



Trait emotional intelligence as a predictor of socioemotional outcomes in early adolescence

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ABSTRACT

Trait emotional intelligence (EI) refers to a constellation of emotional self-perceptions located at the lower levels of personality hierarchies. This study investigated the predictive and incremental validity of this construct in a sample of 1140 pupils aged 11–13 years. Trait EI showed strong concurrent and predictive validity in relation to three measures of socioemotional competence: self-reported psychopathology as assessed by the Strengths and Difficulties Questionnaire, a sociometric measure of peer relations, and a peer-assessed measure of social behavior. Socioemotional measures were taken twice over a period of seven months. Structural equation modeling revealed trait EI and IQ effects on socioemotional competence (SEC), the former being stronger than the latter. Hierarchical regression analyses suggested an association also of trait with level of change in SEC (controlling for both IQ and SEC at time 1). The findings corroborate an important role for trait emotional intelligence in peer relations and socioemotional competence.

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1. Introduction

Trait emotional intelligence (*trait EI* or *trait emotional self-efficacy*) refers to a constellation of emotional self-perceptions located at the lower levels of personality hierarchies (Petrides, Pita, & Kokkinaki, 2007). It is conceptually distinct from ability EI (see Austin, 2009; Ferguson & Austin, 2010), which – in theory – comprises actual emotion-related abilities and should be measured via maximum-performance tests similar to those used in the operationalization of standard cognitive ability. The distinction between trait EI and ability EI is important practically as well as theoretically, for example, in evaluating the efficacy of interventions seeking to enhance “emotional intelligence,” “emotional literacy,” etc. For a detailed exposition of this distinction, explaining what trait EI encompasses and how it differs from ability EI and other models, such as those of Bar-On and Goleman, sometimes classified as “mixed models”, see Petrides (2011).

Although many studies of the concurrent validity of trait EI have been conducted most have utilized self-assessment exclusively, and to date there have been few investigations of predictive and incremental validity in children. This is surprising given the recent dramatic growth in socioemotional learning (SEL) programs, which have been specifically based on models of emotional intelligence (Lewkowicz, 2007; Qualter, Whiteley, Hutchinson, & Pope, 2007;

Ulutas & Omeroglu, 2007), or which are considered to address facets of such models (e.g., the PATH program; Greenberg, Kusche, Cook, & Quamma, 1995). The establishment of predictive validity is of particular importance where measures are to be used in research evaluating interventions.

Studies of the concurrent validity of trait EI in children and adolescents have found associations with improved self-concept and adaptive coping styles, and with lower levels of somatic complaints, anxiety, depression, anger, and disruptive behavior (Mavroveli, Petrides, Rieffe, & Bakker, 2007; Williams, Daley, Burnside, & Hammond-Rowley, 2009). A number of studies have gone beyond the use of self-report measures in establishing concurrent validity based on others' ratings of children's socioemotional competence. These studies have shown that peer nominations for pro-social behaviors are associated with high trait EI as assessed by the Schutte Emotional Intelligence Scale (Charbonneau & Nicol, 2002), the TEIQue-CF (Mavroveli, Petrides, Sangareau, & Furnham, 2009) and the TEIQue-ASF (Mavroveli et al., 2007; Petrides, Sangareau, Furnham, & Frederickson, 2006). In addition, high trait EI scores on the TEIQue-ASF have been associated with fewer peer nominations for negative characteristics such as ‘disruption’ and ‘dependence’ (Mavroveli et al., 2007; Petrides et al., 2006).

Studies using teacher ratings have reported positive correlations with pro-social behavior and negative correlations with externalizing and internalizing problem behaviors, for both the TEIQue-ASF (Petrides et al., 2006) and the TEIQue-CF (Mavroveli, Petrides, Shove, & Whitehead, 2008). Some concurrent validity studies have used objective criteria, such as unauthorized absences and disci-

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plinary exclusions from school. Negative relationships between these criteria and trait EI have been reported for 16-year olds (Petrides, Frederickson, & Furnham, 2004) and for 8–12 year-olds (Mavroveli et al., 2008).

