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Longitudinal Associations Between Perceived Inclusivity Norms and Opinion Polarization in Adolescence

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Abstract

Affective polarization, characterized by emotional hostility and behavioral avoidance toward ideological opponents beyond mere policy disagreements, can pose a significant threat to social cohesion. However, this phenomenon remains relatively unexplored in adolescence. This longitudinal study investigates whether perceived inclusivity norms—emphasizing equality-based respect, open and constructive dialogue, and communal unity—reduce opinion-based affective polarization among adolescents. Using a sample of 839 students from two demographically distinct German secondary schools (grades 7–11), we developed and validated measures of polarization tailored to adolescents, capturing dialogue orientation and social distance toward ideological outgroups. Results revealed stable ideological subgroup differences in norms and attitudes, with conservative students exhibiting lower descriptive and prescriptive inclusivity norms and higher affective polarization compared to their liberal peers. However, a significant proportion of adolescents demonstrated fluid political orientations over time, highlighting the malleability of early political identities. Cross-lagged analyses showed no evidence that inclusivity norms directly reduce affective polarization, although early dialogue orientation significantly predicted greater social openness in diverse settings. Our findings advance the understanding of adolescent political identity development by demonstrating that while ideological orientations remain unstable during this period, group-based differences in norm perceptions and polarization tendencies are already evident. We emphasize how this developmental fluidity presents both opportunities and challenges for interventions, suggesting that effective depolarization strategies must account for the distinct characteristics of adolescent political socialization and the varying influence of school-based normative contexts.

Keywords
adolescents; affective polarization; dialogue; inclusivity norms; political intolerance; political polarization; school norms; social distance; social norms

1. Introduction

Affective polarization, characterized by heightened negative emotions and behavioral avoidance towards ideological opponents beyond policy disagreements (Bakker & Lelkes, 2024; Iyengar et al., 2019), is linked by substantial research to negative democratic consequences, including political gridlock, eroded trust, and the spread of mis/disinformation (Iyengar et al., 2019; Shah, 2025; Tang et al., 2022; Wagner, 2024). While research has extensively examined these detrimental outcomes and the development of such antagonistic orientations in adults, understanding their initial emergence during adolescence has received surprisingly limited attention (Boonen, 2015; Hooghe & Wilkenfeld, 2008; Hutchins, 2024; Lay et al., 2023; Rekker et al., 2015; Tyler & Iyengar, 2023; Wang et al., 2017). Adolescence is a critical period in political socialization, marked by identity formation and heightened social sensitivity (Dahl et al., 2018; Van Hoorn et al., 2017). During this stage, young individuals often develop politically charged identities and partisan-tinged hostilities, even lacking fully articulated partisan affiliations (Tyler & Iyengar, 2023). Recent evidence indicates affective polarization can manifest as early as age 11, making adolescence an essential window for understanding political animosities' roots (Hutchins, 2024).

Yet, significant methodological and theoretical gaps constrain our understanding of adolescent affective polarization, which this longitudinal study aims to address. First, traditional adult-focused polarization measures are often developmentally inappropriate for adolescents, whose political identities frequently center on specific contentious social issues rather than formal partisanship (Lay et al., 2023). We, therefore, developed and validated novel opinion-based polarization measures capturing how young people's issue-specific stances manifest in social distancing and diminished dialogue willingness with ideological opponents. Second, to address the dearth of developmental studies, we examined whether opinion-based groups exhibited differential patterns over time in openness to dialogue and social interaction, key behavioral indicators of affective polarization (Kekkonen et al., 2022). Third, while research has explored how personal beliefs drive intergroup hostility, fewer studies have systematically investigated the role of social norms, particularly within schools, in exacerbating or mitigating adolescent polarization (Bicchieri et al., 2023). Schools are vital socialization environments where adolescents internalize norms about intergroup behaviors via peer interactions and institutional messaging (González, 2024; Tankard & Paluck, 2016). Thus, we examined the potential of school-based inclusivity norms, perceptions that peers endorse and enact equality-based respect, open dialogue, and communal unity, to attenuate affective polarization.

1.1. Polarization and Its Affective Manifestation

In recent years, polarization has emerged as a fundamental challenge that is increasingly shaping political landscapes across the globe (Kingzette et al., 2021; McClosky, 1964; McCoy & Somer, 2019). While traditional polarization research focuses on ideological distance, *affective polarization* centers on the emotional dimension of intergroup relations in the political sphere (Bakker & Lelkes, 2024; Iyengar et al., 2019; Shah, 2025; Tang et al., 2022; Wagner, 2024). It involves negative feelings (dislike, distrust, anger) and

behavioral avoidance directed towards members of opposing political or opinion-based groups, independent of specific policy disagreements. This "us vs. them" mentality aligns with social identity theory, where group membership fosters ingroup loyalty and outgroup derogation (Bakker & Lelkes, 2024; Iyengar et al., 2012; Schedler, 2023).

Pertaining to democratic norms, a prominent hypothesis suggests that partisans who harbor more negative feelings toward opponents will be more inclined to overlook transgressions of democratic norms by representatives of their camp (Graham & Svolik, 2020; Svolik, 2019). As the tendency to dismiss or delegitimize opposing viewpoints increases, the capacity for inclusive governance and reasoned compromise deteriorates (Levendusky, 2013). Consistently, a robust correlation between affective polarization and democratic backsliding was found across 50 countries (Orhan, 2022). On the other hand, some research suggests that affective polarization might have potential positive effects, such as increasing voter turnout by heightening the perceived stakes of elections (Ferreira Da Silva & Garzia, 2024; Harteveld & Wagner, 2023). Another study demonstrated that across Germany, the UK, and the US, moderate levels of affective polarization strengthen democratic attitudes by increasing political engagement and representation, while both very low and extremely high levels of polarization are associated with weaker democratic support (Janssen & Turkenburg, 2024). Studies also show that citizens may often prioritize more relevant considerations over raw partisan sentiment when making political judgments (Broockman et al., 2023), and that "partisan animosity is not a unifying concept underpinning the psychology of polarization and democracy" (Voelkel et al., 2024, p. 9).

However, affective polarization may systematically erode institutional trust (Iyengar & Westwood, 2015; Reiljan & Ryan, 2021), impede constructive discourse, undermine societal cohesion by diminishing meaningful cross-group contact, and potentially catalyze societal divisions that culminate in discriminatory behaviors or intergroup conflict (Berntzen et al., 2024; Orian Harel et al., 2023). These group dynamics align with social identity theory's core propositions, which posit that group attachments can override rational policy deliberation (Greene, 2004; Tajfel & Turner, 2004). As identification with particular viewpoints solidifies, opposing groups transition from being perceived as fellow citizens to being viewed as antagonistic outgroups that threaten fundamental values (Stephan & Stephan, 2016), which also may infiltrate everyday social decisions, from employment preferences to interpersonal relationships (Gift & Gift, 2015; Huber & Malhotra, 2017). Understanding how these affective processes become embedded in group identities, and identifying strategies to mitigate resultant hostilities, is crucial for preserving democratic discourse and institutional legitimacy.

1.2. Affective Polarization in Adolescence

Recent research challenges traditional assumptions that political enmity emerges only in late adolescence (Greenstein, 1960; Hess & Torney-Purta, 2017), revealing that partisan-tinged hostility can emerge as early as age 11 (Kinder & Sears, 1985; Tyler & Iyengar, 2023). While affective polarization has been extensively studied in adults (e.g., Bakker & Lelkes, 2024; Iyengar et al., 2019; Kinder & Sears, 1985; Mason, 2015), its early manifestations remain comparatively understudied (Boonen, 2015; Hooghe & Wilkenfeld, 2008; Hutchins, 2024; Lay et al., 2023; Rekker et al., 2015; Tyler & Iyengar, 2023; Wang et al., 2017). Yet, these developmental years represent a critical window: children and adolescents often progress from general political awareness to emotionally charged ingroup–outgroup judgments (Hutchins, 2024; Lay et al., 2023). Far from being politically

neutral, many youths readily internalize antagonism toward opposing ideological groups, reflecting polarizing rhetoric encountered in their home environments and digital spaces (Iyengar et al., 2019; Shah, 2025; Van Deth et al., 2011).

