreement with denialist arguments relative to non-partisans and supporters of any other party.

With respect to the association between residential school denialism and prior knowledge and education, we find that respondents' scores on a three-item pre-treatment measure of factual knowledge about residential schools does not have a substantively meaningful relationship with residential school denialism. And other potential potential channels for prior exposure to factual history, including university education or knowing an Indigenous person, are not significantly associated with residential school denialism.

There are no major differences in denialism across age groups. On average, men express 0.17 standard deviation greater residential school denialism. Christians also report just over 0.2 standard deviation greater residential school denialism than agnostics and atheists, although we cannot reject the null hypothesis that Christians do not differ significantly from other religious adherents on this issue. We observe no major differences in residential school denialism across regions or language groups.

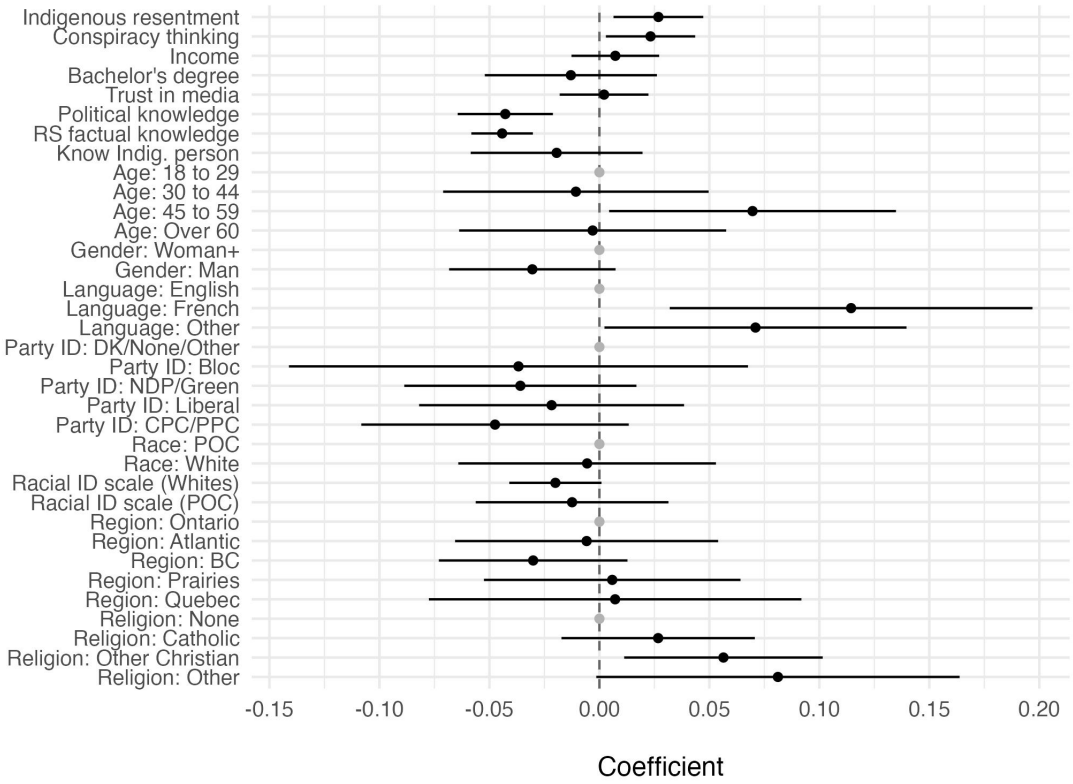


**Figure S10:** Correlates of "don't know" responses to denialism items

Plot reports coefficient estimates and 95% robust confidence intervals from an OLS regression of the proportion of denialist items that are responded to with "don't know" (0 to 1) on the covariates listed on the $y$-axis. All continuous variables are scaled in terms of standard deviation changes. ($n = 659$)

### SM4.2.1 Multivariate analysis of correlates of "don't knows"

A large proportion of respondents indicated that they "don't know" or "haven't thought too much about this" in response to the denialism items. Between 12 to 33 percent indicated a non-opinion, depending on the item. To understand what factors are driving these responses, we created a variable measuring the proportion of non-opinions that a respondent gave in response to the nine residential school denialism items. We then regress this variable on the same covariates as in the previous section and report the coefficient estimates in Figure S10.

