# Measuring Racial Prejudice in New Zealand Pre-schoolers and testing an intervention to reduce the same using brief cross-race friendship picture books

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This study with 88 children from Dunedin ($M_{Age}$ = 5.18, *SD* = 1.32) aimed to measure racial prejudice, particularly that against Asians and Arab Muslims. Each participant was requested to complete two tasks to measure their explicit bias and one task to measure their implicit bias. Together, the results indicated that young children display a greater preference for friendship with own race and rate children from own race more positively than children from other races. Further, when these participants were tested again post-intervention (a month of reading picture books about cross-race friendships) they did not show any change thereby indicating that this prejudice not only develops early but is also fairly rigid. Additionally, children's implicit prejudice displayed a positive relation with parent's racism score indicating that the children may have learnt such attitudes from their parents.

**Keywords:** *Prejudice in NZ, Muslim Prejudice, Asian Prejudice, Racial Prejudice, Preschool*

## Introduction

In January 2020, a woman in Dunedin reported that her 9-year-old daughter was verbally abused by some boys of the same age who called her a 'stinky Indian' and rubbed dog excrement all over her face at a local playground (Ayling, 2020). While an incident of this nature is shocking, it indicates a deeper problem, i.e. the prevalence of racial prejudice in children. New Zealand has generally maintained its position as a peace-loving nation governed by an empathic leader who spoke regarding the Muslim community that, "they are us" immediately after the 2019 Christchurch mosque attack. However, certain discriminatory acts indicate that perhaps the wider population may not resonate with the Prime Minister. In fact, recent scientific findings within the country indicate that prejudice against Muslims is substantially higher than towards any other religious group (Greaves et al., 2020; Wilson, 2019). Further, Asians are the least warmly rated ethnic group (Sibley & Ward, 2013) and one fourth of New Zealanders feel that Asians are the most discriminated group in the country (Human Rights Commission, 2010). Taken together, these findings indicate that racial prejudice and discrimination against Asians and Muslims in New Zealand exists and cannot be denied.

While most of the current studies in the country have focused on measuring attitudes amongst adults, little is known about whether the same trends follow in children. The purpose of the current study, therefore, was to fill that gap in literature and to understand how young children in NZ feel about ethnic and racial minorities. Our research had two main goals: First, to measure pre-schoolers prejudice against Asians and Arab Muslims and second, to see if such prejudice could be reduced by introducing cross-race friends via picture books.

### *Development of Racial Preference*

Elaborate research in prejudice development has indicated that racial preference starts at an early age. For instance, Kelly et al. (2005) found that at 3 months, children start displaying a preference for their own race, although such a preference is not present at birth. Further, Bar-Haim et al. (2006) found that infants who were exposed to multiple races did not show an own-race preference. This finding is crucial in understanding that early exposure to multiple races may reduce own race preferences. By 9 months, infants are able to categorise own-race faces into one category and other-race faces into a separate category (Quinn, et al., 2016), and begin to associate 'own race' with happy music and 'other race' with sad music (Xiao et al., 2017). Between 10 and 12 months, children show a preference towards snacks and toys endorsed by someone who speaks their native language (Shutts et al., 2009) and between 14 and 18 months, toddlers imitate physical actions of a native speaker more than those of a foreigner (Buttelmann et al., 2013).

The same trends continue in pre-schoolers (age 2 to 5) who prefer to play with and allocate more resources to people from their 'own race' (Kinzler & Spelke, 2011; Renno & Shutts, 2015) particularly when distributing limited resources (Lee et al., 2018). A similar pattern was also reported by Fehr et al. (2008) in 5- to 6-year-olds but not in 10- to 11-year-olds, as the older children were guided by principles of fairness while distributing resources. As a result, older children made conscious efforts to be fair and inclusive but younger children were not able to do the same. Thus, discriminatory attitudes and behaviours might be more easily observable in younger children as compared to older children (Rutland et al., 2005). However, research on prejudice with very young children has also found some inconsistencies. For instance, Howard et al. (2015) found that 3-year olds, but

not younger children, strongly screened out outgroup information and showed such strong dispreference for outgroup individuals that they even avoided toys offered by them.

