Acknowledging Other People's Perspectives Encourages their Empathy: Testing the Relational-Interactionist View on Affective Polarization

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Abstract: A number of studies on partisan polarization illustrated that prompting people to consider other people's perspectives reduced participants' dislike and distrust toward the other people (affective polarization). However, some other studies demonstrated the opposite effect. Reviewing the literature, we argued that perspective-taking can entail a threat to people's own values, needs, and identity, so people may be prompted to solidify their perspectives and feel more, not less, polarized in response to perspective-taking tasks. Therefore, along with the effect of perspective-taking it is necessary to consider a complementary effect of perspective-taking from the opponent's party. We hypothesized that individuals would feel less threatened and therefore less polarized towards their opponents when the opponents acknowledge the individuals' perspectives. In a survey experiment with 3728 participants focused on the polarized views on supporting Ukrainian refugees in the Czech Republic, we found a support for the complementary perspective-taking effect. Furthermore, we found that the effect was more pronounced in participants who scored higher on the subscales of dispositional empathic concern and perspective-taking. In other words, these participants were more responsive to acknowledging their perspectives and were less polarized towards their opponents. Discussing these results, we argued for a relational-interactionist account of affective polarization.

Keywords: affective polarization, partisan polarization, trust, social distance, perspective-taking, empathic concern, refugees

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The confrontation of perspectives is an integral part of democracy. The flip side of this principle, however, is the possibility of increasing affective polarization between partisan groups, which is accompanied by growing mistrust, hostility, radicalization, and willingness to resort to violence. Tuller et al. (2015) suggested that a failure of perspective-taking is an important mechanism underlying affective polarization.

This study aims to test the mitigation of affective polarization by facilitating perspective-taking. In this way, we seek to address previous mixed evidence for the effects of perspective-taking on affective polarization. To properly understand the mechanisms of perspective-taking, we combine three theoretical frameworks: a cognitivist framework that defines perspective-taking as a cognitive capacity that has a reducing effect on affective polarization, a relational-interactionist view that considers perspective-taking as a capacity to develop relationships with other people, and another view that considers perspective-taking as a trait component of empathy.

Affective Polarization and Perspective-Taking

Affective polarization is defined as the tendency of party members to dislike and distrust members of the other party (Iyengar et al., 2019). In recent years, social scientists have explored affective polarization and related phenomena (e.g., intergroup hostility, intolerance, etc.) in the context of various socially sensitive issues. Global issues include the origin of a new coronavirus, epidemic control measures, and vaccination during the Covid-19 pandemic (e.g., Hegland et al, 2022; Schmid et al., 2023), and climate change (e.g., Falkenberg et al, 2022); other issues have been studied in regional contexts such as Brexit (e.g., Mason et al., 2022). In addition, societies have experienced polarization on historical, cultural, or religious issues, such as gun control or abortion in the USA (e.g., Hout et al., 2022).

Perspective-taking is described as the "cognitive capacity to look at the world from another person's perspective" (Boca et al., 2018; p. 411). Researchers have investigated whether enhancing perspective-taking can reduce affective polarization. Studies have focused on polarization in the context of various sensitive issues and have used various techniques to manipulate perspective-taking, such as asking participants to put the opponent's perspective in writing (Tuller et al., 2015) or to write a response to a member of the opposing party while putting themselves in the opponent's shoes (Boca et al., 2018).

Perspective-Taking in Everyday Life

Although the aforementioned studies have shown that perspective-taking can reduce affective polarization, they overlook two crucial aspects of the issue.

Mixed Evidence for the Perspective-Taking Effect and the Complementary Perspective-Taking Effect

First, in experimental studies on perspective-taking, participants are usually asked to articulate the perspectives of people with whom they disagree. In everyday life, however, it is not easy to consider the opponent's perspective, as it can threaten one's own perspective (Heltzel & Laurin, 2021). Therefore, people may dismiss their opponents' perspectives as illegitimate, foolish, or biased (Berndsen et al., 2018; Heltzel & Laurin, 2021; Tuller et al., 2015) instead of acknowledging them, which in turn deepens affective polarization. For example, in a field experiment, Paluck (2010) documented that exposure to the perspectives

of different ethnic groups via a TV talk show did not lead to a deeper understanding of these groups, but to greater affective polarization (e.g., higher intolerance).

From the point of view of mediation approaches such as Nonviolent Communication (NVC, Rosenberg, 2016) or a constructivist approach developed by Mascolo (2022, 2023), these contradictory findings could occur because considering the perspectives of others can threaten one's own values and needs. Mascolo (2022) assumed that individuals' beliefs (e.g., "vaccination against Covid-19 is an effective way to mitigate the pandemic" versus "vaccination only ensures profit for the pharmaceutical industry") are linked to individuals' core values and needs (e.g., freedom, safety, protection, etc.). Therefore, admitting that one's opponent's perspective is legitimate can threaten not only one's own original beliefs but also the associated core values and needs that underlie one's identity. For example, someone who believes that vaccination is a tool to strengthen control over citizens and identifies with others who hold similar attitudes may be hesitant to take the perspective of doctors or scientists, as this could jeopardize his or her identity as a "fighter for freedom." Therefore, reflection, communication, and acknowledgment of the underlying needs and values on both sides of the conflict are crucial to bringing polarized people together (Rosenberg, 2016).

However, experimental research on perspective-taking does not adequately address these principles. While experimental research demonstrates the effects of perspective-taking on reducing affective polarization and identifies contexts in which it can have the opposite effect, there is a lack of focus on how to consider another perspective without compromising one's own, including underlying values and needs.

Following the principles of NVC, we propose that acknowledging others' perspectives could make others feel less polarized. Rosenberg (2016) emphasized the emphatic acknowledging of the needs underlying another person's beliefs, even when one may disagree with those beliefs. When individuals' needs are empathically acknowledged, they may feel that their needs are legitimate, reducing the urge to reinforce their positions and dismiss individuals with differing views. This indicates that perspective-taking can also function in a complementary way. If an individual considers the opponent's perspective, he or she may experience less affective polarization towards the opponent. Conversely, an individual whose perspective is acknowledged by the other party may also feel less polarized toward the opponent. We will refer to the latter mechanism as the complementary perspective-taking effect.

Interaction Processes Underlying Affective Polarization and Sociality

Second, studies on perspective-taking and affective polarization usually focus on straightforward effects (e.g., participants who elaborate on the opponent's perspective tend to show less affective polarization). However, it has been hypothesized that changes in affective polarization represent a dynamic process underlain by reciprocal interactions between opposing parties (Mascolo, 2022; Mason, et al., 2022).

Hypothetically, affective polarization escalates based on reciprocal interactions characterized by the dismissal of the other parties' perspectives. Mascolo (2021) provided a heuristic example in the context of the COVID-19 pandemic in the USA, commenting on the polarization between two partisan groups: the "mask refuters" who rejected protective measures like wearing masks and staying home in the name of personal *freedom*, and the "mask wearers" who considered this behavior *irresponsible* and advocated for state-backed *protection*. The "mask refusers" perceived the "mask wearers" calls for state intervention as an encroachment on individual freedoms, further fueling their resistance to the measures, leading to a spiral of gradual polarization.

Thus, to understand and mitigate affective polarization, we should recognize its interactionist nature. We follow a relational-interactionist framework rooted in the personal

construct theory (Kelly, 1955; Procter &Winter, 2020). Its central concept is sociality. In the "sociality corollary," Kelly (1955) postulated that an individual develops social relationships and plays social roles based on his or her construing of construct processes of other people. In common psychological terms, an individual develops social relationships based on how he or she understands others (e.g., based on what he or she thinks, how the others are, or what the others think, feel, or intend). For example, "mask wearers" develop their antagonist relationship toward "mask refuters" based on their understanding as *irresponsible*. Furthermore, following Procter and Winter (2020), we assume that these processes are typically reciprocal (e.g., "mask refuters" form their own role in opposition to those who, in their view, support the state's encroachment on individual freedoms).

Reciprocal ways of understanding the other party form dynamic patterns of sociality that may be adaptive or maladaptive (Kovář et al., 2023). Maladaptive patterns, illustrated by the example above, are based on understanding the other party in terms of dismissing evaluations that attribute a moral or cognitive insufficiency (e.g., *irresponsible*, *self-centered*, *stupid, untrustworthy*). As the example shows, dismissing evaluations are strengthened within reciprocal interactions of opposing parties; this process underlies affective polarization. In other words, within this framework, affective polarization is viewed as emerging from these reciprocal processes. On the contrary, an adaptive pattern would be based on the acknowledgment of the other party's values and needs (e.g., *freedom*, *need for protection*), which opens a possibility to view the other party's perspective as reasonable and legitimate (Mascolo, 2022; Marginean et al., 2019). As argued above, this would lead to a decrease in affective polarization.

