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The Political Gender Gap in Adolescence and the Potential Influence of Beliefs
About Empathy

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Abstract

As men and women seem to progressively drift apart in their political stances, understanding the reasons behind this shift has gained particular interest in recent psychological research. While gender and ideological differences in empathy are well established, recent findings suggest that not empathy itself, but rather the metacognitive beliefs and attitudes about it, play a crucial role in shaping political orientation. The present two studies examine the hypothesized moderation of biases in empathy beliefs on the political gender gap. Given that this gap appears to be widening among younger generations in recent European elections, Study 1 focuses on examining these relations in 128 young Austrian adolescents aged 10 - 15, while Study 2 targets a sample counting 815 Austrians in later adolescence, aged 15 - 21. Analyses suggest mixed results with ANCOVAs revealing no gender gaps in the younger sample, while gender gaps in political ideology and empathy expressions emerge in later adolescence. Multiple linear regressions do not indicate a moderating effect of biases in empathy beliefs regarding those relations but do show that these biases predict political ideology in 15–21-year-olds. The results emphasize the role of age in shaping gender gaps in political ideology and empathy expression toward in- and outgroups. Additionally, they highlight the influence of empathy beliefs on political ideology. The results offer valuable insights into the development of the political gender gap and its connection to empathy beliefs, further encouraging future research to explore the interplay between empathy beliefs and political polarisation.

Keywords: Political Gender Gap, Political Psychology, Empathy Gap, Empathy Beliefs, Adolescence

Zusammenfassung

Männer und Frauen scheinen in ihrer politischen Einstellung zunehmend auseinander zu driften, weswegen psychologische Forschung vermehrt der Exploration der psychischen Korrelate dieses Trends nachgeht. Während geschlechtsspezifische und ideologische Unterschiede in Empathieausprägungen weitreichend erforscht sind, deuten neuere Ergebnisse darauf hin, dass nicht das Empathievermögen selbst, sondern vielmehr die metakognitiven Überzeugungen und Einstellungen dazu eine zentrale Rolle bezüglich der Ausprägung politischer Orientierungen spielen. Die beiden vorliegenden Studien untersuchen die angenommene Moderation von Biases bezüglich solcher Einstellungen zu Empathie auf das politische Geschlechtergefälle. Wie auch bei den jüngsten Europawahlen ersichtlich, scheint sich diese Kluft zwischen den Geschlechtern insbesondere in den jüngeren Generationen zu vergrößern. Daher konzentriert sich Studie 1 auf die Untersuchung dieser Zusammenhänge bei 128 jungen österreichischen Jugendlichen im Alter von 10 bis 15 Jahren, während Studie 2 auf eine Stichprobe von 815 Österreicher*innen im Alter von 15 bis 21 Jahren abzielt. Die Analysen liefern gemischte Ergebnisse: Während ANCOVAs in der jüngeren Stichprobe keine geschlechtsspezifischen Unterschiede zeigen, treten in der späteren Adoleszenz deutliche Differenzen in politischen Ideologien und im Empathieausdruck auf. Multiple lineare Regressionen deuten darauf hin, dass Biases bezüglich Einstellungen zu Empathie keinen moderierenden Effekt auf diese Beziehungen haben. Allerdings zeigt sich, dass die Stärke dieser Biases die politische Orientierung der 15- bis 21-Jährigen vorhersagt. Die Ergebnisse unterstreichen die Bedeutung des Alters für geschlechtsspezifische Unterschiede in politischen Ideologien und im Empathieausdruck gegenüber Eigen- und Fremdgruppen. Zudem verdeutlichen sie den Einfluss von Einstellungen zu Empathie auf politische Orientierungen entlang des Links-Rechts Spektrums. Die Ergebnisse bieten wertvolle Einblicke in die Entwicklung des politischen Geschlechtergefälles und dessen Zusammenhang mit Empathieeinstellungen. Ferner regen sie dazu an, das Zusammenspiel zwischen diesen Einstellungen und politischer Polarisierung weiter zu erforschen.

Schlagwörter: Politische Ideologie, Geschlechterdifferenzen, Politische Psychologie, Empathie, Einstellungen zu Empathie, Adoleszenz

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THE POLITICAL GENDER GAP IN ADOLESCENCE AND THE POTENTIAL
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The Political Gender Gap in Adolescence and the Potential Influence of Beliefs About Empathy

Recent elections throughout Europe, including national and past EU elections, have demonstrated a notable trend towards right-wing parties across various countries. This shift has shown to be evident in multiple European countries like Austria, France, Italy or Germany, where parties such as the Freedom Party of Austria (FPÖ), the Rassemblement National (RN), Fratelli d'Italia (FdI) and the Alternative für Deutschland (AfD) have seen significant gains (Austrian Federal Ministry of the Interior, 2024; European Parliament, 2024; Forschungsgruppe Wahlen, 2025; French Ministry of the Interior, 2024; Italian Ministry of the Interior, 2022). Parallel to this trend, it has been noticed that these right-wing tendencies seem to profoundly differ between the genders (European Parliament, 2024; Donovan, 2023; Shorrocks, 2018; Van Ditmars, 2023). The latest EU election of June 9th, 2024, underscored these trends, revealing significant differences in gender voting behavior across multiple EU-countries. For example, in Germany, while the voting proportions for centrist parties were nearly equally distributed between genders, there were stark differences concerning the more progressive Die Grünen and the right-wing AfD. Die Grünen received substantial support from women, whereas the AfD was significantly more popular among men, collecting almost 20% of male votes compared to 12% from female voters (European Parliament, 2024). Similar voting tendencies were found across other EU-countries like France, Austria, Belgium, Italy, Portugal and Finland (European Parliament, 2024).

Traditionally, up until the 1980s, the gender gap in politics was characterized by women voting more conservatively than men. However, over the past few decades, this relationship has reversed, revealing a modern gender gap (Inglehart & Norris, 2000). Women increasingly identify with left-wing ideologies, while men show a growing tendency towards right-wing parties. Supporting this theory, the gendered ideological tendencies are also reflected in attitudes. Several recent studies have found that women are generally more inclined toward left-wing attitudes, such as economic egalitarianism (Rekker et al., 2015), and put greater emphasis on issues like abortion rights, same-sex marriage, as well as increased welfare and healthcare spending (Bittner & Goodyear-Grant, 2017). In contrast, men tend to support more conservative views, favouring authoritarian leadership and maintaining order (Immerziel et al., 2015), exhibiting stronger ethnocentric beliefs (Rekker et al., 2015), and being less supportive of gun control (Gidengil et al., 2003).

Although this gendered voting trend has been consistent in most European countries over the past 30 years, it has regained media attention as studies reveal that the gender gap seems to be widening in Western societies, especially among younger generations (European Parliament, 2024; Forschungsgruppe Wahlen, 2025; Gidengil et al., 2003). For instance, a recent examination of generational gender differences regarding political ideologies revealed that while older cohorts exhibited a traditional gender gap, younger cohorts displayed a modern twist, with women leaning more left-wing than men (Shorrocks, 2018). These generational changes were primarily attributed to higher levels of religiosity in older women. As those religious beliefs are more aligned with conservative positions, women in older cohorts tended to demonstrate more right-wing ideologies (Kittilson, 2016; Shorrocks, 2018). As religiosity profoundly decreases among younger generations and younger women tend to increasingly support economic equality and state intervention, the gender gap seems to invert and grow over time (Shorrocks, 2018).

Further supporting this observation, a study on the intergenerational transmission of political ideology revealed that young women tend to identify more with leftist ideologies compared to men, regardless of their parents' political beliefs. This suggests that the gender-generation gap has a stronger influence than other gender-related patterns in the intergenerational transmission of political views. As a result, daughters are less likely to align with their parents' right-wing positions, whereas the transmission of political beliefs from parents to sons remains robust for both left- and right-leaning ideologies (Van Ditmars, 2023).

Explanations for the inversion of the gender gap and its widening are diverse, with most explanations pointing towards various social and cultural shifts over the past few decades. Parallel to the consideration of Shorrocks et al. (2018) regarding the decline of religiousness, findings also suggest that the rise of feminism, particularly during the third wave, may be a key factor. Young women socialized during this period seem to exhibit increased support for feminist ideals, which are usually considered to be reflected in more progressive and left-leaning political stances (Gidengil et al., 2003). Lastly, studies most prominently linked this trend to higher female workforce participation, related to changes in traditional family structures and evolving gender roles, and therefore changes in women's beliefs and values (Abendschön & Steinmetz, 2015; Inglehart & Norris, 2000; Kittilson, 2016). These arguments furthermore reinforce the notion that the gender gap is assumed to widen to an extent, as these trends of modernisation tend to increase in Western societies (Inglehart & Norris, 2000).

Empathy Gaps Across Political Ideologies and Gender

While prior research mentions various sociological factors contributing to the gender gap, it provides little insight into the deeper underlying psychological contrasts that may also play a role. For instance, if modernization processes—such as evolving gender roles and declining religiosity—are influencing women’s political attitudes, it raises the question of why men do not similarly shift toward more progressive stances, as they are being exposed to the same societal changes. A psychological construct that could help to explain that circumstance is empathy, which is thought to be heavily related to political beliefs.

