# Talking Across Boundaries: Intergroup Disagreement and Outgroup Attitudes

**Abstract**

Recent research shows that narrative storytelling in face-to-face conversations can durably reduce negative outgroup attitudes, even when discussants broach controversial policy issues. However, with respect to mass communication online, there is a growing concern that counter-attitudinal social media messaging can worsen intergroup animosities. We use a pre-registered survey experiment to clarify whether watching a YouTube video displaying a counterargument from an outgroup member impacts outgroup attitudes. We also identify whether the *communication style* matters for how viewers react to online video messages, testing whether an objectivating, *rational-legal communication style* worsens viewers' outgroup attitudes and whether a *narrative storytelling* communication style improves viewers' outgroup attitudes. Confirming expectations, we find that, for certain respondents with stronger opinions, watching a contradictory argument in a rational-legal communication style significantly worsened viewers' attitudes toward the outgroup depicted in the video. Contrary to expectations, we find no evidence that personal storytelling over social media videos improves outgroup evaluations.

# 1    Introduction

Policy disputes often overlap with salient social identities. According to deliberative theorists and researchers, solving disagreement through discourse produces desirable outcomes such as more informed opinions (Knobloch and Gastil, 2015; Gutmann and Thompson, 1996; Landemore, 2012; Warren and Gastil, 2015), more tolerant outgroup attitudes (Thompson, 2008), and more empathy (Mendelberg, 2002). Although hearing challenges to one's convictions is difficult and might be expected to worsen intergroup animosity, research shows that in formal, face-to-face deliberating groups, information, moderators, and discussion rules can promote more positive outgroup attitudes (Grönlund, Herne and Setälä, 2015).

There is also some evidence that communication-based interventions can be scaled up through mass media to help bridge policy disagreements and intergroup divides on a larger, society level. Unlike in smaller deliberating groups,[1] moderators and discussion rules are less likely to govern the range of media technologies that reach wide audiences via mass communication. However, there is compelling evidence that storytelling—messages that involve characters and plot to illustrate a point—can be used effectively to promote mutual understanding across group divides through mass communication. Stories are said to be particularly effective for expressing personal experiences, because they "are processed differently than other kinds of persuasive messages" (Myers, 2019). Through a process of narrative transportation, stories can transport the listener to the speakers' world, helping to promote intersubjective understandings (Gerrig, 1993; Green and Brock, 2000). The process of being "swept up into the storyline" is what distinguishes the power of narrative storytelling from overtly persuasive messages delivered in a more factual, objectivating style (Moyer-Gusé, 2008, p. 409). Empirical scholarship shows that the power of face-to-face communication

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[1]Some scholars have also found that moderated online discussion groups promote similar positive epistemic outcomes (e.g., learning) that face-to-face groups do (Grönlund, Himmelroos et al., 2009). Although online mini-public type interventions are the gold standard of deliberation, we are more interested in the types of communicative exchanges made possible new technologies and social media platforms, which, unlike online small-group deliberations, tend to be unmoderated, involve shorter interventions, and often involve image or video content.

for improving intergroup attitudes can be scaled up via mass communication, through the "sharing of narratives" by phone bank canvassers (Kalla and Broockman, 2020), by reading narrative fiction (Johnson et al., 2013), and by watching narrative television (Moyer-Gusé, Dale and Ortiz, 2019).

We develop existing research by clarifying how cross-cutting political communication over social media impacts outgroup attitudes. In our present work, we use a pre-registered survey experiment to identify how exposing viewers to a YouTube video that depicts an outgroup member expressing a counter-attitudinal policy argument impacts the viewers' attitudes toward the outgroup depicted in the video. We also vary the *communication style* to clarify whether communication style matters for how viewers process counter-attitudinal information.

In Section 2, we review the mixed findings on intergroup communication and outgroup attitudes. Drawing on findings from communication studies (Wojcieszak and Kim, 2016) as well as decolonial critiques of Western, legalistic styles of political communication (Young, 2000; Sommer, 1988; Beverley, 1991), we hypothesize that hearing an objectivating *rational-legal counterargument* from an outgroup member will activate outgroup animosity. By contrast, we expect that hearing a *personal storytelling counterargument* from an outgroup member will improve outgroup evaluations.

We review our methodology in Section 3. We recruited White Canadian settlers (non-Indigenous Canadians) to complete an online survey. Participants were asked their opinion on a controversial policy issue and, regardless of their opinion, were randomly assigned to watch either a placebo video or a one-minute YouTube video where an Indigenous speaker—a member of a salient group in the Canadian context—presented a counterargument to the viewer's position. We varied the communication format to see if a rational-legal communication style activates more prejudicial attitudes toward Indigenous peoples while a more personal, narrative storytelling communication style promotes more tolerant attitudes. Our research design, hypotheses, and analysis were pre-registered at EGAP.

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We present our findings in Section 3.3. We find no evidence that interventions involving personal storytelling reduced anti-Indigenous attitudes, at least not with our short, online interventions. However, we did find that—among a subset of respondents with stronger opinions—hearing an opposing argument in a more formal, rational-legal communication style significantly activated anti-Indigenous attitudes. In Section 4, we conclude by discussing our results. We discuss some of the limits of short video clips shared over online media platforms such as YouTube for eliciting positive outgroup evaluations and bridging divides when political disagreement and social exclusion intersect.

## 2 Diversity, Disagreement, and the Power of Story-telling

Our present work is concerned with the special challenge of when policy disagreements overlap with salient social identities, and the effect that hearing a counter-attitudinal argument from an outgroup member over social media has on the listeners' outgroup attitudes. Existing research suggests that exposure to countervailing information online can have negative consequences for intergroup relations. For instance, mere exposure to Twitter content from cross-partisans can deepen polarization among some Twitter users (Bail et al., 2018).

Normative theorists working in the field of deliberative democracy would point out that mere exposure to online content—likely highly partisan commentary, news, and clickbait—should not be expected to achieve democratic aims. Instead, they argue that *deliberation*, a special form of political communication that involves addressing disagreement through reason-giving, is required to achieve democratic outcomes such as increasing learning and promoting positive outgroup attitudes (Chambers, 1996; Habermas, 1984, 1998). Empirical evidence substantiates that certain face-to-face (Broockman and Kalla, 2016), telephone (Kalla and Broockman, 2020), and computer-mediated (Simonovits, Kézdi and Kardos, 2018) communicative interventions that induce participants to really hear the other side can im-

prove outgroup attitudes.

