

The Online Educational Program ‘Perspectives’ Improves Affective Polarization, Intellectual Humility, and Conflict Management

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Journal of Social and Political Psychology, 2023, Vol. 11(2), 437–457, <https://doi.org/10.5964/jssp.10651>

Received: 2022-11-14 • **Accepted:** 2023-06-15 • **Published (VoR):** 2023-08-21

Handling Editor: Tobias Stark, Utrecht University, Utrecht, The Netherlands

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Supplementary Materials: Data, Materials [see [Index of Supplementary Materials](#)]



Abstract

Solving the most pressing problems of our time requires broad collaboration across political party lines. Yet, the United States is experiencing record levels of affective polarization (distrust of the opposing political party). In response to these trends, we developed and tested an asynchronous online educational program rooted in psychological principles called Perspectives. In Study 1, using a large longitudinal dataset (total N = 35,209), we examined Perspectives users’ scores on affective polarization and intellectual humility at pre- and post-intervention. Studies 2 and 3 were longitudinal randomized controlled trials with government finance officers (N = 341) and college students (N = 775), respectively, and examined the effects of Perspectives on affective polarization, intellectual humility, and conflict resolution skills. Across these studies, we found that Perspectives users experienced small to medium-sized decreases in affective polarization and small to medium-sized increases in intellectual humility. In Study 3, we found that Perspectives led to small yet significant improvements in conflict resolution skills. These findings suggest promise for a brief and scalable intervention to improve affective polarization, intellectual humility, and conflict management.

Keywords

intellectual humility, political psychology, affective polarization, digital interventions, conflict resolution

Non-Technical Summary

Background

Over the past few decades, the United States has been facing a significant issue of affective polarization, characterized by a deep distrust and animosity towards opposing political parties. This polarization hinders collaboration and problem-solving across party lines and there is an increasing need for people to have better conversations across differences. One potential solution to reduce this animosity is the scalable online education program called “Perspectives,” which is designed to help people constructive engage with each other across differences. Perspectives consists of five to eight psychology-based modules and optional peer-to-peer discussion activities designed to promote constructive dialogue.



Why was this study done?

In order to establish solutions to promoting constructive dialogue, it is necessary to show that existing interventions are effective. This research was conducted to evaluate whether Perspectives is effective as an intervention, particularly in regard to three critical outcomes that are important for constructive dialogue (described below). In addition, it was important to examine if Perspectives was effective across people with different political views (i.e., liberal vs. conservative).

What did the researchers do and find?

The researchers conducted three studies to assess the effectiveness of Perspectives on three key metrics of dialogue across differences: affective polarization (dislike, distrust, and avoidance those who hold different political views), intellectual humility (the willingness to recognize and acknowledge the limits of one's knowledge and actively seek out and consider new information and ideas), and conflict resolution (how individuals address and resolve disagreements and conflict). In Study 1, they analyzed a large dataset with 35,209 participants to examine changes in affective polarization and intellectual humility before and after using Perspectives. Studies 2 and 3 were randomized controlled trials involving government finance officers ($N = 341$) and college students ($N = 775$), respectively. These studies evaluated the impact of Perspectives on affective polarization, intellectual humility, and conflict resolution skills. The findings across all three studies indicated that users of Perspectives experienced small to medium-sized reductions in affective polarization and small to medium-sized increases in intellectual humility. Additionally, in Study 3, it was observed that Perspectives led to small yet significant improvements in conflict resolution skills. These studies suggest that Perspectives is effective for people across the political spectrum, although Study 1 suggested that liberals/progressives showed stronger improvement in affective polarization compared to conservatives.

What do these findings mean?

The findings of the study provide promising insights into addressing affective polarization, promoting intellectual humility, and enhancing conflict management. The asynchronous online educational program, Perspectives, showed the potential to effectively reduce bias against opposing political parties and foster more intellectual humility among participants. Moreover, the intervention demonstrated the capacity to enhance individuals' ability to resolve conflicts constructively. Perspectives is an effective, concise, and scalable intervention that has the potential to improve political polarization, encourage intellectual humility, and facilitate better collaboration with those who have different views. By equipping individuals with the skills necessary for constructive dialogue and conflict resolution, Perspectives holds the promise of bridging the gaps that exist in our current political landscape and promoting a more harmonious and collaborative society.

Solving the most pressing problems of our time, including climate change, health disparities, and COVID-19, requires broad collaboration across political party lines. Yet, historical trends indicate that, in the United States (US) and other countries, people increasingly dislike, distrust, and avoid those who hold different political views – a phenomenon labeled “affective polarization” (Iyengar et al., 2012). A significant portion of both Democrats and Republicans (20% and 15%, respectively) go so far as to agree that the US would be better off if large numbers of the opposing party “just died” (Kalmoe & Mason, 2019). This level of affective polarization may have deleterious consequences for the functioning of a democratic society. Out-party animus, for example, has been linked to a tendency to share fake news stories that denigrate the other side (Osmundsen et al., 2021). Additionally, Druckman et al. (2021) showed that affective polarization, measured prior to the onset of the COVID-19 pandemic, was correlated with individuals' appraisals of the seriousness of the pandemic, their willingness to change their behavior to curb the spread of COVID-19, and their support for COVID-19 policies (e.g., stay-at-home orders). To address this growing threat to democracy, we created a research-based online educational program to improve mindsets and skill sets for dialogue across differences. The purpose of the present studies is to examine the efficacy of this intervention on affective polarization, intellectual humility, and conflict resolution skills.

Reducing Affective Polarization

Researchers have identified several large-scale societal trends that may contribute to rising affective polarization (see Iyengar et al., 2019 for a review). Over the last 50 years, the two major political parties in the US have become increas-

ingly dissimilar and internally homogenous, with liberals increasingly identifying as Democrats and conservatives as Republicans (Levendusky, 2009). These increases in polarization have been attributed to greater use of the internet and social media, particularly when people are selectively exposed to content consistent with their views (e.g., Kubin & von Sikorski, 2021; Lelkes et al., 2017). As a result of these societal trends, people tend to interact exclusively with those who share their political ideology, making it easy to stereotype and demonize those who belong to the opposing party. Confirmation biases appear to be magnified with political issues, whereby individuals are more receptive to information they agree with, yet dismissive of evidence that conflicts with their beliefs (e.g., Taber & Lodge, 2006).

Fortunately, there is a burgeoning literature suggesting that it may be possible to mitigate partisan animosity with psychological intervention. For instance, partisan animosity decreases when participants are exposed to models of respectful political disagreement (e.g., Huddy & Yair, 2021; Levendusky & Malhotra, 2016). Further, Ahler and Sood (2018) observed that people tend to hold exaggerated, stereotypical views of Democrats and Republicans. For instance, people estimate that 32% of Democrats are LGBT (6% in reality). Correcting such misperceptions reduced affective polarization. In another study, Levendusky (2018) primed a shared US identity among partisans and showed a significant reduction in affective polarization.

Increasing Intellectual Humility

In recent years, there has been an emerging focus on intellectual humility as a way to promote better dialogue across differences. Intellectual humility is defined as an awareness of one's own intellectual limitations and a recognition of the value of others' intellect (Porter et al., 2022). Intellectual humility is positively associated with openness to new ideas, empathy, prosocial values, tolerance for diverse people and perspectives, and scrutiny of misinformation (Koetke et al., 2022; Krumrei-Mancuso, 2017; Krumrei-Mancuso & Rouse, 2016; McElroy et al., 2014). Importantly, higher intellectual humility is also linked to greater openness to learning about different political views, lower affective polarization, and higher religious tolerance (Hook et al., 2017; Krumrei-Mancuso & Newman, 2020; Porter & Schumann, 2018). Although intellectual humility has been suggested as an antidote for political polarization (Sgambati & Ayduk, 2022), it remains to be seen whether experimentally manipulating intellectual humility can lead to changes in affective polarization or vice versa.

