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Development of prejudice against immigrants and ethnic minorities in adolescence: A systematic review with meta-analysis of longitudinal studies

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ABSTRACT

Previous research highlighted that prejudice is already formed in early childhood, reaches a peak in middle childhood, and slightly decreases in late childhood, whereas the development of prejudice in adolescence was mostly unknown. This systematic review with meta-analysis aimed to comprehensively summarize and integrate prior longitudinal research on adolescents' prejudice to address two main research questions: (a) how does prejudice develop in adolescence? (b) which factors are related to holding prejudicial attitudes in adolescence? Using multiple search strategies and applying a two-step selection process, a final set of 26 journal articles including a total of 30 samples (N = 23,513 participants) was found to match eligibility criteria and, thus, was included in the review. The meta-analytic findings highlighted that (a) prejudice does not change in adolescence; (b) interindividual differences in prejudice are well-established, they become increasingly strong with age, and they are inversely related to the time-lag between assessments; and (c) several individual, identity, and contextual factors are related to prejudice in different ways. More specifically, social dominance orientation, intergroup anxiety, identification with the national ingroup, and parental prejudice contributed to increasing later levels of adolescents' prejudice, whereas intergroup friendship contributed to lessening it. Importantly, prejudice had comparable reverse effects on these factors, pointing to consistent bidirectional associations. These main findings are discussed considering their implications for future research and practice.

Introduction

Many countries have witnessed an increase in ethnocentrism and nationalism, resulting in a call to establish barriers against "foreigners" and to defend one's own nation against migrants. Given this situation, it is crucial to understand how prejudice against immigrants and ethnic minorities is formed and develops over time. Prejudice is conceived by social psychologists as an intergroup phenomenon, according to which "ingroup members should be regarded or treated in some more favourable way than outgroup members" (Brown & Zagefka, 2005, p. 54). This leads to derogative and discriminative behaviors towards whole groups of people or towards individuals because of their membership in a different group. Research has shown that merely belonging to a group can lay the

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foundation of prejudice towards those who do not share this membership (Tajfel, Billig, Bundy, & Flament, 1971).

Prejudice against immigrant and ethnic minorities relies on individuals' negative orientation towards other people because of their group membership or their immigrant status (Brown, 2011; Raabe & Beelmann, 2011). Such negative orientation is multifaceted, and it implies cognitive (i.e., attributing negative traits, such as being aggressive or rude, to immigrants and ethnic minorities), affective (i.e., disliking immigrants and ethnic minorities), and behavioral (i.e., exhibiting negative behaviors such as offensive language, discrimination, avoidance, etc. of immigrants and ethnic minorities) components (Brown, 2011; Beelmann & Heinemann, 2014). Notably, the cognitive and affective components refer to the symbolic, abstract facets of prejudicial orientation (Stangor, Sullivan, & Ford, 1991), while the behavioral component taps into the possible manifestations of prejudice. In this vein, prejudice against immigrants and ethnic minorities can be conceived as a multifaceted phenomenon that can give rise to heinous implications for intergroup relationships (Brown, 2011).

In their seminal meta-analysis, Raabe and Beelmann (2011) highlighted that ethnic, racial, and national prejudice is already formed in early childhood, reaches a peak in middle childhood (5–7 years), and slightly decreases in late childhood (8–10 years), whereas no age-related changes in prejudice could be found in adolescence. However, as the authors underscored, these findings should be interpreted while considering some weaknesses of the literature: mainly, the dearth of longitudinal studies and, in general, the limited attention devoted to adolescents' prejudice as compared to children's prejudice. Using their own words, "more longitudinal research is required to study changes in prejudice with age as well as interindividual differences in intraindividual prejudice development. Also, further research should take a closer look at changes in prejudice in adolescence, because the number of studies is quite low" (Raabe & Beelmann, 2011; p. 1732).

Notably, their call has been heard, as there has been a sharp increase in longitudinal studies on adolescents' prejudice against immigrants and ethnic minorities in the last few years (e.g., Miklikowska, 2017; Mitchell, 2019; van Zalk & Kerr, 2014). Thanks to these increasing examples of cross-fertilization between social psychology and developmental psychology, the available evidence allows us to disentangle the developmental trajectories through which adolescents' prejudice is formed as well as to examine the factors which are more strongly related to it. Along this line, the current systematic review with meta-analysis summarized the evidence collected in extant longitudinal studies to address two main research questions: (a) how does prejudice develop in adolescence? (b) which factors are related to holding prejudicial attitudes in adolescence?

How does prejudice develop in adolescence?

Adolescence is a key developmental phase (Meeus, 2019), in which individuals face multiple tasks, with the most important one consisting of re-defining their personal and social identity (Albarello, Crocetti, & Rubini, 2018; Crocetti, 2017; 2018). Such a task implies exploring alternatives, choosing commitments in meaningful life domains, and developing more stable and clear-cut attitudes towards a large variety of meaningful social objects (Crocetti, Prati, & Rubini, 2018). Importantly, it has been found that today's youth hold lower prejudice towards social groups that have traditionally been marginalized or discriminated (such as sexual minorities), but they are less accepting of immigrants than older generations (Janmaat & Keating, 2019). Furthermore, attitudes towards immigrants have been found to represent the main organizing principles of youth future political attitudes (Rekker, 2016). This implies that understanding the development of adolescents' prejudice against immigrants and ethnic minorities may provide critical insights into the development of their political orientations.

Developmental trajectories of prejudice. According to developmental and socio-psychological theories, multiple factors can underpin prejudice developmental patterns. The social-cognitive developmental theory of prejudice (Aboud, 1988) underscores that cognitive changes taking place in the development of adolescents "bear directly on the young person's view of self and others, and therefore on prejudice" (Aboud, 2008; p. 55). Adolescents' cognitive development from concrete to more abstract operations is at the basis of a more complex cognitive representation of reality (Kuhn, 2009). More specifically, adolescents become able to think about themselves, as well as about others, considering multiple aspects and categories. This ability is at the basis of one's definition in terms of social identity complexity (i.e., individuals' awareness that they belong to multiple, diverse, and non-overlapping groups; Roccas & Brewer, 2002), and reliance on multiple categorization as a means to perceive and define outgroup members (Crisp, Hewstone, & Rubin, 2001). In this way, adolescents can go beyond the dichotomous ingroup *versus* outgroup categorization that, as theorized by social identity (Tajfel & Turner, 1979) and self-categorization (Turner, Hogg, Oakes, Reicher, & Wetherell, 1987) theories, is at the basis of intergroup prejudice, by acknowledging that other people, like themselves, are defined by multiple group memberships. Prior longitudinal studies with adolescents (Albarello, Crocetti, & Rubini, 2020; Knifsend & Juvonen, 2013) and experimental research with young adults (Albarello, Crisp, & Rubini, 2018; Albarello & Rubini, 2012; Prati, Crisp, Meleady, & Rubini, 2016; Prati, Crisp & Rubini, 2015; Prati, Moscatelli, Pratto & Rubini, 2016) have showed that social identity complexity and multiple categorizations are important factors for reducing prejudice. In this vein, cognitive development occurring in adolescence can pose the basis for a decline in prejudice.

In addition to cognitive development, adolescents' moral development may also account for changes in prejudice (Aboud, 2008). Adolescents can increase their understanding and endorsement of egalitarian and humanitarian principles, and this can lead to a decrease in prejudice (Rutland & Killen, 2015). Furthermore, empathy as a core component of morality (Hoffman, 2000), has been theorized to be a key factor underlining the development of prejudice (Miklikowska, 2018). In adolescence, young people's perspective-taking (i.e., the cognitive dimension of empathy involving understanding others' viewpoints; Davis, 1983) increases (van der Graaff et al., 2014). This increase in perspective-taking can foster adolescents' sensitivity to other experiences, facilitating the acknowledgement "that they are not as different from the outgroup members as they thought they were, that they and the outgroup members share a common human experience and that outgroup members have individual characteristics that define them more than

their group membership. In addition, perspective-taking enables putting oneself in the shoes of the stigmatized outgroup members, which increases the salience of injustice and arouses sympathetic feelings for the outgroup" (Miklikowska, 2018; p. 705). Thus, social-cognitive abilities related to moral decision making and perspective-taking can lead to reducing prejudice over time.

If cognitive, moral, and social-cognitive development could lead to a decline of prejudice during adolescence, other factors can account for different trajectories. It has been theorized that when adolescents grow older, the wider and more diverse social experiences they have, the less naïve and more critical they become in their judgments about other people (Flanagan & Stout, 2010). As a result, middle and late adolescents hold lower levels of social trust (i.e., the belief that people are generally fair and trustworthy) than early adolescents (Flanagan & Stout, 2010). Along this line, public discourses depicting immigrants as a threat (i.e., "immigrants steal our job"; Albarello, Foroni, Hewstone, & Rubini, 2019) might become particularly salient in contexts with high rates of youth unemployment (e.g., Southern European countries; Eurostat, 2019), especially for adolescents dealing with their identity development, making educational and vocational choices for their future prospects (Negru-Subtirica, Pop, & Crocetti, 2015; 2018). As a result, this decreasing trend in social trust, coupled with a growing perception of threat from immigrants, can be responsible for the increase of prejudice against them (Janmaat & Keating, 2019).

Overall, cognitive, moral, and social development can account for changes in adolescents' prejudice. If cognitive and moral changes can lead to a decrease in prejudice, on the one hand, social experiences can diminish social trust and lead to an increase in prejudice, on the other hand. While the prior meta-analysis of Raabe and Beelmann (2011) could not clarify how prejudice develops during adolescence, given the dearth of longitudinal research at that time, the current review relies on longitudinal studies conducted in recent years to increase the understanding of prejudice development.

Interindividual differences in prejudice. To comprehensively understand developmental processes, developmental trajectories need to be unraveled in conjunction with the analysis of how interindividual differences evolve (Bornstein, Putnick, & Esposito, 2017). In this respect, the developmental literature indicates that interindividual differences of multiple psychosocial aspects (e.g., personality traits, Klimstra, Hale, Raaijmakers, Branje, & Meeus, 2009; self-perceptions of morality, competence, and sociability, Crocetti et al., 2019; self-concept clarity, Crocetti, Rubini, Branje, Koot, & Meeus, 2016) tend to be high in adolescence and to increase over time. Such a pattern seems to apply also to adolescents' prejudice (e.g., Eckstein, Šerek, & Noack, 2018; Hooghe Meeusen, & Quintelier, 2013; Miklikowska, 2017). This indicates that interindividual differences in prejudice stabilize early, and they are maintained or even increased over time (Rekker, Keijsers, Branje, & Meeus, 2015). In simpler terms, this means that if two friends have different levels of prejudice when they are 15 years old (e.g., John reports higher prejudice than Martin), this difference is also maintained when they are 16.

