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## Adolescent racial prejudice development: The role of friendship quality and interracial contact

Fiona A. White\*, Bethany Wootton, Joyce Man, Hernan Diaz, Jana Rasiah, Emily Swift, Amanda Wilkinson

School of Psychology, University of Sydney, Australia

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### ABSTRACT

There is a limited theoretical and empirical literature on the role of friendship quality and interracial contact on adolescent racial prejudice development. To address this gap, the present study examined the relationship between these factors amongst an Australian sample of 89 school-aged adolescent friendship dyads and 80 university-aged adolescent friendship dyads. All participants were administered questionnaires measuring prejudice towards Asian and Arab Australians, friendship quality and interracial contact. Overall, the results revealed that all adolescents reported significantly higher levels of subtle prejudice than blatant prejudice. As predicted, university-aged adolescents reported significantly lower levels of both subtle and blatant prejudice towards Asian and Arab Australians than school-aged adolescents. Importantly, adolescents who had contact with Asian (outgroup) friends reported significantly lower levels of subtle and blatant prejudice towards Asian Australians than adolescents with no Asian friends. Interestingly, friendship quality was not found to moderate the similarity of prejudice levels within friendship dyads. Together, these findings indicate that in developing subtle prejudice-reduction programs research should focus on increasing interracial cooperative contact, particularly amongst school-aged adolescents.

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### 1. Introduction

Prejudice towards racial minority groups remains a prevalent social problem nationally in Australia (Dunn & McDonald, 2001; Fraser & Islam, 2000) and internationally (Persson & Musher-Eizenman, 2005). Despite this there has been very few research studies investigating prejudice development, particularly amongst adolescents. Adolescence is a crucial developmental period especially when one considers the fact that this age cohort includes the next generation of social policy makers. In order to address this empirical gap, the present study aimed to identify developmental differences between middle and late adolescents' racial prejudice towards Asian and Arab Australians, and explored the extent to which friendship quality and interracial social contact predicts these differences. By empirically identifying developmental differences and clarifying social and cognitive predictors of adolescent racial prejudice researchers will gain essential information about target variables to focus on in developing racism reduction strategies—a worthwhile social investment for the future.

Racial prejudice is defined in the literature as “an antipathy based upon a faulty and inflexible generalization. It may be felt or expressed. It may be directed towards a group as a whole, or an individual because he [or she] is a member of that

\* Corresponding author at: School of Psychology, A18, The University of Sydney, NSW 2006, Australia. Tel.: +61 2 935132461; fax: +61 2 90365223.  
E-mail address: [fionaw@psyc.usyd.edu.au](mailto:fionaw@psyc.usyd.edu.au) (F.A. White).

group” (Allport, 1954, p.9). Despite Australia’s multicultural context, prejudice towards racial minorities, in particular Asian and Arab Australians, is still widespread (Dunn & McDonald, 2001; Fraser & Islam, 2000; Islam & Jahjah, 2001). Moreover, since the events of September 11, 2001, Arab Australians have increasingly become targets of prejudice (Islam & Jahjah, 2001). As Oswald (2005) notes, commonly held stereotypes about Arab individuals include beliefs that they are untrustworthy, uncivilised, radical Muslims and/or terrorists. Since the terrorist attacks and continued negative media coverage of Arab individuals, it is possible that many people feel a sense of threat to both their individual and group security (Oswald, 2005). Related to this, Persson and Musher-Eizenman (2005) found American college students reported greater levels of prejudice towards Arabs than towards Blacks, a finding that is consistent with the idea proposed by Domke, Garland, Billeau, and Hutcheson (2003) that an increase in attention to one ethnic minority group by news sources temporarily displaces other ethnic minority groups from the news.

### 1.1. *Blatant versus subtle racial prejudice*

Not only are different ethnic groups the targets of different levels of prejudice due to temporal and/or historical factors, there are also differences in the *form* of prejudice. Meertens and Pettigrew (1997) identified two distinct forms of prejudice, subtle and blatant prejudice: blatant prejudice is regarded as the traditional form of prejudice which involves the open expression of negative attitudes/emotions towards minority groups (Meertens & Pettigrew, 1997, p. 58); whereas subtle prejudice is indirect and involves the denial of expressions of positive emotions towards a minority group (Meertens & Pettigrew, 1997, p. 55). In the existing cultural climate of Australia, blatant prejudice remains a socially unacceptable form of expressing outgroup attitudes. In fact, Pedersen and Walker (1997) and Islam and Jahjah (2001) have found that subtle racial prejudice was more prevalent than blatant prejudice amongst Australian samples, and that blatant prejudice was declining in Australia (Walker, 1994). Taking this literature into consideration it was predicted that

**H1.** Adolescents will report higher levels of subtle prejudice than blatant prejudice, and both forms of prejudice will be higher towards Arab Australians than Asian Australians.