Sociality and its Proxy Measures

We consider (mal)adaptive sociality as a theoretical principle (Chirkov & Anderson, 2018) that cannot be operationalized. However, it is related to the other concepts that can be assessed empirically. Procter (2014) related sociality to mentalization or theory of mind. Analogically, we argue that sociality could be related to the capacity of perspective-taking: The more an individual can look at the world from another person's perspective, the more engaged in patterns of adaptive sociality. The other concept is affective polarization manifested as distrust, dislike, or evaluation of the other party in terms of moral or cognitive insufficiency. Thus, measures of perspective-taking and affective polarization could be viewed as proxy measures of sociality. Therefore, if these measures were valid, they should be interrelated.

In addition, a decrease in sociality has been associated with lower cognitive complexity. This means that individuals or groups who build mutual relationships based on maladaptive sociality patterns tend to perceive their opponents in an undifferentiated manner (e.g., an outgroup member is not only *irresponsible* but also *stupid*, *self-centered*, etc.; Kovář et al., 2023; Winter & Feixas 2019). Generally, people who are less concerned with others' perspectives would view them in a unidimensional manner as morally and cognitively insufficient, and untrustworthy.

Perspective-Taking and Empathy

Finally, we discuss the relationships between perspective-taking and affective polarization in the context of recent research on empathy. Along with experimental studies that manipulated participants' perspective-taking, other studies have focused on a dispositional ability of perspective-taking and analyzed its impact on affective polarization. In this framework, dispositional perspective-taking has been conceptualized as a component of empathy and distinguished from dispositional empathic concern ("the tendency to experience other oriented emotions, such as sympathy or compassion;" Simas et al., 2020, p. 259).

Simas et al. (2020) examined the effects of dispositional empathy on affective polarization. Specifically, hypothesized that dispositional empathic concern increases affective polarization due to a tendency to be empathically concerned with ingroup members rather than outgroup members. In other words, empathic concern should increase ingroup bias. They demonstrated effects on ingroup bias in two ways: empathic concern decreased outgroup liking and increased relative ingroup favoritism (i.e., more positive evaluation of ingroup relative to outgroup members). They also showed that empathic concern increases the probability of affective polarization as indicated by schadenfreude and willingness to censor outgroup members. Nevertheless, they found that empathic concern predicts lower social distance, which means that empathically concerned people are more encouraged to enter into contact with outgroup members. Furthermore, Simas et al. (2020) investigated the effects of dispositional perspective-taking as the cognitive component of empathy on affective polarization. They did not find evidence for a presumably reducing effect of dispositional perspective-taking.

Gillissen et al. (2023) replicated the effect of empathic concern on strengthening ingroup liking and relative ingroup liking. In addition, they reported a decrease in outgroup liking. Moreover, they reported that perspective-taking has opposite effects on affective polarization and argued that dispositional perspective-taking reduces ingroup bias.

Following both reviewed studies, in our study, we tested the effects of dispositional empathic concern and perspective-taking on affective polarization. Besides straightforward effects (i.e., relative ingroup liking, in- and outgroup liking), we also considered the effects of dispositional empathic concern and dispositional perspective-taking within the relational-interactionist framework. We investigated how an individual's levels of empathic concern and perspective-taking change affective polarization in experimental conditions when the individual's perspective is either acknowledged or neglected.

Present Study

In this preregistered study[1] (https://osf.io/4cg8d), we investigated the effects of complementary perspective-taking and empathy on affective polarization. Specifically, the aims of the study were i) to test the complementary perspective-taking effect; ii) to test the validity of proxy measures of sociality; iii) to test the hypothesized opposite effects of the components of empathy (i.e., perspective-taking, empathic concern) on affective polarization.

In a two-wave survey experiment, we used a comic strip to simulate an everyday situation in which people talk about a polarizing topic and express their views on it. We focused on the issue of the support to Ukrainian refugees, which has been polarizing since the Russian invasion of Ukraine. In November 2023, there were almost 600,000 Ukrainian refugees who had received temporary protection status from the Czech Republic, which was the highest proportion of the number of citizens of all European countries (Consortium of Migrants Assisting Organizations, 2024). Generally, politicians who supported Ukraine and argued for the aid to the refugees called for solidarity with the attacked country and their citizens. In contrast, politicians from parties endorsing anti-system rhetoric typically argued that the refugees receive social welfare at the expense of Czech citizens or will increase

[1] In this study, we deviated from the preregistration in these points: i) The subscales of dispositional empathic concern and perspective-taking were not transformed to the scale from 0 through 1 as in Simas et al. (2020); as we did not directly compare our scores with the scores in Simas et al. (2020), we used rough scores; ii) The hypotheses were renumbered and their order was changed; in addition to the preregistered hypotheses, we formulated further ones (H3c, H3d, H4a, H4b) and conducted further analyses (Table 9a, 9b, 10a, 10b); iii) Attitudes towards the support to Ukrainian refugees was assessed on the scale from "resolutely disagree" (0) to "resolutely agree" (7), and the other way around; iv) The the-factor and three-factor structures of the evaluation of the comic strip characters were compared also using the AIC index.

criminality. According to a survey by CVVM (2024) conducted in February 2024, 52 percent of Czechs thought that Ukrainian refugees pose problems for the Czech Republic.

In contrast to most studies on affective polarization (e.g., Iyengar et al., 2019; Simas et al., 2020), we did not directly assess participants' identification with any of the parties involved in a public discussion on Ukrainian refugees (e.g., we did not use data about participants' political preferences or asked them about their identification with a pro- or anti-refugee political party). Since the issue of Ukrainian refugees had been common and highly polarizing in the Czech context, we assumed that participants would sympathize with others holding similar attitudes and experience polarization towards those with contrary attitudes. In other words, we assumed that based on the convergence and discrepancy of participants' attitudes towards Ukrainian refugees, they would develop relationships with ingroup and outgroup members.

Design of the Study

The study was an experiment with four treatments. We manipulated participants' exposure to communication where a person articulated an argument for or against support for Ukrainian refugees and either acknowledged or did not acknowledge the opposing perspective. Specifically, participants were randomly exposed to one of four comic strips (stimuli) depicting a debate on supporting Ukrainian refugees. The comic strip was created by a professional graphic artist and illustrated a situation from everyday life (a conversation on a street) where one character expressed an argument for or against supporting Ukrainian refugees to another character. The characters were drawn without common cues that might influence their evaluation (e.g., gender, facial expression, clothing). Therefore, we anticipated that participants primarily evaluate the comic strip characters based on the text in the speech bubble. The scene was consistent across all four stimuli, including the size of the bubble; only the text differed. To enhance readability, the font size was maximized to fit the bubble. Preliminary versions of the comic strip were assessed for comprehensibility by volunteer participants, and the final version (Figure 1) was crafted based on their feedback.

The arguments of the speaker in the stimuli were as follows (original Czech versions translated to English):

Stimulus I (argument for the support to Ukrainian refugees, acknowledgment of the opposing perspective): "Look, I understand that some people here don't want refugees from Ukraine because they see that a lot of people here can't even pay energy bills, not to mention housing. But there is a war going on in Ukraine, and rockets are hitting the entire territory, so they can definitely stay here."

Stimulus II (argument for the support to Ukrainian refugees, neglect of the opposing perspective): "Look, it is simple with those Ukrainian refugees. There is a war going on in Ukraine, and rockets are hitting the entire territory, so they can definitely stay here."

Stimulus III (argument against the support to Ukrainian refugees, acknowledgment of the opposing perspective): "Look, I understand that some people here want refugees from Ukraine because they see that there is a war going on in Ukraine and rockets are hitting the entire territory. But a lot of people here can't even pay energy bills, not to mention housing, so they definitely can't stay here anymore."

Stimulus IV (argument against the support to Ukrainian refugees, neglect of the opposing perspective): "Look, it is simple with those Ukrainian refugees. A lot of people here can't even pay energy bills, not to mention housing, so they definitely can't stay here anymore."

Methods and Measures

The data collection was conducted in two waves in November 2023 with a two-week gap. In the first wave, we assessed participants' attitudes toward supporting Ukrainian refugees, measures of dispositional empathy, and subjective economic condition. In the second wave, participants were exposed to one of the four experimental stimuli and evaluated the comic strip characters. The stimuli were randomly assigned to respondents. During the data collection process, the probability of selecting each stimulus was adjusted so that all four groups ended up equal in size.

Variables in the First Wave

Attitudes Towards the Support to Ukrainian Refugees were assessed by an agreement with the statement "In your opinion, do you think it is correct that the Czech Republic prolongs residency of previously approved Ukrainian refugees?" on a 7-point scale from "resolutely disagree" (1) to "resolutely" agree" (7).

