Intellectual Humility is Reliably Associated with Constructive Responses to Conflict

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Abstract

Conflict is a ubiquitous, but potentially destructive, feature of social life. In the current research, we argue that intellectual humility—the awareness of one's intellectual fallibility—plays an important role in promoting constructive responses to conflict. In Studies 1a and 1b, we focus on ideological intergroup conflict and provide a large-scale replication of intellectual humility as a mitigator of affective polarization. In Studies 2a and 2b, we examine the role of intellectual humility in interpersonal conflicts with friends, family members, and work colleagues. Across all studies (N = 23,869), we find that intellectual humility predicts constructive conflict responses.

Ideological Conflict; Affective Polarization; Intellectual Humility; Conflict Resolution

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"In the course of my life, I have often had to eat my words, and I must confess that I have always found it a wholesome diet." – Winston Churchill

Whether it's because of a misunderstanding, a betrayal, an insult, or even an ideological disagreement, we all frequently face conflict situations that have the capacity to fracture our personal and professional relationships. How we choose to engage with the other person during these conflicts determines whether they escalate into destructive events or de-escalate and potentially become opportunities for learning and relationship growth. In the current research, we examine how one individual difference factor, *intellectual humility*, predicts constructive responses to both interpersonal and ideological intergroup conflict.

The Outcomes of Destructive Conflict

Conflicts can be rooted in either interpersonal (i.e., between individuals) or intergroup (i.e., between groups) disagreements, but both types of conflict can be costly when managed ineffectively. At the interpersonal level, conflict with our close relationship partners can be physically and psychologically stressful. For example, persistent marital conflict increases chronic health issues (e.g., high blood pressure) and reduces immune functioning (Kiecolt-Glaser & Newton, 2001). Conflict and hostility can also lead to divorce and separation (Gottman & Levenson, 1999). When married couples have children, their negative conflict patterns or the dissolution of their relationship can disrupt their children's academic, psychological, physical, and social wellbeing (Amato, 2001; Katz & Gottman, 1993; Troxel & Matthews, 2004). Beyond romantic relationships, conflict is also one of the strongest predictors of friendship dissolution (Vieth et al., 2021).

Interpersonal workplace conflict can also have deleterious consequences. Conflict with coworkers is associated with lower workplace satisfaction and organizational commitment, as well as higher intention to turnover (Morrison, 2008), costing organizations millions of dollars annually (e.g., Waldman et al., 2010). Workplace conflict can also spiral into more extreme incivility (Andersson & Pearson, 1999) and acts of revenge (Wall & Callister, 1995). In the most extreme cases, workplace conflict can even escalate into outright aggression (Baron & Neuman, 1996). A recent poll found that even in remote work environments, 80% of respondents had experienced workplace conflict, including 67% who reported being aggressively cursed at (Pieniazek, 2021).

Intergroup conflicts can similarly escalate quickly and intensely, especially when people's moral or ideological values are involved (Mayer, 2010). People often tie their morality to their personal identity (De Freitas et al., 2018), and therefore tend to be hostile towards people or groups who violate their sense of morality (Skitka et al., 2015). A common result of this type of intergroup conflict is affective polarization—negative emotions toward and evaluations of the political outgroup—which has been rising over past decades (West & Iyengar, 2020). Levels of affective polarization are so high in the U.S. that political partisans now have more negative emotions towards the political outgroup than they have positive emotions towards their political ingroup (Finkel et al., 2021).

Affective polarization has negative consequences for cross-group relationships and the country at large. For example, people get upset when they learn that a friend holds ideological views counter to their own (Buliga & MacInnis, 2020). Anecdotal evidence suggests that similar tensions have been occurring increasingly in familial relationships (Tavernise & Seelye, 2016), at times resulting in relational fractures. Americans are also increasingly preferring to date and

marry those who share their political views (Huber & Malhotra, 2017). At the national level, affective polarization contributes to the erosion of democratic norms (Levitsky & Ziblatt, 2018), slows government functioning (Zaveri et al., 2019), motivates people to believe false information (Van Bavel & Pereira, 2018), and promotes political violence (Allam, 2020).

In sum, across all relationship contexts and both interpersonal and intergroup disagreements, conflict can have powerful destructive outcomes. It is therefore paramount to understand factors that support constructive responses aimed at defusing these conflicts and promoting more harmonious social functioning.

The Benefits of Constructive Conflict

Despite the challenges and costs associated with conflict, these encounters need not be destructive (Deutsch, 1973). When people engage in collaboration, problem-solving, and open-minded, non-hostile communication, conflict can be less damaging and can even have productive outcomes (De Drue, 1997; de Dreu et al., 2015; Weiss & Hughes, 2005). For example, actively collaborating to resolve relationship conflict is associated with positive feelings between relationship partners as well as short- and long-term benefits to the relationship (Overall et al., 2010). In the workplace, minority dissent in teams can lead to more innovation (De Dreu & West, 2001), especially when that disagreement is paired with openness and a safe climate (Bradley et al., 2011). Even conflicts rooted in ideological differences can be productive if people share the personal experiences that contributed to their ideological perspectives (Kubin et al., 2021) or display openness to each other's views (Hackett et al., 2018). This raises the question: how can we minimize the costs of destructive conflict and encourage more constructive cognitions and behaviors? We propose that intellectual humility is one solution.

Intellectual Humility in Conflict

Intellectual humility (IH) has been growing as an area of research over the last decade (Porter et al., 2022). While researchers vary in how they define IH, most agree that a central feature is an awareness of one's intellectual fallibility (Leary et al., 2017; Porter et al., 2021; 2022). Researchers consider IH to be a trait (Porter et al., 2022), though it can also vary across situations (Zachry et al., 2018).

Research provides emerging support for the possibility that IH plays an important role in driving constructive conflict management. During interpersonal conflict, people tend to adopt a narrow perspective that focuses on their own experience rather than the other person's experience (Baumeister et al., 1990; Schumann, 2014). This limited perspective often leads to misattributions, blaming, and conflict escalation (Baumeister et al., 1990). Because people with high IH acknowledge that their viewpoint is limited and potentially flawed, they tend to be motivated to seek out other perspectives and to favor a more nuanced view of the conflict at hand (Bowes et al., 2022; Grossmann et al., 2021; Krumrei-Mancuso et al., 2020). In support of this argument, people with higher IH are dispositionally more openminded (Meagher et al., 2021), are more likely to empathize with others during a disagreement (Krumrei-Mancuso, 2017), and are more likely to offer comprehensive apologies when they have harmed someone, at least in part because they feel more empathy for the victim (Ludwig et al., 2022).