### 1.2. *Cognitive maturity and adolescent prejudice development*

The majority of prejudice development theory and research have concentrated on the childhood years (4–12 years of age) with a particular focus on the role of social-cognitive developmental (Aboud, 1988) and motivational processes (Nesdale, Maas, Griffiths, & Durkin, 2003; Tajfel & Turner, 1979). For example, Aboud (1988) social-cognitive developmental approach proposes that young children’s inward focus and their dominant perceptual processes result in preferences based on physical attributes such as skin colour. As a consequence, outgroup prejudice begins around the age of 4 years and peaks at approximately 7 years of age (Aboud, 1988). However, with the development of formal operational thought the child becomes increasingly able to understand and focus on the individual rather than the group-based qualities of people, as a result of this increasing cognitive maturity their ingroup preference and outgroup stereotyping falls between the ages of 8–12 years (Doyle, Beaudet, & Aboud, 1988). In contrast, Social Identity Theory (SIT: Tajfel & Turner, 1979) and its application to children’s development (Nesdale et al., 2003), predicts no such fall in prejudice levels during middle childhood. According to SIT (as applied to children), because ethnic preferences primarily reflect social motivations to identify with particular groups rather than cognitive considerations, ethnic preferences remain the same throughout middle childhood. Interestingly, there are research findings to support both views during child development but less ‘direct’ theoretical and empirical evidence exists for prejudice development during adolescence.

According to Hoover and Fishbein (1999), there are three theoretical views that ‘indirectly’ lead to the prediction of a decrease in prejudice with increasing age from 10 to 20 years: (i) Fischer and Lamborn (1989) propose that because prejudice stems in part from simplistic social thinking that, as adolescents move towards more abstract levels, prejudice should decline; (ii) Katz and Ksiansnak (1994) model predicted that gender role flexibility increases with age in adolescence due to an interaction between increasing cognitive flexibility and socialization influences, and this model when extended to prejudice predicts a decrease with age; and (iii) Kohlberg and Candee (1984) theorise that moral development generally increases from preadolescence to young adulthood. Because prejudice can involve action against target groups it can be seen as a proxy for moral action (Fishbein, 1996), therefore it would be expected that prejudice would also decrease in this age range. Taking this literature into consideration it was predicted that

**H2.** University (late) adolescents will show less prejudice towards Asian and Arab Australians than high-school (middle) adolescents.

### 1.3. *The social environment and adolescent racial prejudice development*

It is clearly the case that more theory-building and research needs to examine the complex phase of prejudice development during adolescence (12–18 years). As Black-Gutman and Hickson (1996, p. 455) conclude from their cognitive

developmental study “Whether the more favourable racial attitudes of middle childhood are maintained into the teenage years is dependent on the distinctive sociocultural events taking place within children’s social environment”. Such sociocultural events include socialization experiences where adolescents’ prejudice attitudes develop through either direct contact or indirect observational learning of attitudes expressed by parents, friends, and the media, all of which are influential socializing agents that the child is exposed to on a daily basis (Rosenfield & Stephan, 1981; White & Gleitzman, 2006). Clearly, an improved understanding of the mechanisms of adolescent prejudice development requires an examination of environmental-learning factors in addition to cognitive factors (Black-Gutman & Hickson, 1996).

One of the first theorists to advocate a role for the social environment in prejudice development was Allport (1954). According to Allport, during childhood, parents play an important socializing role in forming children’s attitudes and values. However by adolescence, peers have been found to play an increasingly important role in the child’s social world, including a greater influence on adolescent’s racial attitudes (Larson & Bradney, 1988; Ritchey & Fishbein, 2001; Verkuyten, 2002). In fact, Hoover and Fishbein (1999) argue that social environmental factors (i.e., socio-cultural contexts or socialization experiences) may be more influential in fine-tuning adolescent’s prejudice than children’s prejudice. To examine this possibility further, two social environmental factors and their role on adolescent racial prejudice will be investigated—friendship quality and interracial friendship contact.

### 1.3.1. *Friendship quality within reciprocal dyads*

Research on the influence of friendship quality on adolescents’ attitudes have focused largely on peer influence at the group level, neglecting the friendship dyad and the unique role that a single close friend can play on the development of prejudice. It is also more difficult to make distinctions between reciprocal and non-reciprocal friendships at a group level of analysis compared to the dyadic level. With regard to close reciprocal friendships adolescents have been found to show more similarity in terms of interpersonal understanding in comparison to non-reciprocal friends (Epstein, 1983). A close reciprocal friendship has also been found to be a more powerful influence over adolescents’ attitude change compared to the influence from peers as a group (Epstein, 1983). For these reasons, dyads of close reciprocal friends chosen by participants, rather than the peer group as a whole, will be the level of analysis examined in this study.

How are attitudes influenced within the friendship dyad? Research has reported that friends are selected either on the basis of their similar attitudes (Epstein, 1983), or that friends socialise one another in their attitudes as the friendship progresses, consequently leading to an assimilation of attitudes (Deutsch & Mackesy, 1985). Therefore similarity in attitudes between friendship dyads can either come about through initial friendship selection or through mutual socialization. From the mutual socialization perspective, close friend’s attitudes assimilate with, and accommodate for, one another as the friendship grows in closeness. As conformity and belonging, both indicators of friendship quality, gain in importance during adolescence, friends may share even more similar attitudes and beliefs (Brown, Clasen, & Eicher, 1986).

