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Theoretical Perspectives on the Development of Implicit and Explicit Prejudice

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For decades, theories and frameworks of prejudice have helped to guide our research. The findings of empirical research have also informed theory development. In this chapter we aim to make use of theory and empirical findings to help explain the development of implicit and explicit prejudice in children. To accomplish this goal, we start by defining prejudice and then briefly note some of the many theories that have shaped the study of prejudice development. We then summarize the current empirical findings from research examining racial preferences and prejudice in early and late childhood, and attempt to explain these findings. Finally, we conclude by discussing how both theory and research can inform our attempts to reduce prejudice in childhood.

In this chapter, we define prejudice as holding "derogatory social attitudes or cognitive beliefs, the expression of negative affect, or the display of hostile or discriminatory behavior towards members of a group on account of their membership of that group" (Brown, 1995, p. 8). Although we include behavioral reactions in our definition, most measures of prejudice that we review use either explicit or implicit evaluations (e.g., good, mean) that assess cognitive and/or affective

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processes. As negative evaluations may only sometimes translate into behavior, most of our findings and theories focus on evaluations. Thus, the scope of this chapter is delineated in terms of explanations of the development of evaluative aspects of prejudice, especially pertaining to its acquisition in the early years and subsequent development during childhood.

There are many theories of prejudice development. Some of these theories are domain-specific (with constructs that apply to prejudice development as a unique phenomenon) and others are domain-general (with constructs taken from developmental theories, but which also serve to explain the development of prejudice across age). A theory can be defined as a set of interrelated concepts, definitions, and propositions that present a systematic view of events or situations (in this case prejudice development), by specifying relations among variables, in order to explain and predict it (Glanz, Rimer, & Viswanath, 2008). All theories specify a certain scope of application, which is broader than the findings of a specific study but nonetheless apply only under specific conditions. Importantly, an ideal theory is both testable and parsimonious.

Commonly cited early theories of prejudice development include learning theory (Bandura, 1986), conformity to norms (Cialdini, Kallgren, & Reno, 1991), contact theory (Pettigrew, 1998), social identity theory (Tajfel, 1978), and social-cognitive developmental theory (Kohlberg, 1969; Piaget & Weil, 1951). Allport (1954) was eclectic and used elements from many of these theories to explain how and why children become prejudiced. He gave most emphasis to learning, conformity, and contact. However, he lacked rigorous data to support any of these theories; they all seemed feasible at the time (Aboud, 2005). More recent theories of prejudice development have integrated components of domain-specific and/or domain-general theories (e.g., Aboud, 2008; Bigler & Liben, 2006; Nesdale, 2007). In addition, emerging theories about the development of *implicit* racial prejudice (e.g., Banaji, Baron, Dunham, & Olson, 2008; Dunham, Baron, & Banaji, 2008) have built on theory and research with adults on dual attitudes (Chaiken & Trope, 1999) and implicit social cognition (Gawronski & Payne, 2010), in addition to theories of explicit prejudice development.

In the current chapter we outline and then explain research examining the acquisition of prejudice, and differences across ages in the expression of prejudice. The findings are somewhat different for explicit and implicit attitude measures; however, as we will explain, both sets of findings could emerge from the same underlying processes. Explicit attitudes are often measured with a photograph or drawing of an in-group and/or out-group child and an explicit question such as "How friendly (or mean) is this child?" (Tredoux, Noor & de Paulo, 2009). Thus, the child is making a direct, controlled, and conscious evaluation using evaluative terms that are age-appropriate. Older children might be asked more sophisticated

evaluations such as "Who is bossy?" (Tredoux et al., 2009), "Who broke the window?" (Katz & Zalk, 1978), or "How loyal would this person be as a friend?" (Aboud, Friedmann, & Smith, 2015). In each case, the question includes an explicit evaluation of the stimulus person.