Existing research also demonstrates that IH is associated with constructive responses during ideological intergroup conflicts. People higher in IH see their ideological beliefs as potentially fallible and are therefore motivated to seek out new and counter-attitudinal information (Porter & Schumann, 2018). This may be why people higher in IH are less affectively polarized and are more likely to vote for a candidate from the other party (Bowes et

al., 2020). Critically, this is not because people high in IH are less committed to their ideology, but rather because they are more likely to listen and be convinced by strong political arguments, regardless of their initial beliefs (Krumrei-Mancuso & Newman, 2020). People higher in IH are also more likely to respect and be open to others' views because they see other views as potentially correct (Hopkin et al., 2014; Leary et al., 2017). Similarly, people higher in IH display greater willingness to engage in political discussions (Krumrei-Mancuso & Newman, 2021) and befriend members of the political outgroup (Stanley et al., 2020). The current literature therefore suggests that IH also plays an important role in promoting constructive responses to ideological intergroup conflict, despite how challenging these types of conflicts can be to resolve.

The Current Research

The potential for IH to promote more constructive responses to conflict is an exciting advance that may point to a fulcrum for future intervention. In the current research, we replicate and extend previous findings on IH in the domain of ideological intergroup and interpersonal conflict to provide more robust evidence for this possibility. To do this, we examine data from Perspectives, a program developed by the Constructive Dialogue Institute—a nonprofit organization that offers online training programs to reduce ideological intolerance. All samples are pre-surveys completed prior to the Perspectives program.[1]

[1] Studies 1a, 2a, and 2b use pre-survey data derived from a larger set of studies, portions of which are reported by Welker and colleagues (in revision). The analyses reported here were not presented in Welker et al. (in revision), which examines whether Perspectives causes improvements in IH, affective polarization, and conflict resolution. Study 1b reports analyses from a dataset that has not been used in another manuscript.

Our first two studies (Studies 1a and 1b) focus specifically on conflict rooted in ideological groups. We provide a large-scale replication of IH as a predictor of decreases in affective polarization. All previous studies on the association between IH and affective polarization rely on samples from Mechanical Turk—a site shown to have problems with data quality and generalizability (Chmielewski & Kucker, 2019). This raises the critical question of whether these effects will replicate to the general population.

Our second two studies (Studies 2a and 2b) expand on existing work by testing the role of IH in interpersonal conflicts with friends and family members (Studies 2a and 2b) and work colleagues (Study 2b). In these studies, participants thought of specific people with whom they have conflict and reported on their behaviors and emotions in the context of these disagreements.

Across all four studies (N = 23,869), we find consistent support for IH as a predictor of constructive conflict responses. Because these are secondary data analyses, there were several measures assessed in each study that were unrelated to the current research question or measured in only part of the study sample. For concision, we report only the main variables of interest below. Full materials and data for all studies are available at https://osf.io/sjh97/?view_only=1ec9acad7dd043fe8a5a7f0324aad5ab. Code is available by contacting the corresponding author. We assessed affective polarization in all four studies. Because this measure requires identification with an "ingroup" and "outgroup," for analyses using this measure we removed those who identified as moderate, libertarian, or did not identify with a political group. In the main paper, we report demographics for the full study samples; please see SM for demographics of the subsamples used for analysis with affective polarization.

Study 1a

The goal of Study 1a was to provide a large-scale replication of the association between IH and attitudes towards political outgroup members. We tested the generalizability of these associations using three combined samples of Perspectives pre-surveys. These samples all included shortened versions of two IH scales, affective polarization, and reactions to an imagined interaction with someone who disagreed with participants on an ideological issue. See SM for results across individual samples.

Method

Participants

The total sample across the three surveys included 17,371 participants. We first removed participants under the age of 18, who were not permitted to complete the whole survey (n = 2,500) and those who did not report their age (n = 4). Because we aimed to test whether IH predicted more constructive responses to ideological conflict in the United States, we then removed those who completed the survey from outside the United States (n = 2,374) and those who failed to report their country (n = 7).[2] This left a final sample of 12,486 (Sample 1 = 1,011, Sample 2 = 1,481, Sample 3 = 9,994; M_{age} = 24.54, SD_{age} = 10.36; Female = 7,414, Male = 4,809, Non-binary = 50, "Other" = 87, "Prefer not to say" = 102, failed to report = 24; African American/Black = 943, American Indian or Alaska Native = 43, East or Southeast Asian = 661, Hispanic/Latino = 1,153, Middle Eastern/North African = 142, South Asian = 347, White/Caucasian = 7,441, indicated more than one racial identity = 1,329, "Other" = 176, "Prefer not to say" = 232, failed to report = 19). The sample when including only liberals and conservatives was 7,652. A sensitivity analysis in G*Power (Faul et al., 2007) revealed that the

[2] For Studies 1a and 1b, we re-ran all models using only the sample from outside of the United States to test if the effects replicate to these other contexts. The associations with IH were all similar in this subsample.

study was powered to detect small correlations ($\rho_{full\ sample}$ = .03, $\rho_{affective\ polarization\ sample}$ = .04, 95% power, α = .05).

Materials and Procedure

Intellectual Humility. Participants completed shortened versions of two validated IH scales. Participants completed two items from the General Intellectual Humility Scale (GIHS)—a unidimensional measure of the tendency to see one's knowledge as fallible (Leary et al., 2017)—on a scale from 1 (*Strongly agree*) to 7 (*Strongly disagree*); ("I question my own opinions, positions, and viewpoints because they could be wrong"; "I accept that my beliefs may be wrong"); r = .43, p < .001. Participants also completed two items from the Independence of Intellect and Ego subscale of the Comprehensive Intellectual Humility Scale (CIHS)—a multi-dimensional measure of IH (Krumrei-Mancuso & Rouse, 2016)—on a scale from 1 (*Strongly agree*) to 7 (*Strongly disagree*); ("When others disagree with my ideas, I feel like I'm being attacked"; "When others have different beliefs than me, I feel like I'm being personally attacked")*;* r = .62, p < .001. IH was coded so that higher values indicate higher IH.

