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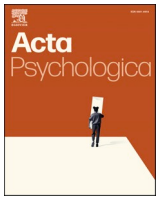

Priming attachment and diversity ideologies: Effects on ethnic bias in children's altruistic sharing in a dictator game

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ABSTRACT

Children often show a positive ingroup bias in altruistic behaviors such as sharing. Insight in factors related to ethnic bias in sharing can help towards understanding the origins of inequality in the distribution of resources in society. The present study examined the effect of priming secure attachment (versus positive affect) and multiculturalism (versus color-evasiveness) on ingroup bias in dominant ethnic group children's altruistic sharing. One hundred twenty-five White Dutch children (45 % boys, 55 % girls) between 7 and 11 years old (M_{age} = 8.47, SD_{age} = 0.87) participated in a Dictator game after being primed. The Dictator game was played against three same-gender children with different ethnic backgrounds (White, Black, Middle Eastern). Results support the idea that priming secure attachment and multiculturalism can decrease ingroup bias in dominant ethnic group children's altruistic sharing, although the effects do not strengthen each other and are effective in situations with different trade-offs and interaction partners. Future research is needed to disentangle the effectiveness of secure attachment and multiculturalism messages in different sharing situations and with interaction partners with different ethnic backgrounds. Results from the present study provide starting points from which to further examine which messages potentially positively impact children's interethnic relations.

1. Introduction

Children tend to show a bias favoring their ingroup in altruistic behaviors (Over, 2018), referring to a specific form of prosocial behaviors that benefit others but not oneself (Dovidio et al., 2017). More specifically, some studies reveal a tendency for an ingroup bias in sharing behaviors among White American and Canadian children (the dominant ethnic group; Friesen et al., 2012; Renno & Shutts, 2015). This ingroup bias in altruism among children from the dominant ethnic group can contribute to (maintaining existing) inequalities between ethnic groups. Research with adults has shown that the priming of attachment security can increase altruistic behaviors (e.g., Mikulincer & Shaver, 2005), and improve interethnic attitudes (e.g., Boag & Carnelley, 2016). In addition, priming a multiculturalist ideology, as compared to a color-evasive ideology, has more positive effects on adults' interethnic relations (Whitley & Webster, 2019). Although priming can effectively be used with children as well (Stupica & Cassidy, 2014), to our knowledge no studies have examined the potential effect of priming diversity- and attachment-related messages on children's intergroup behavior. Therefore, the present study examines the effects of secure attachment and diversity ideology primes on ethnic ingroup bias in altruistic sharing behaviors of children from the dominant ethnic group in the Netherlands (White Dutch). Results from the present study will provide insight in which messages have the potential to positively impact children's interethnic relations. Understanding how to decrease bias in altruism towards members from different ethnic groups among children from a dominant ethnic group is an important step fostering equal and just distribution of resources in society.

1.1. Children's prosocial behavior and altruism

Children already display prosocial behaviors (behaviors that benefit others) before turning two years old (Dunfield et al., 2011; Svetlova et al., 2010; Warneken & Tomasello, 2009). Prosocial behaviors can take many forms, such as comforting, helping, and sharing (Dunfield et al., 2011). Some studies show that the tendency to display prosocial behavior increases as children get older (e.g., Benenson et al., 2007; Eisenberg et al., 2006), whereas others show that prosocial behaviors become more selective over time (Hay, 1994). In addition, there are stable individual differences that already start in early childhood

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(Eisenberg et al., 1999). Sharing in particular involves recognizing someone else's need and, if sharing is costly, overcoming one's own desires. Sharing can therefore also be altruistic. Altruism has been defined in different ways, but in social psychology generally refers to prosocial behaviors that do not benefit oneself (Dovidio et al., 2017). In terms of altruism development, children are argued to have reached the final stage at age 7, in which altruistic behaviors are not only led by empathic concerns for others, but also by normative and moral evaluations (Dahl & Paulus, 2019).

1.2. Prejudice and bias in children

In the same period of children's development (5–7 years old), explicit prejudice towards members from underrepresented ethnic groups is generally at its peak (Raabe & Beelmann, 2011). According to Social Identity Development Theory and work by Aboud (2003), ethnic prejudice among children develops in different phases, in which a preference for the ingroup (ingroup favoritism) precedes negative evaluations of outgroups (outgroup derogation; Nesdale, 2004). Similar ingroup bias is also found at an implicit level from a young age, which, in contrast to explicit bias, remains fairly stable (Dunham et al., 2008). Ingroup favoritism and outgroup derogation tendencies are correspondingly found in children's sharing (Over, 2018). For example, in both costly and non-costly situations, some children share more with children who are in the same class or from the same school (Chiang & Wu, 2015; Fehr et al., 2008; Fehr et al., 2013), or with peers who are manipulated to be in the same trivial social group (Gummerum et al., 2009; Vaughan et al., 1981). In addition, children tend to give more resources to people who speak the same language in non-costly situations (Angerer et al., 2017; Kinzler et al., 2012).

Research on sharing with members from different ethnic groups is somewhat mixed. Some studies show an ethnic bias in sharing. For example, in societies where the dominant ethnic group is White (Canada and the United States), White 5- to 8-year-old children tend to share more with members from their ethnic ingroup than with members from other ethnic groups in a costly sharing situation (Friesen et al., 2012), and a sample of mostly White 3- to 5-year old children gave more resources to White than Black children in a non-costly sharing situation (Renno & Shutts, 2015). Similar pro-White biases are found in both costly and non-costly sharing situations among White American children from preschool age to fifth grade (Zinser et al., 1981), and among an ethnically diverse American sample of 4- to 6-year old children (Mandalaywala et al., 2021). In other studies, in contrast, White American children did not differentiate between ethnic groups in a non-costly sharing situation (Kinzler & Spelke, 2011), or gave more to ethnic outgroup members in costly sharing situations (List et al., 2017; Zinser et al., 1976). Similarly, children in some instances help (a related prosocial behavior) outgroup members more than ingroup members (Sierksma et al., 2018). Nonetheless, researching ethnic ingroup bias in sharing among White children is particularly relevant in light of structural inequalities among ethnic groups, to which ingroup bias in altruism among members from the dominant ethnic group can contribute. Given that ethnic biases in behaviors in general are often portrayed unconsciously, the present study uses a definition of altruistic sharing that does not define the underlying motivation. Furthermore, both costly and non-costly situations are relevant to behaviors that might change or maintain existing structural inequalities among ethnic groups, based on zero-sum beliefs (i.e., beliefs that gain for one group necessarily involves loss for another group; Stefaniak et al., 2020).

1.3. Attachment

Individual differences in sharing behavior have numerous predictors, among which children's attachment to their caregivers (Gross et al., 2017). Attachment refers to the emotional bond that forms between a child and caregiver in early infancy, and the quality of this relationship can be categorized as a secure or different insecure attachment styles (Ainsworth et al., 2015). Attachment theory states that children develop internal working models of themselves and their attachment figures to help predict and understand their environment, which in turn guide how people engage in social interactions later in life (Bowlby, 1962/1982, 1973). These internal working models are one pathway through which attachment is theorized to impact prosocial behavior: secure internal working models contribute to sharing behaviors because they involve expectations of responsiveness and good intentions of interaction partners (Gross et al., 2017). In addition, Gross et al. (2017) propose that the higher levels of emotion regulation skills of securely attached children and their heightened effortful control positively influence prosocial behavior. Indeed, empirical research on the association between attachment and sharing among children shows that attachment security is positively related to sharing, specifically under conditions that require higher emotion regulation capacities (i.e., costly sharing, Beier et al., 2019; Paulus et al., 2016). In addition, attachment might only be related to non-costly sharing for some children (i.e., with a specific dopamine-related gene, Bakermans-Kranenburg & Van Ijzendoorn, 2011). At the same time, attachment security is related to more positive views of interethnic relations: previous studies with adolescents and adults have shown that securely attached individuals have lower levels of ethnic prejudice and more positive attitudes towards integration (Di Pentima & Toni, 2009; Hofstra et al., 2005; Van Oudenhoven & Hofstra, 2006). Carnelley and Boag (2019) hypothesize that in response to outgroup members, securely attached individuals perceive less threat, and engage in more high quality intergroup contact, resulting in lower levels of prejudice, whereas insecurely attached individuals perceive more threat and therefore distance and fear, resulting in higher levels of prejudice.