In sum, a preference for own race has been found even in infants, but has been noted to become more evident in preschool children. These findings suggest that early life (e.g., preschool to the beginning school years) is a time when children have developed clear preference for own race, which may be easily observed in an experimental setting. Therefore, this age might be a particularly good time for assessing prejudice and in testing interventions aiming to reduce it (Gonzalez, et al., 2017).

### *Implicit and Explicit Bias*

Prejudice (a preference for 'own race' over 'other race') can be either implicit or explicit. Implicit prejudice refers to an unconscious, automatic association that affects judgments, yet the person might not be completely aware of them (Baron, 2015) whereas explicit prejudice refers to observable, discriminatory behaviour (McGlothlin & Killen, 2010). There have been mixed results regarding the relation between explicit and implicit bias. For instance, Rutland et al. (2005) reported no significant relation between the two, whereas Newheiser and Olson (2012) found explicit bias to be a significant predictor of implicit bias. A meta-analysis conducted by Hofmann et al. (2005) found a weak relationship between implicit and explicit prejudice. Further, Dovidio et al. (2002) noted that both manifest in different ways. Thus, implicit bias accounts for nonverbal friendly contact and explicit bias accounts for verbal friendliness in an interracial context. It is therefore important to measure both.

Past studies have largely focused on explicit bias measurement and its reduction but recently there has been an interest in studying implicit bias. By the age of 3 years, if not earlier, children display signs of implicit racial bias (Dunham et al., 2013) and this bias has been found to remain stable and resistant to numerous age-related factors. Explicit bias, on the other hand, has been successfully reduced by intergroup contact in 3- to 5-year-old children (McGlothlin & Killen, 2006).

### *Parent-child prejudice connection*

Recent studies have, by and large, indicated a relation between many different types of parental attitudes and children's prejudiced attitudes (e.g., see the meta-analysis by Degner & Dalege, 2013). Regarding implicit bias, Castelli et al. (2009) found that it is more easily transmitted from parents to young children. We therefore included measures of parent's'attitudes in our study.

There are certain measures of social attitudes that correlate with prejudice, chief amongst these, Social Dominance Orientation (SDO) and Right-Wing Authoritarianism (RWA). SDO assesses one's acceptance of inequalities in society, whereas RWA relates more to one's willingness to submit to authorities perceived as established and legitimate (Duckitt & Sibley, 2010). In New Zealand, where the present study was carried out, SDO has been found to relate to low warmth towards ethnic minorities, and RWA to anti-immigration attitudes (Satherley & Sibley, 2016). These findings have been obtained with adults, but recently, Ruffman et al. (2020) found links between maternal SDO and prejudice in children aged 6 to 12 years as well. Additionally, studies with adolescents and their parents have indicated that parental SDO and RWA are specifically and uniquely related to offspring SDO and RWA respectively (Duriez et al., 2008). Therefore, in the present study, we included specific instruments to measure parents' racial prejudice to examine potential links between parental racial attitudes and pre-schoolers' racial prejudice.

### *Reducing Interracial Prejudice*

Childhood attitudes are argued to be more malleable than those in adults, and therefore, it is important to try and shift negative beliefs about the 'other race' at a young age (Aboud et al., 2012; Raabe & Beelmann, 2011). Prior interventions based on contact theory (Allport, 1954) have successfully reduced prejudice in school-age children by encouraging contact between minority and majority ethnicities (see the meta-analyses by Aboud et al., 2012; Ülger, et al., 2018), and so have studies using imagined contact (Birtel et al., 2019). Thus, we examined whether children's attitudes toward other ethnicities might also be changed, although in our case, we used brief picture books which introduce children to 'other-race' characters for four weeks.

Our specific hypotheses were:

1. An own-race preference will be evident in children as young as 3 years on both implicit and explicit measures.
2. Older children (above 5 years) will show less explicit bias than younger children as indicated by previous research, although implicit prejudice would be maintained (see above).
3. There would be a positive relation between parents' racial attitudes and children's racial attitudes.
4. Reading cross-race friendship books will increase familiarity and reduce racial prejudice towards Muslims and Asians amongst participants in the Experimental (Asian Friendship) group.