Affective Polarization. Participants completed the most common measure of affective polarization. They indicated their emotions towards progressives and conservatives each on a scale from 0 (*Very cold or unfavorable*) to 100 (*Very warm or favorable*; Lelkes & Westwood, 2017). We computed affective polarization by subtracting emotions towards the outgroup from emotions towards the ingroup. Because this measure requires identification with an "ingroup" and "outgroup," for analyses using this measure in all studies we removed those who identified as moderate, libertarian, or did not identify with a political group.

Imagined Outgroup Interactions. Participants also completed two measures about outgroup interactions. Participants first picked two political issues they cared about from a list of four options (e.g., whether colleges should rename buildings on their campuses that were named after slave owners; whether the government should ban assault rifles and semi-automatic weapons).

Participants then completed questions about an imagined person (named Erin/Eric) who disagreed with them on one of these issues. They first completed four items assessing avoidance and anxiety ("I would feel awkward discussing this issue with Erin/Eric"; "I would feel nervous discussing this issue with Erin/Eric"; "I would rather not discuss this issue with Erin/Eric"; " I would want to avoid discussing this issue with Erin/Eric"; adapted from Plant & Devine, 2003) on a scale from 1 (*Strongly agree*) to 7 (*Strongly disagree*); $\alpha = .85$. This was recoded so that higher values indicate higher avoidance and anxiety.

Participants then completed two items assessing social distance ("I would feel comfortable with having Erin/Eric as a close friend"; "I would feel comfortable with having Erin/Eric as a roommate/coworker"; Plant & Devine, 2003) on a scale from 1 (*Strongly agree*) to 7 (*Strongly disagree*; $r = .76$, $p < .001$).

Results

To account for data clustering, we ran multi-level models using lme4 (Bates et al., 2015) and lmerTest (Kuznetsova et al., 2017) using a random intercept for classroom, instructor, or organization. We then regressed each outcome variable on each IH scale separately. Both IH scales significantly predicted lower affective polarization, less avoidance and anxiety, and less social distancing (see Table 1 and Figure 1). These associations accounted for between .1% and

9.8% of the total variance of the outcomes, with larger associations being found with the CIHS. These results thus provide a replication and, to our knowledge, the largest test of the association between IH and affective polarization. They also demonstrate that IH is associated with more constructive responses toward an imagined person holding opposing views on political topics of personal importance. Although self-reports and hypothetical scenarios are both limited by their reflected rather than behavioral nature, prior work on IH shows similar patterns of associations with both self-reported vignette and behavioral paradigms (e.g., Koetke et al., 2021; Porter & Schumann, 2017).

Table 1
Regression models using intellectual humility as a predictor, *Study 1a*

	Affective Polarization									
	β	*b*	*CI*	*SE*	*p*	*β*	*b*	*CI*	*SE*	*p*
(Intercept)	0.001	53.55	49.94, 57.16	1.84	<.001	0.01	57.53	54.41, 60.65	1.59	<.001
GIHS	-0.06	-1.74	-2.37, -1.11	0.32	<.001					
CIHS						-0.11	-2.52	-3.07, -1.98	0.28	<.001
Observations	7,342					7,342				
Marginal R^2	.004					.011				
	Avoidance and Anxiety									
	β	*b*	*CI*	*SE*	*p*	*β*	*b*	*CI*	*SE*	*p*
(Intercept)	-0.04	3.45	3.32, 3.58	0.07	<.001	-0.02	5.06	4.95, 5.17	0.05	<.001
GIHS	-0.03	-0.04	-0.06, -0.02	0.01	<.001					
CIHS						-0.31	-0.34	-0.36, -0.32	0.01	<.001
Observations	12,211					12,211				
Marginal R^2	.001					.098				
	Social Distance									
	β	*b*	*CI*	*SE*	*p*	*β*	*b*	*CI*	*SE*	*p*
(Intercept)	0.02	4.24	4.10, 4.38	0.07	<.001	0.03	4.27	4.15, 4.39	0.06	<.001
GIHS	-0.13	-0.18	-0.21, -0.16	0.01	<.001					
CIHS						-0.16	-0.19	-0.21, -0.17	0.01	<.001
Observations	11,954					11,954				
Marginal R^2	.017					.026				