Whereas these studies focus on the relation between individual attachment styles and other constructs, another line of research has examined the effects of attachment-related priming. Through priming, individuals are exposed to stimuli that are intended to activate mental representations of secure attachment or asked to visualize interactions with a partner that fits the description of a secure relationship (Gillath & Karantzas, 2019). The effect of these primes can be compared to the effect of control primes, which can either be neutral, reflect insecure attachment styles, or evoke positive affect (Gillath & Karantzas, 2019). Studies with adults have shown that security primes result in higher empathy and compassion, more concern for others, and more altruistic behaviors (e.g., Bartz & Lydon, 2004; Mikulincer et al., 2005; Mikulincer, Gillath, et al., 2001). Moreover, priming security in adults of various ethnic and religious backgrounds results in reduced negative outgroup emotions and prejudice, reduced discriminatory and aggressive behaviors towards outgroup members, and increased cultural empathy (Boag & Carnelley, 2016; Mallinckrodt et al., 2013; Mikulincer & Shaver, 2001; Saleem et al., 2015). Priming attachment security thus has the potential to increase altruistic behaviors, such as sharing, and improve intergroup relations simultaneously.

Few studies, however, have researched the effects of security priming in children, although priming can be effective in child research (Stupica & Cassidy, 2014), and can even modify their social behaviors (Over & Carpenter, 2009). One study did show that a school intervention including attachment-security priming resulted in more altruistic behaviors in 6- to 7-year old children in Argentina (Lozada et al., 2014). Although the effects of security priming in this study cannot be separated from other aspects of the intervention (i.e., relaxation sessions and cooperative games, Lozada et al., 2014), the effects of security priming on altruistic behaviors of children may be similar to those in adults. Furthermore, although to our knowledge no study directly examined the effect of security priming on interethnic relations among children, priming security has shown to decrease 6- to 7-year old White American children's physiological fear response to threatening stimuli, irrespective of their own attachment style (Stupica et al., 2019). Given that the perception of outgroup threat plays an important role in interethnic prejudice in children (Nesdale, Durkin, et al., 2005; Nesdale, Maass,

et al., 2005), this suggests that security priming also reduces prejudice in children.

1.4. Diversity ideologies

Another method to potentially reduce interethnic bias and improve children's outgroup attitudes relates to diversity ideologies, i.e., beliefs about ethnic diversity in society (Rattan & Ambady, 2013). Two common diversity ideologies are color-evasiveness and multiculturalism. Color-evasiveness refers to beliefs that ethnic prejudice can be reduced by not noticing or stressing ethnicity, and is based on the idea that prejudice stems from an emphasis on ethnicity (Rosenthal & Levy, 2010). This ideology, however, is described as a form of racism in itself, as it ignores experiences of racism and justifies existing inequalities (Neville et al., 2013). Multiculturalism refers to beliefs that ethnic prejudice can be reduced by increased knowledge and appreciation for different ethnic groups, as its proponents argue that prejudice stems from a lack of intergroup knowledge and appreciation (Rosenthal & Levy, 2010). Research on adults has shown that multiculturalism is related to lower levels of interethnic prejudice than color-evasiveness (Leslie et al., 2020; Whitley & Webster, 2019), and that color-evasiveness is related to more negative behaviors in interethnic interactions by members of dominant ethnic groups (Apfelbaum et al., 2008; Holoien & Shelton, 2012; Norton et al., 2006; Vorauer et al., 2009). There is also evidence that children are sensitive to diversity ideologies. Parenting practices that resemble multicultural or color-conscious rather than color-evasive ideologies are related to more positive interethnic attitudes of children from the dominant ethnic group (e.g., Mesman et al., 2022; Vittrup & Holden, 2011). In addition, exposure to multicultural ideologies at school relates to more positive interethnic attitudes (Verkuyten & Thijs, 2013), and White Dutch children of mothers who endorse multiculturalism more strongly show less prejudice (de Bruijn et al., 2021).

Similar to research on attachment, the effects of diversity ideologies on interethnic relations have been examined using primes. Although generally effect sizes of studies using primes are smaller than those of correlational research, meta-analytic patterns are similar in that multiculturalism is more beneficial for reducing interethnic prejudice than color-evasiveness (Whitley & Webster, 2019). Primes often consist of written texts conveying different diversity ideologies (mostly based on work by Wolsko et al., 2000), or video-clips in which multicultural aspects are (not) acknowledged and celebrated (Kauff et al., 2013). The framing of these ideologies is important for the effect that priming has on interethnic relations. Specifically, multiculturalism has stronger prejudice-reducing effects among White Americans when it is conveyed in abstract terms (i.e., why multiculturalism is important) rather than concrete terms (i.e., how multiculturalism can be achieved; Yogeeswaran & Dasgupta, 2014). Different interpretations of concrete forms of multiculturalism also have different effects: it is received more positively when presented as learning opportunities than when presented as policies or general implementation methods by White Americans with high levels of ethnic identification (Rios & Wynn, 2016).

Like attachment priming research, studies on priming diversity ideologies with children are limited. One study exposed school children to a series of illustrations guided by two different prerecorded audio narratives, resembling multiculturalism and color-evasiveness (Apfelbaum et al., 2010). Results showed that children (predominantly White American) exposed to an abstract multicultural narrative were more sensitive to racism and more likely to describe the racist event in such a way that would promote intervention by teachers than children exposed to the color-evasive mindset (Apfelbaum et al., 2010). All evidence combined suggests that priming multiculturalism is likely to evoke more positive effects on interethnic relations among children than color-evasiveness. The question is whether these patterns also generalize to other aspects of interethnic relations, such as sharing with members of ethnic outgroups.

1.5. The present study

In the present study we examine the effect of priming secure attachment and diversity ideologies on dominant ethnic group children's ingroup bias in altruistic sharing behaviors. It is expected that (1) secure priming, as compared to positive affect priming, is associated with less White ingroup bias in altruistic sharing behaviors, specifically in costly sharing situations, and that (2) multiculturalism priming, as compared to color-evasiveness priming, is also associated with less White ingroup bias in altruistic sharing behaviors (irrespective of the costly or non-costly nature of the sharing situation). Apart from these expected main effects, there may also be an interaction effect. In adults, attachment security is positively related to openness to new information and to using new information in making social judgments (Mikulincer, 1997). It is unclear whether this also holds for priming attachment security and for children. Therefore, we will explore if (3) there is an interaction effect between the attachment and diversity-related primes, specifically whether the effect of the multiculturalism (vs. color-evasiveness) prime on White ingroup bias in children's altruistic sharing behaviors is stronger when combined with the attachment security (vs. positive affect) prime. Results from the present study will provide insight in which messages have the potential to positively impact children's interethnic relations.

2. Method

2.1. Sample

Children and their parents participated in a three-wave study (each approximately one year apart) on the development of interethnic prejudice in children. In this larger study, families from three different ethnic backgrounds (White Dutch, Afro-Dutch, and Turkish-Dutch) participated. Families were recruited in various ways: face-to-face at events and locations aimed at families and children or at the ethnic target groups, through organizations that are specifically aimed at the ethnic target groups, online through social media, or through snowballing. Parents were informed that the focus of the study was on children's view on diversity in society, and that participation consisted of three waves of data collection. Inclusion criteria were that (1) the child was between 6 and 10 years old at the start of the research, (2) did not have severe developmental disorders, and (3) lived in the urban Western region of the Netherlands. For parents who participated in the larger study, inclusion criteria were that (1) they were the biological parents, (2) living with the child, and (3) did not have severe mental or physical illnesses. The data in the present study were collected during the second wave. The present study includes only White Dutch children, because we are most interested in altruistic sharing behaviors of children from the dominant ethnic group, and the sample sizes of Afro- and Turkish-Dutch children were too small for the analyses needed in the present study (n = 42 and 56, respectively). For the White Dutch children, (grand)parents had to be born in a North-Western European country. Some exceptions were made if grandparents were born abroad during a temporary stay, (grand)parents did not identify with the other country, and their ethnic appearance was White.

