The Role of Task Structure in Children's Implicit Bias

Amanda Williams Jennifer R. Steele Stefania Durante
York University, Toronto, ON, Canada

• Young White children display explicit racial bias that declines around 7 to 8 years of age (Doyle & Aboud, 1995). According to Social Cognitive Developmental Theory (SCDT; Aboud 1988, 2008), the expression of explicit bias in young children reflects the tendency to view ingroup members positively. Decreases in bias are thought to correspond to developmental changes, notably increased flexibility in categorization and seeing differences among members of a common group.

• In contrast, initial findings from research examining the *implicit* preference for White relative to Black targets suggest that these biases remain relatively stable across development (Baron & Banaji, 2006; Dunham et al., 2006; Rutland et al., 2005). However, previous research examining implicit biases has relied on a categorization-based measure (the Implicit Association Test or IAT; Greenwald et al., 1998). The IAT requires participants to categorize along racial dimensions (Black versus White faces paired with pleasant versus unpleasant stimuli) and does not allow scores to be decomposed into ingroup and outgroup components.

• Alternatively, an Affective Priming Measure (APT; Fazio et al., 1995) is an implicit task that does not require such racial categorization. On the APT, participants respond to pleasant and unpleasant stimuli following the presentation of a Black or White face. This results in 4 separate priming scores that can be combined to examine overall bias, ingroup preference, and/or outgroup derogation.

• In research assessing implicit bias expressed by 9 to 15 year olds with an APT, shifts in implicit bias emerged. Unlike findings with the IAT, children aged 9 to 12 did not demonstrate implicit bias on the APT, whereas the responses of 13 to 15 year olds did reveal bias. This increase in bias reflected outgroup derogation as opposed to ingroup preference (Degner & Wentura, 2010), and may be the result of the gradual learning of these biases.

Current study: We were interested in determining whether shifts in implicit bias would be evident in middle childhood. As part of a larger study, children aged 6 and 9 years and adults completed the APT and IAT.

Hypothesis 1: Due to the categorical nature of the IAT, the APT will be more sensitive to developmental differences in exemplar-based implicit bias.
Hypothesis 2a: In line with SCDT, exemplar-based implicit bias in young children will reflect ingroup preferences, as opposed to outgroup derogation.
Hypothesis 2b: In line with SCDT, exemplar-based implicit bias will decrease from age 6 to 9, corresponding to changes in cognitive development that occur during this period.

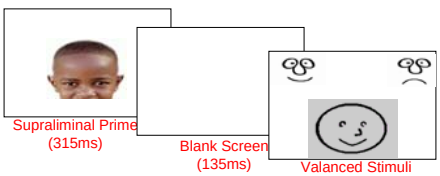
Method

***Participants*:** In total 153 White participants, 37 6-year-olds (17 females; aged 6 to 7 years), 53 9-year-olds (23 females, aged 9 to 10 years), and 63 Undergraduates (63 females; aged 17 to 45 years), completed two child-friendly measures of implicit attitudes as part of a larger study.

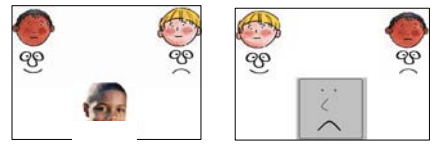
Affective Priming Task: The APT consisted of 3 Blocks (Fazio et al., 1995; Degner & Wentura, 2010, Study 1). Block 1 and 2 required participants to sort target (8 positive and 8 negative line drawings) and prime pictures (8 Black boys, 8 White boys, 5 Tables, 5 Chairs). Similar to Degner and Wentura (2010, Study 1) there was a categorization manipulation in Block 2 that did not reveal any significant differences and will not be discussed. Block 3 was the *priming task* which consisted of 120 trials. In 64 critical trials a supraliminal prime of a White or Black boy (315ms) was followed by a blank screen (135ms), and 1 of 4 valanced targets (2 positive, 2 negative selected *a priori* from Block 1) which remained on the screen until a response was made. The response time (RT) for categorizing the target was recorded. The 8 practice and 48 filler trials had the same structure, but the primes were furniture and the target was 1 of the 12 remaining pictures from Block 1. RTs were filtered according to Fazio et al., 1995; incorrect responses were removed, as were reaction times less than 150ms or greater than 2 SD from each participant's mean. RT for the trials were averaged, resulting in 4 priming scores (Black-Positive, Black-Negative, White-Positive, and White-Negative). To control for differences in latency between the age groups, responses were collapsed into a relative score where higher values indicated more bias towards Blacks relative to Whites (Wittenbrink, 2007). To examine the role of ingroup preference and outgroup derogation in implicit bias, separate indices were created for White and Black targets, where higher scores indicated more positivity (Degner & Wentura, 2010).