The predictive validity of trait EI in pre-adolescents was investigated by Williams Daley, Burnside, and Hammond-Rowley (2010a), who found that TEIQue-ASF scores in the last year of primary school correlated significantly with anxiety, depression, and anger scores on the Beck Youth Inventory in the first year of secondary school. Given a degree of content overlap between these two measures, further analyses were undertaken in which relevant TEIQue-ASF items were identified and removed. The resulting re-analysis essentially replicated the original findings (Williams, Daley, Burnside, & Hammond-Rowley, 2010b), indicating that the relationship between trait EI and psychopathology cannot be attributed to item overlap. However, since all the measures in these studies relied on self-report, common method variance may have inflated their interrelationships.

The value of multi-method assessment is corroborated by evidence of differential accuracy of different informants across condition types (Roberts, Harms, Smith, Wood, & Webb, 2006). Superior validity has been found for self-reports by children over reports by parents and teachers in identifying internalizing problems (DiBartolo & Grills, 2006). By contrast, self-reports can result in under-reporting of anti-social behavior compared to reports by peers (Pakaslahti & Keltikangas-Jarvinen, 2000), or by parents and teachers which show higher concordance with clinical diagnoses and future negative outcomes (Loeber, Green, Lahey, & Stouthamer-Loeber, 1991).

Studies with various populations have shown that peer-assessed social behavior and peer relations, assessed by sociometric measures, can contribute independently (Coie, Lochman, Terry, & Hyman, 1992), or interactively (Prinstein & La Greca, 2004), in predicting socioemotional outcomes. Positive peer relations represent a key index of competence in childhood and adolescence while peer rejection has been linked to multiple negative outcomes, concurrently as well as prospectively (Bierman, 2004; Rubin, Bukowski, & Parker, 2006; Witvliet, van Lier, Cuijpers, & Koot, 2009). While a few studies have established a concurrent association between trait EI and peer-assessed social behavior (Charbonneau & Nicol, 2002; Mavroveli et al., 2007, 2009; Petrides et al., 2006), the association with peer relations has yet to be investigated, as has the possibility of a prospective relationship with either variable.

The present study seeks to extend the investigation of the predictive validity of trait EI in early adolescence using a longitudinal design and triangulated criteria extending beyond self-report questionnaires into sociometric and peer-assessment methodologies. Bearing in mind the well established associations of peer relations and social behavior with cognitive ability (Bellanti & Bierman, 2000; Czeschlik & Rost, 1995), it was considered important to investigate the effects of trait EI incrementally over IQ. In line with previous research using the TEIQue, and other self-report measures of EI (Mavroveli & Sánchez-Ruiz, 2011; Mavroveli et al., 2008, 2009; Petrides et al., 2004; Williams et al., 2010a), low correlations between General Cognitive Ability and trait EI were predicted.

In summary, then, it was hypothesized that:

1. Trait EI would be related concurrently, and prospectively, to measures of socioemotional competence: self-reported psychopathology, sociometrically assessed peer relations, and peer-assessed social behavior.
2. Trait EI scores at time 1 would predict change in socioemotional competence (i.e., trait EI at time 1 would predict follow-up socioemotional competence scores at time 2 incrementally over baseline socioemotional competence scores at time 1).

3. The correlations between trait EI scores and General Cognitive Ability would be low, and the relationships between trait EI and measures of socioemotional competence would be independent of the effect of General Cognitive Ability.

2. Method

2.1. Participants

Participants were 1140 students (53% male) between the ages of 11 and 13 years, attending four secondary schools in South East England. Information on ethnicity was available for 93% of the sample; 78% were from White English backgrounds, 12% from Western European backgrounds and 3% from Caribbean, Asian or mixed race backgrounds. Eligibility for free school meals, an index of socioeconomic status, at 9.6% of students is nationally representative. The overall sample size was 1140 but missing values on various variables across the two time points meant that the effective sample size varied across analyses: between 833 and 1140 for the Pearson correlations where pairwise deletion was used; for the hierarchical regressions it is reflected in the degrees of freedom, and for the structural equation model it was 707.

