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Self-nominated peer crowds, school achievement, and psychological adjustment in adolescents: Longitudinal analysis

Patrick C.L. Heaven *, Joseph Ciarrochi, Wilma Vialle

University of Wollongong, Department of Psychology, Northfields Avenue, Wollongong, NSW 2522, Australia

Abstract

We assessed the extent to which identification with peer crowds in the first year of high school predicted scholastic achievement, teacher-rated adjustment, and self-reported emotional experience in the third year of high school. Unlike previous studies, we controlled for initial levels of our criterion variables. Crowds were found to predict most of the outcome variables in the second year and many of the significant differences remained in the third year, even after controlling for students' initial levels of the criterion variables. These findings are discussed with reference to the importance of social networks and the impact that peer networks, over time, have on students' scholastic achievement and psychological adjustment.
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1. Introduction

It is well established that a range of individual difference characteristics are linked to adolescents' school achievement and overall adjustment (e.g. Adams & Berzonsky, 2005). These characteristics span a wide range of possibilities including personality, family, genetic, and

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* Corresponding author.
E-mail address: patrick_heaven@uow.edu.au (P.C.L. Heaven).

hormonal influences. The influence of peers on adolescent adjustment is all too often neglected in individual differences research. It is not clear whether and to what extent peer group affiliations and memberships explain unique variance in adolescent outcomes. The present research is concerned with the influence of the peer network on adolescent adjustment and focuses specifically on the "crowd", that is, reputation-based groups (Brown, Mory, & Kinney, 1994).

Although it is often assumed that peers shape adolescent outcomes and may be direct and indirect "sources of influence" on teenagers (Smetana, Campione-Barr, & Metzger, p. 267), almost no research has systematically and longitudinally evaluated the impact of peer crowds on adolescent outcomes. Thus far, studies have failed to demonstrate that measurable behavioral differences that have been found to exist across peer crowds (see review below) are, in fact, due to crowd membership or identification rather than to already existing characteristics of the group members themselves, such as their levels of intelligence or particular personality dispositions. The present study is unique in that it is the first to examine the longitudinal effects of early peer crowd membership on school achievement and adjustment whilst controlling for baseline levels of the criterion variables.

The relationships that teenagers form with their peers are important in shaping a wide range of different outcomes (e.g. Barber, Eccles, & Stone, 2001; Brown, Eicher, & Petrie, 1986; Emler & Reicher, 1995; La Greca & Harrison, 2005; Urberg, Degirmencioglu, Tolson, & Halliday-Scher, 2000; Younnis, McLellan, & Strouse, 1994). As teenagers expand their interpersonal horizons and make academic and other choices, so peers assume a critical role in shaping the individual's trajectory of development. As Gavin and Furman (1989, p. 827) explained, "Without being connected to the peer group, one may be left without an important source of support during a period of physical, emotional, and social upheaval".

1.1. The importance of peer crowds

As young people move into high school, peer crowds take on added significance. According to Younnis et al. (1994) crowds provide "shared knowledge" that give rise to "orderly" and "efficient" social interactions (p. 107) that are reflective of cultural and behavioral norms, values, and attitudes. They set the "rules of engagement" that determine acceptable group behavior and the rituals to be performed (Coleman & Hendry, 1990). Not only does acceptable behavior vary from one crowd to another, but crowds and smaller interaction-based groups provide "common experience" (Emler & Reicher, 1995, p. 179), a social map for interacting with like-minded others (Barber et al., 2001; Prinstein & La Greca, 2002), as well as a distinctive status hierarchy (Younnis et al., 1994). By following the rules of engagement, one's reputation as a valued member is maintained, if not enhanced.

The "social map" generated by the peer crowd underpins adolescents' interpersonal relationships and choice of friends (Emler & Reicher, 1995; Urberg et al., 2000), their overall levels of adjustment (Barber et al., 2001) and their academic achievement (Brown et al., 1994). By providing shared knowledge, crowds impart to individuals a sense of identity and self worth (Hogg & Abrams, 1988; Smith & Mackie, 1997). Because crowd membership is so closely allied to and integrated with the self, membership shapes not only our social interactions, but also behaviors at the individual level (Allport, 1962). The propensity of crowds to engage in certain behaviors (e.g. delinquent versus pro-social behaviors, or academic versus non-academic behaviors) will therefore vary depending on crowd status (Younnis et al., 1994) and crowds' respective values and behavioral norms.