By contrast, implicit attitudes, which can be defined as unintentional, unconscious, or uncontrollable evaluations that are automatically activated by the presence of an attitude object (Gawronski & DeHouwer, 2014), are often measured using computer-based reaction time tasks. The most frequently used measure of implicit racial attitudes is the Implicit Association Test (or IAT; Greenwald, Nosek, & Banaji, 2003), which provides attitude estimates by comparing the speed with which participants associate two target concepts (e.g., the racial categories Black and White) with two attributes (e.g., pleasant and unpleasant). The child-friendly version of this measure (ch-IAT) often makes use of picture and/or audio stimuli instead of words (e.g., Baron & Banaji, 2006; Dunham, Baron, & Banaji, 2006; Williams & Steele, 2016) to ensure that results are not affected by individual differences in reading ability. It is assumed that, if racial biases have become automatic, children should be faster at matching one pairing (e.g., White faces with pleasant stimuli and Black faces with unpleasant stimuli) as compared with the reverse pairing (e.g., Black faces with pleasant stimuli and White faces with unpleasant stimuli). Unlike many of the most widely used measures of *explicit* prejudice, this measure of *implicit* prejudice is both categorical and comparative; children must categorize target faces by race in order to successfully complete the task. Other measures of implicit attitudes that are not categorical or comparative are beginning to be modified for use with children (Degner & Wentura, 2010; Williams & Steele, 2016). Findings using these *exemplar* measures, where race is not explicitly made salient to children, are helping to paint a richer picture of implicit prejudice development.

Prejudice Acquisition and Development: Summary of Empirical Findings

In order to understand *why* children show a specific pattern of prejudice development, it is first important to review what we know about *when* prejudice develops. Fortunately, a systematic review and meta-analysis on the development of prejudice has been published recently, outlining age changes between 2 and 19 years of age (Raabe & Beelmann, 2011). It is unlikely that the findings from these studies will be substantially overturned in the next decade as they have shown a good deal of stability, especially among younger age groups, for the past 50 years.

Rather than selectively highlighting specific studies, we make use of the findings from this review as the empirical basis for conclusions about the acquisition and development of explicit prejudice. However, it is worth noting that Raabe and Beelmann's review was limited in several ways by the studies that fit their eligibility criteria. For example, their studies mainly used explicit measures, and therefore our review of the findings from implicit measures comes directly from the key empirical studies conducted to date. Moreover, they only selected studies where there was an age-group comparison on out-group negativity, assessed independently or in relation to in-group attitude (i.e., bias). Most of their studies used cross-sectional designs but the findings were consistent with seven longitudinal studies. Conclusions were based on 193 between-age-group comparisons and 102 within-age-group comparisons. Their findings are most robust for age comparisons, although they also draw some conclusions about changes in absolute levels of prejudice.

We outline seven important findings below that we believe a parsimonious theory of prejudice development needs to explain.

With respect to explicit prejudice, Raabe and Beelmann's (2011) conclusions were:

1. The first significant rise in prejudice was found to occur between the age groups 2–4 years and 5–7 years. Changes within the 2–4 and within the 5–7 ranges were not significant. This was particularly so for out-group targets with low status that are visibly different, and as such this pattern best describes, for example, White children's increase in prejudice toward Black children.
2. The second change was a significant decline in prejudice between 5–7 years and 8–10 years, which also continued to change within the 8–10 year age group. These changes were moderated by the status of the target out-group, such that White children showed a strong decline in prejudice toward Blacks, while Blacks showed an *increase* in prejudice toward Whites.
3. Changes after the age of 10 years were nonsignificant until late adolescence, when slight increases in prejudice were noted within the 17–19 year age group. However, heterogeneity among the adolescent effects indicated important individual and experiential influences at this age.
4. Prejudice toward lower status racial and ethnic out-groups, such as Blacks and immigrants, showed the inverted-U curve described under items 1–3, whereas prejudice toward higher status out-groups such as Whites and national groups (e.g., Germans and British) had a slow start but increased monotonically after 7 years of age. This may also be the case for out-groups whose ethnicity or religion is not visually salient to children, such as French- and English-speaking Canadians.
5. Prejudice toward lower status out-groups was moderated by contact opportunities, even when contact was very slight. Prejudice increased between the 2–4 and 5–7 age groups regardless of contact, but more so in those with no contact. However, even few opportunities for contact resulted in a significant drop in

prejudice between the 5–7 year and 8–10 year age groups, whereas no contact resulted in a small but continuous rise in prejudice.