However, talking through political disagreements is not always an easy activity. Even when speakers are being polite, hearing challenges to one's opinions can be upsetting and conflicts over how to address competing needs and preferences through public policy can be difficult. Evidence shows that even high-quality deliberative intergroup communication that involves reason-giving can intensify outgroup animosity and deepen attitude polarization in both face-to-face (Mendelberg and Oleske, 2000; Sunstein, 2002; Wojcieszak, 2011) and online (Wojcieszak and Price, 2010) deliberative interventions. What accounts for these mixed findings?

It is possible that the nature of the discursive intervention—in particular, the *communication style*—matters for whether intergroup disagreement activates or reduces outgroup prejudice. Researchers in communication studies have shown that narrative storytelling through fictional novels can increase identification with members of a Muslim outgroup (Johnson et al., 2013), and that the power of narrative storytelling can also be harnessed through television and documentaries to promote intergroup understanding (Moyer-Gusé, Dale and Ortiz, 2019; Chattoo and Feldman, 2017). Like communication studies scholars, other empirical social science scholars have taken the democratic potential of storytelling seriously. Political scientists show that telephone and face-to-face canvassers can effectively use "non-judgmental sharing of narratives" to improve attitudes toward immigrants (Kalla and Broockman, 2020; Broockman and Kalla, 2016), and psychologists have shown that narrative self-disclosure can induce perspective taking (Dovidio et al., 2004). Decolonial scholars have also expressed support for storytelling and reservations about the role that rational-legal styles of argumentation—which refers to more emotionally-detached, factual reason-giving that is presented as neutral and "objective" (i.e., not personal)—plays in political discourse. For instance, Young (2000, p. 56) notes that in legal and formal political arenas, norms of articulateness can devalue disempowered group members' modes of expression and that norms of dispassion exclude important forms of emotive or figurative expression, producing

discursive influence that is wrongly unequal. Young (2000) makes a strong case for going beyond rational-legal deliberations and to make space for storytelling in political discourse.

Latin American Indigenous and decolonial theorists have also theorized the political importance of storytelling, or *testimonio*, for articulating experiences of injustice (Sommer, 1988; Beverley, 1991). *Testimonios* involve subjective narratives told directly by the person who experienced the recounted events. Beverley (1991, p. 5) suggests that *testimonios* create discursive spaces for negotiating alliances between disempowered group members—often Indigenous, racialized, and working class speakers—and "the equivalent of what Peruvians call a *pituco*—White, upper class, culturally European" interlocutors.

Narrative storytelling is central to the social and political practices of Indigenous peoples[2] around the globe. For instance, according to Anishinaabeg peoples, stories create and maintain social relationships, influence human perceptions, and ultimately shape material reality (Garroutte and Westcott, 2013). The Anishinaabeg peoples consider life, culture, and political nationhood as being bound together through a continuum of interlinked sacred narratives ("*Aadizookaanag*") and ordinary stories, personal narratives, and family or historical stories ("*Dibaajimowinan*") (Doerfler, Sinclair and Stark, 2013; Simpson and Manitowabi, 2013).

Thus far, less work has explicitly tested whether the *narrative communication style* is what promotes these positive shifts in outgroup attitudes. Existing studies that explicitly compare narrative with numerical (Wojcieszak and Kim, 2016) or "somber" and factual communication (Chattoo and Feldman, 2017) have focused on the ability for narrative storytelling to change opinions or increase learning. Although important, these studies are

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[2]A note on terminology: "Indigenous peoples" is the term "used in international or scholarly discourse" (Government of Canada, 2018). However, this term is often less familiar to non-academic audiences. The term "Aboriginal" is more commonly used. This term includes peoples of First Nation, Inuit or Métis descent "regardless of where they reside and whether or not their names appear on an official register" (Government of Canada, 2018). In our academic publications we try to use the distinct nation names by which peoples most commonly identify themselves (such as Mi'kmaq, Haida, or Dene), but where a global term is appropriate we use the term Indigenous. In our surveys, we use items that ask about feelings and attitudes toward Aboriginals. We define the term "Aboriginal" for respondents the first time it appears in our survey.

concerned with important *epistemic outcomes* (learning and opinion change)—they do not gauge how communication style impacts *outgroup attitudes*. To our knowledge, only one study explicitly tests whether using narrative hooks in news articles can improve outgroup attitudes (Myers, 2019). Myers (2019) finds that reading news articles that use narrative stories are no more effective than non-narrative articles for promoting positive outgroup attitudes.

While reading news is a common and important form of political engagement, given the explosion of political messaging being shared over social media sites it is also important to clarify whether storytelling through video can improve intergroup attitudes. A growing proportion of electorates are communicating about politics over social media platforms, expressing themselves not only with text but increasingly with images and videos. According to survey data, Americans spend an average of 2:04 hours per day on social media—just below the global average of 2:16 hours per day. Data from social media sites' press releases and investor earning releases reveal there are approximately 230 million active social media users in the United States (70% of the total population) (Hootsuite, 2019). Currently, most active social media platforms are YouTube (82% of internet users) and Facebook (80%). Newer social media sites—such as Snapchat and TikTok—are also increasingly being used to share short video content. It is important to clarify whether storytelling over the kind of short videos that are proliferating over social media can effectively improve intergroup attitudes.

The growing theoretical and empirical literature on different communication styles—and the potential power of storytelling—raises important questions about the effects of political communication when policy disputes overlap with salient social group memberships, particularly with respect to online communication. Does hearing an opposing argument from an outgroup member about a salient policy issue activate prejudicial outgroup evaluations? Or does the communication style matter, with more formal, objectivating *rational-legal argumentation* worsening outgroup evaluations and more narrative, *personal storytelling* promot-

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ing more positive outgroup evaluations? Drawing on empirical research in communication studies and recognizing the centrality of narrative storytelling for Indigenous practices, we hypothesize that a hearing a personal, narrative-style counterargument from an Indigenous speaker over social media will reduce racial animosity among White listeners. Explaining the mixed findings in the research on the effects of intergroup communication on outgroup attitudes, we hypothesize that hearing a more objectivating, rational-legal counterargument from an Indigenous speaker will increase racial animosity among White listeners.

# 3 Materials & Methods

We aimed to clarify the effect of communication style on racial attitudes when policy disagreement and social boundaries intersect using a survey experiment pre-registered at EGAP. We recruited subjects through Dynata's (formerly Survey Sampling International, or SSI's) online panels to participate in a study about opinions toward the Trans Mountain pipeline. Participation in the study was restricted to the largest and historically most empowered group in Canada, White, English-speaking[3] "settlers" (non-Indigenous residents). Like in other settler-colonial contexts, White settlers are on average economically and politically empowered relative to Indigenous peoples and non-Indigenous people of color.