Most intellectual humility intervention research has focused on brief, one-time manipulations to "prime" state (versus trait) intellectual humility and has not examined the consequences of these interventions on affective polarization. One of the most well-studied of these primes uses the "illusion of explanatory depth" (Rozenblit & Keil, 2002). After being prompted to write a detailed explanation of how a topic works, participants were less likely to overestimate their own knowledge of that topic (Fernbach et al., 2013; Johnson et al., 2016; Meyers et al., 2020). Another effective manipulation prompts participants to step back from their interpersonal conflicts and take a "fly on the wall" (self-distanced) perspective (Grossmann et al., 2019; Grossmann & Kross, 2014). Only a few studies have sought to foster intellectual humility over a period of time. For example, Grossmann and colleagues (2021) asked participants to journal daily about significant events from a distanced, third-person perspective. Those randomized to this intervention showed higher intellectual humility at the end of the month.

Improving Conflict Resolution Skills

Training in conflict resolution skills may be another viable approach to promoting constructive dialogue across differences. Conflict is inevitable and political conflicts are becoming more prevalent as political party differences are exacerbated and affective polarization increases (Esteban & Ray, 1999; Lee, 2015). When conflict is poorly managed, it can severely undermine group cohesion and productivity (Amason, 1996; Jehn & Mannix, 2001) and make conflicting parties more steadfast in their positions (Nyhan & Reifler, 2010). Many scholars posit that democracies rely on citizens to have the skills to express their views, listen to others, adjust their opinions based on new information, reach compromise, generate creative solutions, and tolerate differences (Diamond & Morlino, 2004; Schmitter & Karl, 1991).

Meta-analyses suggest that conflict resolution interventions improve a variety of outcomes, including reducing violence (Matjasko et al., 2012) and enhancing teamwork and cooperation (McEwan et al., 2017). Although the majority of conflict resolution training occurs in-person, some recent work has tested such interventions in asynchronous online

settings. For example, Martínez-Moreno and colleagues (2015) had work teams engage in a joint problem-solving task. Teams in the treatment condition were then provided with a guide to debrief their decision-making processes and the quality of the decisions made during the problem-solving task. Compared to the control condition, teams that underwent the 60-minute debrief displayed more functional conflict management strategies (e.g., open communication) and fewer dysfunctional strategies (e.g., avoidance) at post-test. Notably, no research to our knowledge has examined the impact of conflict resolution skills training on outcomes such as affective polarization and intellectual humility.

A Scalable Intervention to Improve Constructive Dialogue

While the interventions reviewed above demonstrate promise, research on ways to reduce affective polarization, foster intellectual humility, and improve conflict resolution skills have not been well-integrated. That is, existing interventions have focused on shifting one of these outcomes, but none have tried to improve them simultaneously. In addition, most affective polarization and conflict resolution interventions cannot be readily implemented at scale. To address these limitations, we designed an interactive online educational program rooted in psychological research, called Perspectives (see [Supplementary Materials](#)). Perspectives consists of five to eight 30-minute modules that enhance readiness to engage across differences and provide concrete behavioral strategies (e.g., active listening) to manage conflict. Broadly, Perspectives covers techniques based on established psychological research, including Moral Foundations Theory (Graham et al., 2013), dual process models of cognition (e.g., Kahneman, 2011), and moral outrage (e.g., Crockett, 2017). The modules weave scientific findings with thought experiments and opportunities for practice and are designed to apply to learners within and outside of the US. Perspectives incorporates research-based interventions, such as the illusion of explanatory depth (Rozenblit & Keil, 2002) and correcting misperceptions about out-partisans (Ahler & Sood, 2018). As an option, learners can pair up with another Perspectives user for four “peer-to-peer” discussions where they put into practice the skills covered in the online modules.

Overview of the Current Research

We investigated the effectiveness of the Perspectives program on key outcomes of affective polarization, intellectual humility, and conflict resolution skills. We also explored whether Perspectives was equally effective across the political spectrum. Study 1 utilized a pre-post quasi-experimental design with a large sample. Studies 2 and 3 used randomized controlled designs with employees of local government and college students, respectively. We hypothesized that individuals who engage in Perspectives would report lower affective polarization, increased intellectual humility, and better conflict resolution skills.

Study 1

Study 1 used data from the Perspective program’s embedded assessment, which learners complete immediately before the first module (Time 1, or T1) and immediately after the last module (Time 2, or T2). Two versions of Perspectives were included in this study. Perspectives 1.0, available from August 2017 to August 2020, consisted of five 30-minute learning modules. Perspectives 2.0 was available after August 2020 and consisted of eight 30-minute modules and four optional 45-minute peer-to-peer conversations. In addition to examining changes from T1 to T2, Study 1 also examined whether program efficacy differed across the two versions.

Method

Participants

Study 1 consisted of 29,706 Perspectives 1.0 users and 5,503 Perspectives 2.0 users ($N = 35,209$, 58.96% White/Caucasian, 57.65% female, 41.70% male, 0.65% other/non-binary, $M_{\text{age}} = 24.98$, $SD_{\text{age}} = 10.87$). Most participants were completing Perspectives in the US (86.10%) or Canada (8.19%). Most participants were using Perspectives as a higher education

student (84.64%); others were completing Perspectives with a community organization (e.g., church; 10.12%), their workplace (1.83%), high school class (2.28%), or student group or organization (1.13%).

Procedure and Materials

All participants were enrolled in Perspectives by their class instructors or organizational leaders as part of a course or training. In classrooms, Perspectives was written into course syllabi, and students received credit for completing the program. In organizations, Perspectives was used as a part of employee training. Once enrolled, participants were emailed a link to access the program.

Participants completed T1 assessment before and T2 assessment immediately after completing Perspectives. Most (80.05%, $N = 28,186$) participants provided usable T1 data and 54.13% ($N = 19,058$) provided usable T2 data. These sample sizes provided substantial power ($>99.99\%$) to estimate small effect sizes ($d = 0.20$) between paired means (e.g., T1 vs. T2). For analyses involving changes from T1 to T2, we only included participants if they provided data at both time points. We present the sample sizes for each longitudinal model in the [Results](#).

Because participants were completing this as part of a class or employee training, and not a research study, and were not receiving monetary incentives for survey completion, it was important to keep the surveys as short as possible. To this end, we used selected items from validated scales, as opposed to full scales. Over the course of Study 1, we changed the assessment six times, since we had a large sample and were interested in exploring a range of outcomes while keeping the assessment short. All participants completed measures of demographics, political views, and affective polarization. Measures of intellectual humility were also included at all time points, but we experimented with differing items and subscales across assessment versions. Despite these limitations, the measures still shed light on what potential constructs Perspectives might shift (see [Supplementary Materials](#) for more details).

Participants indicated their age, race/ethnicity, gender, and political views. For race/ethnicity, participants selected all options that apply from a list (e.g., “African American/ Black”, “South Asian”). For analysis, race was coded as 1 = White and 0 = Other. Participants selected gender from a list of options (“female,” “male,” “non-binary,” “other,” or “prefer not to say”). Gender was coded using two dummy variables representing men (men vs. otherwise) and women (women vs. otherwise), with “prefer not to say” responses treated as missing. Political views were coded on a -3 to +3 scale (-3 = very progressive/left, -2 = progressive/left, -1 = slightly progressive/left, 0 = moderate/middle of the road, 1 = slightly conservative/right, 2 = conservative/right, 3 = very conservative/right). All other views (libertarian/classical liberal, don’t know/not political, other, prefer not to say) were assigned a missing value for comparisons on the progressive vs. conservative spectrum.

We measured affective polarization with the temperature rating scale ([Lelkes & Westwood, 2017](#)). Participants were asked how they felt about individuals who identify as progressive and individuals who identify as conservative, on a scale of 0 (*cold*) to 100 (*warm*). We scored affective polarization as the difference in ratings for political ingroup vs. outgroup ([Druckman & Levendusky, 2019](#)), which resulted in scores for self-identified liberals and conservatives.

Intellectual humility was assessed as general intellectual humility and independence of intellect and ego. There were 1-2 items used for each construct. 30.52% of participants completed two items from the general intellectual humility scale ([Leary et al., 2017](#)): “I accept that my beliefs may be wrong” and “I question my own opinions, positions, and viewpoints because they could be wrong” (Cronbach’s $\alpha = .60$ at T1, $.67$ at T2). Another 43.20% of participants received only the latter item. Another 30.53% of participants completed 2 items measuring independence of intellect and ego, a subscale of the Comprehensive Intellectual Humility Scale ([Krumrei-Mancuso & Rouse, 2016](#)): “When someone disagrees with ideas that are important to me, it feels as though I’m being attacked” and “When others disagree with my ideas, I feel like I’m being attacked” (Cronbach’s $\alpha = .76$ at T1, $.83$ at T2). Both items were reverse scored and averaged, such that higher scores represented greater intellectual humility.