Adolescence represents a period marked by heightened receptivity to social cues and identity-related norms (Dahl et al., 2018; Van Hoorn et al., 2017), with early-formed opinions and group memberships demonstrating remarkable stability across the lifespan (Hooghe & Wilkenfeld, 2008). Through interactions with parents, peers, teachers, and social media, adolescents internalize which viewpoints garner approval and which spark conflict (Boonen, 2019; Uzun & Lüküslü, 2023).

The consequences of early polarization can extend to political behavior: When youths enter adulthood with established polarized attitudes, their capacity for compromise and cross-ideological engagement may be compromised (Kingzette et al., 2021; Mason, 2018b). Research indicates that adolescents' negative orientations can match adults' partisan animosity in intensity (Boonen, 2019; Laffineur et al., 2024; Raabe & Beelmann, 2011), fostering patterns of outgroup distrust that transcend political domains. Therefore, cultivating dialogue across opinion-based group boundaries and developing critical civic skills during adolescence becomes essential for preventing entrenched polarization in adulthood (Reifen-Tagar & Cimpian, 2022).

1.3. Social Norms and Their Impact on Affective Polarization

A second crucial gap in the literature concerns the relatively limited exploration of how *perceived social norms* influence affective polarization. While research has extensively examined how personal beliefs drive negative partisanship, fewer studies have investigated how collective rules and standards, both explicit and implicit, can either reinforce or reduce intergroup hostility (Bicchieri et al., 2023; G. D. A. Brown et al., 2022; Crandall et al., 2002; Fehr et al., 2002; Paluck, 2009; Tankard & Paluck, 2016). Social norms function as informal regulatory mechanisms through two interrelated forms: prescriptive (injunctive) norms, which capture group-sanctioned appropriate behavior, and descriptive norms, which reflect perceptions of how group members actually behave (Bicchieri et al., 2023; Cialdini et al., 1990; Miller & Prentice, 2016; Smith et al., 2012). Within the *school* environment, normative influences on adolescent behavior become especially salient because they can inadvertently function as echo chambers that intensify us-them thinking (González, 2024; Nipedal et al., 2010; Váradi et al., 2021), yet they also hold the potential to foster respectful peer norms that reframe disagreement as constructive dialogue (González, 2024; Tropp et al., 2016). Importantly, perceived norms, even when based on misperceptions of peers' attitudes, can shape youth behavior toward either exclusion or tolerance (Váradi et al., 2021), regardless of actual group norms, capturing the standards that individuals recognize and internalize (Tankard & Paluck, 2016).

Ultimately, perceived norms present both challenges and opportunities for addressing polarization (González, 2024; Iyengar & Westwood, 2015; Mullinix & Lythgoe, 2023). While polarized ingroup norms can accelerate intergroup hostility (Motyl et al., 2014; Whitt et al., 2021), recalibrating group expectations may foster more open-minded attitudes, particularly during adolescence (Crandall et al., 2002). Educational institutions can establish institutional messages of fairness and respect, offering alternative frameworks for intergroup relations (Bracegirdle et al., 2022). In this context, perceived inclusivity norms (Schäfer et al., 2024) emerge as a significant form of prescriptive norm—when adolescents perceive peer support for equal

treatment, dialogue, and shared community membership, these norms may buffer against polarization by facilitating open discourse and reducing social distance from outgroup members. The following section examines how these inclusivity norms interact with youth socialization processes to potentially mitigate polarizing influences in educational settings.

1.4. Perceived Inclusivity Norms to Counter Affective Polarization

Inclusivity norms (Schäfer et al., 2024) comprise three interrelated components: (a) equality-based respect norms, (b) communal unity norms, and (c) constructive dialogue norms. Equality-based respect norms establish collective standards that recognize the inherent dignity of all group members, regardless of their ideological or background differences (Renger & Reese, 2017; Simon & Schaefer, 2016). Emphasizing such equal status enhances intergroup relations and reduces outgroup hostility (Simon et al., 2019). Communal unity norms, grounded in civic rather than ethnic conceptions of belonging, promote the understanding that groups can maintain distinct identities while participating in a shared public sphere (Verkuyten et al., 2020). Lastly, constructive dialogue norms foster respectful perspective-taking toward outgroup members, a process that reduces stereotyping and intergroup anxiety (Glasford & Dovidio, 2011; Gurin et al., 2013). While past research has examined equality-based respect, dialogue, and unity as individual beliefs, our focus lies on their potential when perceived as social norms. These norms represent a set of interrelated principles for managing differences in diverse societies, principles that can theoretically apply beyond cultural or ethnic diversity to ideological differences (Verkuyten et al., 2020). Together, these norms transcend mere passive acceptance by promoting active respect for ideological diversity (Schäfer et al., 2024). Such collective standards become particularly vital in contemporary contexts where political and opinion-based antipathy often remains unchallenged (Iyengar & Westwood, 2015; Mullinix & Lythgoe, 2023). These norms align with broader principles of intergroup tolerance (Gibson, 1992; Velthuis et al., 2021; Verkuyten, 2022; Verkuyten et al., 2019), fostering not just acceptance but active engagement in shared social spaces with those holding divergent beliefs. This framework encourages adolescents to view ideological differences as components of a diverse social fabric rather than zero-sum conflicts, potentially attenuating the emotional foundations of affective polarization (Levendusky & Stecula, 2023).

Initial research provides encouraging, albeit mixed, evidence for these norms' effectiveness. A recent multinational investigation revealed that perceived inclusivity norms correlate with enhanced tolerance and cooperation while reducing avoidance of ideological opponents, even among individuals who strongly disagree with opposing views (Schäfer et al., 2024). Additionally, peer-led equality-based respect programs in educational settings have demonstrated potential to foster positive outgroup attitudes, though with time-bounded effects (Shani et al., 2023). However, the relationship between inclusivity norms and polarization during adolescence has not been studied. Our longitudinal approach addresses this gap by examining potential bidirectional effects: whether inclusivity norms predict subsequent changes in affective polarization and whether affective polarization shapes the development of inclusivity norms.

1.5. The Current Study

This article examines how perceived inclusivity norms in educational settings might attenuate opinion-based polarization among adolescents. Focusing on early—to mid-adolescence, a formative period for opinion development, we address "opinion-based group" polarization rather than formal party identification (Lay et al., 2023). While partisan conflicts are visible manifestations, affective polarization also arises within

opinion-based groups around contentious issues like climate change or immigration (Bliuc et al., 2007; Mason, 2015, 2018a; McGarty et al., 2009). This approach aligns with the "policy-over-party" hypothesis, suggesting animus primarily reflects policy disagreements (Webster & Abramowitz, 2017). Though the competing "party-over-policy" perspective (polarization from social identity attachments to parties; Mason, 2018b) has gained traction, an issue-focus is particularly appropriate for adolescents still developing partisan identities and whose attitudes often center on specific issues. Research supports this: Even unbranded policy preferences can diminish partisanship's effect on interpersonal affect (Dias & Lelkes, 2022), suggesting policy positions may shape interpersonal evaluations more than partisan identities, especially for adolescents. In these contexts, individuals develop robust social identities around shared stances, fostering ingroup loyalty and hostility toward those with different views (Harteveld, 2021; Hobolt et al., 2021). Even without formal partisan identification, strongly held opinions can foster an us-them mentality, reinforcing societal divisions (Bakker & Lelkes, 2024).

Existing scholarship has not systematically examined how perceived inclusivity norms might reduce affective polarization in educational contexts, particularly for youth forming opinion-based rather than strictly partisan identities. While some interventions (e.g., Shani et al., 2023) show short-term tolerance gains, the processes of norm internalization and whether school demographic composition moderates such effects remain unclear. Moreover, conflicting findings on potential ideological asymmetries (Kekkonen et al., 2022; Kluge et al., 2024) highlight the need to investigate whether liberal- or conservative-leaning adolescents differ in receptivity to inclusivity norms.