When examining gender differences through the lens of empathy, research strongly suggests male and female adults as well as adolescents to significantly differ regarding their empathy expressions (Lim et al., 2018; Marsden & Barnett, 2020; O’Brien et al., 2013; O’Neill, 2020; Rueckert & Naybar, 2008). Women and girls consistently demonstrate greater levels of perspective-taking and empathic concern (Marsden & Barnett, 2020; O’Neill, 2020; Van der Graaff et al., 2014), which has been suggested to stem from socialization processes that leading to higher emotional reactivity in both young and adult females (Narvy et al. 2023; Rueckert et al., 2011). Theories further explain those gender disparities by linking them to traditional gender roles. As femininity is typically associated with nurturing behaviours such as kindness and compassion for others (Bem, 1974; Wood & Whelan, 1989), whereas masculinity is often linked to dominance-related behaviours (Whitley & Lee, 2000), these socialized expectations are thought to contribute to the development of gendered patterns in empathy and emotional responses. Current research suggests that gendered socialization practices often lead boys to experience a decline in empathic abilities after age 10, known as "anti-empathic development," as they increasingly conform to gender-normative behavior. Conversely, girls are expected to exhibit higher levels of affective empathy, resulting in greater personal distress when witnessing others suffer (O’Neill, 2020).

Moreover, levels of expressed empathy are also known to show significant disparities between liberals and conservatives, with liberals generally exhibiting higher levels (Harell et al., 2021; Hasson et al., 2018; Morris, 2020; Simas et al., 2020; Zebarjadi et al., 2023). This difference is often attributed to differing core beliefs and policy priorities (Morrell, 2010; Wagaman & Segal, 2014). For example, Hasson et al. (2018) examined the relationship between political views and empathy through surveys conducted in three countries. Their findings revealed that liberals showed higher tendencies to experience and express empathy - in the U.S. and Germany and also demonstrated a higher willingness to assist others. Across

all surveyed nations, both liberals and conservatives showed less empathy for those outside their political or social groups, though this tendency was more pronounced among conservatives (Hasson et al., 2018). Liberals' greater emphasis on social and economic equality and their proactive support for disadvantaged groups likely enhance their empathetic responses (Morris, 2020), whereas conservatives' preference for social hierarchies correlates with lower empathy levels (McFarland, 2010; Sidanius et al., 2013). Conversely, conservatives, who often value social hierarchies, show more selective empathy (Zebarjadi et al., 2023).

Moreover, recent neuroscientific research supports these behavioral findings, highlighting that the temporoparietal junction in the brain, which is said to be critical for empathy and perspective-taking, shows greater activation in liberals when they observe others in distress (Zebarjadi et al., 2023). This suggests a stronger neural response to empathy among liberals. Consequently, empathy might be considered as a moderating factor to the growing gender gap in political alignment.

Empathy Biases

While the significant influence of empathy on political orientation is consistently replicated by research, recent literature highlights a limitation to this relationship due to the biased nature of empathy. Several studies indicated that differences in empathy between political groups are not about the overall level of empathic ability but rather the subjects that are targeted when empathy is expressed (Bloom, 2016; Simas, 2020; Waytz et al., 2016; Zebarjadi et al., 2023). Findings suggest that there is a significant "empathy gap" (Gutsell & Inzlicht, 2012) where people find it easier to empathize with ingroup members compared to outgroup members, resulting in less likelihood of helping outgroup members (Gutsell and Inzlicht, 2012; Sirin et al., 2017; Vanman, 2016; Zaki, 2014). Therefore, biased empathy is thought to contribute to political polarization, as those most predisposed to empathy might also be more politically divided (Simas et al., 2020). Following from that, Zaki (2014) argues that this bias in empathy facilitates cooperation within groups but can be costly of resources when extended to outgroup members.

Especially in resource-limited situations, selective empathy directed towards specific target groups can result in unequal support, benefiting some over others (Bloom, 2017; Zaki, 2014). Recent studies suggest that the expression of empathy is rooted in empathy beliefs, which encompass convictions and attitudes about who deserves empathy. Prior research on the matter indicates that people's beliefs significantly impact their motivations, behaviors, and

emotions. For instance, individuals regulate their emotions, including empathy, based on their beliefs about the utility of these emotions in various situations (Santos et al., 2022; Zaki, 2014). Additionally, empathy beliefs affect communication methods, such as political discourse on controversial issues, and tend to perpetuate themselves in self-fulfilling ways. When participants were primed with the belief that expressing cross-partisan empathy was useful their communication became more empathic and conciliatory. Instead of doubling down on their own beliefs, they expressed them in a way that was more understanding and respectful toward out-group members. This shift in communication style led to greater acceptance from out-partisans, improving intergroup attitudes and reducing overall animosity (Santos et al., 2022). Furthermore, when it is believed that showing empathy to an out-group member could be of advantage, these lesser biased empathy beliefs consequently lead to more generous expressions of empathy (Santos et al., 2022, Schumann et al., 2014; Weisz et al., 2022).

Likewise, a handful of studies have already shown that holding positive empathy beliefs, e.g. that empathy is useful (Santos et al., 2022), or an unlimited resource (Hasson et al., 2022) is associated with more efforts to feel empathy and greater expression of empathy towards outgroups (Hasson et al., 2022; Santos et al., 2022; Schumann et al., 2014; Weisz et al., 2022).

Regarding political issues, studies revealed that belief in the usefulness of cross-partisan empathy predicted a lower tendency to associate with those of similar political views even after controlling for common constructs of empathy, like perspective taking and empathic concern. Moreover, the effect showed to be robust when controlling for gender. Although those beliefs seemed to be associated with other empathy-related constructs, empathy beliefs and political orientation did not significantly interact in this relation, suggesting the effect to be independent of one's political convictions (Santos et al., 2022). However, it has been suggested that lesser biased empathy beliefs may increase the overall expression of empathy (Santos et al., 2022) and empathic effort (Schumann et al., 2014), hinting towards a positive relation between the two concepts.

Regarding the previously suggested relationship between empathy, political ideologies and gender, the current findings on empathy belief hint to the assumption that the level of biases in empathy beliefs might interact with the size of political disparities across the genders. Although the concept of empathy beliefs has yet to be further examined for gender differences, findings on women's and men's differences in sympathy biases towards

outgroups hint toward significant differences similar to those when expressing empathy (Mehta, 1997; Navarrete et al., 2010; Ratcliff et al., 2006). For instance, compared to white woman, white men expressed greater race biases in their attitudes towards the former U.S. President Barack Obama, which was related to demonstrating higher levels of aggression and social dominance (Navarette et al., 2010). Similarly, biases towards homosexuals were less evident in amongst heterosexual woman, due to their stronger internal motivation to reject prejudgement (Hildebrandt & Jäckle, 2024; Ratcliff et al., 2016). This reinforces the notion that metacognitive processes on attitudes towards outgroups influence the expression of biases and that these processes might vary across the genders. Although motivation to reduce biases and attitudes towards empathy are conceptually distinct from one another, these findings imply that empathy beliefs might follow a similar pattern.

Following these insights the present research aims to examine whether gender disparities in empathy expressions are rooted in empathy beliefs – more specifically, the degree of biases regarding those beliefs. Furthermore, it aims to check whether biased empathy beliefs help to explain the gendered political divisions across the left-right spectrum, which characterize the European political landscape. Current findings of the political gender gap suggest that this divide is becoming even more pronounced among younger generations. However, the investigation of such a gap in young adolescence remains understudied, as most studies focused on samples aged 16 and older (Abendschön & Steinmetz, 2015; Albaugh et al., 2024; Shorrocks, 2018; Van Ditmars, 2023). As youth and adolescence constitute very sensitive periods for identity formation and the development of political beliefs (Klimstra et al., 2010; Meeus et al., 2010), it states the importance of examining these relations among younger adolescents.

This paper analyses findings from two studies: Study 1 focuses on early adolescents, while Study 2 examines participants in mid- to late adolescence. Both studies attempt to assess potential relationships between gender, empathy, biased empathy beliefs, and political ideologies, with a specific focus on the moderating role of biased empathy beliefs in shaping the gender gap in political ideology during adolescence in Austria. Through these studies, I aim to find evidence for the gender disparities across political ideologies and empathy, allowing me to further test for more detailed hypotheses regarding both samples:

H₁: Female adolescents are expected to exhibit more left-wing political ideologies compared to male adolescents.

H₂: Female adolescents are predicted to exhibit higher levels of empathy expressions compared to male adolescents.

H₃: Male adolescents are expected to exhibit greater biases in empathy beliefs compared to female adolescents.

H₄: Biased empathy beliefs are expected to moderate the relationship between gender and empathy expressions.

H₅: Biased empathy beliefs are predicted to moderate the differences in political ideologies across the genders by increasing the disparities.

Both Studies in my master project were part of a bigger research project at the CSN Unit, which is still in progress. Therefore, the data included in this thesis is preliminary data of a restricted subsample and represents an interim result. Data collection and analysis of the research project are still ongoing. It is therefore possible that the results presented here will change.

Study 1

Study 1 was conducted as part of the first wave of the larger three-wave longitudinal research initiative, “*Interdisciplinary Perspectives on the Politics of Adolescence & Democracy*” (IP-PAD). The data presented in Study 1 was collected from the 4th of November 2024 until the 6th of January 2025.