Data Analysis

Data analyses were conducted in R. Mixed models were conducted with the lme4 package to account for longitudinal data ([Bates & Sarkar, 2007](#)). The emmeans package was used to compare marginal means and estimate Cohen’s d ([Lenth & Lenth, 2018](#)), and the reghelper package was used to interpret simple slopes with continuous moderators ([Hughes,](#)

2020). Participant age was highly positively skewed, skewness = 2.51, $SE = 0.01$, Anderson-Darling $A = 4237.50$, $p < .001$. Therefore, we applied an inverse transformation (Tabachnick & Fidell, 2007).¹ For analyses involving change over time, participants that did not provide responses at both T1 and T2 were removed using list-wise deletion.

Results

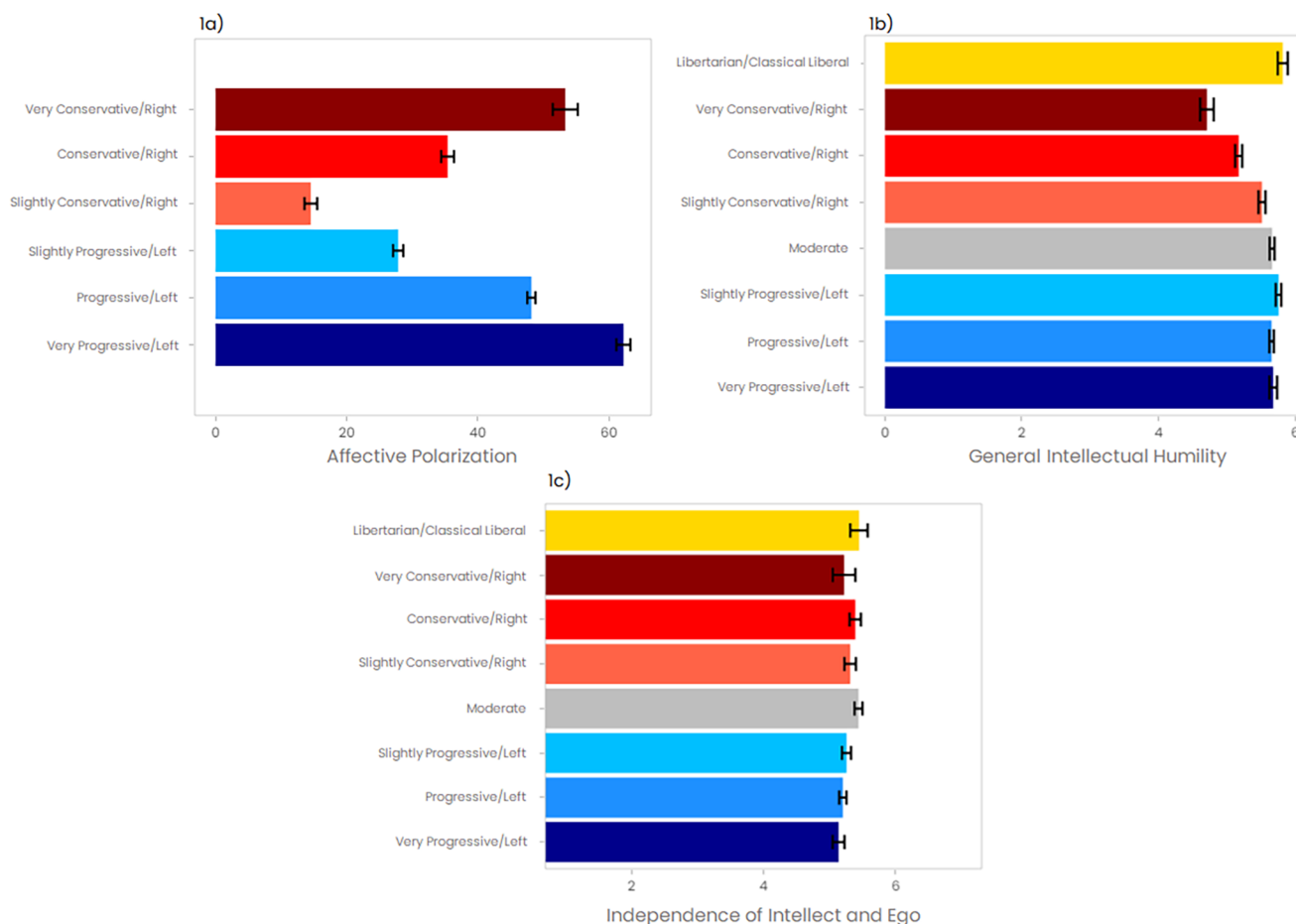
Preliminary Analyses

Affective polarization had small negative correlations with general intellectual humility, $r = -.09$, $p < .001$, and independence of intellect and ego, $r = -.11$, $p < .001$. General intellectual humility and independence of intellect and ego were positively but modestly correlated, $r = .07$, $p < .001$. Bivariate correlations, descriptive statistics, and attrition analyses are in Tables S2 and S3 (see Supplementary Materials).

We first examined differences in T1 scores across political views using a series of ANCOVAs, controlling for age, gender, and race. Group differences in affective polarization and intellectual humility are presented in Figure 1. For brevity, we exclude participants who self-identified as “other” (1.65%), “don’t know/not political” (12.73%), or who did not provide information about their political views (4.88%).

Figure 1

Baseline Differences by Political Views in Study 1



Note. Error bars represent 95% confidence intervals.

1) This transformation resulted in the interpretation of age being reversed in models since higher ages are assigned lower values.

Participants' political views were associated with their reported affective polarization, $F(5, 19687) = 1310.61, p < .001$. Consistent with previous findings (Lelkes, 2021; Rogowski & Sutherland, 2016), as participant views moved further from center, polarization increased. Those who were very conservative and very liberal were considerably more affectively polarized compared to those who identified as "slightly" liberal or conservative, $d_s \geq 0.99, p_s < .001$. In addition, all liberal categories were more affectively polarized than their respective conservative categories (e.g., very conservative vs. very liberal), $d_s \geq 0.34, p_s < .001$.

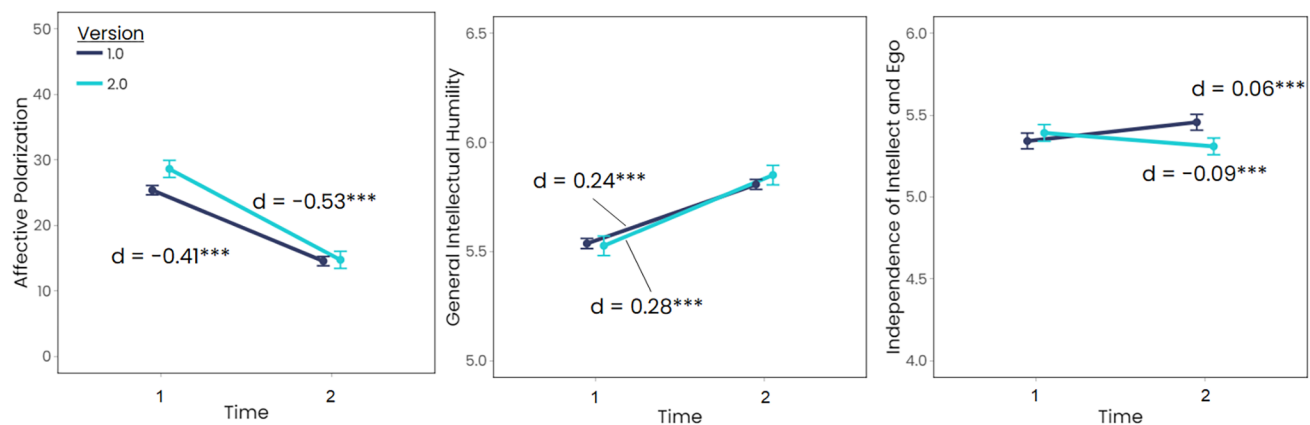
Intellectual humility also varied across political groups, main effect: $F(7, 20772) = 99.81, p < .001$ (see Figure 1). All liberal groups had significantly higher general intellectual humility than conservative groups, $d_s = 0.12$ to $0.88, p_s \leq .001$. Those who identified as very conservative reported the lowest general intellectual humility, $M = 4.71, 95\% \text{ CI } [4.61, 4.81]$, whereas libertarians/classical liberals had the highest scores, $M = 5.82, 95\% \text{ CI } [5.74, 5.89]$. Independence of intellect and ego also varied across political views, $F(7, 8573) = 13.20, p < .001$, although differences were less pronounced (all $|d_s| < 0.24$). Libertarians/classical liberals, $M = 5.44, 95\% \text{ CI } [5.31, 5.58]$, and moderates, $M = 5.44, 95\% \text{ CI } [5.38, 5.50]$, had the highest levels, whereas the lowest levels were found among those who were very progressive/left, $M = 5.14, 95\% \text{ CI } [5.04, 5.23]$. See [Supplementary Materials](#) for more details.