## METHODS

### *Participants*

The sample consisted of 88 children between 3 and 8 years old ($M$ = 5.18, $SD$ = 1.32). Data were collected between August, 2019 and December, 2019. All of the participants were from Dunedin, New Zealand. Seven children were excluded because they did not identify with the European ethnicity. That is, at the beginning of the experiment, each participant was asked to point to the picture of the child that was similar to them (while being presented with a photograph of two children of the same gender and roughly the same age but who were either European or Asian). Seven children pointed towards the Asian child's photograph. Therefore, we excluded these seven cases from all further analyses. Of the remaining children that constituted our final sample, 36 were boys and 45 were girls. The accompanying parent was almost always the mother, with her highest education recorded as a measure of socio-economic status ($M$ = 2.73; $SD$ = .869, where 1 = some high school, 2 = some professional or vocational training, 3 = undergraduate degree and 4 = post-graduate degree).

Based on evidence suggesting that younger children display greater prejudice than older children (Gonzalez,

Steele, & Baron, 2017; Raabe & Beelmann, 2011), we spilt the data into two age groups: Younger (*M*= 4.08; *SD*= .567 and Older (*M*=6.41; *SD*=.704) with roughly equal number of participants in each age group.

Further, for analyses pertaining to the Implicit Racial Bias Test, we excluded children for various reasons (see below), which left 56 children (*M*age = 5.57, *SD* = 1.30). A post hoc power analysis using G*Power3 (Faul et al., 2007) indicated that to test the experimental group differences in the two age groups, with a medium effect size (*f*=.25), and an alpha of .05, a total of 54 participants were required to achieve a power of .95. Thus, for both explicit and implicit measures, we had enough participants to go ahead with the repeated measures analyses.

## Measures

### *Pre/Post Exposure Tasks for Children*

Participants' racial attitudes from three tasks were examined pre- and post-media exposure. These measures included the following tasks.

*Explicit Race Preference Task.* We asked children short questions about who they thought was kind or helpful (Appendix A). For example, one of the stories was about a 'kind' boy who saved a kitten from drowning, with children asked which was the kind boy (with two pictures, one displaying an Asian and the other a European child). All the questions had positive adjectives and the participants were asked to pick one of the two options. These positive adjectives were adapted from the Preschool Racial Attitude Measure II (PRAM II) by Williams, et al (1975) and some of these were included in the friendship books as well. All the pictures in this task were matched for age and attractiveness based on the ratings obtained from 20 postgraduate students. There were five pairs of girls and five pairs of boys. All responses favouring Europeans were coded as '1' and those favouring Asians were coded as '-1'. The maximum score possible over 10 trials was 10 and the minimum was -10, with a positive score indicating that participants demonstrated a greater preference for their 'own race' and a score of 0 indicating no preference for either race.

*Explicit Discrimination Task.* In four different scenarios, we asked children how far or close they would like to be to Olivia, Khadija, Adam and Yong Chen (see Appendix A, Discrimination Task). For this task, children were presented with pictures of two European children's pictures (Olivia and Adam) and two Asian children's pictures (Khadija and Yong Chen). The names were kept the same as those that would appear in the books during intervention with the expectation that children from the experimental group would show greater acceptance towards Khadija and Yong Chen after reading the books.

For these tasks, children could choose from 1 (very close) to 7 (as far as possible). Olivia and Adam were European children who appeared in the European friendship books whereas Yong Chen and Khadija were Asian children who appeared in the Asian friendship books. This scale was similar to the one constructed and used by Berger et al. (2015) to assess discriminatory tendencies in the Israeli–Palestinian context although our scale had four items rather than a single item to increase sensitivity.

*Implicit Racial Bias Test (IRBT).* This task, like the other two, was repeated at pre- and post-intervention. Our version of the IRBT followed that used by Qian et al. (2019) for pre-schoolers (which had been adapted from Cvencek et al., 2011). As with other implicit bias tests, the purpose was to measure whether children had a positive association with their own race and a negative association with the other race. As opposed to the traditional Implicit Association Test, the IRBT requires participants to learn only one set of associations at a time. It also uses images instead of words, which makes it more suitable for pre-schoolers (Danziger & Ward, 2010). This format is similar to that used by researchers to explore implicit gender bias (Cvencek et al., 2011), body shape bias (Thomas et al., 2007) and racial bias (Qian et al., 2019). We measured children's levels of pro-European/anti-Asian bias by calculating how quick they were to pair 'thumbs up' and 'thumbs down' icons with European vs. Asian faces (see Figure 1).