To address these gaps, we conducted a two-wave longitudinal survey of students (grades 7–11) in two comprehensive secondary schools in Lower Saxony, Germany: one culturally diverse, one predominantly homogeneous. Embedded within the Together for Tolerance project (Shani et al., 2023), we analyzed data from these control schools between Time 1 (January-February 2023) and Time 2 (January 2024). This design enabled the examination of both prescriptive and descriptive inclusivity norms and their relationship to adolescent affective polarization; the intervention's effects on intergroup tolerance are reported elsewhere (Shani et al., 2023). Selecting two regional schools with distinct demographic profiles—one highly diverse (urban, high migration background) and one more homogeneous (less urban, predominantly German background)—allowed us to explore how the school norms-polarization relationship might differ contextually.

Germany provides a revealing context for studying opinion-based affective polarization among adolescents, as its multiparty system extends literature beyond typically studied two-party systems (e.g., the US). Adolescents may develop strong opinions on salient social issues (like LGBTQIA+ rights and refugee policies, prominent in German discourse; Schnetzer et al., 2024) even without stable party affiliations characteristic of two-party systems (Bantel, 2023; Schieferdecker et al., 2024; Wagner, 2021). Moreover, Germany's political landscape has transformed: traditional *Volksparteien* (mainstream parties) grow weaker while smaller parties gain prominence (Angenendt & Brause, 2024). This shift likely influences affective polarization, particularly as negative emotions may target emerging fringe parties. The success of parties like the far-right Alternative für Deutschland among young voters (Shukla & Otto, 2025) suggests heightened affective responses. Further, while Germany saw declining ideological polarization (1980–2010) with substantial policy consensus, affective polarization has steadily increased concurrently (Coffé et al., 2025; Ferreira Da Silva & Garzia, 2024). This divergence creates an ideal setting to examine how emotional divisions develop even when ideological differences are less stark (Helbling & Jungkunz, 2020).

Importantly, we do not empirically compare affective polarization or its relationship with inclusivity norms between adolescents and adults. Rather, we investigate how affective polarization across opinion-based groups emerges during adolescence and examine whether inclusivity norms can counteract such polarization by fostering engagement with opposing groups instead of withdrawal. Our comparative analysis is limited to interpreting our findings against existing research and theories on adolescent political development reviewed earlier.

Our investigation had three primary objectives. First, we developed a method to obtain opinion-based groups and examine affective polarization specifically adapted for adolescents. They often lack stable partisan identities, with affiliations centering on opinions about salient issues rather than formal partisanship, particularly in complex multi-party systems (Lay et al., 2023). To enhance ecological validity, participants first shared their opinions on LGBTQIA+ and refugee rights, issues highly relevant to German adolescents (Schnetzer et al., 2024). Participants then responded to vignette-based scenarios depicting peers with opposing stances, reporting their willingness to engage or distance themselves socially and politically. Specifically, social distance, individuals' willingness for social interaction with outgroup members (Bogardus, 1947), is a well-established affective polarization measure in political psychology (Druckman & Levendusky, 2019; Iyengar et al., 2019). While variously operationalized (e.g., general partisan-directed attitudes; Iyengar et al., 2012), our study adopted assessments of comfort with outgroup members across specific social contexts (e.g., as neighbors, in-laws) to capture concrete behavioral manifestations. Social distance measures are particularly useful for examining adolescent intergroup relations (e.g., Binder et al., 2009), as they assess tangible social preferences reflecting everyday political antipathy. Additionally, we included dialogue orientation measures (Cionea et al., 2014) to examine if affective polarization extends beyond social avoidance to impair democratic discourse, a critical concern, as animosity can bias information processing and lead to selective exposure (Kaiser et al., 2022; Lelkes & Westwood, 2017; Mosleh et al., 2025). This approach captured both interpersonal and civic dimensions of potential opinion-based hostility.

Second, we further classified students into opinion-based groups, based on their positions regarding LGBTQIA+ and refugee rights, we examined whether these opinion-based groups exhibited different patterns of perceived norms, affective polarization, and dialogue orientation over time. While research with adults consistently demonstrates ideological asymmetries—with conservatives often expressing stronger outgroup negativity (Iyengar et al., 2019; Kekkonen et al., 2022; Kluge et al., 2024; Peffley et al., 2024)—such patterns among adolescents remain unexplored. Understanding these early group-specific tendencies is crucial for identifying which individuals might be most vulnerable to, or protected from, polarizing influences in educational settings (Lay et al., 2023).

Finally, we investigated whether perceived inclusivity norms predicted reductions in affective polarization over time (Schäfer et al., 2024; Verkuyten et al., 2020). Using cross-lagged models, we assessed whether Time 1 norms predicted subsequent changes in dialogue orientation and social distance while examining two key moderating factors. First, we analyzed whether political ideology moderated norm receptivity, and second, whether school diversity influenced norm effectiveness. Heterogeneous environments may provide more conducive conditions for inclusivity messages (Mitchell, 2019), while homogeneous settings could attenuate norm salience. Additionally, we examined how demographic characteristics—including religious affiliation, migration background, and gender—moderated normative influences.

This comprehensive investigation advances our understanding of how opinion-based hostility emerges and can be moderated within adolescent communities, offering insights into both theoretical frameworks of polarization and empirically informed interventions during this critical developmental period.

2. Methods

2.1. Sample and Procedure

The study protocol received approval from both the authors' institutional ethics committee and the local school authority responsible for educational research. Students provided active opt-in consent before each data collection wave, while parents received opt-out consent forms. Participants completed the survey during regular class time using smartphones or tablets, with trained research personnel present to provide assistance and ensure confidentiality. The 45-minute survey assessed demographics, psychosocial variables, school activities, and social networks, with our analysis focusing on polarization-relevant measures (complete instrument available in the Supplementary File).

The initial sample comprised 860 students (329 from the diverse school, 531 from the nondiverse school) across two waves spaced one year apart. After excluding 21 participants who discontinued before page 20 (of 46) or exhibited completion times under 500 seconds, the final analytic sample included 839 students. The diverse school retained 317 participants (142 at Time 1 only, 26 at Time 2 only, 149 at both waves), while the nondiverse school maintained 522 participants (168 at Time 1 only, 75 at Time 2 only, 279 at both waves). A priori power analysis using the semPower package (Moshagen & Bader, 2023) indicated that 792 participants would provide adequate power (80%) to detect small cross-lagged effects in latent-variable CLPMs, confirming our sample size as sufficient.

Detailed demographics appear in the Supplementary File, Table S1. The sample comprised 45% female and 51% male participants (the remaining participants indicated other gender identities), with a mean age of 14.59 years ($SD = 1.47$). The schools demonstrated significant demographic differences: The diverse school reported higher proportions of students with migration backgrounds (72% vs. 34%, $p < .001$) and distinct religious compositions (37% Muslim, 33% Christian vs. 11% Muslim, 59% Christian in the nondiverse school, $p < .001$). Ethnocultural backgrounds varied substantially, with 60% of nondiverse school students identifying as of German origin, compared to more varied regional backgrounds in the diverse school (e.g., 24% Middle East/North Africa, 4.7% Sub-Saharan Africa). Political orientations (see Section 2.2) further differentiated the schools: The diverse school showed higher proportions of "anti-LGBTQIA+, pro-refugees" students (33% vs. 8.6%), while the nondiverse school had a greater representation of "Conservatives" (6.0% vs. 2.8%) and "pro-LGBTQIA+, anti-refugees" students (10% vs. 2.8%, $p < .001$).

2.2. Measures

All measures were administered in German using a translation/back-translation procedure conducted by the research team. All scale items are provided in the Supplementary File, Table S2, translated into English.

2.2.1. Perceived Prescriptive and Descriptive Inclusivity Norms

The prescriptive inclusivity norms scale comprised six items, with pairs of items assessing three core components: equality-based respect, unity, and dialogue. This measure was adapted from a previously validated 10-item scale (Shani et al., 2023). Participants evaluated their entire school community's agreement with each statement using a 5-point scale (1 = *do not agree at all*, 5 = *fully agree*). Equality-based respect items were adapted from established measures (Renger & Reese, 2017; Renger & Simon, 2011), while unity and dialogue items drew from the Interculturalism Index (Verkuyten et al., 2020). Exploratory factor analyses (EFA) using maximum likelihood estimation with Varimax rotation, conducted separately for each school and wave, consistently revealed a one-factor solution (see Supplementary File, Table S3). Factor retention was determined by eigenvalues greater than 1.0 and examination of explained variance proportions. High factor loadings supported construct unidimensionality, with the factor explaining 60–72% of total variance. Internal consistency was excellent across all subsets (Cronbach's α and McDonald's $\omega \geq .90$; see Supplementary File, Table S7).

