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How Descriptive Norms and Peer Attitudes Shape Interethnic Dating Among Adolescents in Dutch Schools

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Abstract

This study examines the role of school-based environmental factors in shaping interethnic dating patterns among adolescents in the Netherlands. Given that adolescence is a formative period for social behavior, early interethnic dating experiences may foster openness to interethnic marriage later in life. This article focuses on how general peer approval of the outgroup and descriptive norms (i.e., the prevalence of interethnic relationships) influences adolescents' partner choices. Using longitudinal data from the Dutch part of the Children of Immigrants Longitudinal Survey in Four European Countries (CILS4EU), we test whether these factors affect the likelihood of interethnic dating. Results supported the hypothesis that descriptive norms moderate interethnic dating as they strengthen the link between positive individual attitudes towards the ethnic outgroup and the likelihood of interethnic dating. Descriptive norms furthermore moderate the effect of personal preferences, strengthening the relationship under supportive normative conditions. Personal preferences and parental influences also play decisive roles. Additionally, our results suggest that ethnic minorities and non-religious adolescents are more likely to engage in interethnic dating. Future research should explore other sources of normative influence, such as (social) media and adolescent clubs, to better understand the normative underpinnings of interethnic relationships.

Keywords

adolescents; descriptive norms; intergroup attitudes; interethnic dating; schools

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1. Introduction

The increasing diversity in Europe, driven by migration and low native fertility rates (Coleman, 2006), has created greater opportunities for individuals to interact across ethnic lines. This enhanced interaction has the potential to foster more interethnic marriages, which are significant markers of social integration and mutual acceptance between groups. Interethnic marriage is widely regarded as a crucial indicator of integration, as it reflects the degree to which individuals overcome group boundaries. Accepting an out-group member as a spouse suggests that group differences are no longer seen as barriers to long-term partnerships (Alba & Nee, 2003). It signals a reduction in prejudice and the successful blending of cultural differences within a society.

Adolescence is a particularly formative period for social and romantic relations, significantly influencing partner choice in adulthood. Early interethnic dating experiences may shape attitudes towards out-group members and increase the likelihood of intermarriage later in life (van Zantvliet et al., 2014a). Studies show that adolescent romantic experiences often persist into adulthood (Madsen & Collins, 2011; Raley et al., 2007), and those with early interethnic relationships may display a greater openness to intermarriage (King & Harris, 2007). The cues on the appropriateness of interethnic contact within schools encompass both descriptive norms—characterized by the prevalence of certain behaviors in a given social context—and general attitudes of the environment—characterized by the perception of what most people approve or disapprove of (Cialdini et al., 1991). Together, these cues reflect the social acceptability of interethnic dating (Bourgeois & Leary, 2001; Kalmijn, 1998).

Norms in relevant dating settings are pivotal for understanding behavior (Cialdini et al., 1991; Durkheim, 1951, yet research on interethnic dating often neglects the influence of local norms, which we hypothesize may play a pivotal role in shaping romantic partner choices. For adolescents, schools serve as crucial environments for forming romantic connections and friendships. Normative influences in schools are particularly significant because adolescents spend much of their time in these settings, and schools provide one of the primary meeting grounds for romantic partners (Kiesner et al., 2004; Mollenhorst et al., 2008). Schools are spaces where norms regarding interethnic relationships can both be observed and transmitted (van Vemde et al., 2021). Descriptive norms such as interethnic dating patterns within schools reveal the openness of its students to interethnic interactions, thereby encouraging or discouraging interethnic dating (Vaquera & Kao, 2008).

Schoolmates' explicit interethnic attitudes—students' consciously reported evaluations of ethnic groups—influence the social dynamics within ethnically diverse secondary school classrooms (van Vemde et al., 2023). Explicit interethnic attitudes are linked to deliberate and consciously monitored behaviors, including verbal and socially strategic interactions (Azjen et al., 2018). Given that students' social experiences in the school can be shaped by the evaluations of others about their ethnic group, and that these attitudes reflect socially relevant judgments, it is plausible that school interethnic attitudes influence the development of interethnic relationships (Bayram Özdemir et al., 2018; König et al., 2022; Thijs et al., 2014).

In this study, we investigate how the school environment influences interethnic dating between native and ethnic minority adolescents (with Turkish, Moroccan, Surinamese, and Antillean heritage) in the Netherlands. Using the Children of Immigrants Longitudinal Survey in Four European Countries (CILS4EU; Kalter et al., 2014), we analyze how interethnic attitudes and descriptive norms within schools shape partner choices. The longitudinal design allows us to examine whether school-based attitudes and norms on interethnic

relationships indeed influence dating partner choices, while the inclusion of data from several classes per school provides us with a reliable measure of the interethnic attitudes and interethnic relationships within the school context.

2. Theory

2.1. The Basic Model: Preferences, Opportunities, and Third Parties

A review of the sociological literature on intermarriage (Kalmijn, 1998) has pointed to three factors that influence the choice of a partner: (a) personal and (b) third-party preferences for certain characteristics in a partner, as well as (c) opportunities of the marriage market in which candidates search for a partner. We apply this framework and specify the normative component to explain the choice of a dating partner by native and ethnic minority adolescents in the Netherlands (see also van Zantvliet et al., 2014a; Weißmann & Maddox, 2016).

Partner preferences are first held by individuals. In general, individuals prefer to interact and establish relationships with similar others (Feliciano & Hijara, 2024; Kalmijn, 1998; Lewis, 2016; McPherson et al., 2001). Cultural similarity enhances personal attraction because it confirms one's worldview, provides opportunities for joint activities, and facilitates mutual understanding (Kalmijn, 1998). This preference for endogamy is already expressed in adolescence (Blackwell & Lichter, 2004; Herman & Campbell, 2012; Weißmann & Maddox, 2016).

Preferences for endogamy are also held by third parties, such as friends and family (Huijnk & Liefbroer, 2012; Huijnk et al., 2012; Lundquist et al., 2024). Exogamy may threaten affiliation with the own group (Finnäs & O'Leary, 2003; Qian, 2004), solidarity with the own group (Kalmijn, 1998), and the family reputation (Munniksma et al., 2012). Endogamy, on the other hand, may ensure the intergenerational transmission of the group's culture (Kalmijn, 2015; Xie & Goyette, 1997), and ease communication and communal activity (McPherson et al., 2001).

Besides personal and third-party preferences, the formation of romantic relations depends on social structures (Blau, 1977). The realization of preferences is, thus, dependent on the meeting opportunities of the social context: Relationships are only possible with those people one has the opportunity to meet (Blau, 1977; Verbrugge, 1977), and relationships with members of certain groups are more likely if one's social contexts consist of relatively more members of these groups (de Vroome et al., 2014; Harris & Ono, 2005; Kalmijn & van Tubergen, 2010; van Tubergen & Maas, 2007). In adolescence, the school is a social context that is particularly relevant for finding new friends and partners (Kiesner et al., 2004), because of the large amount of time that is spent in this context, and because adolescents have limited mobility. The opportunities for intergroup contact that are offered by this social context have been found to affect adolescents' partner choices (Fujino, 1997; Shibazaki & Brennan, 1998; Wang & Kao, 2007), hence we control for the opportunities for interethnic dating in our analytical approach.