1.1.1. Empirical evidence

Data support these general principles. In a study spanning several years, it was found that those students who identified as "criminals" were more likely to manifest higher rates of drinking and marijuana use than other groups. Those identifying as "brains" were more likely to graduate from college by age 24, whereas "criminals" were least likely to do so (Barber et al., 2001). These crowd differences have been replicated in a number of other cross-sectional studies. Thus, members of deviant crowds have been found to be more likely to engage in drug-taking, smoking, and drinking behaviors (Sussman, Dent, & McCullar, 2000). La Greca and Harrison (2005) found that members of high status crowds (e.g. "populars" and "jocks") were less likely to suffer depression or social anxiety, whereas "burnouts" were also less likely to suffer social anxiety. Achievement-oriented crowds were found to be low on aggression and delinquency (Delsing, ter Bogt, Engels, & Meeus, 2007). Membership of the so-called "squares" group was significantly correlated with agreeableness and conscientiousness, but significantly negatively associated with Eysenck's psychoticism dimension (Mak, Heaven, & Rummery, 2003).

1.2. Aims and rationale of present study

The present study was designed to determine whether affiliation with peer crowds in early high school explains additional variance in academic ability, teacher-rated adjustment, and self-reported emotional experiences two years later. Specifically, we were interested in the extent to which crowd identification in Year 7 was associated with outcomes in Year 9 after controlling for baseline behaviors in Year 8. Ours is the first such study. If it is the case that one's crowd identification influences outcomes over and above pre-existing differences (Gavin & Furman, 1989), then it is hypothesised that, after controlling for baseline differences (Year 8), crowd membership (Year 7) will continue to be a significant predictor of the outcome variables assessed in Year 9. We predicted that identification with crowds deemed to be deviant (e.g. "rebels") will result in significantly poorer outcomes than identification with less deviant crowds.

2. Method

2.1. Participants

Participants attended five high schools in one of the Catholic Diocese of New South Wales (NSW), Australia. The Diocese is centered on the city of Wollongong, but also reaches into south-western metropolitan Sydney thereby ensuring that the socio-economic and cultural mix of the participants is quite varied. Our sample represents a diverse range of key demographic indicators. For example, at Time 1 the spread of fathers' occupations of our participants closely resembled national distributions (Australian Bureau of Statistics, ABS, 2004) as follows: Professionals 20.4% (16.5% nationally), Associated Professionals 15.1% (12.7%), Intermediate Production and Transport 11.2% (13.4%), Tradespersons 34.3% (21%), Managers 4.8% (9.7%), Laborers 3.3% (10.8%), Advanced Clerical 1.2% (.9%), Intermediate Clerical 5.5% (8.8%), and Elementary Clerical 4.3% (6.1%). Additionally, 22% were living in non-intact families, whereas national

divorce rates were 29% (ABS, 2005); 19.77% were exposed to a language other than English in the home, whereas nationally the figure was 15.8% (ABS, 2006).

In the state of NSW high school covers Years 7–12. Students were first surveyed in Year 7 and again in Years 8 and 9. At Time 1, 784 students (mean age = 12.3 years, SD = 0.49) completed the questionnaire (males = 377, females = 389; 18 did not indicate gender). We were able to directly match the data of 563 students across each of the three years, representing a 72% follow-up rate. All classes in the respective year groups participated in the study except at one school where an administrative error resulted in three classes not being available on that day. On each testing occasion, the participation rate of those present on the day exceeded 95%.