The results suggest that knowledge is highly relevant to understanding non-opinions. Respondents' pre-treatment, prior factual knowledge of the residential school history and their general political knowledge were both negatively associated with non-opinions. A one standard deviation increase in each variable correlated with a roughly 4 percentage point greater likelihood of offering an opinion.

Men, who are traditionally more willing to express political opinions, were also 3 percentage points less likely to respond "don't know." Those with greater Indigenous resentment and tendencies toward conspiracy theory beliefs were also more inclined to provide an opinion.

### SM4.2.2 Multivariate analysis of correlates of RS knowledge quiz

Before treatment administration, we administered a three-item factual knowledge quiz about residential schools adapted from Boese, Neufeld and Starzyk (2017). In Figure S11, we summarize the results from an OLS model regressing respondents scores on this quiz on the covariates listed on the $y$-axis. We find that exposure to the residential school history is a central determinant of knowledge in this area. Those who personally know an Indigenous person (+10 p.p.), learned about residential schools during their time as a student (+7 p.p.), and completed a university degree (+6 p.p.) all performed better on the quiz. White Canadians also scored better on the quiz, although this estimate is imprecise. We do not find significant differences in quiz scores across age groups, gender, region, religion or immigration status.

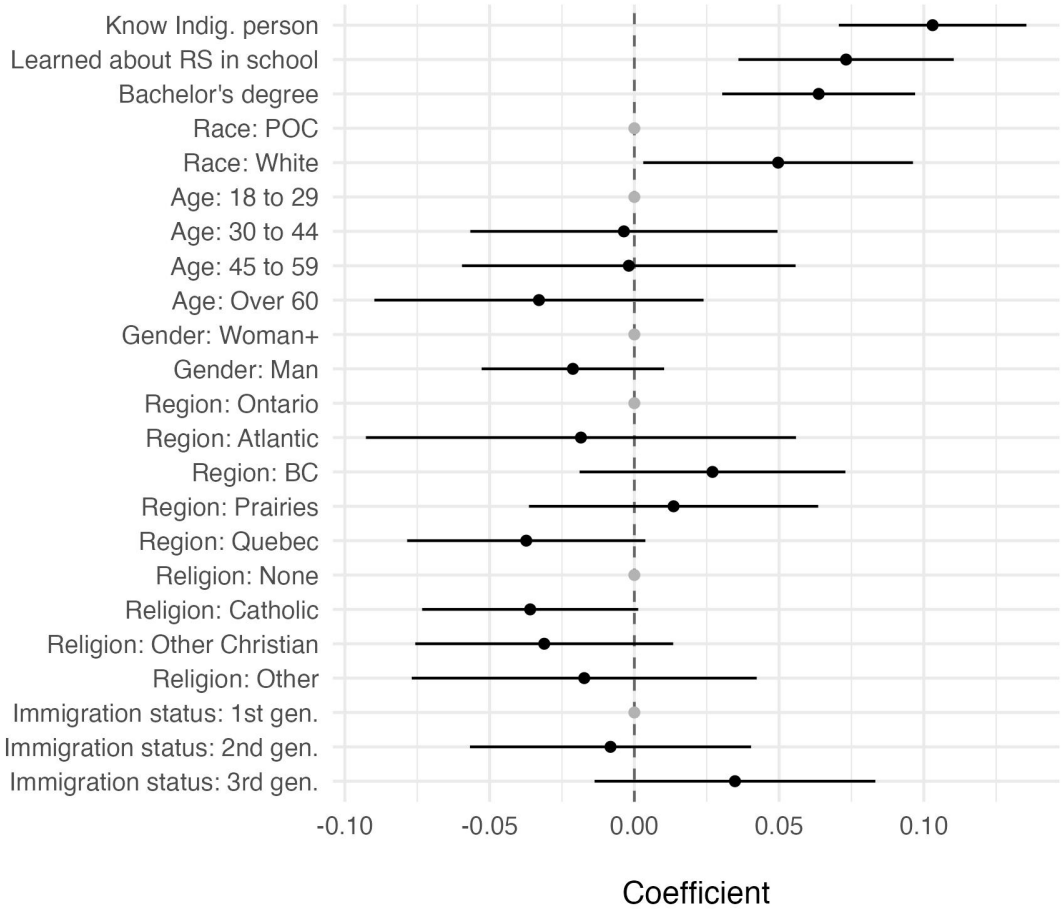


**Figure S11:** Correlates of residential schools knowledge quiz scores

Plot reports coefficient estimates and 95% robust confidence intervals from an OLS regression of the proportion of residential school quiz question that were answered correctly on the covariates listed on the $y$-axis. All continuous variables are scaled in terms of standard deviation changes. ($n = 1,277$)