It is important to note that both the initial friendship selection and mutual socialization perspectives have been empirically challenged. Ritchey and Fishbein (2001) reported a non-significant correlation between adolescents’ and their friend’s prejudiced attitude, concluding that friends do not influence adolescent prejudice. Their null finding may have been due to methodological limitations such as the fact that they examined the peer group and not close reciprocal friendship dyads. They also failed to measure the moderating effect of friendship quality on racial attitude similarity—this effect is important as Berndt (2002) argues that when friendships are high in quality, the influence of the friends’ characteristics or ‘mutual socialization’, may be magnified. To address these previous limitations, the present study investigated the moderating effect of perceived friendship quality [as operationalized by Parker and Asher (1993) scale] on prejudice similarity within close reciprocal friendship dyads. Based on this review of friendship selection, similarity-attraction and mutual socialization approaches one would expect close friends (i.e., friends that report high friendship quality) to share more similar prejudiced attitudes compared with acquaintances (i.e., friends that report moderate to low friendship quality). Therefore it was predicted that

**H3.** The stronger the friendship quality reported by the reciprocal dyad the greater the similarity in prejudice scores.

### 1.3.2. *Interracial contact amongst friends*

In addition to friendship quality, contact with close racial minority (or outgroup) friends may also influence adolescent prejudice development—here reciprocal interracial (outgroup) friendships may result in different prejudice attitudes to reciprocal same-race (ingroup) friendships. For example, Allport (1954) Contact Hypothesis asserts that given the right conditions, increased contact with racial outgroups will significantly decrease prejudice towards these groups. Theoretically, several models have explained the effect of contact on prejudice reduction. For example, the Decategorization Model predicts that interracial contact brings about personalised interactions with individuals from former outgroups and as a result category-based stereotypes of ingroup and outgroup are abandoned (Gaertner, Rust, Dovidio, Bachman, & Anastasio, 1994). Additionally, the Common Ingroup Identity Model predicts that through interracial contact cognitive representations of ingroup and outgroup occur where those formally referred to as ‘them’ now become part of ‘us’. In so doing, prejudice is reduced as more positive feelings are displayed to former outgroup members whom are now considered members of the ingroup (Gaertner et al., 1994).

Empirically, several researchers have shown that interracial friendship contact is related to low levels of prejudice. Specifically, Aboud, Mendelson, and Purdey (2003) have reported that the number of cross-race interactive friendships amongst elementary school children was significantly (and negatively) related to the level of racial bias expressed. Similar findings have also been reported amongst university-aged adolescents. For example, Wright, Aron, McLaughlin-Volpe, and Ropp (1997) found that amongst university-aged adolescents that the number of cross-ethnic friendships and the perceived closeness of these friendships were associated with lower levels of overall prejudice towards that ethnic out-group. Therefore based on this theoretical and empirical literature it was predicted that

**H4.** Adolescents who report contact with Asian and Arab friends will report lower levels of prejudice towards these racial minorities than adolescents who report having no contact with Asian and Arab friends.

## 2. Method

### 2.1. Participants

#### 2.1.1. School (middle) adolescent sample

The school sample ( $M$  age = 15.04 years;  $SD$  = .47) included 186 (31 male and 155 female) year 10 high school students from four schools across the greater Sydney area: - one co-educational state school, two private girl's schools and one private boy's school. The school-aged sample was ethnically diverse with 47% being Anglo-Australian, 8% European, 3% Arab, 39% Asian and 3% nominating 'other' as their background—this ethnic composition was similar across all four high schools. The total number of school-aged participants yielded 89 complete friendship dyads: of these 56% were Anglo/Anglo dyads, 27% were non-Anglo/non-Anglo dyads, and 17% were cross-race dyads.

#### 2.1.2. University (late) adolescent sample

The university sample was matched as closely as possible to the school sample on variables such as size, sex-ratio, ethnicity and percentage of interracial dyads. The university sample ( $M$  age = 18.28 years,  $SD$  = .52) consisted of a total of 176 (43 male and 133 female) first year Psychology students from the University of Sydney and their close friends. The university sample was also ethnically diverse with 58% being Anglo-Australian, 13% being European, 6% being Arab, 16% being Asian, and 7% nominating 'other' as their background. The total number of university-aged participants yielded 80 complete friendship dyads: of these 75% were Anglo/Anglo dyads, 10% were non-Anglo/non-Anglo dyads, and 15% were cross-race dyads.

### 2.2. Measures

Five measures were administered to all participants.

#### 2.2.1. Demographic characteristics

A Demographic Questionnaire assessed characteristics such as age, sex, ethnic background and religious/political affiliations of the participants.

#### 2.2.2. Peer contact

The Peer Contact Questionnaire was developed by the authors and assessed the number of close friends that the participant has; the ethnic group to which these friends belong; the amount of contact each participant has with these friends; the perceived quality of these friendships; and a rating of the perceived degree of similarity between the participant's and their close friend's (co-participant's) racial attitude. The complete scale is included in Appendix A.