A total of 126 White Dutch children participated in the second wave, however, data of the dictator game was missing for one case, resulting in a total sample of $N = 125$ for the current analyses. Children (45 % boys, 55 % girls) were between 7 and 11 years old ($M = 8.47$, $SD = 0.87$) during the second wave. At the start of the research (information gathered at the first wave), most of these children were living with two parents (90 %). Most of the parents (94 %) were born in the Netherlands, not religious (72 % of mothers, 77 % of fathers), and highly educated (i.e., bachelor's degree/higher vocational education or higher, 87 % of mothers, 70 % of fathers). Families' yearly income was above the national mode (>40.000; Centraal Planbureau, 2021) for 75 % of the families. About half of the children (48 %) attended schools with

relatively limited ethnic diversity (i.e., 10 % or less of the students at school had a non-Western migration background).

2.2. Materials

2.2.1. Priming

Children were placed in front of a laptop that the researcher brought (during the face-to-face visits) or were seated behind the families' computer or laptop (during the online visits). Children were exposed to two primes: one attachment-related (security or positive affect) and one diversity-related (multiculturalism or color-evasiveness, see Table 1 for sample distribution). Children were randomly allocated to conditions when appointments for research visits were made. Due to some drop-out after appointments were made, sample sizes across conditions are not perfectly equal. Within each condition, the order of the primes was counterbalanced. Children were instructed to look at the screen and listen carefully to the audio. On the screen, a Microsoft PowerPoint presentation was displayed, starting with a black background and white cross in the middle to capture children's attention. After 3 s, children saw the illustration of the first prime. The audio-recorded messages started playing automatically. All audio messages were voiced by the same female research assistant.

The attachment-related primes lasted for 39 s, and the diversity-related primes lasted for 35 s. In between the primes, children again saw the black background with white cross for 3 s. When children started to look away or were inattentive, researchers reminded them of their task to look at the screen and listen to the audio.

2.2.1.1. Attachment-related prime. During the attachment-related primes, children either saw a drawing of a mother comforting a child (security prime) or a smiley face (positive affect prime). A drawing of a mother and child was selected for the security prime, because this would be a recognizable relationship for all participating children. Previous research similarly included a picture of a mother and infant (e.g., Dutton et al., 2016; Mikulincer, Hirschberger et al., 2001). A silhouette was used, so that ethnicity of the mother-child dyad and gender of the child were unrecognizable, increasing chances that children could relate to the picture. The illustration was combined with a security-activating description similar to previously used security-activation stories (e.g., Deng et al., 2016; Mikulincer, Gillath et al., 2001): an audio message highlighting the responsiveness and support of the mother towards the child. A positive affect prime was used as a control because secure attachment is related to positive affect, which in turn affects intergroup bias (Mikulincer & Shaver, 2001). Comparing the secure attachment prime to the positive affect prime therefore eliminates general positive affect effects. The audio message used as positive affect prime was designed to linguistically mirror the security prime as closely as possible and described positive emotions and feelings. The drawings and audio messages can be found in the Appendix.

2.2.1.2. Diversity-related prime. During the diversity-related primes, children saw a drawing of children with different ethnic appearances playing in the park. The audio message of the multiculturalism prime described that the children had different ethnic backgrounds, mentioned cultural differences, and emphasized how all different cultures are important. The color-evasiveness message was designed to linguistically mirror the multiculturalism prime as closely as possible. It described differences between children but ethnic or cultural differences were avoided, and reflects the "uniqueness" form of color-evasiveness (Rosenthal & Levy, 2010). The drawings and audio messages can be found in the Appendix.

Table 1
Priming conditions and sample sizes.

		Attachment-related	
		Security	Positive affect
Diversity ideology-related	Multiculturalism	$n = 35$	$n = 34$
	Color-evasiveness	$n = 31$	$n = 25$

2.2.2. Dictator game

The dictator game used was based on work by Fehr et al. (2008). Procedures were similar to that study: all children participated in three rounds (prosocial, envy, and sharing). Children played these rounds three times (i.e., nine rounds in total), with one opponent at a time. The opponents were three same-gender children with different ethnic backgrounds (White, Black, Middle Eastern, based on large ethnic groups in the Netherlands). A pilot study was conducted among 83 adults (37 % Dutch, 28 % Turkish-Dutch, 24 % Afro-Dutch, 11 % Chinese-Dutch; 37 % male and 63 % female) between 18 and 53 years old ($M = 27.51$, $SD = 6.93$), who were asked to classify the ethnicity of the children, and rate their cuteness and attractiveness (scale 0–10). Results from this pilot showed that the White children were mostly perceived as Dutch (99–100 %), the Black children were mostly perceived as Surinamese and Caribbean (92–99 %), and the children of Middle Eastern descent were mostly perceived as Moroccan and Turkish (88–95 %). The participants rated the Black children ($M = 6.05$, $SD = 1.73$) as more attractive than the Middle Eastern ($M = 5.79$, $SD = 1.93$, $t(81) = 2.11$, $p = .038$) and White children ($M = 5.75$, $SD = 1.81$, $t(82) = 2.25$, $p = .027$). In addition, the Middle Eastern children were rated less cute ($M = 5.64$, $SD = 1.71$) than the Black children ($M = 6.02$, $SD = 1.61$, $t(81) = 3.08$, $p = .003$), whereas cuteness of the White children did not differ significantly from the rest ($M = 5.93$, $SD = 1.72$).

The order of the opponents was counter-balanced, whereas the order of the rounds was fixed. The task started with a practice trial, during which the researcher explained the choices in each round, and asked questions to ensure that the child understood the task. If a child did not understand at first, the researcher repeated and reformulated the explanation. An example of the set-up is shown in Fig. 1. During the face-to-face visits, the researcher sat next to or across from the child. In front of the child were two pages: each page displayed a circle with an arrow pointing towards the child, and a circle with an arrow pointing towards the opponent. A picture of an opponent (either a silhouette during the practice round, or a picture of a Black, White or Middle Eastern child) was placed above the two pages. Coins of 20 eurocents were used as tokens and displayed within the circles on the pages. Small money-boxes were used to hold the coins during the game, and children were told that they could keep the money after the task. In each round, children were asked to point out the page they wanted to choose, thereby choosing the number of coins the opponent and the participating child themselves received. During the digital visits, the set-up was recreated in Microsoft PowerPoint and animations and sounds of coins were used to recreate the setting. Moreover, in addition to pointing towards the pages with the mouse avatar, we added colored circles to the pages that could be referred to (Fig. 1). The money 'won' by the child was transferred to the bank account of the parent after these digital visits.

In contrast to Fehr et al. (2008) the focus of the present study was on altruistic rather than egalitarian allocations, resulting in a different scoring of choices. In the prosocial round, the altruistic choice was 1 coin for yourself and 1 coin for the other (versus 1 for yourself and none for the other). In the envy round, the altruistic choice was 1 coin for yourself and 2 coins for the other (versus 1 for yourself and 1 for the other). In the sharing round, the altruistic choice was 1 coin for yourself and 1 coin for the other (versus 2 for yourself and none for the other). Therefore, only in the sharing round the altruistic choice was costly for the participating child. White ingroup bias in altruism was calculated for the two ethnic outgroups separately. White ingroup bias in altruism in the separate rounds was calculated by subtracting the occurrence of altruistic choices in a game against an outgroup player from the occurrence of altruistic choices in a game against the ingroup player (possible range of −1 to 1, higher scores reflecting stronger White

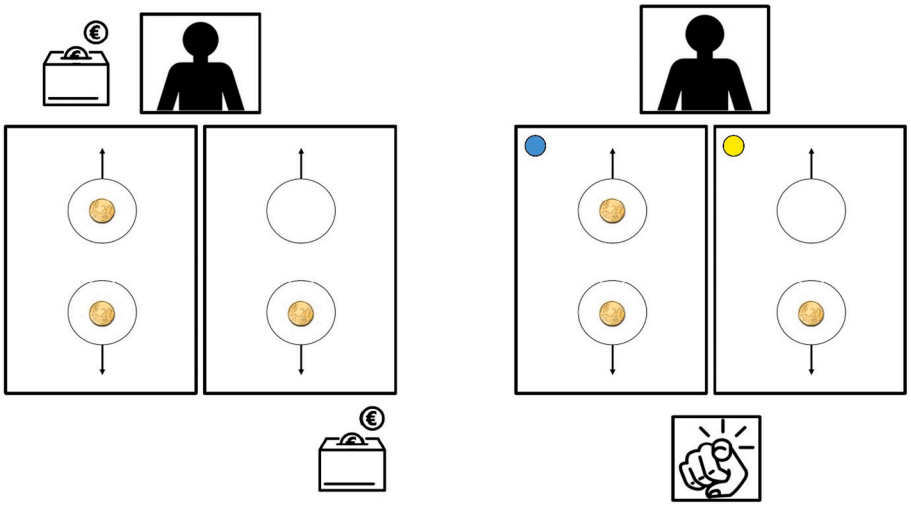

Fig. 1. Set up of the dictator game from the child's viewpoint during real-life (left) and digital visits (right).

ingroup bias). In addition, White ingroup bias in the total number of altruistic choices (i.e., collapsing data from all rounds) was used in the analyses to examine the robustness of priming effects, and was calculated by subtracting the total number of altruistic choices in a game against an outgroup player from the total number of altruistic choices in a game against the ingroup player (possible range of −3 to 3, higher scores reflecting stronger White ingroup bias).