Dispositional Empathic Concern and Perspective-Taking were assessed by the subscales of the Interpersonal Reactivity Index (Davis, 1983). On a 5-point Likert scale, participants indicated their agreement with statements such as "I try to look at everybody's side of a disagreement before I make a decision" (perspective-taking) or "I am often quite touched by things that I see happen" (empathic concern). We used the Czech version of this method reported in Svobodová (2017). This Czech version was reviewed and some items were slightly modified to remove ambiguities. To test the unidimensionality of the subscales, we split the dataset into two random halves for exploratory and confirmatory factor analysis. In the exploratory factor analysis, the number of factors was determined using optimal parallel analysis with tetrachoric correlations. Next, a standard exploratory factor analysis was performed.

Items not fitting the factor structure were excluded from the analysis and unidimensionality was confirmed by confirmatory factor analysis (CFA) using the WLSMW method. Based on this analysis, from the perspective-taking subscale, we removed both two reverse coded items. CFA confirmed its unidimensionality (RMSE 0.047; robust CFI 0.992). On the other hand, we constructed the subscale of empathic concern using all the items from the original method (RMSE 0.019; robust CFI 0.999).

Subjective Economic Condition was assessed by an 8-point scale from 0 (very bad) to 7 (very good)

Variables in the Second Wave

Affective Polarization. To assess affective polarization, we adopted two techniques used in affective polarization research (Druckman & Levendusky, 2019; Iyengar et al., 2012): evaluation of ingroup or outgroup members, and social distance. Specifically, we asked participants to indicate how they perceive the person represented by a comic strip character in terms of untrustworthiness, poor reason, and self-centeredness, and to determine how they feel socially distant from such a person.

Evaluation of Comic Strip Characters. After the exposure of one of the four comic strips, participants were asked to evaluate the comic strip characters by the following instruction:

"It is possible that you have heard a similar debate and it is also possible that you have your own opinion about helping the refugees. Now focus on the person speaking in the picture and imagine that this is a real person. How do you perceive this person when he or she speaks in this way?"

Then, participant evaluated the character in terms of untrustworthiness, poor reason and self-centeredness on a 7-point scale. As the drawings of the characters were free of definite attributes such as gender or age, we assumed that participants will evaluate them on

the basis of what the characters are saying. Moreover, we assumed that participants will evaluate the characters as representatives of ingroup or outgroup, depending on fit with participants' attitudes towards the support to Ukrainian refugees.

Items for evaluation were adopted from the source credibility subscale proposed by McCroskey and Teven (1999). Some items from the original subscales tailored for a different context (research on personal communication) were dropped (e.g., concerned-not concerned with me); some other items were formulated based on typical evaluations of opponents found in Kovář et al. (2023). Following McCroskey and Teven (1999), we expected that the items would create three factors:

Untrustworthiness. Trustworthy-untrustworthy, honest-dishonest, moral-immoral, sincere-insincere, it is necessary to consider his/her opinions-it is not necessary to consider his/her opinions.

Poor Reason ("Competence" in McCroskey &Teven, 1999). Intelligent-not intelligent, bright-stupid, well-informed–uninformed, able to form his or her own opinion-adopts other people's opinions, experienced-naïve.

Self-Centeredness ("Caring/Goodwill" in McCroskey & Teven, 1999). Sensitive-insensitive, empathic-not empathic, concerned with himself/herself-concerned with other people (reverse coded), self-centered-not self-centered (reverse coded)

All the evaluation items were rotated. According to the preregistration, we checked the factor structure by CFA. We computed results for the three-factor model and also for an alternative two-factor model involving the items indicating poor reason and the second factor that puts together the items of untrustworthiness and self-centeredness. The three-factor model showed more satisfactory levels of fit indices (RMSEA=0.09; CFI=0.95) than the two-factor model (RMSEA=0.12; CFI=0.90). Moreover, AIC values also indicated that the former model is more robust (AIC=162019) than the latter one (AIC=164080). Therefore, we assessed the evaluation of the speaker by the three subscales indicated by the three-factor model. The subscales of untrustworthiness, poor reason, and self-centeredness showed satisfactory ω values of 0.93, 0.93, and 0.89, respectively.

In addition, we also used scores of rating on the item trustworthy-untrustworthy as an alternative scale to the subscale of untrustworthiness.

Extremity of Evaluation. Along with rough scores for each subscale, we also computed scores of the extremity of evaluation. These scores were arithmetic means of deviations from the middle point (4) for each subscale.

Cognitive Complexity. Cognitive complexity in the evaluation of the comic strip character was calculated analogically to the assessment by the Repertory Grid Technique (Fransella et al., 2024). The Repertory Grid approach considers a higher variation of personal constructs for the evaluation of other people as higher differentiation. In our data, we calculated the standard deviation of all evaluation items and interpreted higher scores as an index of higher complexity (differentiation) of the evaluation.

Social Distance. On a 7-point scale from not upset at all (1) to extremely upset (7), participants rated how they would be upset if the comic strip character was i) a friend ii) a family member iii) a life partner. The internal consistency of this scale was 0.97 (ω).

In the analysis, we used also demographic variables delivered by the agency that conducted data collection: gender (coded 1-male, 2-female), age, highest completed education (coded from 1 through 11: without education, uncompleted elementary school, elementary school, vocational school, high school with graduation exam, vocational school with graduation exam, follow-up study, tertiary college, bachelor's degree, master's degree, doctoral degree), and size of the place of residence (coded from 1 through 5: up to 1000, 1001-5000, 5001-20000, 20001-100000, 100000+).

Sample

For this study, we recruited participants who represented the online population in the Czech Republic. The minimum sample size for multiple regression was computed by the sample size calculator on: https://www.statskingdom.com/sample_size_regression.html.

Besides general effects we aimed to test on the whole sample, we aimed to analyze separately smaller subsamples defined by convergence or discrepancy between participants' attitudes (pro- and anti-refugees) and the arguments articulated by the comic strip characters (pro- and anti-refugee). We assumed that each of the subsamples would involve about one-fourth of the whole sample. For each of the subsamples, to detect small effects (effect size of 0.14) in a regression model with 7 predictors significant at the level of alpha 0.05 and power of 0.8, we needed a sample of 740 participants. Because this equals approximately one-fourth of the total sample, we needed 740*4=2960 participants. Due to sufficient funding for the project, we could plan to gain a larger sample (N=4850) in the first wave. Assuming a response rate of 75% for the second wave, we expected 3637 participants in the second wave.

Data collection was carried out by an external agency (Ipsos) via an online opt-in panel, ensuring the required number of respondents. Using data about the online population in the Czech Republic published by the Czech Statistical Office, the agency applied quota random sampling; quotas: gender (female, male), age (18-24, 25-34, 35-44, 45-54, 55-64, 65+), education (elementary school, vocational school, high school with graduation exam, university), size of the place of residence (up to 1000, 1001-5000, 5001-20000, 20001-100000, 100000+), and district. Participants had to be at least 18 years old.

We analyzed only data from participants who reacted to all items in both waves. Data from participants who completed in an extremely short time (i.e., less than 30% of the median) had been removed by the agency before providing the data set to the research team. Finally, we received data from N=3728 participants. Table 1 presents the demographic characteristics of the sample.

Table 2 shows the distribution of participants' attitudes. The symmetrical distribution with relatively high and balanced proportions of ratings on the extreme poles indicates that the issue of supporting Ukrainian refugees was highly polarizing. Before data analysis, we divided the sample into the pro-refugee party (scores more than 4 on the attitude scale) and the anti-refugee party (scores less than 4). Then, we created subsamples according to experimental conditions (i.e., the combination of participants' pro- and anti-refugee attitudes and pro- and anti-refugee arguments in the comic strip). Table 3 describes these subsamples in terms of the number of participants and mean values on the attitude item. The number of participants in subA was N=726, which is less than the required number calculated above (740). However, as the number of participants approximated the required number, we conducted the planned analysis. (Note that the total number of participants in all subsamples is lower than the total number of participants mentioned above; i.e., N=3728. This is because participants who had rated the middle value of 4 on the attitude scale were not involved in any of the four subsamples).

Hypotheses

Complementary Perspective-Taking Effect

We expected that acknowledging opposing perspectives would decrease affective polarization.

H1a: For participants with discrepant conditions, arguments that acknowledge participants' perspectives will lead to a more positive evaluation of the comic strip characters in terms of trustworthiness, reasoning, and self-centeredness; furthermore, this evaluation will be more complex (differentiated). In addition, the participants will perceive the characters as less socially distant.

Alternatively to H1a, we expected that acknowledging opposing perspectives would increase adaptive sociality. This means that participants would not need to understand people with opposing attitudes in evaluative terms (be they positive or negative). Therefore, they will use less extreme ratings on the evaluation subscales.

H1b: For participants with discrepant conditions, arguments that acknowledge also participants' perspectives will lead to less extreme evaluations of the comic strip characters in terms of trustworthiness, reasoning, and self-centeredness.