## SM4.3 Multinomial logistic regression framework

To further assess the relationship between ignorance and denialism, we code an alternative categorical outcome variable that scores respondents as "don't know" if more than half of the denialist items received that response. Otherwise, responses are classified as agreeing, disagreeing or neither agreeing nor disagreeing based on their average score across the items. We then analyze responses in a multinomial logistic regression model with the same covariates as in the analysis from Figure S10 in the main text.

The results are presented in Table S7. Several estimates are notable. For one, the informational treatment increased respondents' likelihood of disagreeing with or expressing an intermediate opinion on a denialist claim relative to responding "don't know." General political knowledge and factual knowledge about residential schools are also relevant, but not in exactly the same way: higher scores on these variables increase the likelihood of offering *any* opinion rather than "don't know," even pro-denialist positions.

The estimates related to Indigenous resentment help understand the possibility of social desirability bias. Individuals who report higher levels of Indigenous resentment are more likely to agree with denialist claims rather than express "don't know," and are less likely to disagree with a denialism argument rather than respond with "don't know." Higher resentment does not correlate with a greater likelihood of responding "neither agree nor disagree" relative to the "don't know" option. Taken together, these results suggest that individuals who a priori are most likely to endorse denialism − those with higher levels of Indigenous resentment − are not using the "don't know" option to conceal their true opinions. Indeed, they are significantly more likely to offer a position when presented with a denialist claim.

**Table S7:** Multinomial logistic regression estimates of denialism responses

| | Reference category: Don't know | | |
|---|---|---|---|
| | Disagree with denialism | Neither agree nor disagree | Agree with denialism |
| Informational treatment | 0.935* | 0.638* | 0.372 |
| | (0.260) | (0.250) | (0.472) |
| Indigenous resentment | −1.247* | −0.157 | 0.740* |
| | (0.171) | (0.163) | (0.334) |
| Conspiratorial thinking | −0.257 | −0.099 | 0.265 |
| | (0.158) | (0.153) | (0.292) |
| Race: White | 0.783* | 0.447 | 0.177 |
| | (0.379) | (0.353) | (0.757) |
| Racial identification | 0.195 | −0.228 | −0.697 |
| | (0.267) | (0.244) | (0.507) |
| White × Racial ID | −0.388 | 0.402 | 1.485* |
| | (0.327) | (0.305) | (0.620) |
| Age: 30 to 44 | 0.102 | 0.100 | −0.947 |
| | (0.449) | (0.437) | (1.060) |
| Age: 45 to 59 | −0.485 | −0.675 | −1.530 |
| | (0.434) | (0.421) | (1.041) |
| Age: Over 60 | 0.244 | −0.083 | −1.233 |
| | (0.479) | (0.465) | (1.069) |
| Party ID: Bloc | 0.261 | 0.107 | −0.348* |
| | (0.544) | (0.525) | (0.000) |
| Party ID: CPC/PPC | −0.075 | 0.449 | 1.269 |
| | (0.364) | (0.341) | (0.729) |
| Party ID: Liberal | −0.115 | 0.023 | −0.083 |
| | (0.358) | (0.345) | (0.951) |
| Party ID: NDP/Green | 0.263 | 0.195 | 0.694 |
| | (0.462) | (0.455) | (1.078) |
| Gender: Man | −0.143 | 0.329 | 0.079 |
| | (0.261) | (0.249) | (0.504) |
| Region: Atlantic | 0.893 | 0.576 | 0.747 |
| | (0.712) | (0.696) | (1.106) |
| Region: British Columbia | 0.485 | 0.673 | 1.649* |
| | (0.449) | (0.431) | (0.666) |
| Region: Prairies | −0.250 | −0.023 | 0.545 |
| | (0.434) | (0.410) | (0.647) |
| Region: Quebec | 0.198 | 0.777 | −12.882* |
| | (0.477) | (0.456) | (0.000) |
| Bachelor's degree | −0.243 | 0.027 | 0.079 |
| | (0.290) | (0.276) | (0.550) |
| Language: French | −0.661 | −0.977* | −0.166 |
| | (0.476) | (0.453) | (0.854) |
| Language: Other | −0.669 | −0.553 | −0.749 |
| | (0.377) | (0.356) | (0.803) |
| Political knowledge | 0.515* | 0.435* | 0.741* |
| | (0.153) | (0.147) | (0.278) |
| RS factual knowledge | 0.994* | 0.831* | 0.648* |
| | (0.224) | (0.221) | (0.296) |
| Trust in media | 0.077 | 0.112 | −0.542* |
| | (0.146) | (0.140) | (0.273) |
| Know an Indigenous person | 0.377 | 0.654* | 0.932 |
| | (0.279) | (0.266) | (0.581) |
| Income | −0.039 | −0.083 | −0.452 |
| | (0.139) | (0.133) | (0.261) |
| Religion: Catholic | −0.670* | −0.056 | −0.163 |
| | (0.315) | (0.304) | (0.657) |
| Religion: Other | −0.111 | 0.210 | 0.156 |
| | (0.453) | (0.436) | (1.063) |
| Religion: Other Christian | −0.292 | 0.048 | 0.765 |
| | (0.428) | (0.415) | (0.665) |
| Observations | 1,314 | | |
| Akaike Inf. Crit. | 2,125.531 | | |
| *Note:* | | | *p<0.1; **p<0.05; ***p<0.01 |