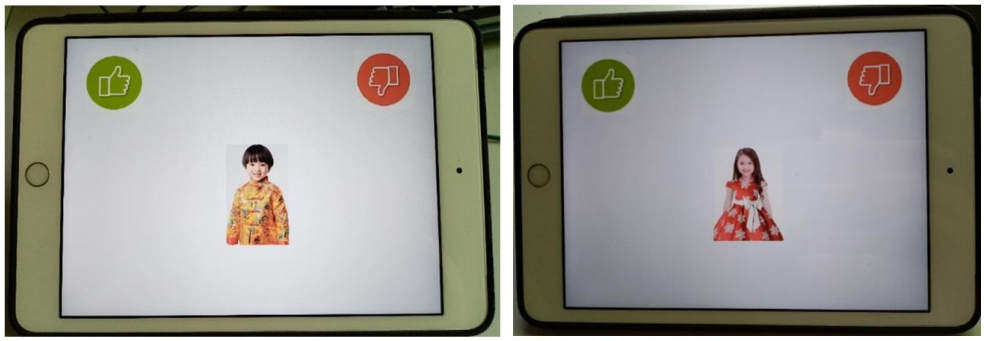

**Figure 1.** IRBT Apparatus Used by Children

We administered the IRBT using an iPad Mini by Apple Inc., which had a screen size of 7.9 inches and seemed to fit perfectly into tiny hands. The touch screen made it easier for children to select their answers. We used the Perception Research Systems software®. Participants were presented with 20 Asian children (10 boys and 10 girls) and 20 European children (10 boys and 10 girls), with children dressed in culture-consistent dress and headgear in two blocks. These sets of images were matched for age and attractiveness after a pilot test based on the ratings obtained from 20 postgraduate students (details discussed below). Each participant saw one image at a time in the centre of the screen, with options of 'thumbs up' button and a 'thumbs down' button (see Figure 6.1). For congruent pairings, participants were

asked to press the 'thumbs up' button when they saw a child similar to themselves, but the 'thumbs down' icon when they saw someone different. These rules were reversed for the incongruent trial. Approximately half of the participants completed the incongruent trial first while the others completed the congruent trial first to control for any effects of fatigue or practice. We also had one practice block at the beginning of each block to familiarize participants to the format. Therefore, each participant completed a total of four blocks: two practice blocks (eight questions each) and two trial blocks (20 questions each). We replaced each incorrect trial by the mean response time for correct responses and added 600ms penalty following the procedure recommended by Greenwald et al. (2003). In line with prior Implicit Attitude measures, we excluded the practice trials as well as any response latencies above 10,000 ms or below 300 ms. We also excluded any child with an error rate > 60%, and any trial with an average response latency 3 *SD* above the mean response latency (Cvencek et al., 2011; Qian et al., 2019). This left us with 56 participants (see the Participants section).

We computed a *D*-score in accordance with prior researchers (Greenwald et al., 2003; Qian et al., 2019) by using the equation: (RTincongruent-RTcongruent)/*SD*. This *D*-score was used for all further analyses of implicit bias in this study. A *D*-Score of 0 indicates no bias, a positive *D*-Score indicates own-race preference, and a negative *D*-Score indicates other-race preference.

***Parental Attitudes***

For measuring parental attitudes, we used three measures:

*SDO and RWA.* SDO was assessed using six items from the original SDO scale (Pratto et al., 1994, see Appendix A). The reason for using the short version was to make sure that parents did not lose motivation with a lengthier version. Other researchers have found this six-item scale to successfully measure SDO (Bergh et al., 2015; Osborne et al., 2017; Stanley et al., 2019). For each of the six questions, parents rated the extent to which they agreed to each statement on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Three items favoured dominance and three favoured equality. After reversing the items that favoured equality, we averaged all six to create one variable for SDO. The SDO scale for the parents had an acceptable internal reliability after deletion of item 3 ($\alpha$ = .745; $M$ = 1.83; $SD$ = .869)

RWA was assessed using six items from the RWA scale (Altemeyer, 1998, see Appendix A) following other researchers who found this scale to accurately gauge right-wing authoritarian attitudes (Stanley et al., 2019). Parents again rated the extent to which they agreed with each item on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). We then created a composite score after reversing the three reversed items. The RWA scale had an acceptable desirable internal reliability after deletion of item 1 ($\alpha$ =.697; $M$ = 2.34; $SD$ = 1.10).