Validity of Proxy Measures of Sociality

The second cluster of hypotheses is formulated to test the validity of the proxy measures of sociality. We focused on dispositional perspective-taking as a basic proxy measure of sociality and tested its effect on other proxy measures. We expected that participants with higher dispositional perspective-taking will exhibit lower affective polarization toward other persons.

H2a: Participants with higher dispositional perspective-taking will evaluate the comic strip characters (including those with opposing attitudes) more positively in terms of trustworthiness, reasoning, and self-centeredness.

Alternatively to H2a, we assumed that participants who are concerned with others' perspectives interpret other people in reflective non-evaluative terms, so they do not need to use extreme ratings on the evaluation scales.

H2b: Participants with higher dispositional perspective-taking would evaluate the comic strip characters (including those with opposing attitudes) less extremely in terms of trustworthiness, reasoning, and self-centeredness.

The last hypothesis focused on cognitive complexity as another concept related to sociality.

H2c: Participants with higher perspective-taking will evaluate the comic strip characters (including those with opposing attitudes) in a more complex (differentiated) way.

Empathy and Affective Polarization

The third cluster of hypotheses is concerned with the effects of the components of dispositional empathy on affective polarization.

H3a: Dispositional empathic concern will decrease outgroup liking. Specifically, empathically concerned participants with the discrepant conditions will evaluate the comic strip characters less positively in terms of trustworthiness, reasoning, and self-centeredness.

H3b: Dispositional empathic concern will increase ingroup liking. Specifically, empathically concerned participants with the convergent conditions will evaluate the comic strip characters more positively in terms of trustworthiness, reasoning, and self-centeredness.

In addition to preregistration, we formulated a hypothesis about the effect of empathic concern on relative ingroup liking.

H3c: Dispositional empathic concern will strengthen relative ingroup liking. Specifically, higher levels of dispositional empathic concern will make evaluations of the comic strip characters in the discrepant conditions relatively more negative in comparison to the effect on the evaluation of characters in the convergent conditions.

Furthermore, we added a hypothesis (not preregistered) that assumes the reducing effect of perspective-taking on ingroup bias.

H3d: Dispositional perspective-taking will reduce relative ingroup liking. Specifically, higher levels of dispositional perspective-taking will make evaluations of the comic strip characters in the discrepant conditions relatively more positive in comparison to the effect on the evaluation of characters in the convergent conditions.

Furthermore, we expected that acknowledgment of an opposing perspective by an ingroup member can threaten partisan identity. Therefore, we expected that the polarizing effect of dispositional empathic concern can lead to more negative perceptions of ingroup members who acknowledge an opposing perspective.

H3e: For persons with high levels of dispositional empathic concern, an argument convergent with their perspective but that acknowledges also an opposing perspective will lead to a more negative evaluation of the character who articulates that argument in terms of trustworthiness, reasoning, and self-centeredness; it will also lead to higher social distance.

In addition to the preregistration, we focused on the critical situation of the interaction between opposing parties and mechanisms of affective polarization. We investigated how individuals with various levels of dispositional empathic concern or perspective-taking would react to a person who acknowledges or neglects their perspectives. There are no previous discussions or evidence to follow. Thus, we built on the assumption of the polarizing effect of dispositional empathic concern and the opposite effect of dispositional perspective-taking.

H4a: Acknowledgment of opposing perspectives will increase the polarizing effect of dispositional empathic concern. Specifically, in participants with the discrepant conditions, dispositional empathic concern will lead to more negative evaluations and higher social distance towards the comic strip characters who acknowledge opposing perspectives, in comparison to the evaluation of characters who neglect opposing perspectives.

H4b: Acknowledgment of opposing perspectives will strengthen the reducing effect of dispositional perspective-taking on affective polarization. Specifically, in participants with the discrepant conditions, dispositional perspective-taking will lead to more positive evaluations and lower social distance towards the comic strip characters who acknowledge opposing perspectives, in comparison to the evaluation of characters who neglect opposing perspectives.

Data Analysis

To explore relationships among variables, we computed a correlation matrix. To test the hypotheses, we used multiple linear regression according to the preregistered analysis plan. We used the significance level of $p<0.05$.

Results

Table 4 shows correlations among all target variables. Measures that indicate a negative evaluation of the character in the comic strip (i.e., untrustworthiness, poor reason, self-centeredness) correlated highly with social distance toward the character. This supports their joint interpretation as measures of affective polarization.

Findings Concerning the Complementary Perspective-Taking Effect

To test the complementary perspective-taking effect, we selected participants with the discrepant conditions. Then, we used multiple linear regression. In addition, we conducted the same analysis for subsamples with one of the two discrepant conditions (subA, subB).

Table 5 shows regression analysis for all participants with the discrepant conditions; Table 6 shows the same analysis for the specific discrepant conditions separately. Regression coefficients in Table 5 indicate that the acknowledgment of the opposing perspective reduced affective polarization. Specifically, it led to significantly more positive perceptions of the comic strip characters and to lower social distance, which supports the complementary perspective-taking effect (H1a). On the other hand, the experimental manipulation did not lead to less extreme evaluations (H1b) except for the significant change in terms of self-centeredness: participants who read one of the discrepant arguments that acknowledged their perspectives perceived the characters less extreme in terms of self-centeredness. Lastly, the

experimental manipulation did not increase but decreased the complexity of the character's evaluation, which contradicts H1a. Table 5 also shows that a further important predictor of the affective polarization variables was the score on the attitude scale: the stronger the agreement with the support to Ukrainian refugees, the more negative perception of the comic strip characters, in particular on the self-centeredness subscale (beta=0.53).

Separate results for both discrepant conditions in Table 6 enable a more detailed analysis. The results indicate that the experimental manipulation did reduce affective polarization in both subsamples (subA, subB). Nevertheless, the beta coefficients for participants who disagreed with the support to the refugees (subB) were roughly of half-size than for participants who agreed (subA). The exception was the self-centeredness subscale, where the acknowledgment of an opposing perspective had a significant effect only for the participants who agreed with the support. Furthermore, exclusively in this latter subsample (subA), the experimental manipulation decreased also the extremity of perception of the character on the self-centeredness subscale. In addition, Table 6 indicates that in subA, more negative perception and greater social distance were also predicted by better subjective economic condition. On the contrary, in participants who disagreed with the aid (subB), negative evaluations and higher social distance were predicted by higher age.

Findings Concerning Proxy Measures of Sociality

Using multiple linear regression, we tested whether dispositional perspective-taking predicts sociality in terms of more complex, more positive, or less extreme evaluation of the comic strip characters. Table 7 shows standardized regression coefficients of dispositional perspective-taking and demographic variables as further predictors. Following H2a, the results show that perspective-taking significantly predicted more positive evaluation on all evaluation subscales. Perspective-taking did not predict complexity of evaluation. In contrast to the direction of the relationship in H2b, perspective-taking significantly predicted not less but more extreme evaluations.

Findings Concerning Relationships between Dispositional Empathic Concern and Affective Polarization

Empathic Concern, Perspective-Taking, and Ingroup Bias

The third cluster of hypotheses formulated the effects of empathic concern on the perception of ingroup and outgroup members.

Concerning outgroup liking, Table 6 indicates that contrary to H3a, participants with higher empathic concern evaluated comic strip characters as more trustworthy, less self-centered, and perceived lower social distance. However, this trend occurred only in the anti-refugee subsample (subB). Participants who indicated the pro-refugee attitude (subA) did not change their view of the characters along with their levels of empathic concern. The exception was the tendency of empathically concerned participants to evaluate the characters as more self-centered, which was the only finding supporting the decrease of outgroup liking (H3a).

Concerning ingroup liking (H3b), Table 8 shows beta coefficients of empathic concern for merged subsamples with convergent conditions (subC, subD). Following H3b, empathic concern significantly predicted more positive evaluation in terms of trustworthiness and lower self-centeredness.

Concerning relative ingroup liking (H3c), Table 9a shows negative significant beta values for the interaction between empathic concern and the condition type (discrepant-convergent). They indicate that empathic concern decreased affective polarization a little bit more for the convergent condition, which means that empathic concern strengthened relative ingroup liking. Figure 2 illustrates this effect on self-centeredness scores. The blue and the yellow lines represent the discrepant and convergent conditions. Understandably, the

characters with opposing attitudes (i.e., discrepant conditions) were evaluated as more self-centered. The almost horizontal direction of the blue line (discrepant condition) indicates there is no tight relationship between empathic concern and self-centeredness. On the contrary, for the convergent condition (i.e., evaluation of ingroup members, yellow line), the higher the empathic concern, the lower the self-centeredness.