#### 2.2.3. Blatant and subtle prejudice

The Prejudice Questionnaire developed by Meertens and Pettigrew (1997) contains 10 items tapping subtle prejudice and 10 items tapping blatant prejudice each for both Arab and Asian Australians, thus yielding a 40-item questionnaire. Higher scores on this measure indicate greater prejudice. The subtle prejudice subscale is divided into three categories—traditional values (“Asian Australians living here should not push themselves where they are not wanted”); the exaggeration of ethnic differences (“How different or similar do you think Asian Australians are to Anglo-Australians in their religious beliefs and practices”); and the denial of positive emotions (“How often have you felt admiration for a Arab person living here”). The blatant prejudice subscale is divided into two categories—Threat and Rejection (“Asians Australians have jobs that Anglo-Australians should have”) and Intimacy (“I would not mind if a Arab person who had a similar economic background as mine joined my close family by marriage”). For the present Australian study the internal consistency on the blatant prejudice subscale for Arab and Asian items was  $\alpha = 0.85$  and  $\alpha = 0.83$ , and  $\alpha = 0.71$  and  $\alpha = 0.70$  on the subtle prejudice subscale for Arab and Asian items.<sup>1</sup>

<sup>1</sup> For all questionnaires the alpha rates amongst the school and university samples were comparable to those reported for the combined sample.

#### 2.2.4. Friendship quality

The Friendship Quality Questionnaire (FQQ) developed by Parker and Asher (1993) is a 40-item Likert scale (where 0 = not at all true to 4 = really true) requiring respondents to rate how accurately each statement portrays the quality of their friendship with a nominated friend. The measure included items such as “makes me feel good about my ideas”, “always sit together at lunch”. Scores ranged from 0 to 160 where the higher the score the higher the friendship quality. The nominated person for the present study was a class-friend for the school-aged children sample and any close friend for the university sample. Since the original FQQ was constructed for primary school students, the wording of some items have been altered to improve the scale's appropriateness to the high school and university sample. For the current Australian study the internal consistency for the full scale of the FQQ was  $\alpha = 0.92^3$ .

#### 2.2.5. Social desirability

Researchers have been concerned about the effects of social desirability on measures of prejudice because respondents who scored high on such scales were presumed to be ‘faking to look good’ and as such could potentially contaminate the result. To address this the Balanced Inventory of Desirable Responding (BIDR) developed by Paulhus (1990) was used to screen the data. The BIDR is a 40-item scale measuring participant's level of socially desirable responding. The two subscales include: self-deception (SD) (e.g., “I never regret my decisions”) and impression management (IM) (e.g., “I don't gossip about other peoples business”). For each of the 40 items the participant is instructed to choose from seven responses ranging from *not true* to *very true*. The items are scored dichotomously by assigning one to extreme answers (either 6 or 7) and zero to the rest. Therefore scores can range from 0 to 20 on each subscale. The BIDR has been shown to have good internal consistency (Paulhus, 1990). For the current Australian study the internal consistency for the SDE subscale was  $\alpha = .55$ , for the IM subscale  $\alpha = .65$ , and for the full scale  $\alpha = .68$ .<sup>2</sup> In line with the Buttell and Carney (2002) study, individuals scoring 14 or more on either subscale was considered *High* on social desirability, and were thus excluded from the main analysis pertaining to the hypotheses.

#### 2.3. Procedure

With regard to the school sample, principals were contacted and their permission sort to conduct this study in their school. Upon permission being granted, a researcher attended the school one week prior to testing to provide students with an introduction to the study, to seek parental consent, and nominate a close friend in their class. With regard to the university sample, students voluntarily signed up for the study as a partial requirement for course credit in Introductory Psychology. University students were also asked to nominate a close friend.

All participants were informed that their responses were confidential and would not be accessed by anyone other than the researchers. Once participant consent was given questionnaires were administered in a counterbalanced fashion to eliminate any systematic effects of one questionnaire on the other. Schools students and their friend completed the questionnaires separately but simultaneously in their classroom room. University students completed their questionnaire in a tutorial room and on returning their completed questionnaires to the researcher were handed a blank set of questionnaires in a sealed envelope for their close friend to complete and return within one week.

To ensure that dyadic responses could be analysed accurately, each set of friendship questionnaires was given a similar 6-digit code. All participants were allowed approximately 40 min to complete their set of questionnaires and debriefed upon completion of testing.

#### 2.4. Analysis of data

A 2 (age group: school, university)  $\times$  2 (prejudice: subtle, blatant)  $\times$  2 (race: Asian, Arab) repeated measures mixed design analysis of variance (ANOVA) was conducted to test H1. In order to test H3, a bi-variate Pearson Product Moment correlation (one-tailed) between an absolute prejudice difference score and the total friendship quality score (for each of the three categories of friendship dyads: ‘Anglo/Anglo’ dyads, ‘non-Anglo/non-Anglo’ dyads and ‘cross-race’ dyads). An absolute prejudice difference score was chosen here because it has been shown to be reliable measure of ‘similarity’ (Zimmerman, 1997), where a *low* absolute prejudice difference score can be interpreted as *highly* similar prejudice scores within the friendship dyad. Finally, a 2 (age group: school, university)  $\times$  2 (friendship type: Asian friends, ‘no Asian’ friends)  $\times$  2 (Asian prejudice: subtle, blatant) repeated measures mixed design analysis of variance (ANOVA) was conducted to test H4.<sup>3</sup>

<sup>2</sup> Because of loss of information caused by dichotomization these moderate alpha rates are comparable with previous research using this procedure—please refer to the Stöber and Dette (2002) paper. Moreover, the smaller alphas reported for the subscales, compared to the full scale, are to be expected as their calculation is based on half the number of items.