The model of preferences and opportunities for romantic partner choice has proven very helpful in explaining interethnic partner choices and it is therefore adopted as a basic model in this study. We extend the model by refining and examining the specific influences that third parties exert on interethnic dating.

Specifically, we investigate how general attitudes regarding the outgroup—from both the ingroup and the outgroup—as well as descriptive norms of interethnic relationships, shape interethnic dating patterns. For clarity, we hypothesize on a situation in which there are only two groups, of which both members view all individuals in their own group as the ingroup, and all individuals in the other group as the outgroup. We contend that local cues for appropriate behavior indirectly influence interethnic dating in three ways. First, the outgroup attitudes of the ingroup inform individuals' personal preferences for interethnic relationships, which in turn affect their likelihood of engaging in interethnic dating (Kalmijn, 1998). Second, the outgroup attitudes of the outgroup reflect outgroup members' willingness to reciprocate interethnic relationship attempts, resulting in the extent to which individuals can translate personal interethnic dating preferences, if any, into actual interethnic relationships (beyond mere opportunity). Third, descriptive norms indicate to what extent interethnic dating would be considered appropriate or desirable behavior by peers, and whether adolescents with interethnic dating partners would face peer penalties. We argue that these descriptive norms influence the extent to which individuals would be willing to act on their own preference for interethnic dating. See Figure 1 for a graphic overview of the hypothesized effects.

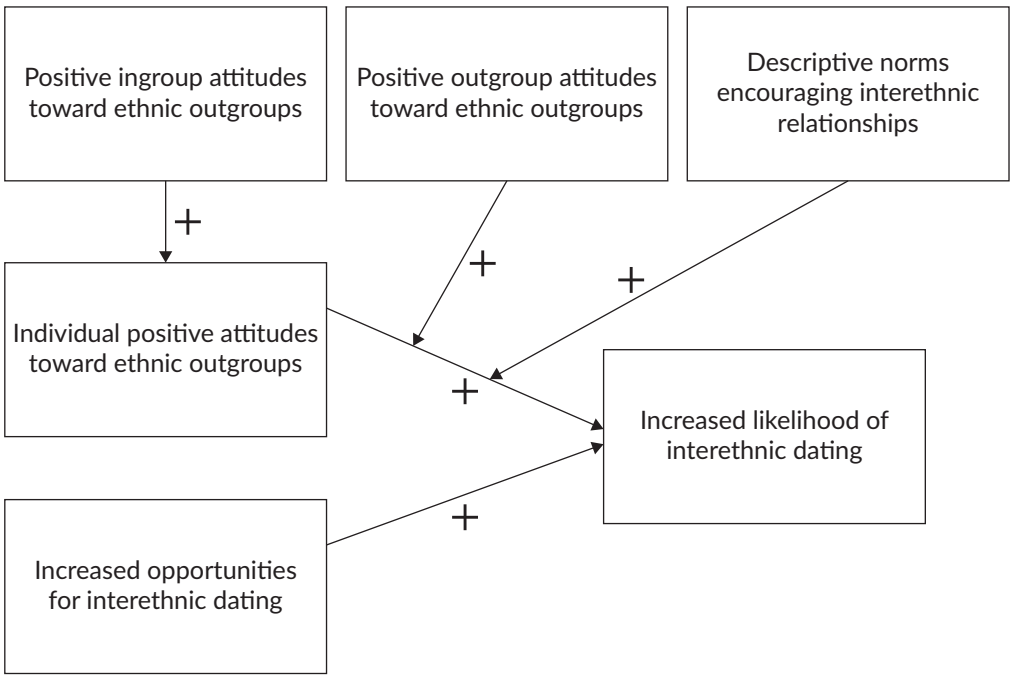

Figure 1. Extended theoretical model of preferences, opportunities, and third-party influences on interethnic dating.

2.2. The Influence of Ingroup Schoolmates' Interethnic Attitudes on Interethnic Dating

As outlined in the previous section, personal and third-party attitudes play an important role in shaping interethnic behaviors like interethnic dating (Kalmijn, 1998). The influence of third-party attitudes on interethnic behaviors is typically theorized to operate through their effect on personal preferences, by shaping the extent to which individuals conform to the general attitudes regarding ethnic outgroups (Kalmijn, 1998).

Generalized attitudes reflect what is commonly approved of within a social group and function as a mechanism of social regulation. Approval of an ethnic outgroup by relevant ingroup members—particularly peers or other significant referents—can influence individuals' interethnic relational preferences and behaviors through several interrelated sociological mechanisms. First, normative influence plays a central role: When ingroup members express positive attitudes towards an outgroup, they signal socially acceptable boundaries for interaction, thereby reducing normative constraints on forming interethnic ties (Rivas-Drake et al., 2017). This social approval can foster a perception that intergroup relationships are acceptable, or even desirable, within the peer group, thereby encouraging individual engagement in such relationships. Second, individuals often look to salient peer groups to inform their attitudes and behaviors (Merton, 1941). If peers demonstrate acceptance or preference for interethnic relations, individuals may internalize these orientations, adjusting their own relational preferences accordingly. Finally, social network dynamics may play a crucial mediating role. Positive group-level attitudes can lead to increased intergroup contact opportunities (Moody, 2001), lowering the social cost of crossing group boundaries and fostering mutual trust and familiarity (Pettigrew, 1998). This is particularly relevant in settings such as schools, where peer approval is closely tied to social capital and reputation (Cillessen & Rose, 2005). Taken together, these mechanisms suggest that positive ingroup attitudes towards an ethnic outgroup create a social context in which interethnic relationships are more likely to be preferred, pursued, and successfully maintained.

In the context of interethnic dating, ingroup attitudes towards the outgroup are thus expected to shape interethnic dating preferences. When these attitudes are positive towards the outgroup, individuals anticipate social or internal approval by their ingroup, leading them to develop more favorable personal preferences for interethnic dating, and consequently, a greater likelihood of engaging in such relationships (Grusec & Hastings, 2014). Based on this theoretical framework, we formulate the following hypothesis:

> Hypothesis 1: Positive ingroup attitudes towards the outgroup will result in an increased personal preference for interethnic dating, which will, in turn, lead to a greater likelihood of engaging in interethnic dating.

2.3. The Influence of Outgroup Attitudes on the Realization of Preferences

In addition to ingroup attitudes, we consider the role of outgroup attitudes towards the outgroup (i.e., the individual's ingroup) in shaping interethnic dating behavior of the individual. While ingroup interethnic attitudes directly influence personal preferences for interethnic dating, we theorize that outgroup attitudes towards the individual's ingroup moderate the extent to which these preferences translate into actual interethnic dating behavior. Outgroup attitudes regulate the social acceptability of interethnic partners within the outgroup. We postulate that this shapes the degree to which individuals can act on their personal preferences for interethnic dating, a distinction that has largely been overlooked in discussions of third-party influence on interethnic romantic relationships (Kalmijn, 1998).