Table 9b shows similar effects for dispositional perspective-taking: it strengthened ingroup bias by making scores of untrustworthiness, poor reason, and self-centeredness relatively lower in the convergent condition. Thus, in contrast to H3d, perspective-taking did not reduce but increased relative ingroup liking. The exception was the opposite effect on social distance scores. Figure 3 shows that perspective-taking reduced social distance scores a little bit more strongly in the discrepant condition than in the convergent condition, which is the only finding that fits H3d.

H3e predicted for more empathically concerned participants with the convergent conditions more negative evaluation of the comic strip characters who acknowledged opposing perspectives. In contrast to the hypothesis, the beta coefficients for the interaction between empathic concern and acknowledgment of an opposing perspective in Table 8 indicate the opposite direction of the effect. Empathically concerned participants perceived the comic strip characters as more trustworthy and reasonable; they did not change significantly their evaluation in terms of self-centeredness and social distance.

Interactions between Empathy and Acknowledgment of Opposing Perspective

Table 10a shows that, in participants with discrepant conditions, dispositional empathic concern did not change affective polarization significantly (except for the increase in self-centeredness scores). However, exposure to discrepant arguments that acknowledge an opposing perspective made empathically concerned participants prone to reduce, not increase, affective polarization on all affective polarization measures; this result does not fit H4a. For example, Figure 4 shows that while empathic concern only slightly affected untrustworthiness when the comic strip characters neglected opposing perspectives (horizontal blue regression line), acknowledgment of an opposing perspective (yellow line) led empathically concerned participants to rate lower scores of untrustworthiness.

Table 10b shows the analogical effects of dispositional perspective-taking. Following H4b, acknowledgment of opposing perspectives led participants with higher dispositional perspective-taking to rate lower scores on all affective polarization measures.

Discussion

Complementary Perspective-Taking Effect

Reviewing former studies that only inconsistently support the effect of perspective-taking on the reduction of affective polarization, we proposed that an individual's affective polarization could be complementary mitigated by outgroup members' acknowledgment of the individual's perspective. The results show that participants who read comic strips that argued for discrepant attitudes but acknowledged opposing perspectives evaluated the comic strip characters as more trustworthy, reasonable, less self-centered, and perceived lower social distance, which supports the complementary perspective-taking effect (H1a). Importantly, we found the effect in both subsamples with the discrepant patterns (except for the insignificant result for self-centeredness in participants with anti-refugee attitudes).

However, the effects were asymmetric. The acknowledgment of an opposing perspective reduced affective polarization more in pro-refugee participants (subA). Moreover, in this subsample, empathic concern increased scores of self-centeredness, whereas in participants with anti-refugee attitudes, empathic concern decreased them (Table 6). These differences indicate that for pro-refugee participants, the evaluation in terms of self-

centeredness could be more salient: they evaluated the characters with the opposing arguments as more self-centered and made their evaluation more positive in response to the conditions where their perspective was acknowledged.

The asymmetry between both subsamples is underlain also by different relationships with demographic variables. Higher subjective economic conditions made pro-refugee participants more polarized, whereas anti-refugee participants were polarized along their older age.

Validity of the Proxy Measures of Sociality

To understand the effects of perspective-taking on affective polarization, we introduced the interactionist framework with the key concept of sociality.

Within this framework, dispositional perspective-taking on one hand and the affective polarization measures on the other should be interrelated as proxy measures of sociality. In addition, they should be also related to cognitive complexity.

As hypothesized (H2a), participants who scored higher on the perspective-taking scale evaluated the comic strip characters more positively and perceived lower social distance (Table 5). In contrast to the alternative version H2b, they used more extreme scores on the evaluation scales. Nevertheless, although more extreme scores contradict H2b, they are compatible with the previous findings and H2a. Participants with higher perspective-taking probably used more extreme ratings in the positive direction (i.e., more trustworthy, reasonable, less self-centered).

Although the data support H2a, the relationships between perspective-taking on affective polarization could occur due to the involvement of participants with the convergent conditions. However, the most decisive is whether participants high on perspective-taking tend to be less polarized not only to people with the same but also with opposing attitudes. The additional (not preregistered) analysis that included only participants who evaluated comic strip characters with discrepant conditions (Table 10b) shows that dispositional perspective-taking neither predicted more positive scores on the evaluation measures nor lower social distance; it was even related to higher self-centeredness. These results question the interpretation in terms of proxy measures of sociality. Lastly, in contrast to H2c, we did not find the hypothesized relationship between dispositional perspective-taking and complexity of evaluation.

In conclusion, the results do not suggest that the measures of dispositional perspective-taking and affective polarization indicate sociality. It remains unresolved how to assess sociality and what the relationship is between sociality and cognitive complexity.

Effects of Dispositional Empathic Concern and Perspective-Taking on Affective Polarization

Outgroup and ingroup liking

We hypothesized that participants with higher empathic concern would decrease outgroup liking (H3a) and increase ingroup liking (H3b). Generally, we found evidence for the latter but contradictory evidence for the former hypothesis. Importantly, the effects of empathic concern were asymmetric: empathically concerned participants with the anti-refugee attitude reduced affective polarization towards outgroup members, whereas empathically concerned pro-refugee participants did not change rating on the affective polarization measures or increased affective polarization in terms of self-centeredness (Table 6).

In conclusion, the results imply that people capable of empathic concern may employ their ability differently, depending on their attitudes towards polarizing issues and measures of affective polarization. The variability of effects imply that it may be difficult to replicate

the straightforward effects of empathic concern in other partisan groups and to search for universal straightforward effects of empathy on affective polarization.

Relative Ingroup Liking

In addition to the preregistered study, we also formulated hypotheses to investigate the effects of dispositional empathic concern more thoroughly and to compare them with the effects of dispositional perspective-taking. We found that empathic concern increases relative ingroup liking consistently for all affective polarization measures, which supports H3c (Table 9a). In contrast to Gillissen et al. (2023), we found that perspective-taking increased relative ingroup liking as well (except for self-centeredness, Figure 3).

Thus, the results for in- and outgroup liking did not correspond to relative ingroup liking. Although the strengthening of relative ingroup liking along with the scores of empathic concern and perspective-taking could be the mechanism underlying affective polarization, Table 6 shows that the overall effects of empathic concern on the evaluation of outgroup members were mostly reducing or insignificant. In other words, although empathically concerned participants were biased towards the relatively more positive evaluation of ingroup members, they still tended to evaluate outgroup members either more positively, or empathic concern did not have a significant effect.

In addition, our results did not replicate Gillissen et al.'s (2023) findings that empathic concern fuels and perspective-taking reduces affective polarization. Although we found special cases when empathic concern increased outgroup dislike (self-centeredness; Table 6) and perspective-taking reduced ingroup liking (Figure 3), they did not represent consistent trends across the affective polarization measures.

Empathic Concern, Perspective-Taking and Acknowledgment of Opposing Perspectives

Further additional analysis (Table 10a, 10b) shows that interactions of empathic concern and perspective-taking on one hand and acknowledgment of the opposing perspective on the other had consistently reducing effects on affective polarization. Interestingly, these effects were revealed just in the interactions with the experimental manipulation: participants high in empathic concern and perspective-taking perceived persons with opposing attitudes (outgroup members) as more trustworthy, reasonable, less self-centered, and socially distant just in situations when their perspectives were acknowledged.

Relational-Interactionist Framework and Sociality

The differences between our and previous evidence could be explained by differences in samples and methodology. Nevertheless, in our view, the difference in the paradigms is the most critical. In this study, we did not test only straightforward effects but also considered the relational-interactionist framework; the latter approach yielded more consistent results. While the effects of the experimental manipulation were asymmetric and the effects of dispositional empathic concern and perspective-taking were variable, the interactions between the manipulation and both measures of dispositional empathy yielded more consistent and also mostly higher effects in terms of beta coefficients (Tables 10a, 10b).

Following the relational-interactionist framework, we discuss the results in terms of (mal)adaptive sociality. The results suggest that the dispositional perspective-taking measure is a proxy measure of sociality. On the other hand, participants with higher perspective-taking were more responsive to acknowledging their perspectives and were less polarized in terms of the evaluation measures and social distance. We found the same effect for dispositional empathic concern. Thus, dispositional perspective-taking and empathic concern could encourage adaptive responsiveness to others' perspective-taking acts (i.e., acknowledging opposing perspectives). In other words, people capable of perspective-taking or empathic

concern are more likely to be engaged in reciprocal patterns of adaptive sociality, which leads to a decrease in affective polarization

Limitations and Suggestions for Future Research

Almost all reported effects were low; the experimental manipulations and self-report scores of dispositional empathies contributed little to changes in affective polarization. However, there are three points that support the results. Firstly, in the analysis, we tested relationships between measures of different types and collected at distant time points: the self-report measures of empathy and the attitude scale in the first wave, and data from the experimental task in the second wave. The fact that the analysis revealed consistent relationships between so heterogenous measures increases the probability that the results did not occur by chance. Secondly, since the experimental task simulated only a small piece of an affective polarization development, small effects are plausible. The experiment simulated merely one conversational turn when an interlocutor formulates a statement and the other ones (i.e., the participants) form their construing of the interlocutor. Thus, the results indicate that even a single act of acknowledgment of the opposing perspective produces a measurable decrease in affective polarization and a measurable effect of interaction with individuals' levels of dispositional empathy.