It is important to note that while our prescriptive inclusivity norms measure uses examples of cultural, religious, and national diversity to contextualize the items for adolescent comprehension (as established during pretesting; see Supplementary File, Table S2, for specific items), the theoretical construct extends beyond ethnic/cultural inclusivity to encompass broader intergroup relations principles. Our factor analyses support the view that these items represent a coherent underlying construct rather than separate dimensions, suggesting participants interpreted them as reflecting general inclusivity principles rather than solely cultural diversity attitudes.

The descriptive inclusivity norms measure, developed through preliminary focus groups with six adolescents, consisted of four items. Two items assessed positive inclusivity behaviors and two captured exclusionary behaviors. Participants estimated the proportion of schoolmates engaging in each behavior using a 5-point scale (1 = *nobody*, 5 = *all*). EFA revealed a consistent two-factor structure distinguishing between positive and negative behaviors, explaining 33–57% of total variance across subsets (see Supplementary File, Table S4). Inter-item correlations were adequate for negative descriptive norms but demonstrated lower consistency for positive descriptive norms (see Supplementary File, Table S7).

2.2.2. Opinion-Based Polarization Assessment

Figure 1 presents a flowchart that describes the sequence of texts and questions included in the measure. Participants' assignment to a specific vignette profile (or a generic one) was based on their responses to the four yes/no questions about LGBTQIA+ rights (same-sex marriage, adoption) and refugee policies (admission levels, societal contribution). An option to skip the question was available.

Participants then encountered a vignette featuring a same-age, same-gender fictional peer (e.g., "Lisa is 14 years old") holding opposing views. Given that adolescents primarily orient themselves toward same-gender and same-age peers (McMillan, 2022; McPherson et al., 2001), this matching enhances the measure's ecological validity and relevance for adolescent respondents (Primi et al., 2016). The profile assignment logic aimed to present participants with a peer holding opposing views on at least one major issue domain, specifically:

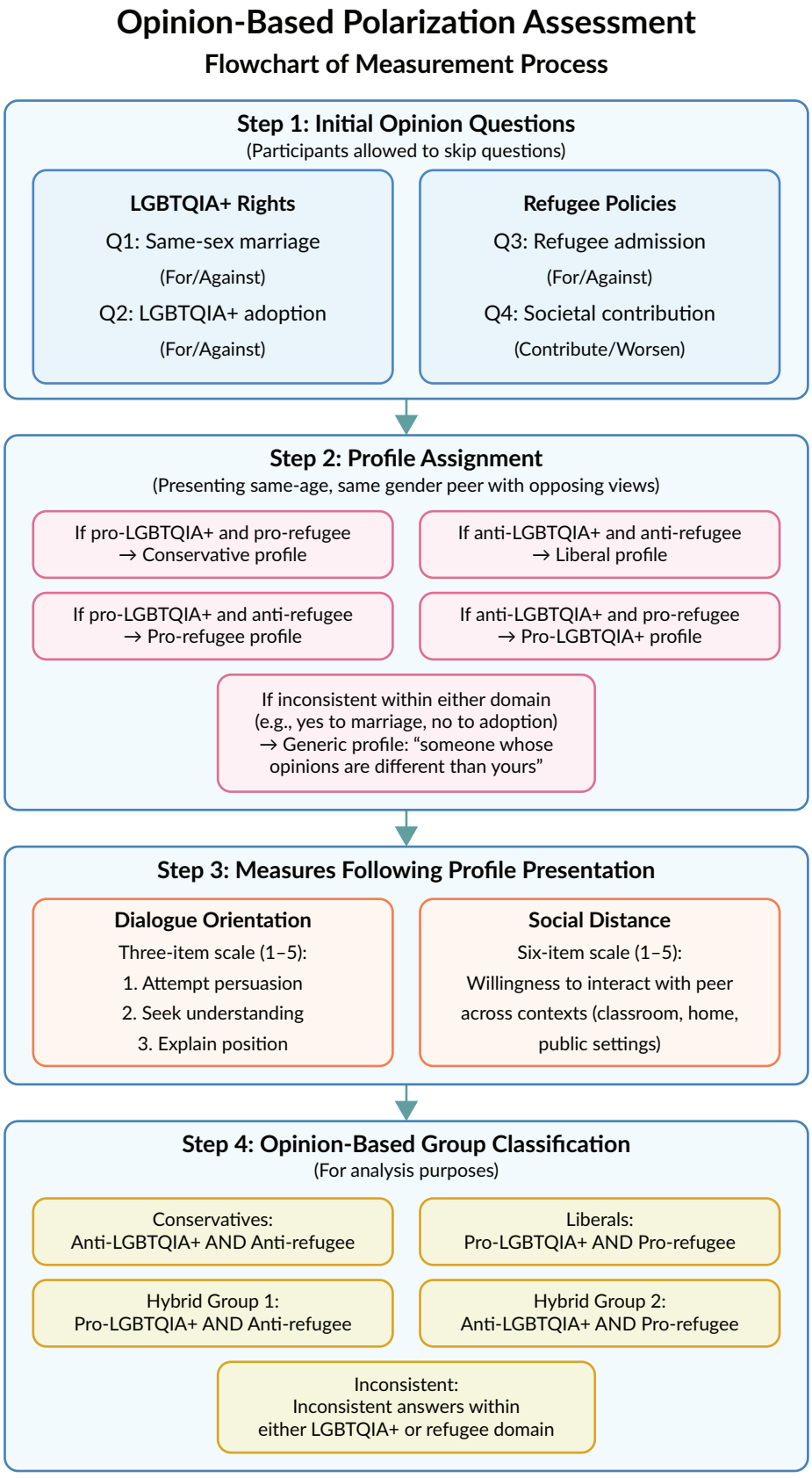

Figure 1. Flowchart depicting adolescent's opinion-based polarization assessment. Note: Classification enables comparison of dialogue orientation and social distance between groups.

1. Participants consistently (that is, matching *within*-domain answers) liberal on both domains (pro-LGBTQIA+, pro-refugee) received a consistently conservative profile (anti-LGBTQIA+, anti-refugee).
2. Participants consistently conservative on both domains (anti-LGBTQIA+, anti-refugee) received a consistently liberal profile (pro-LGBTQIA+, pro-refugee).
3. Participants liberal on LGBTQIA+ issues but conservative on refugee issues received a pro-refugee profile.
4. Participants conservative on LGBTQIA+ issues but liberal on refugee issues received a pro-LGBTQIA+ profile. Crucially, participants whose answers were inconsistent *within* either domain (e.g., answering "yes" to same-sex marriage but "no" to LGBTQIA+ adoption, or similar inconsistency on refugee questions), regardless of their stance on the other domain, were assigned the generic profile describing "someone whose opinions are different than yours." This group, termed "inconsistent" in the classification below, was thus treated separately from those holding clear, albeit mixed, stances across the two domains (e.g., consistently pro-LGBTQIA+ and consistently anti-refugee). In all conditions, the vignette was situated within participants' school environment.

The presentation of a profile was followed by two established measures:

1. Dialogue orientation: Adapted from Cionea et al.'s (2014) dialogue types, this three-item scale assessed willingness to (a) attempt persuasion, (b) seek understanding of others' perspectives, and (c) explain one's position (1 = *not at all*, 5 = *very much*). EFA using weighted least squares estimation confirmed a unidimensional structure (see Supplementary File, Table S5) with satisfactory reliability (see Supplementary File, Table S7).
2. Social distance (indicating affective polarization): A six-item scale measured willingness to interact with the hypothetical peer across contexts (e.g., classroom seating, home visits, public interactions) using a 5-point scale (1 = *very low*, 5 = *very high willingness*). EFA using minimum residual estimation with varimax rotation revealed a single-factor solution explaining 64–69% of variance (see Supplementary File, Table S6). Internal consistency was high ($\alpha > .90$) across schools and times (see Supplementary File, Table S7).