Efficacy of Perspectives

We conducted random intercept moderated 2-level models to test whether Perspectives improved affective polarization and intellectual humility, controlling for demographic covariates. Full model statistics are summarized in the [Supplementary Materials](#). As shown in Figure 2, participants demonstrated improvements in both affective polarization and intellectual humility from T1 to T2. Both models control for age, gender, race, and political views on a liberal to conservative spectrum. For models with affective polarization, we also included a quadratic term for political views, since previous analyses suggested a potential curvilinear relationship between political views and affective polarization (see Figure 1a).

Figure 2

Effectiveness of Perspectives Version 1.0 and Version 2.0



Note. Points represent estimated marginal means from multilevel models. Error bars represent 95% confidence intervals.

For affective polarization, learners showed a significant decrease after completing Perspectives, $d = -0.47, p < .001$, indicated by a significant main effect of time, $F(1, 13204) = 1529.87, p < .001$. There was also a significant time x version interaction, $F(1, 13204) = 23.45, p < .001$. Although the participants completing Perspectives 1.0 showed a significant reduction in affective polarization from T1 to T2, $d = -0.41, p < .001$, the improvements in Perspectives 2.0 learners were significantly stronger, $d = -0.53, p < .001$.

For general intellectual humility, learners showed a significant increase from T1 to T2 ($d = 0.26$), reflected in a significant main effect for time, $F(1, 12677) = 479.89, p < .001$. There was also time x version interaction, $F(1, 12677)$

= 3.85, $p = .050$. Participants completing Perspectives 1.0 showed a significant increase in general intellectual humility from T1 to T2, $d = 0.24$, $p < .001$, but the improvements in Perspectives 2.0 learners were slightly stronger, $d = 0.28$, $p < .001$.

Finally, there was no overall improvement in independence of intellect and ego across time, $d = 0.01$, Main effect of time: $F(1, 5483) = 1.01$, $p = .315$. However, there was a significant time x version interaction, $F(1, 5483) = 37.25$, $p < .001$. Those using Version 1.0 showed a small increase in independence of intellect and ego, $d = 0.06$, $p < .001$, whereas those using Version 2.0 showed a small decrease, $d = -0.09$, $p < .001$.

As a robustness check, we also examined maintenance of effects one month post-intervention (Time 3, or T3). These analyses used data from a non-random sample of 4.95% of participants who completed the T3 assessment. Given the potential limitations associated with attrition (e.g., selection bias) and more limited statistical power, we detail these results in the [Supplementary Materials](#). Overall, these results suggested changes after completing Perspectives remained stable from T2 to T3.

We also recruited a comparison group that completed the T1 and T2 assessments without completing the Perspectives program ($N = 156$). Comparison group participants were college students recruited from 7 four-year colleges and universities in the US and Canada (60.90% Women; 42.95% White; 13.46% Black/African American; 12.82% Hispanic/Latino; 16.03% Asian; Mean age = 22.10, $SD = 6.55$). Because this sample is small and consists solely of college students, we report these analyses in the [Supplementary Materials](#). In brief, the results showed that the changes observed among Perspectives learners were not seen in the comparison group.

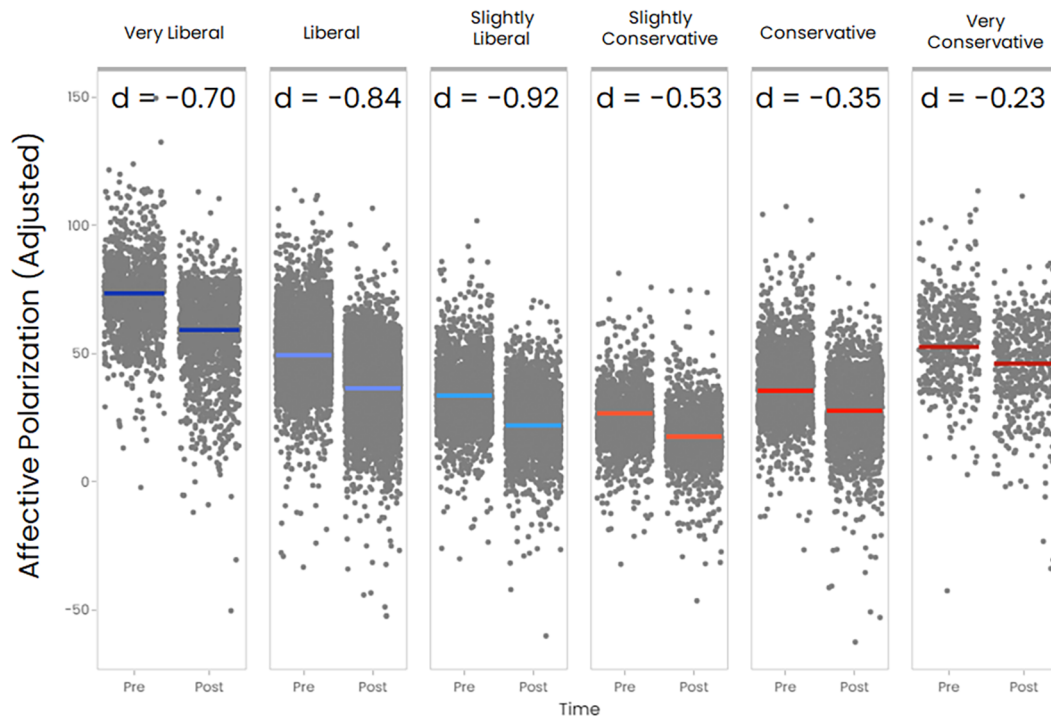
Moderation by Political Views

Did the effects of Perspectives vary depending on learners' political views? We examined this question with a two level model testing a time x political views interaction, along with demographic covariates. In these models, political views were analyzed as a continuous variable. Libertarians were not included within this coding scheme since they do not easily fall on the liberal to conservative spectrum (Iyer et al., 2012). Full model statistics are in the [Supplementary Materials](#).

For affective polarization, there was a significant three way interaction, $b = 1.30$, $t(13204) = 10.75$, $p < .001$. We decomposed this interaction by calculating simple slopes at different levels of political views and converted the effects to Cohen's d using the established formula $d = 2 \times t / \sqrt{df(error)}$. These effect sizes are presented in [Figure 3](#), upper panel. Although Perspectives was effective at reducing affective polarization across the political spectrum ($ps < .001$), the effects were stronger for liberal/progressives (ds from -0.70 to -0.92) compared to conservatives (ds from -0.23 to -0.53).

For general intellectual humility, the effectiveness of Perspectives did not significantly vary across groups, as indicated by non-significant time x political views interactions, $B = 0.00$, $t(12677) = 0.17$, $p = .866$. Perspectives was effective at all values of political views, $ts \geq 10.82$, $ps < .001$.

Political views significantly moderated changes in independence of intellect and ego, $B = -0.05$, $t(5483) = -4.97$, $p < .001$, although the variation was small (see [Figure 3](#)). Simple slopes analysis revealed that those with more liberal/progressive views slightly increased in independence of intellect and ego after completing Perspectives, ds from 0.07 to 0.13, $ps \leq .008$, whereas those with more conservative views slightly decreased, ds from -0.11 to -0.07, $ps \leq 0.015$.