On the other hand, the findings do not say whether changes in affective polarization due to acknowledgment or neglect of opposing perspectives cumulate and produce stable changes. Therefore, in addition to the necessity of replication of the complementary perspective-taking effect and the effects of interactions with dispositional empathy, we propose that the experimental evidence should be combined with qualitative or mixed-methods studies that focus on the process of the development and mitigation of affective polarization during time.

Implications for Practice

The findings could have practical consequences for effective communication of sensitive issues (e.g., to promote compliance with anti-epidemic measures or solidarity with people in need). Besides prompting people to consider others' perspectives, policy or opinion makers should ensure that people's perspectives have been acknowledged and not dismissed. Nevertheless, the acknowledgment does not mean an uncritical confirmation of beliefs including stereotypical, xenophobic, and the like. In terms of NVC (Rosenberg, 2016), acknowledgment would be based on a non-judgmental approach that requires a reflection of individuals' life circumstances, values, and needs and a recognition that although certain beliefs are harmful, from the individual's points of view they are not simply irrational or immoral; they are subjectively meaningful.

Conclusions

We introduced the relational-interactionist framework to understand phenomena of affective polarization such as distrust or dislike of members of other parties. Implementation of this framework to the experiment and data analysis yielded results that support the complementary perspective-taking effect and the mechanism of reciprocal interactions between individuals or groups that underlies affective polarization. The results suggest that, within an effort to mitigate polarization, prompting people to consider the perspective of their opponents could be ineffective or contradictory unless the prompted people perceive that also their perspective matters and is acknowledged. Moreover, the results suggest that people willing or capable of empathic insights are more responsive to acknowledging their perspectives.

In conclusion, we believe that the relational-interactionist framework enables us to address previous mixed evidence for the straightforward effects of perspective-taking and dispositional empathy on affective polarization. In future research, it could also help to integrate the evidence from psychological studies and the rich knowledge on conflicts and polarization that have been developed within approaches to communication and mediation such as Nonviolent Communication.

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Table 1. Charakteristics of the sample

		% of total
gender	female/male	49.8/50.2
age	18-24	10.5
	25-34	17.0
	35-44	22.6
	45-54	22.7
	55-65	14.3
	66-99	12.9
highest compl. edu.	without education	0.1
	uncompleted elementary school	0.1
	elementary school	10.1
	vocational school	32.3
	high school with graduation exam	12.6
	vocational school with graduation exam	22.0
	follow-up study	2.3
	tertiary college	1.9
	bachelor's degree	5.2
	master's degree	12.7
	doctoral degree	0.7

Table 2. Distribution of scores on the item "In your opinion, do you think it is correct that the Czech Republic prolongs residency of previously approved Ukrainian refugees?"

	N	% of Total
1 - Resolutely disagree	708	19.0
2	374	10.0
3	487	13.1
4	694	18.6
5	557	14.9
6	342	9.2
7 - Resolutely agree	566	15.2

Table 3. Description of subsamples

code	subA	sub	subC	subD
type of condition	discrepant	discrepant	convergent	convergent
attitude towards supporting Ukrainian refugees	pro	against	pro	against
stimulus (comic strip)	III, IV	I, II	I, II	III, IV
N	726	778	739	791
Mean on the attitude scale	5.95	1.83	6.06	1.89

Table 4. Pearson's correlations between target variables

	perspective taking	empathic concern	untrustw.	poor reason	self-c.	social distance	complexity	untrustw. (extremity)	poor reason (extremity)
empathic concern	0.45***	—							
untrustw.	-0.08***	-0.06***	—						
poor reason	-0.07***	-0.03	0.89***	—					
self-c.	-0.04*	-0.04*	0.73***	0.67***	—				
social_distance	-0.05**	-0.01	0.74***	0.73***	0.66***	—			
complexity	0.01	-0.03*	0.25***	0.34***	0.17***	0.28***	—		
untrustw. (extremity)	0.10***	0.08***	-0.39***	-0.35***	-0.31***	-0.24***	0.10***	—	
poor reason (extremity)	0.07***	0.06***	-0.21***	-0.18***	-0.19***	-0.08***	0.17***	0.80***	—
self_c._(extremity)	0.12***	0.13***	-0.26***	-0.19***	-0.29***	-0.12***	0.14***	0.70***	0.63***

"untrustw."-untrustworthiness; "self-c."-self-centeredness; *p<0.05; **p<0.01, ***p<0.001

Table 5. Standardized regression coefficients for acknowledgment of the opposing perspective and dispositional empathic concern in predicting affective polarization (discrepant conditions)

	untrustw.	untrustw. (one item)	poor reason	self-c	untrustw. (extremity)	poor reason (extremity)	self-c (extremity)	complexity	social distance
acknowledg. OP	-0.34***	-0.35***	-0.36***	-0.18***	-0.02	-0.03	-0.18***	-0.12*	-0.22***
attitude U. ref.	0.10***	0.07**	0.11***	0.53***	0.01	-0.01	0.18***	-0.18***	0.15***
empathic concern	-0.07**	-0.02	-0.03	-0.03	0.04	0.02	0.11***	0.01	-0.03
gender	-0.01	-0.02	-0.02	-0.03	-0.09**	-0.08**	-0.02	-0.03	-0.02
highest completed edu.	-0.04	0.01	0.00	-0.01	-0.05	-0.04	0.01	0.00	0.04
age	0.10***	0.07**	0.08**	0.05*	0.05	0.10***	-0.06*	-0.02	0.09***
size of municipality	-0.02*	-0.01	0.00	-0.01	0.01	-0.02	0.02	0.03	-0.03
SEC	0.02	0.04	0.01	-0.00	0.05	0.05	0.05	-0.03	0.04
adjusted R^2	0.04***	0.04***	0.05***	0.28***	0.01**	0.01***	0.06***	0.04***	0.05***

“untrustw.”-untrustworthiness; “self-c.”-self-centeredness;“acknowledg. OP” - acknowledgment of an opposing perspective; “attitude U. ref.” - attitude toward supporting Ukrainian refugees; “SEC”- subjective economic condition; *p<0.05; **p<0.01, ***p<0.001

Table 6. Standardized regression coefficients for acknowledgment of the opposing perspective in predicting affective polarization and complexity (discrepant conditions separately)

	untrustw. subA	untrustw. subB	untrustw. (one item) subA	untrustw. (one item) subB	poor reason subA	poor reason subB	self-c. subA	self-c. subB	untrustw. (extr) subA	untrustw. (extr) subB	poor reason (extr) subA	poor reason (extr) subB	self-c. (extr) subA	self-c. (extr) subB	complex subA	complex subB	social distance subA	social distance subB
acknowledg. OP	-0.48***	-0.23**	-0.46***	-0.26***	-0.48***	-0.28***	-0.46***	-0.02	-0.15*	0.08	-0.15	0.04	-0.36***	-0.02	-0.13	-0.12	-0.31***	-0.19**
empathic concern	0.01	-0.13***	0.04	-0.05	0.03	-0.07	0.11**	-0.15***	0.11**	-0.01	0.09*	-0.03	0.12**	0.13***	-0.00	0.01	0.05	-0.09*
gender	-0.02	0.00	-0.04	0.00	-0.03	-0.01	-0.06	-0.01	-0.07	-0.09*	-0.07	-0.09*	-0.02	-0.03	0.04	-0.09*	0.01	-0.04
highest compl. edu.	-0.02	-0.05	0.03	0.00	0.03	-0.00	0.08*	-0.08*	-0.09*	-0.01	-0.07	-0.01	-0.00	0.05	0.01	-0.03	0.08*	-0.01
age	0.05	0.14***	0.02	0.11**	0.04	0.11**	0.00	0.15**	0.06	0.05	0.09*	0.10**	0.00	-0.12***	-0.00	-0.04	0.03	0.14***
size of municipality	-0.01	-0.03	0.03	-0.03	0.00	-0.01	0.05	-0.08	0.01	0.01	0.01	-0.05	0.02	0.04	0.05	0.01	-0.05	-0.03
SEC	0.10**	-0.03	0.07	0.02	0.13***	-0.07	0.07	-0.05	0.08*	0.02	0.14***	-0.01	0.09	0.04	0.02	-0.06	0.16***	-0.04
adjusted R^2	0.06***	0.04***	0.05***	0.02***	0.07***	0.03***	0.07***	0.05***	0.02***	0.01	0.03***	0.02**	0.04***	0.03***	0.00	0.01	0.05***	0.03***