In our study, we consider how hearing a counterargument from an Indigenous speaker (the "outgroup") impacts White subjects' attitudes toward Indigenous peoples.[4] The term

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[3]Canada has two official languages—English and French—and roughly one-fifth of the population speaks French regularly at home. However, omitting francophones and limiting our analysis to English-speakers was necessary due to the technical difficulty of finding a professional Indigenous actor who could speak both official Canadian languages (English and French). Administering the intervention in multiple languages (particularly if one language is spoken with an accent) introduces potential confounding effects. Historically, English-speakers have been economically and politically empowered relative to French-speakers, particularly in the federal context.

[4]In our original research design, we planned to vary the "ethnicity" of the speaker presenting the counterargument. To hold any confounding factors constant we hired a fair, Onondaga (Indigenous) professional actor to play both the role of the Indigenous speaker and the "White" speaker. We varied how we introduced the actor: as an Aboriginal woman named Jessica Littlefeather or a Caucasian woman named Jessica Little. However, after an initial data collection it became clear the ethnicity treatment failed. A treatment check revealed that nearly all the respondents, including most respondents in the "White" treatments, identified the speaker as Indigenous (see Table S2). In the body of this paper, we limit our analysis to the effect

"Indigenous peoples" is common in scholarly discourses, although is less common among non-academic audiences.[5] In our experiment we asked the White respondents about their attitudes toward "Aboriginals." In Canada, the term Aboriginal was popularized in the 1980s after it was defined in Canada's bill of rights, the *Canadian Charter of Rights and Freedoms, 1982.*

Respondents were asked their opinion on a plan to expand an existing pipeline, the Trans Mountain Pipeline. The Trans Mountain Expansion Project proposes to expand an existing pipeline running 710 miles westward between Canada's largest oil-producing region to the Pacific Ocean (Trans Mountain, 2019). The plan proposes to build a new pipeline roughly parallel to an existing line to nearly triple the quantity of crude oil transported to sea. Because we are interested in the effect of hearing a counterclaim to an existing position, only respondents who indicated an opinion are included in the present analysis ($n = 626$) (Figure 1), although it should be noted that approximately a quarter of respondents ($n = 221$) indicated they had no opinion on the pipeline (indicated "neither agree nor disagree" or "don't know") (Figure S3).[6] The distribution of opinions on the Trans Mountain Pipeline in our survey is congruent with findings from public opinion polls. For instance, a May 2018 Ipsos Reid poll shows that 56% of Canadians supported the expansion project, 24% opposed it, and 20% indicated they "don't know" (Ipsos Reid, 2018).[7]

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of hearing a counterargument from an outgroup (the Indigenous treatments). For a longer discussion and analysis, see S4.1 in the Supplementary Materials (SM).

[5]Where appropriate, we try to use the distinct names by which peoples most commonly identify themselves, such as Anishinaabeg, Haida, or Mi'kmaq. Where a global term is appropriate we use the term Indigenous.

[6]As per our pre-registration plan, these respondents were excluded from the present analysis. Respondents who indicated they "neither agree nor disagree" with the proposed expansion or indicated "don't know" ($n = 221$) were randomly assigned to a placebo or any of the experimental treatment (Figure S3). However, as per our pre-registration plan, these respondents are excluded from the present analysis. The effect (or null effects) of the treatment among respondents with no opinion are presented in the SM.

[7]See Ipsos Reid's "Detailed Table 1" at: `https://www.ipsos.com/sites/default/files/ct/news/documents/2018-05/pipeline_table_1_may_3_2018.pdf`

**Figure 1:** Distribution of Opinions Toward the Trans Mountain
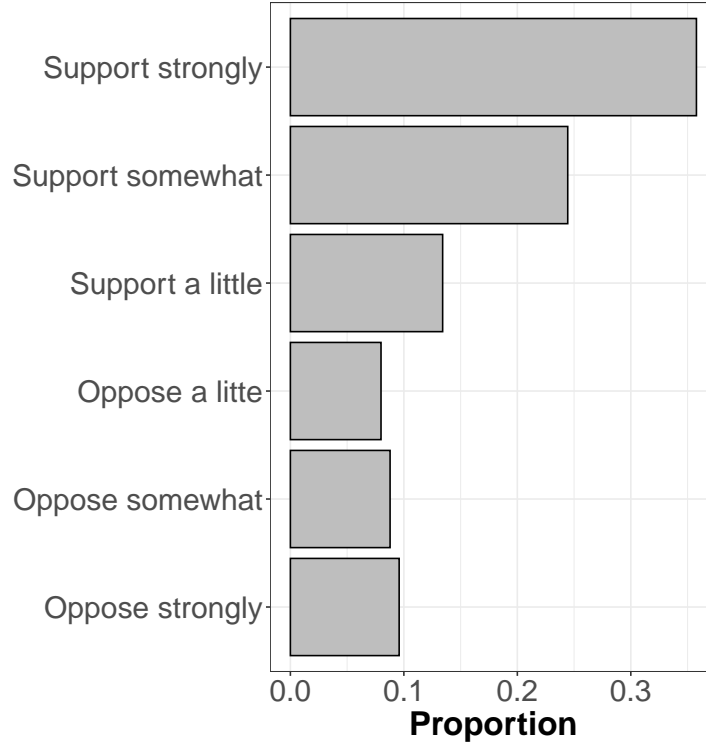


After indicating their opinion on the proposed pipeline expansion, respondents were assigned to watch a one-minute follow-up video on the social media site YouTube. The respondents were randomly assigned to watch a YouTube video showing either a placebo or counterargument to their position, acted by the same Onandaga actor (Figure 2).