2.2.3. Demographic variables

Child age, child gender, and socioeconomic status were selected as potential covariates based on previously established associations with prosocial or altruistic behaviors (Benenson et al., 2007; Fehr et al., 2008; Fehr et al., 2013). Child gender was reported by mothers as either male or female. Mothers furthermore reported their subjective socioeconomic status using the MacArthur Scale of Subjective Social Status (Adler et al., 2000). They were presented with a drawing of a ladder with 10 steps, the top representing people who are best off in terms of money, education, and work, and the bottom representing people who are worst off in these terms, and asked to select the step that best represents their position.

2.3. Procedure

Most children (82 %) were visited at home by a researcher, the others participated via a digital platform due to the covid-19 pandemic. The digital visits were designed to mirror the home visits as closely as possible. Using the digital platform, the researcher and child could hear and see each other and the researcher was able to share content on the screen. Part of the visit was dedicated to collecting longitudinal data as part of the three-wave larger research project. Another part of the visit consisted of an experimental set-up, as reported on in the present study. All visits started with a short explanation to both parent and child. After obtaining consent from (a) parent(s), children performed various standardized child tasks with the researcher. Before performing the dictator game, children were exposed to the primes. The child part of the visit lasted about 1 h, parents were additionally interviewed for about half an hour. Other child tasks included implicit association tasks, categorization tasks, social preference tasks, and a cyberball game. During the face-to-face visits, children received a small gift at the end of the home visit and parents received a gift card for €5. During the digital visit, parents received a small amount of money via bank transfer (€7,50 plus the amount 'won' by the child during the dictator game). The study's procedures and methods were approved by an Ethics evaluation committee.

2.4. Analyses

Preliminary analyses include two-way analyses of variance (ANOVAs) to examine whether there were any differences between priming conditions in child age and socioeconomic status, and chi-square tests to examine whether there were associations between priming conditions and child gender. Data inspection showed that residuals of socioeconomic status followed a non-normal distribution, even after winsorizing one outlier (defined as |3.29| SD from mean). The analysis is still robust, however, given that according to the central limit theorem means are approximately normally distributed when group sample sizes are larger than 10 (Norman, 2010). Results are used to determine whether randomization was successful, or whether child gender, child age, and socioeconomic status should be included as covariates in the main analyses.

The main analyses start with two two-way ANOVAs to examine the effects of the different priming conditions (main effect of diversity-related prime, main effect of attachment-related prime, and interaction effect) on White ingroup bias (against the Middle Eastern and against the Black player separately) in the total number of altruistic choices. Next, six two-way ANOVAs were conducted to examine similar effects of the different priming conditions on White ingroup bias in altruistic choices in each round. Data inspection revealed that residuals of White ingroup bias against the Middle Eastern player in the sharing round were non-normally distributed in one of the conditions, but this again should not harm the robustness of the analysis according to the central limit theorem (Norman, 2010). For two of the ANOVAs (on White ingroup bias against the Middle Eastern player in the prosocial round, and on White ingroup bias against the Black player in the sharing round), Levene's tests of equality of error variances showed that the assumption of homogeneity was violated. The analyses were continued, however, since the *F* test is thought to be rather robust to this violation when sample sizes are fairly close to one another, the ratio does not exceed 3, samples sizes are >20, and scores within the groups are normally distributed (Jaccard, 1998). Order effects were not included in the analyses, given that these were not our main interest and our sample size was limited. Data and codes are available at https://doi.org/10.17026/dans-24t-2tts.

3. Results

3.1. Preliminary analyses

Chi-square tests revealed that child gender was not related to type of diversity prime ($\chi^2(1) = 0.48$, $p = .489$), type of attachment-related

prime ($\chi^2(1) = 0.02$, $p = .876$), or combined prime condition ($\chi^2(3) = 0.92$, $p = .820$). In addition, there were no differences in child age between the types of diversity prime ($F(1, 121) < 0.01$, $p = .992$), types of attachment-related prime ($F(1, 121) = 0.05$, $p = .831$), or combined prime condition ($F(1, 121) = 0.01$, $p = .920$). Similarly, there were no differences in subjective socioeconomic status between the types of diversity prime ($F(1, 120) = 0.06$, $p = .814$), types of attachment-related prime ($F(1, 120) = 0.22$, $p = .637$), or combined prime condition ($F(1, 120) = 3.19$, $p = .077$). Therefore, randomization was successful, and these variables are not included in the main analyses aimed to examine effects of the primes on altruistic behaviors.

3.2. Main analyses

Fig. 2A shows the degree of White ingroup bias in the number of altruistic choices in the different conditions. There was a significant main effect of attachment-related priming on White ingroup bias against the Middle Eastern player ($F(1, 121) = 4.77$, $p = .031$, partial $\eta^2 = 0.038$): bias was lower in the secure attachment (marginal mean -0.07 ± 0.11) than the positive affect conditions (marginal mean 0.28 ± 0.12). In contrast, there was no significant main effect of diversity-related priming ($F(1, 121) = 0.18$, $p = .676$, partial $\eta^2 = 0.001$) nor an interaction effect ($F(1, 121) = 2.63$, $p = .108$, partial $\eta^2 = 0.021$). In addition, there was no main effect of attachment-related priming ($F(1, 121) = 2.59$, $p = .110$, partial $\eta^2 = 0.021$), or diversity-related priming ($F(1, 121) = 0.51$, $p = .478$, partial $\eta^2 = 0.004$), nor an interaction effect ($F(1, 121) = 2.28$, $p = .134$, partial $\eta^2 = 0.018$) on White ingroup bias against the Black player.

Fig. 2B shows White ingroup bias against the Black and Middle Eastern players in each round in the different conditions. Tables 2 and 3 show the results from the ANOVAs examining the priming effects on White ingroup bias in altruistic choices in each round. Two significant main effects emerged, whereas none of the interaction effects reached significance. There was a significant main effect of the attachment-related prime on White ingroup bias against the Middle Eastern player in the prosocial round: bias was lower in the secure attachment (marginal mean 0.01 ± 0.06) than the positive affect condition (marginal mean 0.19 ± 0.07). Moreover, there was a significant main effect of the diversity-related prime on White ingroup bias against the Black player in the envy round: bias was lower in the multiculturalism (marginal mean -0.15 ± 0.06) than the color-evasiveness condition (marginal mean 0.02 ± 0.06).

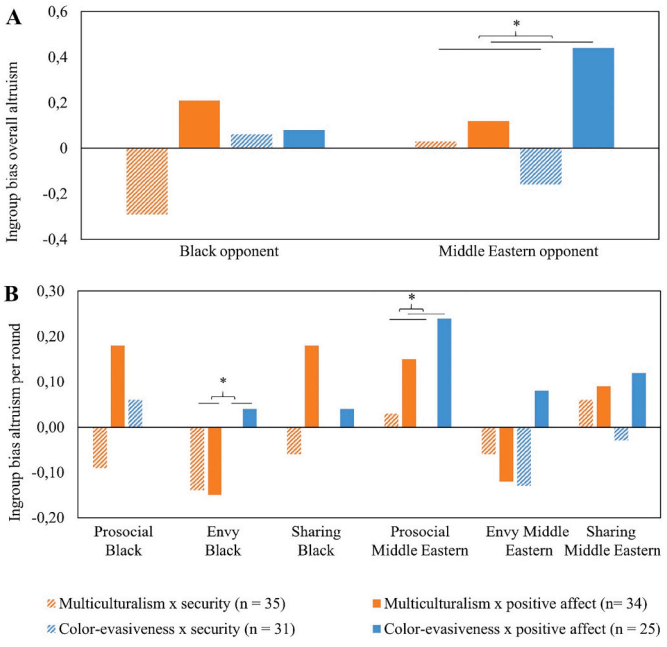

Fig. 2. Ingroup bias in total number of altruistic choices (A) and in altruistic choices per round (B) for each opponent split out per priming condition. *Note.* *$p < .05$. Empty bars reflect means of 0.