Importantly, when several longitudinal studies with adolescents from community samples highlight a specific pattern of change coupled with high rank-order stability, conclusions about *normative* developmental trajectories can be drawn (Meeus, 2019). In this case, it is possible to conclude that adolescent psychosocial development has a clear direction, and most adolescents show this direction in development. The notion of "typicality" (Hollenstein & Lougheed, 2013) has also been proposed to refer to these normative developmental patterns.

Which factors are related to holding prejudicial attitudes in adolescence?

A core purpose of developmental and social psychological research is to uncover which are the main correlates of prejudice, by disentangling risk factors (i.e., factors that can be responsible for increasing levels of prejudice over time) from protective factors (i.e., factors that can work in the opposite direction, leading to reduction of prejudice). In accordance with the developmental intergroup theory (Bigler & Liben, 2006; 2007), the development of prejudice can be affected by individual and contextual factors. At the individual level, ideologies, such as right-wing authoritarianism (i.e., the adherence to conventional norms and values, uncritical submission to authorities, and aggressive feelings towards people violating the norms; Altemeyer, 1981) and social dominance orientation (i.e., the ideology supporting non-egalitarian and hierarchically structured relations among social groups; Sidanius & Pratto, 2001) have been found to increase prejudice (e.g., Albarello, Crocetti, & Rubini, 2020; Bratt, Sidanius, & Sheehy-Skeffington, 2016). Furthermore, adolescents who are oriented towards extrinsic rather than intrinsic goals are more likely to display higher prejudice, and this is partly explained by the fact that they tend to view relationships as highly competitive and they endorse to a higher extent social dominance orientation (Duriez, Vansteenkiste, Soenens, & De Witte, 2007). In contrast, perspective-taking (Miklikowska, 2018) and cognitive processes based on the reliance on multiple categories to define immigrants (Albarello et al., 2020) have been found to countermand adolescents' prejudice. Thus, different individual factors can increase or reduce prejudice.

In adolescence, substantial attention has been paid to contextual factors affecting prejudice. In this respect, existing studies examined how the main socialization contexts of young people such as family, friends, and school (Crocetti, Moscatelli, et al., 2018), influence the development of prejudice. The effects of *parents* on adolescents' prejudice have been mainly examined through the lens of the social learning theory (Bandura, 1977), which emphasizes the centrality of the concept of modeling in the socialization processes. In this respect, parents can have an effect in shaping adolescents' views by acting as modeling agents (Crocetti et al., 2016). Empirical evidence has supported this notion, by documenting that intergenerational transmission of prejudice happens within the family context (Gniewosz & Noack, 2015; Miklikowska, 2016): adolescents with parents holding negative attitudes against immigrants tend to develop negative attitudes against immigrants as well (cf. also, Degner & Dalege, 2013). The strength of this transmission is moderated by the quality of the relationship between adolescents and their parents; that is, the more positive the relationship, the stronger the parental influence (Miklikowska, 2016). Recently, the importance of considering siblings, in addition to parents, as important family socialization agents (Eckstein et al., 2018) has been highlighted.

Since adolescents spend increasing time with their friends, considering the effect of *peers* is also crucial for understanding

adolescents' prejudice. Friends are usually similar in their attitudes towards immigrants and ethnic minorities. Such similarity (i.e., homophily) can be understood considering both socialization and selection processes (Kandel, 1978; van Zalk, Kerr, van Zalk, & Stattin, 2013). Socialization effects highlight that, like parents, peers can represent modeling agents: adolescents can observe, learn, and imitate the attitudes, norms, and behaviors of their peers. In this way, they develop attitudes towards immigrants that become over time more similar to those endorsed by their peers. In addition to socialization processes, selection processes, according to which adolescents form relationships with peers who are similar to them, are also at play (Wölfer & Hewstone, 2018). This means that adolescents are more likely to form and maintain friendships with peers with whom they share similar attitudes and characteristics.

Furthermore, intergroup contact theory (Allport, 1954; Pettigrew & Tropp, 2006) has underlined the importance of cross-group friendships to "fight" adolescents' prejudice (Titzmann, Brenick, & Silbereisen, 2015). The close contact that can be experienced with an immigrant/ethnic peer in a friendship can undermine prior prejudice and lead to changes in attitudes that, starting from the interpersonal level, can be generalized to the immigrant/ethnic group as a whole. Besides the direct effects of intergroup friendships and peers' attitudes on adolescents' prejudice, friends can also moderate parental influences. In fact, Miklikowska (2017) found that anti-immigrant attitudes of parents and peers predicted changes in adolescents' prejudice, especially for those with no immigrant friends.

In the *school* context, different theoretical perspectives have highlighted that multiple factors related to the school experience can affect adolescents' prejudice. First of all, intergroup contact theory (Allport, 1954; Pettigrew & Tropp, 2006) underscores that the school context is a crucial environment for experiencing interethnic contact (Thijs & Verkuyten, 2014) and forming cross-ethnic friendships (Wölfer et al., 2017) that can reduce prejudice. Educational theories have further added that school norms that support contact and cooperation among students with different ethnic and immigrant backgrounds and value inclusion and cultural pluralism (Schwarzenthal, Schachner, van de Vijver, & Juang, 2018), can further increase the positive effects of the school context in the reduction of prejudice. Furthermore, building upon an extended attachment theory (Ainsworth, 1989; Bowlby, 1982), it has been suggested that a positive relationship with teachers, characterized by high levels of support, can provide a "safe" base from which adolescents can confidently explore their social worlds and deal with its ethnic diversity (Miklikowska, Thijs, & Hjerm, 2019).

Overall, this corpus of evidence highlighted that the development of adolescents' prejudice can be influenced by multiple risk or protective factors including individual dimensions (e.g., social dominance orientation) and socialization contexts (family, peers, and school). Recent years witnessed an increase in research aimed at understanding the developmental trajectory of prejudice and the factors that affect it, whereas studies focusing on its implications for adolescents' psychosocial development are still scarce. Some exceptions are provided by longitudinal studies of Bayram Özdemir, Özdemir, and Stattin (2016), who found that adolescents high in prejudice were more likely to harass their immigrant peers, and Albarello et al. (2020), who demonstrated that high levels of prejudice diminished identification with the human group, considered as a core dimension of social inclusiveness. In the social-developmental model of radicalization (Beelmann, 2020), prejudice was theorized to be, along with identity problems, political or religious ideologies, and antisocial attitudes and behaviors, a central condition for radicalization and extremism. A call for longitudinal research testing this model has been done (Beelmann, 2020). Thus, high prejudice can affect behaviors and cognitions of adolescents at a later time and can have deep implications for understanding radicalization.

Notably, although most existing longitudinal studies focused on risk and protective factors that can lead to changes in prejudice, rather than on the implications of prejudice in adolescents' psychosocial development at a later time, they employed a full longitudinal design, measuring all study constructs at each wave. In this way, they could model reciprocal associations between prejudice and its correlates, finding that several factors expected to influence prejudice at a later age were, in turn, affected by prejudice itself. For instance, bidirectional associations have been found between prejudice and social dominance orientation (Albarello et al., 2020), perspective-taking (Miklikowska, 2018), and multiple categorization (Albarello et al., 2020). In this vein, longitudinal studies can highlight a nuanced pattern of influences in which the same factors that are expected to shape the development of prejudice can also be influenced by prejudice itself. The current review sought to systematically consider which factors have been investigated in extant longitudinal studies and to examine the strength of their associations with prejudice.

The present study

This systematic review with meta-analysis aimed to comprehensively summarize and integrate prior longitudinal research on adolescents' prejudice to address two main goals. First, it sought to examine how prejudice develops in adolescence, considering both changes in mean levels and interindividual differences (i.e., rank-order stability; Bornstein et al., 2017; Mroczek, 2007). Second, it investigated individual and contextual factors that are related to prejudice over time.

Moreover, the current review relies on recent studies integrating socio-psychological and developmental approaches to identify those factors (i.e., moderators) which can explain the heterogeneity of the results of primary studies (Crocetti, 2016). In a systematic review with meta-analysis which adopts a developmental framework, such as the current one, moderators that can uncover specific developmental trajectories are of utmost importance. This set of moderators includes the age of participants and the time-lag between assessments. In fact, by considering these moderators it is possible to unravel whether changes occur in different phases of adolescence as well as the pace of development (e.g., whether changes occur in the short and/or in the long term). Moreover, considering the country in which the studies were conducted can provide additional information, as average levels of prejudice vary across countries (Eurobarometer, 2018). Furthermore, other moderators related to theoretical and methodological differences among the primary studies considered are also of utmost importance, since results can vary according to the dimensions along which prejudice is studied (e.g., cognitive, affective, behavioral; Brown, 2011; Fishbein, 1996) and its operationalization, referring to the method used to assess it (i.e., explicit or implicit; Rutland, Cameron, Milne, & McGeorge, 2005).

Method

Eligibility criteria

The first set of eligibility criteria concerned the characteristics of the studies. In this respect, studies were eligible for the systematic review if (a) participants were adolescents attending junior high schools or secondary high schools (ages 10/11–18/19) from majority (native) groups; (b) the study design was longitudinal (with at least two waves of data); (c) at least one indicator of prejudice against an immigrant/ethnic group was examined[1] (i.e., if a study evaluated the immigrant/ethnic group only on a positive dimension, such as liking of the target group, the study was excluded; Raabe & Beelmann, 2011); and (d) prejudice was not manipulated, experimentally or through an intervention. This last choice is common in meta-analyses aimed at unveiling normative patterns of development (e.g., Huang, 2010; Lee et al., 2011).

The second set of eligibility criteria was related to the characteristics of the publication. We included journal articles and one type of grey literature (i.e., doctoral dissertations) to identify eligible studies that (a) were subjected to the peer-review process and (b) could be systematically retrieved through bibliographic databases. In this way, we sought to enhance the methodological rigor of the included studies and to guarantee a transparent and fully replicable search aimed at avoiding selection biases (Ferguson & Brannick, 2012). Finally, we did not apply any restriction based on the year and the language of publication (when articles/dissertations were published in a language other than English, professional translators were contacted).