# SM5 Education experiment

## SM5.1 Treatment full text

The following text was provided to respondents assigned to the treatment condition:

> We would like you to read some information about residential schools. We will then ask your personal opinions about residential schools.
>
> - The term residential schools refers to a system set up by the Canadian government and run by Christian churches for Indigenous children.
> - The main goal of the schools was to assimilate Indigenous children into White, Christian society.
> - Many students had negative experiences at the schools. They were forcibly separated from their parents at a young age and not allowed to speak their own languages. Physical, emotional and sexual abuse were common.
> - Residential schools provided students with an inadequate education. Only a few hours a day were spent in the classroom. When they left school, most students did not have the skills they needed to find a well-paying job.

The picture above shows a group of female students and a nun in a classroom at Cross Lake Indian Residential School in Manitoba in February 1940.

[new page]

> - Poor living conditions meant that many students became sick with preventable diseases like tuberculosis and died at very high rates.
> - Archival sources show that thousands of children died at residential schools. To save money, their remains were often buried at the schools rather than sent home to their families.

- In recent years, Indigenous communities have begun locating evidence of unmarked graves of children that died at the schools. This work often involves taking radar scans of the soil at former schools using a technique that archaeologists have found to be accurate elsewhere.

The Kamloops Indian Residential School was already known to have been the site of 51 student deaths, but recent radar surveys have found evidence of 200 unmarked graves.

This information about residential schools comes from the Canadian Encyclopedia (link).

## SM5.2 Balance checks

By virtue of respondents' random assignment to treatment arms, the treated and control groups should resemble each other on average. To evaluate this assumption, Table S8 presents averages of pre-treatment variables across treatment arms and summarizes $t$- and $\chi^2$-tests for imbalance. None of the variables indicate statistically significant or substantively large differences across the two groups, suggesting randomization was successful.