"untrustw."-untrustworthiness; "self-c."-self-centeredness; "extr"-extremity; "complex"-complexity; "acknowledg. OP" - acknowledgment of the opposing perspective; "attitude U. ref." - attitude toward supporting Ukrainian refugees; "SEC"- subjective economic condition; *p<0.05; **p<0.01, ***p<0.001

Table 7. Standardized regression coefficients for perspective-taking in predicting affective polarization and complexity (whole sample)

	untrustw.	untrustw. (one item)	poor reason	self-c.	untrustw. (extremity)	poor reason (extremity)	self-c. (extremity)	complexity
perspective-taking	-0.08***	-0.04*	-0.07***	-0.04*	0.10***	0.07***	0.11***	0.01
gender	-0.03	-0.01	-0.02	-0.05**	-0.03*	-0.04*	0.01	-0.01
highest completed edu.	-0.02	0.01	0.02	0.02	-0.03	-0.03*	0.05**	-0.05**
age	0.04**	0.03*	0.02	0.02	0.05**	0.09***	-0.02	-0.02
size of municipality	-0.02	-0.02	-0.01	-0.00	0.02	0.01	0.02	-0.01
SCE	0.02	0.03	0.02	0.04	0.02	0.02	0.07***	-0.04*
adjusted R^2	0.008***	0.002*	0.005***	0.004**	0.012***	0.015***	0.023***	0.004***

"untrustw."-untrustworthiness; "self-c."-self-centeredness; "SEC"- subjective economic condition; *p<0.05; **p<0.01, ***p<0.001

Table 8. Standardized regression coefficients for acknowledgment of the opposing perspective, empathic concern in predicting affective polarization (convergent conditions)

	untrustw.	untrustw. (one item)	poor reason	self-c	social distance
EC	-0.05**	0.00	-0.01	-0.08***	0.01
EC * acknowledg. OP	-0.08**	-0.09**	-0.08***	-0.05	-0.06
gender	-0.03	-0.02	-0.05076	-0.01	-0.02016
highest compl. edu.	-0.08**	-0.05	-0.05255	-0.14***	-0.15***
age	-0.01	-0.00	-0.04130	0.0157	0.02977
size of municipality	-0.03	-0.05	-0.02828	-0.0212	-0.00491
SEC	-0.03	-0.02	-0.02705	-0.07*	-0.01681
adjusted R^2	0.02***	0.01**	0.02**	0.04***	0.02***

"untrustw."-untrustworthiness; "self-c."-self-centeredness; "acknowledg. OP" - acknowledgment of the opposing perspective; "SEC"- subjective economic condition; *p<0.05; **p<0.01, ***p<0.001

Table 9a. Standardized regression coefficients for interaction between dispositional empathic concern and condition type in predicting affective polarization (whole sample without participants who rated the middle point on the attitude scale)

	untrustw.	untrustw. (one item)	poor reason	self-c.	social distance
empathic concern	-0.06	-0.02***	-0.03***	-0.02**	-0.01***
empathic concern * discrepant condition	-0.02***	-0.02***	-0.02***	-0.06***	-0.01***
gender	-0.01	-0.01	-0.02*	-0.03**	-0.01
highest compl. edu.	-0.02**	0.01	0.01	0.01	-0.01
age	0.05	0.04	0.03	0.02	0.06
size of municipality	-0.02	-0.02	-0.01	-0.01	-0.01
SEC	0.01	0.02	0.01	0.04*	0.03*
adjusted R^2	0.25***	0.22***	0.27***	0.18***	0.25***

"SEC"- subjective economic condition; *p<0.05; **p<0.01, ***p<0.001

Table 9b. Standardized regression coefficients for interaction between dispositional perspective-taking and condition type in predicting affective polarization (whole sample without participants who rated the middle point on the attitude scale)

	untrustw.	untrustw. (one item)	poor reason	self-c.	social distance
perspective-taking	-0.07*	-0.04***	-0.06**	-0.03***	-0.05***
perspective-taking * discrepant condition	-0.02***	-0.02***	-0.02***	-0.06***	0.02***
gender	-0.02*	-0.01	-0.02**	-0.04**	-0.01
highest compl. edu.	-0.02**	0.01	0.01	0.01	-0.00
age	0.05*	0.04	0.03	0.02	0.06**
size of municipality	-0.02	-0.02	-0.01	-0.01	-0.01
SEC	0.01	0.02	0.01	0.04	0.04
adjusted R^2	0.25***	0.22***	0.27***	0.18***	0.25***

"SEC"- subjective economic condition; *p<0.05; **p<0.01, ***p<0.001

Table 10a. Standardized regression coefficients for acknowledgment of opposing perspective, empathic concern and other covariates in predicting affective polarization (discrepant conditions)

	untrustw.	untrustw. (one item)	poor reason	self-c.	social distance
EC	0.01	0.05	0.03	0.07*	-0.01
EC * acknowledge OP	-0.11***	-0.10***	-0.07***	-0.03***	0.02***
gender	-0.04	-0.04	-0.05	-0.10***	-0.04
highest compl. edu.	-0.02	0.02	0.02	0.11***	0.07**
age	0.09***	0.06*	0.07**	0.02	0.08**
size of municipality	-0.01	-0.00	0.01	0.00	-0.03
SEC	0.05	0.05*	0.04	0.14***	0.08**
adjusted R^2	0.04***	0.04***	0.04***	0.05***	0.03***

"EC"-empathic concern; "untrustw."-untrustworthiness; "self-c."-self-centeredness; "acknowledg. OP" - acknowledgment of an opposing perspective; "attitude U. ref." - attitude towards the aid to Ukrainian refugees; "SEC"- subjective economic condition; *p<0.05; **p<0.01, ***p<0.001

Table 10b. Standardized regression coefficients for acknowledgment of opposing perspective, perspective-taking and other covariates in predicting affective polarization (discrepant conditions)

	untrustw.	untrustw. (one item)	poor reason	self-c.	social distance
PT	-0.00	0.04	0.03	0.10*	-0.06
PT * acknowledge OP	-0.11***	-0.12***	-0.15***	-0.13***	-0.03***
gender	-0.02	-0.04	-0.04	-0.09**	-0.04
highest compl. edu.	0.09	0.02	0.02	0.11***	0.07**
age	-0.01***	0.07*	0.07**	0.02	0.08**
size of municipality	0.05	-0.00	0.01	0.00	-0.02
SEC	-0.00*	0.06*	0.04	0.13***	0.09***
adjusted R^2	0.04***	0.04***	0.04***	0.05***	0.03***

“PT”-perspective-taking; “untrustw.”-untrustworthiness; “self-c.”-self-centeredness;“acknowledg. OP” - acknowledgment of an opposing perspective; “attitude U. ref.” - attitude towards the aid to Ukrainian refugees; “SEC”- subjective economic condition; *p<0.05; **p<0.01, ***p<0.001

Figure 1. Stimuli I, II, III, and IV (from left to right)