Theoretically, outgroup attitudes function similarly to ingroup attitudes but operate within the ethnic outgroup. Rather than shaping personal preferences directly, they moderate the extent to which individuals can act on their existing preferences for interethnic dating. Even if an individual holds a strong preference for interethnic dating and has opportunities to engage in such relationships because of enough outgroup members—and the ingroup generally holds positive attitudes towards such relationships—the extent to

which they can pursue them depends on the interethnic attitudes of the ethnic outgroup (Tropp & Pettigrew, 2005). When outgroup interethnic attitudes are positive towards the ingroup, individuals who are positive about an outgroup member may be more likely to act on their preference, as they perceive increased openness from outgroup members. Furthermore, outgroup members may be more likely to reciprocate such dating attempts. Conversely, when outgroup attitudes disapprove of the ingroup, the influence of personal preference on interethnic dating behavior weakens, as individuals may face rejection from outgroup members. On that basis, we formulate the following hypothesis:

> Hypothesis 2: Outgroup interethnic attitudes that are positive towards the ingroup will moderate the relationship between personal preference for interethnic dating and the likelihood of engaging in interethnic dating, such that this relationship will be stronger when outgroup attitudes are more positive towards the ingroup.

2.4. The Influence of Descriptive Norms on Interethnic Dating

Descriptive norms indicate what behaviors are prevalent within a given social context and function as social heuristics, guiding behavior by signaling which actions provide the most certainty for navigating a social group effectively (Cialdini et al., 1991). Research has shown that individuals rely on descriptive norms to guide behavior, particularly in ambiguous or uncertain social situations such as the adolescent dating market (Cialdini et al., 1991).

In the context of interethnic dating, descriptive norms provide individuals with cues about the prevalence of interethnic relationships and, consequently, their feasibility. When interethnic contact is widely observed, individuals infer that such behavior is socially acceptable and that outgroup members are receptive to such relationships, reinforcing the perception that interethnic dating is a viable option (Tropp & Pettigrew, 2005). Conversely, when interethnic contact is rare or unseen, individuals may perceive it as socially uncertain or undesirable, anticipating a higher likelihood of rejection from the ethnic outgroup (Herman & Campbell, 2012).

Descriptive norms are hypothesized to moderate the extent to which personal preferences translate into actual dating behavior by shaping perceptions of feasibility. When interethnic dating is prevalent and normalized, individuals who are positive towards outgroup members and prefer an interethnic relationship are more likely to act on their preferences, as they perceive a lower risk of rejection from the ethnic outgroup (Herman & Campbell, 2012). Since dating at this age is still rare, the relationships that are observed—even if it is just one—send out a strong signal about the social acceptance and receptiveness of the other group. Conversely, when interethnic dating is absent, individuals may hesitate to pursue such relationships due to the lack of clear social cues which indicates that outgroup members are unlikely to reciprocate interest. Based on this reasoning, we formulate the following hypothesis:

> Hypothesis 3: Descriptive norms encouraging interethnic contact will moderate the relationship between personal preference for interethnic dating and the likelihood of engaging in interethnic dating, such that this relationship will be stronger when descriptive norms signal that interethnic dating is more common.

3. Data and Methods

3.1. Data

We use the first three waves of the CILS4EU (Kalter et al., 2016a, 2016b, 2016c, 2016d) to test our hypotheses. This panel followed adolescents in England, Germany, the Netherlands, and Sweden annually since 2010, when these adolescents were around 15 years old. Using comparable designs and measures, the survey aims to answer key questions about the structural, cultural, and social integration of the children of immigrants in these countries (Kalter et al., 2014). In this study, we restrict our analyses to the Netherlands.

The survey used a stratified three-stage sample design to allow for oversampling schools with a high proportion of pupils with an immigrant background. In the first stage, schools were sampled from a comprehensive national school list with probability proportional to size. The school response rate was 34.9%. For each non-participating school, a school comparable in educational track and immigrant proportion was sampled. This replacement strategy increased coverage of the school sample to 91.7%. In the second stage, within each participating school, at least two classes of the 3rd grade (age about 14–15) were sampled. In the third stage, all pupils enrolled in these classes were sampled. The sampled pupils for whom passive parental consent was granted completed an extensive questionnaire at school. The pupil response rate was 91.1%. In wave 2, respondents who were still in school were again surveyed at school. Respondents who were no longer in school were surveyed via an online questionnaire. In wave 3, respondents were surveyed via online questionnaires. Respondents who were still in school were approached via their school if the school agreed to participate one more time. Conditional on participation in waves 1 or 2 (during which the necessary contact information was collected), response rates for wave 3 are 57.9%. In addition, a parental survey was conducted in wave 1 (and wave 2, for those parents who had not participated in wave 1), for which the response rate was 74.7%.

3.2. Observed Sample

Our observed sample consists of 511 respondents, including 430 ethnic majority members and 81 ethnic minority members. The observed sample was obtained through a series of selection steps. First, we included only those who participated in wave 1 (n = 4,636) and who self-identified as part of either the ethnic majority or one of the minority groups of interest (n = 3,445). Second, we limited the sample to respondents who attended a school with at least one student from both the majority and minority group (n = 2,995). We furthermore excluded three schools where only one student from either group was present who had missing data on the individual attitudes variable (n = 2,883). Additionally, respondents older than 20 years were excluded (n = 2,776). Finally, we selected only those respondents who were in a (intra- or interethnic) romantic relationship at either wave 2 or wave 3 and with complete data on the variables of interest, leading to a final sample size of 511. Exploratory Heckman (1979) selection models subsequently indicated that adolescents who were dating did not differ substantially from non-dating adolescents on key characteristics relevant to partner choice, mitigating concerns about selection bias (results available upon request).

3.3. Imputed Sample Sensitivity Analysis

As we lost a substantial number of cases in the observed sample due to the presence of missing data, particularly on the dating status variable in wave 2 (~23%) and wave 3 (~43%), a considerably reduced number of cases was available for analysis. To mitigate potential estimation bias due to data not missing at random and to enhance statistical power, we supplemented our complete-case analysis with a sample obtained by performing cutting-edge multilevel multiple imputation.

Multilevel multiple imputation was conducted using the *mice* package in R (van Buuren, 2018; van Buuren & Groothuis-Oudshoorn, 2011), employing a two-level imputation model to account for the hierarchical structure of the data (i.e., students nested within schools). The imputation was performed on raw level 1 variables, which were subsequently used to derive the key dependent and independent variables at levels 1 and 2 for the analyses.