**Figure 2:** Screenshot of YouTube Video
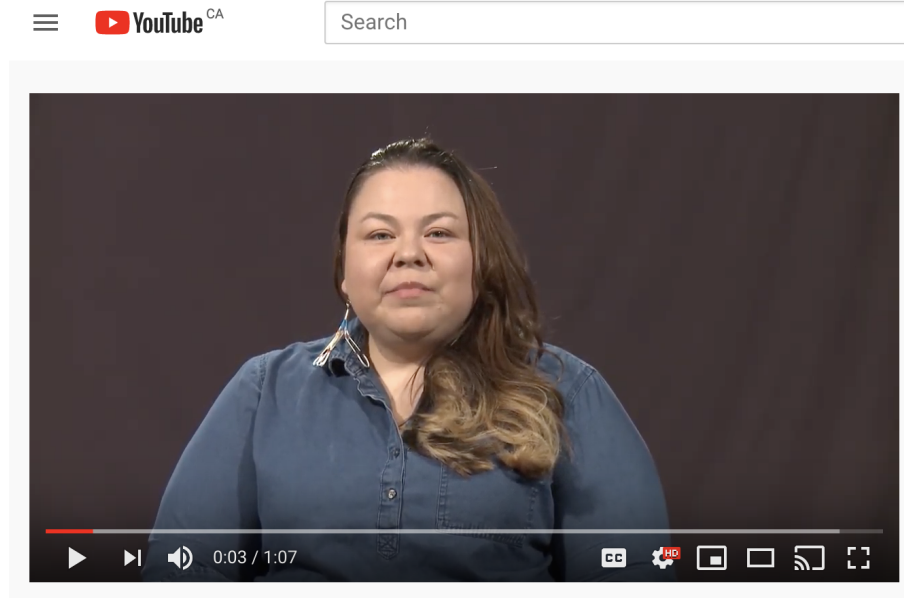


Although the majority of Canadians support the expansion project it was important to include participants from both sides of the debate. This was so we could test whether hearing a counterargument from an Indigenous speaker has different effects on the racial attitudes of pro- versus anti-pipeline Canadians. There are important partisan and regional differences in support for the pipeline, with residents in oil-producing regions and voters on the right expressing greater support for the project, and residents living further from oil-producing regions and voters on the left expressing greater opposition (Ipsos Reid, 2018). While there is less research on White racial attitudes toward Indigenous peoples in Canada, existing American research suggests that partisanship and region are important predictors of racial attitudes (Enders and Scott, 2019).

Furthermore, it is possible that pipeline politics have become associated with Indigenous peoples in specific ways. In the case of the Trans Mountain pipeline proposal, efforts to construct the pipeline were slowed when some Indigenous groups challenged the constitutionality of the project on the grounds that affected Indigenous peoples were insufficiently consulted (News, 2017). It is possible that pipeline supporters hold more negative attitudes toward Indigenous peoples and might react more strongly to hearing a counterargument from

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an Indigenous speaker. That said, both the anti-pipeline and pro-pipeline YouTube videos depicting an Indigenous speaker were realistic interventions. While there have been notable Indigenous-led pipeline protests and constitutional challenges, other Indigenous groups have supported and even spearheaded oil and natural gas projects. For instance, in 2003 the Inuvik-based Aboriginal Pipeline Group obtained a one-third stake in the multibillion-dollar Mackenzie Valley pipeline project, and in 2017 the Fort McKay First Nation purchased a $350 million stake in a Suncore Energy bitumen storage terminal (Southwick, 2016). With respect to the Trans Mountain Pipeline in particular, the majority of Indigenous groups in the most affected region—British Columbia—have not expressed support for the pipeline. However, the company that owned the Trans Mountain pipeline, Kinder Morgan, claimed to have received the "expressed consent" of all Indigenous peoples whose reserve lands were adjacent to the proposed pipeline (Hopper, 2018). Note that this does not include the consent of Indigenous peoples whose traditional but unrecognized lands are adjacent to the pipeline. Furthermore, the Trans Mountain has been contentious even within Indigenous communities whose reserve lands are impacted by the pipeline: the Ts'elxwéyeqw Tribe Society rejected the pipeline with only 55.5% of the tribe society's vote, while the Lower Nicola Indian Band voted in favor of the pipeline with only 59% of the band's support. Ultimately, there has been notable media coverage of both Indigenous opposition to and support for pipelines in the Canadian context (Coletta, 2019; Purdon and Palleja, 2019).

## 3.1 The Intervention and Placebo

After respondents indicated their position on the pipeline issue, they were randomly assigned to watch a video depicting either a rational-legal style counterargument, a narrative storytelling-style counterargument, or a placebo (a neutral video unrelated to the pipeline). The full scripts are presented in the Supplementary Materials (SM), see Section S6. Subjects assigned to any of the experimental treatments were told that a speaker ("Jessica Littlefeather") had a different opinion and were shown a one-minute video with Jessica's

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counterargument. In all the counterargument treatment conditions, the speaker begins by introducing herself with her name and Indigenous band affiliation, which is held constant across all experimental treatments.

In the rational-legal argumentation conditions, which were intended to reflect a rational-legal mode of communication, the actor was instructed to keep her tone and facial expressions neutral. The speaker offered "facts about Aboriginals" and explained how a past consultation failure impacted Indigenous peoples and how this continues to influence Aboriginals today. Aside from introducing herself with a band affiliation, the speaker dissociates herself from the story by referring to "Aboriginals" as a group in the third-person, rather than speaking in the first-person.

In the personal storytelling conditions, which were intended to reflect a more personal, narrative storytelling mode of communication, the actor was instructed to be more emotive. In the storytelling conditions, the speaker offered "a personal story about my family" and explained how a past consultation failure impacted "my grandma" and how this continues to personally shape her life today. In addition to introducing herself with a band affiliation, the speaker personalizes the story by speaking in the first-person. Note that, although our research is motivated by critiques of Western practices of rational-legal argumentation and our concept of narrative storytelling is inspired by Indigenous practices, the narrative story in our experiment reflects a personal story. The story in our study is more closely related to *testimonios* or to the Anishinaabeg concept of *Dibaajimowinan* (personal stories or news) (Doerfler, Sinclair and Stark, 2013).[8]

The same substantive information was given in the rational-legal counterarguments and the personal story counterarguments, both for and against the pipeline. All of the treatments

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[8]The narrative story we present is *not* meant to reflect the kind of sacred narratives or oral histories that, for many different Indigenous peoples, embody principles for living a good life. To continue with our earlier example of the distinction between the Anishinaabeg concepts of *Dibaajimowinan* and *Aadizookaanag*, the narrative story we present is not meant to reflect *Aadizookaanag*. *Aadizookaanag* are considered to be *manidoog* (animate), as "living beings who work with Anishinaabeg in the interests of demonstrating principles necessary for *mino-bimaadiziwin*, that good and beautiful life" (Doerfler, Sinclair and Stark, 2013, p. xvii–xviii). Often, *Aadizookaanag* may only be told by certain speakers (such as elders) and in certain contexts (for instance, from certain locations, at times of year, or for certain purposes).

concluded with an assertion that it's time to start including Aboriginals in decision-making and the Trans Mountain Pipeline must *continue* (pro-pipeline counterargument) or that it's time to start including Aboriginals in decision-making and the Trans Mountain Pipeline must *stop* (anti-pipeline counterargument). In the Canadian context, Indigenous groups both in favor of pipelines and opposed to pipelines have used demands for inclusion to justify their positions. As such, both the pro-pipeline and anti-pipeline counterargument treatments represent realistic scenarios. A screenshot from the videos is Figure 2. Hiring the same actor for all conditions ensured we controlled for appearance, voice, presentation style, and other factors that could impact reactions to the videos.

In the placebo, the speaker talks about general and non-controversial facts about recycling. The speaker does not mention anything about the Trans Mountain Pipeline. The speaker also does not offer any explicit indication of their ethnicity or mention Indigenous peoples.[9] Like the treatment videos, the placebo is approximately one minute in length.