Table 2
Results from ANOVAs on ingroup bias against the Middle Eastern player.

		F	*df*	*p*	Partial η^2
Prosocial game	Diversity prime	0.13	1, 121	.720	0.001
	Attachment prime	4.01	1, 121	.048	0.032
	Diversity × attachment	0.46	1, 121	.499	0.004
Envy game	Diversity prime	0.48	1, 121	.491	0.004
	Attachment prime	0.67	1, 121	.416	0.005
	Diversity × attachment	2.20	1, 121	.141	0.018
Sharing game	Diversity prime	0.15	1, 121	.697	0.001
	Attachment prime	1.54	1, 121	.216	0.013
	Diversity × attachment	0.67	1, 121	.413	0.006

Table 3
Results from ANOVAs on ingroup bias against the Black player.

		F	*df*	*p*	Partial η^2
Prosocial game	Diversity prime	0.02	1, 121	.894	0.000
	Attachment prime	1.02	1, 121	.314	0.008
	Diversity × attachment	2.79	1, 121	.098	0.023
Envy game	Diversity prime	3.96	1, 121	.049	0.032
	Attachment prime	0.05	1, 121	.829	0.000
	Diversity × attachment	0.07	1, 121	.790	0.001
Sharing game	Diversity prime	0.27	1, 121	.605	0.002
	Attachment prime	3.19	1, 121	.076	0.026
	Diversity × attachment	1.60	1, 121	.209	0.013

3.3. Sensitivity power analysis

Sensitivity power analyses were conducted for the main analyses. Using G*Power, we established that we were able to detect a minimum effect size of $f = 0.25$ (partial $\eta^2 = 0.059$) with the ANOVAs with our sample size of $N = 125$, 80 % power and α set at 0.05.

4. Discussion

Interethnic bias among children from dominant ethnic groups peaks in middle childhood (Raabe & Beelmann, 2011), and is sometimes also found in their altruistic sharing behaviors, as children tend to share more with ingroup and less with outgroup members (Friesen et al., 2012; Renno & Shutts, 2015). Insight in how to diminish ethnic bias in such altruistic behaviors can help towards equality in the distribution of resources in society. The present study therefore examined the effect of priming secure attachment and diversity ideologies on dominant ethnic group children's ingroup bias in altruistic sharing. The results support the idea that priming secure attachment (versus positive affect) and priming multiculturalism (versus color-evasiveness) can diminish ethnic ingroup bias in dominant ethnic group children's altruistic sharing, although not in all sharing situations (i.e., depending on the trade-off). In addition, priming secure attachment only had an effect on White ingroup bias as compared to the Middle Eastern outgroup and priming multiculturalism only had an effect on White ingroup bias as compared to the Black outgroup.

Based on previous research establishing a positive link between secure attachment and sharing in children (Beier et al., 2019; Paulus et al., 2016), and research showing positive effects of security priming on altruistic behaviors and interethnic attitudes among adults (e.g., Boag & Carnelley, 2016; Mikulincer et al., 2005), priming secure attachment as compared to positive affect was expected to have a negative effect on White ingroup bias in altruistic sharing behaviors of children. Results from the present study align with this part of hypothesis: children who were exposed to the secure attachment prime

displayed less White ingroup bias in altruistic sharing than children who were exposed to the positive affect prime when sharing with the ingroup member was compared to sharing with the Middle Eastern outgroup member. This was true for overall altruistic sharing and altruistic sharing in the prosocial round specifically. The bias-reducing effect of priming secure attachment on altruism could be explained by the fact that secure attachment relates to better theory of mind skills (Szpak & Białecka-Pikul, 2020). Although children in the age range of the sample of the present study will generally have developed theory of mind skills, individual differences in the use of these skills may remain (Hughes & Devine, 2015). Theory of mind skills in turn relate to more prosocial behaviors towards outgroup members, but not towards ingroup members (Yu et al., 2016). Therefore, if priming secure attachment is effective in promoting altruism because it improves theory of mind skills, these skills would transfer to altruism towards outgroup members only, thus decreasing potential ingroup bias. However, group membership in previous research on theory of mind and prosociality was not based on ethnicity (Yu et al., 2016), highlighting the need for more research in specific real-life intergroup contexts. Another possible explanation stems from the notion that priming security not only affects altruism, but also positively impacts outgroup attitudes because of increased empathy (e.g., Boag & Carnelley, 2016; Mikulincer & Shaver, 2001). These simultaneous effects might results in a cumulative positive effect on altruism towards outgroup members specifically.

The fact that the effect of priming secure attachment was not significant in the sharing round, the only round in which the altruistic choice is costly, contrasts the expectation that secure attachment would be specifically effective in costly situations. This expectation was based on the idea that attachment is positively related to sharing through improving emotion regulation skills (Gross et al., 2017), and that costly situations require these skills to a higher degree (Paulus et al., 2016). However, the prosocial round was the first round in the fixed order of the game in the present study. Therefore, it is possible that this first round actually required the most emotion regulation for participating children, and that it became easier for them in the following rounds. Future research should ideally counter-balance the order of the rounds, to further explore the effects of priming security attachment in various costly and non-costly situations.

In addition, more research is needed to understand the association between secure attachment and (bias in) altruism towards different ethnic outgroups and underlying mechanisms, given that the pattern in the present study only emerged for the Middle Eastern, but not the Black opponent. Previous research on White Dutch children showed stronger prejudice towards Middle Eastern than Black children (de Bruijn et al., 2020). Possibly, priming secure attachment is specifically effective in situations in which bias initially is highest as this requires the most emotion regulation, but more research in the context of multiple ethnic outgroups is highly needed to further explore this discrepancy, especially since our pilot study revealed some differences in rated attractiveness and cuteness.

Furthermore, given that previous research suggested more positive effects of exposure to parental multiculturalism than color-evasiveness on children's interethnic attitudes (e.g., de Bruijn et al., 2021; Mesman et al., 2022), it was expected that priming multiculturalism would similarly have negative effects on ingroup bias in dominant ethnic group children's altruistic sharing as compared to priming color-evasiveness. The present results aligned with this hypothesis: children who were exposed to the multiculturalism prime displayed less White ingroup bias in altruistic sharing when sharing with the ingroup member was compared to sharing with the Black outgroup member in the envy round than children who were exposed to the color-evasiveness prime. In this case, the fact that this was found for the Black outgroup only might be explained by the text of the multiculturalism prime, in which skin color was explicitly mentioned (see Appendix). Even though other differences between the ethnic groups shown in the picture were also mentioned (e.g., speaking different languages, celebrating different festivals), these may have been more complex and less salient to children. Thus, they may have understood or remembered parts of the multiculturalist message that applied to the most visually salient outgroup only.

The fact that this effect of multiculturalism only occurred for the envy round is interesting, given that this is the only round in which the altruistic choice is a form of disadvantageous inequity (i.e., inequality that does not benefit the participant). Inequity aversion is generally strongly developed at the age of the participants (Fehr et al., 2008), specifically aversion towards disadvantageous inequity is present well before the age of eight (Blake & McAuliffe, 2011). Previous research has demonstrated that inequity aversion (both advantageous and disadvantageous) is not influenced by (minimal) group membership of the other (Gonzalez et al., 2020). In contrast, results from the present study suggest that ethnic group membership might actually play a role in inequity aversion, but that multiculturalist messages reduce the role of ethnic group as compared to color-evasive messages.

The present study in addition explored interaction effects between attachment-related and diversity-related primes. Based on the notion that attachment security is related to more openness to and using of new information in making social judgments (Mikulincer, 1997), we were particularly interested to see whether this would extend to stronger effects of priming multiculturalism (versus color-evasiveness). However, no significant interaction effects were identified. Although priming multiculturalism and priming attachment can be effective in reducing White ingroup bias in altruism, the results suggest that they are effective in different situations and thus do not necessarily strengthen each other.