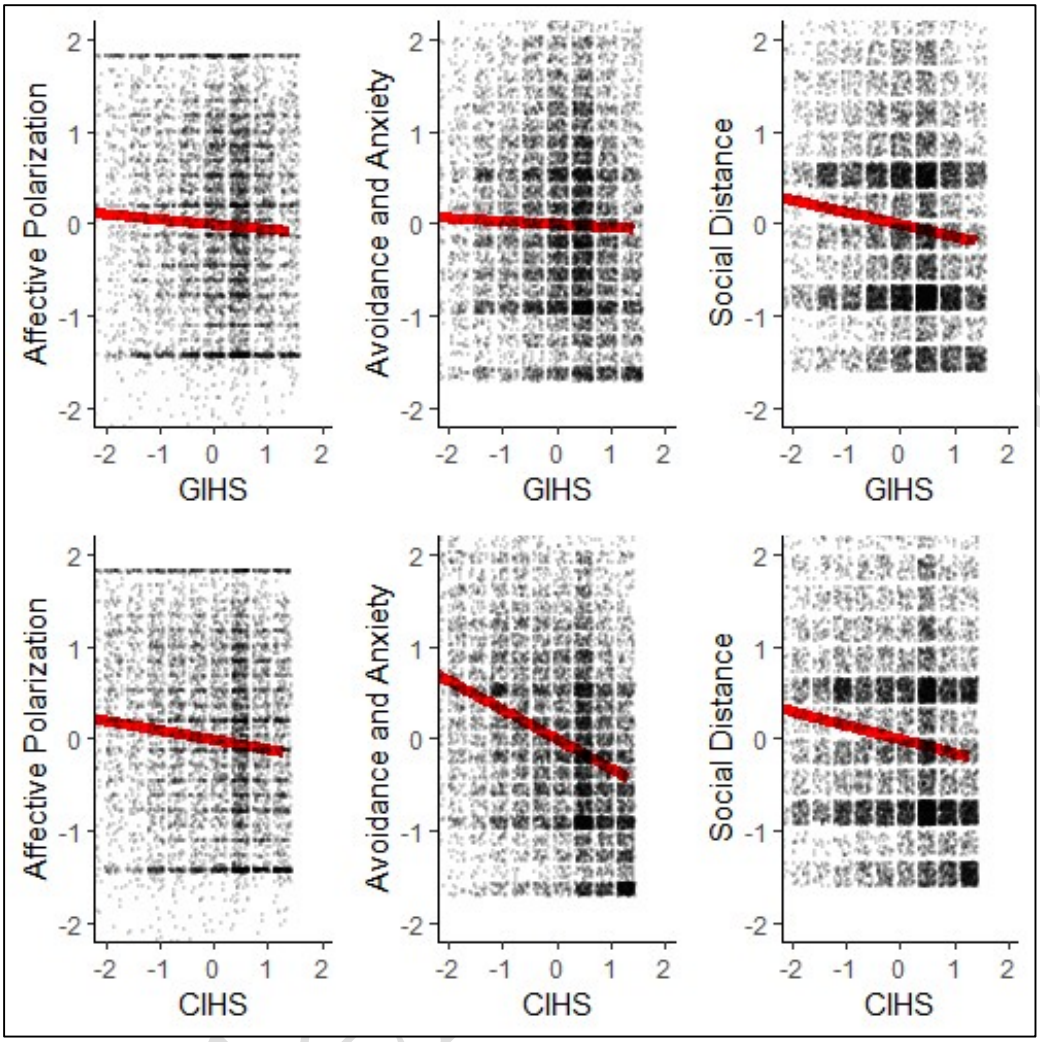

Figure 1: Associations between standardized GIHS (top), standardized CIHS (bottom), and standardized outcomes, *Study 1a*

Study 1b

Study 1a assessed the association between IH and affective polarization, but it was limited by its exploratory analysis strategy. Therefore, the goal of Study 1b was to replicate Study 1a using a preregistered analysis plan. To do this, we analyzed a second large Perspectives sample. This second sample had identical measures of IH, affective polarization, and imagined outgroup interaction to Study 1a. The analyses for Study 1b were preregistered at https://osf.io/sjh97/?view_only=1ec9acad7dd043fe8a5a7f0324aad5ab.

Method

Participants

The total sample was 15,521 participants. As preregistered, we removed participants under the age of 18, who were not permitted to complete the whole survey (n = 2,714). We then removed those who completed the survey from outside the United States (n = 1,252) and those who failed to report their country (n = 1,081). This left a final sample of 10,474 (M_{age} = 23.16, SD_{age} = 7.87; Female = 5,907, Male = 4,259, Non-binary = 169, "Other" = 27, "Prefer not to say" = 97, failed to report = 15; African American/Black = 767, American Indian or Alaska Native = 42, East or Southeast Asian = 618, Hispanic/Latino = 1,194, Middle Eastern/North African = 100, South Asian = 282, White/Caucasian = 5,781, indicated more than one racial identity = 1,216, "Other" = 138, "Prefer not to say" = 332, failed to report = 4). The sample when including only liberals and conservatives was 6,198. A sensitivity analysis revealed that the study was powered to detect small correlations ($\rho_{full\ sample}$ = .04, $\rho_{affective\ polarization\ sample}$ = .05, 95% power, α = .05).

Materials and Procedure

Participants completed the same measures as in Study 1a, including shortened versions of the GIHS ($r = .42$, $p < .001$) and the CIHS ($r = .62$, $p < .001$), affective polarization, avoidance and anxiety ($\alpha = .85$), and social distance ($r = .76$, $p < .001$).

Results

We ran multi-level models including random intercepts for the groups that participants completed the survey in. We then regressed each outcome variable separately on each IH scale. Both IH scales significantly predicted less social distancing (see Table 2 and Figure 2). In this sample, however, only CIHS predicted lower affective polarization as well as avoidance and anxiety. The significant associations accounted for between .9% and 9.8% of the total variance of the outcomes. The results from this large, preregistered study thus provide a close replication of Study 1a.

Table 2
Regression models using intellectual humility as a predictor, *Study 1b*

	Affective Polarization									
	β	*b*	*CI*	*SE*	*p*	*β*	*b*	*CI*	*SE*	*p*
(Intercept)	0.03	45.16	41.07, 49.25	2.09	<.001	0.03	54.98	51.38, 58.57	1.83	<.001
GIHS	-0.02	-0.58	-1.28, 0.13	0.36	.108					
CIHS						-0.10	-2.42	-3.04, -1.80	0.32	<.001
Observations	6,196					6,196				
Marginal R^2	.000					.009				
	Avoidance and Anxiety									
	β	*b*	*CI*	*SE*	*p*	*β*	*b*	*CI*	*SE*	*p*
(Intercept)	-0.02	3.32	3.18, 3.46	0.07	<.001	-0.02	5.11	5.00, 5.23	0.06	<.001
GIHS	-0.01	-0.01	-0.03, 0.02	0.01	.482					
CIHS						-0.31	-0.34	-0.36, -0.32	0.01	<.001
Observations	10,472					10,472				
Marginal R^2	.000					.098				
	Social Distance									
	β	*b*	*CI*	*SE*	*p*	*β*	*b*	*CI*	*SE*	*p*
(Intercept)	0.01	4.21	4.06, 4.36	0.08	<.001	0.003	4.11	3.98, 4.24	0.07	<.001
GIHS	-0.13	-0.18	-0.20, -0.15	0.01	<.001					
CIHS						-0.14	-0.16	-0.18, -0.14	0.01	<.001
Observations	10,472					10,472				
Marginal R^2	.017					.019				