*Racism, Acceptance and Cultural-Ethnocentrism Scale (RACES).* Parent racism was assessed using the RACES (Grigg & Manderson, 2015), a 24-item scale consisting of three subscales (Accepting Attitudes, Racist Attitudes and Ethnocentric Attitudes). RACES was developed bearing in mind the Australian culture so for all questions the country name 'Australia' was replaced with 'New Zealand' in the current study. It consisted questions like, "If people aren't happy with NZ, they should go back to their own country" and "People from all backgrounds are equal". The latter item, along with 11 more items, were reverse-scored, and a composite score was created for all 24 items ($\alpha$ =.843; $M$ = 1.75; $SD$ = .338). Parent Racism positively correlated with SDO, $r$ = .22; $p$ =.049 but not with RWA, $r$ = .206; $p$ =.067.

### *Procedure*

Participants were tested before and after four weeks of reading friendship storybooks outlining friendship between two children who were either all European (which will be referred to as European Friendship group), or between children who were European and Asian/ Arab Muslim (which will be referred to as Asian Friendship group from hereon). In the first session, we measured children's explicit racial attitudes with two measures (see Appendix A) and recorded their implicit racial attitude using the Implicit Race Bias Test (IRBT) that we had created. We also obtained the parent's SDO, RWA and Racism (RACES) scores in the first session (see Appendix B). Children were then randomly assigned two books (either about European Friendship or about Asian friendship depending on which experimental group they had been randomly assigned to. These short picture books had the same text, with only the names and images (race) of the characters differing. The Experimental group ($n$ = 45) received stories about friendship with an Arab and Chinese child namely *'How I met Khadija'* and '*How I met Yong Chen'.* The Control group ($n$ = 36) received stories about two European children named '*How I met Olivia*' and '*How I met Adam'*. Both stories followed the same pattern of initial anxiety when the new character was introduced and then eventually a long-lasting friendship after learning that they had similar interests and desires. A few positive adjectives from PRAM II by Williams et al (1975) were included in these books. These were the same that would be measured in the explicit racism task prior to and after reading these books.

The parents were instructed to read the books to the children, on average three times a week for four weeks as prior research indicates that reading stories across four to six settings is more effective in reducing bias (Aronson et al., 2015; Cameron et al., 2006). Parents were also given a reading schedule sheet to record the number of times they had read each book and to note any comments made by the child. For this experiment, the average number of times a participant had read the books was, $M$ = 13 times; $SD$ = 8.12. After this, the participants were retested on the explicit and implicit tasks.

## RESULTS

The descriptive statistics for all the measures are presented in Table 1.

### *Implicit Bias Results*

*D*-Scores scores were normally distributed, as assessed by Shapiro-Wilk's test ($p$ > .05) and there were no outliers in the data, as assessed by inspection of a boxplot. We explored IRBT *D*-score in a 2 (Age Group: 3- & 4-year-olds, 5-years +) x 2 (Experimental Group:

European friendship, Asian friendship) x 2 (Time: pre-test, post-test) mixed analysis of variance (ANOVA). Age Group and Experimental Group were between-subjects variables and Time was a within-subjects variable. There was no main effect for Time, $F$ (1, 65) = .125, $p$ = .725, $\eta_p^2$ = .002, Experimental Group, $F$ (1, 65) = 1.71, $p$= .195, $\eta_p^2$=.026, or Age Group, $F$ (1, 65) = .520, $p$ = .473, $\eta_p^2$ = .008. Neither were there any significant interactions (all $F$s < 1.59 and all $p$s > .212).

Although $D$-scores were not affected by the Experimental Group or Age, they did indicate bias. Thus, when collapsing over Experimental Group and age, the $D$-score at Time 1 ($M$ = .246; $SD$ = .849) was significantly different from a no-bias score of 0, $t$ (55) = 2.17, $p$ = .035, Cohen's $d$ = .29.