In terms of implicit prejudice, results from studies conducted to date suggest the following:

6. When implicit bias is measured using the ch-IAT (see Banaji et al., 2008; Baron & Banaji, 2006; Dunham et al., 2006; Dunham et al., 2008; Lipman, Steele, & Williams, 2013; Newheiser & Olson, 2012; Rutland, Cameron, Milne, & McGeorge, 2005; Williams & Steele, 2016), implicit intergroup biases favoring in-groups and high status groups are present from as early as 5 years of age. The magnitude of this bias, especially for White majority and high-status children, remains high into late childhood and even adulthood (Dunham et al., 2008). For minority children, such as Black children, results show no reliable implicit intergroup bias at any age when the comparison group is of higher status (Newheiser & Olson, 2012). However, minority children show implicit intergroup bias when the comparison group is of lower status (e.g., Hispanic children comparing Hispanic to Black; Dunham, Baron, & Banaji, 2007; Dunham, Newheiser, Hoosain, Merrill, & Olson, 2014).
7. A different pattern of implicit racial biases is found when majority children are not required to categorize others by race, and implicit attitudes are instead measured using non-categorical *exemplar* measures, in which targets' faces are presented individually and race is not made explicitly salient (Degner & Wentura, 2010; Williams & Steele, 2016). Preliminary evidence with White children in Canada suggests that implicit in-group positivity (but not out-group Black negativity) is present in children aged 5–8 years (Williams & Steele, 2016). For children aged 8–11 years, bias was absent in this Canadian sample, despite reliable intergroup biases emerging for these children on the categorical ch-IAT. Research from the Netherlands and Germany, which similarly examined implicit racial attitudes using exemplar measures, also found no biases in children aged 9–11 years. Instead, implicit prejudice was apparent in early adolescence, around the ages of 12–15 years (Degner & Wentura, 2010). The out-groups for the Netherlands and German samples were Moroccan and Turkish, respectively.

Overview of Theoretical Constructs for Understanding Empirical Findings

Two theoretical mechanisms that are helpful for understanding the early high levels of explicit prejudice and implicit intergroup biases include brain maturation and experience with in-group and out-group faces. Later declines in explicit prejudice

and some forms of implicit bias may also rely on brain maturation and experience, but also social cognitions and, in the case of explicit prejudice, social influences from peers. We feel that maturation, and therefore the age variable, is important in a full explanation of prejudice development. This becomes clear in the first section below, which provides some initial evidence for early processing of own- and other-race faces. It is also a central feature of the consistent age changes reported by Raabe and Beelmann (2011). Moreover, although learning theory is useful for explaining how children learn their identity and social categories, it does not explain why these constructs drive evaluations at specific ages, for example at 6 years of age but not at 3 years, and not always at 10 years. One interesting way to merge what we know of maturation, whether phrased as brain maturation or cognitive maturation, with social influences such as out-group contact, is to suggest that there are optimal windows of social influence. The concept of an optimal window refers to an age, however wide or narrow, when exposure may have its greatest effect on attitudes or behavior. It has been used to explain language acquisition and preference (Maurer & Werker, 2014) by referring to ages when the language structures in the brain are ready to re-organize as a result of language exposure. It may apply equally well to the acquisition of cognitive skills such as conservation and class inclusion (Siegler & Svetina, 2002, 2006).

