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## **Australian Adolescents' Extracurricular Activity Participation and Positive Development: Is the Relationship Mediated by Peer Attributes?<sup>1</sup>**

Corey Blomfield<sup>2</sup> & Bonnie Barber  
*Murdoch University*

### **ABSTRACT**

Adolescent participation in extracurricular activities is associated with numerous positive outcomes, yet the mechanisms underlying this relationship are largely unknown. This study had two goals: to investigate the association between participation in extracurricular activities and indicators of positive and negative development for Australian adolescents; and to determine if these associations were mediated by the characteristics of adolescents' friends. Extracurricular participation was positively associated with higher academic track enrolment, university aspirations, and school belonging, and negatively associated with skipping school; participation in team sports was related to greater alcohol use. In addition, friend characteristics were found to mediate the association between activity participation and developmental indicators.

Keywords: Extracurricular Participation, Adolescence, Peers

### **INTRODUCTION**

Positive adolescent development is a topic of interest for both scholars and the community alike, with many initiatives currently aimed at both increasing positive behaviors such as school commitment and achievement, and reducing negative behaviors such as drug and alcohol use. The interest in positive adolescent development has led to a focus on adolescent discretionary time use. Research on American adolescents has found that more than half their waking hours are spent in leisure activities (Larson & Verma, 1999). Although a substantial portion of this leisure time is dedicated to unstructured pursuits, participation in extracurricular activities has been found to be a productive use of this time, providing diverse opportunities for development and growth (Larson, 2000). Adolescent participation in structured extracurricular activities has been associated with numerous developmental benefits. For example, participating in activities has been linked to greater school attachment and sense of belonging, better academic achievement, higher academic aspirations, and less risky behaviours such as alcohol and drug use, or dropping out of school (Cooper, Valentine, Nye, & Lindsay, 1999; Darling, Caldwell, & Smith,

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<sup>2</sup> Contact  
Corey Blomfield  
[c.blomfield@murdoch.edu.au](mailto:c.blomfield@murdoch.edu.au)  
Phone # 08 9360 7382. Fax #08 9360 6492  
School of Psychology  
Murdoch University  
South Street  
Murdoch Western Australia 6150

2005; Eccles & Barber, 1999; Eccles, Barber, Stone, & Hunt, 2003; Fredricks & Eccles, 2008; Holland & Andre, 1987; Videon, 2002).

Like their US counterparts, Australian adolescents spend much of their discretionary time in organized recreational and leisure activities (Australian Bureau of Statistics [ABS], 2006), but little is known about whether that participation is linked to developmental benefits. In one exception, a recent study found a small significant association between Australian adolescents' participation in leisure activities and their psychological well-being (Trainor, Delfabbro, Anderson, & Winefield, 2010). However the study focused on leisure activities more broadly, and therefore how specific structured extracurricular activities may be linked to developmental outcomes for Australian adolescents is still largely unknown. As approximately two thirds of Australian adolescents are involved in a sport or community-based activity (ABS, 2003; Australian Institute of Health and Welfare [AIHW], 2003), investigating potential consequences of this participation is important and may highlight opportunities for facilitating positive adolescent development.

The present study examined the links between Australian adolescents' participation in extracurricular activities and indicators of their positive and negative development. Adolescents' academic track, university aspirations, school belonging, frequency of skipping school, and alcohol use were examined in relation to extracurricular activity participation. Scholars have suggested that a number of different mechanisms underlie the association between activity participation and developmental outcomes (Eccles & Barber, 1999; Feldman & Matjasko, 2005), with an adolescent's peer group thought to be one such mechanism. Therefore, the present study also investigated the possible mediating role of attributes of the peer group as an explanation for the association between activity participation and developmental outcomes.

### **Structured Activities and Positive Development**

Participation in structured extracurricular activities provides important opportunities for social, emotional, and civic development during adolescence (Mahoney, Larson, Eccles, & Lord, 2005). Some research has contrasted structured leisure time use with unstructured leisure time use. Examples of structured activities include sporting teams, drama clubs, academic clubs, church groups, and service activities, and can be based at school or in the community. In contrast, unstructured activities refer to more passive types of leisure including watching television, 'hanging out' with friends, and listening to music. When compared with unstructured leisure, structured activities have consistently been found to be more developmentally beneficial. For example, higher test scores and school grades are associated with less time watching television and more time in extracurricular activities (Cooper *et al.*, 1999; Marsh & Kleitman, 2002). Time in structured activities is also related to better peer relationships and emotional adjustment at school, while unstructured leisure time is associated with poorer emotional adjustment and work habits (Posner & Vandell, 1994, 1999). Mahoney and Stattin (2000) reported that participation in unstructured activity settings, specifically youth recreation centers in Sweden, was associated with higher levels of antisocial behavior compared to participation in structured activities.

