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Alexithymia and academic success: examining the transition from high school to university

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Abstract

The present study used the major life transition of going off to university as the context for examining the relationship between alexithymia and academic achievement. During the first month of post-secondary classes 707 first-year full-time students completed the 20-item Toronto Alexithymia Scale (TAS-20). At the end of the academic year alexithymia data was matched with students' academic records. Consistent with previous research on personality and achievement, results were dependent on how academic achievement and alexithymia was operationalized. When alexithymia variables were compared in groups who had achieved very different levels of academic achievement, success was moderately associated with alexithymia. Results are discussed in the context of the importance of affect regulation abilities during a stressful life transition.

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1. Introduction

Sifneos (1973) coined the word *alexithymia* to describe a constellation of behaviors he often observed in individuals experiencing various psychosomatic health problems. Over the past three decades the personality construct of alexithymia has come to be defined by the following basic features (Taylor, 1984; Taylor, Bagby, & Parker, 1997): difficulty identifying feelings and distinguishing between these feelings and the bodily sensations of emotional arousal; difficulty describing feelings to others; constricted imaginal processes; and a stimulus-bound, externally oriented, cognitive style. In addition to these core characteristics, several related features have also been observed in individuals scoring high on measures of alexithymia, such as a lower capacity for empathy (Guttman & Laporte, 2002; Taylor, 1987), problems in processing emotional information (Stone & Nielson, 2001; Suslow & Junghanns, 2002), and difficulties in identifying the facial expressions of others (Parker, Taylor, & Bagby, 1993).

Although initially linked with individuals experiencing psychosomatic problems (De Gucht & Heiser, 2003), alexithymia has come to be linked with a variety of mental health problems, such as substance use disorders (Cecero & Holmstrom, 1997; Rybakowski, Ziolkowski, Zasadzka, & Brzezinski, 1988), eating disorders (Zonnevillje-Bender, van Goozen, Cohen-Kettenis, van Elburg, & van Engeland, 2002), and problem gambling (Parker, Wood, Bond, & Shaughnessy, in press). Within non-clinical populations, alexithymia has also been associated with a variety of lifestyle and interpersonal problems. Kauhanen, Kaplan, Julkunen, Wilson, and Salonen (1993), for example, using a large population-based sample of middle-aged men, found alexithymia to be associated with being single and socially isolated. Kokkonen, Karvonen, Veijola, Laeksy, and Jokelainen (2001) found a similar pattern of results in a younger population-based sample. Alexithymia has also been associated with the quality of interpersonal relationships. In a study exploring attachment styles in young men, Troisi, D'Argenio, Peracchio, and Petti (2001) found that alexithymia was associated with insecure attachment, independent of the severity of current levels of distress. Among individuals with insecure attachment styles, they also found that those with preoccupied or fearful patterns had higher levels of alexithymia than individuals with a dismissing pattern. Helmers and Mente (1999), also using a sample of young men, found alexithymia to be associated with maladaptive health behaviors like poor nutritional consumption and a sedentary lifestyle—maladaptive behaviors that continue to be associated with alexithymia in older adults (Waldstein, Kauhanen, Neumann, & Katzel, 2002).

An important explanation for the link between alexithymia and the various negative outcome variables described above is that individuals scoring high on measures of alexithymia possess a limited range of affect regulating abilities (Taylor et al., 1997). As one consequence, individuals scoring high on measures of alexithymia do not cope well with stress (Parker, Taylor, & Bagby, 1998). For example, since “alexithymic” individuals typically have problems identifying and understanding their emotions, as well as communicating these experiences, they are less likely to turn to others for support. Nor are they likely to regulate feelings of distress via daydreams or other imaginative mental activities. Carpenter and Addis (2000), in a study examining the coping behavior of individuals experiencing depressive symptoms, found that alexithymia was negatively associated with the likelihood that the individual would seek social support from friends or family, or even think about the reasons for their mood problems. A similar pattern of non-adaptive coping behaviors has been reported in individuals experiencing a variety of other health

problems (see, for example, Deary, Scott, & Wilson, 1997; Nordby, Ekeberg, Knardahl, & Os, 1995). This maladaptive pattern of coping has also been found when studying other types of stressful situations. Fukunishi, Berger, Wogan, and Kuboki (1999), studying a sample of expatriates adjusting to life in a new country, found alexithymia to be associated with the perception of being socially isolated, being dissatisfied with life in the new country, and a perception that the individual had been happier prior to departure from their home country.