2.2. Materials

Students were asked to complete an inventory comprising several different measures each year. The inventory varied slightly from year to year. The data reported here from part of the larger ongoing Wollongong Youth Study, but only those variables directly relevant to this article are described below:

2.3. Measures obtained in Year 7

2.3.1. Peer crowd identification

Students were asked to indicate the "kind of students you hang around with" by selecting from a list of crowd descriptions. This is a similar approach to that used by Younnis et al. (1994; see also the comments by Urberg et al., 2000, p. 428). The descriptions were taken from Barber et al. (2001), Prinstein and La Greca (2002), and Sussman et al. (2000). The following options were listed: "students who study seriously and have good relations with teachers" (we subsequently labeled this group "studious". Note: this label was not made available to participants); "students who spend a lot of time playing sports" ("athletes"), "students who like to party, and sometimes use alcohol and/or drugs" ("party-goers"), "students who are popular, liked by other students, and enjoy participating in different school activities" ("populars"), "students who rebel against teachers and do not always do homework" ("rebels"). A final category was "I do not associate myself with any kinds of students mentioned above. I think I belong to a general group". Some students listed another group or self-identified as an isolate.

Of the 784 students who provided Time 1 data, 74 self-nominated as "studious", 155 as "athletes", 179 as "populars", 31 as "rebels", and 181 as "general" (N = 620). Eleven students identified as "party-goers", while the remaining students either did not respond, or listed some other group. Statistical analyses were conducted on the studious, athletes, populars, rebels, and general crowds. Of the 620 participants who nominated a crowd at Time 1, 62 (10%) did not provide data two years later. Thus, the follow-up rate was 90%.

2.4. Measures obtained in Year 8

2.4.1. Teacher-rated behavior *(Pulkkinen, Kaprio, & Rose, 1999)*

We used the 34-item multidimensional teacher rating form from the Jyvaskyla Longitudinal Study of Personality and Social Development. This instrument assesses overall adjustment (e.g.

constructiveness, compliance, and social activity), behavioral problems (e.g. hyperactivity/impulsivity, aggression, and inattention), and emotional problems (e.g. depression and social anxiety). The scale has demonstrated concurrent and discriminative validity (Pulkkinen et al., 1999). The instrument was completed by each student's roll-class or home room teacher. These teachers are assigned to a group of students for a year or more and take particular interest in and monitor the student's overall academic performance and welfare at school. They meet with students each day. We used a coding system to protect the identity of the students once teachers had completed their ratings. The coefficient alphas of the three subscales were .90 (adjustment), .85 (emotional adjustment), and .93 (behavioral problems).

2.4.2. Positive and negative affect (PANAS-X; Watson & Clark, 1994)

We assessed a number of affective states including hostility, fear, sadness (indices of negative affect) and positive affect. Positive and negative affect have been shown to underpin the dimensions of emotional experience (e.g. Clark, Watson, & Mineka, 1994) and to be moderately independent of each other. Whereas negative affect has been found to be related to depression, positive affect has been found to be related to social activity, social closeness, and negatively predictive of depression (Watson, 1988; Watson & Walker, 1996). Students were asked to describe their feelings and emotions over the past month. Evidence shows strong convergence between trait and state indices of affect when using the PANAS-X (Watson & Clark, 1994). The following internal consistency coefficients were obtained on the measures: hostility (.83), fear (.87,), sadness (.90), and positive affect (.93).

2.4.3. End-of-year school results

End-of-year grades were obtained for each student in English, Maths, Science, and Religious Studies. We selected these subjects because they are completed by all students. We summed scores across these subjects to form a total grade.

2.5. Measures obtained in Year 9

2.5.1. Positive and negative affect (PANAS-X; Watson & Clark, 1994)

This is the same measure as used the previous year. On this occasion alpha coefficients were .89 (fear), .85 (hostility), .92 (sadness), and .94 (positive affect).

2.5.2. Teacher-rated behavior (Pulkkinen et al., 1999)

We used the same measure as the previous year. On this occasion, alpha coefficients of adjustment, behavioral problems, and emotional problems respectively were .91, .92, and .86.

2.5.3. End-of-year school grades

End-of-year grades were obtained for each student in English, Maths, Science, and Religious Studies. As in the previous year, we combined these grades to form a total grade for each student.