Most research in activities compares youth in structured activities to those who do not participate in any and has found a range of developmental benefits (see Eccles & Templeton, 2002; Feldman & Matjasko, 2005, for full reviews). The majority of this research has been conducted in the United States, with scholars from a variety of different disciplines including sociology, education, leisure studies, sports psychology, and human development finding developmentally positive outcomes associated with participation in structured extracurricular activities. Educational benefits have attracted a great deal of attention. There is a clear link between activity participation and levels of attachment, engagement, and satisfaction with school, with adolescents who participate in extracurricular activities reporting significantly higher levels of these indicators (Darling *et al.*, 2005; Eccles & Barber, 1999; Gilman, 2001). The effects seem to endure. Marsh (1992) found higher educational and occupational aspirations to be associated with participation in extracurricular activities, both during school and two years after completing school. This positive link between activity participation and educational outcomes has recently been found to endure throughout much of young adulthood, present eight years after high school (Gardner, Roth, & Brooks-Gunn, 2008).

In addition to promoting positive outcomes, extracurricular activity participation also seems to protect against numerous developmentally negative behaviors, but for some outcomes it depends on the type of activity. For example, skipping school is generally lower for students who participate in all types of structured extracurricular activities (Eccles & Barber, 1999; Rose-Krasnor, Busseri, Willoughby, & Chalmers, 2006). In contrast, protective participator effects with respect to lower alcohol use vary by type of activity (Eccles & Barber, 1999; Fredericks & Eccles, 2005, 2006; Shilts, 1991). Participation in prosocial activities (church, volunteer, community service) and performing arts activities predicts lower levels of alcohol use (Eccles & Barber, 1999; Fredericks & Eccles, 2005). These findings appear to be activity specific, as participation in team sports can be associated with higher levels of alcohol use (Eccles & Barber, 1999; Fredericks & Eccles, 2005). Eccles and Barber (1999) found that participation in team sports predicted an increase in alcohol use and getting drunk between 10<sup>th</sup> and 12<sup>th</sup> grade, even after controlling for gender, intellectual aptitude, and mothers' education.

Further analyses of the same data set revealed that sports participants who reported having 'more risky' friends had higher levels of drinking across the two waves than sports participants with 'less risky' friends (Barber, Stone, Hunt, & Eccles, 2005). However, a recent study that combined different types of sports participation into a single sports variable, found participation in sports predicted lower levels of alcohol use (Fredericks & Eccles, 2006). These mixed results suggest that the type of sports activity may affect the association between participation and alcohol use, indicating the need for research in this area to measure independently the association between different sporting contexts and alcohol use.

### **Activity-Based Peer Groups**

One limitation of the extracurricular activity literature is the lack of research investigating the explanatory links between activity participation and positive development (Brown, 1988; Eccles *et al.*, 2003; Holland & Andre, 1987). Some scholars have suggested that participation in extracurricular activities is associated with positive development because it facilitates membership in a prosocial peer group (Barber *et al.*, 2005; Mahoney *et al.*, 2005). The considerable amount of an adolescent's free time taken up by participation in extracurricular activities is generally spent in the company of peers also participating in the activity, with such peer interactions thought to influence an adolescents' selection of friends (Dworkin, Larsen, & Hansen, 2003; Patrick *et al.*, 1999). According to Brown (1990), the formation of this peer group can lead to an activity-based culture, whereby adolescents identify with the values, norms, and behaviors of the group. It is then suggested that the peer group's collective behaviors, norms, and values will influence the individuals within the group (Fredericks & Eccles, 2005). A few scholars have documented that the association between extracurricular activity participation and adolescent outcomes can be mediated by peer affiliations (Eder & Parker, 1987; Kinney, 1993). Similar to Brown's idea of an activity-based culture, these researchers concluded that the positive or negative influence of peer affiliations resulted from the social norms associated with the culture of the peer group (Eder & Parker, 1987; Kinney, 1993). This influence of peer group characteristics on the participating adolescent is thought at least partially to explain the associations between such participation and various developmental outcomes.

Participation in structured activities is associated with peer group attributes. Adolescents who participate in extracurricular activities have more academic friends who are doing well in school, and who plan to attend university, than adolescents who do not participate in any activities (Eccles & Barber, 1999; Quane & Rankin, 2006). Adolescents who participate in prosocial activities report having fewer friends who use alcohol and drugs, whereas adolescents who participate in team sports report having a significantly higher proportion of friends who drink alcohol compared to their peers (Eccles & Barber, 1999).