2.2.3. Classification of Opinion-Based Groups

Finally, to facilitate comparisons of norms and polarization measures between ideologically distinct subgroups, we categorized participants based on their pattern of responses to the four questions on LGBTQIA+ and refugee rights. Participants were classified into one of five groups:

1. Conservatives: Consistently anti-LGBTQIA+ (answered "no"/"against" to both items) AND consistently anti-refugee (answered "no"/"against" or "make things worse" to both items).
2. Liberals: Consistently pro-LGBTQIA+ (answered "yes"/"for" to both items) AND consistently pro-refugee (answered "yes"/"for" or "contribute" to both items). However, not all participants' stances aligned along a traditional left-right or liberal-conservative continuum. We classified these "hybrid groups" as:
3. Pro-LGBTQIA+, Anti-Refugees: Consistently pro-LGBTQIA+ AND consistently anti-refugee, and
4. Anti-LGBTQIA+, Pro-Refugees: Consistently anti-LGBTQIA+ AND consistently pro-refugee.
5. Inconsistent: Participants who provided inconsistent answers *within* either the LGBTQIA+ domain or the refugee domain (e.g., supporting same-sex marriage but opposing adoption, or vice-versa; similar

inconsistency on refugee items). This group captures individuals whose views did not align consistently even within a single-issue dimension.

2.3. Statistical Analysis

Initial data screening identified a programming error that resulted in incorrect profile assignments for 36 cases in the social distance and dialogue orientation measures; these cases were excluded from subsequent analyses. Missing data rates ranged from 1.7% to 6.9% across variables. Little's missing completely at random (MCAR) test yielded non-significant results ($p > .05$) for all school-wave subsets, supporting the MCAR assumption. Consequently, we employed robust analytical methods for handling missing data: mixed linear models and full information maximum likelihood (FIML) within structural equation modeling (SEM) frameworks. These approaches maximize available information without requiring listwise deletion, thereby enhancing estimate efficiency and statistical validity (Gabrio et al., 2022; Little & Rubin, 2020).

Preliminary analyses examined variable distributions (detailed in the Supplementary File, Tables S8–S12). Although Shapiro-Wilk tests indicated non-normality ($ps < .001$) and Henze-Zirkler tests revealed multivariate non-normality for both items ($HZ = 2.17$, $p < .01$) and scales ($HZ = 4.30$, $p < .01$; see Supplementary File, Tables S13–S14), all variables demonstrated acceptable skewness and kurtosis values (within ± 1). Given the established robustness of maximum likelihood estimation to moderate violations of normality assumptions (Enders, 2001; Kline & Little, 2023), we proceeded with the planned analyses.

Our analytical strategy comprised three main components. First, we assessed the temporal stability of opinion-based groups using a Sankey plot and marginal homogeneity tests. Second, we examined between-group differences using mixed linear models implemented in lme4 (Bates et al., 2015). These models accounted for the nested data structure (observations within participants) with fixed effects for wave, political orientation group, and their interaction, plus random intercepts for participants. Group comparisons utilized estimated marginal means (emmeans; Lenth, 2021), with Cohen's d effect sizes calculated from residual standard deviations. We applied Kenward-Roger adjustments for degrees of freedom and Tukey's method for multiple comparisons. Intraclass correlation coefficients quantified the stability of individual responses across waves.

Finally, we conducted longitudinal SEM to examine relationships among inclusivity norms, dialogue orientations, and social distance. After establishing measurement invariance (configural, metric, and partial scalar; see Meredith, 1993; Van De Schoot et al., 2012), we specified cross-lagged panel models incorporating stability paths, cross-lagged effects, and within-wave residual correlations. Examination of both directions of these longitudinal associations is important because, although prior literature suggests that perceived norms affect affective polarization, the alternative causal direction between these constructs has not been examined. Model fit evaluation followed Hu and Bentler's (1999) criteria (CFI $\geq .95$, RMSEA $\leq .06$, SRMR $\leq .08$), with missing data handled through full information maximum likelihood estimation (Enders, 2001). To assess moderation effects, we conducted multi-group analyses comparing unconstrained and constrained models across opinion-based groups. Significant moderation effects ($\Delta\chi^2$, ΔCFI $\geq .01$; Cheung & Rensvold, 2002) were then examined through systematic path comparisons and partial invariance testing.

3. Results

3.1. Distribution and Changes in Political Opinion-Based Groups

Analysis of political group distributions revealed substantial variability both within and across waves, with notably high proportions of inconsistent response patterns, meaning that they tended to both agree and disagree on different items within the same ideological domain. In the diverse school at Time 1, the distribution showed a relative balance between liberals (24.74%) and students holding anti-LGBTQIA+ but pro-refugee views (28.52%), with a smaller proportion of conservatives (2.41%). By Time 2, while the proportion of conservatives increased (8.57%), the percentage of students demonstrating inconsistent response patterns also rose (from 29.21% to 32%). The nondiverse school exhibited distinct patterns, with higher proportions of liberals (27.96% at Time 1) and a more substantial conservative presence (5.15% at Time 1, increasing to 9.89% at Time 2).

Longitudinal analysis of individual-level change, which included only participants who responded at both waves (diverse school: n = 149, nondiverse school: n = 279), revealed significant instability in political opinions, particularly in the diverse school ($\chi^2[4]$ = 18.097, p = .001). The Sankey diagram (Figure 2) illustrates substantial flux in political orientations, with students demonstrating considerable movement between categories across waves. For instance, in the diverse school, of the 37 students initially classified as liberal, only 16 maintained this orientation at Time 2, with 11 shifting to inconsistent responses. Similarly, in the nondiverse school, while the overall distribution changes were marginally significant ($\chi^2[4]$ = 8.917, p = .063), potentially due to small cell sizes, individual trajectories showed considerable volatility, with only 37 of 68 initial liberals maintaining their orientation.

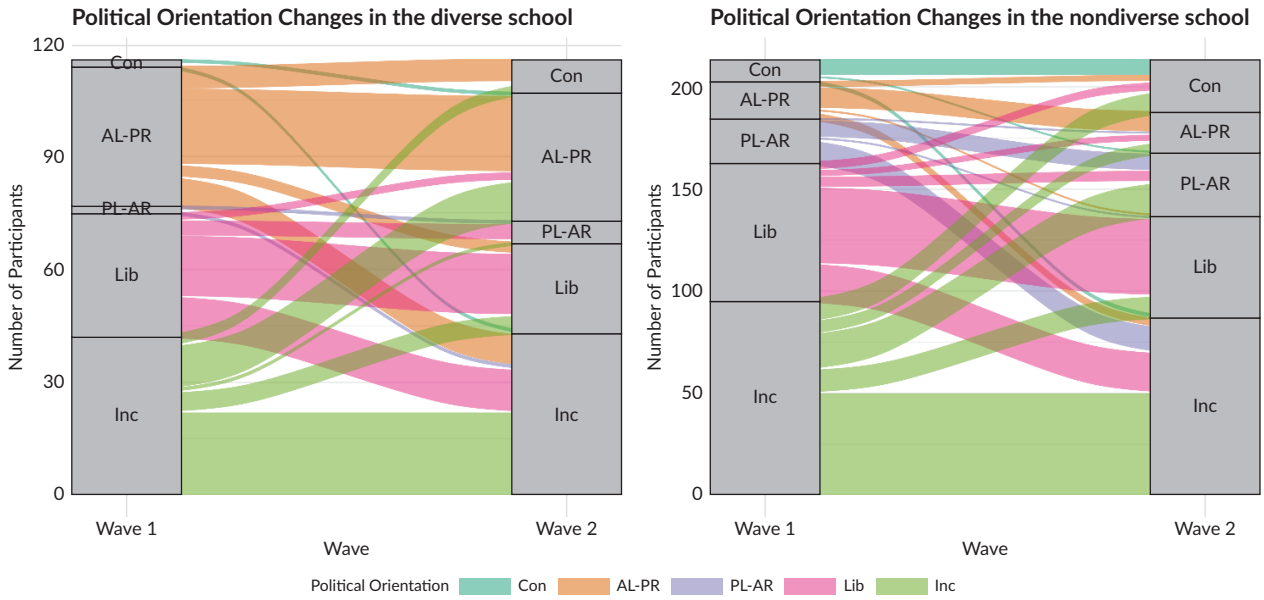

Figure 2. Political orientation (opinion-based groups) changes between Times 1 and 2 in the diverse and nondiverse schools. Note: Political orientations are categorized as conservative (Con), anti-LGBTQIA+/Pro-refugees (AL-PR), pro-LGBTQIA+/anti-refugees (PL-AR), liberal (Lib), and inconsistent (Inc).