Methods

Data was gathered through a survey in Qualtrics. The survey was primarily conducted in schools, with either a research team member or a teacher present to provide a briefing and explain the procedure. However, four classes completed the survey outside of school hours in their private environments. Furthermore, 15 students completed the paper-and-pencil version of the survey, while the remaining participants responded online. The required duration time of the survey was approximately 20 - 30 minutes.

Participants

Data was collected in 11 classes amongst students aged 11 to 15 in the 2nd, 3rd, 4th and 5th year of state secondary schools in Vienna, Austria. Schools were reached out via email by the research team.

As all items were displayed in German, students’ fluency in German was required. Following ethical guidelines, all participants, being minors, had to obtain parental consent to participate in the study. Furthermore, the students were informed about the survey conditions and the option to withdraw at any point. Participating schools were offered compensation in

the form of a 40-minute workshop on social media competence. Lastly, in accordance with ethical guidelines, the survey included a briefing section that informed participants about the survey conditions, research goals, and their right to withdraw at any time.

Measures

Following common practices in political sciences (Jost et al., 2009), students' *political ideologies* were assessed by having participants rate their political orientation on an 11-point scale from *left* to *right*. The item was followed by two items asking for students' certainty regarding their answers in their political orientation (e.g., *How sure are you about your last answer?*). Students who rated themselves to be *not at all sure* or *quite unsure* on these items were excluded from the analyses, providing more reliability to the measurement.

Empathy was measured by asking students how often they express empathy towards their family, friends as well as multiple in- and outgroups (e.g., *How often do you usually try to put yourself in the shoes of people who live in other countries?*). The scale demonstrated an adequate reliability, with a Cronbach's alpha of .75, and showed a significant correlation with the widely recognized empathy trait measure, the Single Item Trait Empathy Scale (SITES) by Konrath et al. (2018).

Empathy beliefs were assessed by asking students to report their beliefs about the importance of empathizing with various outgroups, political ingroups, as well as friends, family, and the general population (e.g., *Making an effort to empathize with all life on Earth is important to me*). The mentioned in- and outgroups, were implemented drawing on Waytz's (2016) theory about differences in empathy display between liberals and conservatives. The assessment consisted of 7 items, each rated on a continuous 7-point Likert scale ranging from *totally disagree* to *strongly agree*, reflecting the personal importance of each statement. The scale showed satisfying consistency with a Cronbach's alpha of .85.

Biases in empathy beliefs were computed by subtracting the items regarding empathy beliefs targeting out-groups (*people worldwide*, *people disagreeing with participants own political beliefs* and *all life*) from the items targeting in-groups (*family*, *friends*, *people of same nationality* and *people agreeing with participants own political beliefs*), in reference to Waytz's (2016) findings of distributions of biases in empathy between liberals and conservatives. Deviating from these findings, *friends* were classified as part of the in-group, as I expected students to feel a strong sense of alignment with their friends due to the heightened need for belonging and the influence of peer dynamics during adolescence (Known & Lease, 2009; Telzer et al., 2018). As a result of the computation, more biased

empathy beliefs were indicated by higher scores among participants who tended to report stronger importance of expressing empathy for their own in-groups compared to the out-groups.

Due to being part of the IP-PAD project the survey included several additional scales measuring students' demographic characteristics, political identity, political engagement, climate change attitudes as well as populist attitudes and their views on democracy.

Data Analysis

Since the number of students that ascribed themselves to the third-gender category was too small ($n = 2$) to allow for group comparisons, they had to be excluded from the analyses. An additional 29 students were excluded because of low certainty regarding their political beliefs. Furthermore, 3 students with excessively long completion times (over 3.5 hours) and 5 students identified as extreme outliers (with values more than three standard deviations from the mean) were also excluded. Lastly, 43 students with missing or invalid values on scales relevant to the analyses were removed. In total, data from 129 students were included in the final analyses.

Due to the clustering in the sample intraclass correlations were calculated for all analyses. The variabilities of intercepts showed to be 0 for empathy and political ideology and very low ($ICC = .12$) for biased empathy beliefs, revealing no meaningful differences between the school classes regarding the variation in the mean of the outcome variables. Analyses were therefore conducted following the assumptions of the general linear model. On account of the varying surroundings between classes when filling out the survey all analyses were controlled for age, by adding it as a covariate to the model.

Group comparisons (H_1 , H_2 , H_3) were tested by running analyses of covariance (ANCOVA) in JASP (JASP Team, 2025). An additional generalized linear model (GLM) was conducted for H_1 since linearity of the regression slope was not met. Analyses of the moderation hypotheses (H_4 , H_5) were performed by linear regressions using the PROCESS procedure (Hayes, 2022) in SPSS 28 (IBM Corp, 2021). If not stated otherwise, all other assumptions were met for the statistical procedures. All test strategies for assumption testing as well as results of violated assumption tests in Study 1 can be found in Appendix A. For all statistical tests, significance was set to $p < 0.05$ (two-sided).

A post-hoc power analyses in G* 3.1.9.7 (Buchner et al., 2020) indicated that the study achieved sufficient power to detect medium to large effects for both ANCOVA and multiple

linear regression analyses. The analyses suggests that the probability of detecting a true effect, if it existed, was greater than 0.80, which is typically considered adequate.

Results

The sample for analysis consisted of 54 boys and 75 girls, aged 11 to 15 years ($M = 13.02$, $SD = 1.03$). Table 1 presents the overall means and standard deviations of students' scores in all outcome variables as well as the means and standard deviations across the genders.

Table 1

Means and Standard Deviations Across the Genders and the Total Sample

Measure	Sample								
	Total			Male Participants			Female Participants		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
PI	129	3.55	2.31	54	3.32	2.58	75	3.72	2.11
Empathy	129	3.29	0.65	54	3.21	0.67	75	3.34	0.63
BEB	129	0.40	1.65	54	0.47	0.75	75	0.35	0.76

Note. PI= Political Ideology, BEB = Biased empathy beliefs. Lower scores on BEB indicate a lower bias and lower scores on PI reflect a more left-leaning ideology.

Gender differences regarding Political Ideologies, Empathy and Biased Empathy Beliefs

Student's disparities in political ideology across gender were examined by running a generalized linear model, with age added as a covariate. Since normal distributions were met in the sample a Gaussian distribution was applied to the analysis. The model was compared to a null model (intercept-only) to assess model fit. A significant likelihood ratio test ($\chi^2 = 662.03$, $p < .001$), indicated a better fit of the full model including the predictors. Regarding the individual predictors, gender did not show a significant effect on political ideology ($B = 0.31$, $SE = 0.41$, $p = .458$), indicating no meaningful difference in political stances between male and female students. In contrast, the covariate age was a significant predictor ($B = 0.393$, $SE = 0.20$, $p = .049$), suggesting that older individuals tended to report more conservative political ideologies. Regarding the hypothesized gender differences in H_1 , the null hypotheses was contained.

The main effects of ANCOVA regarding the comparison of empathy scores between male and female students revealed no significant effects of gender on empathy, after adjusting for age, $F(1,126) = 1.10$, $p = .296$, partial $\eta^2 = .01$. Contrary to my previous assumption, this indicates that female participants did not differ significantly from male participants in their

empathy ratings. Given the absence of expected gender differences in empathy, the null hypothesis was retained.

A second one-way ANCOVA was conducted to examine gender differences in biased empathy beliefs, including age as a covariate. Female students did not significantly differ from male students regarding their biased empathy beliefs, $F(1,126) = 0.82, p = .367$, partial $\eta^2 = .01$. Consequently, the null hypothesis was retained.

Moderation of Biased Empathy Beliefs on Gender Differences regarding Political Ideology and Empathy

A PROCESS Macro regression analyses (Hayes, 2022) examined the moderation of biased empathy beliefs on the relationship between gender and empathy, additionally including age as a covariate. A 5000-sample bootstrap was applied to the analysis to account for disparities in the normal distribution of residuals in the sample. In line with the findings regarding H_2 , the results indicated no significant main effect of gender on empathy ($b = 0.12, SE = 0.12, t(124) = 1.03, p = .307$), nor did the effect of biased empathy beliefs on empathy turn out to be significant, $b = -0.84, SE = 0.21, t(124) = -0.41, p = .684$. Furthermore, the analysis revealed no significant interaction effect between gender and biased empathy beliefs ($b = 0.06, SE = 0.14, t(124) = 0.43, p = .665$), indicating no moderation effect of biased empathy beliefs on the relationship between gender and empathy. Consequently, the null hypothesis was retained. Table 2 displays further model descriptives. Table 3 gives an overview of the Variables intercorrelations.

Table 2

Model Summaries Regarding the Multiple Linear Regression Analyses of H_4 and H_5

Moderation of BEB Regarding the Relationship of Gender and Empathy					
	$R^2 (\Delta R^2)$	F	$df1$	$df2$	p
Model _{H4}	.02 (.00)	0.81	4	124	.523
Moderation of BEB Regarding the Relationship of Gender and PI					
	$R^2 (\Delta R^2)$	F	$df1$	$df2$	p
Model _{H5}	.06 (.00)	2.34	4	124	.059

Note. F-values were adjusted for heteroscedasticity by applying the HC0 (Huber-White) estimator. ΔR^2 refers to the change in R^2 induced by the interaction effect. All results refer to the 5000-bootstrap sample.

*Significant at $p < .05$.