Literature search

We conducted the literature search on January 17, 2018, and we further updated it on June 10, 2019. To systematically identify eligible studies, we relied on four search strategies. First, we searched in several bibliographic databases: PsycINFO, PsycArticles, ERIC (i.e., these three databases were searched simultaneously through the EBSCO platform), Scopus, Web of Science, and ProQuest Dissertations and Theses. In each database, we searched for this combination of keywords: (prejudic* OR discriminat* OR dehumani* OR stereotyp* OR attitude* OR bias*) AND (ethnic* OR immigrant* OR migrant* OR racial*) AND (adolescen* OR youth* OR young* OR teen*) AND (longitudinal* OR prospective*). Full query strings used in each database are reported in the Supplementary materials (Appendix 1).

Second, we checked the websites of journals deemed most likely to publish studies on this topic. We identified the list of journals using the statistics of the previous search in Web of Science, looking for the fifteen journals in which most articles matching our search strategy had been published. The screened journals were (in alphabetical order): *Asian American Journal of Psychology, American Journal of Public Health, Child Development, Cultural Diversity & Ethnic Minority Psychology, Developmental Psychology, Journal of Adolescence, Journal of Adolescent Health, Journal of Family Psychology, Journal of Marriage and Family, Journal of Research on Adolescence, Journal of Youth and Adolescence, Social Forces, Social Science Medicine, Social Science Research, Teachers College Record*. This search was aimed at retrieving articles in press (online first) and recent publications, appeared in the last issue of each journal that could match our eligibility criteria but were not yet available in the electronic databases.

Third, we checked the reference lists of related reviews (Beelmann & Heinemann, 2014; Degner & Dalege, 2013; Priest et al., 2013; Raabe & Beelmann, 2011) to identify additional articles that could match eligible criteria. Fourth, we screened the references of the selected publications to identify further pertinent studies not initially found through the other three search strategies.

Selection of studies

The results of the literature searches are displayed in the PRISMA (Moher, Liberati, Tetzlaff, & Altman, 2009) diagram (Fig. 1). We identified a total of 3976 references, and from this initial set we removed 1201 duplicates. The remaining 2775 records were screened, checking their titles and abstract, by two independent raters (the second and the third authors). The percentage of agreement was excellent (99.46%; Cohen's Kappa = 0.91), and discrepancies were resolved with a third rater (the first author) evaluating independently the records for which initial discrepancies emerged, and the final decisions were taken through a discussion among the three evaluators.

A total of 96 records were selected at this step, and the full-texts were assessed for eligibility by two independent raters (the second and the third authors). The agreement between them was very high (95.70%; Cohen's Kappa = 0.90). Following the same procedure used before, disagreements were resolved with a third rater (the first author) checking the eligibility of the references based on the analysis of the full-texts and discussion among the three raters. In total, 70 references were excluded for various reasons (as detailed in Fig. 1), whereas 26 references could be included in the meta-analysis.

Coding of primary studies

All primary studies were coded to extract relevant information. To this end, a coding protocol consisting of four sections was used. The first author completed the coding and intra-rater reliability (>99%) was established with the author re-coding each study three

[1] To be considered eligible, a study was not required to have assessed prejudice with the same measure at all time points.

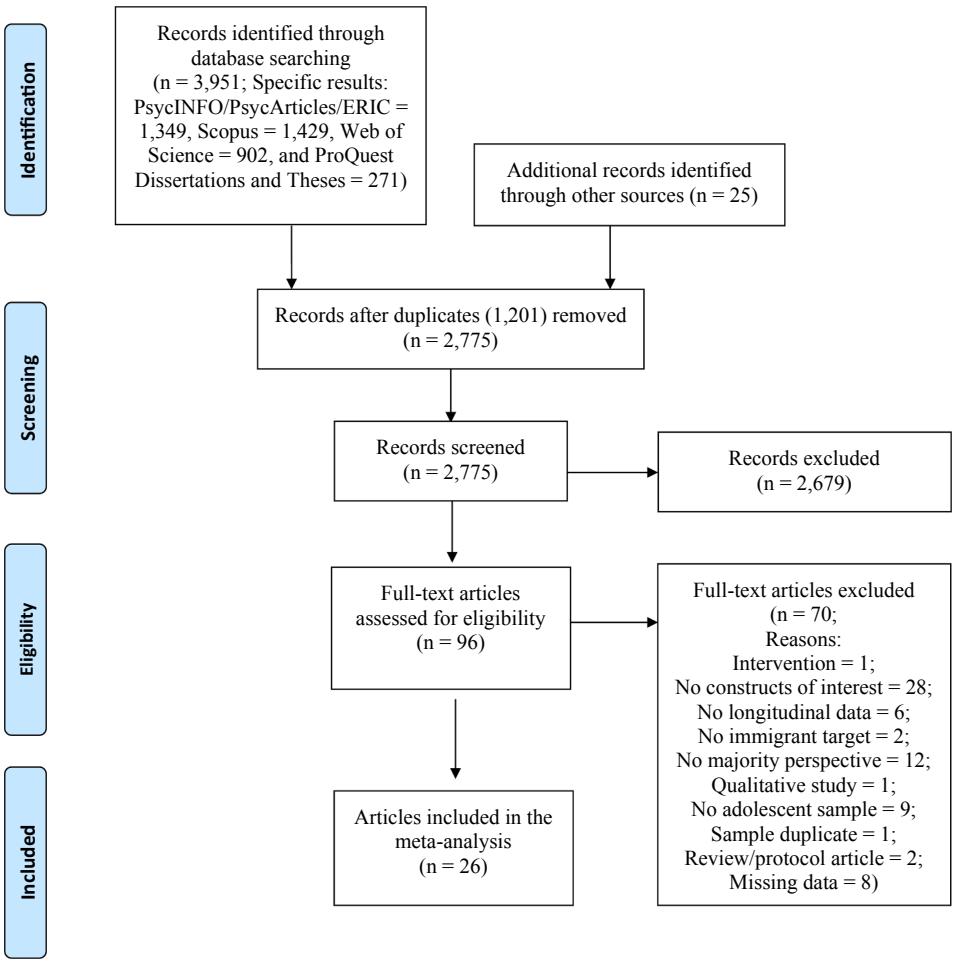

Fig. 1. PRISMA flow diagram.

times (with approximately one month between each coding). All the information extracted from primary studies was imputed in SPSS.

The first section of the coding protocol consisted of characteristics of the publication: type of publication (i.e., journal article or dissertation); year of publication; language of publication (e.g., English; German); and journal name. For journal indexed in Journal Citation Reports (JCR) in the year in which the article was published, four additional JCR information were coded: edition (i.e., SCIE Science or SSCI Social Science), subject category (e.g., Psychology, social; Sociology), Quartile (Q1, Q2, Q3, or Q4; when a journal was indexed in more than one subject category, the one with the best ranking was chosen), and impact factor (based on the year in which the article was published).

The second section of the protocol grouped characteristics of the samples: sample size; gender (i.e., percentage of females in the sample); age (i.e., mean, standard deviation, and age range of the sample in years at T1); family structure (i.e., percentage of intact families); living arrangements (i.e., percentage of adolescents living with one or both parents); parental socio-economic status and parental educational background (e.g., percentage of parents with low, medium, and high levels of education); and country in which the study was contacted.

The third section of the protocol included characteristics of the study design: years in which the study was conducted; number of waves; interval between waves (in months); dimension of prejudice being investigated (e.g., cognitive, affective; behavioral); method used to assess prejudice (i.e., explicit or implicit). When prejudice was assessed with a scale, additional information including the name of the scale, the number of items, the Cronbach's alpha at baseline, and the data source (self-reports or other forms) were coded. Finally, information regarding the funding of the study was extracted (specifying the funding source, unfunded, or not reported).

The last section of the protocol included data necessary for effect size computations. For estimating mean-level changes, we extracted information regarding means and standard deviations of prejudice at each wave. For examining rank-order stability of prejudice, test–retest correlations were used (e.g., correlation between prejudice at T1 and prejudice at T2). For examining the correlates of prejudice, cross-lagged correlations were extracted. These correlations were based on a specific factor measured at one time point (e.g., empathy measured at T1) and prejudice assessed at a later time point (at T2), or prejudice measured at one time point (e.g., T1) and the outcome variable measured at the following time point (e.g., ethnic harassment assessed at T2).

When data for effect size computations were not reported in primary studies, study authors were contacted by email to request missing data. Authors were also contacted when data published in the study were collected in both majority and minority adolescents: in this case, study authors were required to provide disaggregated data, computed only in the majority subsample. In total, 21 (out of 34) authors were contacted for obtaining all (or part of the data) necessary for effect size computations and one author was contacted for clarification questions regarding the sample size. Nine authors replied providing the requested data; seven replied specifying that they could not provide the required data (e.g., they could not access the dataset anymore); and six did not reply to the request. This led to the exclusion of eight studies, as indicated in the PRISMA diagram (full-texts excluded because of missing data; Fig. 1).

Strategy of analysis

To address the research questions guiding this review, we conducted a series of analyses utilizing the meta-analytic software ProMeta 3. First, we computed for each study effect sizes that could provide answers to at least one of our research questions. More specifically, Cohen's *d* (standardized mean difference) effect sizes were used to examine mean-level changes (positive scores indicate that prejudice increases over time) and Pearson's correlations were used to examine rank-order stability and correlates of prejudice (for computation purposes, Pearson's correlations were converted into Fisher's Z-scores and converted back into correlations for presentation; Lipsey & Wilson, 2001). For ease of interpretation, Cohen's *d* values of |0.20|, |0.50|, and |0.80|, and correlations of |0.10|, |0.30|, and |0.50| are considered small, medium, and large effect sizes, respectively (Cohen, 1988; Ellis, 2010). For each effect size, we computed its 95% confidence interval, variance, standard error, and statistical significance.

Second, we combined effect sizes across studies by means of the inverse-variance method (Borenstein, Hedges, Higgins, & Rothstein, 2009). We used the random-effects model as a conservative approach to account for different sources of variation among studies (i.e., within-study variance and between-studies variance) and to allow for generalization of the meta-analytic findings beyond the studies included in the current review (Hedges & Vevea, 1998). We dealt with multiple effect sizes from one sample by using Cooper's (1998) shifting unit-of-analysis approach, which involves both subgrouping and averaging effects. We adopted the conservative approach in which the aggregated estimates are computed by assuming a large correlation ($r = 0.50$) among them (Borenstein et al., 2009; pp. 225-233).