3.2. Mixed Linear Models Predicting Outcomes From Political Groups and Time

Mixed linear models revealed significant main effects of political orientation group across all variables, with no significant time or interaction effects (Table S15 in the Supplementary File details model statistics; Table S16 presents estimated marginal means; see Tables S18–S22 for complete models). Group differences remained stable across waves, revealing several distinctive patterns.

Conservatives consistently demonstrated lower inclusivity-related attitudes compared to other groups. They reported significantly lower prescriptive norms than liberals at both waves (Time 1: $d = 0.57$, $p < .01$; Time 2: $d = 0.78$, $p < .001$) and lower than the anti-LGBTQIA+/pro-refugees group at Time 2 ($d = 0.93$, $p < .01$). They also perceived higher negative descriptive norms compared to liberals ($d = 0.68$, $p < .01$) and the anti-LGBTQIA+/pro-refugees group ($d = 0.78$, $p < .01$) at Time 1, with these differences persisting at Time 2. Conservatives exhibited the lowest dialogue readiness, particularly versus liberals (Time 1: $d = 1.00$, $p < .001$; Time 2: $d = 0.69$, $p < .01$) and the pro-LGBTQIA+/anti-refugees group (Time 1: $d = -0.78$, $p < .05$).

Liberals consistently exhibited more inclusive orientations across measures, reporting higher prescriptive norms than conservatives and higher positive descriptive norms at Time 1 ($d = 0.44$, $p < .05$). They maintained the highest dialogue readiness scores across waves, most notably compared to conservatives and the anti-LGBTQIA+/pro-Refugees group (Time 2: $d = 0.77$, $p < .001$).

The two hybrid groups exhibited distinct patterns. The anti-LGBTQIA+/pro-Refugees group reported higher prescriptive norms and lower negative descriptive norms than the pro-LGBTQIA+/anti-refugees group at Time 2 ($d = 0.56$ and $d = -0.65$ respectively, ps $< .05$), but demonstrated lower dialogue readiness. The pro-LGBTQIA+/anti-refugees group showed the lowest social distance scores, differing significantly from conservatives (Time 1: $d = 0.86$, $p < .05$; Time 2: $d = 0.48$, $p < .05$) and the anti-LGBTQIA+/pro-refugees group (Time 1: $d = 0.52$, $p < .05$).

3.3. Correlational Analysis

To provide a foundational overview of the relationships between key variables before examining longitudinal effects, we first examined bivariate Pearson correlations within and across waves, which are explained in the Supplementary File (Table S17).

3.4. Cross-Lagged SEM and Path Analysis

Initial analyses established measurement invariance across waves (see Supplementary File, Table S23). The measurement model demonstrated configural invariance (CFI = .961, RMSEA = .063) and metric invariance (ΔCFI = .000). Partial scalar invariance was achieved after releasing one item's intercept in the prescriptive norms scale ($\chi^2(197) = 613.57$, $p < .001$; CFI = .960; RMSEA = .060), supporting longitudinal comparisons of latent means.

The final structural model (Figure 3), incorporating theoretically justified residual covariances, demonstrated excellent fit ($\chi^2(368) = 679.91$, $p < .001$; CFI = .971; RMSEA = .032). All three constructs showed significant temporal stability from Time 1 to Time 2: prescriptive norms ($\beta = 0.299$), dialogue intentions ($\beta = 0.352$),

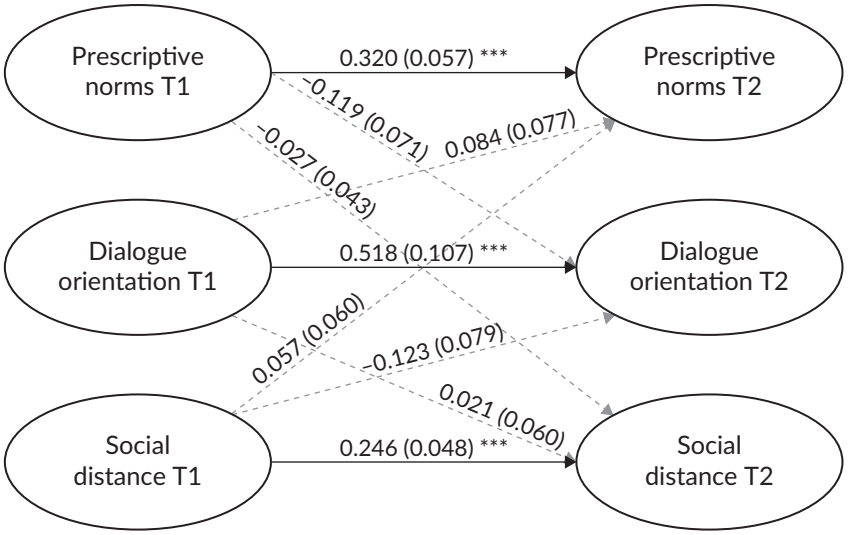

Figure 3. Structural paths in the modified cross-lagged panel model. Notes: Path coefficients are unstandardized. *SE* is the standard error of the unstandardized estimate and is presented in brackets; * $p < .05$, ** $p < .01$, *** $p < .001$.

and social distance ($\beta = 0.311$, all $ps < .001$). However, no significant cross-lagged effects emerged between constructs. Time 1 prescriptive norms neither predicted subsequent dialogue intentions ($\beta = -0.094$, $p = .093$) nor social distance ($\beta = 0.034$, $p = .521$), and initial levels of dialogue and social readiness did not predict later prescriptive norms (all $ps > .276$).

Moderation analyses by opinion-based groups employed observed variables due to convergence issues in the full SEM (for model fit indices see Supplementary File, Table S24). Given limited sample sizes for consistently classified participants across waves (conservative: $n = 8$; liberal: $n = 53$; anti-LGBTQIA+/pro-refugees: $n = 30$; pro-LGBTQIA+/anti-refugees: $n = 9$), group classification relied on Time 1 orientations ($n = 385$). Analyses revealed significant differences in temporal pathways ($\Delta\chi^2(27) = 42.392$, $p = .030$). A partial invariance model allowing dialogue orientation stability to vary across groups demonstrated good fit ($\chi^2(24) = 30.693$, $p = .163$; CFI = .948; RMSEA = .054, 90% CI [0.000, 0.104]). Dialogue orientation stability varied substantially: strongest for pro-LGBTQIA+/anti-refugees participants ($\beta = .524$, $p < .001$), followed by liberals ($\beta = .266$, $p < .001$) and anti-LGBTQIA+/pro-refugees participants ($\beta = .300$, $p = .022$), with a negative coefficient for conservatives ($\beta = -.204$, $p = .142$). All other pathways remained invariant.

School diversity analyses identified two significant path differences ($\chi^2(7) = 6.847$, $p = .445$; CFI = 1.000; RMSEA = 0.000, 90% CI [0.000, 0.060]). Social distance stability was stronger in the nondiverse school ($\beta = .330$, $p < .001$) compared to the diverse school ($\beta = .131$, $p = .093$), and higher Time 1 dialogue orientation predicted lower subsequent social distance only in the nondiverse school ($\beta = .204$, $p = .010$; diverse: $\beta = -.022$, $p = .696$).