The protective influence associated with participation in extracurricular activities can be, in part, explained by these positive peer group characteristics. Mahoney (2000) found that lower school drop-out and criminal arrests in adolescents who participated in structured activities was critically associated with the simultaneous participation of their peer social network. Adolescents whose peer group did not participate in any activities, even when the adolescent participated themselves, were twice as likely to

have an antisocial outcome than adolescents whose peer group, along with themselves, participated in activities (Mahoney, 2000). The simultaneous participation of the peer group in structured activities has also been shown significantly to decrease the likelihood of an adolescent switching from participation in structured activities to 'hanging out' on the streets (Persson, Kerr, & Stattin, 2007). These results highlight the important effect of prosocial activity engaged peer groups on adolescent behavior.

Although peer characteristics appear to be one mechanism responsible for the benefits of activity participation, empirical research directly measuring this link is limited. Fredricks and Eccles (2005) investigated a mediation model linking time spent in organized activities, peer attributes, and adolescent development. As expected, Fredricks and Eccles (2005) found structured extracurricular activity participation to be associated with positive adolescent behaviour. Peer group associations were also found with adolescents in each of the different activity contexts reporting having more prosocial and academic friends than non-participants.

The associations of activity participation with higher school engagement and lower depression were found to be mediated by the adolescents' prosocial peer network, indicating that peer characteristics account, at least partially, for this relationship (Fredricks & Eccles, 2005). The mediating role of a prosocial peer network for adolescent risk behavior and alcohol use was not assessed because there was no relation between activity participation and risk behavior and alcohol use, therefore failing to meet the first condition for mediation. Fredricks and Eccles (2005) provided evidence suggesting a mediating effect of prosocial peer networks for some outcomes. However clearly more research is needed to investigate some of the specific links between peers, activities, and development.

### **The Present Study**

The present study investigated the relation between Australian adolescents' extracurricular activity participation and indicators of positive and negative development. It was hypothesized that participation in extracurricular activities would predict enrolment in a higher academic track, higher university aspirations, and school belonging, and less frequent skipping school. It was also hypothesized that participation in team sports would predict higher alcohol use, whereas participation in the other activity contexts would predict lower alcohol use. Because there are variations in the developmental indicators associated with participation in different types of activities, and in particular sporting contexts when investigating alcohol use (Barber *et al.*, 2005; Feldman & Matjasko, 2005; Fredricks & Eccles, 2005, 2006); the present study divided activity participation into five different contexts: team sports, individual sports, performance, community, and school involvement activities.

Furthermore, a mediational model was tested linking participation in extracurricular activities, developmental indicators, and corresponding peer characteristics. Associations were expected between activity participation and developmental indicators, activity participation and friend characteristics, and friend characteristics and developmental indicators. It was hypothesized that the association between participation in extracurricular activities and developmental indicators would be mediated by the corresponding characteristics of the peer group.

## **METHOD**

### **Participants**

Ninety-eight high school students participated in the study (61% female). The mean age of the participants was 16.1 years ( $SD = 0.75$  years) and ranged from 15 to 18 years. Participants were drawn from a government coeducational high school in a coastal suburban area of Western Australia. The high school was in the lowest quartile on the socioeconomic index, a scale computed annually by the Department of Education for each government school in Western Australia. The socioeconomic index is calculated with data from the Australian Bureau of Statistics, based on the addresses of all students attending each school. Over 55% of participants' mothers and 52% of fathers had attained at least a high school diploma, with 15% of mothers and 15% of fathers having earned a university degree.

## Measures

*Activity Participation.* Participants were provided with a detailed list of activities from which they were asked to circle all of the activities in which they were currently involved or had been involved during the past three months. The mean number of activities was 2.1 ( $SD = 1.97$ ), with a range of 0 ( $n = 22$ ) to 5 or more ( $n = 14$ ). The activities were presented in five different categories: team sports (e.g., football, netball), individual sports (e.g., athletics, swimming), school involvement (e.g., school council, school committee), performance (e.g., school band, drama group), and community (e.g., cadets, surf life saving). Data were coded for each participant using a dichotomous yes or no measure reflecting participation in one or more activities for each of the five categories, with a sixth composite participation variable created for which participants were coded as either participating in any extracurricular activity or not. The majority of students (79%) reported participating in at least one extracurricular activity, with the highest participation rates in sports teams (50%) and the lowest participation rates in performance activities (15%). Two open-ended questions were also included in this section. Students who did not participate in any activities were asked to report why not; and students who did participate in activities were asked to report the “best thing” about participation.

*Academic Track, Future Intentions, and School Belonging.* Participants were asked to report on what academic track they were in (0 = fewer than 4 Tertiary Entrance Examinations (TEE) subjects, 1 = four or more TEE subjects; enrolment in four or more TEE subjects was the university-bound academic track in Western Australia) and their plans for when they finish school (0 = not attend university, 1 = attend university). The measure of school belonging was drawn from Fredricks and Eccles (2005), and consisted of 5 items, starting with the stem “how often do you feel?” Items included “that I really belonged in this school,” “left out of things,” “that I mattered at this school,” “lonely,” and “good about yourself” ( $\alpha = .79$ ). All of the items were assessed on a 7-point Likert scale (1 = never, 7 = all of the time). Participants were also asked an open-ended question concerning whether they thought participation in extracurricular activities made school more or less enjoyable and why.