<sup>3</sup> Sample numbers only permitted analysis of adolescent prejudice towards Asian Australians.

**Table 1**  
Means and standard deviations of prejudice scores for the school and university samples.

Prejudice	School sample (n = 89 <sup>a</sup> )		University sample (n = 118 <sup>a</sup> )	
	M	SD	M	SD
Subtle Asian	28.72	4.81	26.27	5.38
Blatant Asian	22.91	8.12	20.06	7.10
Subtle Arab	29.41	5.36	27.59	5.66
Blatant Arab	23.66	7.71	20.74	6.82

<sup>a</sup> Indicates the reduced sample size due to the deletion of Asian and Arab participants.

### 3. Results

#### 3.1. Preliminary data screening

Prior to testing the hypotheses participants who identified themselves as belonging to an Asian or Arab background were excluded from the relevant analyses. Additionally, missing data was eliminated from the analyses and seven individuals (five school-age adolescents and two university-aged adolescents) who scored 14 or above on either of the BIDR subscales were excluded from the analyses (Buttelle & Carney, 2002). Following this, correlations between prejudice scores and scores on the BIDR were examined in order to check whether remaining participants' responses to the blatant and subtle prejudice scales were related to their social desirability motives. Importantly for the remaining participants, correlations between BIDR scores and prejudice scores were negligible and non-significant, and therefore no further analyses of BIDR scores were required.

#### 3.2. H1 and H2: Forms of prejudice and developmental differences in adolescent prejudice towards Asian and Arabs

The means and standards deviations of prejudice scores for the school and university samples are reported in Table 1. Overall, significant main effects were found for the within subject variables prejudice form [where  $F(1, 205) = 332.92$ ,  $p = .000$ ] and racial group [where  $F(1, 205) = 20.57$ ,  $p = .000$ ], and the between subjects variable of age group [where  $F(1, 205) = 9.73$ ,  $p = .002$ ]. No significant interactions were found.

Pair-wise comparisons revealed that the school-aged sample reported higher Arab prejudice than Asian prejudice for both subtle ( $p = .05$ ) and blatant ( $p = .04$ ) prejudice. Similarly, the university-aged sample reported higher Arab prejudice than Asian prejudice for both subtle ( $p = .000$ ) and blatant ( $p = .033$ ) prejudice. In a further test of H1 additional pair-wise comparisons revealed that the school-aged sample reported higher subtle prejudice than blatant prejudice towards both Asians ( $p = .000$ ) and Arabs ( $p = .000$ ). Similarly, the university-aged sample reported higher subtle prejudice than blatant prejudice towards both Asians ( $p = .000$ ) and Arabs ( $p = .000$ ). Together these analyses provide strong support for H1.

Simple effects analysis for age group revealed that school-aged adolescents reported significantly higher subtle Asian prejudice [ $F(1, 205) = 11.49$ ,  $p = .001$ ], subtle Arab prejudice [ $F(1, 205) = 5.44$ ,  $p = .02$ ], blatant Asian prejudice [ $F(1, 205) = 7.23$ ,  $p = .008$ ] and blatant Arab prejudice [ $F(1, 205) = 8.35$ ,  $p = .004$ ] than university-aged adolescents. These significant findings strongly support H2.

#### 3.3. H3: Friendship quality and adolescent prejudice

The results reported in Table 2 revealed that there are significant levels of similarity in prejudice attitudes within close 'Anglo/Anglo' reciprocal friendship dyads for both age groups, but less similarity, and in some cases a negative relationship in attitudes amongst the 'non-Anglo/non-Anglo' and 'cross-race' dyads.

**Table 2**  
Pearson product-moment (paired sample) correlations as a measure of similarity between prejudice and friendship quality scores within school and university friendship dyads.

	School friendship dyads			University friendship dyads		
	Anglo/Anglo (n = 48)	Non-Anglo/non-Anglo (n = 25)	Cross-race (n = 16)	Anglo/Anglo (n = 61)	Non-Anglo/non-Anglo (n = 8)	Cross-race (n = 10)
Subtle Asian prejudice	.32*	.12	.12	.33**	-.41	.56
Blatant Asian prejudice	.57**	.10	.48	.28*	-.18	.29
Subtle Arab prejudice	.43**	-.44*	-.23	.37**	-.13	.22
Blatant Arab prejudice	.65**	-.09	-.25	.37**	.40	.07
Friendship quality	.51**	.66**	.30	.60**	-.52	-.23

'Anglo/Anglo' refers to each friend in the dyad identifying as Anglo-Australian; 'non-Anglo/non-Anglo' refers to each friend in the dyad identifying as something other than Anglo-Australian; and 'cross-race' refers to one friend identifying as Anglo-Australian and the other friend identifying as non-Anglo Australian.