2.6. Procedure

After obtaining consent from schools and parents, students were invited to participate in a study on ''Youth Issues''. At both times, administration of the questionnaires took place during

regular classes under the supervision of one of the authors or a teacher. Students completed the questionnaires in private and without any discussion. At the conclusion of the sessions students were thanked for their participation and debriefed.

3. Results

Participants who completed less than 70% of the items on a measure were excluded for that measure. Missing values were replaced by the scale average. We first present outcomes assessed at Year 8 as a function of Year 7 group affiliation. This is followed by the outcomes for Year 9 as a function of Year 7 group affiliation whilst controlling for Year 8 variables. Thus we were able to assess the impact of crowd membership on Year 9 outcomes after controlling for the criterion variables in Year 8.

3.1. Predicting outcomes in Year 8

3.1.1. Teacher ratings and school grades
Univariate analyses were conducted to ascertain group differences on Year 8 teacher ratings and total grade (see Table 1). Significant group differences were found for total grade, behavioral problems, and adjustment. There were no significant group differences for teacher-rated emotional problems. The largest effect size was for ratings of behavioral problems, with prior group membership explaining 6.1% of the variance. This was followed by total grade (5.8%). Post-hoc Bonferroni tests were conducted to examine the group differences. Rebels performed consistently poorly showing the lowest grades and poorest adjustment ratings by teachers. Members of the general and populars groups obtained the highest grades. Members of the general group were also rated highest on overall adjustment and lowest on behavioral problems.

3.1.2. Self-reported emotional experience
Univariate analyses were conducted with Year 8 self-reported emotional experience as dependent factors and Year 7 group membership as the fixed factor (see Table 1). There were significant group differences on fear, sadness, and positive affect, but not on hostility. Effect sizes were relatively modest, with prior group membership explaining 1.6% of the variance of positive affect. Post-hoc Bonferroni tests were conducted to examine the group differences. Members of the general group reported significantly higher levels of sadness than athletes, whereas members of the rebel group reported significantly lower levels of positive affect than populars. Bonferroni was not able to distinguish groups on the fear measure. Least Significant Differences (LSD), however, suggested that differences may occur between the studious and general crowds and between the athletes and general crowds. Members of the general crowd were significantly more fearful than members of the studious and athletes crowds.

3.2. Predicting outcomes in Year 9

3.2.1. Total grade
We predicted Year 9 total grade whilst controlling for Year 8 grade. Univariate analysis revealed a significant group effect (Table 2). Post-hoc Bonferroni tests showed that members of

Table 1
Year 7 peer group membership predicting Year 8 mean levels of scholastic achievement, teacher-rated adjustment, and self-reported emotional experience

Year 8 outcomes	Time 1 peer friendship groups					df	F value	ω^2
	Studious	Athletes	Populars	Rebels	General			
Total grades	9.74a (3.57)	8.77bc (2.81)	10.05bd (3.03)	7.51ade (2.92)	10.28ce (2.60)	4, 579	10.02***	.058
Ratings of behavioral problems	4.86b (7.04)	7.17ac (8.01)	6.35d (7.78)	11.71abd (7.92)	3.81c (4.91)	4, 563	10.20***	.061
Ratings of adjustment	19.62a (1.04)	18.60b (0.68)	20.17c (0.67)	13.71abcd (1.06)	20.92d (0.55)	4, 563	5.85***	.033
Ratings of emotional problems	5.23 (4.16)	3.94 (3.74)	4.19 (3.81)	4.89 (4.22)	4.12 (3.68)	4, 563	1.62	.004
Fear	9.33 (3.13)	9.35 (3.21)	10.25 (3.91)	9.44 (5.05)	10.59 (4.47)	4, 518	2.52*	.012
Hostility	9.73 (3.55)	10.48 (3.97)	10.39 (3.90)	11.41 (3.88)	10.59 (4.04)	4, 504	0.97	.000
	Year 7 peer group membership							
Sadness	8.25 (4.28)	7.84a (4.07)	8.60 (3.95)	8.92 (5.19)	9.48a (4.87)	4, 515	2.67*	.013
Positive affect	31.73 (7.97)	33.70 (6.79)	34.10a (6.29)	30.05a (9.35)	33.02 (6.08)	4, 518	3.12*	.016

Note: Means are shown with standard deviations in brackets. Those with similar letters differ significantly from each other (following Bonferroni adjustment).
* $p < .05$.
*** $p < .001$.