The cross-sectional nature of much of the previous research on alexithymia and stressful situations limits our understanding about this important relationship. Alexithymia is typically assessed within or immediately following a stressful situation (e.g., coping with a specific illness), or at the same point in time as the critical outcome variables (e.g., employment or marital status). For example, although often reported in the literature that alexithymia is associated with social isolation and lower social success (Kauhanen et al., 1993; Kokkonen et al., 2001), the cross-sectional nature of most of this work limits our understanding of the direction of this relationship. We do not know if the poor interpersonal abilities associated with alexithymia have had a negative influence on the individual's social success, or whether being socially isolated and experiencing socioeconomic difficulties generates alexithymic symptomatology.

The present study sought to extend our knowledge about alexithymia by studying the impact of this variable on a major life transition. The transition from high school to university is a particularly stressful situation for most young adults (Brooks & DuBois, 1995; Gall, Evans, & Bellerose, 2000; Kanoy & Bruhn, 1996; McLaughlin, Brozovsky, & McLaughlin, 1998; Perry, Hladkyj, Pekrun, & Pelletier, 2001; Ross, Niebling, & Heckert, 1999). Students making this transition face a variety of stressors: modifying existing relationships with parents, family, and friends (e.g., living apart), making new relationships, and learning study habits for the new academic environment. They must also learn to function as independent adults (e.g., budgeting time and money). It is the failure to master these types of tasks and challenges, rather than intellectual ability, which is the more common reason reported by post-secondary students for withdrawing from their institutions (Blanc, DeBuhr, & Martin, 1983; Gerdes & Mallinckrodt, 1994). An important indicator of the stress of this transition is the common observation in Canada and the United States that the majority of high school students who go on to post-secondary institutions withdraw before graduation (Gerdes & Mallinckrodt, 1994; Pancer, Hunsberger, Pratt, & Alisat, 2000). The greatest proportions of these students drop out in the first year (Gerdes & Mallinckrodt, 1994).

There is some evidence in the academic achievement literature to suggest that success in making the transition to a post-secondary environment is linked with emotional competency. For example, in a recent study examining the transition from high school to university, Parker, Summerfeldt, Hogan, and Majeski (2004) found that various emotional and social competencies were predictors of academic success. They used a measure of emotional intelligence (Bar-On, 1997) that has been found to be associated with alexithymia (Parker, Taylor, & Bagby, 2001). At the start of the academic term a sample of first-year (full-time) students completed the short form of the Emotional Quotient Inventory (EQ-i: Short; Bar-On, 2002). At the end of the academic year the EQ-i: Short data was matched with students' academic records. Parker et al. (2004) found that academically successful students had significantly higher levels of several different emotional and social competencies than less successful students. These results have also been replicated in several independent samples of American post-secondary students making the transition from high-school (Parker, Duffy, Wood, Bond, & Hogan, in press).

The present study examined whether alexithymia predicts academic success in young adults making the transition to a post-secondary environment. Since previous research on academic success has found that the choice of operational definition for this variable can lead to quite different outcomes (Parker et al., 2004), the present study examined various definitions of success. For example, although academic success may correlate low or non-significantly with specific predictor variables when success is operationalized as a continuous variable (e.g., GPA for the academic year), the same variables may be quite good predictors when academic success is operationalized as a categorical variable (e.g., comparing honors students vs. students on academic probation or comparing students persisting with their studies vs. students who have withdrawn).

2. Method

2.1. Participants

The sample consisted of 707 young adults (151 men and 556 women) attending a small Ontario university. All of the students had graduated from high school within the past two years and were in their first-year of full-time study at the university. Full-time status was defined as completion of at least the equivalent of 3.5 full-year courses during the academic year. Part-time students, or students who were beyond their first year of study at the university, were excluded from the sample. The mean age of participants was 19.38 years ($SD = 0.83$).¹ Eighty-nine percent of the participants identified themselves as White, 1.4% as Black, 4.1% as Asian, 2.3% as Native American, and 3.2% did not indicate their race.

2.2. Measures and procedures

Participants were recruited from a large psychology class and asked if they would volunteer to participate in a study on “personality and academic success”. In September, at the start of the academic year, participants completed the 20-item Toronto Alexithymia Scale (TAS-20; Bagby, Parker, & Taylor, 1994) as part of a questionnaire package at the end of a regularly scheduled class. The TAS-20 is a widely used self-report measure of alexithymia with well established psychometric properties (Parker, Taylor, & Bagby, 2003; Taylor, Bagby, & Parker, 2003). The TAS-20 uses a 5-point Likert rating scale to assess three factors: difficulty identifying feelings (DIF); difficulty describing feelings (DDF); and externally oriented thinking (EOT). These three factors are added to determine overall level of alexithymia. Individuals with an overall TAS-20 score of ≤ 51 can be considered “non-alexithymic” (72.44% of the present sample); individuals with an overall score of ≥ 61 can be considered “alexithymic” (10.9% of the present sample). The two groups were not significantly different with respect to high school GPA, age, or course load.