Figure 3*Changes in Affective Polarization Across Political Views*

Note. Lines represent predicted values from multilevel simple slopes analysis. Points represent partial residuals from the multilevel models, not raw values.

Discussion

Using a large sample, Study 1 found that participants who completed Perspectives experienced increases in general intellectual humility and decreases in affective polarization. These effects were more pronounced for Version 2.0 of Perspectives compared to Version 1.0. The effects of Perspectives on affective polarization were stronger for liberals/progressives compared to conservatives. Despite the large sample size, this study had some limitations. First, the design was not experimental, making it difficult to rule out alternative explanations such as maturation (participants naturally improving) or history (specific events occurring between measurements, e.g., presidential elections) (Campbell, 1957). We also did not directly recruit participants, so selection bias could have contributed to the observed changes from T1 to T2. Additionally, our measure of intellectual humility relied on a small number of items chosen from larger measures and items changed over the course of data collection. There are also ways to measure affective polarization beyond thermometer ratings (Iyengar et al., 2012). Study 2 aimed to address these limitations.

Study 2

To improve upon the limitations of Study 1, Study 2 evaluated the effectiveness of Perspectives 2.0 using a randomized waitlist controlled design in a novel population of government finance officers.

Method

Participants

Participants were 341 members of the Government Finance Officers Association (GFOA). They were mostly middle-aged ($M = 50.46$ years, $SD = 9.80$), female (72.26% women, 28.16% men, 0.57% prefer not to say), and White/Caucasian (84.59%). The sample size for a given measure varied depending on missing data and the multilevel model used. However, power to detect independent sample mean differences at $\alpha = .05$ using a two-tail test for a medium effect ($d = 0.50$) was >99%, 78%, and 88% at T1, T2, and T3, respectively. Statistical power was reduced for small effect sizes ($d = 0.20$), with 45%, 20%, and 24% power at T1, T2, and T3.

Procedure

An email explaining the research study and sign-up form was sent to all members of GFOA by organizational leadership. After enrolling, participants were randomly assigned to treatment ($n = 177$) or waitlist control ($n = 164$). The groups did not differ on the dependent variables at T1 ($ps \geq 0.271$). The treatment group completed T1 assessment, then Perspectives modules over the course of eight weeks, followed by T2 assessment. They completed T3 assessment eight weeks after post. The waitlist control group completed assessments at the same times as the treatment group, but completed Perspectives lessons between T2 and T3. There was substantial attrition, with 153 (43 Waitlist Control, 110 Treatment) and 159 (82 Waitlist Control, 77 Treatment) providing data at T2 and T3, respectively, and 181 (53.08%) of the participants fully completed Perspectives lessons. Individuals received continuing education credits for completing Perspectives, and a \$20 Amazon gift card and entry into a raffle to win an iPad for completing the surveys.

Materials

Participant demographics were measured at T1, whereas affective polarization and intellectual humility were measured at all three timepoints. Conflict resolution skills were assessed at T1 and T2. Descriptive statistics for all measures are in Table S47 (see [Supplementary Materials](#)).

Demographics — Participants provided their gender, age, race/ethnicity, and political views. Study 2 used the same demographic measures as Study 1. Age was significantly negatively skewed (skewness = -0.35, Shapiro-Wilk $W = .99$, $p = .003$) and was transformed using a reflect and square root transformation for subsequent analysis (Tabachnick & Fidell, 2007).

Affective Polarization (Trait Rating) — Participants rated Democrat and Republican “voters, candidates, and elected officials” on nine positive (e.g., patriotic, intelligent) and negative (e.g., selfish, mean) traits using a 5-point Likert scale (1 = *not at all well*, 5 = *extremely well*) (Iyengar et al., 2012).² Polarization was calculated by taking the difference between the average positive and negative trait ratings for Democrats and Republicans, and then subtracting the outgroup party difference score from the ingroup party difference score. Thus, this measure was only available for liberals and conservatives. The measure had good reliability at all time points ($\alpha s = .83$ to $.91$).

Intellectual Humility — Participants completed the General Intellectual Humility Scale (Leary et al., 2017) which includes six items (e.g., “I recognize the value in opinions that are different from my own.”) The items showed good internal consistency across all waves ($\alpha s = .82$ to $.88$).

Conflict Resolution Skills — Conflict resolution skills were measured using the Negotiation Evaluation Survey (NES; Coleman & Lim, 2001). Participants listed 3 people with whom they experienced conflict, each from 3 categories: friends/family, coworker/supervisor, and coworker/supervisee. Then, they rated how frequently they engage in specific

2) We initially also included the thermometer measure of affective polarization used in Study 1 (Iyengar et al., 2012). However, a programming error resulted in data loss.

behaviors when in conflict with these individuals, across four subscales: Negative Attacking (e.g., “Speak in a disrespectful manner”), Negative Evading (“Remain silent or change the subject because I am uncomfortable with open conflict”), Positive Opening (e.g., “Ask respectful questions to learn about what is important to the other person”), and Positive Uniting (e.g., “Seek and build on areas of agreement between myself and the other”). Across all waves and targets, the internal consistency was generally acceptable for these subscales (mean α s = .75 to .93). Scores were averaged across the three targets for each subscale.

Data Analysis

Changes over time were compared between the treatment and waitlist control groups using moderated 2-level models. We tested a 2-way time \times group interaction using F -tests and, for significant interactions, compared the estimated marginal means. Linear mixed model results are presented in the [Supplementary Materials](#). Since assessments were planned to occur two months apart, we excluded outlying participants who completed the study with too little time (<25 days) or too much time (>100 days) between T1 and T2. Given that study participants were assigned one Perspectives lesson a week for 8 weeks, completing the assessments significantly early or with substantial delay would have resulted in contaminated data. For example, participants in the experimental condition who completed T2 assessments at 25 days would have only completed 3 of 8 Perspectives lessons by that time. Consequently, during their follow-up period, during which no intervention was assigned, they would have completed 5 of 8 Perspectives lessons. For analyses involving T1 to T2 changes, we excluded any participants with missing T1 or T2 data using listwise deletion.

Results

Preliminary Analysis

Similar to Study 1, affective polarization and general intellectual humility had a small, negative correlation at T1, $r = -.17$, $p = .033$. General intellectual humility was negatively correlated with negative attacking, $r = -.19$, $p = .007$, and evading behaviors, $r = -.15$, $p = .031$, but positively correlated with positive opening, $r = .34$, $p < .001$, and uniting behaviors, $r = .40$, $p < .001$. Importantly, missing data at T2 was not associated with affective polarization, but those with complete T2 data had slightly lower general intellectual humility ($d = -0.09$) than those with missing data. See Tables S45-47 ([Supplementary Materials](#)) for complete descriptive statistics and correlations, as well as attrition analysis.

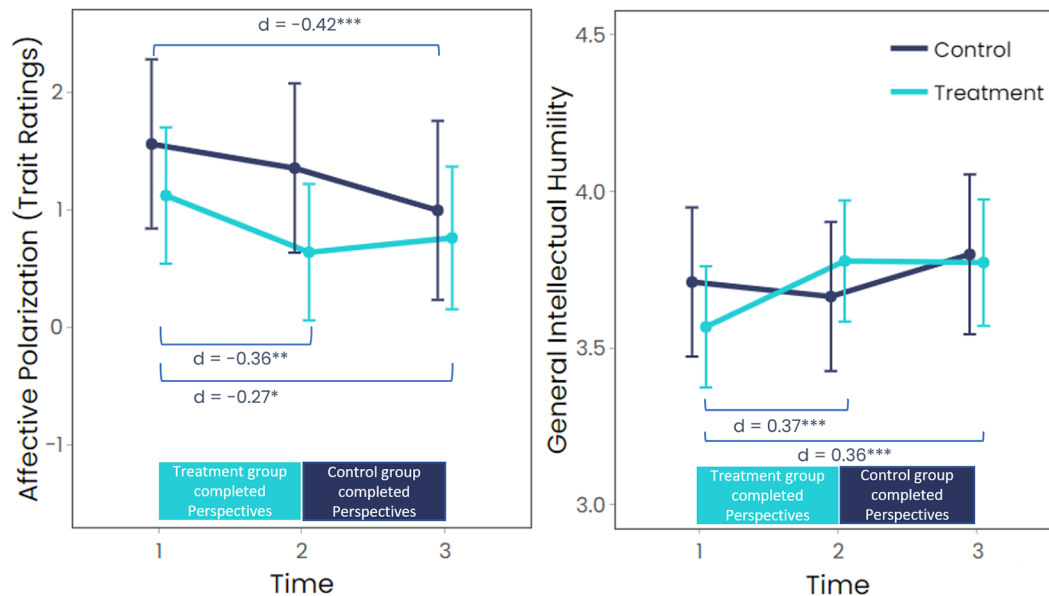
We examined differences in outcomes across political views at T1. Conservatives and liberals did not differ in affective polarization, $d = 0.18$, $p = .270$. However, general intellectual humility differed across liberals, moderates, and conservatives, $F(2, 238) = 7.61$, $p < .001$. Conservatives had significantly lower general intellectual humility compared to moderates, $d = -0.36$, $p = .034$, and liberals, $d = -0.62$, $p < .001$, but moderates and liberals did not differ significantly, $d = 0.26$, $p = .092$. There were no group differences on any conflict resolution subscales, $ps \geq .221$. Because these patterns showcased potential nonlinear relationships between political views and outcomes, we include a quadratic effect of political views as a covariate in the below analyses.