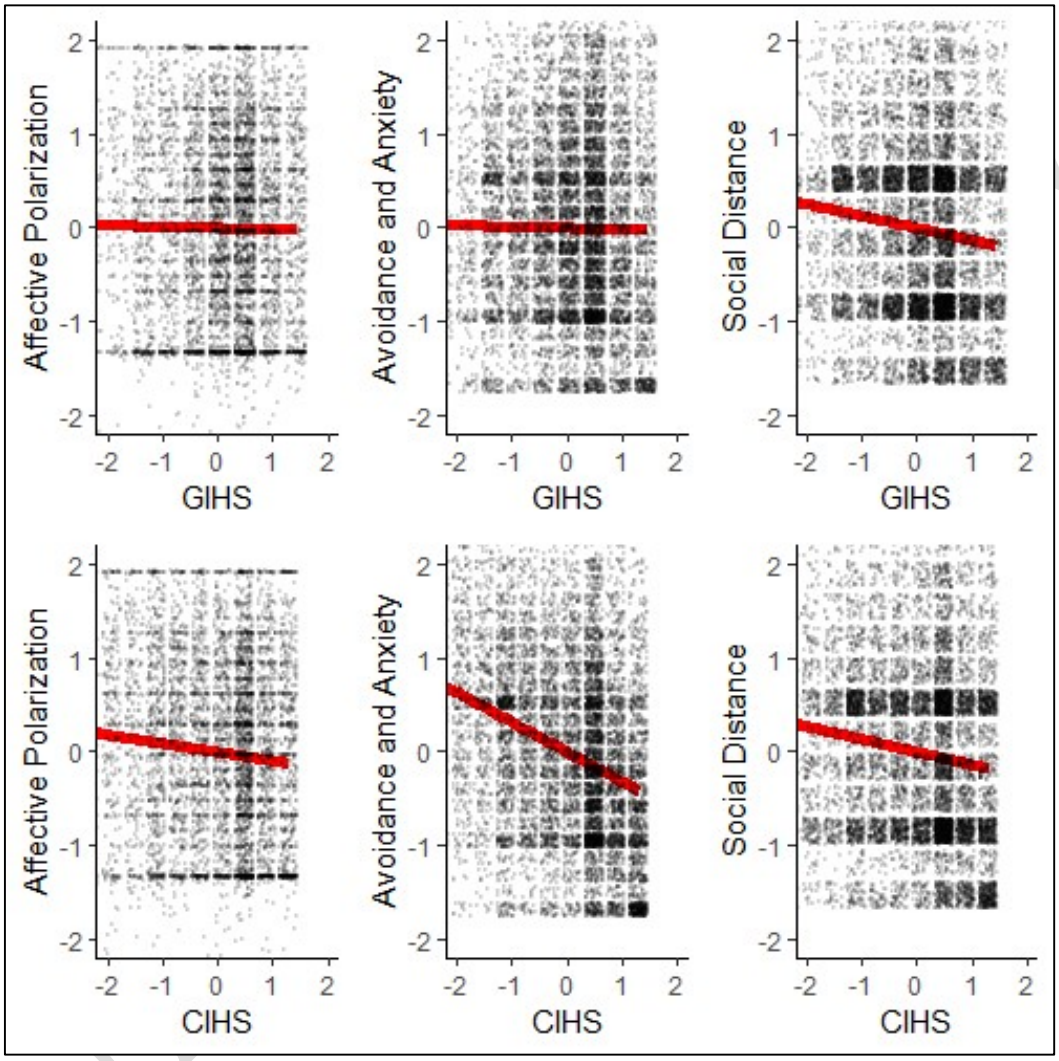

Figure 2: Associations between standardized GIHS (top), standardized CIHS (bottom), and standardized outcomes, *Study 1b*

Study 2a

Studies 1a and 1b showed consistent associations between IH (particularly the CIHS) and constructive responding in the context of intergroup conflicts. However, these studies were limited by their use of shortened IH scales. These shortened scales might have inflated the associations with IH by tapping solely into certain aspects of IH (e.g., emotional defensiveness with the CIHS items). In Studies 2a and 2b, we sought to replicate some of these effects using the full GIHS and CIHS. These studies also sought to expand the literature by examining whether IH predicts more constructive responding during interpersonal conflicts with friends or family members.

Method

Participants

In Study 2a, we analyzed the pre-survey data from a Perspectives higher education randomized control trial. Participants were recruited from ten classes within three higher education institutions (one large Southern university, one large Eastern university, and one small Western community college). The total sample included 775 participants. We removed those who did not complete the survey (n = 66), and then those who failed the attention check (n = 69). This left a final sample of 640 participants (M_{age} = 21.05, SD_{age} = 3.54; Female = 326, Male = 135, non-binary = 17, "Other" = 3, failed to report = 159; African American/Black = 58, East or Southeast Asian = 35, Hispanic/Latino = 76, Middle Eastern/North African = 4, South Asian = 17, White/Caucasian = 226, indicated more than one racial identity = 61, Other = 1, Prefer not to say = 2, failed to report = 160). The sample when including only liberals and conservatives was 325. A sensitivity analysis revealed that the study was powered to detect small-medium correlations ($\rho_{full\ sample}$ = .14, $\rho_{affective\ polarization\ sample}$ = .20, 95% power, α = .05).

Materials and Procedure

Intellectual Humility. Participants completed the full versions of the GIHS (7 items, α = .85) and the CIHS (22 items, α = .81).

Affective Polarization. Participants completed the same affective polarization scale as in Studies 1a and 1b. They also completed a measure of affective polarization using trait ratings. Participants rated Democrats and Republicans on five positive traits (e.g., intelligent; $\alpha_{Democrat}$ = .71, $\alpha_{Republican}$ = .73), and three negative traits (e.g., hypocritical; $\alpha_{Democrat}$ = .76, $\alpha_{Republican}$ = .81) on a scale from 1 (*Not at all well*) to 5 (*Extremely well*). Following the original use of this scale (Iyengar et al., 2012), we first computed the difference between the means of positive and negative traits within each political party target. We then subtracted the outgroup difference scores from the ingroup difference scores to get an overall measure of affective trait polarization.

Conflict Responses. Participants then completed items assessing their behaviors during conflict (Coleman & Lim, 2001). Participants thought of a friend or family member with whom they have conflict. They then completed 19 items assessing constructive conflict behaviors (e.g., "When in conflict with PERSON, I seek and build on areas of agreement between myself and the other," α = .91) and 12 items assessing destructive conflict behaviors (e.g., "When in conflict with PERSON, I defend myself by showing it is the other person's fault," α = .77) on a scale from 1 (*Never*) to 7 (*Always*)[3].

Results

[3] We group behaviors into "constructive" and "destructive" for concision in Studies 2a and 2b. See SM for analyses with these items separated into their original categories (Coleman & Lim, 2001).

We first included random intercepts for both higher education institution and class, however this often resulted in singular fit. We therefore only include random intercepts for class.[4] We regressed both affective polarization outcomes separately on each IH scale. Replicating Studies 1a and 1b, both GIHS and CIHS predicted lower affective polarization (see Table 3 and Figure 3). Both GIHS and CIHS also predicted lower affective trait polarization.

Finally, we regressed each interpersonal conflict response on each IH scale. Both GIHS and CIHS predicted more constructive conflict behaviors and less destructive conflict behaviors.