Third, we assessed heterogeneity across studies. To this end, we used the *Q* statistic to test if there is significant heterogeneity across studies and the I^2 index to estimate it (Crocetti, 2016). I^2 indicates what proportion of the observed variance reflects differences in true effect sizes, rather than sampling error, with values of 25%, 50%, and 75%, respectively denoting a low, moderate, and high proportion of dispersion in the observed effects that would remain should sampling error be removed (Higgins, Thompson, Deeks, & Altman, 2003). Moderator analyses were used to test which factors can account for the heterogeneity (Viechtbauer, 2007). We tested categorical moderators (i.e., country of the study, dimension of prejudice being investigated, method used to assess prejudice) using subgroup analysis (when at least three studies for each level of the moderator were available; Crocetti, 2016) and continuous moderators (i.e., percentage of females in the sample, mean age of the sample, interval between assessments) employing meta-regressions (when at least three studies were available).

Finally, we run sensitivity analyses to check the stability of study findings, computing how the overall effect sizes would change, removing one study at a time. Furthermore, we performed multiple publication bias analyses to control for the fact that published studies may have a larger mean effect size than unpublished studies (Rothstein, Sutton, & Borenstein, 2005). First, we computed the

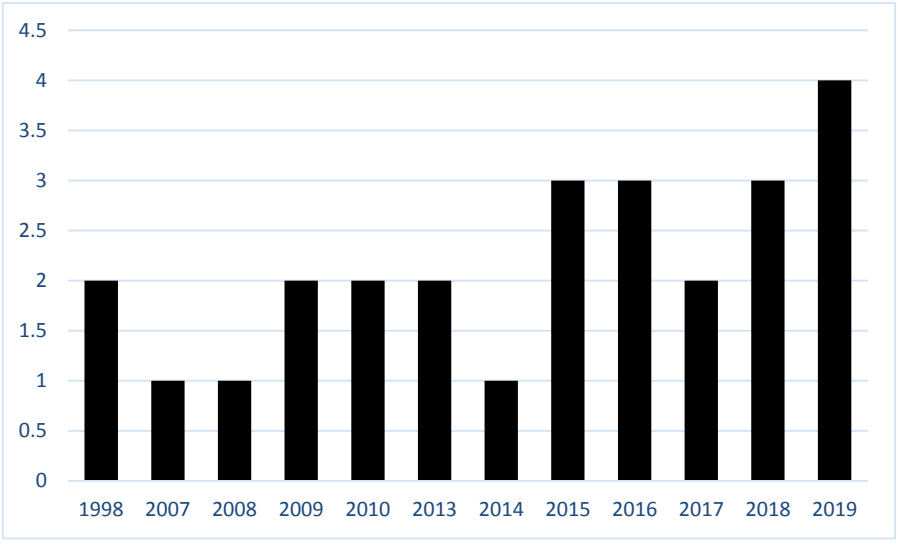

Fig. 2. Number of articles published each year. *Note*. One of the articles included in the meta-analysis (Albarello et al., 2020) was published online first in 2019, and it was assigned to an issue in 2020. In the Figure, it is included among the articles published in 2019.

Table 1
Characteristics of Studies Included in the Systematic Review.

Study (year)	N participants	% girls	Mean Age T_1	Country	Years	N waves	Time lag (months)	Prejudice dimension	N items	α	Funding
Albarello et al. 2020	289	61.90	13.93	Italy	2016–2017	3	3	Cognitive	7	0.81	Yes
Bayram Özdemir et al. 2016	583	50.00	17.36	Sweden	na	2	12	Cognitive	8	0.79	No
Binder et al. 2009 (Belgian sample)	404	50.70	17.42	Belgium	na	2	6	Affective/ Behavioral	6, 5	0.82, 0.80	Yes
Binder et al. 2009 (English sample)	255	29.40	16.17	England	na	2	6	Affective/ Behavioral	6, 5	0.82, 0.80	Yes
Binder et al. 2009 (German sample)	484	58.90	13.50	Germany	na	2	6	Affective/ Behavioral	6, 5	0.82, 0.80	Yes
Bratt et al. 2016 (Study I))	453	54.00	15.47	Norway	2008–2010	3	12	Affective	8	0.96	Yes
Brown et al. 2008 (Study I)	120	55.65	16.02	Chile	na	2	1.85	Multiple	9	0.81	Yes
Brown et al. 2008 (Study II)	137	51.42	14.94	Chile	na	2	6	Multiple	9	0.76	Yes
Duriez et al. 2007 (Study II)	724	49.17	13.61	Belgium	2004–2005	2	12	Cognitive	6	0.81	Yes
Eckstein et al. 2018	362	61.30	13.30	Germany	2003–2004	2	12	Cognitive	6	0.83	Yes
Gniewosz & Noack 2015 (older cohort)	435	51.20	11.30	Germany	2003–2007	3	12	Cognitive	6	0.80	Yes
Gniewosz & Noack 2015 (younger cohort)	391	51.20	16.50	Germany	2003–2007	5	12	Cognitive	6	0.80	Yes
Gomez et al. 2013	116	48.28	16.00	Spain	na	2	3	Affective	6	0.80	Yes
Hooghe et al. 2013	2,428	51.20	16.27	Belgium	2006–2008	2	24	Cognitive	3	Na	Yes
Meeus et al. 2010 (Study II)	275	55.00	13.41	Belgium	2005–2006	2	12	Cognitive	6	0.89	Yes
Miklikowska 2016	507	50.80	13.41	Sweden	2010–2012	2	24	Cognitive	3	0.77	Yes
Miklikowska 2017	517	50.80	15.35	Sweden	2010–2014	3	24	Cognitive	3	0.77	Yes
Miklikowska 2018	574	50.60	13.41	Sweden	2012–2014	3	12	Cognitive	3	0.77	Yes
Miklikowska et al. 2019	671	50.20	13.41	Sweden	2010–2015	5	12	Cognitive	3	0.76	Yes
Mitchell 2019	596	50.48	16.50	Sweden	2010–2015	5	12	Cognitive	3	0.77	Yes
Pehrson et al. 2009 (Study II)	219	72.15	13.52	England	na	2	1.38	Behavioral	4	0.92	Yes
Rekker et al. 2015	321	57.73	14.53	the Netherlands	1991–1997	3	36	Cognitive	4	0.89	Yes
ten Berge et al. 2017	2,955	50.56	14.69	the Netherlands	2010/ 2011–2012/2013	2	12	Affective	4	Na	Yes
Titzmann et al. 2015	372	62.30	15.10	Germany	2003–2006	3	12	Cognitive	7	0.87	Yes
Urban & Singelmann 1998a	131	67.20	15.10	Germany	1994–1996	3	12	Cognitive	3	Na	Yes
Urban & Singelmann 1998b	131	67.20	15.31	Germany	1994–1996	3	12	Cognitive	3	Na	Yes
van Zalk & Kerr 2014	1,542	50.20	16.03	Sweden	2007–2009	3	12	Cognitive	4	0.87	Yes
Vezzali et al. 2010	68	52.00	15.13	Italy	na	2	2.30	Affective	5	0.90	Na
Weber 2019	1,454	53.99	15.17	Germany	2010–2014	3	12	Affective	4	0.88	Yes
Wölfer & Hewstone 2018	5,999	54.62	13.93	Multi-national (England. Germany, the Netherlands. Sweden)	2010/ 2011–2011/2012	2	24	Affective	4	0.81	Yes

Note. N = number; T1 = Time 1; α = Cronbach's Alpha; na = not available.

fail-safe *N* (Rosenthal, 1979) to know how many studies with a non-significant result would be required to render the overall effect size to be non-significant. Rosenthal (1979) suggested a fail-safe *N* higher than (5 *k* + 10) as supporting findings' robustness (where *k* refers to the number of studies included in the meta-analysis). Second, we examined the funnel plot (i.e., a scatter plot of the effect sizes estimated from individual studies against a measure of their precision, such as their standard errors). In the absence of bias, the plot would be shaped as a symmetrical inverted funnel. However, since smaller or non-significant studies are less likely to be published, studies in the bottom left-hand corner of the plot are often omitted. To evaluate the funnel plot, we employed both the Egger's regression method (Egger, Smith, Schneider, & Minder, 1997) that statistically tests the asymmetry of the funnel plot, with non-significant results indicative of the absence of publication bias and the trim and fill procedure, which is an iterative non-parametric statistical technique aimed at evaluating the effect of potential data censoring on the result of the meta-analysis (Duval & Tweedie, 2000). In this procedure, the absence of publication bias is indicated by zero trimmed studies or, in the presence of trimmed studies, by trivial differences between the observed and the estimated effect sizes (Duval, 2005). When multiple methods converge in indicating that the impact of publication bias is absent or minimal, the meta-analytic findings are highly trustworthy.

Table 2
Results of the meta-analyses of mean-level changes.