Attention to Race in Infancy

Brain maturation does not imply that prejudice is innate or inevitable. Researchers have found that, from birth, infants show a preference for looking at faces and by 3 months they prefer faces over all complex stimuli (for reviews of material presented in this paragraph, see Anzures et al., 2013; Maurer & Werker, 2014; Nelson, 2001). This preference ensures that infants will receive a great deal of exposure to the faces of their mother and other family members. Between 3 and 9 months of age, the exposure they receive influences the organization and function of face-perception circuitry in the brain. At 3 months, they attend equally to own-race and other-race faces. By 8–9 months, they attend more to own-race faces and discriminate more among own-race than other-race faces that differ on internal features such as the distance between eyes, nose, and mouth. The preference for novelty commonly reported in infancy remains, but the preference is for novel own-race faces, not other-race faces. So, the right hemisphere brain sites for face recognition become specialized in processing same-race faces. Importantly, this does not take place when infants have exposure to family members who come from two or more racial groups (Gaither, Pauker, & Johnson, 2012).

These findings are relatively new and need replication with different ages and control stimuli. Their interpretation is still speculative, however they suggest what is called a "perceptual narrowing" revealed in both brain function and behavioral responses (preference, recall, discrimination). This occurs at a specific age, namely 3 to 9 months, called an "optimal window" because this is the age range when the brain, because of maturation, quickly develops or prunes synapses as a result of exposure (Nelson, 2001). As a result of typically greater exposure to their mother, infants individuate female faces by 9 months (Maurer & Werker, 2014). They start to show the same individuation of other-race faces as a result of exposure at any age of childhood to other-race faces. However, without exposure, out-group faces may become processed for their category rather than for their individuating features. As a category, other-race faces would be treated similarly to one another and different from own-race faces. Similarly, exposure to only one's mother tongue deletes synapses for foreign languages starting in infancy, so this perceptual narrowing for language may lead to stronger language preferences and prejudices as seen in some research (Kinzler, Shutts, DeJesus, & Spelke, 2009). Thus, maturation and exposure to faces and speech during the first few years set the stage for early in-group preference, and possibly out-group prejudice toward novel out-group faces. In the next sections, we discuss the implications of this early maturation and exposure for racial prejudice in early and late childhood.

Explaining In-group Positivity in Early Childhood

The systematic review by Raabe and Beelmann (2011) suggests that there is typically a significant rise in prejudice between 2–4 years and 5–7 years, with the magnitude of bias toward visible minorities among majority-group children peaking between 5–7 years. Similarly, numerous studies have now found that by 5 years of age, children show implicit intergroup racial biases. Research examining in-group and out-group attitudes separately at this age suggest that prejudice is largely driven by a strong in-group positivity and, at most, a mild out-group negativity (Aboud, 2003; Williams & Steele, 2016). Still, it is important to explain each attitude (in-group and out-group), and the discrepancy (in-group compared with out-group evaluations), which we refer to as intergroup bias.

It is generally acknowledged that out-group negativity at the age of 5–7 years is not experienced with the same emotions as adolescent or adult prejudice. The latter is sometimes characterized in terms of anger, hostility and discriminatory acts (e.g., Hugenberg & Bodenhausen, 2003), whereas young children's prejudice may reflect suspicion, fear, sadness, and disapproval. Yet, it is expressed overtly in explicit

evaluative measures. Most of the research has been done with White children from monoracial families who live in predominantly White communities, possibly attending predominantly White preschools. This is to say that our explanation assumes high early exposure to own-race people. The only group in the systematic review that showed a weak rise in prejudice at this age was children from lower status groups who evaluated higher status out-groups. There is heterogeneity in their evaluations because many show an out-group preference or equal preference for in-group and out-groups. Even on measures of implicit intergroup bias, minority children tend to show an equal preference for the in-group relative to the out-group, provided the out-group is of higher status (Dunham et al., 2007; Newheiser & Olson, 2012).