Table 3

Pearson correlations of all sample variables

Variable	1	2	3	4	5
1. Gender	-				
2. Age	.12	-			
3. PI	.09	.18*	-		
4. Empathy	.11	.11	-.04	-	
5. BEB	-.08	.03	.12	.01	-

Note. * indicates $p < .05$ (two-tailed).

A second PROCESS Macro regression analysis (Hayes, 2022) was conducted to assess whether biased empathy beliefs moderated the relationship between gender and political ideology, while also incorporating age as a covariate. To ensure normality of residuals, a 5000-bootstrap sample was applied to the analyses. The analysis revealed no significant main effects for gender on political ideology ($b = 0.34$, $SE = 0.42$, $t(124) = 0.82$, $p = .413$), nor for biased empathy beliefs on political ideology, $b = -0.12$, $SE = 0.89$, $t(124) = -0.19$, $p = .850$. Similarly, no evidence of moderation by biased empathy beliefs was found in the relationship between gender and political ideology, as the interaction term did not significantly influence the outcome variable, $b = 0.34$, $SE = 0.51$, $t(124) = 0.66$, $p = .511$. H_5 , hypothesizing an existing moderation, was therefore rejected. The full model summary is provided in Table 2.

Discussion

Study 1 examined the potential gender gaps amongst young adolescents, aged 11 – 15, regarding their political ideologies, empathy expressions as well as their biases in empathy beliefs. Building on previous research, it was hypothesized that female adolescents would demonstrate more left-wing political ideologies (European Parliament, 2024; Donovan, 2023; Shorrocks, 2018; Van Ditmars, 2023), higher levels of empathy (Lim et al., 2018; Marsden & Barnett, 2020; O'Brien et al., 2013; O'Neill, 2020; Rueckert & Naybar, 2008), and, logically concluding I assumed lower biases in empathy beliefs compared to their male counterparts. Furthermore, biased empathy beliefs were hypothesized to moderate the relationships between gender and political ideology, as well as gender and empathy. The following section will review the results of the analyses of Study 1, address the limitations of the study, and offer recommendations for future practical implications.

Regarding political ideology, there was no meaningful difference between male and female students. This strongly contrasts with prior literature on the matter, which reports consistent gender differences amongst recent younger generations in Western countries, whereas females tend to lean more left-wing, whilst males tend to lean more right-wing in comparison (European Parliament, 2024, Inglehart & Norris, 2000). Instead, age was a significant predictor of political ideology, with older students tending to report more conservative views. This trend might be due to the onset of formation of political ideologies in adolescence. Rekker et al. (2019) found that even though young adolescents from the age of 13.5 already exhibit some consistency in their left-right identification, the explained variance of issue attitudes in left-right identification increases significantly over the course of adolescence - from just 0.6% at age 13.5 to 19.2% around age 23, suggesting a pivotal role of the adolescent years to arrive at a more stable political identification. Given the relatively young age range of participants in Study 1, the absence of gender differences in political ideology may stem from the inconsistency of political beliefs at this age, as they are still in the early phases of identity formation (Hooghe & Wilkenfeld, 2008; Raabe & Beelmann, 2011). This interpretation is supported by the fact that students in Study 1 reported overall little certainty regarding their left-right identification, with only 36.1 % reporting to be very certain or higher.

Unexpectedly, male and female participants in Study 1 also showed no significant differences regarding their reported empathy expressions toward in- and outgroups. This contradicts commonly held beliefs supported by an extensive body of literature, that women tend to exhibit higher levels of empathy than men (Lim et al., 2018; Marsden & Barnett, 2020; O'Brien et al., 2013; O'Neill, 2020; Rueckert & Naybar, 2008). Prior studies could replicate the empathy gender gap among younger populations, though findings vary regarding its onset. Some research suggests that gender differences in empathy emerge as early as childhood. For instance, 5- to 7-year-old female bystanders have been observed displaying more empathic behaviour following minor accidents than their male counterparts (Benenson et al., 2021). However, other studies suggest that the empathy gap emerges later in life, with gender differences becoming apparent around age 10 and continuing to grow thereafter. From age 10 on girls showed steady empathic growth, whereas boys' empathy fluctuated (O'Neill, 2020). As the sample's age range in Study 1 exceeds all the varying identified critical periods for the emergence of gender differences in empathy, the absence of a gender gap in empathy remains surprising.

Lastly, concerning gender differences in biased empathy beliefs, there was no significant variation between male and female students. This contradicts the expected differences, which were anticipated due to the concept's relation to empathy and perspective-taking that are thought to be more pronounced amongst females (Lim et al., 2018; Marsden & Barnett, 2020; O'Brien et al., 2013; O'Neill, 2020; Rueckert & Naybar, 2008). However, this assumption has yet to be confirmed in the context of empathy beliefs, as the concept remains relatively understudied, and gender differences in this area have not been systematically explored. Concluding from the results of Study 1 gender does not seem to be an influential factor to the degree of biases in empathy beliefs.

Though considering the age range of the study, it is possible that the complexity of empathy beliefs might limit the applicability to younger adolescents. Considering that empathy beliefs as a concept refer to a more cognitive dimension of empathy, which involves consideration of who might *deserve* empathy or when showing empathy might be appropriate or potentially of disadvantage (Hasson et al., 2022; Santos et al., 2022). This type of thinking likely requires advanced insight into one's personal values as well as a deeper understanding of societal functions and broader consequences, such as the influence of power dynamics and political attitudes (e.g. when considering the consequences of empathizing with a political outgroup). Therefore, adult participants might possibly show more stability in their answers, whereas younger participants might not fully grasp the implications of their answers. As a result, this may cause challenges in accurately measuring empathy beliefs within a younger sample, as the underlying understandings might not be differentiated enough to show consistency in their responses.

Finally, when exploring the potential moderating role of biased empathy beliefs, no significant interaction effects were found on the relationship between gender and empathy nor on gender and political ideology. Given the previous findings of Study 1, the lack of significant moderations is not surprising, since biased empathy beliefs showed revealed no significant patterns of variation across gender in the sample. Overall, the observations in Study 1 challenge common assumptions on gender gaps regarding political beliefs and empathy. The absence of gender-based differences in these areas may also hint towards the fact that age plays a prominent role in the manifestation on the gap.

Limitations and Future Implications

Study 1 has several limitations that might help contextualize the results of its analyses. Furthermore, these limitations point to options for improvements for future research on this topic.

First, the setting in which the survey was conducted varied in terms of its level of control, which may have influenced the data. Some classes completed the survey with a member of the research team present, allowing students to ask questions and clarify any confusion about the survey or its terminology. In contrast, students who completed the survey at home or with only a teacher present did not have this opportunity. Although for this reason age was controlled for in all my analyses, it is possible that the variation in survey conditions impacted the reliability of students' responses. Additionally, research team members reported receiving many questions from students about the surveyed concepts, particularly in younger classes, suggesting that some concepts were unclear. It was also observed that students may have looked for help from their peers, further reducing the reliability of the ratings.

Uncertainty about terminology especially applied to the political ideology measure, where research team members got a lot of questions regarding the meaning of the left to right spectrum. This was also reflected in the overall low certainty in students answers of the scale as already discussed above. Potentially adding to this, is the fact that political ideology was measures on an 11-point scale which might have lowered students' certainty even more due to the overabundance of options to choose from. Wide Likert scales, such as the 11-point scale used in this study, can decrease the overall reliability of measurement. It is possible that the measurement decreases in precision, as participants may not be able to meaningfully distinguish between the scale points, especially if their opinions on the topic are not strongly defined. This may also lead to a clustering of responses around either the middle or the extreme ends of a scale, undermining the scale's ability to measure nuanced differences in opinion. Future research should opt for making sure reliable measures are applied when surveying for political attitudes in a sample of young adolescents that may have difficulties to translate their beliefs onto a scale that requires advanced political knowledge.

Secondly, the measure for empathy expression was self-constructed, mostly drawing from Waytz's (2016) theory on empathy differences between conservatives and liberals. As a result, it deviates from more commonly used trait-based empathy scales, that ask for participants self-ratings on commonly used subcategories like *perspective taking*, *empathic concern*, or *personal distress*, e.g. the Interpersonal Reactivity Index (Davis, 1983), the Basic

Empathy Scale (Jolliffe & Farrington, 2006) or the Toronto Empathy Questionnaire (Spreng et al., 2009). Unlike the rather trait-oriented measures, the chosen empathy expression scale inherently included biases by evaluating empathy expression toward both ingroup and outgroup members. While this approach captures the contextual nature of empathy expression in this paper, it may not provide as precise an assessment of overall empathy. Although there is accumulating research regarding the differences regarding men's and women's differences in in- and outgroup favouring (Hildebrandt & Jäckle, 2024; Metha, 1997; Navarrete et al., 2010; Ratcliff et al., 2006), they are not as established and robust as gender differences in empathy. Research on the gender gap regarding empathy typically used trait-related measures (McCue & Gopoian, 2000; Mestre et al., 2009; Narvey et al., 2023; O'Neill, 2020; Rueckert & Naybar, 2008; Van der Graff et al., 2014), which may explain why such differences did not emerge in the current sample. Following from this, the fact that there were no differences in how participants expressed empathy toward ingroups and outgroups does not necessarily imply that there were no differences in the overall level of empathy expressions.