The Indigenous speaker in the counterargument represents a salient outgroup member for the White Canadian settlers recruited to participate in our study. We hypothesized that hearing a rational counterargument from an Indigenous speaker (an outgroup member) would activate negative racial attitudes toward Indigenous peoples. Conversely, we hypothesized that hearing a counterargument in personal storytelling style from an Indigenous speaker would reduce negative racial attitudes toward Indigenous peoples. Our pre-registered hypotheses are listed in Table 1.

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[9]One of the comments we received while conducting the research was that it might be better to tell respondents that the speaker in the placebo is Indigenous (to more clearly identify the effect of hearing a counterargument from an Indigenous speaker, rather than just the effect of hearing a counterargument). To address this concern, in the March survey we randomly assigned respondents to a treatment video, the original neutral placebo, or an "Indigenous" placebo where *we* tell the respondents prior to watching the video that the speaker is Indigenous (although both the videos are identical in both the neutral and Indigenous placebos). Since it ultimately makes no difference whether the respondents are told the speaker in the placebo is Indigenous or not, we pool the respondents in the placebo conditions together for our analysis in the body of the paper. We present the comparisons between the experimental treatments and each placebo separately in the SM (Figure S7).

**Table 1:** List of Main Hypotheses

**H1** An Indigenous speaker (outgroup) presenting a personal story counterargument will *reduce* negative attitudes toward Indigenous peoples.

**H2** An Indigenous speaker (outgroup) presenting a rational counterargument will *increase* negative attitudes toward Indigenous peoples.

*As compared to the placebo.*

## 3.2    Outcome: Indigenous Resentment

The main outcome of interest is anti-Indigenous attitudes. Only a few researchers have tried to empirically study settler attitudes toward Indigenous peoples, and most have focused on overtly hostile prejudice (e.g., Walker, 1994; Pedersen and Walker, 1997; Harell, Soroka and Iyengar, 2016). Measures of overt prejudice include items that ask respondents to indicate if they dislike Aboriginals or think Aboriginals are dirty (Walker, 1994; Pedersen and Walker, 1997). Slightly subtler existing measures of anti-Indigenous attitudes ask respondents to rate Aboriginals on a scale from lazy to hardworking or on a scale from dependent to self-sufficient (Harell, Soroka and Iyengar, 2016). In interesting comparative work, Harell, Soroka and Iyengar (2016) find that White Canadians expressed more explicit prejudice toward Indigenous peoples than White Americans did toward Black Americans (or any other group). This strengthens our intuition that Indigenous peoples are a salient outgroup relative to White settlers in the Canadian context.

While it is important to study explicit dislike—and we did include feeling thermometer ratings of Aboriginals and other social groups in our study as pre-treatment covariates—social desirability may prevent many Canadians from openly admitting to overtly hostile attitudes. As such, we used a seven-item scale of Indigenous resentment that taps into subtler anti-Indigenous attitudes for our outcome measure. Although we drew on the existing literature on White racial resentment toward Black Americans to design our measure of Indigenous resentment, there are important reasons to suspect White attitudes toward Indigenous peoples are distinct from attitudes toward other racial minorities. Most impor-

tantly, it is essential tap into attitudes about Indigenous land claims because struggles over land remain at the heart of colonization/decolonization projects (Singh, 2019; Coulthard, 2014; Wildcat et al., 2014; Wolfe, 2006). In addition to demanding control over traditional, unceded territories, Indigenous peoples may also make demands that are rarely made by disempowered racial minorities such as Black Americans. For instance, Indigenous peoples may advocate for the preservation or regeneration of traditional languages. Finally, treaties between settler governments and Indigenous peoples mean Indigenous peoples may enjoy rights—or there may be beliefs that Indigenous peoples enjoy rights—that are distinct from settlers rights, particularly with respect to taxation.

Taking these considerations into account, we developed seven survey items measuring Indigenous resentment (see Table 2). The response options for each question range from "Agree strongly", "Agree", "Neither agree nor disagree," "Disagree," to "Disagree strongly" and are coded such that the higher values indicate greater Indigenous resentment. Item analysis reveals strong internal reliability (Cronbach's $\alpha = 0.90$) and that the reliability of the scale decreases if any of the items are dropped from the scale (see Table S1).

As per the pre-registration, we used factor analysis to create the outcome measure of Indigenous resentment. The results of a scree plot clearly suggest a single factor should be retained, confirming the intuition that the variables tap into a single latent construct of Indigenous resentment (Figure S5). The factor analysis results show that each of the seven items load fairly highly onto the latent concept of Indigenous resentment. Variable wording and factor loadings are presented in Table 2. The extracted factor, which we retain as our outcome measure of Indigenous resentment, is mean-centered. The distribution of prejudicial attitudes toward Indigenous peoples is presented in Figure 3 and Table 3 (Variable Distributions).

**Table 2:** Indigenous Resentment Items with Factor Loadings

| Variables | Factor Loadings |
|---|---|
| "Aboriginal activists are making reasonable demands." | 0.72 |
| "Aboriginals are getting too demanding in their push for land rights." | 0.88 |
| "Aboriginals get more favors from the education system than they should have." | 0.74 |
| "Irish, Jewish, Chinese, and many other minorities overcame prejudice and worked their way up. Aboriginals should do the same without any special favors." | 0.78 |
| "More must be done to protect Aboriginal languages." | 0.70 |
| "The government does not show enough respect toward Aboriginals." | 0.72 |
| "Aboriginals get unfair tax breaks." | 0.74 |