**Table S8:** Sample characteristics by treatment status

| | Averages | | |
|---|---|---|---|
| | Control | Treatment | $p$ |
| Man | 0.50 | 0.48 | 0.42 |
| Age | 50.5 | 50.6 | 0.90 |
| White | 0.74 | 0.75 | 0.38 |
| Bachelor's degree | 0.30 | 0.34 | 0.12 |
| Household income | $74,405 | $75,574 | 0.91 |
| Religion: Catholic | 0.36 | 0.30 | 0.07 |
| Religion: Other Christian | 0.19 | 0.20 | 0.07 |
| Religion: Other | 0.09 | 0.10 | 0.07 |
| Religion: None | 0.36 | 0.40 | 0.07 |
| Region: Ontario | 0.38 | 0.37 | 0.06 |
| Region: Quebec | 0.26 | 0.27 | 0.06 |
| Region: Prairies | 0.13 | 0.15 | 0.06 |
| Region: B.C. | 0.17 | 0.14 | 0.06 |
| Region: Atlantic | 0.05 | 0.07 | 0.06 |
| Language: English | 0.59 | 0.60 | 0.92 |
| Language: French | 0.28 | 0.28 | 0.92 |
| Language: Other | 0.12 | 0.12 | 0.92 |
| Party ID: None/Other | 0.23 | 0.24 | 0.19 |
| Party ID: Conservative | 0.26 | 0.30 | 0.19 |
| Party ID: Liberal | 0.27 | 0.24 | 0.19 |
| Party ID: NDP/Green | 0.17 | 0.16 | 0.19 |
| Party ID: Bloc | 0.06 | 0.06 | 0.19 |
| Indigenous resentment | 2.82 | 2.85 | 0.46 |
| Conspiratorial thinking | 3.05 | 3.03 | 0.61 |
| Racial identification | 3.26 | 3.23 | 0.41 |
| Political knowledge | 0.51 | 0.51 | 0.60 |
| RS knowledge | 0.22 | 0.22 | 0.66 |
| Trust in media | 2.70 | 2.74 | 0.49 |
| Know an Indigenous person | 0.56 | 0.58 | 0.47 |

Right-most column presents $p$-values from a $t$-test or $\chi^2$-test, depending on if variable is continuous or categorical.

## SM5.3 Treatment engagement

The median respondent spent 42 seconds engaging with the treatment information, but 24% of those in the treated group spent less than 15 seconds reading the text. To understand whether those who actually engaged with the treatment reported less denialism, we estimate our main OLS models with the treatment indicator replaced by a categorical variable

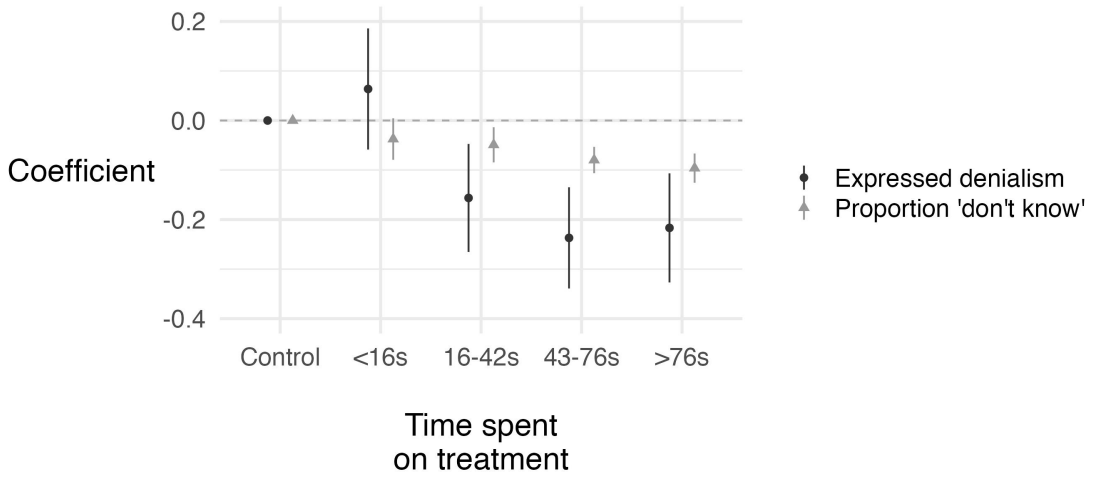


**Figure S12:** Partial correlations between denialism and time spent with treatment content

Plot reports coefficient estimates and 95% robust confidence intervals from an OLS regression of (a) the denialism index and (b) the proportion of a respondents' responses that were "don't knows" on a categorical variable indicating the quartile of time spent on the treatment pages (the reference category is the control condition). Outcome is scaled by the control group mean and standard deviation. The following covariates are included in the model specification but not reported here: age, gender, Party ID, region, language, visible minority status (and its interaction with racial identity attachment), Bachelor's degree, religion, household income, Indigenous resentment, conspiratorial thinking, political knowledge, residential school factual knowledge, trust in media and whether the respondent knows an Indigenous person ($n = 1,822$)