Another methodological limit regards the measure of biased empathy beliefs. Since the concept is fairly new to quantitative research, a standardized and securely validated measure has yet to be established. As a result, the conceptualizations of empathy belief measures vary to some extent across studies. Pioneer research on the matter predominantly implemented measures targeting participants meta-cognitive stances on empathy, like asking participants about their believed limitations of empathy (Hasson et al., 2022, Schuhman et al., 2014) or its functions in interpersonal and intergroup contexts (Santos et al., 2022). The applied measure in the current research, based on Waytz et al. (2016), asked about participants felt importance of expressing empathy towards several in- and outgroups. The applied measure fails to ask characteristics of empathy beliefs in certain regards, like its malleability or utility. By emphasizing attitudes toward empathizing with specific in- and outgroups, it may blend emotional tendencies with cognitive beliefs about empathy as a concept. Unlike more meta-cognitive approaches that explore individuals' broader theories of empathy, ratings on the applied measure might have been influenced by situational affective states rather than reflecting stable, overarching empathy beliefs. Differences in the measure's conceptualisation, may have therefore impacted the comparability of the study's findings and the overall reliability of the measure.

An indication for this were the overall very high standard deviations of, hinting toward a high degree of variability in participants' responses. Although it could be assumed that this

is a realistic depicting of student's empathy beliefs, previous literature on the matter presented more moderate variations of empathy beliefs in their samples (Hasson et al., 2022, Santos et al., 2022; Schumann et al., 2014). High standard deviations in the sample may suggest deficits regarding the reliability and precision of the measure, as it becomes difficult to determine whether the observed effects truly reflect underlying differences in empathy beliefs or rather inconsistencies in how individuals interpreted the items.

Furthermore, both the biased empathy belief measure and the empathy measure may have been influenced by social desirability bias. In many societies, treating others with kindness and showing empathy are morally considered positive behaviours. The way items were phrased (e.g., *How often do you usually make an effort to empathize with your friends?*) may have influenced participants to give more socially acceptable answers rather than reflecting their true behaviours. Therefore, this desire to conform to social expectations could have influenced students' self-ratings, potentially skewing the results.

Additionally, all items of the German biased empathy belief measure included the term "*empathy*" itself (e.g. *Making an effort to empathize with family members is important to me*), which may have caused confusion for younger participants. Since the scale did not provide a definition of the term, this could have led to uncertainty regarding its meaning. Future research regarding the topic should make sure to use age-adequate phrasing or provide sufficient explanation as well as objective measures when surveying empathy or related constructs.

Lastly, power analyses revealed that Study 1 was adequately powered to detect large to medium-sized effects given the sample size. However, as previously discussed, gender differences in political ideology may be smaller in younger adolescents compared to adults. This suggests that Study 1 may have been underpowered to detect smaller effects and may have therefore potentially overlooked smaller effects regarding the differences between male and female adolescents in the outcome variable. To address this limitation, future studies should aim to increase the sample size or adapt more sensitive measures to ensure they are adequately powered to detect potential smaller gender gaps.

Despite its limitations, Study 1 provides novel insights into gender-based variations in political ideologies, empathy, and biases in empathy beliefs. Contrary to the widely spread assumptions that there are pronounced gender gaps in both political ideologies and empathy, the findings of Study 1 suggest that these gaps might emerge later in life and are not as salient among younger adolescents. Moreover, to the best of my knowledge, Study 1 is the first to

examine the concept of empathy beliefs amongst adolescents and explore its similarity to empathy regarding significant gender differences, revealing novel findings on this underexplored topic. Future research should aim to build on these findings by investigating the development of empathy beliefs over time, examining potential factors that influence their variation and impact.

Study 2

Methods

Study 2 was conducted as part of the first wave of the larger three-wave longitudinal research initiative, “*Interdisciplinary Perspectives on the Politics of Adolescence & Democracy*”. Data was collected entirely online through the Gallup International Access Panel, with the survey conducted between May 23rd and June 7th in 2024. On average, participants completed the survey in 17.42 minutes.

Participants

Participants, aged 15 to 21, were reached out based on Gallup standards within Austria, with German fluency as a requirement. Following the ethical guidelines, the survey included by a briefing section, providing participants with information about the survey conditions, as well as the research goals and the option to withdraw at any point. All respondents who completed the questionnaire received incentives according to the local panel compensation scheme.

Measures

To ensure good comparability to Study 1, all the same measures were applied in this study. Participants certainty in answering the political ideology item was likewise accounted for and led to exclusion in the case of *low* to *very low* certainty.

Like in Study 1 the scales provided satisfying reliabilities with Cronbach’s alphas of .74 for the expressed empathy measure and .85 for the biased empathy beliefs scale. All items were displayed in German.

Data Analysis

To maintain comparability with Study 1, third-gender participants ($n = 7$) were excluded from the analyses. Likewise, 129 participants were excluded due to low certainty ratings regarding their answers on their political beliefs. Furthermore, participants with missing or invalid values ($n = 32$) in relevant measures, extreme outliers ($n = 16$) as defined in Study 1, or a completion time exceeding 3.5 hours ($n = 2$) were excluded, resulting in a final sample of 815 participants for the analyses.

H₁ and H₂ were tested using ANCOVAs in JASP (JASP Team, 2025). Due to the violation of homogeneity of variances, a generalized linear model was employed in JASP for examining H₃. All other statistical tests met their assumptions if not stated otherwise.

The moderation hypotheses, H₄ and H₅, were examined using the PROCESS macro (Hayes, 2022) in SPSS 28 (IBM Corp, 2021), with 5000-bootstrap samples. Age was controlled for as a covariate in all analyses. A significance level of $p < 0.05$ (two-sided) was used for all statistical tests. Appendix B displays the results of violated assumption tests.

A post-hoc power analysis conducted using G*Power (G*Power 3.1.9.7, Buchner et al., 2020) demonstrated that the study had adequate power to detect small effects in all applied statistical analyses. The results suggest that the likelihood of identifying a true effect, if present, exceeded 0.80.

Results

Of the 815 participants included in the study 398 identified as female and 417 as male. Participant's age ranged from 15 to 21 ($M = 18.8$, $SD = 1.6$). The overall means and standard deviations of participants' scores for all outcome variables, along with the means and standard deviations categorized by gender are displayed in Table 4.

Table 4

Means and Standard Deviations Across the Genders and the Total Sample

Measure	Sample								
	Total			Male Participants			Female Participants		
	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>	<i>n</i>	<i>M</i>	<i>SD</i>
PI	815	4.37	2.42	417	4.77	2.40	398	3.94	2.37
Empathy	815	3.27	0.66	417	3.17	0.66	398	3.37	0.65
BEB	815	0.12	0.85	417	0.10	0.90	398	0.15	0.80

Note. Lower scores on BEB indicate a lower bias and lower scores on PI reflect a more left-wing ideology.

Gender differences regarding Political Ideologies, Empathy and Biased Empathy Beliefs

A one-way ANCOVA was conducted to compare male and female participants regarding their political ideologies. The main effect analysis revealed that female participants scored significantly lower on political ideology than male participants, $F(1, 812) = 25.46$, $p < .001$, partial $\eta^2 = .03$, after controlling for age. This indicates that female participants rated

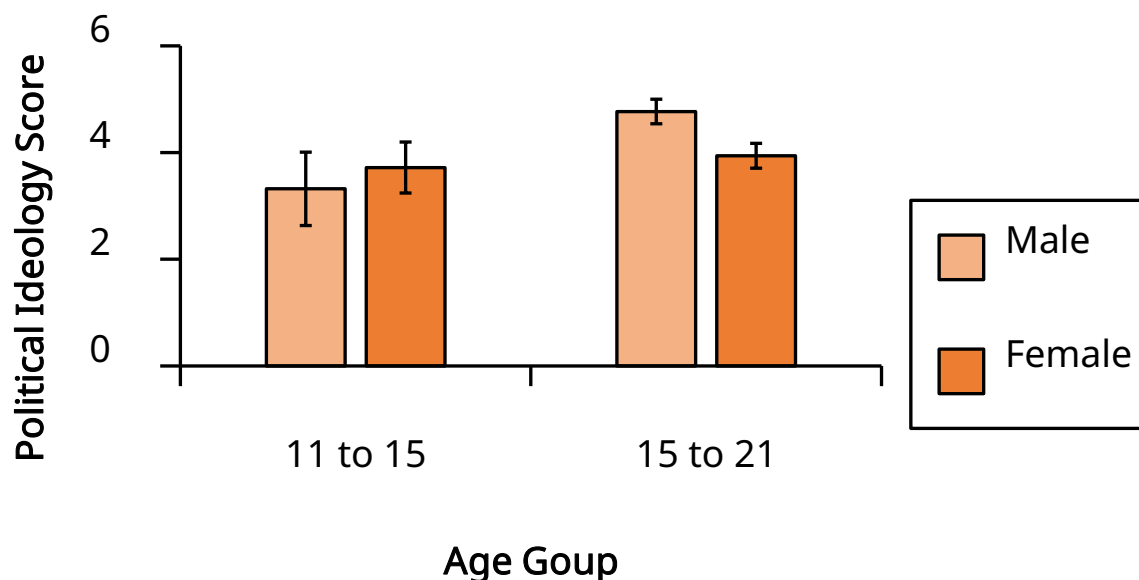
themselves to be more left-wing compared to male participants, and consequently, the null hypotheses was rejected.