2.2. Measures

2.2.1. The Trait Emotional Intelligence Questionnaire-Adolescent Short Form

The Trait Emotional Intelligence Questionnaire-Adolescent Short Form (TEIQue-ASF; Petrides et al., 2006) is a simplified version, in wording and syntactic complexity, of the adult short form. The items are sampled from the 15 facets of the adult trait EI sampling domain (two items per facet). The TEIQue-ASF does not yield scores on the 15 trait facets, scores on the four trait EI factors can be derived, in addition to the global score. The 30 short statements are responded to on a seven-point Likert scale (e.g. 'I often find it hard to understand other people') which can be downloaded from www.psychometriclab.com. In this sample, Cronbach's alpha for the scale was 0.82.

2.2.2. A General Cognitive Ability

General Cognitive Ability score was obtained from the Cognitive Ability Test (CAT; Lohman et al., 2001), administered to all students at 11 years of age upon entry to secondary school. The CAT yields scores on verbal, quantitative, and non-verbal subscales as well as a total score on General Cognitive Ability. It is used widely in the UK educational system where studies with national samples have reported high reliability (Strand, 2004) and strong validity correlations with later educational attainment (Strand, 2006).

2.2.3. Socioemotional competence (SEC)

This was assessed by three measures:

(a) The Strengths and Difficulties Questionnaire (SDQ; Goodman, Meltzer, & Bailey, 1998) is a widely used and well-validated measure of adjustment and psychopathology. The self-report questionnaire for 11–16-year-olds consists of five scales (of five items each): emotional symptoms, conduct problems, hyperactivity, peer relationship problems and prosocial behavior. A total difficulties score is obtained by summing the four problem subscale scores. Cronbach's alpha values for the total difficulties scale were 0.79 at time 1 and 0.81 at time 2.

(b) The Social Inclusion Survey (SIS; Frederickson & Graham, 1999) was used to assess peer relations. It is a forced-choice sociometric measure on which students indicate how much they like to work with each of their classmates: 'like', 'don't mind', prefer not, or 'don't know well enough to decide'. For each participant the

proportion of 'like to work with' choices provided an acceptance index, and the proportion of 'prefer not to' choices a rejection index. Frederickson and Furnham (1998) have reported test–retest reliabilities of 0.70–0.78 for acceptance and rejection over a 5-week period. The rejection index was subtracted from the acceptance index to give a composite Peer Relations score.

(c) In the Guess Who peer assessment of social behavior (Parkhurst & Asher, 1992) students identify classmates who fit behavioral descriptors: "Co-operates: This person is really good to have as part of your group because they are agreeable and co-operate. They join in, share and give everyone a turn. Disrupts: This person has a way of upsetting everything when he or she gets in a group. They don't share and try to get everyone to do things their way. Dependent: this person is always looking for help. They ask for help even before they've tried very hard." The proportion of classroom peers nominating each student for each descriptor was calculated. Frederickson (1999) reported stability coefficients for 9–12 year-olds over a five week interval as follows: Cooperates 0.76, Disrupts 0.80, and Dependent 0.70. The proportion scores for Disrupts and Dependent were subtracted from that for Cooperates to give a composite Social Behavior score.

2.3. Procedure

Approval for the project was obtained from the university ethics committee. Permission was obtained from parents/carers using an opt-out consent method appropriate to group survey data. No parent refused consent. Measures were completed on computers during school time following provision of information on the purpose of the activities, confidentiality and the voluntary nature of the project. No student declined to participate or subsequently withdrew. Data were collected in the autumn and, for the three SEC measures, again in the summer, approximately seven months later.

3. Results

3.1. Preliminary analyses

Bivariate correlations, means, and standard deviations for all variables are reported in Table 1. In accordance with hypothesis 1, significant associations were found between total trait EI at time 1, and the three SEC measures at both time 1 and time 2. The correlations between total trait EI and measures of self-reported psychopathology were moderate, and somewhat higher than the former's correlations with peer report measures of social behavior and peer relations. Significant correlations were also found between cognitive ability and the three SEC measures at time 1 and

time 2. These were generally low as was the correlation between General Cognitive Ability and trait EI.