[4] The model assessing GIHS on destructive behavior in Study 2a did not include any random intercept due to singular fit.

Table 3
Regression models using intellectual humility as a predictor, *Study 2a*

	Affective Polarization									
	β	*b*	*CI*	*SE*	*p*	*β*	*b*	*CI*	*SE*	*p*
(Intercept)	-.08	71.01	50.93, 91.63	10.36	<.001	-.05	131.51	100.65, 163.71	15.91	<.001
GIHS	-.12	-5.59	-10.57, -0.63	2.53	.028					
CIHS						-.28	-21.98	-30.43, -13.80	4.22	<.001
Observations	311					312				
Marginal R^2	.015					.079				
	Affective Trait Polarization									
	β	*b*	*CI*	*SE*	*p*	*β*	*b*	*CI*	*SE*	*p*
(Intercept)	-.01	3.34	2.27, 4.45	.55	<.001	-.001	6.02	4.34, 7.71	.86	<.001
GIHS	-.14	-.35	-0.62, -0.08	.14	.012					
CIHS						-.25	-1.08	-1.54, -0.63	.23	<.001
Observations	321					322				
Marginal R^2	.020					.065				
	Constructive Behavior									
	β	*b*	*CI*	*SE*	*p*	*β*	*b*	*CI*	*SE*	*p*
(Intercept)	.06	2.75	2.24, 3.27	.26	<.001	.04	2.13	1.39, 2.86	.38	<.001
GIHS	.36	.51	0.38, 0.64	.06	<.001					
CIHS						.32	.70	0.51, 0.90	.10	<.001
Observations	426					426				
Marginal R^2	.127					.104				
	Destructive Behavior									
	β	*b*	*CI*	*SE*	*p*	*β*	*b*	*CI*	*SE*	*p*
(Intercept)	.000	3.96	3.46, 4.63	.26	<.001	.001	5.23	4.52, 5.92	.36	<.001
GIHS	-.11	-.15	-0.28, -0.03	.06	.018					
CIHS						-.25	-.50	-0.69, -0.31	.10	<.001
Observations	426					426				
Marginal R^2	.013					.061				

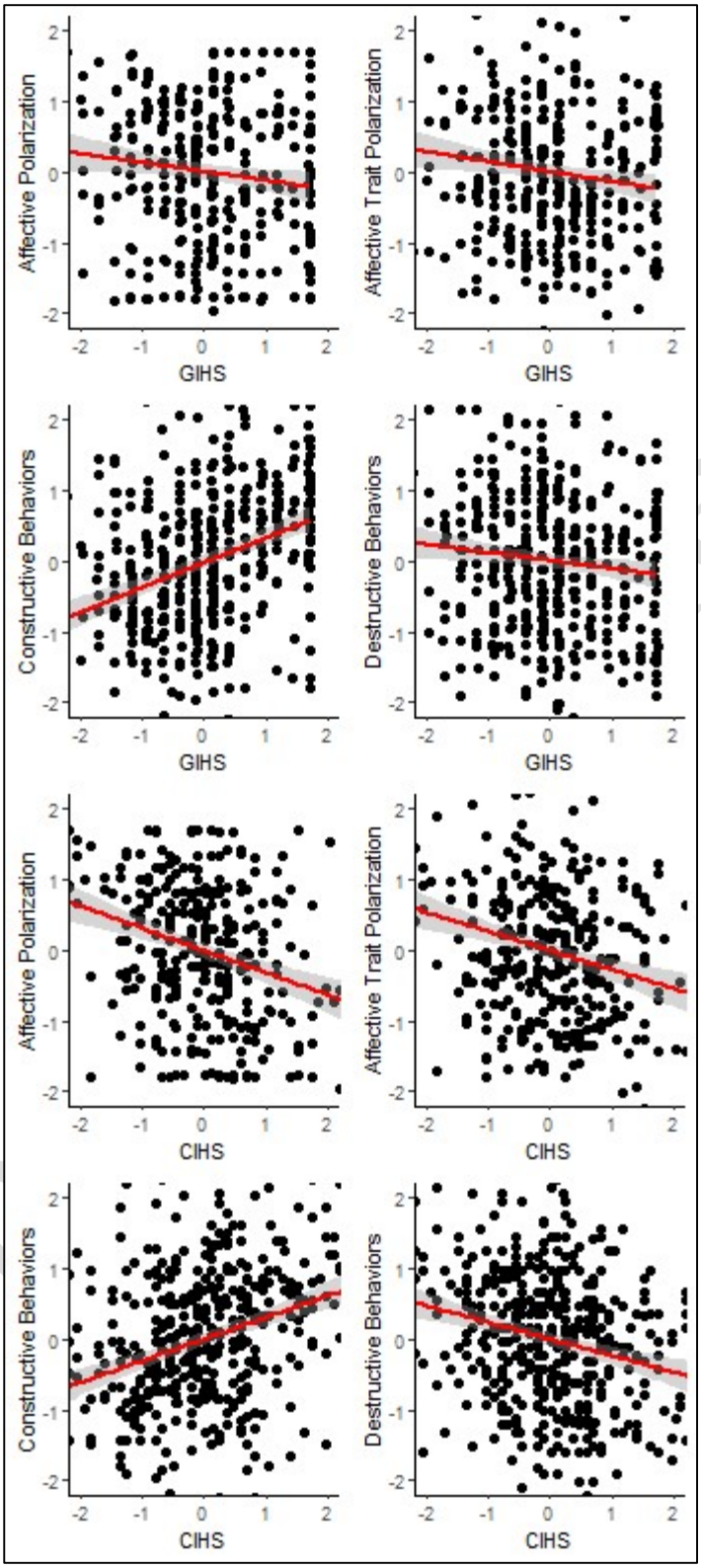

Figure 3: Associations between standardized GIHS (top two rows), standardized CIHS (bottom two rows), and standardized outcomes, *Study 2a*

Study 2b

In Study 2a, we replicated the associations between IH and affective polarization using the full IH scales, and also showed benefits of IH for constructive responding to interpersonal conflicts with family and friends. In Study 2b, we aimed to replicate the effects of Study 2a, while also extending into the domain of workplace conflict. To do so, we examined the relationship between IH and constructive responses to workplace conflict among members of government finance organizations. Study 2b used a pre-survey from a second randomized control trial with a new sample.