To inform the imputation model, we selected 110 auxiliary variables based on three criteria: (a) less than 50% missing data, (b) its theoretical relevance with respect to or an absolute correlation of at least .30 with one or more of the dependent and independent variables, and (c) no substantial computational issues during model fitting. A custom visit sequence was used, prioritizing the imputation of auxiliary variables with the least missingness. Each auxiliary variable was sequentially imputed using the fully observed independent variables—specifically, ethnic background and a "mixed parents" indicator (defined as having one immigrant and one native parent)—as well as any previously imputed auxiliary variables. Once all auxiliary variables were imputed, they were used in combination with the fully observed independent variables to impute the remaining dependent and independent variables, without applying a visit sequence.

The school identifier was specified as the clustering variable in the predictor matrix, while the method "2l.pmm" was used for imputing all variables. A total of 40 imputed datasets were generated using 20 iterations each. Diagnostic checks—including trace plots for convergence and density plots to assess imputation plausibility—indicated that the imputations performed sufficiently.

3.4. Measures

3.4.1. Dependent Variable

Interethnic dating was a binary measure indicating whether an adolescent was in an intra- (0) or interethnic romantic relationship (1) in either wave 2 or 3. In these waves, respondents were asked: "Do you currently have a boyfriend or girlfriend?" Those who answered affirmatively were then asked about their partner's background, with response options including "Dutch," "Antillean," "Surinamese," "Turkish," "Moroccan," and "Other background." The definition of background was left to the respondent's interpretation, which could refer to ethnic or national origin of their partner, their partner's parents, or their (great-)grandparents. Based on the respondent's own national origin (see Section 3.4.4), relationships were classified as intra-ethnic (0) if the partner belonged to the same background and interethnic (1) if the partner was from a different background. The "Other background" category was excluded from this classification. We now turn to a discussion of the independent variables, all of which were measured at wave 1.

3.4.2. Independent Variables

Respondents' *individual attitudes towards the ethnic outgroup* was operationalized as their attitude towards the ethnic outgroup, measured using a thermometer question. This question asked respondents to indicate their feelings towards the ethnic outgroup on a scale from 0 to 100, in increments of 10, where 0 represented *very negative* feelings, 50 was *neutral*, and 100 was *very positive*. A higher score on this variable thus indicates a more positive individual attitude towards the outgroup. For native Dutch individuals, the score was calculated as the mean rating across the thermometer questions for the four ethnic minority groups (Turkish, Moroccan, Surinamese, Antillean; $\alpha_{obs} = 0.90$, $\alpha_{imp} = .90$). For each ethnic minority group, the score reflected their attitude towards native Dutch people.

For each respondent, the *ingroup attitude towards the ethnic outgroup* was operationalized as the average attitude of their ethnic ingroup towards the ethnic outgroup within their respective school. For the majority (native Dutch) respondents, the average ingroup attitude was thus calculated as the average attitude of their native Dutch peers within the same school towards ethnic minority groups. For ethnic minority respondents, the average ingroup attitude reflected the average attitude of members of their ethnic ingroup within a school towards the native Dutch population. Conversely, the *outgroup attitude towards the ethnic ingroup* reflected the average view of the respondent's ethnic outgroup towards their ingroup: For native Dutch respondents, this was average attitude of ethnic minority peers towards natives; for ethnic minority respondents, it was the average attitude of native Dutch peers towards minorities.

The variable *descriptive interethnic relationship norms* was measured as the total number of romantic relationships between ethnic majority and minority individuals within the sampled classes in a given school. As it reflects the overall prevalence of interethnic relationships, this measure is identical for both majority and minority individuals within the same school. A higher value indicates a greater occurrence of interethnic relationships within a school. We also include the proportion as an alternative to the absolute value, because it accounts for differences in school size and relationship prevalence.

3.4.3. Control Variables: Personal Preferences, Third-Party Preferences, and Opportunities

Besides the main variable of interest, our analyses included variables that have been associated with three factors from the basic model of partner choice: *personal preferences*, *third-party preferences*, and *opportunities*.

To account for personal preferences that are associated with a higher likelihood of interethnic dating (van Zantvliet et al., 2014a), we controlled for traditional gender roles and conservative family values. *Traditional gender roles* were assessed by asking respondents whether the following tasks should be done mostly by the man, mostly by the woman, or by both about the same: (a) taking care of the children, (b) cooking, (c) earning money, and (d) cleaning the house. We constructed a scale by counting the number of times the adolescent endorsed the traditional task division, where taking care of the children, cooking, and cleaning should be done mostly by the woman, and earning money should be done mostly by the man (Loevinger's $H_{obs} = 0.48$; Loevinger's $H_{imp} = 0.48$). *Conservative family values* were measured based on respondents' approval of the following behaviors: (a) living together as a couple without being married, (b) divorce, (c) abortion, and (d) homosexuality. Each behavior was rated on a 4-point scale (1 = *always OK*, 2 = *often OK*, 3 = *sometimes OK*, 4 = *never OK*). We calculated the final measure as the average score across items ($\alpha_{obs} = 0.71$; $\alpha_{imp} = 0.70$).

Second, we controlled for parental ethnic background, parental education, and religious affiliation, as these factors have been found to be associated with parental pressure to date within one's own ethnic group (van Zantvliet et al., 2014b) and with their children's interethnic partner choice (van Zantvliet et al., 2014a). For these measures, we used information provided by the parent in the parental survey or, if missing (or if referring to a non-biological or non-adoptive parent), the respective information provided by the child. The dummy variable *mixed parents* indicated that at least one parent had an immigrant background and the other had a native background. The dummy variable *educated parents* indicated that at least one biological or adoptive parent had completed upper secondary school. Parents participating in the parental survey specified the highest education completed by themselves and their partner on a scale with the following answer categories: 1 = *no school leaving certificate*, 2 = *degree below upper secondary school*, 3 = *degree from upper secondary school*, and 4 = *university degree*. Adolescents separately reported whether their biological mother and biological father had completed primary school, upper secondary school, or university. *Religious affiliation* was measured in wave 1 by asking parents about to which religion they belonged, with response options including several prelisted religions and an open-ended category. In our model, we distinguish between "no religion," "Christianity," "Islam," and "other religion" (which combines all other reported affiliations into one category).

Third, the choice of a partner is constrained by the opportunities available in the local social environment (Kalmijn & Flap, 2001). To control for the opportunity structure within schools, we included the proportion of outgroup members (among the opposite sex) within the school as a measure of the availability of potential partners from different ethnic backgrounds.

3.4.4. Control Variables: Demographic Characteristics

We finally controlled for three demographic variables: age, gender, and ethnic majority/minority status, as these factors have been shown to be correlated with interethnic contact (Martinović, 2013) and for dating behaviors (Connolly et al., 2004, 2013; van Zantvliet et al., 2014a). *Age* was measured as a continuous variable, recorded in months at wave 1. *Gender* was included as a dummy variable, with respondents coded as a boy (0) or a girl (1). *Ethnic majority/minority status* was also included as a dummy variable, determined based on the respondent's national origin, using information from wave 1 supplemented with data from waves 2 and 3 to reduce missing values. National origin was coded following the strategy used by Dollmann et al. (2014), which relied on information about the respondent's country of birth as well as the birthplaces of their biological parents and grandparents. Respondents were categorized as the native Dutch ethnic majority (0) if none of their ancestors were foreign-born. If one or more ancestors were foreign-born and from the same country, national origin was assigned to that country. If ancestors were born in different countries or if information about their birthplaces was missing, national origin was determined based on the respondent's own country of birth. Based on this classification, Antillean, Surinamese, Turkish, and Moroccan respondents were assigned to the ethnic minority category (1).