Efficacy of Perspectives

For affective polarization, multilevel models revealed that there was no interaction between time and group, $F(2, 137.25) = 1.29$, $p = .278$, $n = 84$ (see [Figure 4](#), left panel). However, the general pattern of results was consistent with expectations. Affective polarization significantly declined from T1 to T2 in the treatment group, $d = -0.36$, $p = .001$, and remained significantly lower at T3 compared to T1, $d = -0.27$, $p = .037$. The waitlist control group did not show the same magnitude of change from T2 to T3, $p = .360$, before and after they completed Perspectives. However, their T3 scores were significantly lower than their T1 scores, $d = -0.42$, $p = .030$, possibly reflecting some change due to the intervention.

Figure 4

Changes in Affective Polarization and General Intellectual Humility in the Treatment and Waitlist Control Groups



Note. Points represent estimated marginal means from multilevel models. Effect sizes are Cohen's *d*s. Error bars represent 95% confidence intervals. * $p < .05$. ** $p < .01$. *** $p < .001$.

For general intellectual humility (Figure 4, right panel), a significant time \times group interaction emerged, $F(2, 194.58) = 4.71$, $p = .010$, $n = 120$. From T1 to T2, the treatment group increased, $d = 0.37$, $p < .001$, remaining significantly higher at T3, compared to baseline, $d = 0.36$, $p < .001$. However, the waitlist control group showed no changes between any time points, $ps \geq .297$.

The treatment group and waitlist control group did not significantly differ across time for negative attacking, group \times time interaction: $F(1, 92) = 0.09$, $p = .770$, negative evasion, $F(1, 92) = 1.01$, $p = .319$, positive opening $F(1, 92) = 0.90$, $p = .346$, or positive uniting behaviors, $F(1, 92) = 0.00$, $p = .973$, across all three targets ($n = 94$ for these models). This did not provide evidence that Perspectives improved conflict resolution skills, but the sample size may be underpowered.

Moderation by Political Views

We examined whether political views moderated the effects of Perspectives by testing a 3-way interaction (group \times time \times political view). Political view was treated as a continuous variable ($-3 = \text{very liberal}$, $0 = \text{moderate}$, $3 = \text{very conservative}$). Political views did not moderate the time \times group interactions in models predicting affective polarization, general intellectual humility, negative attacking, negative evading, positive opening, or positive uniting, $ps \geq .065$.³ These findings contradict those of Study 1, where political groups moderated changes in affective polarization and intellectual humility. However, Study 1 had much higher statistical power to detect such effects.

3) Some readers might speculate about the pattern of findings in the interaction ($p = .065$) for negative attacking. When we decomposed this interaction, we found a trend for very liberal participants to show a decrease in the control group from T1 to T2 ($d = -0.35$, $p = .099$), but very conservative participants have a trend of increasing in the waitlist control group ($d = 0.36$, $p = .089$). All other interactions with political views were nonsignificant ($ps \geq .113$).

Discussion

Study 2 used a randomized waitlist controlled design to evaluate the efficacy of Perspectives 2.0 among local government employees. There was some evidence that Perspectives 2.0 led to reductions in affective polarization and increases in intellectual humility. There was no evidence that the program improved conflict resolution skills.

Study 2 had several limitations. First, statistical power was limited, and attrition was particularly pronounced for the waitlist control group, which may have introduced bias. In addition, missing demographic data did not allow us to confirm whether the models were robust after controlling for demographic factors. Although Study 2 did not find evidence that Perspectives reduced affective polarization, we used a different measure than Study 1. Additionally, the trait measure of affective polarization asked participants to rate “Democrats” and “Republicans” rather than “conservatives” and “liberals.” A small but non-negligible portion of liberals identify as Republicans and conservatives as Democrats (Newport, 2009), so this phrasing may have introduced measurement error. Participants were also asked to imagine political parties in terms of both their voters and the elites (e.g., candidates and elected officials), and previous work suggests that thinking of party elites may increase polarization compared to thinking of voters (Druckman & Levendusky, 2019). Study 3 aims to address these limitations by including both thermometer and trait measures of affective polarization.

Study 3

Study 3 improved on the limitations of Study 2 in several ways. Like Study 2, Study 3 also used a randomized waitlist controlled design, but with a larger sample. To address inconsistent findings related to affective polarization between Studies 1 and 2, affective polarization was measured with both thermometer and trait ratings in Study 3.

Method

Participants

Participants were 775 college students recruited from ten classes across three institutions. Average age was 21.27 years ($SD = 3.75$). The sample was predominantly White/Caucasian (46.01%) and mostly female (65.47% female, 30.40% male, 3.60% non-binary, and .54% other). Most students (88.48%) completed the entire Perspectives program. There was more attrition in survey completion, however, with 450 participants beginning the T2 survey (205 Treatment, 245 Control). Power calculations for a multi-site cluster randomized controlled trial often assume consistent cluster sizes and numbers of clusters across sites (e.g., Spybrook et al., 2011). The variability in number of clusters per institution and class sizes in this study made it difficult to pinpoint achieved power, but assuming an average cluster size of 78, 4 classes each at 3 sites provides 69% power for assessing medium effects ($d = .50$) with a two-tailed alpha of .05.

Procedure and Materials

Three professors distributed research recruitment emails to their students. Students were provided with course credits for completing Perspectives, but participation in research (i.e., completing the surveys) was optional. Fall 2021 students were compensated with a \$10 Amazon gift card for each completed survey, whereas spring 2022 students were compensated with a \$15 Amazon gift card per survey (incentive was increased to boost response rates). Within professors, classes were randomly assigned to treatment or waitlist control. The two groups did not significantly differ on dependent variables at pre, suggesting that randomization was successful, $|t|s \leq 1.49$, $ps \geq .137$. The treatment group completed T1 assessment and then Perspectives lessons over a four-week period, after which they completed T2 assessment. The control groups completed assessments within the same four-week period but completed Perspectives lessons after completing T2 assessment.

Demographics, Affective Polarization, Intellectual Humility — Participants completed the same demographic, affective polarization trait ratings, and intellectual humility measures used in Study 2, as well as the affective polarization

thermometer rating from Study 1. The affective polarization trait measure showed acceptable reliability for all T1 and T2 scales ($\alpha \geq .78$), as did general intellectual humility (both $\alpha \text{ s} = .86$).

Age was highly positively skewed, Skewness = 3.97, Shapiro-Wilk $W = .65$, $p < .001$, and was transformed using an inverse transformation (Tabachnick & Fidell, 2007). Similar to Study 1, gender was coded using two dummy variables representing men (men vs. otherwise) and women (women vs. otherwise).

Conflict Resolution Skills — Like Study 2, participants completed the negative attacking, negative evasion, positive opening, and positive uniting subscales of the NES (Coleman & Lim, 2001). To reduce participant burden and improve survey completion, however, we only asked participants to report on how they handle conflict with friends/family and removed the set of items about how they handle conflict with their coworker/supervisor and coworker/supervisee (see [Supplementary Materials](#)). Items were averaged within subscales for analysis.