### *Explicit Bias Results*

Next, we explored Explicit Race Preference in a 2 (Age Group: 3- & 4-year-olds, 5-years +) x 2 (Experimental Group: European friendship, Asian friendship) x 2 (Time: pre-test, post-test) mixed analysis of variance ANOVA. There was no main effect for Time, $F$ (1, 79) = .115, $p$ = .736, $\eta_p^2$ = .001, Experimental Group, $F$ (1, 79) = 1.43, $p$ = .707, $\eta_p^2$ = .002, or Age Group, $F$ (1, 79) = .012, $p$ = .912, $\eta_p^2$ = .000. Neither were there any significant interactions (all $F$s < .171 and all $p$s > .681). Although Race Preference scores were not affected by the Experimental Group or age, they nevertheless indicated bias. Thus, collapsing over Experimental Group, and when examining pre-intervention scores, the Race Preference score ($M$ = 2.28; $SD$ = 3.59) was significantly different from 0 (with 0 indicating no bias and a positive score indicating an own-ethnicity bias), $t$ (78) = 5.64, $p$ < .001, Cohen's $d$ = .63.

Next, we explored Explicit Discrimination in a 2 (Time: pre-test, post-test) x 2 (Age Group: 3- & 4-year-olds, 5-years +) x 2 (Experimental Group: European friendship, Asian friendship) mixed methods ANOVA. Time was a within-subjects variable whereas Age and Experimental Groups were between-subject factors. The results of this analysis indicated that there was no main effect for Time, $F$ (1, 77) = .007, $p$ = .933, $\eta_p^2$ < .001, Experimental Group, $F$ (1, 77) = .029, $p$ = .866, $\eta_p^2$ < .001, or Age Group, $F$ (1, 77) = .361, $p$ = .550, $\eta_p^2$ = .005. Neither were there any significant interactions (all $F$s < 2.13 and all $p$s > .334).

Finally, we used multiple regression analysis to predict the D-score at Time 2, with Time 1 ratings, Parent SDO, Parent RWA and Parent Racism as predictors. All

**Table 1.** Descriptive Statistics for Explicit and Implicit Bias

| | Dependent variable | Asian friendship group *M* (*SD*) | | European friendship group *M* (*SD*) | |
|---|---|---|---|---|---|
| | | Younger | Older | Younger | Older |
| Time 1 | Explicit Race Preference | 1.92 (2.80) | 3.06 (3.61) | 2.63 (3.56) | 1.80 (4.54) |
| | Explicit Discrimination Task | -0.22 (3.03) | 1.61 (4.85) | 1.50 (3.69) | 0.45 (3.63) |
| | Implicit IRBT D-Score | .167 (.980) | .414 (.847) | .550 (1.62) | .288 (.672) |
| Time 2 | Explicit Race Preference | 1.63 (3.76) | 2.82 (5.25) | 2.63 (2.60) | 1.00 (4.27) |
| | Explicit Discrimination Task | 0.48 (4.14) | 1.17 (3.07) | 0.75 (3.57) | 0.75 (3.16) |
| | Implicit IRBT D-Score | .404 (.867) | .051 (.539) | .722 (1.35) | .357 (.910) |

**Table 2.** Multiple Regression Analyses with Race Discrimination, D-Score and Race Preference at Time 2 as Dependent Variables

| | IRBT D-Score | | | Explicit Race Preference | | | Discrimination | | |
|---|---|---|---|---|---|---|---|---|---|
| | *B* | *SE* | *β* | *B* | *SE* | *β* | *B* | *SE* | *β* |
| Time 1 Value | .329 | .118 | .339** | .517 | .120 | .459*** | .113 | .110 | .121 |
| Parent Racism | .758 | .349 | .269* | -.567 | 1.32 | -.047 | -1.26 | 1.28 | -.118 |
| Parent SDO | -.154 | .143 | -.135 | .596 | .509 | .128 | .617 | .484 | .151 |
| Parent RWA | -.117 | .122 | -.131 | -.437 | .388 | -.121 | .026 | .383 | .008 |

*Note.* *$p \leq .05$, **$p \leq .01$, ***$p \leq .001$.

predictors were entered in a single step. Together, these variables predicted a significant amount of variance in the Time 2 D-score, $F$ (4, 62) = 5.38, $p$ = .001), with an $R^2$ of .258. Time 1 Ratings and Parental Racism were significant predictors on their own, even after accounting for the variance explained by the other variables ($p$ = .006 and $p$ = .011 respectively). We then used two similar analyses to examine Time 2 Race Preference and Time 2 Asian Discrimination. The results are presented in Table 6.2.