Method

Participants

The total sample included 277 participants who were all members of the Government Finance Officers Organization and worked for local governments in the United States. We removed those who did not complete the survey (n = 8). This left a final sample of 269 participants (M_{age} = 49.79, SD_{age} = 9.62; Female = 190, Male = 69, "prefer not to say" = 2, failed to report = 8; African American/Black = 9, East or Southeast Asian = 7, Hispanic/Latino = 10, South Asian = 1, White/Caucasian = 198, indicated more than one racial identity = 7, Other = 2, "Prefer not to say" = 4, failed to report = 31). Most participants identified as executives or department heads (n = 138), with others identifying as middle managers (n = 57), staff (n = 36), or elected officials (n = 7; failed to report = 31). The sample when including only liberals and conservatives was 144. A sensitivity analysis revealed that the study was powered to detect small-medium correlations ($\rho_{full\ sample}$ = .22, $\rho_{affective\ polarization\ sample}$ = .29, 95% power, α = .05).

Materials and Procedure

Participants completed the same measures as in Study 2a, including full versions of the GIHS (α = .83) and CIHS (α = .84), affective polarization and affective trait polarization ($\alpha_{Positive\ Democrat}$ = .76, $\alpha_{Positive\ Republican}$ = .86, $\alpha_{Negative\ Democrat}$ = .82, $\alpha_{Negative\ Republican}$ = .86), and conflict responses while thinking about conflicts with a friend or family member ($\alpha_{\text{constructive behaviors}}$ = .91, $\alpha_{\text{destructive behaviors}}$ = .84). In addition, they completed conflict responses while thinking about conflicts with a work supervisor and supervisee ($\alpha_{\text{constructive behaviors}}$ = .95, $\alpha_{\text{destructive behaviors}}$ = .90).

Results

Unless otherwise noted, all models include a random intercept for department area.[5] Replicating Studies 1a, 1b, and 2a, GIHS predicted lower affective polarization (see Table 4 and Figure 4). Counter to prior studies, CIHS did not predict lower affective polarization, though it trended in the expected direction. Neither CIHS nor GIHS predicted lower trait polarization.

We then regressed each family/friend conflict behavior on each IH scale. Replicating Study 2a, both GIHS and CIHS predicted more constructive conflict behaviors and less destructive conflict behaviors with family/friends.

Finally, we regressed each workplace conflict behavior on each IH scale. Both GIHS and CIHS predicted more constructive conflict behaviors in the workplace. CIHS, but not GIHS, predicted less destructive conflict behaviors in the workplace.

[5] The following models in Study 2b did not include any random intercept due to singular fit: CIHS on family/friend constructive behaviors, GIHS on family/friend destructive behaviors, CIHS on family/friend destructive behaviors.

Table 4
Regression models using intellectual humility as a predictor, *Study 2b*

	Affective Polarization									
	β	*b*	*CI*	*SE*	*p*	*β*	*b*	*CI*	*SE*	*p*
(Intercept)	-.02	60.80	36.17, 86.20	12.80	<.001	-.03	73.49	24.74, 122.01	24.83	.004
GIHS	-.16	-6.76	-13.59, -0.14	3.41	.049					
CIHS						-.12	-9.68	-22.23, 3.02	6.42	.134
Observations	144					144				
Marginal R^2	.025					.015				
	Affective Trait Polarization									
	β	*b*	*CI*	*SE*	*p*	*β*	*b*	*CI*	*SE*	*p*
(Intercept)	.01	1.54	0.09, 3.01	.75	.043	.01	1.92	-0.90, 4.73	1.44	.183
GIHS	-.005	-.01	-0.41, 0.37	.20	.953					
CIHS						-.02	-.11	-0.84, 0.62	.37	.762
Observations	144					144				
Marginal R^2	.000					.001				
	Constructive Behavior (Family)									
	β	*b*	*CI*	*SE*	*p*	*β*	*b*	*CI*	*SE*	*p*
(Intercept)	-.004	3.10	2.45, 3.76	.33	<.001	-.000	1.96	0.60, 3.33	.69	.005
GIHS	.36	.46	0.28, 0.64	.09	<.001					
CIHS						.29	.73	0.37, 1.08	.18	<.001
Observations	169					173				
Marginal R^2	.130					.087				
	Constructive Behavior (Work)									
	β	*b*	*CI*	*SE*	*p*	*β*	*b*	*CI*	*SE*	*p*
(Intercept)	-.14	3.88	3.29, 4.49	.31	<.001	-.12	3.06	1.93, 4.20	.58	<.001
GIHS	.33	.35	0.20, 0.51	.08	<.001					
CIHS						.27	.54	0.25, 0.84	.15	<.001
Observations	160					160				
Marginal R^2	.102					.072				
	Destructive Behavior (Family)									
	β	*b*	*CI*	*SE*	*p*	*β*	*b*	*CI*	*SE*	*p*
(Intercept)	-.000	4.56	3.78, 5.33	.39	<.001	-.000	6.78	5.22, 8.35	.79	<.001
GIHS	-.21	-.30	-0.52, -0.09	.11	.006					
CIHS						-.30	-.86	-1.27, -0.46	.21	<.001
Observations	173					173				
Marginal R^2	.043					.093				
	Destructive Behavior (Work)									
	β	*b*	*CI*	*SE*	*p*	*β*	*b*	*CI*	*SE*	*p*
(Intercept)	.007	3.11	2.46, 3.81	.35	<.001	.002	5.79	4.57, 7.04	.63	<.001
GIHS	-.14	-.17	-0.37, 0.01	.10	.075					
CIHS						-.38	-.86	-1.18, -0.54	.16	<.001
Observations	160					160				
Marginal R^2	.020					.147				