4. Discussion

This study examined the relationship between perceived inclusivity norms in educational settings and opinion-based affective polarization during adolescence. Using a longitudinal design comparing two

schools with distinct multicultural compositions, we investigated whether perceived normative climate—independent of observed behavioral norms—could attenuate affective polarization over time. Despite theoretical propositions suggesting that normative emphasis on equality, respect, communal unity, and constructive dialogue would reduce polarization, our analyses revealed no evidence of cross-lagged causal effects from norms to either dialogue orientation or social distance. Below, we interpret these findings through intersecting developmental, contextual, and methodological perspectives.

4.1. Differences Across Political Orientations

Our mixed linear models revealed robust and consistent effects of political orientation on normative perceptions and intergroup engagement patterns, with ideological subgroups maintaining distinctive attitudinal profiles across waves. Conservative adolescents exhibited a consistent pattern characterized by lower perception of prescriptive norms, heightened perception of negative descriptive norms, and reduced propensity for cross-group dialogue. In contrast, liberal-identifying adolescents demonstrated the strongest inclusivity-oriented dispositions, consistently perceiving both prescriptive and positive descriptive norms while exhibiting enhanced dialogue readiness. Hybrid groups revealed more nuanced attitudinal configurations: the anti-LGBTQIA+/pro-refugees group perceived stronger prescriptive norms despite showing reduced dialogue readiness, while the pro-LGBTQIA+/anti-refugees group demonstrated notably lower social distance from ideological opponents.

These patterns align with research on ideological asymmetries showing conservative orientations associated with heightened outgroup distrust and reduced intergroup contact willingness (Brandt & Crawford, 2020; Ganzach & Schul, 2021). Conservative tendencies toward ingroup loyalty and resistance to social change (e.g., Feldman & Johnston, 2014; Jost, 2017) contrast with liberal characteristics of enhanced empathy and reduced ingroup emphasis (Jost et al., 2009; Morris, 2020). Our findings extend established work linking stronger ideological identities to increased political animosity (J. K. Brown & Hohman, 2022; Iyengar et al., 2019; Iyengar & Westwood, 2015; Mason, 2018a). Importantly, we found that many adolescents hold hybrid positions that transcend the traditional liberal-conservative divide. These mixed stances—such as supporting refugee policies while opposing LGBTQIA+ rights—can generate strong emotional attachments and issue-specific resistance to dialogue. While considerable instability was observed over one year, some stability patterns emerged, suggesting that for certain adolescents, ideological identities may crystallize earlier than previously recognized (Hess & Torney-Purta, 2017; Laffineur et al., 2024; Oosterhoff et al., 2021; Reifen-Tagar & Cimpian, 2022).

4.2. Methodological Insights and Developmental Patterns in Adolescent Political Identity Formation

Our vignette-based approach to measuring opinion-based affective polarization offered both methodological insights and theoretical revelations about adolescent political development. It presented concrete, developmentally appropriate scenarios rather than abstract political concepts; captured contextually relevant social issues; and measured both behavioral intentions and communicative orientations in naturalistic peer contexts. By focusing on concrete social scenarios rather than abstract political evaluations, our methodology captured behavioral manifestations of affective polarization through social distance (Druckman & Levendusky, 2019) and dialogue orientation measures (Cionea et al., 2014). However, the substantial proportion of participants showing within-individual fluctuations and

within-domain inconsistent responses revealed both methodological challenges and theoretically meaningful patterns in adolescent political identity formation.

The observed malleability in political orientations may reflect genuine opinions that are seemingly incoherent (i.e., hybrid on the conservative-liberal dichotomy) or inconsistent (i.e., mixed within domains), but may also be held by the wider public. Alternatively, it may reflect broader developmental processes, where youth actively explore and revise their beliefs through encounters with new information and social influences. This instability may stem from multiple factors: adolescents may still be developing the cognitive frameworks needed to organize political beliefs systematically, their opinions may be genuinely in flux as they engage with diverse perspectives, or they may lack sufficient exposure to political discourse to form stable viewpoints on complex social issues. Unlike adult populations, where ideological consistency often indicates political sophistication, adolescent hybrid groups (e.g., pro-LGBTQIA+, anti-refugees, or vice versa) and inconsistencies (e.g., supporting same-sex marriage but opposing adoption rights) may represent active engagement with complex political issues rather than measurement error.

Developmental perspectives provide theoretical grounds for expecting heightened instability and inconsistency during adolescence compared to adulthood. Political attitudes tend to become increasingly stable as individuals transition from adolescence to early adulthood (Rekker et al., 2019). Longitudinal research shows that core political attitudes in adulthood demonstrate remarkable stability over time, with approximately 75% of individuals maintaining consistent beliefs over decades (Peterson et al., 2020). The fluidity we observed aligns with developmental literature suggesting that adolescence represents a critical period for identity formation (Dahl et al., 2018), characterized by exploration across various domains, including political identity, coined by heightened susceptibility to social influence (Steinberg & Monahan, 2007), and ongoing cognitive development (Steinberg, 2005). Consequently, adolescent political attitudes might be particularly susceptible to change and less ideologically coherent.

However, while our findings highlight notable ideological inconsistencies and temporal instabilities in adolescents' political beliefs, we acknowledge that such patterns are not unique to adolescents. Research on European adults identified diverse belief structures, which were classified as "ideologue" groups (internally consistent left-right positions), "alternative" groups (multi-dimensional, often conflicting cultural and economic attitudes), and "unstructured" groups (weakly correlated beliefs; van Noord et al., 2025). Similarly, American adults frequently hold hybrid beliefs that combine economic liberalism with moral conservatism or vice versa (Baldassarri & Goldberg, 2014). Without a direct comparison of adolescents and adults using identical measures, we cannot conclude that the instability and ideological inconsistency observed in our sample exceeds that of adults. This limitation highlights the need for future research employing age-comparative designs with parallel measures to empirically test developmental differences in political attitude stability and consistency.

4.3. Inclusivity Norms and Affective Polarization

Contrary to our expectations that perceived inclusivity norms would predict increased dialogue and social orientations over time (Schäfer et al., 2024), cross-lagged analyses showed no longitudinal effects between inclusivity norms and readiness for cross-group social interactions. Instead, both dialogue orientation and social distance were primarily predicted by their own prior levels. This pattern suggests that naturally occurring

school inclusivity norms may be insufficient to overcome established identity-based attitudes. While previous research has demonstrated that school interventions can produce short-term tolerance gains (Shani et al., 2023), our findings indicate that the mere perception of inclusive norms does not alter dialogue orientation or social distance toward opposing groups. Family socialization may exert a stronger influence than school-based norms (Beck & Jennings, 1991; Sapiro, 2004; Tyler & Iyengar, 2023), or adolescents might respond more strongly to immediate peer-group norms than broader institutional climate messages. Future research should examine whether peer-led approaches prove more effective than institutional initiatives in shifting intergroup attitudes (Murrar et al., 2020).

Prescriptive inclusivity norms demonstrated stronger associations with polarization measures than descriptive norms, particularly negative descriptive norms, which showed no significant relationships across waves. This pattern aligns with Schäfer et al.'s (2024) findings of stronger connections between injunctive or prescriptive norms and tolerance across European countries. The limited influence of descriptive norms may reflect their context-specificity—prejudice often faces variable public condemnation depending on the target group (Crandall et al., 2002), suggesting that behavioral norms' effectiveness may vary between concrete outgroups and abstract ideological opponents.

4.4. Theoretical and Practical Implications

Our findings advance several key debates in political socialization and intergroup relations research. First, they support emerging perspectives that view political identity development as more fluid and complex than traditionally assumed. The substantial opinion-based group instability we observed challenges classic models suggesting political enmity emerges only in late adolescence (Greenstein, 1960; Hess & Torney-Purta, 2017). Rather, our results align with evidence that partisan hostility can emerge by age 11 (Tyler & Iyengar, 2023) while remaining malleable throughout adolescent development (Hooghe & Wilkenfeld, 2008; Lay et al., 2023).