Table 2
Year 7 peer group membership predicting Year 9 levels of scholastic achievement, teacher-rated adjustment, and self-reported emotional experience when controlling for the baseline (Year 8) measure of each variable

Year 9 outcomes	Year 7 peer group membership					df	F value	η^2
	Studious	Athletes	Populars	Rebels	General			
Total grade	.65a (4.11)	−.47bc (3.02)	.04d (3.07)	−2.55abde (3.24)	.99ce (3.14)	4, 545	5.40[***]	.038
Ratings of behavioral problems	1.13a (1.60)	1.77b (2.03)	1.59 (1.96)	2.74ac (2.32)	1.13bc (1.59)	4, 524	1.24	.009
Ratings of adjustment	6.32a (2.55)	5.69b (2.81)	6.18c (2.80)	3.20abcd (2.05)	6.22d (2.65)	4, 524	3.79[**]	.028
Ratings of emotional problems	1.60 (1.19)	1.19a (1.39)	1.06b (1.22)	1.46 (1.45)	1.63ab (1.60)	4, 524	3.17[*]	.024
Fear	11.62 (5.04)	10.74 (4.47)	11.34 (5.17)	8.13 (2.67)	11.07 (4.99)	4, 419	2.52[*]	.024
Hostility	11.23 (4.53)	11.50 (5.33)	11.53 (4.65)	11.96 (4.68)	11.15 (4.51)	4, 412	0.50	.005
	Year 7 peer group membership							
Sadness	9.86 (5.15)	9.68 (5.16)	9.55 (4.82)	8.76 (4.89)	10.33 (5.48)	4, 416	0.26	.002
Positive affect	3.75a (.99)	4.11 (.81)	4.22abc (.75)	3.67b (1.14)	3.91c (.80)	4, 418	2.80[*]	.026

Note: Means appear above. Those that share the same subscript differ from each other (following Bonferroni adjustment) Standard deviations are shown in brackets.
[*] $p < .05$.
[**] $p < .01$.
[***] $p < .001$.

the rebel group had significantly poorer grades in Year 9 than members of all the other groups. Prior group membership explained 3.8% of the variance of Year 9 grades after controlling for Year 8 grades. We re-ran this analysis controlling also for gender. Crowd identity continued to have a significant effect on Year 9 grades, $F(4, 534) = 4.7$, $p < .001$.

3.2.2. Teacher ratings

We conducted a series of univariate analyses with Year 7 group membership as the fixed factor and Year 9 teacher ratings as dependent factors. In order to determine whether group membership predicts changes in ratings over time, the Year 8 teacher ratings were entered as covariates. The main results are shown in Table 2. After controlling for Year 8 ratings, there were significant group effects for ratings of adjustment and emotional problems. Post-hoc Bonferroni tests showed that, compared to all other groups, rebels were rated lowest on adjustment, whereas the general and studious groups were highest. Members of the general and studious groups were rated as being high on emotional problems with the general group significantly higher than the athletes or populars. Rebels were highest on behavioral problems with the general and studious groups being significantly lower.

We re-ran these analyses whilst also controlling for gender. Crowd identity in Year 7 continued to have a significant effect on Year 9 teacher ratings for emotional problems, $F(4, 517) = 2.89$, $p < .05$, and adjustment $F(4, 517) = 3.14$, $p < .05$.

3.2.3. Self-rated emotional experience

We predicted Year 9 emotional experiences whilst controlling for Year 8 scores on this variable. Univariate analyses found significant group effects on fear and positive affect. Rebels obtained the lowest scores on positive affect and post-hoc Bonferroni tests showed populars to have significantly higher scores on this variable than the studious, rebel, and general groups. Bonferroni was not able to detect exact crowd differences in fear, but use of LSD suggested that significant differences exist between the rebel crowd on the one hand and the studious, popular, and general crowds on the other. Rebels reported significantly less fear than the studious, popular, and general crowds.