A sub-set of participants ($N = 464$), as part of a separate study, also completed the Positive and Negative Affect Schedule (PANAS; Watson, Clark, & Tellegen, 1988) at the end of a regularly scheduled class (one week after completing the TAS-20). The PANAS data will allow for the

¹ At the time the data was collected students in Province of Ontario could graduate from high school after grade 12 or grade 13.

potential confounding effects of mood state to be taken into account. In some previous research with the TAS-20, alexithymia has been found to be associated with depressed mood and negative affect (e.g., Hintikka, Honkalampi, Lehtonen, & Viinamaeki, 2001; Lundh & Simonsson-Sarnecki, 2001)—variables that have been found to reduce cognitive functioning (Austin, Mitchell, & Goodwin, 2001). The PANAS contains a 10-item negative affect (NA) sub-scale as well as a 10-item positive affect (PA) sub-scale. High NA reflects negative mood states such as feeling “guilty”, “hostile”, or “nervous”, while high PA reflects mood states such as feeling “interested”, “excited” or “inspired”. Ratings are made on 5-point Likert scales with participants instructed to indicate how they have been feeling during the past week.

Students who participated in the study were informed that the researchers would be tracking their academic progress at the university. In June, after final marks for the entire academic year had been processed by the University’s registrar’s office, alexithymia scores were matched with students’ academic records (grade-point-average for the entire academic year). Graduating high school GPAs were also available for the majority of students ($N = 664$). In order to compare levels of alexithymia in successful and less successful first-year students, academic records were used to identify two groups of students: academically successful students (defined as a GPA above 79%) and academically unsuccessful students (defined as a GPA below 60%). For the students participating in the study, the GPA values used to identify groups had several implications. Students in the successful group made the Dean’s Honor roll (and noted on their university transcript); students in the unsuccessful group were “rusted” (and would be asked to withdraw from university if their GPA in the second year remains below 60%). There were 105 students (14.9% of the sample) in the successful group (21 men and 84 women) and 98 students (13.9% of the sample) in the non-successful group (28 men and 70 women). The two groups were not significantly different with respect to high school GPA, age, or course load.

3. Results

3.1. Total sample

Table 1 presents the correlations amongst high school grade point average, first year grade point average and TAS-20 scores for the whole sample and for males and females separately. It can be seen that the males and females show a similar correlation pattern. Low or non-significant correlations were found between GPA (first year or high school GPA) and the various variables from the TAS-20. For the sub-set of students who also completed the PANAS, negative affect was not found to be associated with either high-school GPA, first-year GPA, or total TAS-20 (r was -0.02 , 0.04 , and 0.08 respectively); a similar pattern of low correlations was also found for positive affect (r was 0.03 , -0.04 , and -0.12 respectively).

In order to examine the associations among alexithymia and academic success in more detail, regression models with first year GPA as the outcome variable were examined. Model 1 used gender, high-school GPA and the TAS-20 full-scale score as predictors; Model 2 used gender, high-school GPA and the three TAS-20 sub-scales as predictors. The results are shown in Table 2 and show that high-school GPA, TAS-20 full-scale score and the two TAS-20 sub-scales of difficulty identifying feelings and externally oriented thinking were significant predictors of first-year GPA.