The main effect of a second ANCOVA revealed that male and female participants also significantly differed regarding their empathy scores after controlling for age, $F(1,812) = 16.98, p < .001$, partial $\eta^2 = 0.02$, whereas females showed higher values compared to male participants. As this supports previously stated assumptions, the null hypothesis was rejected.

A generalized linear model (GLM) was applied to compare the extend of biases in empathy beliefs between the genders. A Gaussian distribution was applied to the analysis, since normality was met. The GLM revealed no significant main effect of gender on biased empathy beliefs, $B = 0.06, SE = 0.06, t(812) = 0.92, p = .360$, 95% CI $[-0.06, 0.17]$, indicating no difference in the variation of biases regarding empathy beliefs between male and female participants. Concluding from these results, the null hypotheses was retained. Figures 1, 2, and 3 present bar charts illustrating the mean differences across gender for political ideology, empathy and biased empathy beliefs in Study 2 in comparison to the results from Study 1.

Figure 1

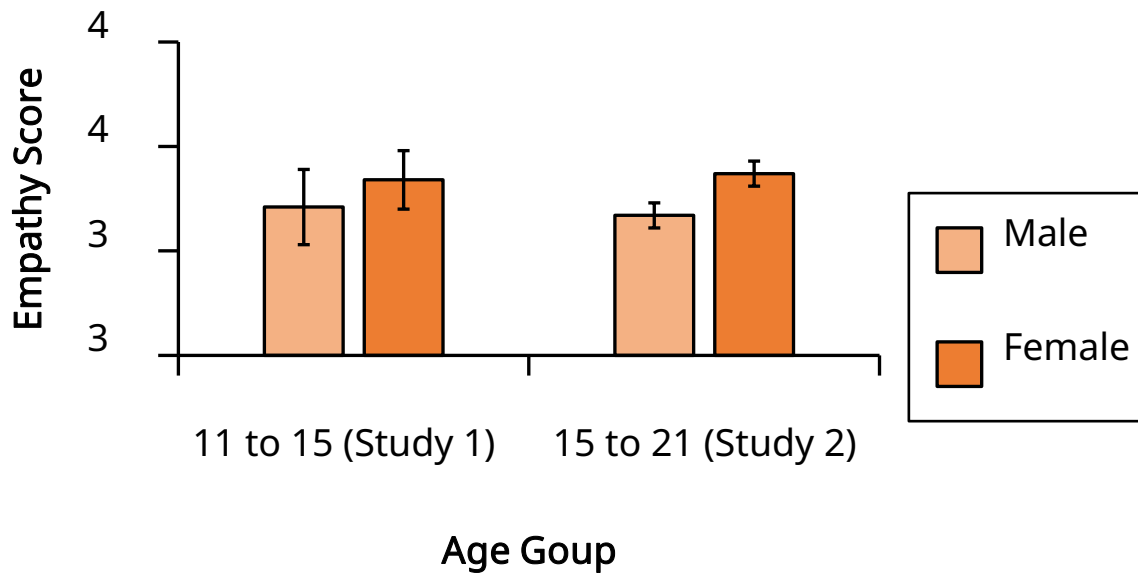
Gender Mean Differences amongst Participants in Study 1 (11 - 15) and Study 2 (15 - 21) regarding Political Ideology Rating



Note. A lower score indicates more left-wing ideologies. Error bars show the 95% confidence intervals.

Figure 2

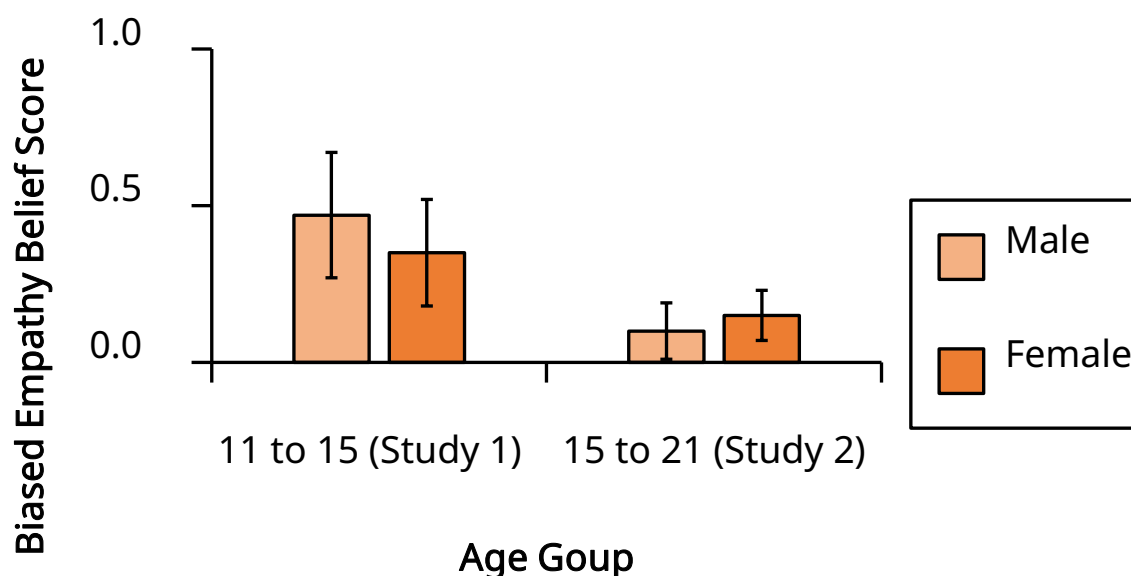
Gender Mean Differences amongst Participants in Study 1 (11 - 15) and Study 2 (15 - 21) regarding Empathy Ratings.



Note. A lower score indicates lower empathy. Error bars show the 95% confidence intervals.

Figure 3

Gender Mean Differences amongst Participants in Study 1 (11 - 15) and Study 2 (15 - 21) regarding Biased Empathy Beliefs.



Note. A lower score indicates lower lesser biases in empathy beliefs. Error bars show the 95% confidence intervals.

Moderation of Biased Empathy Beliefs on Gender Differences regarding Political Ideology and Empathy

A multiple linear regression in the PROCESS Macro (Hayes, 2022) was conducted to evaluate how biased empathy beliefs moderate the relationship between gender and empathy. A 5000-bootstrap sample was applied to all following analyses, to ensure normal distributions of residuals. The analysis revealed a significant main effect of gender ($b = 0.19$, $SE = 0.05$, $t(810) = 4.20$, $p < .001$), suggesting higher scores in empathy for females compared to males, whereas biased empathy beliefs showed no significant main effect on empathy, $b = -0.07$, $SE = 0.08$, $t(810) = -0.86$, $p = .389$. Similarly, no significant interaction effect on empathy was found ($b = 0.01$, $SE = 0.05$, $t(810) = 0.21$, $p = .834$), contradicting the hypothesized moderation of biased empathy beliefs in the relationship between gender and empathy. Consequently, the null hypothesis was retained. Table 5 reports the total model summary and Table 6 provides all intercorrelations for the variables. Figure 4 displays conditional effects of gender on empathy.

Table 5

Model Summaries Regarding the Multiple Linear Regression Analyses of H₄ and H₅

Moderation of BEB Regarding the Relationship of Gender and Empathy					
	$R^2 (\Delta R^2)$	F	$df1$	$df2$	p
Model _{H4}	.03 (.00)	6.01	4	810	< .001*
Moderation of BEB Regarding the Relationship of Gender and PI					
	$R^2 (\Delta R^2)$	F	$df1$	$df2$	p
Model _{H5}	.04 (.00)	7.99	4	810	< .001*

Note. F-values were adjusted for heteroscedasticity by applying the HC0 (Huber-White) estimator. ΔR^2 refers to the change in R^2 induced by the interaction effect. All results refer to the 5000-bootstrap sample.

*Significant at $p < .05$.

Table 6

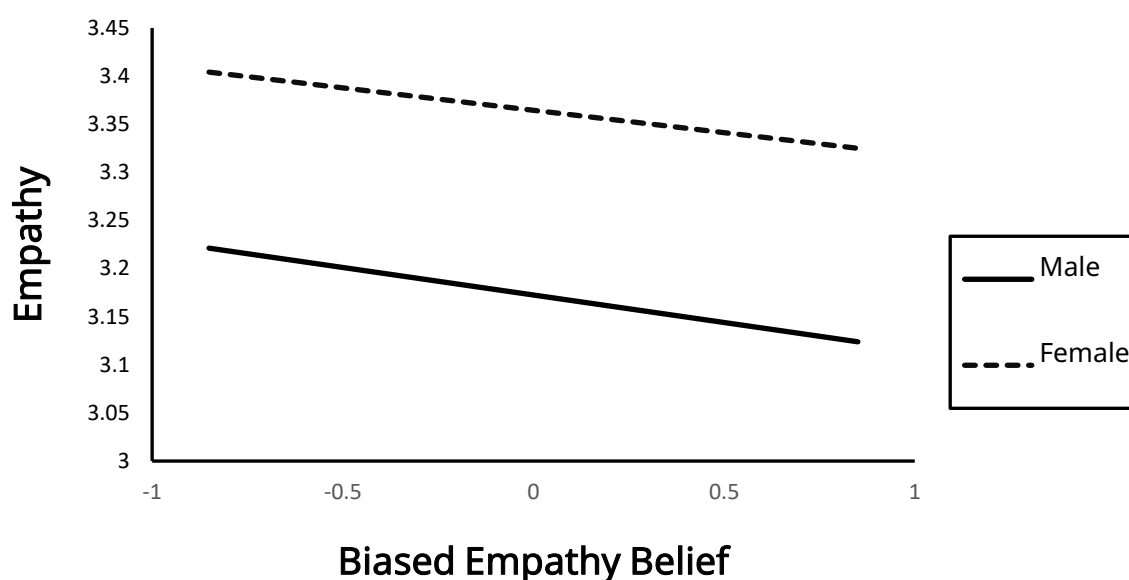
Pearson correlations of all sample variables

Variable	1	2	3	4	5
1. Gender	-				
2. Age	.07	-			
3. PI	-.17**	.04	-		
4. Empathy	.15**	.05	-.06	-	
5. BEB	.03	-.02	.05	-.06	-

Note. ** indicates $p < .01$ (two-tailed).