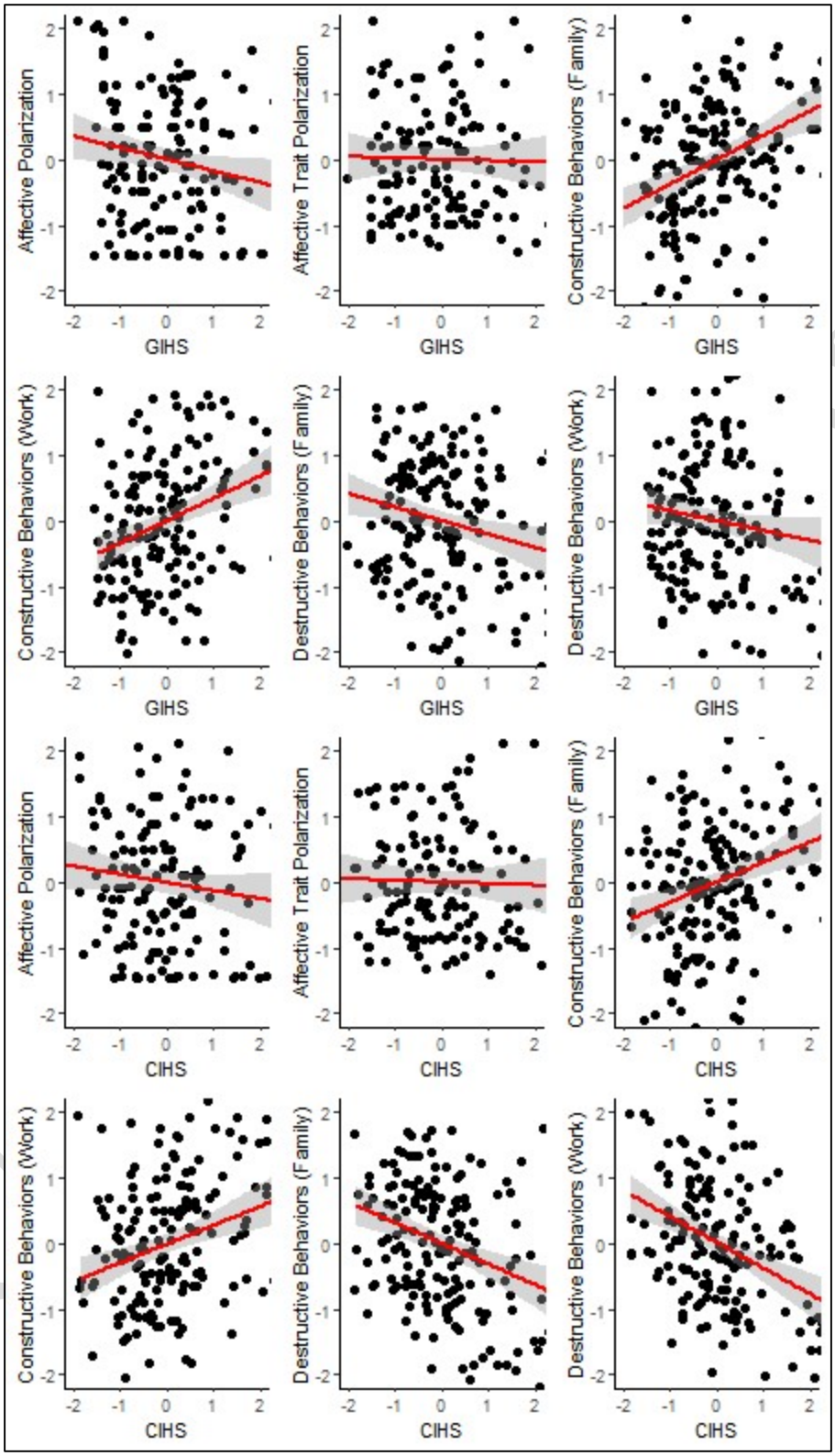

Figure 4: Associations between standardized GIHS (top two rows), standardized CIHS (bottom two rows), and standardized outcomes, *Study 2b*

General Discussion

Conflicts are a normal and common part of life. Left unresolved, however, even small conflicts can escalate into destructive consequences for the parties involved and society. It is therefore critical that we understand how to promote more constructive responses to conflict. In the current research, we tested whether IH steers people toward more productive responses during conflict. Across four studies, we found support for the benefits of IH using different measures and outcomes, in both ideological intergroup and interpersonal contexts. In Studies 1a and 1b, we replicated past work by showing that people with high IH are less affectively polarized and more open toward political outgroup members (Bowes et al., 2020; Krumrei-Mancus & Newman, 2021; Porter & Schumann, 2018; Stanley et al., 2020). We examined this association using large samples of participants who were not part of typical recruitment pools (e.g., mTurk). We confirmed that these associations are largely reliable and generalizable.

In Studies 2a and 2b, we examined whether IH predicts more constructive responses in interpersonal conflicts. We found that people with high IH are more likely to engage in constructive conflict strategies and less likely to engage in destructive conflict. We replicated these findings across conflicts with family and friends (Studies 2a and 2b) and workplace colleagues (Study 2b).

Although the current research replicates and extends the existing work in important ways, it has several limitations. First, Studies 1a and 1b were limited by the use of shortened measures of IH. Although this was rectified by using the full scales in Studies 2a and 2b, these latter studies had smaller (but still well-powered) sample sizes. Second, there were some inconsistencies in associations across studies. In particular, the GIHS had weaker and sometimes nonsignificant associations with the outcomes. In Studies 1a and 1b, the two-item GIHS had

weaker internal reliability than did the CIHS, which may partially explain the weaker associations in those studies. Another explanation is that the GIHS is an intrapersonal measure of IH, whereas the CIHS also includes interpersonal components—aspects of humility that might be especially pertinent to interpersonal conflict contexts. The CIHS was therefore more tightly connected to, and more reliably associated, with our outcomes. Third, all our findings are limited by their correlational nature. While most research on IH relies on correlational evidence, future work might leverage newly developed manipulations that temporarily boost IH (e.g., Koetke et al., 2022; Porter et al., 2020) to conduct experimental replications.

Despite these limitations, the current research provides the largest test of the association between IH and conflict responses to date, and finds evidence for this association across a spectrum of conflict contexts. Future work might examine whether intervening at the level of people's IH promotes enduring improvements to how people engage with their conflict partners. Future work could also build on this by examining the impacts of *perceived* IH during conflict. In a practical sense, perceiving IH in another party might signal that they are willing to listen and collaborate. This might encourage collaborative behaviors and IH from the perceiver. In line with this possibility, perceptions of conversational receptiveness—a construct theoretically similar to IH—increases collaboration (Yeomans et al., 2020) and reciprocal levels of receptiveness in the listener (Chen et al., 2010). IH may prove to be similarly contagious during conflicts. Finally, future research might investigate if and when IH could backfire during conflict. For example, could someone with high IH see a low IH counterpart as unworthy of collaboration (e.g., Colombo et al., 2021)? Could someone with high IH be seen as deferential and be taken advantage of during conflict? In a time of polarization and intense ideological and personal conflict, it is important to understand when IH is beneficial and when it might not be.

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