*Risk Behavior.* Skipping school was measured with one item asking participants how many times they had skipped school in the last three months. Alcohol use was measured with three items asking the participants how many times over the last three months they had: drunk alcohol, had more than five drinks on one occasion, and been drunk ( $\alpha = .94$ ). Items were adapted from Fredricks and Eccles (2005) alcohol use scale. All items were assessed with a frequency response scale containing 7 options (1 = none, 2 = once, 3 = 2-3 times, 4 = 4-6 times, 5 = 7-10 times, 6 = 11-15 times, 7 = 15 or more times). Participants were also asked an open-ended question concerning whether they thought there were any negative consequences of participating in extracurricular activities.

*Friend Characteristics.* Participants were asked five questions concerning the characteristics of their group of friends, starting with the stem “think about your group of friends, how many of them do each of the following?” The items included in the analysis were “plan to go to university,” “are doing very well in school,” “encourage you to do your best in school,” “regularly drink alcohol,” and “skip days of school without parent permission.” Items were drawn and adapted from Eccles and Barber (1999) and Fredricks and Eccles (2005) and were measured on a 5-point Likert scale (1 = none, 3 = about half, 5 = all). Participants were also asked an open-ended question concerning whether they thought their participation in the extracurricular activities had influenced who their friends were and how.

## Procedure

Prior to data collection, ethical clearance and approval to conduct research was obtained from the university human research ethics committee. Year eleven students were surveyed during their English class, and year twelve students surveyed during a variety of classes deemed appropriate by the school. The questionnaire took approximately 10 minutes to complete.

## RESULTS

### Descriptive Data on Student Activity Participation

Differences in the distribution of activity participation and gender were examined. Activity participation (any activity, dichotomously coded yes/no) was distributed significantly differently by gender ( $X^2(1, 97) = 5.72, p < .05$ ), with only 8% of males not participating in any activities compared to 28% of females. Chi-squared analyses also revealed that participation in individual sports was distributed significantly differently by gender ( $X^2(1, 97) = 10.78, p < .001$ ), with 68% of males compared to 33% of females participating in individual sports. Participation in team sports, community activities, performance activities, and school involvement activities was not distributed significantly differently by gender.

Of the students who did not participate in any activities, 56% cited a lack of time due to paid work as a reason for not participating “I do not have time to do it because I work and I am busy with school,” “I don’t really have time after school and work.” Students indicated multiple positive aspects associated with participating in their chosen activities, such as “The challenge and joy of the activity,” “Its not only fun...you feel a sense of belonging and work together to strive for an ultimate goal.” A substantial number of respondents (21%) identified the ability to meet new people as the best thing about participating in activities, with responses including; “It enabled me to make new friends and meet new people,” “You meet kids your own age...,” and “Fun meet new people....”

### Activities and Developmental Indicators

In order to investigate the general effect of activity participation for Australian adolescents, differences in the developmental indicators were first investigated for adolescents participating in any extracurricular activity compared to adolescents not participating in any activities. The differences in the developmental indicators across five different activity contexts (team sports, individual sports, performance, community, and school involvement activities) were then investigated, as previous research has identified variations in the developmental indicators associated with participation in different types of activities (Barber *et al.*, 2005; Feldman & Matjasko, 2005; Fredricks & Eccles, 2005, 2006).

*Academic Track and University Intentions.* Half of the respondents were enrolled in the university-bound track and half in the non-university track (48% each, four participants did not respond to the question). Differences in the distribution of activity participation and academic track across gender were examined, first for any activity, and then for each individual activity category. Chi-squared analysis revealed that academic track was distributed significantly differently by participation in any extracurricular activity for female adolescents ( $X^2(1, 57) = 4.08, p < .05$ ), with 83% of female university track students compared to 59% of female non-university track students participating in any extracurricular activity. Chi-squared analysis revealed that academic track was also distributed significantly differently by participation in team sports for female adolescents ( $X^2(1, 57) = 6.48, p < .05$ ), with 63% of female university track students compared to 30% of female non-university track students participating in team sports. Academic track was not distributed significantly differently by participation in the other activity contexts. Chi-squared analysis also revealed that university aspirations were distributed significantly differently by participation in any extracurricular activity for female adolescents ( $X^2(1, 59) = 6.76, p < .01$ ). Fifty five percent of female students participating in any extracurricular activity planned to attend university upon completion of high school, compared to 18% of female students not participating in any activities.