3.5. Descriptives

Table 1 presents the mean, standard deviation (for non-categorical variables), and range for the dependent, independent and control variables in the observed sample. The Supplementary File presents descriptive statistics for the observed sample by ethnic group, along with all descriptives (i.e., across the entire sample

Table 1. Descriptives of dependent and independent variables for the observed sample.

	N	*M (SD)*	*Min-Max*
Variable			
Interethnic dating	511	0.14	0–1
Individual attitudes	511	57.69 (21.69)	0–100
Ingroup attitudes	511	57.16 (9.81)	33.72–95.00
Outgroup attitudes	511	71.74 (12.13)	41.83–100.00
Descriptive norm (abs.)	511	0.95 (1.07)	0–4
Descriptive norm (rel.)	511	2.23 (2.78)	0.00–15.39
Trad. gender roles	511	1.52 (1.31)	0–4
Cons. family values	511	1.28 (0.66)	0–3
Mixed parents	511	0.07	0–1
Educated parents	511	0.96	0–1
Religious affiliation	511		0–3
No religion (0)	315		
Christianity (1)	142		
Islam (2)	30		
Other religion (3)	24		
Proportion outgroup	511	10.51 (11.98)	0.00–65.00
Age (in months)	511	203.9 (7.77)	157–231
Gender (1 = girl)	511	0.66	0–1
Ethnic majority/minority status (1 = min.)	511	0.16	0–1

and by ethnic group) for the imputed sample. We note that the descriptives have not been weighted for the sampling design and may therefore not be fully representative of the population of adolescents who were in the target grade in 2010.

In the observed sample, 14% of adolescents reported being in an interethnic romantic relationship. Individual attitudes towards the ethnic outgroup were slightly more positive than neutral, with a mean score of 57.69 (*SD* = 21.69). The average ingroup attitude towards the outgroup was 57.16 (*SD* = 9.81), while the average outgroup attitude towards the ingroup was higher—71.74 (*SD* = 12.13). The average number of interethnic relationships per school, as an absolute measure of the descriptive norm, was 0.95 (*SD* = 1.07). The average relative proportion of interethnic dating per school, as a second relative measure of the descriptive norm, was equal to 2.23% (*SD* = 2.78). The respondents had an average age of 203.9 months (*SD* = 7.77), with 66% reporting being girls and 34% being boys. In terms of ethnic composition, 84% of respondents identified as ethnic majority members, while 16% identified as ethnic minority members.

Table 2 presents Pearson correlations for the key theoretical variables in the observed sample. In line with our theoretical expectations, interethnic dating was significantly positively correlated with individual attitudes (r = .274) and the average ingroup attitude (r = .488). However, contrary to expectations, it was not significantly associated with either absolute (r = .023) or relative descriptive norms (r = .065) and was significantly negatively correlated with the average outgroup attitude (r = −.333).

Table 2. Pearson correlations for key theoretical variables in the observed sample.

	Inter. date	Ind. att.	Ing. att.	Outg. att.	Desc. norm. (abs.)	Desc. norm. (rel.)	Eth. status
Inter. date		0.274***	0.488***	−0.333***	0.023	0.065	0.610***
Ind. att.			0.425***	−0.080	0.007	0.044	0.264***
Ing. att.				−0.270***	0.036	0.095*	0.650***
Outg. att.					0.050	−0.018	−0.478***
Desc. norm (abs.)						0.816***	0.110*
Desc. norm (rel.)							0.127**
Eth. status							

Notes: *** $p < .001$; ** $p < .01$; * $p < .05$, two-sided.

3.6. Analytical Strategy

To examine our hypotheses, we employed a two-step analytical strategy. First, we estimated a logistic regression model (i.e., the outcome model) to evaluate how the likelihood of being in an interethnic romantic relationship in either wave 2 or 3 was associated with our independent variables. We began with a model including only main effects and then introduced interaction terms to test our moderation hypotheses. Specifically, we examined whether the association between individual attitudes and interethnic dating was moderated by the average outgroup attitude and by descriptive norms by including interaction terms between each of these variables and individual attitudes. All continuous variables were mean-centered prior to analysis to facilitate interpretation of interaction terms. Throughout the analyses, we present separate models in which descriptive norms are operationalized in either absolute or relative terms. To probe significant interactions, we used Johnson-Neyman plots to identify the regions of significance along the moderator, allowing us to determine the values of the moderator at which individual attitudes significantly predicted interethnic dating. To account for multiple testing across these conditional effects, we applied a correction for multiple comparisons.

To test the hypothesized mediation effect of the average ingroup attitude on interethnic dating via individual attitudes, we followed the causal mediation framework proposed by Tingley et al. (2014). This involved first estimating a linear regression model (i.e., the mediator model) with individual attitudes as the dependent variable and the average ingroup attitude as the main predictor, while controlling for the average outgroup attitude, descriptive norm, and the control variables. The results of the mediator models are available in the Supplementary File. Because the outcome model included interaction terms, the resulting mediation effects represent conditional indirect effects, with the moderators (i.e., the average outgroup attitude and descriptive norm) fixed at their means. We then conducted a bootstrapped mediation analysis using the mediation package in R, based on 2,000 simulations, incorporating the mediator and outcome models.

Given the hierarchical structure of the data—with adolescents nested within schools—we adjusted for the intra-class correlation by estimating cluster-robust standard errors in all models. For analyses involving the imputed data, results were pooled across the 40 imputed datasets using Rubin's rules with the Barnard and Rubin (1999) adjustment for degrees of freedom. The degrees of freedom were however greatly reduced in

the imputed sample, even though the number of cases more than doubled. This lowers confidence in results obtained for the imputed sample. All analyses with respect to the imputed sample (mirroring those of the observed sample) are therefore only reported in the Supplementary File.

4. Results

Table 3 presents the results of the logistic regression models predicting interethnic dating based on the theoretical and control variables. For reasons of modelling order, we start with hypotheses 2 and 3. Our second hypothesis posited that the average outgroup attitude towards the respondent's ingroup would moderate the association between individual attitudes towards the ethnic outgroup and the likelihood of engaging in interethnic dating. Specifically, we expected this association to be stronger when the average outgroup attitude was more positive. However, the interaction between individual attitudes and average outgroup attitudes was not statistically significant in either model 1b (β = .00, p = .55) or 2b (β = .00, p = .55), providing no empirical support for this hypothesis.