indicating whether respondents were assigned to the control condition or, if they were assigned to treatment, their quartile of time spent on the treatment pages. Figure S12 presents the coefficients on the treatment time categories, with all coefficients indicating the standard deviation differences in denialism and percentage point differences in likelihood of a "don't know" from those in the control group. The estimates suggest that respondents who spent more time with the treatment information reported significantly less denialism and were more likely to offer an opinion on the denialism items than those in the control group. Respondents who skipped through the information in less than 16 seconds do not appear significantly different on either outcome than those in the control.

These results provide suggestive evidence that the treatment worked through a learning mechanism rather than by priming social desirability concerns. While everyone in the treatment condition would have perceived social desirability considerations, only those that carefully read the text would have been persuaded by the information. The fact that only those that engaged with the content thoroughly differ from those that didn't see the content at all lends support to the latter explanation.

Of course, this analysis is not causally identified: interacting with the content more thoroughly is endogenous to respondents' prior attitudes and demographics. In Figure S13, we report estimates from an OLS model in which log time spent on the treatment is regressed on a range of pre-treatment covariates. While we control for these same variables in the model behind Figure S12, there is clearly some selection into greater engagement with the treatment content. Men and younger people, for example, spent significantly less time on

the treatment pages.

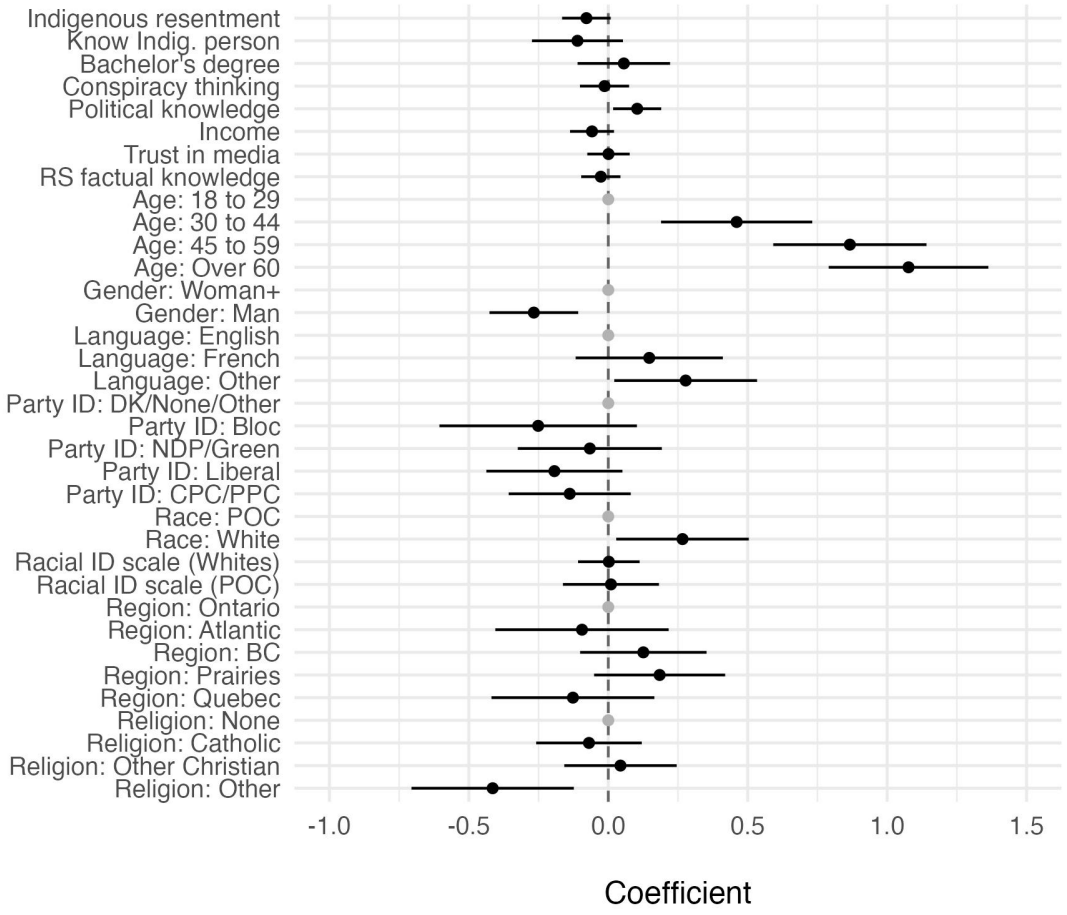


**Figure S13:** Correlates of log time spent engaging with treatment content

Plot reports coefficient estimates and 95% robust confidence intervals from an OLS regression of the log time spent on the treatment pages on the covariates listed on the $y$-axis. All continuous predictors are scaled in terms of standard deviation changes. ($n = 655$)