4.1. Limitations and future directions

Some limitations to the present study should be noted. Firstly, although multiculturalist and color-evasive diversity ideologies can take many forms, only one form of each was included in the present study. More specifically, the multiculturalism prime resembles an abstract form (i.e., focusing on why it is important rather than practical and concrete implications, Yogeeswaran & Dasgupta, 2014), and the color-evasiveness prime focusses on individual differences (i.e., focusing on the characters' individuality without touching upon ethnicity, rather than on similarities between characters with different ethnic backgrounds, Rosenthal & Levy, 2010). Conclusions can therefore only be limited to the effects of these specific forms of diversity ideologies. Future research should look into the effects of other operationalizations of multiculturalism and color-evasiveness. Secondly, our pilot study revealed some differences in the rated attractiveness and cuteness of the children in the pictures used in the Dictator Game. Attractiveness can impact the level of prosocial behavior received both positively and negatively (e.g., Benson et al., 1976; Fisher & Ma, 2014). However, similar pictures were used in all conditions, and differences in attractiveness and cuteness can thus not explain the discrepancy in effectiveness of the different primes. Thirdly, the present study does not control for participants' previous exposure to the content of the prime. For example, it remains unclear whether children's dispositional attachment moderates effects of priming secure attachment. Such moderation effects are not found in previous research on the effects of security priming on threat perception among children (Stupica et al., 2019), but have not been consistently tested in research among adults (Gillath & Karantzas, 2019). Fourthly, a randomized order of the rounds would have ensured stronger evidence for differential effects based on sharing conditions, as the fixed order limits our ability to disentangle whether differential effects are due to order or sharing conditions. However, the fact that children played all rounds three times, and thus were familiar with the set up after the first game, strengthens our beliefs that not only the order but also the specific conditions play a role. Lastly, the sensitivity power analysis revealed that the observed effect sizes were smaller than the minimal detectable effect size. Therefore, results must be interpreted cautiously, and the fact that some patterns only emerge for specific ethnic outgroups or in specific sharing situations

could be due to insufficient power in the present study. Future research is needed to replicate and generalize the results, look into long-term effects, and examine the effectiveness of attachment- and diversity-related priming in different age groups.

The present study is the first to examine the effects of both attachment-related and diversity-related primes on ethnic ingroup bias in altruistic sharing behaviors of dominant ethnic group children. Results show that the effectiveness of different messages on reducing White ingroup bias might be dependent on the specific sharing conditions and the ethnicity of the interaction partner, and therefore call for future research to zoom in on these differential effects. Overall, nonetheless, the results from the present study suggest that attachment and multiculturalism have promising effects in terms of reducing ethnic ingroup bias in altruistic behaviors among dominant ethnic group children. Future research needs to build on this work by further examining the effects of related messages in different forms and contexts, their underlying mechanisms, and effects on real life interethnic interactions.

Declaration of competing interest

None.

Data availability

The data that support the findings of this study are available at https://doi.org/10.17026/dans-24t-2tts.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.actpsy.2022.103746.

References

Aboud, F. E. (2003). The formation of in-group favoritism and out-group prejudice in young children: Are they distinct attitudes? *Developmental Psychology, 39*(1), 48–60. https://doi.org/10.1037/0012-1649.39.1.48

Adler, N. E., Epel, E. S., Castellazzo, G., & Ickovics, J. R. (2000). Relationship of subjective and objective social status with psychological and physiological functioning: Preliminary data in healthy,White women. *Health Psychology, 19*(6), 586–592. https://doi.org/10.1037//0278-6133.19.6.586

Ainsworth, M. D. S., Blehar, M. C., Waters, E., & Wall, S. N. (2015). *Patterns of attachment: A psychological study of the strange situation*. Psychology Press.

Angerer, S., Dutcher, E. G., Glätzle-Rützler, D., Lergetporer, P., & Sutter, M. (2017). Gender differences in discrimination emerge early in life: Evidence from primary school children in a bilingual city. *Economics Letters, 152*, 15–18. https://doi.org/10.1016/j.econlet.2016.12.031

Apfelbaum, E. P., Pauker, K., Sommers, S. R., & Ambady, N. (2010). In blind pursuit of racial equality? *Psychological Science, 21*(11), 1587–1592. https://doi.org/10.1177/0956797610384741

Apfelbaum, E. P., Sommers, S. R., & Norton, M. I. (2008b). Seeing race and seeming racist? Evaluating strategic colorblindness in social interaction. *Journal of Personality and Social Psychology, 95*(4), 918–932. https://doi.org/10.1037/a0011990

Bakermans-Kranenburg, M. J., & Van Ijzendoorn, M. H. (2011). Differential susceptibility to rearing environment depending on dopamine-related genes: New evidence and a meta-analysis. *Development and Psychopathology, 23*(1), 39–52. https://doi.org/10.1017/S0954579410000635

Bartz, J. A., & Lydon, J. E. (2004). Close relationships and the working self-concept: Implicit and explicit effects of priming attachment on agency and communion. *Personality and Social Psychology Bulletin, 30*(11), 1389–1401. https://doi.org/10.1177/0146167204264245

Beier, J. S., Gross, J. T., Brett, B. E., Stern, J. A., Martin, D. R., & Cassidy, J. (2019). Helping, sharing, and comforting in young children: Links to individual differences in attachment. *Child Development, 90*(2), e273–e289. https://doi.org/10.1111/cdev.13100

Benenson, J. F., Pascoe, J., & Radmore, N. (2007). Children's altruistic behavior in the dictator game. *Evolution and Human Behavior, 28*, 168–175. https://doi.org/10.1016/j.evolhumbehav.2006.10.003

Benson, P. L., Karabenick, S. A., & Lerner, R. M. (1976). Pretty pleases: The effects of physical attractiveness, race, and sex on receiving help. *Journal of Experimental Social Psychology, 12*(5), 409–415. https://doi.org/10.1016/0022-1031(76)90073-1

Blake, P. R., & McAuliffe, K. (2011). "I had so much it didn't seem fair": Eight-year-olds reject two forms of inequity. *Cognition, 120*(2), 215–224. https://doi.org/10.1016/j.cognition.2011.04.006

Boag, E. M., & Carnelley, K. B. (2016). Attachment and prejudice: The mediating role of empathy. *British Journal of Social Psychology, 55*(2), 337–356. https://doi.org/10.1111/bjso.12132

Bowlby, J. (1973). Attachment and loss. In *, Vol. II. Separation, anxiety, and anger*. Basic Books.

Bowlby, J. (1962/1982). *Attachment and loss: Volume 1. Attachment*. Basic Books.

Carnelley, K. B., & Boag, E. M. (2019). Attachment and prejudice. *Current Opinion in Psychology, 25*, 110–114. https://doi.org/10.1016/j.copsyc.2018.04.003

Centraal Planbureau. (2021). Augustusraming 2021. https://www.cpb.nl/augustusraming-2021-2022.

Chiang, Y. S., & Wu, C. I. (2015). Social influence and the adaptation of parochial altruism: A dictator-game experiment on children and adolescents under peer influence. *Evolution and Human Behavior, 36*(6), 430–437. https://doi.org/10.1016/j.evolhumbehav.2015.03.007

Dahl, A., & Paulus, M. (2019). From interest to obligation: The gradual development of human altruism. *Child Development Perspectives, 13*(1), 10–14. https://doi.org/10.1111/cdep.12298

de Bruijn, Y., Amoureus, C., Emmen, R. A. G., & Mesman, J. (2020). Interethnic prejudice against Muslims among White Dutch children. *Journal of Cross-Cultural Psychology, 51*(3–4), 203–221. https://doi.org/10.1177/0022022120908346

de Bruijn, Y., Emmen, R. A. G., & Mesman, J. (2021). Navigating diversity: Maternal ideologies and associations with child interethnic prejudice in the Netherlands. *Social Development*. https://doi.org/10.1111/sode.12579

Deng, Y., Yan, M., Chen, H., Sun, X., Zhang, P., Zeng, X.Lye, Y., … (2016). Attachment security balances perspectives: Effects of security priming on highly optimistic and pessimistic explanatory styles. *Frontiers in Psychology, 7*, 1269. https://doi.org/10.3389/fpsyg.2016.01269

Di Pentima, L., & Toni, A. (2009). Subtle, blatant prejudice and attachment: A study in adolescent age. *Giornale di Psicologia, 3*(2), 153–163.