Data Analysis

Participants were excluded from analyses if they missed an attention check item or they completed the Perspectives lessons in a previous course. Similar to Study 2, we excluded outliers of participants with <15 or >74 days between T1 and T2 assessments to prevent contamination of data. This resulted in a final sample of 311 participants (142 treatment, 169 control). We excluded participants from T1 vs. T2 comparisons that had missing data at either time point for each respective model. We note the sample sizes for each model below.

Results

Preliminary Analyses

Correlations between the outcomes were mostly small at T1. Affective polarization (thermometer) was positively correlated with negative attacking, $r = .19$, $p = .038$. General intellectual humility was negatively correlated with negative attacking, $r = -.13$, $p = .044$, but positively correlated with negative evasion, $r = .15$, $p = .022$, positive opening, $r = .34$, $p < .001$, and positive uniting, $r = .26$, $p < .001$. General intellectual humility and affective polarization measures (both thermometer and trait ratings) were not correlated, $ps \geq .559$. Descriptives, attrition analysis, and bivariate correlations are in Tables S69-70 (see [Supplementary Materials](#)).

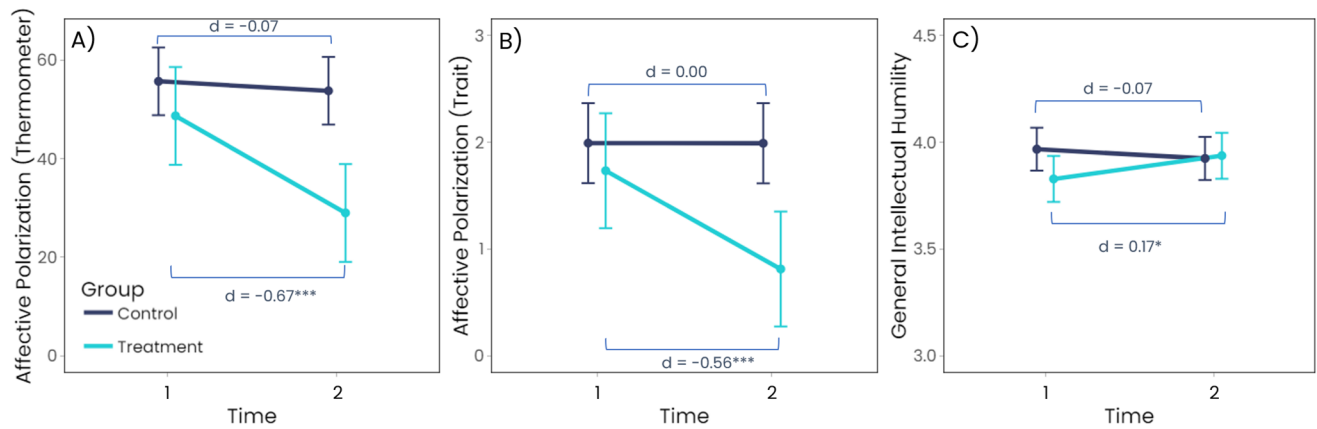
Liberals reported significantly higher affective polarization than conservatives using the thermometer measure, $d = 1.47$, $p < .001$. However, there were no significant differences between liberals and conservatives on the trait ratings, $d = 0.39$, $p = .131$, and no differences across political views for intellectual humility, negative attacking, negative evasion, positive opening, and positive uniting, $ps \geq .115$ (see Tables S48-49, [Supplementary Materials](#)).

Efficacy of Perspectives

Results suggested that Perspectives improved affective polarization. For the thermometer measure, there was a significant time x group interaction $F(1, 103) = -13.67$, $p < .001$, $n = 105$. Those in the treatment group significantly decreased in affective polarization, $d = -0.67$, $p < .001$, but those in the control group did not, $d = -0.07$, $p = .482$ (see [Figure 5A](#)). For the trait rating affective polarization measure, there was also a significant group x time interaction, $F(1, 108) = 11.22$, $p = .001$, $n = 110$. In the treatment group, affective polarization significantly decreased, $d = -0.56$, $p < .001$, but remained stable in the control group, $d = 0.00$, $p = .994$ (see [Figure 5B](#)).

Figure 5

Changes in Treatment and Control Groups for Affective Polarization and Intellectual Humility (Study 3)



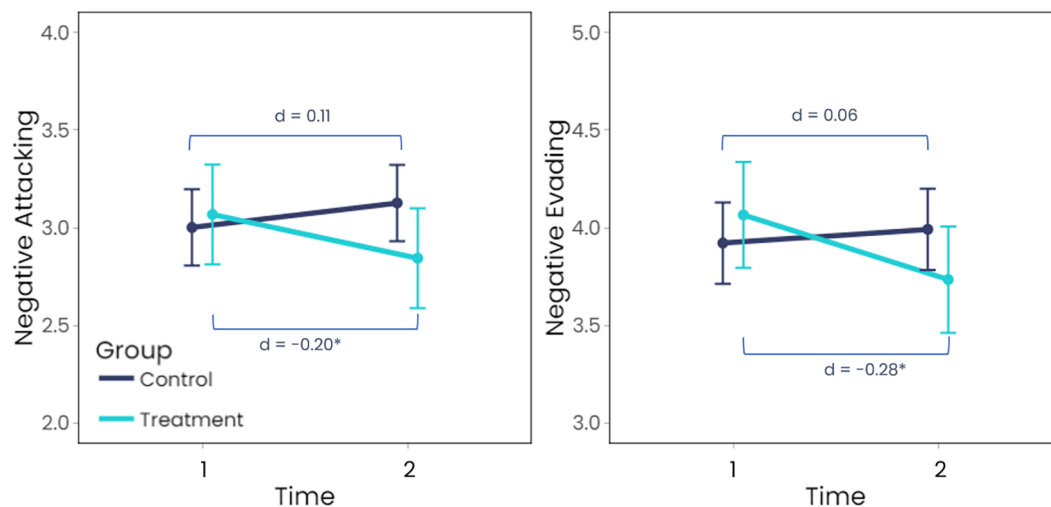
Note. Points represent estimated marginal means from multilevel models. Effect sizes are Cohen’s *ds*. Error bars represent 95% confidence intervals. **p* < .05. ***p* < .01. ****p* < .001.

For intellectual humility, there was a significant group x time interaction, $F(1, 275) = 5.35, p = .021, n = 277$. Intellectual humility significantly increased in the treatment group, $d = 0.17, p = .024$, but not in the control group, $d = -0.07, p = .336$ (see Figure 5C).

Both negative attacking and negative evasion were improved because of Perspectives (see Figure 6). There was a significant time x group interaction for negative attacking $F(1, 198) = 7.08, p = .008, n = 200$. Those in the treatment group decreased in negative attacking, $d = -0.20, p = .033$, whereas those in the control group did not, $d = 0.11, p = .118$. This pattern was similar for negative evasion (time x group interaction, $F(1, 198) = 5.41, p = .021, n = 200$. Those in the treatment group decreased, $d = -0.28, p = .017$, but the control group did not, $d = 0.06, p = .505$.

Figure 6

Changes in Treatment and Control Groups for Negative Conflict Resolution Tactics (Study 3)



Note. Points represent estimated marginal means from multilevel models. Effect sizes are Cohen’s *ds*. Error bars represent 95% confidence intervals. **p* < .05. ***p* < .01. ****p* < .001.

The pattern of data was as expected for positive opening and uniting, but the time \times group interactions were not significant, $F(1, 198) = 1.129$, $p = .289$, $n = 200$ and $F(1, 198) = .98$, $p = .323$, $n = 200$ respectively. However, both positive opening, $d = 0.25$, $p = .015$, and uniting, $d = 0.27$, $p = .017$, significantly improved in the treatment group, but not in the control group, $ps \geq .129$.

Moderation by Political Views

We examined whether political views moderated the effect of Perspectives by testing a 3-way group \times time \times political view interaction. Like in Study 2, political views was modeled as a continuous variable. None of these models contained a significant 3-way interaction, $ps \geq .115$. See Tables S87-S93 ([Supplementary Materials](#)) for more details.

Discussion

Study 3 replicated the effects of Perspectives on affective polarization and intellectual humility, while also providing some evidence that Perspectives may improve elements of conflict resolution. Although the sample was relatively large in terms of the number of students, sample size was more restricted at the level of the institution and classroom. Thus, we may not have had the power to detect some true effects. It will be important to test the efficacy of Perspectives using a larger scale multi-site cluster randomized controlled trial.