## DISCUSSION

In this experiment, we examined whether young children in New Zealand displayed a preference for own-race over other-race and if that could be reduced by brief but repetitive media exposure to Asian and Muslim characters via short cross-race friendship picture books. The results indicated that children as young as 3 years old consistently demonstrated a preference for their own race at both an explicit and implicit level. These results are in line with what other researchers have found for children of this age range (Baron & Banaji, 2006; Dunham et al., 2006; Qian et al., 2016) However, this study is unique as no study has examined anti-Asian and anti-Muslim bias in NZ children. The results of our study indicate that children display the same trends in racial and religious prejudice as adults in NZ.

Further, the results also indicated that the preference for own race was hard to change in pre-schoolers such that that exposure to books about friendship with Asian characters (13 times on average) was not enough to reduce prejudice. Children continued to choose own-race (European) playmates and associated positive adjectives with them more readily than with Asian or Muslim children. Moreover, we did not find any effects between the Age Groups for either implicit or explicit bias in this study. Some other researchers have also arrived at similar results (e.g. Dunham et al., 2006; Setoh et al., 2017; Qian et al., 2016) providing evidence that racial biases emerge early and remain stable throughout life. Our results also support that implicit bias may be consistent across early childhood. Further, contrary to our hypothesis that explicit bias would reduce over age, we found that it was not the case. Perhaps 5- and 6-year olds (who constituted the older children in this study) had not yet achieved the level of fairness that Fehr et al. (2008) noted in 10-year-olds which marks the transition towards becoming consciously aware and thus avoiding race discrimination in everyday life or at least attempting to conceal it in an experimental setting.

Parental RWA and SDO were unrelated to child attitudes but parent racism was related to implicit own-race bias in children, emphasising the importance of intergenerational transmission of prejudiced attitudes. This finding is similar to Castelli et al. (2009) who found that children are able to pick up non-verbal cues from their parents. Thus, they may display a bias very similar to their parents, but without being aware of it. Taken together, our results indicate that children as young as 3 years old display anti-Asian and anti- Muslim prejudice that is relatively inflexible, and that parental attitudes are important in shaping children's racist attitudes at least at an implicit level.

One limitation of this study was that parents were reading the picture books to their young children. Recent studies have addressed the role of communicator in the process of bias reduction. For instance, Endendijk et al. (2014) found that mothers were subtly communicating gender stereotypes to their children while reading storybooks. Further, regarding racial bias, Pahlke et al. (2012) found that while reading books that encourage discussion about interracial friendships, mothers shifted the focus to nonhuman friendships or other goals unrelated to race or discrimination. Indeed, other researchers have also found that White parents specifically refrain from discussing race with their children (Katz, 2003; Vittrup & Holden, 2011). This may have been the reason that children appeared to miss the emphasis on cross-race friendships and therefore reading the books made no difference to their racial attitudes.

Further, during the data collection, we observed that many parents were reluctant to discuss race-related issues with their young children, some even explicitly remarked that it was unnecessary to read cross-race friendship books. Contrary to this view, there is evidence that books introducing children to different cultural narratives are important for developing diversity awareness and assisting in identity development, critical literacy and empathy (Drucker, 2003; Myers, 2014). Future research should therefore continue to explore how children's attitudes would be affected by such cross-race friendship books when parents are excluded from this process altogether.

It is also noteworthy that children growing up in Dunedin may have lesseexposure to cross-race individuals, perhaps substantially less than children growing up in Auckland, for instance, which has been rated as one of the world's most culturally diverse cities (International Organization for Migration, 2015). Therefore, it is possible that children in other cities, which have a greater in-person interaction with different races, show greater acceptance of other races. There is strong evidence that exposure to diverse cultures in childhood reduces prejudice and this would be an area worth exploring by conducting a similar study in other, more culturally diverse cities.