Table 1
Correlations among high-school GPA, first-year GPA, and TAS-20

Variables	1	2	3	4	5	6
<i>Total Sample (N = 707)</i>						
1. HGPA	–					
2. GPA	0.24**	–				
3. DIF	–0.01	–0.14**	–			
4. DDF	–0.04	–0.13**	0.59**	–		
5. EOT	–0.07	–0.21**	0.24**	0.48**	–	
6. Total TAS	–0.05	–0.21**	0.80**	0.86**	0.70**	–
Mean	77.67	69.85	13.96	12.13	18.26	44.35
SD	6.14	10.84	5.81	4.68	4.88	12.11
<i>Men (N = 151)</i>						
1. HGPA	–					
2. GPA	0.25*	–				
3. DIF	0.07	–0.10	–			
4. DDF	0.02	–0.04	0.61**	–		
5. EOT	–0.12	–0.14	0.27*	0.44**	–	
6. Total TAS	–0.01	–0.12	0.83**	0.86**	0.68**	–
Mean	76.38	67.66	14.23	13.31	19.56	47.10
SD	6.31	12.47	5.61	4.75	4.44	11.75
<i>Women (N = 556)</i>						
1. HGPA	–					
2. GPA	0.23**	–				
3. DIF	–0.03	–0.16**	–			
4. DDF	–0.04	–0.15*	0.59**	–		
5. EOT	–0.03	–0.22**	0.23**	0.48**	–	
6. Total TAS	–0.04	–0.22**	0.80**	0.86**	0.70**	–
Mean	78.03	70.45	13.89	11.80	17.91	43.60
SD	6.05	10.28	5.86	4.61	4.94	12.12

Note: Sample sizes for correlations in the range 664–707 for the whole sample, 143–151 for men, 521–556 for women. HGPA, high school grade point average; GPA, first year grade point average; TAS, Toronto alexithymia scale total; DIF, difficulty identifying feelings; DDF, difficulty describing feelings; EOT, externally oriented thinking.

* $p < 0.01$.

** $p < 0.001$.

3.2. Successful vs. unsuccessful students

As in previous work on determinants of academic success (Parker et al., 2004), it is also of interest to examine the differences between the successful and unsuccessful groups in more detail. Table 3 shows the mean TAS-20 scores for the successful and unsuccessful groups for the combined sample and for males and females separately. A series of ANOVAs was performed with gender and success group as factors. A significant main effect of gender was found for difficulty describing feelings [$F(1, 199) = 4.07, p = 0.045$]. There were significant main effects of success group for total TAS score [$F(1, 199) = 14.05, p < 0.001$], difficulty describing feelings [$F(1, 199) = 4.31, p = 0.039$], difficulty identifying feelings [$F(1, 199) = 6.59, p = 0.011$] and externally oriented thinking

Table 2
Regression of gender, high-school GPA, and TAS-20 as predictors of first-year GPA

Standardised regression coefficient <i>t</i>		
<i>Model 1. Gender, high school GPA and TAS-20 scores as predictors of GPA</i>		
Female gender	0.06	1.66
HGPA	0.23**	6.13
TAS-20	−0.19**	−5.12
<i>Model 2. Gender, high-school GPA and TAS-20 sub-scales as predictors of first-year GPA</i>		
Female gender	0.06	1.67
HGPA	0.23**	6.09
DIF	−0.14*	−3.10
DDF	0.06	1.28
EOT	−0.19**	−4.54

Note: $R^2_{\text{adjusted}} = 9.8\%$ for Model 1, 10.9% for Model 2. HGPA, high school grade point average; GPA, first year grade point average; TAS-20, Toronto alexithymia scale total; DIF, difficulty identifying feelings; DDF, difficulty describing feelings; EOT, externally oriented thinking.

* $p < 0.01$.

** $p < 0.001$.

Table 3
Means and standard deviations of TAS-20 scores by success group

Group	<i>N</i>	Total mean (SD)	DIF mean (SD)	DDF mean (SD)	EOT mean (SD)
<i>Total sample</i>					
Unsuccessful	98	47.68 (12.98)	15.14 (6.81)	12.93 (4.91)	19.61 (5.13)
Successful	105	39.52 (11.41)	12.54 (4.76)	10.92 (4.88)	16.06 (4.76)
<i>Men</i>					
Unsuccessful	28	49.36 (11.52)	15.00 (6.30)	13.82 (4.62)	20.54 (4.50)
Successful	21	42.48 (12.72)	12.71 (4.99)	12.52 (5.70)	17.24 (4.81)
<i>Female</i>					
Unsuccessful	70	47.01 (13.54)	15.20 (7.05)	12.57 (5.00)	19.24 (5.34)
Successful	84	38.79 (11.01)	12.50 (4.73)	10.52 (4.61)	15.76 (4.73)

Note: TAS-20; Toronto alexithymia scale total; DIF, difficulty identifying feelings; DDF, difficulty describing feelings; EOT, externally oriented thinking.

[$F(1, 199) = 17.28, p < 0.001$]; as can be seen from Table 3, these results correspond to the unsuccessful group having higher mean scores for total TAS-20 and for the TAS-20 sub-scales. There were no significant gender-success group interactions. For the sub-set of participants who completed the PANAS, the successful ($N = 37$) and unsuccessful ($N = 64$) groups were not significantly different on the positive or negative affect scales ($p > .05$).