Our explanation for the rise in prejudice at this age, due to strong in-group positivity and mild out-group negativity, is based in social-cognitive developmental theory. Theory and research published by Piaget (Piaget & Weil, 1951), Kohlberg (1969), and Selman (1980) point to the mindset of children in this age group which influences their perceptions of themselves and others. Social-cognitive developmental theory and research point to a strong focus on oneself and one's group (egocentrism and sociocentrism), strong attention to perceptions of external features over internal attributes, and the assumption that all people share the same attitudes as the child. For example, at 5–7 years, children perceive racially different people to be very different regardless of their clothing, color, and facial expression (Aboud, 2003). They segregate photos of children into piles by race, according to which of them they think belong together (Aboud, 2003). They assume that racial characteristics foretell underlying essential differences that prevent a person from changing (Aboud & Skerry, 1983; Diesendruck, Goldfein-Elbaz, Rhodes, Gelman, & Neumark, 2013; Kinzler & Dautel, 2012). Children also predict that the attitudes of others, such as parents, friends, and generalized "others," match their own (Aboud & Doyle, 1996a; Augoustinos & Rosewarne, 2001; Johnson & Aboud, 2013). Perhaps most importantly, they are motivated to maintain a strongly positive self-identity (Verkuyten & De Wolf, 2007). These social cognitions appear to be general and to reflect perceptions of themselves and their friends (Selman, 1980). They also appear to change rapidly after 8 years of age. Consequently, they form the basis of our theoretical explanation of the rise of prejudice, both explicit and implicit, between the age groups 2–4 years and 5–7 years.

One controversial variation in findings concerns whether out-group prejudice is strong, mild, or possibly even absent during these early years. When only one score comparing in-group and out-group attitudes is derived, as with the forced-choice PRAM and the ch-IAT, bias and relative out-group negativity appear to be strong (Aboud, 2003; Dunham et al., 2006; Williams & Steele, 2016). Furthermore, when the task requires that children rely on social categories (e.g., White and

Black), individuating features of the stimuli may not modify their evaluations (Lipman et al., 2013). Finally, as was noted earlier, exposure to the out-group softens negativity, and this may occur at least in part because out-group faces are processed more as individuals (Anzures et al., 2013; Maurer & Werker, 2014) and less as a category to be contrasted with the in-group (Aboud, 2003).

Theoretical explanations are less clear on minority children's attitudes, namely a lack of bias or possibly an even distribution of some children preferring their in-group, others the out-group, and others showing no preference. Given their bicultural status, as members of a predominantly White society as well as a minority racial group, and their exposure to Whites in their society, they may process individual faces and attach positively valenced attributes to White faces as well as members of their racial in-group. There is also some evidence to suggest that children from minority groups who value status show greater implicit intergroup biases favoring the advantaged out-group as opposed to their in-group (Newheiser & Olson, 2012).

Using the maturation constructs outlined for face recognition, we might describe this rise in in-group positivity as demonstrating a narrowing of the window of influence to in-group events. As children move from their family to community living, they may be motivated to learn about themselves and their in-group; they might also begin to acquire positive associations with high-status groups. Brain maturation for face attention and preference provides a mindset that processes same-race faces and language efficiently. As such, children's age-related social motivation, social environment, and brain maturation converge to allow them to optimize entry into their social world. At this age, the window appears to be narrowed to include mainly members of their in-groups and possibly advantaged groups. We might expect that they will not be very receptive to information and attitudes that are positive toward out-groups and negative toward in-groups, unless the out-groups are relatively advantaged. This is not to say that all children experience such a narrowing of attention and influence. Those with early exposure to families and friends who are Black and White, who speak French and English, and who live in multiracial multilingual environments may have experiences that enhance the brain circuitry for processing people as individuals rather than categorically.

Explaining Increased Respect for Other Races in Middle Childhood

The second change reported by Raabe and Beelmann (2011) was a significant decline in explicit prejudice between the age groups 5–7 years and 8–10 years, which also continued within the 8–10 year age group. These changes were strongly moderated

by the status of the target out-group, such that White children showed a strong decline in prejudice to Blacks, while Blacks showed an increase in prejudice to Whites. Changes were also moderated by out-group contact, such that the decline was seen only among White children who had out-group contact. Note that contact also had some impact on the early rise in prejudice, being more consistent among those with no contact.