*School Belonging and Risk Behaviors.* A series of one-way analyses of covariance (ANCOVAs) were run to compare the means of participants in any extracurricular activity to non-participants for school belonging, skipping school, and alcohol use, controlling for gender. In addition, the means of participants and non-participants in team sports, individual sports, school involvement activities, community activities, and performance activities were compared for each of the developmental indicators. Table 1 presents the means and standard deviations by activity for each indicator. School belonging was higher for adolescents who participated in any extracurricular activities compared to those who did not ( $F(1, 94) = 5.77, p < .05$ ). For individual sports, the difference approached significance, with school belonging higher for

participants than non-participants ( $F(1, 94) = 5.50, p = .07$ ). School belonging was not significantly associated with participation in the other activity contexts.

Of the students who participated in extracurricular activities, 88% indicated participation in the activities made school more enjoyable. Typical responses included: “Because it makes me feel accepted,” “Because I can talk to my friends about the activities,” “Because you are involved in something.” A quarter of the respondents who indicated activity participation made school more enjoyable cited reasons associated with a reduction in the stress and pressures of school work. Such responses included: “It stops you stressing out about tests, school in general, so when your (sic) at school you have a calmer mind,” “Because it takes my mind off the pressure I feel at school,” “Participation in these activities gives me a way of relaxing from school stress, if I am not stressing out I don’t dread going to school.” Frequency of skipping school was lower for students who participated in extracurricular activities compared to students who did not participate in any extracurricular activities ( $F(1, 90) = 10.10, p < .01$ ). When examined for each type of activity, frequency of skipping school was lower for individual sports participants than those who did not play individual sports ( $F(1, 90) = 5.86, p < .05$ ), and for team sports, the difference approached significance, with frequency of skipping school lower for participants than non-participants ( $F(1, 90) = 3.02, p = .08$ ). Frequency of skipping school was not significantly different by participation in any of the other activity contexts. Participants in team sports reported higher rates of alcohol use ( $F(1, 92) = 6.23, p < .05$ ) than did non-participants. No other activity contexts were significantly associated with alcohol use.

**Table 1:** Means (and Standard Deviations) of Developmental Indicators by Participation in Extracurricular Activities.

	Any Activity		Team Sports		Individual Sports		School Involvement		Performance		Community	
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
School Belonging	4.2 (1.09)	5.0* (1.07)	4.6 (1.18)	5.0+ (1.00)	4.6 (1.02)	5.1+ (1.1)	4.8 (1.06)	4.8 (1.34)	4.9 (1.10)	4.3+ (1.08)	4.8 (1.04)	4.8 (1.45)
Alcohol Use	3.1 (1.66)	3.1 (1.79)	2.7 (1.49)	3.6* (1.89)	2.9 (1.66)	3.4 (1.85)	3.3 (1.72)	2.5 (1.83)	3.2 (1.84)	3.0 (1.29)	3.2 (1.76)	2.8 (1.76)
Skipped Class	3.1 (1.47)	1.8** (1.22)	2.4 (1.56)	1.8+ (1.08)	2.5 (1.46)	1.6* (1.07)	2.1 (1.32)	2.0 (1.55)	2.1 (1.41)	2.0 (1.07)	2.1 (1.40)	1.9 (1.24)

Note. Gender included as a covariate.

\*  $p < .05$ , \*\*  $p < .01$ , +  $p < .10$ .

*Friend Characteristics:* Students’ participation in the different extracurricular activity contexts was used to predict their perceptions of their friends’ positive and risky characteristics, controlling for gender, in a series of ANCOVAs. Table 2 presents the means and standard deviations of the 5 measures of friend behavior by participation in extracurricular activities. Students who reported participating in any extracurricular activity had more friends who planned to go to university ( $F(1, 94) = 4.67, p < .05$ ) than those who did not participate in any extracurricular activity. Adolescents who participated in team sports reported having more friends who regularly drank alcohol ( $F(1, 94) = 4.82, p < .05$ ) than those who did not participate. Participants in individual sports had more friends doing well in school ( $F(1, 94) = 7.18, p < .01$ ), more friends encouraging them to do their best at school ( $F(1, 93) = 6.04, p < .05$ ), and fewer

friends who skipped school ( $F(1, 94) = 4.15, p < .05$ ). In addition, adolescents who participated in school involvement activities had more friends who encouraged them to do their best at school ( $F(1, 93) = 4.14, p < .05$ ).

Open-ended responses about the link between activity participation and friends were examined. Students were divided in their opinion of whether they thought their participation in extracurricular activities had influenced who their friends were, with 46% stating they thought it had and 40% indicating that they thought it had not (14% did not indicate a clear 'yes' or 'no' response). For the respondents who indicated that they thought their extracurricular participation had influenced who their friends were, typical responses included: "yes because you see them the most," "yes because they are the people I spend time with." Respondents who thought their participation had not influenced who their friends were typically indicated reasons such as: "no we were friends beforehand," "no I met my friends from school or work."