Results for each study (Cohen's *d* [95% CI])	T1 → T2	T2 → T3	T3 → T4	T4 → T5	T1-Tfinal
Albarello et al. 2020	0.08 [−0.01, 0.17]	0.02 [−0.06, 0.10]			0.09 [−0.00, 0.19]
Binder et al. 2009 (Belgian sample)	0.01 [−0.07, 0.08]				0.01 [−0.07, 0.08]
Binder et al. 2009 (English sample)	0.07 [−0.02, 0.17]				0.07 [−0.02, 0.17]
Binder et al. 2009 (German sample)	0.14*** [0.08, 0.20]				0.14*** [0.08, 0.20]
Bratt et al. 2016 (Study I)	0.21*** [0.11, 0.31]	0.03 [−0.07, 0.12]			0.24*** [0.13, 0.35]
Brown et al. 2008 (Study I)	0.05 [−0.13, 0.23]				0.05 [−0.13, 0.23]
Brown et al. 2008 (Study II)	0.10 [−0.08, 0.27]				0.10 [−0.08, 0.27]
Duriez et al. 2007 (Study II)	0.00 [−0.07, 0.07]				0.00 [−0.07, 0.07]
Gniewosz & Noack 2015 (older cohort)	0.05 [−0.04, 0.13]	−0.11** [−0.18, −0.03]			0.00 [−0.09, 0.09]
Gniewosz & Noack 2015 (younger cohort)	−0.04 [−0.13, 0.06]	0.02 [−0.06, 0.10]	−0.14*** [−0.21, −0.06]	0.17*** [0.11, 0.24]	0.02 [−0.08, 0.12]
Gomez et al. 2013	−0.14 [−0.29, 0.02]				−0.14 [−0.29, 0.02]
Hooghe et al. 2013	−0.00 [−0.03, 0.03]				−0.00 [−0.03, 0.03]
Meeus et al. 2010 (Study II)	−0.01 [−0.11, 0.09]				−0.01 [−0.11, 0.09]
Mitchell 2019	0.01 [−0.07, 0.10]	0.06 [−0.02, 0.13]	0.00 [−0.06, 0.07]	−0.23*** [−0.30, −0.17]	−0.17*** [−0.27, −0.07]
Pehrson et al. 2009 (Study II)	−0.03 [−0.12, 0.05]				−0.03 [−0.12, 0.05]
Rekker et al. 2015	0.20*** [0.09, 0.31]	−0.10 [−0.19, 0.00]			0.12 [−0.00, 0.23]
Ten Berge et al. 2017	0.17*** [0.13, 0.20]				0.17*** [0.13, 0.20]
Titzmann et al. 2015	−0.08 [−0.18, 0.02]	0.08 [−0.00, 0.17]			0.00 [−0.10, 0.10]
Urban & Singelmann 1998a	−0.07 [−0.25, 0.11]	0.13 [−0.05, 0.31]			0.06 [−0.12, 0.24]
Van Zalk & Kerr 2014	−0.19*** [−0.24, −0.14]	−0.13*** [−0.18, −0.08]			−0.32*** [−0.37, −0.27]
Vezzali et al. 2010	−0.03 [−0.28, 0.21]				−0.03 [−0.28, 0.21]
Weber 2019	−0.22*** [−0.28, −0.16]	0.01 [−0.04, 0.07]			−0.20*** [−0.26, −0.14]
Wölfer & Hewstone 2018	−0.09*** [−0.11, −0.06]				−0.09*** [−0.11, −0.06]
Overall results					
k (*N*)	23 (20,168)	10 (5,984)	2 (987)	2 (987)	23 (20,168)
Cohen's *d* [95% CI]	0.01 [−0.05, 0.06]	−0.01 [−0.06, 0.05]	−0.07 [−0.20, 0.07]	−0.03 [−0.43, 0.37]	0.00 [−0.06, 0.06]
Heterogeneity statistics					
Q	291.83***	42.91***	7.84**	69.64***	381.08***
I^2	92.46	79.03	87.24	98.56	94.23
Publication bias analysis					
Fail-safe *n*	–	–	–	–	–
Egger' test	0.54	1.63	–	–	0.49
Trim and fill, (n of trimmed studies; estimated *d*, 95% CI)	0	0	–	–	0

Note. T = Time; *k* = number of studies; *N* = number of participants; CI = Confidence Interval. *$p < .05$, **$p < .01$, ***$p < .001$.

Results

Descriptive characteristics of studies included in the systematic review

Twenty-six articles published in peer-reviewed journals were included in the systematic review. As displayed in Fig. 2, most articles were published in the last decade (between 2009 and 2019), with a sharp increase in the last five years (2015–2019), in which 57.69%

Table 3
Results of the meta-analyses of rank-order stability.

Results for each study (Pearson's *r* [95% CI])	T1 → T2	T2 → T3	T3 → T4	T4 → T5	T1-Tfinal
Albarello et al. 2020	0.70*** [0.64, 0.76]	0.74*** [0.69, 0.79]			0.66*** [0.60, 0.73]
Binder et al. 2009 (Belgian sample)	0.64*** [0.59, 0.69]				0.64*** [0.59, 0.69]
Binder et al. 2009 (English sample)	0.62*** [0.55, 0.69]				0.62*** [0.55, 0.69]
Binder et al. 2009 (German sample)	0.74*** [0.70, 0.77]				0.74*** [0.70, 0.77]
Bratt et al. 2016 (Study I)	0.40*** [0.32, 0.48]	0.43*** [0.35, 0.50]			0.32*** [0.24, 0.41]
Brown et al. 2008 (Study I)	0.51*** [0.38, 0.64]				0.51*** [0.38, 0.64]
Brown et al. 2008 (Study II)	0.46*** [0.32, 0.60]				0.46*** [0.33, 0.59]
Duriez et al. 2007 (Study II)	0.59*** [0.54, 0.64]				0.59*** [0.54, 0.64]
Eckstein et al. 2018	0.60*** [0.53, 0.67]				0.60*** [0.53, 0.67]
Gniewosz & Noack 2015 (older cohort)	0.61*** [0.56, 0.67]	0.65*** [0.59, 0.70]			0.54*** [0.47, 0.61]
Gniewosz & Noack 2015 (younger cohort)	0.55*** [0.48, 0.61]	0.67*** [0.61, 0.72]	0.73*** [0.68. 77]	0.76*** [0.72, 0.80]	0.46*** [0.38, 0.54]
Gomez et al. 2013	0.64*** [0.53, 0.75]				0.64*** [0.53, 0.75]
Hooghe et al. 2013	0.64*** [0.62, 0.67]				0.64*** [0.62, 0.67]
Meeus et al. 2010 (Study II)	0.65*** [0.58, 0.72]				0.65*** [0.58, 0.72]
Miklikowska et al. 2019	0.44*** [0.38, 0.50]	0.58*** [0.53, 0.63]	0.65*** [0.61, 0.69]	0.67*** [0.63, 0.71]	0.23*** [0.16, 0.31]
Pehrson et al. 2009 (Study II)	0.80*** [0.75, 0.85]				0.80*** [0.75, 0.85]
Rekker et al. 2015	0.49*** [0.41, 0.58]	0.61*** [0.54, 0.68]			0.42*** [0.33, 0.51]
Ten Berge et al. 2017	0.52*** [0.49, 0.55]				0.52*** [0.49, 0.55]
Titzmann et al. 2015	0.52*** [0.45, 0.60]	0.65*** [0.59, 0.71]			0.52*** [0.45, 0.60]
Urban & Singelmann 1998a					0.46*** [0.32, 0.60]
Vezzali et al. 2010	0.46*** [0.26, 0.65]				0.46*** [0.26, 0.65]
Weber 2019	0.30*** [0.25, 0.35]	0.38*** [0.33, 0.42]			0.32*** [0.27, 0.37]
Wölfer & Hewstone 2018	0.42*** [0.40, 0.44]				0.42*** [0.40, 0.44]
Overall results					
k (*N*)	22 (18,915)	8 (4,386)	2 (1,062)	2 (1,062)	23 (19,063)
Pearson's *r* [95% CI]	0.57*** [0.52, 0.62]	0.60*** [0.51, 0.69]	0.69*** [0.61, 0.77]	0.72*** [0.63, 0.80]	0.55*** [0.49, 0.60]
Heterogeneity statistics					
Q	523.25***	152.11***	5.46*	7.75**	576.44***
I^2	95.99	95.40	81.69	87.09	96.18
Publication bias analysis					
Fail-safe *n*	29,172	3,591	–	–	27,675
Egger' test	2.05	4.13**	–	–	1.37
Trim and fill, (n of trimmed studies; estimated *r*, 95% CI)	0	1 (0.57*** [0.48, 0.67])	–	–	0

Note. T = Time; *k* = number of studies; *N* = number of participants; CI = Confidence Interval. *$p < .05$, **$p < .01$, ***$p < .001$.

of the publications appeared. With regards to the *characteristics of the publication* (see Supplementary materials, Table S1), most articles (24 out of 26) were published in English journals, while two (Urban & Singelmann, 1998a; 1998b) were published in German journals. All journals (with a unique exception) were indexed in JCR (all in the SCCI edition), and most of them were associated to the subject categories of "Developmental psychology" (36%) or "Social psychology" (28%), with other categories being "Sociology" (16%), "Multidisciplinary psychology" (12%), "Ethnic studies" (4%), and "Family studies" (4%). Notably, 64% of the journals in which the selected articles were published ranked in the first quartile of their JCR category (Q1), 24% in the second quartile (Q2), and 12% in the third quartile (Q3). The average impact factor was 2.62 ($SD = 1.22$; range 0.38 – 5.04).

Among the selected 26 articles, one (Brown, González, Zagefka, Manzi, & Čehajić, 2008) reported two eligible studies and two articles (Binder et al., 2009; Gniewosz & Noack, 2015) reported information from multiple samples (Belgian, English, and German samples in Binder et al., 2009; younger and older cohorts in Gniewosz & Noack, 2015). As a result, a total of 30 samples were included in the review. Information about *participants' characteristics* is reported in Table 1. The total number of participants was 23,513 ($M = 783.77$, $SD = 1187.24$, range 68–5999). Most samples were gender-balanced (the average percentage of females across samples was 52.88%; range 29.40%-72.15%) and the average age of sample participants at baseline was 14.98 years ($SD = 1.48$, range: 11.30–17.48 years). Information about family structure, living arrangements, parental socio-economic status, and parental educational background were missing from several studies and, when available, were often reported in different ways making not possible to further code and examine it. With regards to the context of the studies, except for two samples from Chile (Brown et al., 2008, Study I and Study II), all the samples were European (26.67% from Germany; 23.33% from Sweden; 13.33% from Belgium; 6.67% from England; 6.67% from Italy; 6.67% from the Netherlands; 3.33% from Norway; 3.33% from Spain; and 3.33% from multiple countries).

In terms of the *study design* (Table 1), 10% of the studies started between 1990 and 1999; 30% between 2000 and 2009; and 30% between 2010 and 2019 (in the remaining 30% of studies the information about the exact year in which the study was initiated was not available). More than half of the studies (53.3%) included two-time points, 36.7% included three-time points, and 10% included five-time points. The average time-lag between adjacent waves was one year ($M = 11.98$ months; $SD = 7.81$ months), and it ranged from 1.38 to 36 months. All studies considered only one dimension of prejudice (mainly cognitive prejudice, followed by affective prejudice), with only Binder et al. (2009) reporting information on two distinct dimensions of prejudice (affective and behavioral, respectively). Interestingly, in all studies, prejudice was assessed using self-reported scales, with no studies employing implicit measures, and the same instrument was used for measuring prejudice at multiple waves. The average number of items used to assess participants' prejudice was 5 ($SD = 1.81$; range: 3–9) and the reliability was high (the average Cronbach's Alpha was 0.82, $SD = 0.05$, range = 0.76-0.96). Most studies (93.33%) reported one or multiple sources of funding.