Implicit Association Test: Participants then completed a child-friendly IAT (ch-IAT; Baron & Banaji, 2006; Greenwald et al., 2003). In the critical blocks, each consisting of 60 trials (20 practice), participants sorted pictures of Black and White boys and line drawings depicting happy or sad faces (Rutland et al., 2005). *D* scores were created such that higher scores indicated more bias towards Black relative to White targets (Greenwald et al.).

Critical Trial on the APT



Critical Trial on the IAT



Results

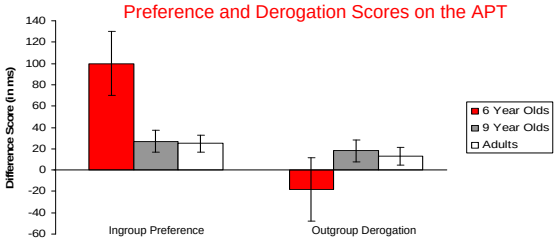
Affective Priming Task: A one-way ANOVA revealed a significant Age effect, $F(2, 250) = 7.60$, $p = .001$. 6 year olds (M = 117ms, SD = 249) demonstrated higher levels of relative bias than 9 year olds (M = 9ms, SD = 103) and adults (M = 12ms, SD = 77), who did not differ.

To examine ingroup preference and outgroup derogation, a 3 (Age) X 2 (Group: In, Out) repeated measures ANOVA was conducted. An effect for Age did not emerge ($F(2, 150) = .88$, $p = .42$), but an effect for Group was revealed ($F(1, 150) = 14.60$, $p < .001$) that was qualified by an Age X Group interaction ($F(2, 150) = 7.60$, $p = .001$).
Ingroup Preference (White negative – White positive): 6 year olds (M = 100ms, SD = 142) demonstrated more ingroup preference than 9 year olds (M = 27ms, SD = 74) and adults (M = 25ms, SD = 58), who did not differ ($F(2, 150) = 9.42$, $p < .001$).
Outgroup Derogation (Black negative – Black positive) did not differ by age ($F(2, 150) = .97$, $p = .38$).

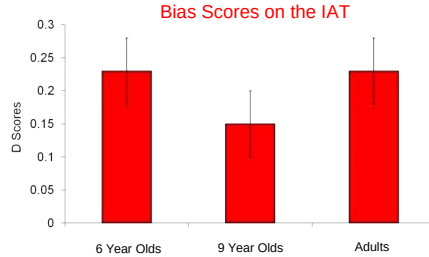
When comparing levels of preference and derogation, 6 year olds demonstrated more positivity towards in the ingroup as compared to the outgroup (M = -18, SD = 221; $t(36) = 2.86$, $p = .007$), whereas 9 year olds (Outgroup M = 18, SD = 79), and adults (Outgroup M = 13, SD = 71) did not (ts < 1.3, ps > .22).

Implicit Association Test: The levels of bias expressed by 6 year olds (D = .23, SD = .40), 9 year olds (D = .15, SD = .28), and adults (D = .23, SD = .31) did not significantly differ ($F(2, 150) = 1.20$, $p = .31$); all revealed a relative pro-White bias.

Preference and Derogation Scores on the APT



Bias Scores on the IAT



Discussion

• When implicit bias was assessed with the APT, a developmental trend emerged in line with SCDT: Younger children demonstrated bias, and this was driven by ingroup preference as opposed to outgroup derogation. As expected, 9 year olds did not demonstrate bias on this task. Surprisingly, adults also did not demonstrate bias, which might be due to the multicultural testing location, the use of child targets, and/or the fact that adults do not always show bias on this measure (Olson & Fazio, 2003).

• When measured with the IAT, bias appeared at all ages. Together these results suggest that the APT and IAT may provide different insights into development-related changes in implicit bias (Degner & Wentura, 2010, Study 3).

Amanda Williams: awillia@yorku.ca; Dr. Jennifer Steele: steeleje@yorku.ca

This research was supported by a SSHRC Doctoral Fellowship awarded to the first author and a SSHRC-SRG and a CFI-LOF grant held by the second author.