**Figure 3:** Distribution of Indigenous Resentment
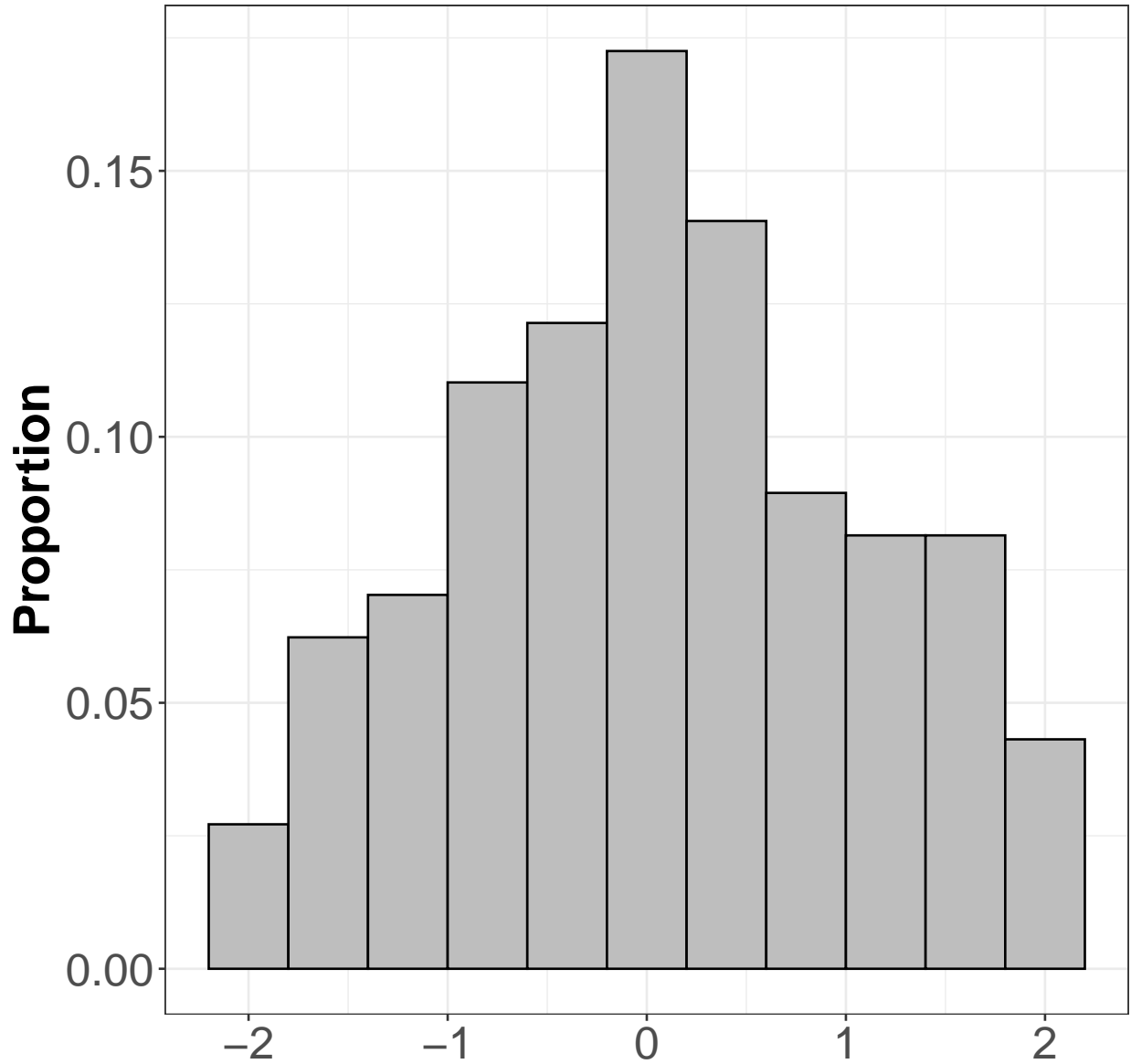


## 3.3   Analysis

We analyze the data in two steps. In the first step, we estimate the average treatment effect (ATE) by comparing the experimental treatments to the placebo using a difference of means test ($t-$test). Second, we use OLS regression to estimate the ATE as a function of the treatment plus a vector of pre-treatment control variables (Equation 1). Including pre-treatment

control variables helps reduce noise and increase power in experiments (Broockman, Kalla and Sekhon, 2017).

$$Y_i = \alpha + \beta_1 Treatment_i + \theta \mathbf{X}_i + \varepsilon_i \tag{1}$$

The pre-treatment controls are: respondent age, gender (male= 1), education, region, voting for a right-of-center party (right-party vote= 1), ideology, and feelings toward Indigenous peoples (Equation 1). Respondent age is measured with a five-category variable (18–34 years, 35–44 years, 45–54 years, 55–64 years, and 65 years and older) (see Table 3 for variable distributions). In our model, the reference category for age is 35 to 44 years, because this is the modal category in our sample (the average age in Canada is 40.8 years of age). Education is measured using a four-category variable: no trade or college degree, trade school diploma, four-year university or college degree, and post-graduate or professional degree. The reference category is "no college or university." We grouped respondents into the following five regions: the Northwest, the Prairies, Ontario, Québec, and the Maritimes and treat Canada's largest province—Ontario—as the reference category.[10]

Voting for a right-of-center party is a dummy variable indicating whether a respondent said they would vote for a right-of-center party (e.g., the Conservative Party) in the 2019 federal election.[11] Ideology is measured by taking subjects' response to the question: "In political matters, people talk of 'the left' and 'the right.' How would you place your views on this scale, generally speaking?" (ranging from 0, most left-wing, to 1, most right-wing).

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[10]Our study only included a single respondent from Canada's North, and so we cannot say anything generalizable about Northern Canadians. The region "Northwest" here refers to respondents in British Columbia (Canada's westernmost coastal region) and the single respondent from Canada's northern territories.

[11]The category "right vote" also included respondents who said they would vote for the People's Party of Canada, Canada's right-wing populist party (just under 2% of the sample). The reference category includes any respondents who say they would vote for any other party (almost exclusively center-left parties, particularly the Liberal or NDP parties, or who were undecided). In terms of the distribution of attitudes toward Indigenous peoples, the main political divide in Canada is between right-party voters and the rest of Canadians.

Feelings toward Indigenous peoples are measured by subtracting respondents' feeling thermometer ratings for Aboriginals from the average feeling thermometer ratings for a number of different groups (Aboriginals, atheists, Blacks, Canadians, Christians, and immigrants). Feelings thermometer ratings ranged from 0 (dislike a great deal) to 100 (like a great deal). Higher values on the pre-treatment measure of feelings toward Indigenous peoples indicate greater *dislike* for Indigenous peoples (a higher score indicates that a respondent's average feelings across all groups was warmer than the respondents feeling for Aboriginals).