Our third hypothesis proposed that descriptive norms encouraging interethnic relationships would moderate the association between individual attitudes towards the ethnic outgroup and the likelihood of engaging in interethnic dating, such that this association would be stronger when descriptive norms indicated that interethnic relationships were more common. First, regarding the marginal effect of individual attitudes, model 1b shows a statistically significant positive association when absolute descriptive norms (i.e., number of interethnic relationships)were at their mean (β = .02, p = .04). In contrast, in model 2b, this marginal effect was not statistically significant when descriptive norms were operationalized in relative terms (i.e., the number relative to the potential number of interethnic relationships; β = .02, p = .10). Subsequent inspection of the interaction terms between descriptive norms and individual attitudes in Table 3 supports the hypothesis for both operationalizations (1b: β = .02, p = .01; 2b: β = .01, p = .004). In both models, the positive interaction terms indicate that more positive individual attitudes were more predictive of interethnic dating in normative contexts where interethnic relationships were perceived as more common. Conversely, more negative attitudes were associated with a lower likelihood of interethnic dating in these same, more supportive contexts.

Turning to the other side of the interaction, model 1b shows a significant negative marginal effect of absolute descriptive norms (β = −.43, p = .02), indicating that when individual attitudes are average, stronger descriptive norms are associated with a lower likelihood of interethnic dating. In contrast, relative descriptive norms did not show a significant marginal effect in model 2b (β = −.10, p = .11). In both cases, however, these marginal effects are qualified by the significant positive interaction with individual attitudes: the more positive the individual attitude, the weaker the negative effect of descriptive norms.

To further clarify the nature of this interaction, we examined the Johnson-Neyman plots shown in Figures 2 and 3. These plots illustrate how the effect of individual attitudes on interethnic dating varies across the observed range of descriptive norms (Figure 2), and how the effect of descriptive norms varies across the range of individual attitudes (Figure 3). In Figure 2, for the absolute descriptive norm, we probed the marginal effect of individual attitudes at values 0, 1, 2, 3, and 4 on the original scale. For the relative norm, we selected the minimum and maximum observed values, along with three equally spaced values in between. In Figure 3, we probed the marginal effects of both absolute and relative descriptive norms across the minimum and

Table 3. Logistic regression model of interethnic dating on independent theoretical and control variables, by absolute (model 1) and relative (model 2) descriptive norm operationalization ($N = 511$).

	(1a)		(1b)		(2a)		(2b)	
	Est.	(se)	Est.	(se)	Est.	(se)	Est.	(se)
Intercept	**−1.63***	**(.696)**	**−1.47***	**(.702)**	**−1.68***	**(.736)**	**−1.49***	**(.724)**
Individual attitudes	**.02***	**(.009)**	**.02***	**(.010)**	**.02***	**(.009)**	.02	(.011)
Ingroup attitudes	−.01	(.031)	−.01	(.032)	−.01	(.032)	−.00	(.033)
Outgroup attitudes	.00	(.016)	.00	(.016)	−.00	(.017)	.00	(.017)
Descriptive norms (abs.)	−.24	(.171)	**−.43***	**(.188)**				
Descriptive norms (rel.)					−.04	(.055)	−.10	(.064)
Traditional gender roles	−.02	(.158)	−.01	(.150)	−.03	(.154)	−.04	(.152)
Conservative family values	.04	(.277)	.01	(.321)	.02	(.288)	−.04	(.325)
Mixed parents	.60	(.598)	.54	(.664)	.63	(.599)	.50	(.626)
Educated parents	−1.36	(.753)	**−1.72***	**(.805)**	−1.29	(.791)	**−1.65***	**(.800)**
Religious affiliation								
No religion (ref)								
Christianity	**−1.11***	**(.535)**	**−1.03***	**(.518)**	**−1.08***	**(.522)**	**−1.01***	**(.503)**
Islam	−1.57	(.863)	−1.28	(.924)	−1.46	(.854)	−1.26	(.908)
Other religion	−.62	(1.22)	−.30	(1.22)	−.58	(1.19)	−.32	(1.19)
Proportion outgroup	.04	(.023)	.04	(.023)	.04	(.023)	.04	(.023)
Age (in months)	**.05***	**(.025)**	**.06***	**(.026)**	**.05***	**(.026)**	**.06***	**(.027)**
Gender (1 = girl)	.27	(.401)	.39	(.447)	.26	(.411)	.39	(.439)
Ethnic majority/minority status (1 = minority)	**3.13*****	**(.966)**	**2.86****	**(.974)**	**3.02****	**(.951)**	**2.86****	**(.960)**
Outg. att.*Ind. att.			.00	(.001)			.00	(.001)
Desc. norm (abs.)*Ind. att.			**.02***	**(.009)**				
Desc. norm (rel.)*Ind. att.							**.01****	**(.003)**

Notes: *** $p < .001$; ** $p < .01$; * $p < .05$, two-sided.

maximum observed values of individual attitudes, and three equally spaced values in between. The bottom x-axes display centered values; the top x-axes show the original scales to aid interpretation.

Figure 2 reveals that for both the absolute and relative norm operationalizations, individual attitudes significantly predicted interethnic dating only when descriptive norms were sufficiently supportive. For the absolute norm, this threshold was crossed when there was at least one observed interethnic relationship in the school. For the relative norm, significance emerged when roughly 3% of peers were in interethnic relationships. Below these thresholds, individual attitudes were not significantly associated with interethnic dating. Figure 3 shows that absolute descriptive norms had a significantly negative marginal effect on

interethnic dating until individual attitudes were approximately at the midpoint of the attitude scale (i.e., neutral attitudes). Beyond that point, the effect was no longer statistically significant. For relative descriptive norms, no significant marginal effect was observed across the full range of individual attitudes.