General Discussion

Taken together, this research suggests that Perspectives is a promising intervention for reducing affective polarization, fostering intellectual humility, and to some extent, improving conflict resolution tactics.

Prior intervention studies have primarily relied on one-time experimental manipulations to reduce affective polarization among research participants recruited from online registries (e.g., Mechanical Turk) and have focused on immediate changes in affective polarization, although there are several larger scale studies examining longer term effects from more representative samples (e.g., Broockman et al., 2023; Kalla & Broockman, 2022; Santoro & Broockman, 2022). This study adds to the emerging literature examining longer-term intervention effects. The findings from Studies 1 and 2 suggest that these changes in attitudes may be sustained at least one to two months post-intervention, although further research is needed to address limitations of attrition and statistical power. These findings are notable given that affective polarization is associated with deleterious social and political consequences, including dehumanization of out-partisans (Martherus et al., 2021) and polarized responses to COVID-19 (Druckman et al., 2021).

Perspectives led to an increase in intellectual humility, as measured by the General Intellectual Humility Scale (Leary et al., 2017). Intellectual humility may have significant intrapersonal and interpersonal benefits, including better judgment of arguments, more accurate memory recall, and improved relationships (Leary et al., 2017; Meagher et al., 2015). Intellectual humility is also linked to openness to diverse perspectives and willingness to work constructively across differences (Porter & Schumann, 2018). It remains to be seen whether Perspectives, by cultivating intellectual humility, can help to curb the tendency to be more receptive to evidence that confirms our existing beliefs. Of note, we did not find the expected differences when intellectual humility was measured with items from the Comprehensive Intellectual Humility Scale (CIHS) in Study 1 (Krumrei-Mancuso & Rouse, 2016). There are many caveats to this finding, including that only a select number of items from the CIHS were administered in Study 1. Nevertheless, these findings are consistent with literature suggesting that the existing measures of intellectual humility may tap into distinct dimensions (Porter et al., 2022). The findings may suggest that Perspectives may shift self-focused cognitions about one's intellectual limitations, but not how intellectual humility is expressed externally to others (Porter et al., 2022). Given the nascent literature of intellectual humility, future research using multiple measures will be helpful in delineating the nomological network of this construct.

We found that Perspectives led to reductions in negative conflict tactics (negative evading and attacking) in Study 3 but not Study 2. This is possibly due to greater statistical power in Study 3. However, we did not find conclusive evidence that Perspectives led to improvements in the use of positive conflict tactics such as positive evading and

positive uniting in either study. In Study 3, there was some evidence that the use of positive behaviors during conflict improved from T1 to T2 in the treatment group, although the group \times time interaction was not significant. These findings may indicate that these components of Perspectives need to be strengthened.

Finally, this is one of the few studies to simultaneously examine the impact of an intervention on the outcomes of affective polarization, intellectual humility, and conflict resolution skills. This study contributes to the emerging work demonstrating that these three constructs are related and contributes to the functioning of a thriving pluralistic democracy. Recent work by Lubis and Sianipar (2022) found that intellectual humility was a critical factor for improving religious tolerance among aggressive people. Similarly, Bowes and colleagues (Bowes et al., 2020) found that intellectual humility is inversely related to affective polarization and can buffer people against the negative consequences of affective polarization. Additionally, affective polarization has been linked to more aggressive and dehumanizing online interactions (Harel et al., 2020). Theoretically, conflict resolution skills often involve perspective taking and building areas of agreement, which may temper affective polarization. Nevertheless, more work is needed to understand how these constructs are related.

Future Directions and Limitations

Some limitations of the current research should be noted. First, attrition was generally high at T2 assessment. Although baseline demographics and outcomes were generally not associated with attrition, there were limited exceptions (see [Supplementary Materials](#)). It is difficult to assess how attrition may have impacted the findings, as, to our knowledge, existing techniques for statistically assessing attrition bias (e.g., Gerber & Green, 2012) have not been applied to a multilevel modeling framework, used in this paper. In addition, our assessment of outcomes relied primarily on participant self-report of their attitudes and experiences rather than observed behaviors. Future studies examining conflict resolution skills would be strengthened by informant reports or behavioral observations.

In addition, we used multiple measures of affective polarization. Although the pattern of results was consistent across studies and measures, the thermometer and trait ratings were only modestly correlated. This lack of convergent validity among different measures of affective polarization have been noted by others (Druckman & Levendusky, 2019). Future research examining interventions to reduce affective polarization would benefit from the inclusion of multiple measures with a latent variable to assess affective polarization or greater attention to how these measurements of affective polarization may be distinct.

The content of Perspectives was based on psychological research that has been conducted in international contexts, such as Moral Foundations Theory (e.g., Doğruyol et al., 2019) and affective polarization (e.g., Ryan, 2023). Study 1 provided some preliminary data to suggest that Perspectives could be effective in non-US contexts. Nonetheless, much more research is needed to validate the effectiveness of this program in non-US settings.

Finally, the current research yields evidence that the Perspectives program is effective, but more work is needed to understand the mechanisms underlying the effects. For one, it is unclear which interventions in the multi-module program are producing the effects on affective polarization, intellectual humility, and conflict resolution skills. This knowledge would also be useful in designing a briefer intervention. More work is also needed, at both the theoretical and empirical levels, to understand how the outcomes measured in this study are interrelated. It is possible, for example, that interventions designed to increase intellectual humility also indirectly reduce affective polarization.

Conclusion

Affective polarization has been consistently on the rise in the US for a number of decades, and scholars have worried that this trend may make it difficult for individuals to arrive at mutually beneficial policy compromises and could ultimately undermine foundational democratic norms (Druckman & Levy, 2022). The current study suggests that affective polarization can be reduced with an educational intervention and that these changes may be maintained in the short term. However, more work is needed to link the individual-level outcomes documented in this study to societal and cultural changes, such as greater policy collaboration and adherence to democratic principles.

Funding: This research was supported by a John Templeton Foundation Grant awarded to Jonathan Haidt.

Acknowledgments: We thank Caroline Mehl, Matt Motyl, Takuya Sawaoka, and Fabio Votta for help with study design and Bryan Lovelace, Dylan Selterman, Jimmy Urbanovich, and Shane Kavanagh for help with data collection.

Competing Interests: Keith Welker and Mylien Duong are current employees of the Constructive Dialogue Institute (CDI), which has created Perspectives. Andrew Rakhshani is a former employee of CDI. Macrina Dieffenbach is a former employee of CDI and currently is a member of the CDI research advisory council. Peter Coleman is a member of the CDI research advisory council. Jonathan Haidt is the co-founder and chairman of CDI.

Data Availability: For this article, three data sets are freely available (Welker, Duong, Rakhshani, Dieffenbach, Coleman, & Haidt, 2023a).

Supplementary Materials

The Supplementary Materials contain the following items (for access see [Index of Supplementary Materials](#) below):

- Data for Studies 1, 2, and 3
- R Code for Studies 1, 2, and 3
- An overview of the content of Perspectives
- Additional methods and results from Studies 1, 2, and 3

Index of Supplementary Materials

- Welker, K. M., Duong, M., Rakhshani, A., Dieffenbach, M., Coleman, P., & Haidt, J. (2023a). *Supplementary materials to "The online educational program 'Perspectives' improves affective polarization, intellectual humility, and conflict management"* [Research data]. PsychOpen GOLD. <https://doi.org/10.23668/psycharchives.13035>
- Welker, K. M., Duong, M., Rakhshani, A., Dieffenbach, M., Coleman, P., & Haidt, J. (2023b). *Supplementary materials to "The online educational program 'Perspectives' improves affective polarization, intellectual humility, and conflict management"* [Code]. PsychOpen GOLD. <https://doi.org/10.23668/psycharchives.13034>
- Welker, K. M., Duong, M., Rakhshani, A., Dieffenbach, M., Coleman, P., & Haidt, J. (2023c). *Supplementary materials to "The online educational program 'Perspectives' improves affective polarization, intellectual humility, and conflict management"* [Additional information]. PsychOpen GOLD. <https://doi.org/10.23668/psycharchives.13036>

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