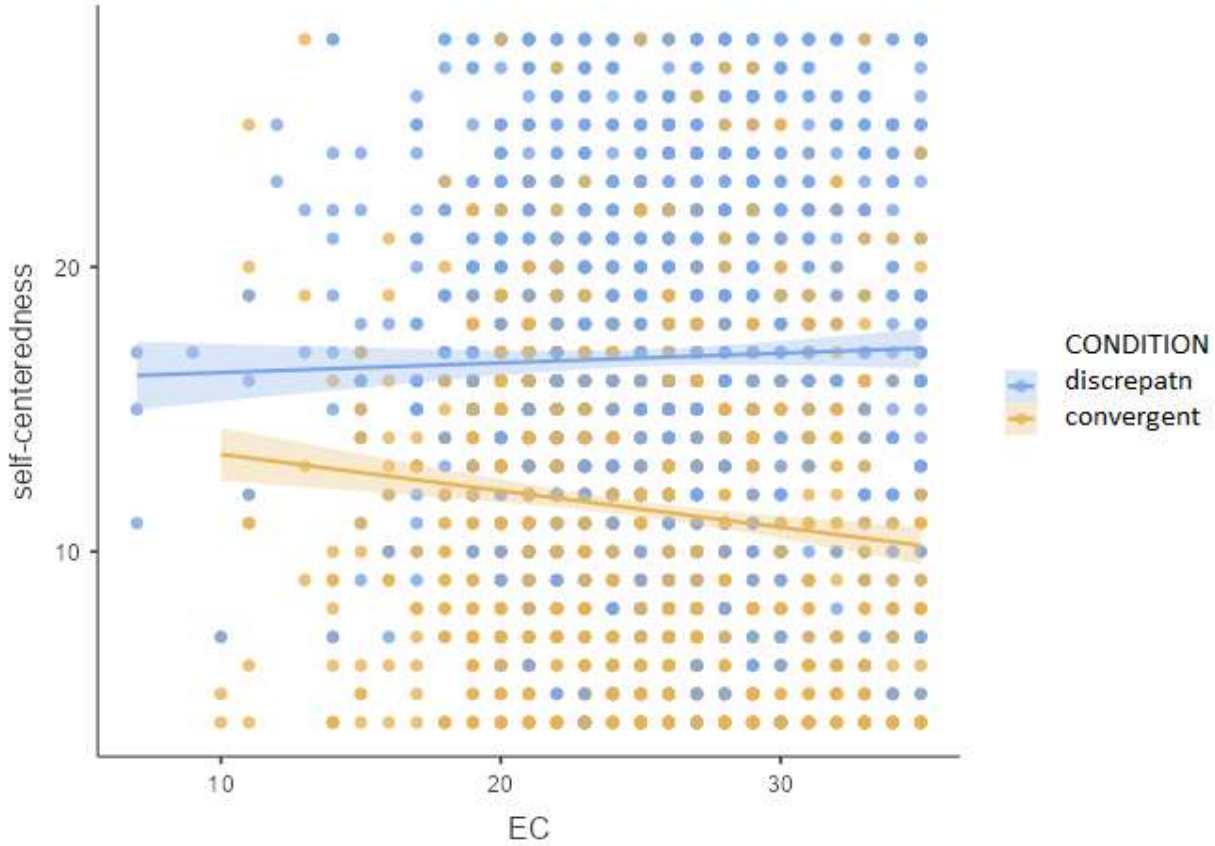

Figure 2. Increase of ingroup bias (relative ingroup liking) along with the empathic concern scores (EC; regression lines with standard errors)

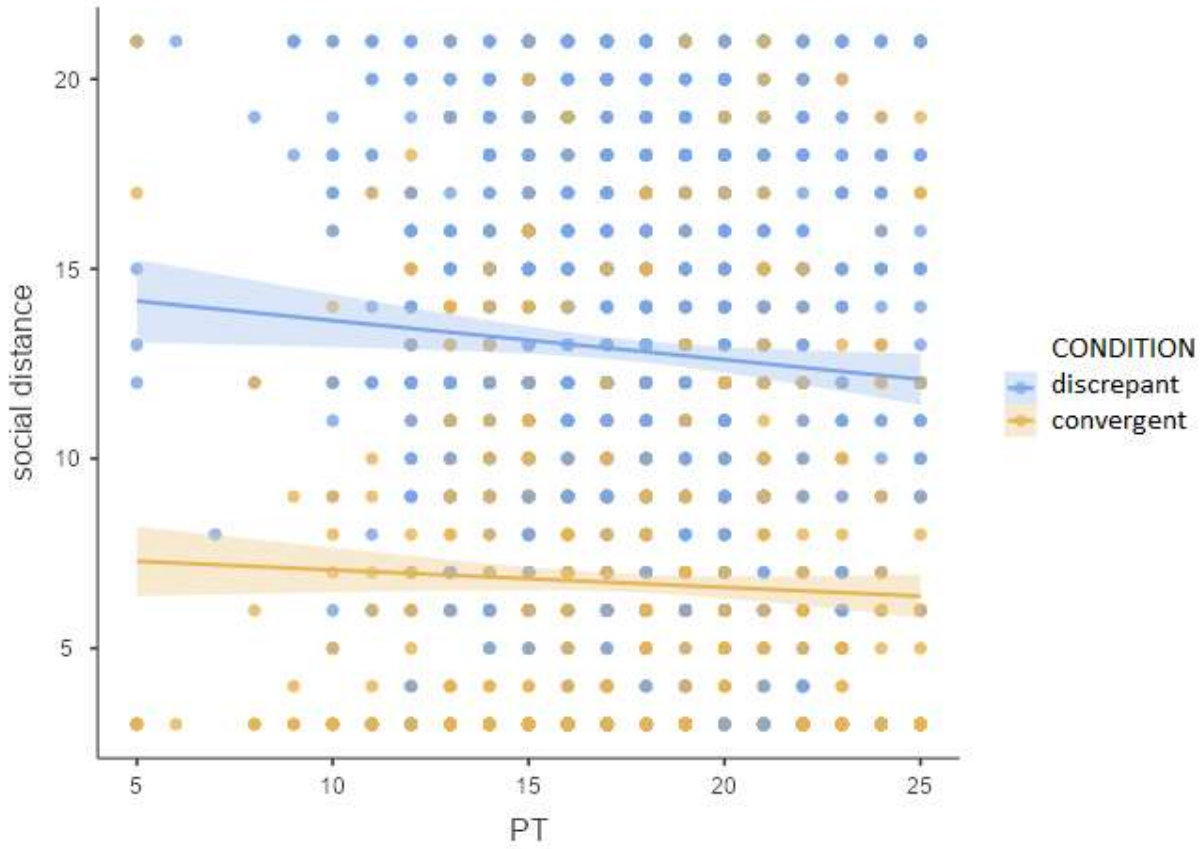

Figure 3. Reduction of ingroup bias (relative ingroup liking) along with the perspective-taking scores (PT; regression lines with standard errors)

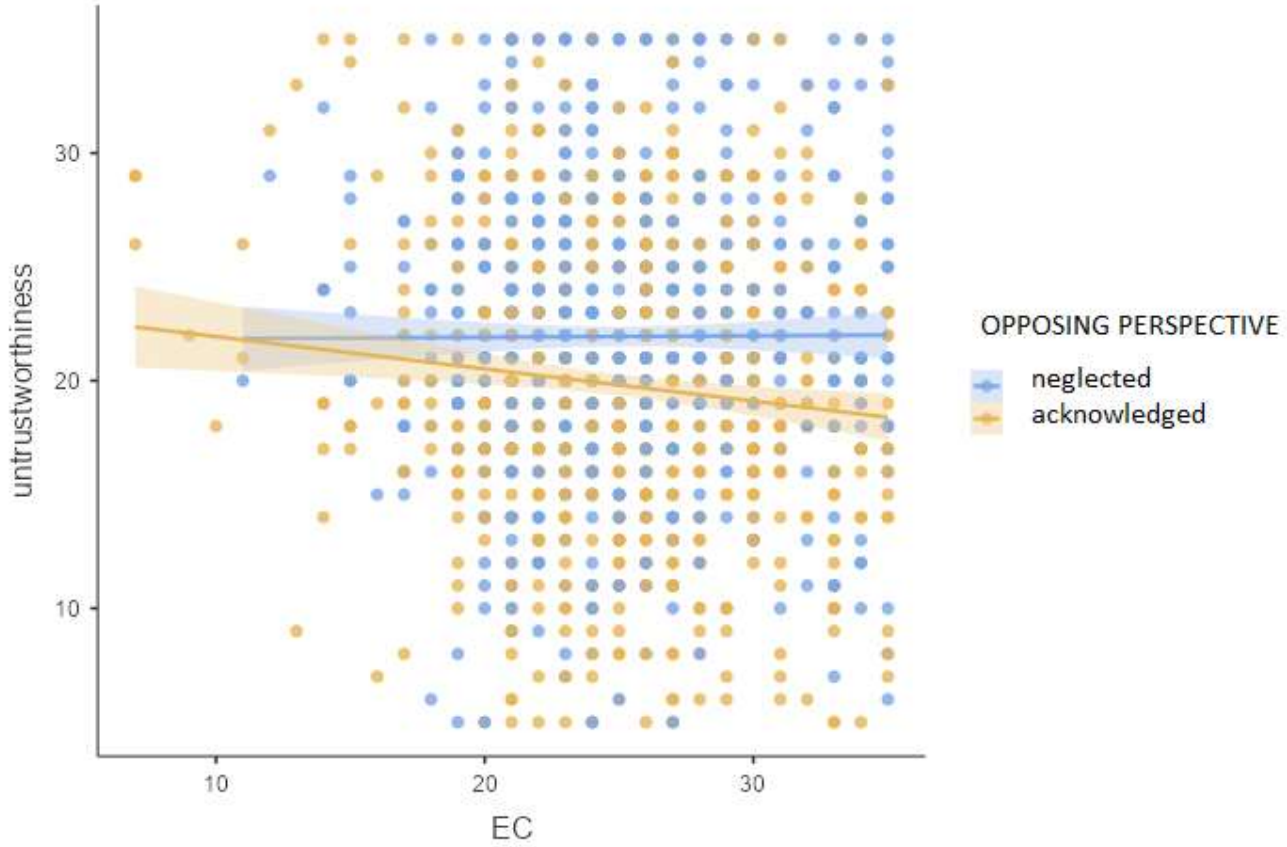

Figure 4. The effect of the interaction of empathic concern (EC) and acknowledgment of opposing perspectives on the reduction of untrustworthiness