Dovidio, J. F., Piliavin, J. A., Schroeder, D. A., & Penner, L. A. (2017). *The social psychology of prosocial behavior*. Psychology Press.

Dunfield, K., Kuhlmeier, V. A., O'Connell, L., & Kelley, E. (2011). Examining the diversity of prosocial behavior: Helping, sharing, and comforting in infancy. *Infancy, 16*(3), 227–247. https://doi.org/10.1111/j.1532-7078.2010.00041.x

Dunham, Y., Baron, A. S., & Banaji, M. R. (2008). The development of implicit intergroup cognition. *Trends in Cognitive Science, 12*(7), 248–253. https://doi.org/10.1016/j.tics.2008.04.006

Dutton, D. G., Lane, R. A., Koren, T., & Bartholomew, K. (2016). Secure base priming diminishes conflict-based anger and anxiety. *Plos one, 11*(9), Article e0162374.

Eisenberg, N., Fabes, R. A., & Spinrad, T. L. (2006). Prosocial development. In N. Eisenberg, W. Damon, & R. M. Lerner (Eds.) (6th ed.)*Handbook of child psychology: Social, emotional and personality development* (6th ed., Vol. 3). John Wiley & Sons Inc.

Eisenberg, N., Guthrie, I. K., Murphy, B. C., Shepard, S. A., Cumberland, A., & Carlo, G. (1999). Consistency and development of prosocial dispositions: A longitudinal study. *Child Development, 70*(6), 1360–1372. https://doi.org/10.1111/1467-8624.00100

Fehr, E., Bernhard, H., & Rockenbach, B. (2008). Egalitarianism in young children. *Nature, 454*(7208), 1079–1083. https://doi.org/10.1038/nature07155

Fehr, E., Glätzle-Rützler, D., & Sutter, M. (2013). The development of egalitarianism, altruism, spite and parochialism in childhood and adolescence. *European Economic Review, 64*, 369–383. https://doi.org/10.1016/j.euroecorev.2013.09.006

Fisher, R. J., & Ma, Y. (2014). The price of being beautiful: Negative effects of attractiveness on empathy for children in need. *Journal of Consumer Research, 41*(2), 436–450. https://doi.org/10.1086/676967

Friesen, J., Arifovic, J., Wright, S. C., Ludwig, A., Giamo, L., & Baray, G. (2012). Ethnic identity and discrimination among children. *Journal of Economic Psychology, 33*(6), 1156–1169. https://doi.org/10.1016/j.joep.2012.08.003

Gillath, O., & Karantzas, G. (2019). Attachment security priming: A systematic review. *Current Opinion in Psychology, 25*, 86–95. https://doi.org/10.1016/j.copsyc.2018.03.001

Gonzalez, G., Blake, P. R., Dunham, Y., & McAuliffe, K. (2020). Ingroup bias does not influence inequity aversion in children. *Developmental Psychology, 56*(6), 1080–1091. https://doi.org/10.1037/dev0000924

Gross, J. T., Stern, J. A., Brett, B. E., & Cassidy, J. (2017). The multifaceted nature of prosocial behavior in children: Links with attachment theory and research. *Social Development, 26*(4), 661–678. https://doi.org/10.1111/sode.12242

Gummerum, M., Takezawa, M., & Keller, M. (2009). The influence of social category and reciprocity on adults' and children's altruistic behavior. *Evolutionary Psychology, 7*(2), 295–316. https://doi.org/10.1177/147470490900700212

Hay, D. F. (1994). Prosocial development. *Journal of Child Psychology and Psychiatry, 35*, 29–71. https://doi.org/10.1111/j.1469-7610.1994.tb01132.x

Hofstra, J., van Oudenhoven, J. P., & Buunk, B. P. (2005). Attachment styles and majority members' attitudes towards adaptation strategies of immigrants. *International Journal of Intercultural Relations, 29*(5), 601–619. https://doi.org/10.1016/j.ijintrel.2005.05.009

Holoien, D. S., & Shelton, J. N. (2012). You deplete me: The cognitive costs of colorblindness on ethnic minorities. *Journal of Experimental Social Psychology, 48*(2), 562–565. https://doi.org/10.1016/j.jesp.2011.09.010

Hughes, C., & Devine, R. T. (2015). Individual differences in theory of mind from preschool to adolescence: Achievements and directions. *Child Development Perspectives, 9*(3), 149–153.

Jaccard, J. (1998). *Interaction effects in factorial analysis of variance*. Thousand Oaks, CA: Sage Publications.

Kauff, M., Asbrock, F., Thörner, S., & Wagner, U. (2013). Side effects of multiculturalism: The interaction effect of a multicultural ideology and authoritarianism on prejudice and diversity beliefs. *Personality and Social Psychology Bulletin, 39*(3), 305–320. https://doi.org/10.1177/0146167212473160

Kinzler, K. D., Dupoux, E., & Spelke, E. S. (2012). 'Native'objects and collaborators: Infants' object choices and acts of giving reflect favor for native over foreign speakers. *Journal of Cognition and Development, 13*(1), 67–81. https://doi.org/10.1080/15248372.2011.567200

Kinzler, K. D., & Spelke, E. S. (2011). Do infants show social preferences for people differing in race? *Cognition, 119*(1), 1–9. https://doi.org/10.1016/j.cognition.2010.10.019

Leslie, L. M., Bono, J. E., Kim, Y. S., & Beaver, G. R. (2020). On melting pots and salad bowls: A meta-analysis of the effects of identity-blind and identity-conscious diversity ideologies. *Journal of Applied Psychology, 105*(5), 453–471. https://doi.org/10.1037/apl0000446

List, A. J., List, J. A., & Samek, A. (2017). Discrimination among pre-school children: Field experimental evidence. *Economics Letters, 157*, 159–162. https://doi.org/10.1016/j.econlet.2017.06.006

Lozada, M., D'Adamo, P., & Carro, N. (2014). Plasticity of altruistic behavior in children. *Journal of Moral Education, 43*(1), 75–88. https://doi.org/10.1080/03057240.2013.878244

Mallinckrodt, B., McNett, A. M. S., Celebi, E., Birks, K. M., Tsai, C. L., & Williams, B. E. (2013). Cognitive primes for attachment security can increase cultural empathy, but also interact negatively with attachment anxiety. *Journal of Social and Clinical Psychology, 32*(10), 1013–1039. https://doi.org/10.1521/jscp.2013.32.10.1013

Mandalaywala, T. M., Benitez, J., Sagar, K., & Rhodes, M. (2021). Why do children show racial biases in their resource allocation decisions? *Journal of Experimental Child Psychology, 211*, Article 105224. https://doi.org/10.1016/j.jecp.2021.105224

Mikulincer, M., Hirschberger, G., Nachmias, O., & Gillath, O. (2001). The affective component of the secure base schema: Affective priming with representations of attachment security. *Journal of Personality and Social Psychology, 81*(2), 305–321. https://doi.org/10.1037/0022-3514.81.2.305

Mesman, J., de Bruijn, Y., Van Veen, P. D., Pektas, F., & Emmen, R. A. G. (2022). Maternal color-consciousness is related to more positive and less negative attitudes toward ethnic-racial outgroups in children in White Dutch families. *Child Development, 93*(3), 668–680. https://doi.org/10.1111/cdev.13784

Mikulincer, M. (1997). Adult attachment style and information processing: Individual differences in curiosity and cognitive closure. *Journal of Personality and Social Psychology, 72*(5), 1217–1230.

Mikulincer, M., Gillath, O., Halevy, V., Avihou, N., Avidan, S., & Eshkoli, N. (2001). Attachment theory and reactions to others' needs: Evidence that activation of the sense of attachment security promotes empathic responses. *Journal of Personality and Social Psychology, 81*(6), 1205. https://doi.org/10.1037/0022-3514.81.6.1205

Mikulincer, M., & Shaver, P. R. (2001). Attachment theory and intergroup bias: Evidence that priming the secure base schema attenuates negative reactions to out-groups. *Journal of Personality and Social Psychology, 81*(1), 97–115. https://doi.org/10.1037//0022-3514.81.1.97

Mikulincer, M., & Shaver, P. R. (2005). Attachment security, compassion, and altruism. *Current Directions in Psychological Science, 14*(1), 34–38.