3.2. Multiple regressions

Four standard multiple regressions were performed with socio-emotional competence (SEC) and its constituent indicators: the Guess Who peer assessment measure of social behavior, the self-reported SDQ assessing psychopathology and the sociometric assessment of peer relations at time 2 were modeled as criteria, and the respective time 1 scores, along with General Cognitive Ability (GCA) and global trait EI were modeled as predictors. The results of these analyses are summarized in Table 2. It can be seen in that table that GCA and, especially, trait EI at time 1 showed significant incremental effects on the socioemotional competence criteria at time 2, after controlling for baseline scores at time 1. The sole exception was the effect of GCA on peer relations, which approached, but did not exceed, the 0.05 significance level.

3.3. Structural equation model

The preceding analyses provide an outline of the structural relationships between the main variables of interest. However, they do not take account of the psychometric properties of the variables, for example, measurement error in the indicators of the latent variables or the extent to which these indicators intercorrelate. We attempted to address these concerns through the use of a structural equation model set up in LISREL 8.5. In this model, GCA and trait EI were modeled as exogenous variables with, respectively, three (verbal, quantitative, and non-verbal ability) and four (Well-being, Self-control, Emotionality, and Sociability) indicators, while socio-emotional competence (SEC) at time 1 and time 2 were modeled as endogenous variables. Fig. 1 presents the tested statistical model, along with the standardized parameter estimates. The model represented a reasonably good fit to the data: $\chi^2_{(55)} = 330.07$, RMSEA = 0.08, GFI = .94, CFI = .94, SRMR = 0.06. The largest modification indices concerned correlated errors of limited substantive interest that were not modeled in order to avoid over-fitting.

As expected, both GCA and trait EI had significant paths into SEC at time 1, with the latter, however, showing a substantially larger standardized coefficient. Neither variable showed incremental effects on SEC at time 2, which is understandable given the high stability coefficient in SEC between the two measurement occasions (0.66). The paths in Fig. 1 represent the direct effects linking the latent variables in the model. Indirect effects on SEC at time 2 were 0.13 for GCA and 0.55 for trait EI. With respect to amount of variance explained in the endogenous variables, the value was 77% for SEC at time 1 and 43% for SEC at time 2. The amount of variance attributed to the indirect effects of GCA and trait EI on SEC at time

Table 1
Descriptive data on key variables: means, standard deviations, and correlations.

	1	2	3	4	5	6	7	8
1. CAT-GCA	–							
2. TEIQue-ASF Total Score	.18	–						
3. Psycho-pathology time 1	.24	.62	–					
4. Social behavior – time 1	.34	.25	.34	–				
5. Peer relations – time 1	.24	.23	.24	.51	–			
6. Psycho-pathology time 2	.28	.52	.66	.31	.20	–		
7. Social behavior – time 2	.38	.24	.34	.75	.43	.39	–	
8. Peer relations – time 2	.21	.23	.26	.47	.52	.28	.62	–
<i>M</i>	96.10	4.47	–12.62	0.15	0.14	–13.96	0.02	0.15
(<i>SD</i>)	(11.02)	(0.71)	(5.92)	(0.43)	(0.33)	(6.38)	(0.45)	(0.34)

Note. All correlations were significant at $p < 0.01$. Key CAT-GCA = Cognitive Abilities Test-General Cognitive Ability, TEIQue-ASF = Trait Emotional Intelligence Questionnaire-Adolescent Short Form.