\*  $p < .05$ .  
\*\*  $p < .01$ .

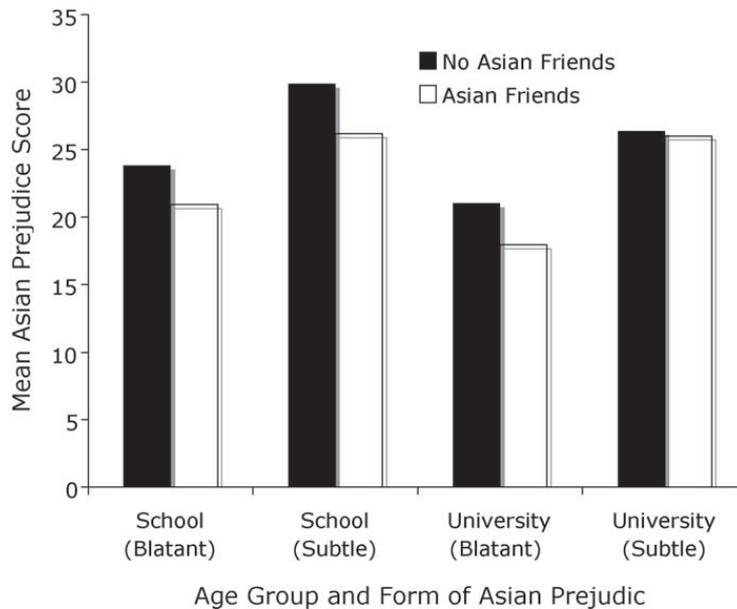


Fig. 1. Mean total prejudice, subtle prejudice and blatant prejudice scores by age group.

H3 predicts that if friendship quality is high then the absolute prejudice difference score will be low—in other words, a negative correlation. For the school-aged sample, several negative correlations (between total friendship quality and the difference prejudice scores) approached significance: the blatant Asian prejudice difference score [ $r(44) = -.23, p = .06$ ], and the blatant Arab prejudice difference score [ $r(44) = -.24, p = .06$ ] for the 'Anglo/Anglo' dyads, and the subtle Asian prejudice difference score [ $r(15) = -.41, p = .06$ ] for the 'cross-race' dyads. Unexpectedly, a significant positive correlation [ $r(25) = .41, p = .02$ ] was found between the blatant Asian prejudice difference score and total friendship quality amongst the 'non-Anglo/non-Anglo' dyads. No significant correlations were found for the close reciprocal friendship dyads in the university sample. In sum, the negative trends approaching significance provide limited support for H3 amongst the school-aged sample.

#### 3.4. H4: Intergroup contact and adolescent prejudice

The means of total prejudice, subtle prejudice and blatant prejudice scores according to age group are reported in Fig. 1. Importantly, significant main effects were found for the within subject variable of Asian prejudice [where  $F(1, 203) = 251.53, p = .000$ ] and for the between subjects variable of age group [where  $F(1, 203) = 7.20, p = .008$ ] and friendship type [where  $F(1, 203) = 8.19, p = .005$ ]. A significant three-way interaction between age  $\times$  friendship  $\times$  Asian prejudice was also found [where  $F(1, 203) = 5.03, p = .026$ ].

Simple effects analysis for age group revealed that school-aged adolescents with 'no Asian' friends reported significantly higher Asian prejudice [ $F(1, 203) = 10.15, p = .002$ ] than university students with 'no Asian' friends, suggesting that interracial contact may be more important for reducing racial prejudice levels during middle adolescence rather than late adolescence. Also, school-aged adolescents with Asian friends reported lower levels of Asian prejudice than those with 'no Asian' friends [ $F(1, 203) = 6.17, p = .01$ ]. There was no equivalent difference amongst the university sample.

The simple effects analysis for the three-way interaction revealed that school-aged adolescents with 'no Asian' friends reported higher subtle Asian prejudice [ $F(1, 203) = 10.38, p = .001$ ] than those with Asian friends. This effect was not found for blatant Asian prejudice. In contrast, university-aged adolescents with 'no Asian' friends reported higher blatant Asian prejudice [ $F(1, 203) = 4.33, p = .039$ ] than those with Asian friends. This effect was not found for subtle Asian prejudice. Additionally, the school-aged sample with 'no Asian' friends reported higher subtle Asian prejudice [ $F(1, 203) = 16.69, p = .000$ ] and blatant Asian prejudice [ $F(1, 203) = 4.89, p = .028$ ] than the university-aged sample with 'no Asian' friends. And finally, both the school [ $F(1, 203) = 84.37, p = .000$ ] and university [ $F(1, 203) = 87.82, p = .000$ ] samples with 'no Asian' friends reported higher levels of subtle Asian prejudice than blatant Asian prejudice. In summary, having 'no Asian' friends was most detrimental to school-aged children's levels of subtle prejudice.