Figure 4

Moderated Multiple Regression Analysis including Biased Empathy Beliefs with Empathy by Gender



Note. The graphs were probed by examining conditional effects of gender on empathy. Conditional effects are defined by low (1 standard deviation below the mean) to high (1 standard deviation above the mean) levels of the moderator.

To investigate whether biased empathy beliefs moderate the relationship between gender and political ideology, a second multiple linear regression was performed using the PROCESS Macro (Hayes, 2022).

The results indicated a significant main effect of gender on political ideology ($b = -0.85$, $SE = 0.17$, $t(810) = -5.12$, $p < .001$), suggesting that female participants demonstrated further left-leaning ideologies in comparison to male participants. Additionally, biased empathy beliefs also had a significant main effect ($b = 0.66$, $SE = 0.33$, $t(810) = 2.01$, $p = .045$), suggesting that higher biased empathy beliefs were associated with more right-wing ideologies in the sample. However, the interaction between gender and biased empathy beliefs did not reach significance ($b = -0.34$, $SE = 0.20$, $t(810) = -1.72$, $p = .086$), contradicting the hypothesized moderation effect. As a result, the null hypothesis for moderation was retained. The full model summary is presented in Table 5. Figure 5 illustrates the moderated effects of gender on political ideology.

Figure 5

Moderated Multiple Regression Analysis including Biased Empathy Beliefs with Political Ideology by Gender



Note. The graphs were probed by examining conditional effects of gender on political ideology. Conditional effects are defined by low (1 standard deviation below the mean) to high (1 standard deviation above the mean) levels of the moderator.

Discussion

Study 2 aimed to extend the findings of the previous Study 1 by targeting the examinations of the same relations, in an older adolescent sample. Adolescents in their mid to late teenage years were assessed for the hypothesized gender differences in political ideology, empathy, and biased empathy beliefs.

Contrary to the findings of Study 1, male and female participants showed highly significant disparities in their political ideologies, thus confirming the postulated hypothesis. The results indicate that female participants identified as more left-wing in their political beliefs compared to male counterparts. This aligns with existing literature suggesting that women in Western societies tend to hold more progressive or liberal views (Inglehart & Norris, 2000; Van Ditmars, 2023), potentially due to a growing concern for social equality (Inglehart & Norris, 2000; Kittilson, 2016; Van Ditmars, 2023) Furthermore, the political gender gap consisted over age in the older sample, which agrees with previous research,

suggesting that political ideology reaches stability over the period of mid to late adolescence (Rekker et al., 2015; Rekker et al., 2019). Similarly, a study amongst Dutch adolescents found the most formative age for party preference to be 18 years (amongst 12- to 25-year-olds), which was shown to be predicted by the adolescents left-right identification (Rekker et al., 2019). The growing clarity in political ideology as adolescence proceeds may explain why the regarding gender gap becomes more pronounced with age. The findings therefore reinforce the notion that gender socialization and experiences may shape ideological orientations differently for men and women starting in adolescence, while also finding support to the notion of a modern gender gap in younger generations.

Male and female participants also showed highly significant disparities regarding their reported empathy expressions. Results confirmed the hypothesis that females would express higher empathy levels than males. These findings stand in line with extensive previous research indicating that women generally exhibit greater emotional sensitivity and concern for others (Lim et al., 2018; Marsden & Barnett, 2020; O'Brien et al., 2013; O'Neill, 2020; Rueckert & Naybar, 2008). Several longitudinal studies have also emphasized the role of age in this dynamic. For instance, Mestre et al. (2013) found that gender differences in empathy widened significantly between the ages of 13 and 14, with larger effect sizes observed in this gap. Likewise, Van der Graaff et al. (2014) reported that the empathy gap increased from ages 13 to 18, as boys exhibited a temporary dip in empathic concern, whereas girls' levels remained stable, thus resulting in a gap growth. This pattern may explain why gender differences in empathy were strongly apparent in the older sample of Study 2 compared to Study 1, that failed to find significant differences in a younger sample. Furthermore, the results from Study 2 suggest that empathy disparities between male and female participants remain robust between the ages of 15 and 21.

In similarity to Study 1, comparisons between male and female participants biased empathy beliefs revealed no significant differences in Study 2. This finding contradicts the hypothesis that women, due to their generally higher levels of empathy, would exhibit less pronounced biases in their empathy beliefs. However, previous research does suggest, the tendency for woman to express more positive attitudes toward outgroups compared to men, indicating smaller biases. For instance, studies revealed that heterosexual women in western countries were significantly more accepting than men towards outgroups like homosexual people than heterosexual men (Hildebrandt & Jäckle, 2024) as they showed higher internal motivation to respond without prejudice (Ratcliff et al., 2006). Similarly, woman displayed

more positive attitudes (Metha, 1997) and lesser in-group favouritism (Navarrete et al., 2010) towards ethnic outgroups. Given these patterns, it would be reasonable to expect that such attitudes would translate to decreased in-group favouritism in empathy beliefs, leading to lesser biases regarding empathy beliefs. However, the results of Study 2 remain surprising, as no such differences were reflected between male and female participants. Instead, the results suggest that both male and female participants demonstrate similar patterns in how they consider the importance of their empathetic responses towards in- and outgroups.

Additionally, biases in empathy beliefs showed no moderation effect to the relationship between gender and empathy. This finding contradicts the hypothesis that biased empathy beliefs might shape how empathy manifests across the genders. Secondly, biases in empathy did not seem to predict expressions in empathy in general. Despite female participants in Study 2 scored higher in empathy overall, their distribution of empathy expressions toward in- and outgroups did not appear to be influenced by biases in how they direct their empathetic responses.

Study 2 further examined whether biased empathy beliefs moderated the relationships between gender and political ideology. Although, contrary to the hypothesized assumptions, biases did not significantly moderate the gender gap in political alignments, participants that held stronger biases in their empathy beliefs were associated with expressing more right-wing political ideologies. This agrees with prior research suggesting that empathy beliefs play a crucial role in political positioning. As empathy is often more readily directed toward ingroup members, this results in a bias that could intensify political polarization (Gutsell & Inzlicht, 2012; Zaki, 2014). The literature further suggests that biased empathy beliefs contribute to political division by not only reinforcing in-group favouritism, but also increasing out-group exclusion (Simas et al., 2020; Zaki, 2014). This however also builds on the assumption that empathy beliefs affect the way empathy is expressed (Bloom, 2017; Santos et al., 2022; Zaki, 2014) toward in- or outgroup members, which is not supported by the data in Study 2. This might further explain the lack of moderation in of biased empathy beliefs. Instead, the results of Study 2 suggests that while biased empathy beliefs may influence political leanings, they do not explain why women tend to be more left-leaning than men, thus contrasting with my assumption, that gendered differences in biases would enhance the disparities between the genders. The findings of Study 2 may point to a more complex relationship between empathy, political beliefs, and gender, where empathy beliefs influence political ideology but do not serve as a significant moderator of gender effects.

Limitations and Future Implications

Although this study offers significant insights, it has several limitations that should be acknowledged. Similarly to Study 1, all outcome variables were measured using self-reported ratings. Self-report data inherently carries a risk of various biases. In the context of Study 2, gender role conformity bias may especially have influenced participants' self-ratings. For instance, research suggests that gender-role orientation mediates the relationship between gender and self-reported empathy (Hodges et al. 2011; Löffler & Greitemeyer, 2023). This tendency could have inflated significance of the found gender gaps in empathy in Study 2.

Additionally, as already accruing a limitation in Study 1, the biased empathy belief scale may lack in precision. As standard deviations were very high, this might suggest low validity of the measure, given the wide variability in participants' responses. Similarly, the shortcomings discussed in Study 1 regarding the differences in scale conceptualization of both the expressed empathy and the empathy belief measure, when compared to the conceptualization of in pioneering research, likely also apply to Study 2.

Lastly, due to Study 2 being conducted as an online survey, a controlled setting could not be guaranteed, which results in several potential limitations. Participants self-rating may be less reliable, as they might have faced several distractions while filling out the survey. Even though data that showed extensive duration time, was not included in the analyses to somewhat control for that possibility, distractions may have still invalidated or primed participants answers. Additionally, the absence of a research member present to clarify instructions or and answer remaining questions may have led to misunderstandings of items or deviations from the intended procedure of the survey. Moreover, without the presence of a researcher, participants may have felt less accountable to give accurate answers, particularly when sensitive topics, such as morally loaded traits like empathy or personal biases, are involved.