**Table 3:** Variable Distributions

| Variable | N | Mean | St. Dev. | Min | Max |
|---|---|---|---|---|---|
| Indigenous resentment | 626 | 0.00 | 0.96 | -1.87 | 1.70 |
| Opinion on the Trans Mountain | | | | | |
| *Oppose strongly* | 626 | 0.10 | 0.28 | 0 | 1 |
| *Oppose somewhat* | 626 | 0.09 | 0.28 | 0 | 1 |
| *Oppose a little* | 626 | 0.08 | 0.27 | 0 | 1 |
| *Support a little* | 626 | 0.13 | 0.34 | 0 | 1 |
| *Support somewhat* | 626 | 0.24 | 0.43 | 0 | 1 |
| *Support strongly* | 626 | 0.36 | 0.48 | 0 | 1 |
| Age category | | | | | |
| *18–34* | 626 | 0.16 | 0.37 | 0 | 1 |
| *35–44* | 626 | 0.21 | 0.41 | 0 | 1 |
| *45–54* | 626 | 0.23 | 0.42 | 0 | 1 |
| *55–64* | 626 | 0.31 | 0.46 | 0 | 1 |
| *65+* | 626 | 0.09 | 0.29 | 0 | 1 |
| Gender (male= 1) | 626 | 0.55 | 0.50 | 0 | 1 |
| Education | | | | | |
| *Less than college* | 626 | 0.32 | 0.47 | 0 | 1 |
| *Trade school diploma* | 626 | 0.29 | 0.45 | 0 | 1 |
| *College degree* | 626 | 0.29 | 0.45 | 0 | 1 |
| *Post-grad degree* | 626 | 0.10 | 0.30 | 0 | 1 |
| Region | | | | | |
| *B.C. & North* | 626 | 0.14 | 0.35 | 0 | 1 |
| *Prairies* | 626 | 0.22 | 0.41 | 0 | 1 |
| *Ontario* | 626 | 0.43 | 0.50 | 0 | 1 |
| *Quebec* | 626 | 0.14 | 0.35 | 0 | 1 |
| *Maritimes* | 626 | 0.07 | 0.26 | 0 | 1 |
| Right-party vote | 626 | 0.34 | 0.48 | 0 | 1 |
| Ideology | 626 | 5.09 | 2.20 | 0 | 10 |
| Dislike for Indigenous peoples | 626 | 2.10 | 15.47 | -48.83 | 79.17 |

We excluded responses for which there was missing data on the outcome measure of Indigenous resentment. For the control variables, missing data was imputed through multiple imputation by chained equations using the MICE package in R. Multiple imputation by chained equations helps account for uncertainty in the imputations and thus yields more accurate standard errors (Azur et al., 2011).

# 4    Results

The results presented in Figure 4 show the raw treatment effects of watching either a rational-legal or story-telling YouTube video on anti-Indigenous attitudes, as compared to a neutral placebo. As Figure 4 shows, there is no evidence that hearing a counterargument in personal story from an Indigenous speaker reduces anti-Indigenous attitudes for the sample as a whole. In fact, the effect of both the rational counterargument and personal storytelling counterargument appear quite similar. Although the average scores on the anti-Indigenous attitudes scale appear to be slightly higher in the treatment groups, these effects are not significantly different from the placebo.

**Figure 4:** Difference of Mean Resentment Scores from Placebo
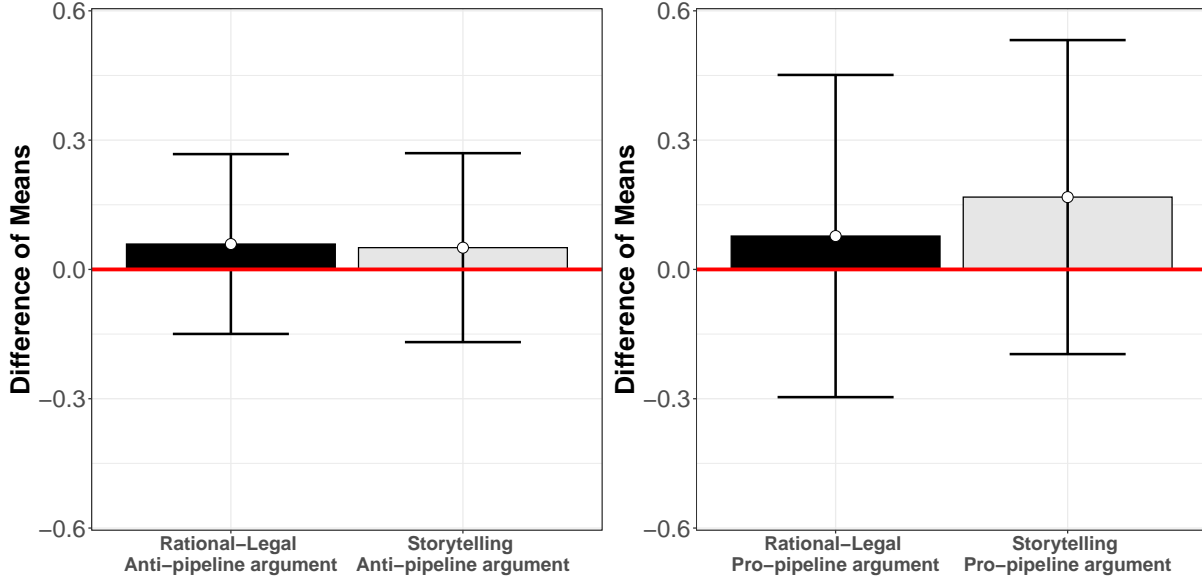


Furthermore, although on average the anti-pipeline respondents (who received the pro-pipeline counterargument) express lower anti-Indigenous sentiments to begin with (as measured by a pre-treatment feeling thermometer), they seem to react in a similar manner to pro-pipeline respondents (who received the anti-pipeline counterargument) (Figure 4). The confidence intervals around the estimated treatment effect of hearing pro-pipeline counterarguments are wider because there were fewer anti-pipeline respondents and thus fewer respondents who received the pro-pipeline treatments.

Regressing anti-Indigenous attitudes on the treatment and a vector of pre-treatment covariates to reduce noise and increase statistical power reveals the same pattern (see Figure S1). Average Indigenous resentment scores among White respondents who watched a treatment video featuring an Onandaga actor presenting a counterposition on a pipeline project appear slightly higher than among White respondents who watched a placebo video featuring an Onondaga actor presenting neutral information about recycling. However, the coefficients are not significantly different from zero. Although the ATE is not significantly different from zero for the sample as a whole, it is possible that the treatment effects different subsets of the

population differently. In particular, it is possible that those with stronger opinions might respond differently to the treatment.

## 4.1 Heterogeneous Treatment Effects

As per our pre-registration plan, we also tested whether hearing a counterargument from an outgroup is conditional on subjects' initial position. In particular, we tested the hypothesis that hearing a rational counterargument activates racial animosity among subjects with stronger pro-pipeline opinions, which suggests that the pipeline is a salient political issue to them. Because testing conditional effects by definition entails multiple comparisons (increasing the risk of Type I errors), we corrected the confidence intervals using the Holmes method.

We did find evidence that the response variable is conditional on the strength of some respondents' initial position. Subjects who were "somewhat" in favor of the pipeline who received a rational-legal counterargument expressed significantly higher levels of Indigenous resentment compared to the placebo, even accounting for multiple comparisons. Subjects who were "strongly" in favor of the pipeline who receive a rational-legal counterargument also expressed higher levels of Indigenous resentment compared to the placebo, although these findings are not robust to the Holmes penalty. Plots of the rational-legal counterargument treatment effects among pro-pipeline respondents are presented in Figure 5.