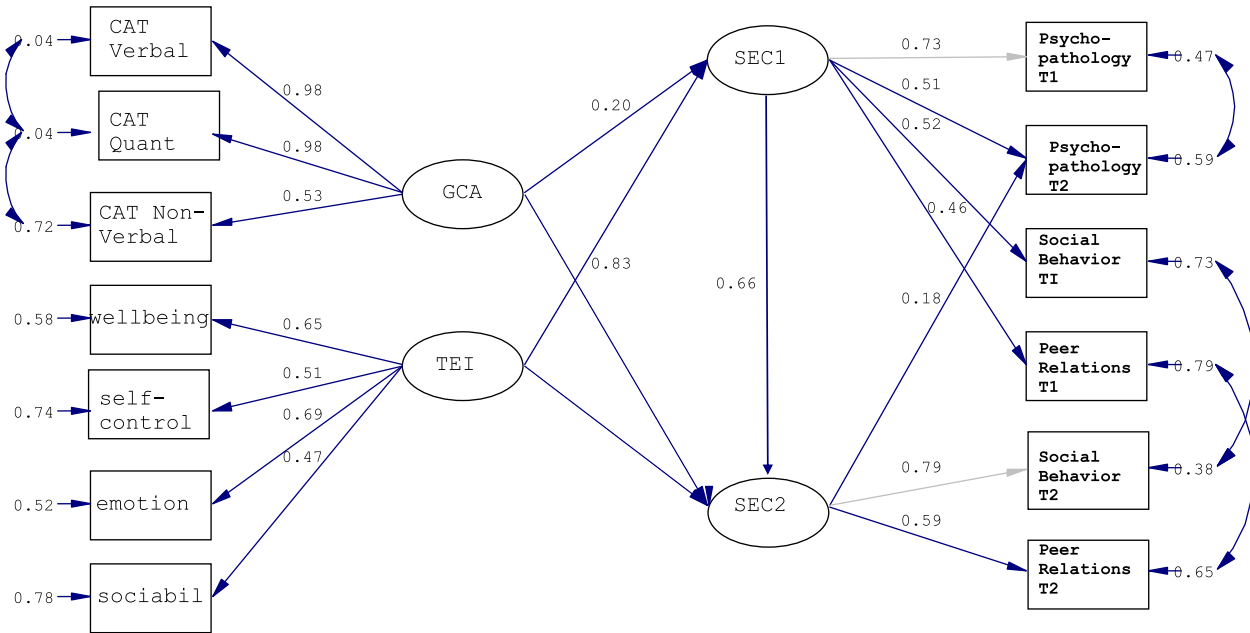


Fig. 1. Structural equation model. Grey lines indicate the reference indicators for the endogenous variables. Dotted lines indicate non-significant paths.

Table 2
Multiple regression results of socioemotional measures at time 2 on trait EI, cognitive ability and baseline socioemotional measures at time 1.

	Socioemotional competence (SEC) time 2		Social behavior time 2		Peer relations time 2		Psychopathology time 2	
	Beta	t	Beta	t	Beta	t	Beta	t
CAT-GCA	.12	4.54**	.14	6.07**	.05	1.78	.12	4.38**
TEIQue-ASF	.14	4.16**	.06	2.53*	.11	3.98**	.16	4.58**
SEC time 1	.56	16.15**	–	–	–	–	–	–
Social behavior time 1	–	–	.69	29.98**	–	–	–	–
Peer relations time 1	–	–	–	–	.48	16.64**	–	–
Psychopathology Time 1	–	–	–	–	–	–	.53	15.51**

Note. CAT-GCA = Cognitive Abilities Test-General Cognitive Ability, TEIQue-ASF = Trait Emotional Intelligence Questionnaire-Adolescent Short Form.
* p < 0.05.
** p < 0.01.

2 (‘Reduced Form Equations R^2 ’; see Joreskog & Sorbom, 1996) was 33%.

4. Discussion

The results reported in this paper add to our understanding of the relationship between trait EI and socioemotional competence in early adolescence. As in previous studies, concurrent associations were found between lower levels of trait EI and higher levels of self-reported psychopathology (Siu, 2009; Williams et al., 2009). Previously reported concurrent associations with peer-assessed negative social behavior in middle childhood (Mavrouli et al., 2007; Petrides et al., 2006) were replicated in early adolescence. Higher levels of trait EI were concurrently associated with higher levels of self-reported and peer-reported pro-social behavior. Complementary findings were obtained for peer relations assessed by sociometric status, an important component of socioemotional competence, whose concurrent relationship with trait EI had not previously been investigated.