Meta-analyses of prejudice development

Mean-level changes

The meta-analysis of mean-level changes indicated that prejudice did not change over time. In fact, as reported in Table 2, results of each study highlighted that in most cases prejudice did not change significantly from one-time point to the next one and, in the cases in which significant changes were found, they were small and in opposite directions (e.g., four studies reporting a slight increase and

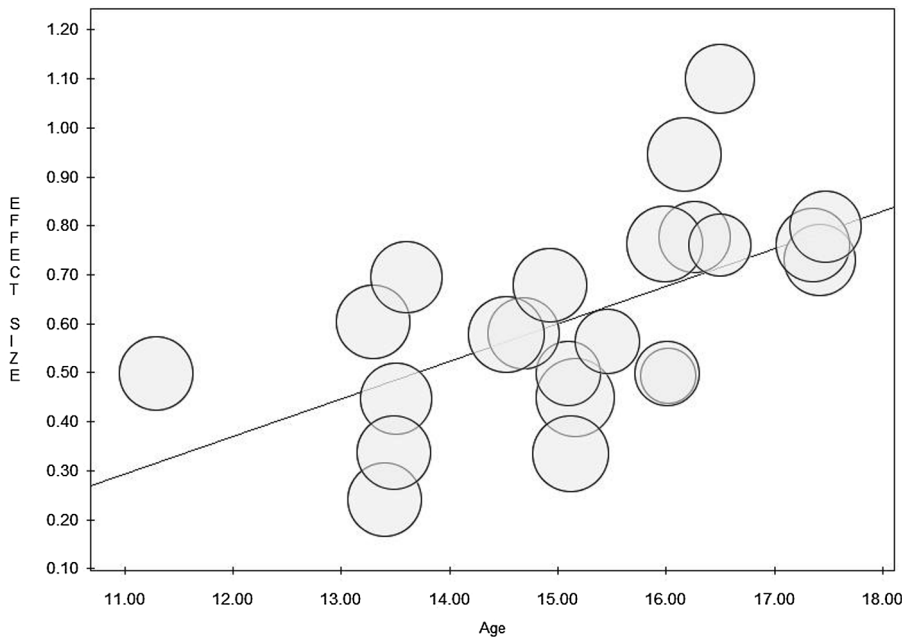

Fig. 3. Moderator effects of adolescents' age on rank-order stability (the effect sizes are Fisher's Z scores).

three studies a slight decrease in prejudice from T1 to T2). As a result, the overall effect size was zero and the same conclusion could be drawn when considering changes from T1 to T2, from T2 to T3, from T3 to T4, and from T4 to T5, and from T1 to the last available time point (specific to each study).

Although all these overall results were characterized by significant and large heterogeneity, as indicated by heterogeneity statistics reported in Table 2, moderator analyses highlighted that results were not moderated by the characteristics of the sample participants (i.e., mean age at T1, % of females) or by characteristics of the studies (i.e., country in which the study was conducted, interval between waves, dimension of prejudice considered). Sensitivity analyses further showed that results were very consistent (i.e., overall effect sizes did not change substantially when removing any of the studies from the analyses). Furthermore, meta-analytic findings were not affected by publication bias, as can be seen by the analyses reported in Table 2.

Rank-order stability

Meta-analytic results provided robust evidence of high and significant levels of rank-order stability in adolescents' prejudice. As shown in Table 3, in each study included in the review, rank-order stability was high and significant. This was confirmed from overall results found from T1 to T2, from T2 to T3, from T3 to T4, from T4 to T5, and from T1 to the last available time point. Sensitivity analyses further indicated the robustness of the findings (i.e., removing any study does not impact overall results), and the publication bias analyses underlined that the results were not affected by publication bias.

Heterogeneity across studies was high and significant in all sets of analyses and, in this case, it was explained by two key moderators: Rank-order stability linearly increased with adolescents' age (Fig. 3) whereas it was inversely related to the time-lag between waves (Fig. 4). These moderating effects were found when analyzing both T1 to T2 (age: $B = 0.05$, $p = .031$; time-lag: $B = -0.01$, $p = .029$) as well as T1 to T_{final} (age: $B = 0.08$, $p = .003$; time-lag: $B = -0.01$, $p = .002$) rank-order stability. Thus, rank-order stability was higher in older adolescents and when the time-lag between assessments was shorter. In addition, T1-T2 rank-order stability differed significantly when considering different dimensions of prejudice ($Q = 8.98$, $p = .003$): it was higher for cognitive ($r = 0.58$) than for affective prejudice ($r = 0.45$).

Correlates of prejudice

The systematic review highlighted that, in the selected primary studies, a heterogeneous array of correlates of prejudice was examined. We grouped these correlates into three main theoretical categories: individual factors (i.e., social dominance orientation, multiple categorization, empathy, extrinsic goal pursuit, tolerance, education, religion, self-efficacy, intergroup anxiety, and willingness for intergroup contact); identity dimensions (i.e., national identification, human identification, religious identity, ethnic representation of national identity, and national essentialism); and contextual factors, further organized into family (i.e., parental and sibling prejudice, parental and sibling social dominance orientation, parental tolerance, family cohesion, family equal treatment, parental support, parental educational and family socio-economic status); friends (i.e., intergroup friendship, friends' prejudice); school (i.e., teacher support, contact opportunity, negative contact/bully); and other (e.g., media) contexts. For most correlations, both cross-lagged correlations were available (i.e., the correlation between the variable under consideration measured at T1 and prejudice measured at a later time point, $T1_v$-$T2_p$; and the correlation between prejudice at T1 and the other variable measured at the following

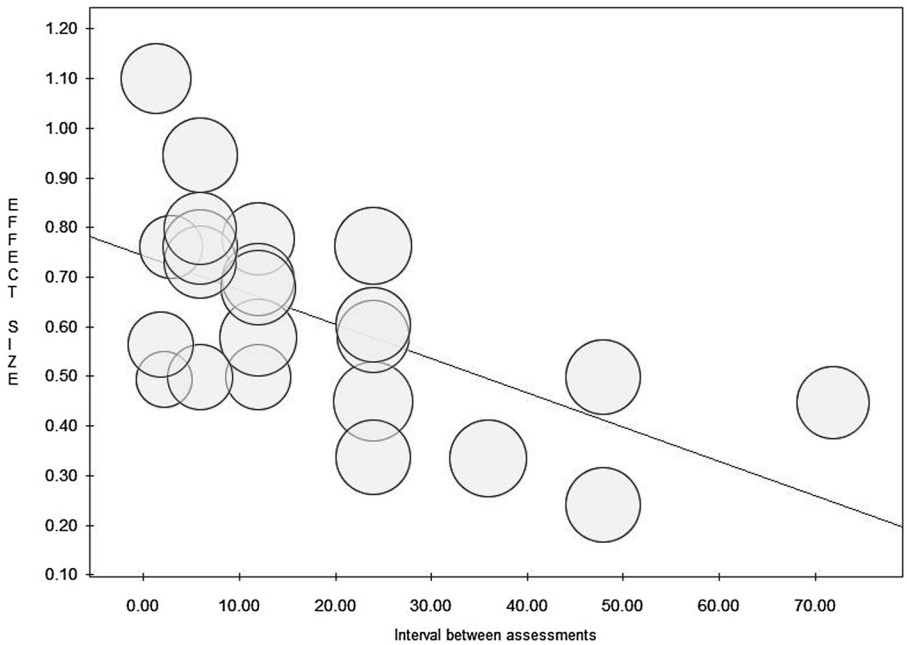

Fig. 4. Moderator effects of time lag (in months) between assessments on rank-order stability (the effect sizes are Fisher's Z scores).

Table 4
Correlates of prejudice: cross-lagged correlations with individual and identity factors.

Study	Individual factors	$T1_v$ – $T2_p$	$T1_p$ – $T2_v$	Identity	$T1_v$ – $T2_p$	$T1_p$ – $T2_v$
Albarello et al. 2020	SDO	0.46	0.53	Human identification	−0.33	−0.40
	Multiple categorization	−0.25	−0.23			
Binder et al. 2009 (Belgian sample)[a]	Intergroup anxiety	0.15/ 0.13	0.25/ 0.20			
Binder et al. 2009 (English sample)[a]	Intergroup anxiety	0.25/ 0.32	0.38/ 0.44			
Binder et al. 2009 (German sample) [a]	Intergroup anxiety	0.34/ 0.36	0.35/ 0.38			
Bratt et al. 2016 (Study I)	SDO	0.16	0.15			
Duriez et al. 2007 (Study II)	Goal pursuit (Extrinsic)	0.30	0.37			
	SDO	0.39	0.44			
Eckstein et al. 2018	SDO	0.33	0.40			
Meeus et al. 2010 (Study II)				Ethnic representation of national identity	0.52	0.63
				National identification	0.44	
Miklikowska 2016	Adolescent tolerance	−0.29	−0.38			
Miklikowska 2018	Empathic concern	−0.29	−0.22			
	Perspective-taking	−0.21	−0.18			
Pehrson et al. 2009 (Study II)				National identification	0.36	0.40
				National essentialism	50	0.55
Rekker et al. 2015	Religion	0.01				
	Adolescent education	−0.38				
ten Berge et al. 2017	Adolescent education	−0.15				
Titzmann et al. 2015	Educational aspirations	−0.19				
	Self-efficacy	0.00				
	Willingness for intergroup contact	−0.28				
Vezzali et al. 2010	Intergroup anxiety	0.38	0.33			
	Empathy	−0.32	−0.21			
Weber 2019	Adolescent education	−0.14	−0.18	National identification	−0.03	−0.03
Wölfer & Hewstone 2018				National identification	−0.01	−0.02
				Religious identity	−0.03	0.04

Note. $T1_v$ – $T2_p$ = cross-lagged correlation between the variable of interest (v) measured at one time (T) point and prejudice (p) measured at a following time point. $T1_p$ – $T2_v$ = cross-lagged correlation between prejudice (p) measured at one time (T) point and the variable of interest (v) measured at a following time point. [a] The results refer to the affective and behavioral dimensions of prejudice, respectively.

time point, $T1_p$-$T2_v$), as synthesized in Tables 4 and 5.

When the same factor was examined in at least three studies, a meta-analysis was applied to obtain overall estimates of the longitudinal associations between prejudice and its correlates. As shown in Table 6, the individual factors that were more commonly related to prejudice were adolescents' education (higher educational levels were related to lower levels of prejudice), social dominance orientation, and intergroup anxiety, which were related to heightened prejudice. The identity component that was mainly associated (positively) with prejudice was the identification with the national ingroup. Among the family variables, parental education and socioeconomic status were negatively related to adolescents' prejudice, while parental prejudice was positively related to adolescents' prejudice. Finally, intergroup friendship was the factor that was more commonly investigated in longitudinal studies on adolescents' prejudice, and the available evidence indicated that it contributed to reducing it.

Notably, for all these psychosocial factors (social dominance orientation, intergroup anxiety, national identification, parental prejudice, intergroup friendship) cross-lagged correlations were also available in the opposite direction (from prejudice to each factor). The size of these associations ($T1_p$-$T2_v$) was not significantly different from the effect in the other direction ($T1_v$-$T2_p$). Thus, these results suggest that the same factors that are expected to affect prejudice at a later time are likely to be affected by prejudice itself.