4. Discussion

We aimed to determine the extent to which self-nominated peer crowd identification in the first year of high school is predictive of school achievement, observers' ratings of behavior, and self-reported emotional experience two years later. Our expectation that scores on these measures would vary according to crowd affiliation was confirmed, even after controlling for identical variables assessed in the preceding year. We also controlled for gender and this had negligible effects on our conclusions. Thus, crowd identity in Year 7 explained unique and additional variance in our criterion variables.

Our results were also fairly consistent, namely, that of all the groups included in our study self-nominated rebels had the poorest outcomes across a number of domains. They had the weakest school achievement results, were judged to be highest on behavioral problems, judged to be the lowest on adjustment, and reported the lowest positive affect. On some, but not all indices the

general and studious groups fared the best: the general group was highest on grades, whilst the general and studious groups were lowest on judged behavioral problems and highest on judged adjustment. However, these crowds were highest on teacher-judged emotional problems, whereas the populars reported the highest levels of positive affect. Although members of the athletes crowd obtained low grades in Year 9, they were judged to be well adjusted.

One strength of the study is our inclusion of multi-methods of assessment, including self-reports, performance measures (grades), and teacher ratings. These multiple methods make it unlikely that all group differences can be explained in terms of simple method variance. Another strength of the study is that we controlled for pre-existing differences in variables. This allowed us to provide evidence that peer crowds predict changing scores on our criterion variables. For example, students in the rebel crowd showed worsening grades from Year 8 to Year 9, compared to members of other groups with the same baseline grades at Year 8. The behavior and emotional experience of rebels also seemed to worsen relative to the other groups.

4.1. The threat of cascading risk

Members of some crowds (e.g. rebels) may be vulnerable to the threat of cascading risk (Goldstein & Brooks, 2005). Problems associated with membership of certain crowds early in high school are likely to be compounded over time. For instance, consistent poor grades at each school year will put rebels at increasing risk of not graduating from high school and will place entry to university or other higher education facilities at risk. The ability to acquire and hold down a job will be put at risk which will continue to compound already low levels of positive affect (Table 2). School counselors, teachers, and other professionals therefore have a responsibility to identify at risk students as early as possible so as to intervene to increase students' chance of success.

4.2. Limitations and conclusion

One limitation, inherent in all longitudinal studies, is the possibility that some omitted variable might explain our results. Whilst we cannot rule this out, we reduced that risk by controlling for baseline levels of each variable (Finkel, 1995). Another limitation of the present report is its reliance on self-nominated peer crowd identity. The assessment of crowd identity is an unresolved problem (Urberg et al., 2000) and, ideally, it would have been preferable to use a multi-item assessment of crowd identity. Having said this, however, it is remarkable how predictive this scale is (explaining 3–6% of the variance of several outcomes). Urberg et al. (2000) also acknowledge that, in many cases, adolescents might be quite aware of their crowd status and would therefore be in a good position to provide accurate and unbiased reports of their affiliation. A multi-item scale would be likely to reduce error variance related to measurement and thereby increase the observed effect sizes. Thus, the present measure may represent a lower bound estimate of effect sizes.

Our research did minimize some of the risks of self-reports, by having criterion measures that were based on teacher ratings and performance. Although our data do not allow us to conclude *why* students affiliate with particular peers in the first place, they do show that strong prospective links exist between such affiliations early in high school and later academic and other outcomes. Our data also suggest that these outcomes are not just reliant on characteristics that are peculiar

to the members, but are related to the fact of affiliation itself. Notwithstanding the challenges that young people inevitably must face, challenges that span the academic, social, sexual, and interpersonal domains, it appears that how adolescents deal with these challenges is colored by a host of different factors including their early peer relationships. We do not suggest that crowd affiliation or membership is fixed for life, but for many teenagers it would seem that it is difficult to escape the influence of early peer networks.

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