## SM5.4 ATEs by item

The average treatment effects reported in the main text focus on the full denialism scale and "don't know" responses across all items in the scale. In Figure S14, we report ATEs for each individual item, alongside the main estimates for the full scale for reference. Across all items, the informational intervention reduced the likelihood of responding with "don't know" by between 5 and 11 p.p., with the largest decrease for the item relating to ground-penetrating radar searches. There was slightly more variability in effect sizes on the expressed denialism among respondents who did not say "don't know." In general, the reductions in denialism were larger for the items related to the unmarked graves and smaller for those related to the intentions and legacies of residential schools. The latter items tended to see greater levels of denialism at baseline (see Figure 3).

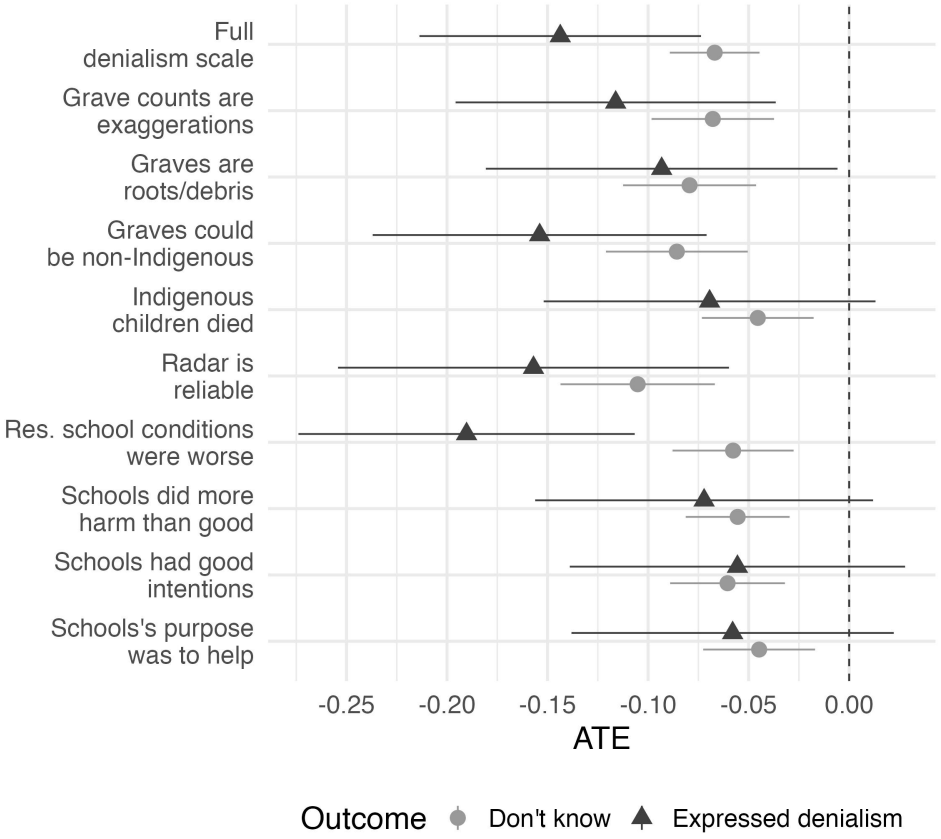


**Figure S14:** ATEs on individual denialism items

Plot reports coefficient estimates and 95% robust confidence intervals from an OLS regression of (a) the expressed denialism score (scaled in terms of control group standard deviations) among respondents who expressed an opinion on that item and (b) whether the respondent responded with a "don't know" response. The following covariates are included in the model specification but not reported here: age, gender, Party ID, region, language, visible minority status (and its interaction with racial identity attachment), Bachelor's degree, religion, household income, Indigenous resentment, conspiratorial thinking, political knowledge, residential school factual knowledge, trust in media and whether the respondent knows an Indigenous person. For expressed denialism models, $n$ between 1,400 and 1,700, depending on the number of "don't know" responses. For "don't know" models, $n = 1,915$.