### Mediational Analyses

The next set of analyses investigated the possible mediational effects of peer group behavior on the associations between activity participation and developmental indicators. The relationships deemed suitable for mediational analyses were determined through examination of the significant associations found in Tables 1 and 2. Three mediational models were tested: 1) Team sports, alcohol use, and friends who drink alcohol; 2) Individual sports, skipping school, and friends who skip school; and 3) Individual sports, school belonging, and friends who do well in school. Because gender was found to be associated with a number of indicators, it was included as a control.

Mediational analyses were carried out according to Baron and Kenny's (1986) guidelines. Baron and Kenny (1986) list three conditions that must be met to conclude that there is evidence of mediation. First, the link between the predictors and the outcomes must be significant; second, a significant relation must be present between the predictors and the mediator, and third, when all measures are entered into the same equation, there must be a significant link between the mediator and the outcomes, and in the presence of this significant link the direct effects between the predictor and the outcome must be reduced. According to Baron and Kenny (1986), full mediation occurs when in the presence of the mediator, the relation between the predictor and the outcome becomes non-significant. Hierarchical regression was used to test each of the three conditions for mediation for the three models (Tables 3-5).

In order to establish condition 1, the developmental indicators were regressed on activity participation ("Model 1" of each table). Condition 2 was then established by regressing the friend characteristics on activity participation. Finally, in order to establish condition 3, both participation in the activity (predictor) and friend characteristics (mediator) were regressed on the developmental indicators ("Model 2" of each table). In the models where mediation was established, the significance of the mediated effect was investigated using the Sobel test<sup>3</sup> (Sobel, 1982).

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<sup>3</sup> The Sobel test (Sobel, 1982) has previously been used to test for the significance of the mediated effect. However the Sobel test is based on the assumption of a normal distribution which is often violated in small sample sizes (Preacher & Hayes, 2004). For small sample sizes, Bootstrapping is the recommended method (Bollen & Stine, 1990; MacKinnon, Lockwood, Hoffman, West & Sheets, 2002; Shrout & Bolger 2002) where through a process of repeated resampling standard errors are estimated which are then used in the calculation of confidence intervals (Shrout & Bolger). The significance of the mediated effect in the current study was also investigated using the Bootstrapping procedure (estimates = 5000), with the Bootstrapping procedure indicating the mediated effect to be significant for model 1 (.077, .824,  $p < .05$ ) and model 2 (-.899, -.048,  $p < .01$ ).



**Table 2.** Means (and Standard Deviations) of Friend Characteristics<sup>a</sup> by Participation in Extracurricular Activities.

	Any Activity		Team Sports		Individual Sports		School Involvement		Performance		Community	
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Plan to go to uni	2.4 (0.68)	2.7* (0.85)	2.6 (0.84)	2.8 (0.80)	2.7 (0.76)	2.7 (0.90)	2.6 (0.81)	2.9 (0.87)	2.6 (0.79)	2.8 (1.01)	2.7 (0.82)	2.7 (0.87)
Doing well in school	3.0 (0.56)	3.2 (0.74)	3.1 (0.62)	3.2 (0.80)	3.0 (0.61)	3.4** (0.78)	3.2 (0.72)	3.2 (0.71)	3.2 (0.69)	3.2 (0.86)	3.2 (0.69)	3.0 (0.82)
Encourage you to do best in school	2.9 (1.18)	3.1 (1.07)	3.1 (1.12)	3.0 (1.08)	2.9 (1.14)	3.3* (1.01)	2.9 (1.07)	3.6* (1.10)	3.1 (1.11)	2.7 (0.96)	3.1 (1.11)	2.8 (0.98)
Regularly drink alcohol	3.3 (1.45)	3.5 (1.19)	3.2 (1.25)	3.8* (1.18)	3.4 (1.27)	3.6 (1.21)	3.5 (1.25)	3.2 (1.21)	3.5 (1.26)	3.4 (1.18)	3.4 (1.28)	3.7 (1.01)
Skip school	2.9 (1.42)	2.6 (1.07)	2.7 (1.21)	2.7 (1.11)	3.0 (1.19)	2.4* (1.03)	2.7 (1.16)	2.7 (1.14)	2.7 (1.15)	2.7 (1.18)	2.7 (1.17)	2.6 (1.09)

<sup>a</sup>Friend characteristic: 1 = none, 3 = about half, 5 = all of them.

Note. Gender included as a covariate.

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

### Model 1: Team Sports and Alcohol Use

The results of the regressions involving participation in team sports and alcohol use are presented in Table 3. Participation in team sports had a positive direct relationship with alcohol use, satisfying the first step for mediation. In order to establish condition two in the hypothesized mediational sequence, the measure of the friend characteristic was regressed on participation in team sports. Participation in team sports was significantly predictive of friends' alcohol use. Finally, in the presence of friends' alcohol use, the relation between participation in team sports and alcohol use dropped to non-significance. These results satisfy the conditions for mediation (Baron & Kenny, 1986), and a Sobel test confirmed that the mediation was significant ( $Z = 2.21, p = .03$ ).