Discussion

This systematic review with meta-analysis sought to understand the development of prejudice in adolescence and its correlates. Notably, we have recently witnessed a sharp increase in longitudinal studies on this topic, especially in Europe, showing the strong efforts of scientific research to address a societal priority. In fact, because of the increase in migration flows between the economic crisis of 2007/2008 and the peak of the so-called refugee crisis in 2015, issues related to immigration have become a significant concern in several nations (Weber, 2019). Importantly, the ways in which young people see immigration and develop negative attitudes against individuals with a migration background and ethnic minorities have also become the organizing principle of youth political attitudes (Rekker, 2016), underscoring the importance of unraveling the developmental roots of adolescents' prejudice. This systematic review extends prior knowledge on this topic by showing that (a) prejudice does not change in adolescence; (b) interindividual differences are well-established and become increasingly strong; and (c) several individual, identity, and contextual factors are related to prejudice in different ways. Below, we discuss these main findings considering their implications for future research and

Table 5
Correlates of prejudice: cross-lagged correlations with contextual factors (family, friends, school, and other contexts).

Study	Family	$T1_v$ – $T2_p$	$T1_p$ – $T2_v$	Friends	$T1_v$ – $T2_p$	$T1_p$ – $T2_v$	School	$T1_v$ – $T2_p$	$T1_p$ – $T2_v$	Other	$T1_v$ – $T2_p$	$T1_p$ – $T2_v$
Bayram Özdemir et al. 2016							Ethnic harassment perpetrated in school		0.28			
Binder et al. 2009 (Belgian sample)[a]				Intergroup friendship	−0.30/ −0.38	−0.39/ −0.40						
Binder et al. 2009 (English sample)[a]				Intergroup friendship	−0.32/ −0.43	−0.29/ −0.34						
Binder et al. 2009 (German sample)[a]				Intergroup friendship	−0.41/ −0.46	−0.34/ −0.47						
Brown et al. 2008 (Study I)										Reparation / collective guilt / collective shame	−0.20/ −0.17/ −0.32	
Brown et al. 2008 (Study II)										Reparation / collective guilt / collective shame	−0.19/ 0.01/ −0.20	
Eckstein et al. 2018	Older sibling prejudice	0.40	30									
	Older sibling SDO	0.31	0.15									
	Maternal SDO	0.21										
	Paternal SDO	0.25										
	Family cohesion	−0.03										
	Family equal treatment	−0.02										
	SES	−0.06										
Gniewosz & Noack 2015 (older cohort)	Maternal prejudice	0.39	0.44									
	Paternal prejudice	0.39	0.34									
Gniewosz & Noack 2015 (younger cohort)	Maternal prejudice	0.25	0.26									
	Paternal prejudice	0.34	0.35									
Miklikowska 2016	Parental support	−0.13										
	Parental tolerance	−0.25	−0.21									
	Parental prejudice	0.19	0.19									
Miklikowska 2017	Parental education	−0.20		Friends' prejudice	0.23							
	Family financial situation	−0.19		Intergroup friendship	−0.17							
							Teacher support	−0.16	−0.12	Social trust	−0.16	−0.17

(*continued on next page*)

Table 5 (*continued*)

Study	Family	$T1_v - T2_p$	$T1_p - T2_v$	Friends	$T1_v - T2_p$	$T1_p - T2_v$	School	$T1_v - T2_p$	$T1_p - T2_v$	Other	$T1_v - T2_p$	$T1_p - T2_v$
Miklikowska et al. 2019												
Rekker et al. 2015	SES	−0.22										
	Parental education	−0.29								Urbanization	−0.07	
ten Berge et al. 2017				Intergroup friendship	−0.11		Contact opportunity	−0.04				
							Negative contact/ bully	0.01				
Titzmann et al. 2015	Family financial situation	0.01		Intergroup friendship	−0.02	−0.10				Norms of native group	−0.10	
				Opportunity to engage in intergroup friendship	0.11							
Vezzali et al. 2010										Quantity of contact	−0.37	−0.12
										Quality of contact	−0.64	−0.46
Weber 2019	Parental education	−0.07	−0.11	Intergroup friendship	−0.10	−0.09				Foreigners in the area	0.01	0.02
										Refugees inflows	0.00	−0.01
										Media salience	0.02	−0.01

Note. $T1_v - T2_p$ = cross-lagged correlation between the variable of interest (v) measured at one time (T) point and prejudice (p) measured at a following time point. $T1_p - T2_v$ = cross-lagged correlation between prejudice (p) measured at one time (T) point and the variable of interest (v) measured at a following time point. [a] The results refer to the affective and behavioral dimensions of prejudice, respectively. SDO = Social dominance orientation.

Table 6
Individual, identity, and contextual factors related to prejudice: meta-analytic results of cross-lagged correlations.

	k	$T1_v$-$T2_p$	*k*	$T1_p$-$T2_v$	*Q*
Individual factors					
Adolescent education	3	-0.21^{***} [−0.31, −0.11]			
Social dominance orientation	4	0.34^{***} [0.22, 0.46]	4	0.39^{***} [0.24, 0.54]	0.24
Intergroup anxiety	4	0.28^{***} [0.17, 0.39]	4	0.33^{***} [0.25, 0.42]	0.55
Identity					
National identification	4	0.19* [0.02, 0.35]	3	0.10 [−0.04, 0.24]	0.59
Family					
Parental education	3	-0.18^{**} [−0.31, −0.05]			
SES	4	−0.12* [−0.22, −0.01]			
Parental prejudice	3	0.29^{***} [0.18, 0.41]	3	0.30^{***} [0.18, 0.42]	0.00
Friends					
Intergroup friendship	7	-0.22^{***} [−0.33, −0.12]	5	-0.27^{***} [−0.42, −0.11]	0.21

Note. *k* = number of studies. $T1_v - T2_p$ = cross-lagged correlation between the variable of interest (v) measured at one time (T) point and prejudice (p) measured at a following time point. $T1_p - T2_v$ = cross-lagged correlation between prejudice (p) measured at one time (T) point and the variable of interest (v) measured at a following time point. Q = test to compare $T1_v - T2_p$ with $T1_p - T2_v$ correlations. $^{*}p < .05$, $^{**}p < .01$, $^{***}p < .001$.

practice.

The development of prejudice

Mean levels of prejudice do not change in adolescence

The current meta-analysis provides consistent evidence that mean levels of prejudice against immigrants and ethnic minorities do not change in adolescence. This conclusion has been drawn combing results of 23 longitudinal studies following over time more than 20,000 participants. The current findings extend prior work by Raabe and Beelmann (2011) that reported, by means of their meta-analysis, the developmental trajectory of prejudice in childhood but could not draw conclusions about adolescence because of a dearth of longitudinal studies at that time. Luckily, the increasing interest in this topic, coupled with an approach that investigated a classic aspect of social-psychological research with the lens of developmental frameworks, has provided novel insights on the development of prejudice. Thus, prejudice is already formed in early childhood, reaches a peak in middle childhood (5–7 years), slightly decreases in late childhood (8–10 years), as indicated by Raabe and Beelmann (2011), and it remains stable in adolescence (11–18 years), as highlighted by the current review.

The lack of changes in mean levels of adolescents' prejudice could be the result of competing underlying processes. On the one hand, cognitive and moral development can lead to a reduction of prejudice throughout adolescence. Adolescents' increased cognitive ability can help to dismiss simplified and dichotomous ingroup *versus* outgroup categorization (i.e., we *versus* the immigrants) that is at the basis of prejudice (Albarello et al., 2020) and moral and empathy development can lead to a greater understanding of the needs and experience of others (Miklikowska, 2018). However, on the other hand, these positive effects can be countermanded by social experiences that reduce adolescents' social trust (Flanagan & Stout, 2010) and by heightened exposure to public narratives that depict immigrants as a threat (cf. Albarello, Foroni, et al., 2019). Thus, as a result of multiple processes that operate in different directions, either decreasing or increasing prejudice, overall, no mean-level changes of prejudice could be detected in adolescence.

Importantly, this conclusion does not imply that prejudice does not change for *any* adolescent. It might be possible to identify, within the general population, multiple and distinct developmental trajectories: prejudice might increase in a group of adolescents, remain stable in another group, and decrease in a third one. Future research applying a person-centered approach (Bergman, Magnusson, & El Khouri, 2003; Von Eye, & Bogat, 2006) is needed to understand whether such different subgroups do exist, and which factors predict belonging to each of them. To gain this knowledge, it is of paramount importance to plan interventions targeting specific subgroups of young people, who may be at risk of developing high prejudice throughout adolescence.

Interindividual differences in prejudice are high and increase in adolescence

Another main conclusion that can be drawn from the current meta-analysis is the extent to which interindividual differences on prejudice vary during adolescence. Convergent evidence from 23 studies involving about 19,000 participants indicated that rank-order stability is high, and it increases linearly. This means that the relative placement of individuals within their groups, based on their levels of prejudice, become increasingly consistent during adolescence. Furthermore, rank-order stability was negatively related to the length of the interval of assessment (i.e., it is larger when the time interval is short). Overall, these results are fully in line with literature about adolescents' development, which has consistently found that interindividual differences in multiple psychosocial aspects are well-established in adolescence, tend to increase over time and to be higher over shorter intervals (cf. Meeus, 2019; Roberts & DelVecchio, 2000).

Interestingly, rank-order stability was also moderated by the dimension of prejudice considered. Given that most studies considered either cognitive or affective prejudice only, these two dimensions could be directly compared. The findings pointed out that rank-order stability was higher for cognitive than for affective prejudice. Thus, the extent to which an individual maintains over time, as compared to their peers, a negative attitude against immigrants and ethnic minorities is somehow more stable that the extent to which he/she also holds negative feelings against them.

This result might have important implications for designing interventions. More specifically, interventions might better focus on targeting the affective dimension prejudice, since on this aspect, interindividual differences (e.g., those that can be found among students of a classroom) are less stable than those for the cognitive dimension. Along this line, building upon the principles of the intergroup contact theory (Allport, 1954; Pettigrew & Tropp, 2006; 2008), confirmed by longitudinal studies showing the having friends from the outgroup is a powerful form of direct contact that promotes beneficial intergroup outcomes (e.g., Binder et al., 2009), interventions might focus on creating opportunities for engaging in intergroup friendships in the school context. For instance, teachers could encourage contact and cooperation between students with a different ethnic background in order to reach common goals (e.g., through allocating students to diverse workgroups, employing cooperative learning techniques, and encouraging a mixed seating arrangement; Schachner et al., 2016). Similar strategies to increase contact and cooperation among diverse students can be implemented in sport (e.g., physical education) and cultural (e.g., musical educational program, theatre workshops) activities organized in the school context as well as during extra-curricular activities (Neto, Pinto, & Mullet, 2019; Puente-Maxera, Méndez-Giménez, & Martínez de Ojeda, 2020). The emotional arousal that can be activated in a warm and engaging friendship between adolescents from the majority group and adolescents from ethnic minorities can increase empathic concern and perspective-taking, which are socio-cognitive aspects that, as further discussed below, are negatively related to prejudice.