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## Appendix A: Explicit Prejudice Tasks

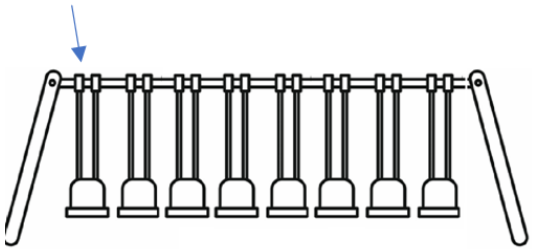
**Race Preference Task**

1. Here are two boys. One of them is a kind little boy. Once he saw a kitten fall into a lake and he picked up the kitten to save it from drowning. Which is the kind boy?
2. One of these is a smart boy. The other day someone broke the TV remote and he fixed it all by himself. Who is the smart boy?
3. Here are two boys. One of them is a friendly boy. He has a lot of friends. Which one is the friendly boy?
4. Here are two girls. One of them is a helpful girl. She helps her friends and is always there when they need her. Which one is the helpful girl?
5. Here are two girls. One of them is a happy girl. She smiles almost all the time. Which one is the happy girl?
6. One of these is a good girl. She does nice things for her friends and family. Which one is the good girl?
7. Who would you like to go to go camping with?
8. Who would you like to go to the supermarket with?
9. Who would you like to play with at the playground?
10. Who would you like to be friends with?

Child Racism= Composite score across all these questions. Same race responses coded as 1 and different race coded as -1. Responses may range from -10- 10 with a positive score indicating preference for 'own race', a negative score indicating a preference for 'other race' and a score of 0 indicating no racial preference.

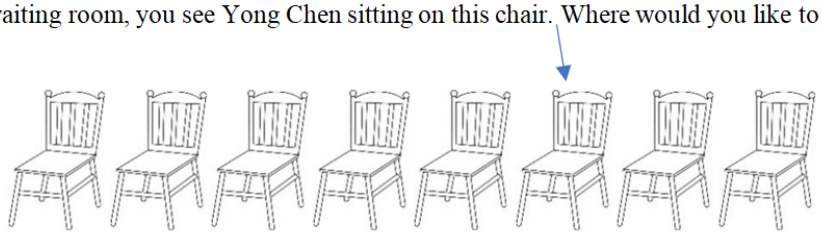
**Discrimination Task**

a. Olivia is swinging on this swing at the park. Where would you like to swing?

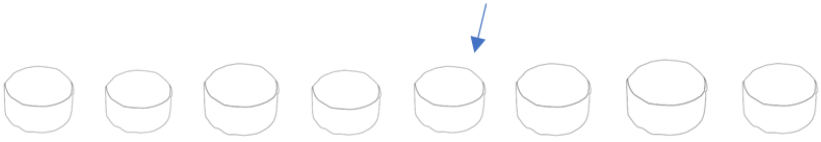


b. Khadija lives in this house. Where would you like to live?

c. In a hospital waiting room, you see Yong Chen sitting on this chair. Where would you like to sit?



d. At the library, Adam is sitting on this bean bag in a reading corner. Where would you like to sit?



## Appendix B: Measuring Parental Attitudes

**Social Dominance Orientation (SDO) and Right- Wing Authoritarianism (RWA) Scales**

Instruction: Show how much you favour or oppose each idea below by selecting a number from 1-7 on the scale below. You can work quickly, your first feeling is generally best.

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
|---|---|---|---|---|---|---|
| Strongly oppose | Somewhat oppose | Slightly oppose | Neutral | Slightly favour | Somewhat favour | Strongly favour |

1. An ideal society requires some groups to be on top and others to be on the bottom.
2. Some groups of people are simply inferior to other groups.
3. No one group should dominate in society.
4. Groups at the bottom are just as deserving as groups at the top.
5. Group equality should not be our primary goal.
6. It is unjust to try to make groups equal.
7. We should do what we can to equalize conditions for different groups.
8. We should work to give all groups an equal chance to succeed.
9. It is always better to trust the judgment of the proper authorities in government and religion than to listen to the noisy rabble-rousers in our society who are trying to create doubt in people's minds.
10. It would be best for everyone if the proper authorities censored magazines so that people could not get their hands on trashy and disgusting material.
11. Our country will be destroyed someday if we do not smash the perversions eating away at our moral fibre and traditional beliefs.
12. People should pay less attention to The Bible and other old traditional forms of religious guidance, and instead develop their own personal standards of what is moral and immoral.
13. Atheists and others who have rebelled against established religions are no doubt every bit as good and virtuous as those who attend church regularly.
14. Some of the best people in our country are those who are challenging our government, criticizing religion, and ignoring the "normal way" things are supposed to be done.