Second, our findings illuminate the differential impact of norm types on adolescent intergroup attitudes. The stronger associations of affective polarization behavioral indicators with prescriptive norms compared to descriptive norms (see Supplementary File, Table S17) suggests that explicit institutional messages about inclusion may carry more weight than perceived peer behavior, supporting recent work on prescriptive norms as regulatory mechanisms in intergroup relations (Bicchieri et al., 2023; Cialdini & Jacobson, 2021). However, these normative influences compete with other socialization forces, particularly family influence in the transmission of partisan loyalties (Jennings & Niemi, 1968; Pedraza & Perry, 2020; Tyler & Iyengar, 2023). Our measure of inclusivity norms primarily contextualizes these principles within cultural diversity, which may influence their relationship with opinion-based polarization outcomes. Prejudice operates differently across ideological lines, with both liberals and conservatives expressing prejudice toward dissimilar outgroups (Crawford & Brandt, 2020). The modest associations we found between prescriptive inclusivity norms and opinion-based polarization may reflect this distinction between cultural and ideological inclusivity domains. Nevertheless, parallel research with adults using more generic inclusivity norm measures finds similar patterns of relationships between inclusivity norms and willingness to engage with ideological outgroups (Schäfer et al., 2024), suggesting some transferability of inclusivity principles across different intergroup contexts.

This raises the possibility of a bidirectional relationship between ideological orientation (rather than their affective consequences) and perceptions of inclusivity norms. Liberal-identifying adolescents demonstrated the strongest inclusivity-oriented dispositions, consistently perceiving positive prescriptive and descriptive norms while exhibiting enhanced dialogue readiness. If ideological groups differ in their approaches to various forms of diversity, with liberals often demonstrating greater endorsement of diversity-related attitudes (Crawford & Brandt, 2020), inclusivity norms may not represent a truly independent construct that influences polarization, but rather partially reflect existing ideological positions. The correlational nature of our study limits causal inferences, and the stability of both inclusivity norms and political positions over the one-year interval suggests a potential underlying relationship. Future research employing experimental manipulations of perceived norms could better disentangle these effects and test whether inclusivity norms can function as an intervention strategy that transcends ideological differences.

Third, the varying effects across contexts highlight the importance of considering multiple moderating factors. The enhanced dialogue-social openness link in nondiverse schools suggests that dialogue may be particularly crucial in settings where intergroup contact opportunities are limited. These findings bridge classic contact theory (Allport, 1954; Bracegirdle et al., 2022; Tausch et al., 2024) with contemporary research on how normative climates affect polarization in the absence of sustained outgroup interaction (Kingzette et al., 2021; Mullinix & Lythgoe, 2023). Although dialogue orientation was operationalized distinctly from perceived inclusivity norms, this result offers preliminary support for the theoretical role of inclusivity norms in reducing polarization, given that dialogue represents one of the core values associated with tolerance toward political adversaries (Schäfer et al., 2024).

These insights suggest several actionable interventions. Since adolescents often overestimate peer hostility, interventions that reveal more moderate actual peer attitudes can help recalibrate social perceptions (You & Lee, 2024). Face-to-face discussions combined with inclusivity messages can effectively reduce stereotypes and promote cross-group friendships (Levendusky & Stecula, 2021). Given the emotional foundations of polarization (Bakker & Lelkes, 2024), integrating inclusivity norms with emotion regulation strategies (Evers et al., 2014; Simonsson et al., 2022) may enhance intervention effectiveness. Programs should be tailored to ideological orientations—emphasizing communal values for conservative youth (Mullinix & Lythgoe, 2023) while adopting nuanced approaches with those holding hybrid beliefs to sustain dialogue without eliciting defensiveness.

4.5. Limitations and Future Directions

Several limitations qualify our conclusions. While our polarization measure enabled the assessment of opinion-based groups in an adolescent sample, its complexity and narrow focus on only two issues with two questions each resulted in a high proportion of within-domain inconsistent responses that complicated appropriate profiling and classification into opinion-based groups. Future research might develop more comprehensive profiles using questions that address a broader range of societal issues, or focus on partisan group affiliations rather than opinion-based groups.

Regarding our research design, the two-wave structure with a one-year interval limited our ability to detect potential short-term or delayed shifts in norms and polarization. Future studies employing longer timeframes with more frequent measurements (e.g., using random-intercept cross-lagged panel model,

Hamaker et al., 2015) could better illuminate whether and how norm-based changes emerge gradually. Finally, while we focused on perceived school norms, adolescents simultaneously navigate multiple social networks—including family, social media, and neighborhoods—that may transmit competing messages about outgroup engagement.

Attention should also be paid to the absence of a comparable adult sample. While our findings reveal considerable fluidity in adolescents' stances on LGBTQIA+ and refugee rights over a one-year period, without adult comparison using identical measures, we cannot definitively determine whether the instability observed is unique to adolescence or simply reflects broader patterns of opinion change across the lifespan. Future research should directly compare adolescent and adult samples using longitudinal designs and parallel measures to establish the relative stability and consistency of political attitudes across developmental stages. Moreover, instability and inconsistency may have resulted from our opinion-based polarization measure, which may have oversimplified adolescents' complex ideological explorations. Future studies should incorporate attitudinal ambivalence measures (Burger, 2024) and neutral response options to better distinguish between genuine political uncertainty, active ideological exploration, and measurement-related response inconsistency. Additionally, we did not assess strength of identification with opinion-based groups, though this factor often influences how ingroup norms are internalized or resisted (You & Lee, 2024).

The age range of our sample (grades 7–11) limits the generalizability to younger children or emerging adults, as political attitudes continue to develop across adolescence (Nieuwelink et al., 2018). Future studies should employ cohort-sequential designs that follow multiple age groups (including adolescents and adults of varying ages) over several years to disentangle age effects from cohort and period effects, and to identify the trajectories of opinion stability across the lifespan.

Furthermore, a key limitation pertains to our measurement of inclusivity norms. Following cognitive pretesting, we contextualized inclusivity norm items within cultural, religious, and national diversity to enhance comprehensibility for adolescent participants. This approach, while developmentally appropriate, may have narrowed the conceptual scope of inclusivity norms, potentially limiting their applicability to opinion-based polarization. Future research should develop and validate measures of inclusivity norms that more explicitly encompass ideological diversity alongside cultural diversity, allowing researchers to examine whether these norms function similarly or differently across domains.

Finally, while this study provides valuable insights into affective polarization among adolescents in Germany, several scope conditions should be considered when generalizing these findings to other contexts. Our measurement approach focusing on opinion-based rather than partisan polarization, while appropriate for adolescents with developing political identities in a multiparty system, might yield different results in contexts where partisan identities form earlier or where political conflict is structured differently. The divergence between Germany's declining ideological polarization and increasing affective polarization (Coffé et al., 2025; Ferreira Da Silva & Garzia, 2024) represents a unique political climate that may shape adolescent political socialization differently than in countries where ideological and affective polarization align. Additionally, Germany's historical legacies, including its Nazi past and East–West division and reunification, have created distinct political socialization patterns that influence how young people form and express political attitudes. The country's ongoing debates around LGBTQIA+ rights and refugee policies, which we used as focal issues, reflect particular national concerns that may manifest differently in countries

with distinct historical legacies and contemporary political narratives, yet these also vary across the federal states within Germany (Angenendt & Brause, 2024). Future research should explore these dynamics across diverse regional, national, cultural, and political settings to determine which aspects of adolescent affective polarization represent universal developmental processes versus context-specific manifestations shaped by particular political and educational environments.

These limitations suggest several promising research directions. The growing influence of algorithm-driven social media feeds and viral political content on adolescent attitudes may amplify or counteract tolerance-promoting messages in educational settings (Chan & Fu, 2017; Daniel, 2024), warranting investigation into how these digital environments interact with school-based norm interventions. Researchers should also examine the comparative effectiveness of peer-led initiatives versus institutional policies, explore how emotion regulation strategies might buffer against polarization-induced hostility, and investigate the dynamic interplay between evolving ideological alignments and normative influences during adolescent development.

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Conflict of Interests

The authors declare no conflict of interests. In this article, editorial decisions were undertaken by Ulf R. Hedetoft (University of Copenhagen, Denmark).

Data Availability

Data and materials used in this study are available upon request to the corresponding author.

Supplementary Material

Supplementary material for this article is available online in the format provided by the author (unedited).

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