**Table 3.** Regressions Predicting Alcohol Use from Participation in Team Sports and Friends' Drinking.

Variable	Model 1			Model 2		
	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$
Step 1						
Gender	-.08	.37	-.02	.15	.32	.04
Team sports	.88	.35	.25*	0.49	.31	.14
Step 2						
Friends alcohol use				0.73	.12	.52***
$R^2$			.07			.32
$F$ for change in $R^2$			6.23*			35.00***

\* $p < .05$ . \*\*\* $p < .001$

### Model 2: Individual Sports and Skipping School

Table 4 presents the results of the regressions involving participation in individual sports and skipping school. The first step for mediation was satisfied as a negative direct relationship was found for participation in individual sports and skipping school. The second step of mediation was also established as participation in individual sports was negatively related to the proportion of friends' who skip school. Following the addition of friends who skip school, the negative relation between participation in individual sports and skipping school dropped to non-significance. Together, these results satisfy the criteria for mediation, and a Sobel test confirmed that the mediation was significant ( $Z = -2.57, p = .01$ ).

### Model 3: Individual Sports and School Belonging

The series of regressions involving individual sports and school belonging are presented in Table 5. Participation in individual sports approached a significant positive direct relationship with school belonging. Condition 2 for mediation was established as a positive direct relationship was also found for participation in individual sports and friends who do well at school ( $\beta = .28, p < .01$ ). However, the marginal relation between individual sports participation and school belonging was not reduced when having friends who do well at school was added to the model. These results do not satisfy the third condition for mediation (Baron & Kenney, 1986).

**Table 4.** Regressions Predicting Skipping School from Participation in Individual Sports and Friends' Skipping School.

Variable	Model 1			Model 2		
	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$
Step 1						
Gender	.62	.28	.22*	.38	.24	.13
Individual sports	-.67	.28	-.25*	-.36	.24	-.13
Step 2						
Friends skip school				.61	.10	.53***
$R^2$			.14			.39
<i>F</i> for change in $R^2$			5.86*			36.53***

\* $p < .05$ . \*\*\* $p < .001$ .

**Table 5.** Regressions Predicting School Belonging from Participation in Individual Sports and Friends' who do well at School.

Variable	Model 1			Model 2		
	<i>B</i>	<i>SE B</i>	$\beta$	<i>B</i>	<i>SE B</i>	$\beta$
Step 1						
Gender	-.31	.24	-.14	-.31	.24	-.13
Individual sports	.42	.23	.19 <sup>+</sup>	.44	.24	.20 <sup>+</sup>
Step 2						
Friends do well at school				-.04	.16	-.02
$R^2$			.07			.07
<i>F</i> for change in $R^2$			3.31 <sup>+</sup>			.05

<sup>+</sup> $p < .10$ .

## DISCUSSION

The results of this study indicate that participation in extracurricular activities is associated with indicators of both positive and negative development for Australian adolescents, and that in some cases this association is mediated by the characteristics of adolescents' friends. As anticipated, adolescents who participated in extracurricular activities were more likely to be TEE students (university track) than adolescents who did not participate in any extracurricular activity. Given this finding, it was not surprising that participation in extracurricular activities was also associated with university aspirations. These results are consistent with those of Eccles and Barber (1999), whose longitudinal research found participation in extracurricular activities to be predictive of university attendance at age 21. Furthermore, students who participated in extracurricular activities reported higher levels of school belonging, which is also consistent with prior research (Darling, 2005; Darling *et al.*, 2005; Dotterer, McHale, & Crouter, 2007).

The academically positive associations with activity participation also extended to school attendance as the reported frequency of skipping school was lower for students who participated in extracurricular activities than for those who did not. This protective effect associated with extracurricular activity participation has previously been identified in the research (Rose-Krasnor *et al.*, 2006; Mahoney & Cairns, 1997), and is often attributed to an increased commitment to school that is thought to occur through participation in school-based extracurricular activities. However, the presence of this protective effect on school-linked indicators in the current sample is of particular interest, as, unlike the US, extracurricular activities are often community based in Australia.

The association between participation in extracurricular activities and school-related indicators found in the current study may be understood as a product of membership in a particular peer group. Scholars have previously suggested that an adolescent's peer group is a mechanism responsible for the associations found between activity participation and developmental indicators (Barber *et al.*, 2005; Mahoney *et al.*, 2005). The current findings support this suggestion, as adolescents who participated in school involvement activities reported having more friends who encouraged them to do their best in school than those who did not participate, as did individual sports participants, who also reported having a higher proportion of friends who were doing well in school than non-participants. Furthermore, the protective association between individual sports participation and skipping school was found to be mediated by the corresponding peer characteristic. Peer group characteristics were also found to underlie the association between team sports participation and alcohol use. Having friends who regularly drank alcohol mediated the relationship between participation in team sports and more frequent alcohol use. Participation in individual sports, while in the predicted direction, was not significantly associated with alcohol use.