## 4. Discussion

This study has produced four principle findings on the nature of adolescent prejudice development. Firstly, as predicted by H1, both the school and university samples reported significantly higher levels of subtle prejudice than blatant prejudice. This is consistent with previous Australian research findings (Islam & Jahjah, 2001; Pedersen & Walker,

1997; Walker, 1994), and further supports the notion that subtle prejudice has become more prevalent than blatant racial prejudice in today's society. Such an increase may be due to the fact that subtle forms of prejudice are currently more socially acceptable ways of expressing prejudice (Meertens & Pettigrew, 1997). Moreover, there was a higher level of prejudice expressed towards Arabs than Asians for both the school and university samples. This findings is also in line with previous Australian (Dunn & McDonald, 2001; Fraser & Islam, 2000; Islam & Jahjah, 2001) and international (Oswald, 2005; Persson & Musher-Eizenman, 2005) findings which have found that targets of prejudice change with historical and cultural contexts.

#### 4.1. Developmental differences in adolescent racial prejudice

As predicted in H2, another important result of the present study was the finding that adolescents attending school consistently reported higher subtle and blatant prejudice scores than the university sample. Specifically, these developmental differences occurred for expressions of prejudice towards both Asians and Arabs. Although previous research with children (Doyle & Aboud, 1995) has shown that prejudice decreases with age, the current finding is the first amongst an adolescent cohort. The current result may also be explained by differences in the level of education, as well as age differences between the two samples, as the level of education has been found to be negatively associated with levels of prejudice (Dunn & McDonald, 2001). Although previous research (Wagner & Zick, 1995) has found that more educated participants provide more socially desirable answers, this latter interpretation does not adequately explain the current results as there were no differences in each age group's reported levels of social desirability.

Although the current design's focus on adolescents aged 14–19 years provides an important extension to previous literature on prejudice development, there are several methodological improvements that future research may adopt. For example, it cannot be inferred from these results that prejudice development follows this decreasing linear trend across the lifespan as research involving three or more age groups has found the developmental path of prejudice to be variable in nature (Hoover & Fishbein, 1999); the inclusion of a third comparative group of late adolescents not attending university may further clarify the independent effects of age and level of education on prejudice development; and implementing a longitudinal study that tests 14-year-old adolescents through to the age of 19 years may further clarify developmental trends in racial prejudice. Future research may also benefit from testing the robustness of these findings in a rural setting where the opportunity for direct contact with Asian or Arab adolescents is less likely due to their under-representation than in the urban context examined here.

#### 4.2. Friendship quality as a moderator of the similarity of close friends' prejudice attitudes

Prior to testing H3 concerning the relationship between friendship quality and the similarity between adolescent friends' racial attitudes, friendship dyads were divided into three categories—'Anglo/Anglo', 'non-Anglo/non-Anglo' and 'cross-race'. This categorization of friendship dyads provided a fourth set of interesting findings—namely that dyadic friends attitudes were significantly similar but only amongst 'Anglo/Anglo' dyads, and there was no significant correlations between 'cross-race dyads'. This finding is in opposition to Ritchey and Fishbein (2001), and clearly suggests that in the realm of racial prejudice, adolescent birds of a feather do flock together. It may be the case that the smaller number of 'non-Anglo/non-Anglo' and 'cross-race' dyads available in both age cohorts partially explains the non-significant correlations in prejudice and friendship quality scores reported in Table 2. In their study of elementary school-aged children's peer relations and racial attitudes, Aboud et al. (2003) also reported fewer cross – than same – race companions, however the small number of cross-race friendships in the current study may have compromised the necessary level of statistical power.

It was not surprising that because (significant) positive correlations were found amongst 'Anglo/Anglo' friendship dyads, that friendship quality moderated the strength of the blatant prejudice attitude-similarity relationship for the school-aged sample. Here school-aged Anglo-Australian adolescents who report a strong friendship quality with their close Anglo-Australian friend also report very similar levels (or a small absolute difference score) of blatant prejudice towards Asian and Arabs. A possible explanation for this finding is that the blatant form of prejudice is overtly expressed (Meertens & Pettigrew, 1997), and therefore more openly communicated within a close reciprocal Anglo-Australian dyad. Similarly, friendship quality was found to moderate the strength of the subtle Asian prejudice attitude-similarity relationship amongst the 'cross-race' dyads in the school-aged sample. Here school-aged Anglo-Australian adolescents who report a strong friendship quality with their close non-Anglo-Australian friend report very similar levels (or a small absolute difference score) of subtle Asian prejudice. This may have resulted because the close non-Anglo friend is mostly likely to be Asian in the case of school-aged sample, and therefore both members of this 'cross-race' dyad report similarly low levels of subtle Asian prejudice. Interestingly, none of these moderating effects generalized to the university-aged sample, here friendship quality and similarity in friend's prejudice levels appear unrelated. One possible explanation may be the homogenously low levels of prejudice expressed by these more cognitively mature adolescents. Importantly however, before any firm conclusions can be made on the moderating role of friendship quality in friend's racial prejudice similarity, additional qualitative analysis of the content of 'actual' discussions between reciprocal friends is needed to shed light on the true nature of racial attitude transmission.