## SM5.5 CATE estimates

Table S9 presents the tabular estimates behind the CATEs plotted in the main text. The insignificant coefficient estimates on the interaction terms indicate that we cannot reject the null hypothesis that the intervention had larger effects on medium or high resentment respondents relative to those that expressed low resentment. Supplementary tests also indicate that differences in effect sizes on high and medium resentment respondents are also statistically insignificant ($p = 0.7$ and 0.3, for each outcome, respectively).

Table S10 presents analogous estimates with Party ID as the moderating variable. In this case, Conservative Party and People's Party supporters are the reference category. The first column indicates that effects sizes were only statistically distinguishable between Con-

servative/PPC and NDP/Green supporters. Supplementary tests indicate that no other statistically significant differences in effect sizes are present, although the difference between NDP/Green and Liberal effects is large and close to statistical significance ($-0.19$, $p = 0.05$). None of the difference in effect sizes for the "don't know" outcome are significant.

**Table S9:** CATEs by Indigenous resentment level

| | Expressed denialism | "Don't know" |
|---|---|---|
| | (1) | (2) |
| Educational intervention | −0.040 | −0.044* |
| | (0.048) | (0.016) |
| Educational intervention × medium Indigenous resentment | −0.134 | −0.048 |
| | (0.079) | (0.026) |
| Educational intervention × high Indigenous resentment | −0.164 | −0.019 |
| | (0.093) | (0.027) |
| Observations | 1,822 | 1,915 |
| $R^2$ | 0.395 | 0.187 |
| Controls | Yes | Yes |

Table reports estimates from OLS models with HC2 standard errors. The outcome in the first model is the average expressed denialism score (scaled in terms of control group standard deviations) among respondents who expressed an opinion on at least one of the denialism items. The outcome for the second model is the proportion of a respondent's denialism items that were responded to with a "don't know" response. In both models, the following covariates are included in the model specification but not reported here: age, gender, Party ID, region, language, visible minority status (and its interaction with racial identity attachment), Bachelor's degree, religion, household income, Indigenous resentment, conspiratorial thinking, political knowledge, residential school factual knowledge, trust in media and whether the respondent knows an Indigenous person. *p<0.05

**Table S10:** CATEs by Party ID

| | Expressed denialism | "Don't know" |
|---|---|---|
| | (1) | (2) |
| Educational intervention | −0.236* | −0.050* |
| | (0.076) | (0.021) |
| Educational intervention × Bloc Québécois | 0.096 | −0.055 |
| | (0.139) | (0.046) |
| Educational intervention × Don't know/None/Other | 0.158 | −0.022 |
| | (0.109) | (0.037) |
| Educational intervention × Liberal | 0.043 | −0.030 |
| | (0.103) | (0.029) |
| Educational intervention × NDP/Green | 0.234* | −0.005 |
| | (0.105) | (0.029) |
| Observations | 1,822 | 1,915 |
| $R^2$ | 0.416 | 0.188 |
| Controls | Yes | Yes |

Table reports estimates from OLS models with HC2 standard errors. The outcome in the first model is the average expressed denialism score (scaled in terms of control group standard deviations) among respondents who expressed an opinion on at least one of the denialism items. The outcome for the second model is the proportion of a respondent's denialism items that were responded to with a "don't know" response. In both models, the following covariates are included in the model specification but not reported here: age, gender, Party ID, region, language, visible minority status (and its interaction with racial identity attachment), Bachelor's degree, religion, household income, Indigenous resentment, conspiratorial thinking, political knowledge, residential school factual knowledge, trust in media and whether the respondent knows an Indigenous person. *p<0.05