The results of research examining implicit racial biases at this age have been interesting. One consistent finding is that when comparative, category-based measures such as the ch-IAT were used to measure implicit racial biases, intergroup biases remained at levels that were comparable to the biases of younger children (Banaji et al., 2008; Baron & Banaji, 2006; Dunham et al., 2008; Williams & Steele, 2016). However, preliminary findings using exemplar measures of bias, that do not require that targets' faces be categorized by race, revealed no implicit intergroup bias, no in-group preference or out-group negativity, among White children aged 9 to 12 years (Williams & Steele, 2016), or majority Dutch and German children aged 9 to 11 years (Degner & Wentura, 2010).

A sound theoretical explanation must explain what happens between 8 and 10 years of age that potentially facilitates an increase in respect for visible minority out-groups and decrease in in-group preference among majority group children. Both out-group respect and the lack of bias on implicit and explicit measures need to be explained, as well as the stable high levels of implicit intergroup bias found on category-based measures.

Researchers who study child development have noted that many aspects of social-cognitive development change at this age. A domain-general explanation relies on changes in the way children perceive themselves and others. Evidence shows that children in this age range start to think about attributes that are internal and unobservable such as abilities and personality attributes (Aboud & Fenwick, 1999; Katz & Zalk 1978), they start to pay more attention to internal features as opposed to external features such as race (Doyle & Aboud, 1995), and they become more aware of others' attitudes that diverge from their own (Aboud, 1981). For these reasons, the social-cognitive theory (Aboud, 2008) emphasizes general age-related increases in children's use of cognitive outcomes over perceptions in guiding their attitudes. The social-cognitive theory also emphasizes children's ability to process internal attributes, such as sports-lover or math fanatic, attributes that differentiate them from some in-group peers but create a likeness with some out-group peers. Although not all children show the decline in prejudice at this age, those who do also show acquisition of these social-cognitive abilities in longitudinal research (Doyle & Aboud, 1995).

At the same time, these social-cognitive abilities facilitate children's understanding that members of their in-group are not all highly positive, and that some of them may hold respectful attitudes toward others. We found, for example, that

children of this age evaluated in-group members with a mix of positive and negative evaluations (Aboud, 2003; Aboud & Doyle, 1996b; Doyle & Aboud, 1995), they acknowledged that in-group members might like out-group people (Augoustinos & Rosewarne, 2001), and they started to agree that out-group children might prefer their own race. Because of their greater in-group focus, young children might change their in-group attitudes ahead of their out-group attitudes, but the sequence is not yet confirmed.

It is not solely the change in social cognitions that explains the drop in explicit prejudice, but it forms the backdrop to children's receptivity to social influences. The change in receptivity is indirectly supported by a number of studies. For example, a systematic review of the relation between child and parent ethnic/racial attitudes showed a small correlation ($r = .130$) among 4 to 6.5-year-olds, with a jump to $r = .183$ among 6.5 to 9.5 year-olds, and $r = .256$ among adolescents (Degner & Dalege, 2013). Furthermore, whereas White 5-year-old children were not receptive to others who said that Blacks are, for example, friendly and likeable, 8-year-old children were (Aboud, 1981). Only the latter age group acknowledged that maybe the Blacks were right and maybe their own attitude ratings could be changed a bit. The younger children denied that others held unbiased attitudes and stated explicitly that, if they did, they must be wrong. We also found that highly prejudiced children of 10 years were more receptive to explanations of their low-prejudiced friends as to why Blacks had positive qualities and in-group Whites had many negative qualities (Aboud & Doyle, 1996b). Others have found that social desirability and normative influences are more likely to be felt at this age (Monteiro, de França, & Rodrigues, 2009). Yet others have expressed it as an increased awareness of fairness and equality (Singh, Choo, & Poh, 1998). Therefore, more mature social cognitions may serve to give children the ability to process and give meaning to discrepant attitudes that they are now exposed to in their social world.