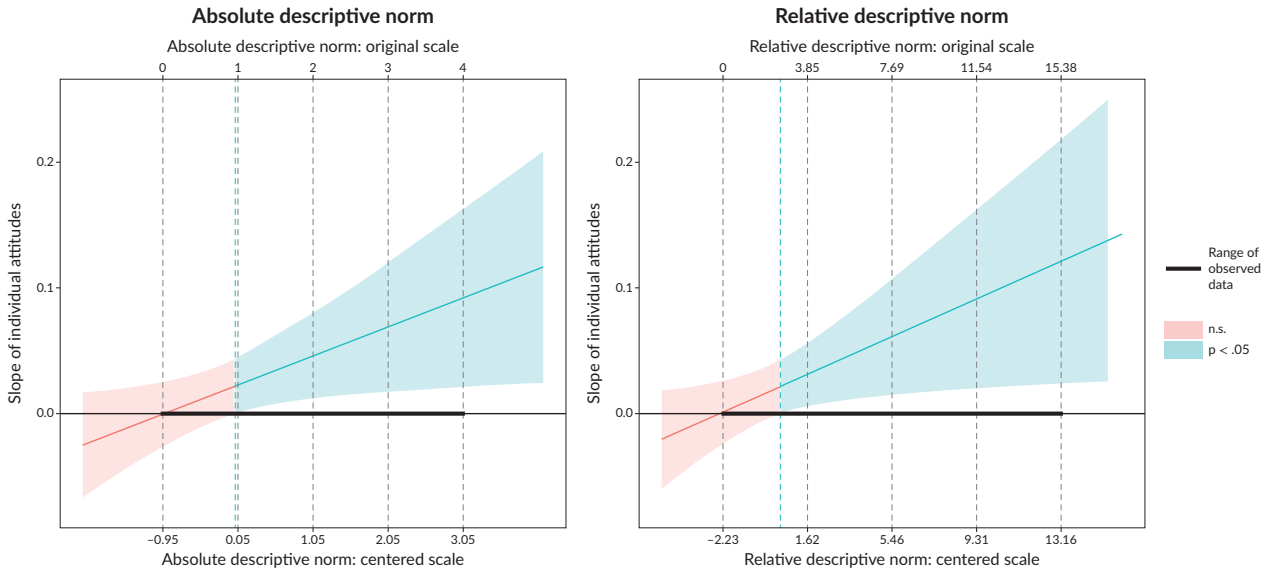

Figure 2. Johnson-Neyman plot of the marginal effect of individual attitudes on interethnic dating conditional on absolute and relative descriptive norms.

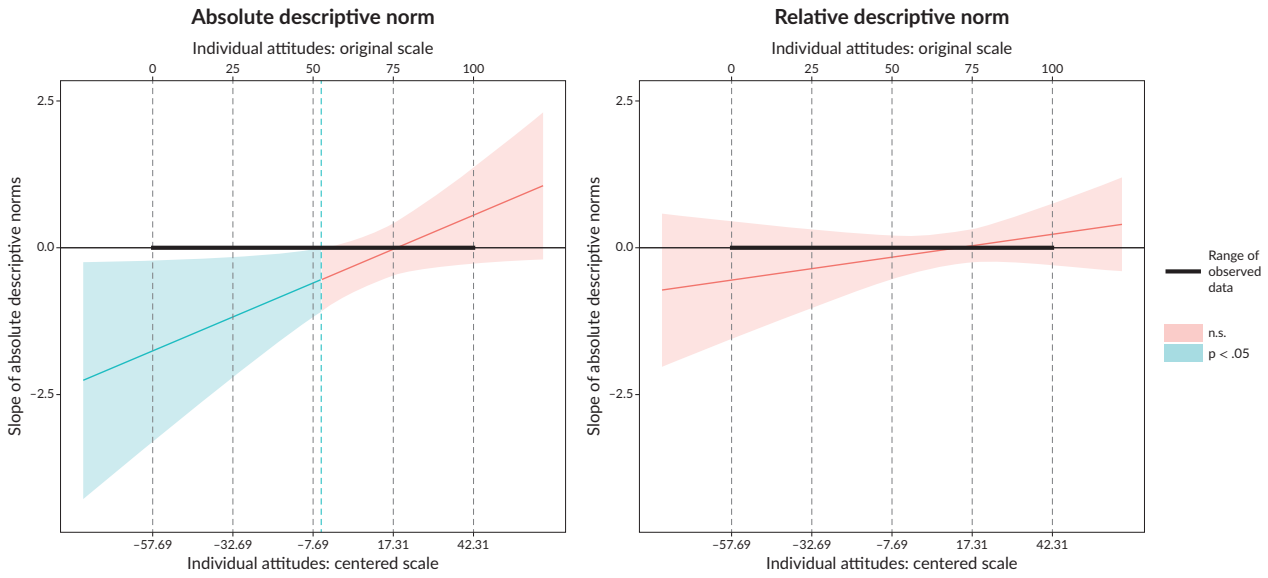

Figure 3. Johnson-Neyman plot of the marginal effect of absolute and relative descriptive norms on interethnic dating conditional on individual attitudes.

Taken together, this interaction pattern suggests that individuals with more positive attitudes towards the ethnic outgroup are increasingly able to translate these attitudes into interethnic dating as the normative environment becomes sufficiently and increasingly supportive. However, counterintuitively, individuals with more negative attitudes, are likewise better able to translate their attitudes into a lower likelihood of interethnic dating under similarly supportive normative conditions. In addition, for individuals with

(sufficiently) negative attitudes, unsupportive absolute descriptive norms show a negative marginal effect on interethnic dating. Notably, we do not observe a statistically significant negative effect of absolute descriptive norms when individual attitudes are positive, even in unsupportive normative environments.

With respect to the control variables, Table 3 shows that having educated parents emerges as a negative predictor in the interaction models: respondents with highly educated parents are less likely to date interethnically (1b: $\beta = -1.72$, $p = .03$; 2b: $\beta = -1.65$, $p = .04$). Religious affiliation also appears to play an important role in shaping interethnic dating patterns, with individuals identifying as Christian being significantly less likely to engage in interethnic dating compared to those with no religious affiliation (1b: $\beta = -1.03$, $p = .047$; 2b: $\beta = -1.01$, $p = .045$). Age is furthermore positively associated with interethnic dating: older respondents are more likely to report being in an interethnic relationship (1b: $\beta = .06$, $p = .03$; 2b: $\beta = .06$, $p = .04$). Finally, ethnic group membership stands out as a strong predictor of interethnic dating: ethnic minority individuals are significantly more likely than ethnic majority individuals to report interethnic dating (1b: $\beta = 2.86$, $p = .003$; 2b: $\beta = 2.86$, $p = .003$).

Table 4 finally presents the results of the mediation model testing our first hypothesis. We expected that more positive average ingroup attitudes towards ethnic outgroups would increase positive individual attitudes towards ethnic outgroups, which in turn would be associated with a greater likelihood of engaging in interethnic dating. Inspection of Table 4 indicates that this expectation was supported when descriptive norms were operationalized in absolute terms ((1) $\beta = .0012$, $p = .04$), but not when operationalized in relative terms ((2) $\beta = .0010$, $p = .10$). Additionally, we do not observe significant direct ((1): $\beta = -.0002$, $p = .87$; (2): $\beta = -.0002$, $p = .90$) or total effects ((1): $\beta = -.0010$, $p = .66$; (2): $\beta = .0009$, $p = .74$) in either model.

Table 4. Mediation model for interethnic dating on average ingroup attitudes via individual attitudes, by absolute and relative descriptive norm operationalization.

	(1) Descriptive norm: Absolute	(2) Descriptive norm: Relative
	Est. [95% C.I.]	Est. [95% C.I.]
Indirect effect	**.0012* [.0001; .0025]**	.0010 [−.0002; .0024]
Direct effect	−.0002 [−.0039; .0046]	−.0002 [−.0039; .0045]
Total effect	.0010 [−.0027; .0056]	.0009 [−.0027; .0055]

Notes: *** $p < .001$; ** $p < .01$; * $p < .05$, two-sided. Indirect effects and confidence intervals reflect conditional indirect effects, with moderators fixed at their means.

5. Conclusions and Discussion

In this study, we investigated the interethnic partner choice of adolescents. Using unique large-scale panel data collected among adolescents with and without a migration background in the Netherlands, we tested hypotheses about the influence of in- and outgroup attitudes and descriptive norms on interethnic dating patterns.