3.3. Alexithymic vs. non-alexithymic students

A gender by alexithymia group (non-alexithymic vs. alexithymic) ANOVA with first-year GPA as the dependent variable found that the main effect for gender and the interaction were not significant. However, the non-alexithymic ($M = 70.61, SD = 10.28$) and alexithymic ($M = 66.23,$

SD = 15.06) groups differed significantly on GPA [$F(1,585) = 5.04, p = .02$]. Analyses also revealed that the proportion of alexithymic and non-alexithymic individuals falling into the three different academic success groups were significantly different [$\chi^2 = 6.50, df = 2, p = .04$]. For the non-alexithymic group, the proportions for unsuccessful, moderately successful, and successful were 12.3%, 71.1%, and 16.6% respectively; for the alexithymic group the proportions were 15.5%, 77.9%, and 6.5% respectively. For the sub-set of participants who completed the PANAS, the alexithymic ($N = 48$) and non-alexithymic ($N = 332$) groups were not significantly different on the positive or negative affect scales ($p > .05$).

4. Discussion

As expected, alexithymia was found to be linked with students making the successful transition from high school to first-year university. Although alexithymia groups did not differ on high school GPA, the non-alexithymic group performed significantly better in their first-year of study than the alexithymic group. The two groups also differed in the proportion of students having a “successful” or “unsuccessful” first-year. For example, only 6.5% of the alexithymic students ended up on the Dean’s Honor Roll (GPA of 80% or better), compared to 16.6% of the non-alexithymic students. The results for the different achievement groups also revealed a significant relationship with alexithymia. Although the two groups did not differ on high school GPA, highly successful students (those who achieved a first-year university GPA of 80% or better) scored significantly lower on total TAS-20, as well as all three sub-scales, compared to unsuccessful students (those who received a first-year GPA of 59% or less). The results of the present study are very similar to those reported by Parker et al. (2004) and Parker et al. (in press), who found that various emotional and social competencies were good predictors of academic achievement in samples of Canadian and American first-year students.

The finding of a relationship between alexithymia and academic achievement is not surprising, given the variety of stressors involved in a major life transition like going to university (Ross et al., 1999), and the poor coping strategies habitually used by individuals scoring high on measures of alexithymia (Carpenter & Addis, 2000; Parker et al., 1998). First-year students face a variety of new personal and interpersonal challenges (Brooks & DuBois, 1995; Gall et al., 2000; Kanoy & Bruhn, 1996; McLaughlin et al., 1998; Perry et al., 2001). Along with the need to make new relationships, they must modify existing relationships with friends and family, as well as learn new study habits for an academic environment that typically involves more independence than was experienced in high school (Ross et al., 1999).

The overall finding of a link between alexithymia and academic achievement is at odds with the overall conclusions of several recent studies (Barchard, 2003; Newsome, Day, & Catano, 2000; O’Connor & Little, 2003) where weak or non-significant relationships were found between academic achievement and emotional intelligence—a variable with considerable conceptual overlap with alexithymia (Parker et al., 2001; Saklofske, Austin, & Minski, 2003). The discrepancy in central findings is likely due to important methodological differences between the various studies. Predicting academic achievement often produces divergent results depending on how achievement is operationalized (Parker et al., 2004). In Barchard (2003), Newsome et al. (2000) and O’Connor and Little (2003) both emotional intelligence and academic achievement were treated only as

continuous variables. In the present study, when both alexithymia and achievement were treated as continuous variables, alexithymia was found to be a relatively poor predictor of first year university achievement (although it was found to be about as powerful a predictor as high-school GPA). Several other methodological differences may have also contributed to the divergent pattern of results. The other researchers used very heterogeneous samples of students. These researchers either combined first-year students with students in more advanced years of study, full-time students with part-time, or young adults with mature students. Since age and course load are potential confounds, the present study focused directly on young adults making the transition from high school to full-time study at university.

One limitation of the present study is that academic achievement was assessed for only a single academic year. Future research needs to examine the long-term effects of alexithymia on achievement. Additional research might also want to investigate a broader range of indicators for academic success than just GPA. A recent study on the relationship between emotional intelligence and academic achievement in a group of high school students (Petrides, Frederickson, & Furnham, 2004) found that the former variable was differentially associated with educational subjects (better for predicting success on comprehensive exams in English than for Math or Sciences). Therefore, other indicators might include the number of or type of courses completed, along with the number of courses dropped or not completed, and whether a student persists or withdraws from an institution.

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