Correlates of prejudice: individual, identity, and contextual factors

This systematic review highlighted that a large variety of individual, identity, and contextual factors were related to adolescents' prejudice. Individual factors included adolescents' ideologies (social dominance orientation; e.g., Eckstein et al., 2018), intergroup anxiety (Binder et al., 2009), extrinsic goal pursuit (Duriez et al., 2007), which were positively related to prejudice, while adolescents' education level and aspirations (e.g., Rekker et al., 2015; Titzmann et al., 2015), empathy (Miklikowska, 2018), multiple categorization (Albarello et al., 2020), willingness for intergroup contact (Titzmann et al., 2015), and tolerance (Miklikowska, 2016) were negatively related to it. A focus on identity facets highlighted that a strong identification with the national ingroup was positively related to prejudice (Meeus, Duriez, Vanbeselaere, & Boen, 2010; Pehrson et al., 2009), while identification with the common human ingroup was negatively associated with prejudice (Albarello et al., 2020).

With respect to contextual factors, a variety of family, peer, and school factors were taken into consideration. The family context was found to affect adolescents' prejudice because of structural aspects (i.e., parental education and socio-economic status; Miklikowska, 2017) and, more importantly, because family members (parents but also older siblings; Eckstein et al., 2018) can model adolescents' prejudice showing their prejudice and related aspects (social dominance orientation and tolerance; Gniewosz & Noack, 2015; Miklikowska, 2016). In addition to family, friends become key socialization agents in adolescence, and intergroup friendships have been found to be negatively related to adolescents' prejudice (e.g., Binder et al., 2009; Miklikowska, 2017). Only a few studies examined how school factors were related to adolescents' prejudice, tackling the positive effects of teacher support (Miklikowska et al., 2019) that deserve to be further examined in future studies.

As typical in longitudinal studies (Meeus, 2019), most studies measured prejudice as well as all factors expected to be related to it at all time points. Thus, the effects in both directions could be examined and compared (Binder et al., 2009). The meta-analytic findings highlighted that social dominance orientation, intergroup anxiety, identification with the national ingroup, and parental prejudice contributed to increasing adolescents' prejudice at a later time, whereas intergroup friendship contributed to lessening it. Importantly, prejudice had comparable reverse effects on these factors, pointing to consistent bidirectional associations.

This meta-analytic evidence is in line with the results of cross-lagged panel models that indeed showed evidence of mutual influences between prejudice and multiple psychosocial aspects. For instance, Albarello et al. (2020) found not only that social dominance orientation and prejudice influenced each other over time, but also that the effect of prejudice on social dominance orientation was stronger than the reverse, that is, the impact of social dominance orientation on prejudice. Importantly, effects can be unidirectional or bidirectional according to the interval between waves (i.e., it has been argued that social dominance orientation is more malleable to intergroup experiences and related attitudes in the short term than in the long term; Bratt et al., 2016) and to the phase of adolescence being considered.

Furthermore, the negative implications of prejudice for interpersonal and intergroup relationships have been documented. Importantly, prior studies also suggest that some individual and contextual factors can exacerbate such adverse outcomes. For instance, Bayram Özdemir et al. (2016) found that adolescents with high prejudice were more likely to harass their immigrant peers when they had high levels of impulsivity and violent tendencies, whereas, contrary to the authors' expectations, adolescents' perceptions of the school atmosphere did not influence their engagement in ethnic harassment over time. Notably, future studies are needed to clarify further which factors *moderate* the link between prejudice and its negative implications. Such knowledge is of utmost importance to identify which adolescents are more at risk of implementing their negative attitudes against immigrants with discriminatory and coercive acts.

Limitations and suggestions for future research

Studies included in the meta-analysis focused on different dimensions of prejudice (Brown, 2011). The dimensions that were more often investigated were those tapping into affective and cognitive prejudice, while the behavioral dimension received less attention. Interestingly, most studies considered only one dimension (except for Binder et al., 2009). In this way, profile similarity (or profile stability; Roberts, Caspi, & Moffitt, 2001), that is a person-centered index capturing intra-individual consistency in a cluster of psychological dimensions (Meeus, 2019), was never examined. To understand how the different components (i.e., cognitive, affective and behavioral ones) of prejudice are rank-ordered within each individual (e.g., whether an individual reports cognitive prejudice consistently higher than his/her affective and behavioral prejudice), would provide valuable information, in addition to those related

to mean-level changes and rank-order stability, to understand more comprehensively developmental processes (Bornstein et al., 2017). Future longitudinal studies could, thus, consider multiple dimensions of prejudice and examine whether their intraindividual configurations tend to become increasingly stable throughout adolescence, as it has been found for other psychological dimensions (e.g., personality factors, Klimstra et al., 2009; identity processes, Klimstra, Hale, Raaijmakers, Branje, & Meeus, 2010; dimensions of social judgment, Crocetti et al., 2019).

Notably, all studies included in the meta-analysis used explicit measures of prejudice, applying a variety of self-report instruments (e.g., feeling thermometer, Haddock, Zanna, & Esses, 1993; Classical and Modern Racial Prejudice Scale, Akrami, Ekehammar, & Araya, 2000; Tolerance and Prejudice Questionnaire, van Zalk et al., 2013). Hence, it was not possible to examine whether the developmental trajectory of prejudice varied according to the method (i.e., explicit or implicit; Aboud, 2008) used to assess it. Although interventions to reduce implicit forms of bias against ethnic minorities have been developed (e.g., Devine, Forscher, Austin, & Cox, 2012), the developmental trajectory of implicit prejudice remains mostly unknown and more longitudinal studies including implicit (Degner & Wentura, 2010), in addition to explicit, measures of prejudice are strongly needed.

Third, surprisingly we did not find any longitudinal study on prejudice conducted in the US. While there is a rich corpus of longitudinal studies in the US focused on the effects of perceived discrimination in adolescents from ethnic minorities (e.g., Cheon & Yip, 2019; Hou et al., 2015; Stein et al., 2016), the same attention has not been paid, at least in longitudinal research, to the development of prejudice by adolescents from the majority group. Given the importance of taking intergroup perspectives (e.g., Karataş, Crocetti, Schwartz, & Rubini, 2020), in which the interplay between prejudice held by adolescents from the majority group and perceived discrimination reported by adolescents from ethnic minorities is disentangled, future longitudinal studies tackling the development of intergroup attitudes in adolescents from both majority and minority groups in the US are needed.

Finally, in this meta-analysis, we focused on prejudice against a specific target, namely immigrants and ethnic minorities. In this vein, the results of this review cannot be generalized to negative attitudes towards other social groups, such as gender (e.g., women) and age groups (e.g., elderly), sexual minorities, people with mental or physical disabilities. Although similar cognitive and affective processes stemming from in-group favoritism and outgroup derogation and dislike of unfamiliar groups are embedded in the genesis of prejudice towards various social groups (Brown, 2011), the developmental trajectory of negative attitudes can vary as a function of the target group. For instance, it has been shown that while young people nowadays are more welcoming towards sexual minorities than previous generations, they are more negative towards immigrants (Janmaat & Keating, 2019). Furthermore, a prior meta-analysis has shown that child and adolescent training program aimed at reducing prejudice and improving intergroup attitudes were more effective when the target outgroup was based on disability rather than on ethnicity (Beelmann & Heinemann, 2014).

Conclusions

This systematic review with meta-analysis provides a comprehensive synthesis of longitudinal research on adolescents' prejudice against immigrants and ethnic minorities that, especially in recent years, has received increasing attention. First, the results highlighted that, on average, prejudice against this target group does not change in adolescence. Nevertheless, this evidence does not preclude the possibility that different subgroups might exist within the adolescent population, thus indicating the importance of relying on a person-centered approach as the main venue for future research. Second, the findings showed that interindividual differences in adolescents' prejudice are already well established, linearly increase with age, are inversely related to the time-lag between assessments and are also moderated by the dimension of prejudice at stake (being stronger for the cognitive dimension of prejudice as compared to the affective dimension). Finally, several individual, identity, and contextual factors were found to be reciprocally related to adolescents' prejudice. Among the factors that received the most attention in primary studies, social dominance orientation, intergroup anxiety, identification with the national ingroup, and parental prejudice were found to be positively related to prejudice, whereas it was negatively associated with intergroup friendship. Additional longitudinal research is needed to unravel further how multiple psychosocial factors are related to prejudice over time, and how prejudice might also affect them.

The results of this meta-analysis have significant theoretical and practical implications. From a theoretical stance, the results suggest that the normative developmental pattern of adolescents' prejudice against immigrants and ethnic minorities, characterized by average stability, might be the result of competing individual and social factors. On the one hand, cognitive, moral, and social-cognitive developmental precursors can lead to a decrease in prejudice. However, these positive effects are likely to be countermined by public and social discourses depicting immigrants as a threat and being particularly relevant for young people considering their future career prospects in the job market (Janmaat & Keating, 2019). Thus, this evidence highlights the necessity of integrating multiple levels of analyses to understand the developmental trajectory of prejudice.

Likewise, this study has important practical implications. Since several individual and contextual factors are related to adolescents' prejudice, interventions require a multi-componential design in order to maximize their effectiveness. In this vein, while activities with adolescents themselves (e.g., empathy training) are of paramount importance, activities targeting also prejudicial attitudes transmitted by the parents and fostering friendships with peers with an immigrant background and belonging to different ethnic groups are likely to lessen adolescents' prejudice. Furthermore, on the basis of the evidence presented in this meta-analysis regarding the bidirectional associations between prejudice and individual and contextual factors, it is possible to assume that virtuous circles are likely to arise (e.g., intergroup friendships can contribute to reducing prejudice; and in turn, adolescents with lower prejudice can show a higher willingness to establishing intergroup friendships). Indeed, a multifaceted approach is necessary for developing evidence-based interventions aimed at promoting positive intergroup relationships in modern multicultural societies.

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Appendix A. Supplementary material

Supplementary data to this article can be found online at https://doi.org/10.1016/j.dr.2021.100959.

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