#### 4.3. The interracial contact and adolescent prejudice development

The final and most important finding as predicted by H4 was that adolescents who reported interracial contact with Asian friends also reported significantly lower levels of Asian prejudice than adolescents who reported having 'no Asian' friends. Specifically, the three-way interaction revealed that school-aged adolescents with 'no Asian' friends reported higher subtle Asian prejudice than those with Asian friends, whereas university-aged adolescents with 'no Asian' friends reported higher blatant Asian prejudice than those with Asian friends. Clearly, interacting with Asian friends has a different impact on the form of prejudice reported by school-aged and university-aged adolescents.

Nevertheless, this finding may be explained in terms of decategorization of ingroup and outgroup stereotypes (Gaertner et al., 1994) or changes to cognitive representations of common ingroup identity where those formally referred to as 'them' now become part of 'us'. An alternative but equally plausible explanation of the results could involve selection bias—where adolescents who are less prejudiced to begin with, simply seek more interracial friendships. Due to the ex post facto nature of the measurement being taken of ongoing interracial contact, inferences of causality are difficult to draw with any confidence (Hewstone & Brown, 1986).

Irrespective of the direction of causality interracial contact is important for lower levels of prejudice. In their recent meta-analysis of 516 studies, Pettigrew and Tropp (2006) found that intergroup contact reduced prejudice. Synthesizing effects from 696 samples, their meta-analysis conclusively revealed that greater intergroup contact is associated with lower levels of prejudice (mean  $r = -.215$ ). Altogether, 94% of the samples in the Pettigrew and Tropp analyses showed an inverse relationship between intergroup contact and prejudice. Moreover, the findings of the current field-work study provides support that interracial contact with Asians friends promotes positive attitudes (lower levels of prejudice) towards Asians, in general. Similarly, Nesdale and Todd (2000) reported that the pattern of contact, which occurred in the natural setting of a residential hall of an Australian university, impacted directly on the Australian students' level of intercultural acceptance. Overall, there appears to be sufficient empirical support for the current finding that interracial contact is related to lower levels of adolescent prejudice.

One important research application of this encouraging finding could be the implementation of *cooperative contact* strategies within the classroom—here racially diverse small groups could participate in joint activities to achieve common or superordinate goals, which in turn change the functional relations between groups from actual competition to cooperation (Dovidio, Kawakami, & Gaertner, 2000). Thus cooperative contact reduces the salience of the original ingroup–outgroup (racial) category and negative intergroup schema, resulting in positive group interaction. Similarly, Fiske (2000) has demonstrated that the social interdependence that is inherent in cooperative interactions towards common goals is what gives contact situations their power to reduce prejudice. A further outcome of cooperative contact strategies is the successful generalization of greater racial tolerance to other outgroups (Pettigrew, 1997). Overall, the existing empirical evidence shows that cooperative contact is a more than viable strategy for decreasing adolescent racial prejudice.

#### 5. Conclusion

This study on adolescent racial prejudice development has offered a unique examination of attitude transmission involving two different adolescent cohorts in close reciprocal friendship dyads. The core findings reveal that university (late) adolescents are significantly less prejudiced than adolescents attending high school, either because of the cognitive maturity that comes with higher education and/or a broadening social sphere. Despite finding that friends in close reciprocal dyads share similar racial prejudice attitudes, perceived friendship quality did moderate the strength of this similarity in attitudes. Importantly, however, interracial contact with Asian friends was found to play a salient role in influencing the level of adolescent subtle and blatant racial prejudice towards this outgroups. One implication of these findings is for psychologists to encourage cooperative interracial contact amongst adolescents—a worthwhile strategy to curb the growth of racial prejudice.

**Appendix A. The Peer Contact Questionnaire**

The following questions refer to your friendship group. Some of the following questions require you to estimate *time*, such as hours per week (i.e., 7 days), so please ensure that your answers are as accurate as possible.

1. How many ‘close’ friends do you have, that is, friends that you share personal information with? \_\_\_\_\_.

2. List the first names (only) of your close friends

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3. List the cultural group that each of your close friends belong to. For example, if you answered two close friends in Q.2 then you need to list two ethnic groups below:

First name of close friend	Ethnic Group
_____	_____
_____	_____
_____	_____
_____	_____

4. List the amount of *weekly* contact (including both face-to face interactions and phone/internet conversations) with each of these friends:

First name of close friend	Amount of contact (hours per week/7days)
_____	_____
_____	_____
_____	_____
_____	_____

5. Rate the overall quality of your friendship with each of these close friends on a scale of 1-10 (where 1= low quality; 5 = medium quality and 10 = high quality):

First name of close friend	Overall quality rating of friendship
_____	_____
_____	_____
_____	_____
_____	_____

6. You and your close friend are taking part in this study. Please rate the degree of similarity between you and your close friend’s racial attitude on a scale of 1-10 (where 1= very different; 5 = unsure and 10 = very similar): \_\_\_\_\_

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