Although not without limitations, Study 2 offers noteworthy insights on gender differences in political ideologies and empathy in mid-to late adolescence, by reinforcing well-perceived trends while challenging assumptions about biased empathy beliefs. Female participants consistently demonstrated both more left-leaning political tendencies as well as higher empathy expression. While results suggested that variations in empathy and political ideology are both influenced by gender, these relations were not necessarily effected by biased empathy beliefs. Whilst conforming the relation between biased empathy beliefs and political ideology as assumed in previous literature, the findings of Study 2 hint to the fact,

that relations between gender, empathy and biased empathy beliefs might be more differentiated than first expected. This is especially surprising regarding the lack of connection between empathy expressions amongst in- and out-groups and biased empathy beliefs, as the two concepts would be expected to be related by definition and measure conceptualisation. Future research might help to shed light on additional factors influencing variations in empathy expression beyond gender and clarify the role that biased empathy beliefs play in this relationship.

General Discussion

The present research included two studies focussing on exploring the gender gaps in political ideology and empathy in different stages of adolescence, with Study 1 exploring the earlier years and Study 2 targeting mid- to late adolescence. Additionally, both studies introduced the novel exploration of biased empathy beliefs to these relations whilst also exploring its variation across gender within the adolescent samples. In comparison, the studies present inconsistent findings regarding the commonly observed gender gaps in empathy and political ideology. While no significant gender differences emerged among younger adolescents (ages 10–15), participants aged 15–21 demonstrated highly significant disparities in both empathy and political ideology. Consistent with previous findings, mid- to late adolescent females demonstrated higher expressions in empathy as well as more left-leaning political views compared to male adolescents. However, unexpectedly, these gender differences did not translate to biased empathy beliefs, in either age group.

Moreover, biases in empathy beliefs did not add explanatory value to the relationship between gender and empathy expression, nor gender and political ideology. The assumption raised in previous literature, that biases empathy beliefs are more pronounced amongst right-wing leaning individuals, as they are thought to display stronger in-group favouritism, found support only in the 15 – 21 age group. However, the expected connection between biased empathy beliefs and empathy expressions towards different in- and outgroups was not significant in either sample.

Beyond methodological issues that may be accountable for the disparities in findings across the two studies, the results highlight the potential role of age in shaping the relationships between gender, empathy expression, political ideology, and biased empathy beliefs. The findings suggest that developmental stages in adolescence may play a crucial role in the formation and growth of disparities in empathy and political ideologies between the genders. This hypothesis is partly supported by previous literature discussing the onset of

stable identification regarding the left-right spectrum in political ideologies to emerge in mid to late adolescence (Rekker et al., 2015, Rekker et al., 2019). However, a notable gap persisted in research examining how gender differences develop and begin to form significance in younger cohorts. The present research contributes to filling this gap by revealing disparities in significance regarding the gender gap in political views when comparing individuals in the early stages of adolescence to those in later stages.

In contrast, gender differences in empathy have been widely researched across various age groups (Benenson et al., 2021; O'Neill, 2020), showing that even young girls tend to exhibit higher empathy compared to boys. The findings of Study 1 challenge this assumption, highlighting the need for more research on the topic including the exploration of potential alternative influences on the variation of empathy expression in young adolescence.

However, a key distinction in the present research is that empathy was not measured as a general trait but rather in relation to expressions towards specific in-groups and out-groups. This nuanced approach raises important questions about whether previously reported gender differences in empathy in younger cohorts extend equally to all social groups or whether they are influenced by social and contextual factors. Nonetheless, as the gender gap in empathy expressions did significantly emerge in the older sample, this raises the question of what factors might have contributed to the absence of such differences in younger participants. Since the empathy measure used in both studies assessed the expression of empathy toward different in-groups and out-groups, one could be led to believe that it is the attitudes toward each of the groups that become more differentiated by gender as individuals age. However, this was not supported by either of the studies, as the attitudes toward the groups, measured through participants' empathy beliefs, did not reveal a difference in biases across genders. This suggests that biases in empathy beliefs were not reflected in participants' behaviour, indicating that these biases may not translate directly into empathetic actions.

Taken together, the results across both studies point to a more complex relationship between empathy beliefs and its biases regarding in- and outgroups with the actual expressed empathy. It remains for future research to explore the specific circumstances that could explain why the gender gaps in empathy expressions towards in- and outgroups seem to appear later in adolescence, potentially considering factors such as shifts in political and social attitudes as adolescents mature.

Furthermore, while age was considered to some extent in the present research, particularly in the comparison between the two age groups, it was not explicitly tested for

potential moderating effects on the proposed gender gaps. Further research focussing on age in the development of distinct gender differences is needed to gain deeper insights into the timing of gendered variations in political ideology as well as beliefs about empathy and its expressions. In addition, the influence of other sociodemographic variables, such as cultural background, socioeconomic status, and educational attainment, should be explored further, as they may hold explanatory value to the variation within these regarded concepts. Likewise, alternative concepts related to empathy should also be examined in relation to empathy beliefs to gain a deeper understanding of the factors contributing to their variability.

Of similar importance for future research is the inclusion of third gender variations to the examined gender differences in the current studies. Both samples in the present research counted too few participants that identified outside of the traditional male-female gender spectrum to make meaningful comparisons to male and female participants regarding their political ideology, empathy expressions and empathy beliefs. As a result, the presented studies lack in generalisability of the results to broader populations and may oversimplify the relationships by limiting the analysis to only male and female individuals. Recent research increasingly includes third-gender perspectives and has shed some light on differences within the broader gender spectrum concerning political ideologies. For instance, a study regarding the Canadian Election of 2021 revealed that nonbinary people expressed even more-left leaning tendencies than women in both their voting behaviour and general political identification, while women still demonstrated more left-leaning ideologies compared to men. This gap was found to be even wider than the one between the traditional gender categories (Albaugh et al., 2024). An even more differentiated investigation into gendered disparities revealed that gender conformity played a curial part in shaping the gender gap in political ideologies, with more gender-conforming individuals demonstrating stronger right-wing tendencies. The ideological gaps alongside conformity appeared to be conditionally larger compared to those based purely on gender identification (Solevid et al., 2021). This challenges the common view that the political gap develops purely along the lines of gender identification and suggest the need for a deeper deconstructions of often-referenced gender disparities to uncover the underlying causes. These findings indicate that the impact of gender may be more complex, though further exploration is required. Additionally, more nuanced gender perspectives are yet to be applied to empathy beliefs and younger cohorts.

Lastly, employing alternative methodologies, such as behavioural measures or longitudinal studies to allow for causal conclusions may allow for clearer specifications of how variations in political ideologies and biased empathy beliefs evolve over time.

Conclusion

Gendered differences remain prevalent and seem to increasingly contribute to societal divides by shaping political orientations and empathic stances towards others, possibly promoting the increase of societal conflict in the future. Understanding these dynamics in more clarity could help to refine theoretical models of political polarisation between the genders and the impact of attitudes about empathy in forming political orientations. Furthermore, deeper insights may also provide practical implications for increasing unbiased and prosocial attitudes in adolescence, being a crucial time period for identity formation. By uncovering the underlying causes of these divides, future research could inform strategies that supports unity rather than division, thus encouraging greater cooperation not only between the genders but also between in- and outgroups. Addressing these issues proactively could help deflate societal tensions and path the way toward a more inclusive society.

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Appendix A

Assumption Testing in Study 1

The Methods of assumption testing apply to both analyses in Study 1 and Study 2.

Normal distribution of residuals was checked by examining Q-Q plots and Histograms in JASP (JASP Team, 2025) for ANCOVAs and additional residuals statistics in SPSS (IBM Corp, 2021) for multiple linear regressions. Minor disparities in normality were disregarded, as ANCOVA is robust enough for sufficiently large sample sizes. 5000-sample bootstrapping was applied to all regression analyses to provide normality.

Homogeneity of the regression slope for ANCOVAs was examined by including the interaction term of the covariate with the independent variable into the analyses and checking for significance in JASP (JASP Team, 2025). Non-significant interactions provided homogeneity.

Homoscedasticity for ANCOVAs was examined by checking Levene's tests in JASP (JASP Team, 2025) for insignificance. Testing this assumption for multiple regression analyses included checking residuals vs. predicted plots as well as partial regression plots. Additionally, all multiple linear regressions applied the Huber-White HC0 estimator in the PROCESS procedure (Hayes, 2022), adjusting the standard errors to be robust against heteroscedasticity.

Absence of correlations between the independent variable and the covariate was tested for by examining Pearsons's correlations in SPSS 28 (IBM Corp, 2021).

Linearity was checked by examining residuals vs. predicted plots as well as partial regression plots for all multiple linear regressions in SPSS (IBM Corp, 2021).

Multicollinearity was assessed using moderation regression analyses in JASP (JASP Team, 2025) and was deemed acceptable when the variance inflation factor for the independent variables was below 10.

Violations of Assumptions in Study 1

As homogeneity of the regression slope for the ANCOVA testing for gender differences in political ideology (H_1) was violated ($F = 4.83, p = .030$), a generalised linear model was applied for testing the hypothesis.

Appendix B

Assumption Testing in Study 1

Levene's test for equality of variances revealed significant results ($F(813) = 4.62, p = .032$) for when running an ANCOVA for gender differences in biased empathy beliefs (H_3). To account for the violation of homoscedasticity a generalised linear model was run for testing the hypothesis, as it is more robust regarding this assumption.