Adolescent participation in extracurricular activities occurs predominately in the company of peers also participating in the activity. The peer interactions that occur during this shared leisure time are thought to influence an adolescents' selection of friends (Dworkin *et al.*, 2003; Patrick *et al.*, 1999). For the present study this appeared to be the case, as in response to a general question concerning the best aspect of activity participation; a fifth of the respondents specifically stated the ability to meet new people as the best thing about participating in their extracurricular activity. Furthermore, when students were specifically asked if they thought their activity participation had influenced who their friends were, responses included "yes because they are the people I spend time with" and "yes because you see them the most," with just under fifty percent stating participation had influenced their selection of friends.

No significant relationships were found between participation in non-sport extracurricular activities and alcohol use. This may reflect the relatively low participation rates of the current sample in the activities that have previously been identified as being associated with lower levels of alcohol use. For example, Eccles and Barber (1999) found participation in prosocial and performing arts activities to be associated with lower levels of alcohol use. In the current sample, two similar activity contexts – community and performance activities – had the lowest rates of participation, so there may not have been adequate power to detect differences. In support of this idea, it is noted that the means for alcohol use were in the predicted direction for students who participated in school involvement activities compared to those who did not.

Generalizability of the current study is limited by the low response rate, and therefore cannot be considered representative of Australian adolescents. However, the results are generally consistent with previous research on US adolescents, and suggest these developmental processes may also operate in Australia. As with many studies of activity participation, we are unable to disentangle the direction of effects. The association between activity participation and developmental indicators may, in part, reflect the characteristics of the students who choose to participate in organized activities. Longitudinal research, controlling for a number of youth characteristics, suggests that developmental outcomes are at least partially a result of participation in extracurricular activities (Eccles & Barber, 1999). Thus, it is not without precedent to suggest activity participation may play a role in the developmental indicators studied.

A caveat must also be placed on the interpretation of the behavioral similarities found between an adolescent and their peer group in the current study. These similarities are likely to be a product of both socialization and selection. However the cross sectional nature of the research does not allow us to

separate these processes. It has been argued though, that as the processes are not mutually exclusive (Kandel, 1978), separation is inconsequential, as socialization and selection work as a synergistic system influencing developmental outcomes (Barber *et al.*, 2005).

Despite these limitations, the current study makes a contribution to the literature on activity participation. The inclusion of both positive and negative indicators of development enabled the identification of both benefits and costs associated with activity participation. Furthermore, the measurement of friend characteristics with both positive and negative indicators allowed exploration of the mediational effects of these specific characteristics, building on previous research that investigated the mediational effects of more generally having a prosocial peer group (Fredricks & Eccles, 2005). Further, we tested theoretically-based hypotheses that peer characteristics mediated the link between activity participation and development. Studies investigating the possible mechanisms by which activity participation is associated with developmental indicators are sparse, with this limitation being a considerable criticism of the research area (Brown, 1988; Eccles *et al.*, 2003; Holland & Andre, 1987).

In conclusion, the current study has documented a link between extracurricular activity participation and developmental indicators for Australian adolescents. In addition, some of these relationships were found to be mediated by the characteristics of adolescents' friends, providing an insight into the underlying mechanisms of these associations. The present findings partially support the recommendations of American scholars for increasing the opportunities for adolescents to participate in a variety of extracurricular activities (Eccles & Templeton, 2002; Larson, 2000), with the caveat that team sports may bring together youth in a drinking culture. Although larger and more diverse studies are required before the instigation of educational policies on the provision of extracurricular activities, this research offers a foundation for the development of initiatives aimed at increasing positive behaviors and reducing negative behaviors in Australian adolescents. Like the context provided by family, school, and peers, extracurricular activities form a crucial context of adolescent development. Therefore, the potential benefits of participating in extracurricular activities should not be neglected. Rather, they should be embraced as a complementary approach in the facilitation of positive development for Australian adolescents.

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### Author Details

Corey Blomfield is a PhD candidate at Murdoch University. His research interests include adolescent development, the influence of leisure activities on the positive development of adolescents, and contexts that promote and improve an adolescent's self-concept

Professor Bonnie Barber's research interests include adolescent and young adult leisure time use, long-term benefits of organized sport and activity participation, the effects of family structure transitions, and positive parent-adolescent relationships. ([b.barber@murdoch.edu.au](mailto:b.barber@murdoch.edu.au); Phone # 08 9360 2879. Fax #08 9360 6492).