First, in support of our first hypothesis, we found that the average ingroup attitude had a positive indirect effect via personal preferences for interethnic dating on the likelihood of interethnic dating in the model where descriptive norms were operationalized as absolute. Second, individual attitudes towards the ethnic

outgroup predicted interethnic dating at a later point in time and were moderated by both the absolute and relative operationalizations of the descriptive norm, but not by the average attitude of the ethnic outgroup towards the ingroup. The second hypothesis, which stated that the relationship between personal preference for interethnic dating and the likelihood of engaging in such dating would be stronger when outgroup attitudes towards the ingroup were more positive, was therefore not confirmed. We did find support for our third hypothesis: descriptive norms strengthen the link between personal preference for interethnic dating and actual interethnic dating behaviour, with this relationship being stronger when descriptive norms indicate that interethnic dating is more common. With respect to the control variables, we found that both ethnic minority adolescents and older students were more likely to date someone from an ethnic outgroup, while students with at least one biological or adoptive parent who had completed upper secondary school, and Christian students compared to non-religious students, were less likely to do so.

A particularly interesting finding of this study was the interaction effect between individual attitudes towards the ethnic outgroup and descriptive norms on the likelihood of interethnic dating. We found that individuals with more positive attitudes towards the ethnic outgroup were increasingly able to translate these attitudes into interethnic dating as both the absolute and relative normative environments became sufficiently and increasingly supportive. However, counterintuitively, individuals with more negative attitudes were likewise better able to translate their attitudes into a lower likelihood of interethnic dating under similarly supportive normative conditions. In addition, for individuals with sufficiently negative attitudes, unsupportive absolute descriptive norms showed a negative marginal effect on interethnic dating. Notably, we did not observe a statistically significant negative effect of absolute descriptive norms when individual attitudes were (sufficiently) positive, even in unsupportive normative environments.

As such, our findings show that supportive normative environments do not universally promote interethnic dating but instead amplify the effect of individuals' existing attitudes. This qualifies the role of descriptive norms in shaping interethnic dating: Rather than exerting a uniformly liberalizing influence, they appear to facilitate the expression of both openness and resistance to interethnic relationships, depending on individual predispositions. Additionally, we found that more positive average ingroup attitudes were indirectly associated with a higher likelihood of interethnic dating via stronger personal preferences, suggesting that the attitudinal climate within an ingroup may contribute to shaping individual-level openness to interethnic dating. These results underscore the importance of considering not only individual attitudes in shaping interethnic partner choice but also their interplay with the surrounding normative climate.

The lack of support for the influence of the attitudes of outgroup peers within the highly-relevant school context was surprising. A potential explanation for the lack of effects of outgroup peer attitudes towards the (relevant) ingroups is that we measured actual attitudes rather than perceived attitudes. Adolescents may perceive the attitudes of their outgroup peers incorrectly, and be guided by these misperceptions. For example, adolescents may erroneously conclude that interethnic relationships are disapproved of by their outgroup peers, thereby lowering their likelihood of interethnic dating. Another explanation for the lack of support might be that we did not directly assess outgroup peers' preferences for interethnic dating, but rather measured outgroup peers' general attitudes towards the ingroup. While this measure was a pragmatic consequence of the data availableand research shows that such outgroup peer attitudes are in fact associated with popularity and likability (van Vemde et al., 2023) and with visible behaviors such as intergroup contact (Pettigrew & Tropp, 2008; Swart et al., 2011)by using a general attitude measure, we may have overestimated outgroup

peers' openness and approval of interethnic dating. People may differentiate between their preferences for outgroup relationships in the public or the private sphere and are generally more positive regarding relations in the public sphere (Bogardus, 1925, 1933; Ng Tseung-Wong & Verkuyten, 2015). If outgroup peers' general attitude towards an ethnic group is negative, their approval of interethnic romantic relationships with members of that group is almost certainly negative as well. But when general attitudes towards an ethnic group become more positive, the possibility of approval for interethnic dating increases, and more so if attitudes become very positive. This is also demonstrated by the finding that adolescents' own attitude regarding the outgroup was a significant predictor of their likelihood of engaging in an interethnic relationship. By using the general attitude of outgroup peers as a measure, we argue that we may have thus estimated the lower bound of the true effect.

A strength of this study is that interethnic partner choice was studied from a two-sided perspective, both theoretically and empirically. Attitudes regarding the outgroup were measured within a relevant context (i.e., the school as a local dating market) and reflected the majority and minority group. Descriptive norms were operationalized in a manner similar to how adolescents would perceive them. Nevertheless, this study comes with limitations.

Unfortunately, we were not able to test for differences in the effects between ethnic minority origin groups because of the small group sizes. Although differences between these groups are partly captured by the differences in natives' attitudes towards one's origin group and other covariates, some differences likely remained. Longitudinal data with a larger sample (including other ethnic minority groups) is needed to gain insight into how group differences may have affected the findings.

A second limitation of this study is that we were unable to control for non-random selection into schools. Immigrants who are very negative about natives probably select themselves into schools with a low proportion of natives, and natives who are very negative about immigrants probably select themselves into schools with a low proportion of immigrants. The observed null effect of the proportion of outgroup students at school may therefore be biased upwards.

Other sources of normative cues on interethnic dating, relevant to adolescents, were also beyond the scope of this article, such as (social) media or associations they belong to, but should be considered in future research. Finally, we cannot say how stable these interethnic relations were, and whether they will increase the likelihood of ethnic intermarriage in the future for the adolescents we studied. How interethnic dating in adolescence impacts overall integration in society thus remains a somewhat open question.

A further limitation concerns our use of absolute and relative descriptive norms. When descriptive norms were operationalized in absolute terms, we found an indirect effect of average ingroup attitudes on interethnic dating via individual attitudes, but not when norms were operationalized in relative terms. The absolute and relative versions of descriptive norms also showed slightly different types of moderating effects on the relationship between individual attitudes and interethnic dating. This may reflect a substantive difference between the two types of norms: absolute norms capture the total number of interethnic relationships within the school, whereas relative norms reflect how common interethnic dating is among all dating relationships, thereby accounting for differences in school size and relationship prevalence. Alternatively, these differing findings may be an artefact of how the measures were constructed. Future

research should investigate how adolescents interpret and weigh these different normative cues when shaping their interethnic dating behaviours.

A third limitation of this study is that we were unable to control for non-random selection into schools. Immigrants who are very negative about natives probably select themselves into schools with a low proportion of natives, and natives who are very negative about immigrants probably select themselves into schools with a low proportion of immigrants. The observed null effect of the proportion of outgroup students at school may therefore be biased upwards.

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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

The R-code that supports the findings of this study is available at https://osf.io/2zya9. The data are available upon request to other scientists. Inquiries will be forwarded to the relevant data depositories.

Supplementary Material

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

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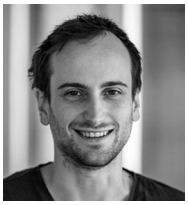

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