**Figure 5:** Rational-Legal Counterargument Treatment Effects Among Pro-Pipeline Respondents
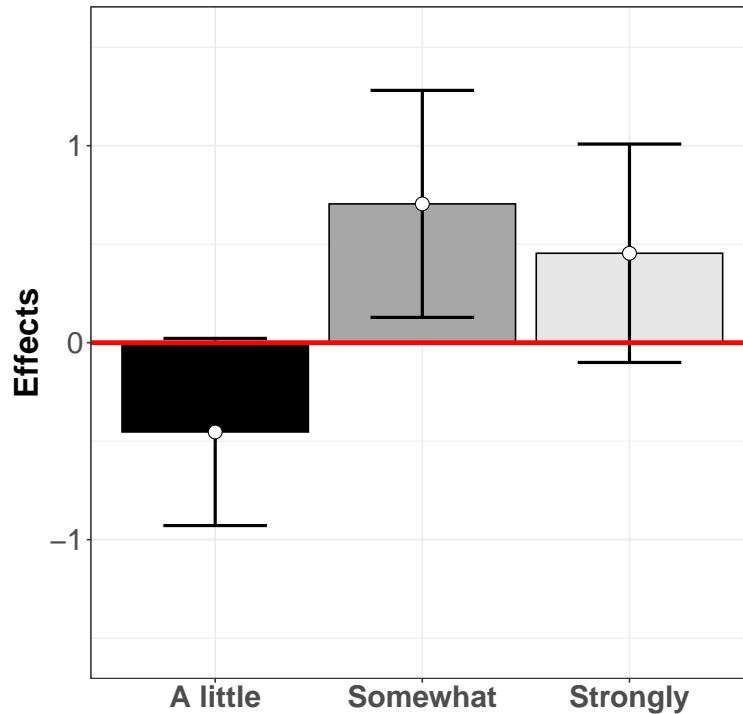


# 5    Discussion and Conclusion

Congruent with our more pessimistic hypothesis—that rational-legal argumentation over social media can activate negative outgroup attitudes—we did find evidence of a backlash effect. Among subjects who were more strongly in favor of the pipeline, hearing an objectivating, rational-legal argument *against* the pipeline significantly increased Indigenous resentment compared to the control group. Unfortunately, we did not find any evidence that exposure to a personal story through a social media video that counters one's view reduces Indigenous resentment. White respondents who saw a counterargument from an Indigenous speaker in a storytelling style expressed slightly higher levels of Indigenous resentment compared to White respondents who watched a neutral video about recycling—although the differences between the storytelling treatment group and the control group were not significantly

different from zero.

Existing research shows that longer, more immersive narrative interventions through face-to-face conversations (Broockman and Kalla, 2016), telephone conversations (Kalla and Broockman, 2020), television (Moyer-Gusé, Dale and Ortiz, 2019), documentaries (Chattoo and Feldman, 2017), and novels (Johnson et al., 2013) can promote positive outgroup evaluations. However, in today's world a great deal of communication and interaction takes place over digital platforms that involve short, unidirectional sound-bites, video clips, and headlines. Our one-minute video intervention was designed to mimic the situation of online communication and short attention spans, and we found no evidence that this relatively weaker storytelling intervention—where a speaker explains their policy position with a personal story in a short online video—can promote more positive outgroup attitudes. Our research is congruent with research showing that framing a short news article with a narrative story is no more likely to improve outgroup attitudes that short news stories without a storytelling hook (Myers, 2019).

As (Myers, 2019) explains, the null findings from shorter storytelling interventions do not contradict research touting the importance of narrative storytelling for outgroup attitudes, but rather "can be thought of as setting scope conditions for the effect of narratives." While longer, more immersive narrative stories seem to be effective at transporting listeners to the speakers' world and ameliorating intergroup attitudes, shorter, more common interventions such as framing a news story with a personal story (Myers, 2019) or—as we have shown—using short videos shared over social media do not improve outgroup attitudes. Unfortunately, we also show that exposure to the rational-legal counterargument significantly *increased* negative outgroup attitudes among respondents with stronger pro-pipeline attitudes. This finding is consistent with existing research suggesting that online communication can exacerbate group-based polarization and worsen outgroup attitudes (Bail et al., 2018; Wojcieszak and Price, 2010).

Our findings—including our null findings—are important. Even though longer, more

intensive perspective-taking interventions are better, social life is increasingly taking place online and over social media platforms that are dominated by short visual and audio clips. Short, online videos that can be quickly shared and consumed over applications such as YouTube, Facebook Stories, and TikTok are an increasingly popular medium for self-expression. As we have shown, when it comes to reducing outgroup prejudice these short clips do not have the same positive effects as more immersive storytelling interventions.

Studies of online political activity reveals that people are unlikely to seek out or be exposed to countervailing information. It is well-known that online political talk tends to occur in echo chambers of like-minded discussants (Barberá et al., 2015). There is also evidence that mere exposure to online content from cross-partisans deepens political polarization among some voters (Bail et al., 2018). Here we show that self-selection is not the only factor limiting online communication from promoting mutual understandings. Even more deliberative counterarguments cannot always mitigate the negative consequences of exposure to online counterclaims. The kind of short, online videos that can be easily shared through social media platforms such as YouTube, Facebook, TikTok, or Twitter seem to fall short of the conditions necessary for reducing outgroup prejudice.

We cannot say from our current data whether the inability for personal storytelling to improve intergroup attitudes was due to the online medium or unidirectional communication flow. Future research should consider the relative importance of online versus offline interaction and the importance of reciprocity in communication for improving outgroup attitudes. In particular, the democratic potential of *listening* (Kalla and Broockman, 2020)—and the ability to promote listening over social media—should be further explored.

Our present work suggests that short videos—the kind of media that proliferates quickly online—have little role to play when it comes to bridging the intersection of political disagreement and social divisions. When it comes to achieving the goal of improving intergroup attitudes, online interventions likely need to be more immersive or interactional. Social and computer scientists should consider how to design social media platforms that enable more

iterated, reciprocal communication—and listening—across group boundaries. In the meantime, when it comes to the hard work of bridging the intersection of social divisions and policy disagreements, interventions should involve face-to-face or telephone storytelling that includes high quality listening (Broockman and Kalla, 2016; Kalla and Broockman, 2020), high quality deliberation in democratic innovations such as mini-publics (Grönlund, Herne and Setälä, 2015), or more immersive forms of narrative storytelling (Moyer-Gusé, Dale and Ortiz, 2019; Johnson et al., 2013; Chattoo and Feldman, 2017).

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