We believe that these changes in social cognitions can also help to explain why some measures of implicit racial attitudes yield high and stable bias throughout childhood, while others show low levels of bias in middle childhood that parallel what is found on explicit measures of prejudice. The social cognitions that allow for greater noncategorical individuated processing of others in middle childhood may decrease the likelihood that children at this age will spontaneously activate category-based associations in response to racial exemplars. By contrast, when contextual cues encourage or require that others be categorized by race, the race-based associations formed and solidified in early childhood will be automatically activated. Thus, the seemingly discrepant findings can be explained by children's more sophisticated social cognitions at this age, combined with the availability of category-level associations with racial categories that were previously acquired in early childhood, and that *can* still be activated when race is salient.

Understanding Why Intergroup Contact Moderates Prejudice Development

We conclude this chapter with a focus on how prejudice might be reduced in childhood, by considering why intergroup contact moderates explicit prejudice development. In the review by Raabe and Beelmann (2011), contact with visible minority out-group members was found to be a strong moderator of age-related changes in explicit prejudice. Although there is not yet any research examining the impact of out-group contact on implicit racial attitudes (cf., Gonzalez, Steele, & Baron, in press), we anticipate that, at least on exemplar measures, contact would similarly moderate *implicit* racial bias, with stronger implicit in-group positivity emerging among children who have had less out-group contact with racial out-group members, and greater *out-group* positivity emerging among children with contact.

There are at least two theoretically interesting explanations of contact moderation. According to brain maturation research, children with early exposure to other races will develop a functional response to other-race faces similar to own-race faces in the fusiform face site of the brain. Even among older children, those with contact will process Black faces as proficiently as White faces by attending to the individuating feature details of in-group as well as out-group faces (Maurer & Werker, 2013). As the frontal lobes mature, they are recruited to continue the cognitive and evaluative processing of an individual out-group person similar to an in-group person, that is, with a great deal of neural activation (Walker, Silvert, Hewstone, & Nobre, 2008). Brain maturation and exposure consequently determine how much circuitry is available to use when processing structural features of faces (e.g., skin color and distance between features) and individuating features (e.g., facial expression). Attending to individual features of faces rather than simply skin color is one of the signature developments of middle childhood associated with the decline in prejudice (Aboud & Fenwick, 1999; Katz & Zalk, 1978). Having the neural capability and readiness to process individuating features, as a result of combined brain maturation and out-group contact, is therefore central to the reduction of prejudice.

The second explanation centers on the way contact is associated with direct and indirect friendship, and the benefits of friendship for prejudice reduction. Prejudice is lower in children from 8–12 years who not only have opportunities for contact, but who also socialize with mixed-race groups of friends and have a high-quality out-group friend (Aboud, Mendelson, & Purdy, 2003). Two reviews form the basis of our theoretical explanation for why this is the case (Davies, Tropp, Aron, Pettigrew, & Wright, 2011; Kenworthy, Turner, Hewstone, & Voci, 2005). Both reviews provide evidence for a number of specific social-cognitive skills that

develop during a friendship, including greater processing of individuating out-group attributes with a focus on internal ones such as emotions, greater attention to similarities with the out-group, positive emotions associated with intimacy and companionship, and a belief that cross-race friendship and respect is normative. The reviews largely cite adult research, so it will be important in the future to test the results with children in the 5–7 and 8–10 year old age groups. It will also be imperative to continue testing the benefits of friendship in intervention research (e.g., Aboud et al., 2012, 2015), where social influences appear to be stronger in the 8–10 year age group, and to examine whether these benefits extend to implicit racial attitudes.

In conclusion, we have proposed a set of theoretical constructs able to explain known empirical findings on the development of implicit and explicit attitudes. Using both domain-specific and domain-general theories of prejudice, we have suggested that maturation of brain circuitry and social cognitions provide optimal windows of social influence when implicit and explicit prejudice is most likely to be acquired and expressed, and when positive intergroup contact is most beneficial. Given the current momentum driving research on prejudice in children, we expect continued research can build on this theoretical framework to increase our understanding of how childhood prejudice not only develops, but how it can ultimately be reduced.

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