Mikulincer, M., Shaver, P. R., Gillath, O., & Nitzberg, R. A. (2005). Attachment, caregiving, and altruism: Boosting attachment security increases compassion and helping. *Journal of Personality and Social Psychology, 89*(5), 817–839. https://doi.org/10.1037/0022-3514.89.5.817

Nesdale, D. (2004). Social identity processes and children's ethnic prejudice. In M. Bennett, & F. Sani (Eds.), *The development of the social self* (pp. 219–245). Psychology Press. https://doi.org/10.4324/9780203391099_chapter_8.

Nesdale, D., Durkin, K., Maass, A., & Griffiths, J. (2005). Threat, group identification, and children's ethnic prejudice. *Social Development, 14*(2), 189–205. https://doi.org/10.1111/j.1467-9507.2005.00298.x

Nesdale, D., Maass, A., Durkin, K., & Griffiths, J. (2005). Group norms, threat, and children's racial prejudice. *Child Development, 76*(3), 652–663. https://doi.org/10.1111/j.1467-8624.2005.00869.x

Neville, H. A., Awad, G. H., Brooks, J. E., Flores, M. P., & Bluemel, J. (2013). Color-blind racial ideology. *American Psychologist, 68*, 455–466. https://doi.org/10.1037/t00078-000

Norman, G. (2010). Likert scales, levels of measurement and the "laws" of statistics. *Advances in Health Sciences Education, 15*, 625–632. https://doi.org/10.1007/s10459-010-9222-y

Norton, M. I., Sommers, S. R., Apfelbaum, E. P., Pura, N., & Ariely, D. (2006). Color blindness and interracial interaction: Playing the political correctness game. *Psychological Science, 17*(11), 949–953. https://doi.org/10.1111/j.1467-9280.2006.01810.x

Over, H. (2018). The influence of group membership on young children's prosocial behaviour. *Current Opinion in Psychology, 20*, 17–20. https://doi.org/10.1016/j.copsyc.2017.08.005

Over, H., & Carpenter, M. (2009). Priming third-party ostracism increases affiliative imitation in children. *Developmental Science, 12*(3), F1–F8. https://doi.org/10.1111/j.1467-7687.2008.00820.x

Paulus, M., Becker, E., Scheub, A., & König, L. (2016). Preschool children's attachment security is associated with their sharing with others. *Attachment & Human Development, 18*(1), 1–15. https://doi.org/10.1080/14616734.2015.1100208

Raabe, T., & Beelmann, A. (2011). Development of ethnic, racial, and national prejudice in childhood and adolescence: A multinational meta-analysis of age differences. *Child Development, 82*(6), 1715–1737. https://doi.org/10.1111/j.1467-8624.2011.01668.x

Rattan, A., & Ambady, N. (2013). Diversity ideologies and intergroup relations: An examination of colorblindness and multiculturalism. *European Journal of Social Psychology, 43*(1), 12–21. https://doi.org/10.1002/ejsp.1892

Renno, M. P., & Shutts, K. (2015). Children's social category-based giving and its correlates: Expectations and preferences. *Developmental Psychology, 51*(4), 533. https://doi.org/10.1037/a0038819

Rios, K., & Wynn, A. N. (2016). Engaging with diversity: Framing multiculturalism as a learning opportunity reduces prejudice among high white American identifiers. *European Journal of Social Psychology, 46*(7), 854–865. https://doi.org/10.1002/ejsp.2196

Rosenthal, L., & Levy, S. R. (2010). The colorblind, multicultural, and polycultural ideological approaches to improving intergroup attitudes and relations. *Social Issues and Policy Review, 4*(1), 215–246. https://doi.org/10.1111/j.1751-2409.2010.01022.x

Saleem, M., Prot, S., Cikara, M., Lam, B. C., Anderson, C. A., & Jelic, M. (2015). Cutting Gordian knots: Reducing prejudice through attachment security. *Personality and Social Psychology Bulletin, 41*(11), 1560–1574. https://doi.org/10.1177/0146167215601829

Sierksma, J., Lansu, T. A. M., Karremans, J. C., & Bijlstra, G. (2018). Children's helping behavior in an ethnic intergroup context: Evidence for outgroup helping. *Developmental Psychology, 54*(5), 916–928. https://doi.org/10.1037/dev0000478

Szpak, M., & Białecka-Pikul, M. (2020). Links between attachment and theory of mind in childhood: Meta-analytic review. *Social Development, 29*(3), 653–673. https://doi.org/10.1111/sode.12432

Stefaniak, A., Mallett, R. K., & Wohl, M. J. (2020). Zero-sum beliefs shape advantaged allies' support for collective action. *European Journal of Social Psychology, 50*(6), 1259–1275. https://doi.org/10.1002/ejsp.2674

Stupica, B., Brett, B. E., Woodhouse, S. S., & Cassidy, J. (2019). Attachment security priming decreases children's physiological response to threat. *Child Development, 90*(4), 1254–1271. https://doi.org/10.1111/cdev.13009

Stupica, B., & Cassidy, J. (2014). Priming as a way of understanding children's mental representations of the social world. *Developmental Review, 34*(1), 77–91. https://doi.org/10.1016/j.dr.2013.12.003

Svetlova, M., Nichols, S. R., & Brownell, C. A. (2010). Toddlers' prosocial behavior: From instrumental to empathic to altruistic helping. *Child Development, 81*(6), 1814–1827. https://doi.org/10.1111/j.1467-8624.2010.01512.x

Van Oudenhoven, J. P., & Hofstra, J. (2006). Personal reactions to 'strange'situations: Attachment styles and acculturation attitudes of immigrants and majority members. *International Journal of Intercultural Relations, 30*(6), 783–798. https://doi.org/10.1016/j.ijintrel.2006.05.005

Vaughan, G. M., Tajfel, H., & Williams, J. (1981). Bias in reward allocation in an intergroup and an interpersonal context. *Social Psychology Quarterly, 44*(1), 37–42. https://doi.org/10.2307/3033861

Verkuyten, M., & Thijs, J. (2013). Multicultural education and inter-ethnic attitudes. *European Psychologist, 18*(3), 179–190. https://doi.org/10.1027/1016-9040/a000152

Vittrup, B., & Holden, G. W. (2011). Exploring the impact of educational television and parent–child discussions on children's racial attitudes. *Analyses of Social Issues and Public Policy, 11*(1), 82–104. https://doi.org/10.1111/j.1530-2415.2010.01223.x

Vorauer, J. D., Gagnon, A., & Sasaki, S. J. (2009). Salient intergroup ideology and intergroup interaction. *Psychological Science, 20*(7), 838–845. https://doi.org/10.1111/j.1467-9280.2009.02369.x

Warneken, F., & Tomasello, M. (2009). The roots of human altruism. *British Journal of Psychology, 100*(3), 455–471. https://doi.org/10.1348/000712608X379061

Whitley, B. E., Jr., & Webster, G. D. (2019). The relationships of intergroup ideologies to ethnic prejudice: A meta-analysis. *Personality and Social Psychology Review, 23*(3), 207–237, 1d0o.i.1o1rg7/71/01.10187878/160838186887361184726134 23.

Wolsko, C., Park, B., Judd, C. M., & Wittenbrink, B. (2000). Framing interethnic ideology: Effects of multicultural and color-blind perspectives on judgments of groups and individuals. *Journal of Personality and Social Psychology, 78*(4), 635–654. https://doi.org/10.1037//0022-3514.78.4.635

Yogeeswaran, K., & Dasgupta, N. (2014). The devil is in the details: Abstract versus concrete construals of multiculturalism differentially impact intergroup relations. *Journal of Personality and Social Psychology, 106*(5), 772–789. https://doi.org/10.1037/a0035830

Yu, J., Zhu, L., & Leslie, A. M. (2016). Children's sharing behavior in mini-dictator games: The role of in-group favoritism and theory of mind. *Child Development, 87*(6), 1747–1757. https://doi.org/10.1111/cdev.12635

Zinser, O., Rich, M. C., & Bailey, R. C. (1981). Sharing behavior and racial preference in children. *Motivation and Emotion, 5*(2), 179–187. https://doi.org/10.1007/BF00993896

Zinser, O., Perry, J. S., Bailey, R. C., & Lydiatt, E. W. (1976). Racial recipients, value of donations, and sharing behavior in children. *The Journal of Genetic Psychology, 129*(1), 29–35. https://doi.org/10.1080/00221325.1976.10534007