Extant findings on the predictive association of trait EI with self-reported psychopathology were also supported (Williams et al., 2010a). In addition, trait EI at time 1 was shown to be related

prospectively, and independently of General Cognitive Ability, to both peer assessed social behavior and sociometric peer relations at time 2. When baseline values at time 1 of these criteria were taken into consideration, the predictive relationships with trait EI remained significant. In this respect, the results of this study differ from those of Williams et al. (2010a) who found that when psychopathology scores at time 1 were taken into account trait EI at time 1 no longer predicted self-rated psychopathology scores at time 2. Possible reasons for this discrepancy are considered below.

There is also a discrepancy to be explained in the findings of the present paper. Specifically, the hierarchical regression analysis found incremental effects of trait EI and GCA over socioemotional competence at time 1 in predicting socioemotional competence at time 2 (i.e., predicting change in socioemotional competence levels between the two measurement occasions). However, neither predictor showed incremental effects on socioemotional competence at time 2 in the structural equation model. Rather, their effects were indirect, mediated by baseline (time 1) socioemotional competence. Both higher GCA and, in particular, higher trait EI were associated with higher socioemotional competence.

The source of this discrepancy is the different nature of the analyses. The hierarchical regressions are based on total scores that combine and include the specific variance of each construct indica-

tor, whereas the SEM analysis only includes the part of the variance that is shared between all indicators. What seems to be happening in this case is that some part of the specific variance of the variables that is finding its way into the respective summated global scores in the hierarchical regressions is being left out in the SEM analysis.

Beyond this technical point there is a broader, and theoretically more important, issue to be considered. This is to do with the rationale underpinning the various studies and hypotheses. For example, in Williams et al. (2010a), it was anticipated that a short trait EI measure should not only predict *level of change* in psychopathology within a 6-month period, but that it should do so incrementally over several other variables. Given the accumulating evidence showing significant associations of trait EI with a range of criteria (for a meta-analysis, see Martins, Ramalho, & Morin, 2010), the demonstration of incremental validity will crucially depend on the other variables investigated.

The findings of this study also have a number of practical implications. First of all, there is a demonstration, using multiple criteria and different informants, of the concurrent and predictive validity of the TEIQue-ASF. This supports its utility as a tool for practitioners in investigating aspects of socioemotional competence in adolescence and evaluating socioemotional learning programs. It is, nevertheless, important to note that this tool can be profitably complemented by tools specifically targeting social (as distinct from emotional) aspects of personality as discussed in Petrides, Mason, and Sevdalis (2011). The establishment of a link with peer sociometric status is also of particular interest. In addition to the well-established association between peer rejection and multiple negative outcomes (Bierman, 2004; Rubin et al., 2006), there is increasing evidence that peer relations can have protective effects for at-risk groups of children and adolescents (Barry, Barry, Deming, & Lochman, 2008; Collishaw et al., 2007; La Greca & Harrison, 2005).

If trait EI is important in the development of peer relations, it may operate as a protective factor, with peer relations acting as a mediator of its effects on psychopathology and anti-social behavior. Such hypothesized mechanisms cannot be tested by correlational data, like those in the current study. Nor can inferences be drawn from observed associations between variables about causal relationships, or direction of influence. Further investigation of the impact of trait EI on the development of aspects of socioemotional competence calls for experimental studies, which may valuably be incorporated into evaluation designs of SEL programmes aiming to enhance aspects of emotional intelligence (Nelis, Quoidbach, Mikolajczak, & Hansenne, 2009; Zins, Elias, & Greenberg, 2007). Such work will rely on assessment instruments of established validity, such as the instrument investigated in this study.

References

- Austin, E. J. (2009). A reaction time study of responses to trait and ability emotional intelligence test items. *Personality and Individual Differences*, 46, 381–383.
- Barry, T. D., Barry, C. T., Deming, A. M., & Lochman, J. E. (2008). Stability of psychopathic characteristics in childhood: The influence of social relationships. *Criminal Justice and Behavior*, 35, 244–262.
- Bellanti, C. J., & Bierman, K. L. (2000). Conduct problems prevention research group: Disentangling the impact of low cognitive ability and inattention on social behavior and peer relationships. *Journal of Clinical Child Psychology*, 29, 66–75.
- Bierman, K. L. (2004). *Peer rejection: Developmental processes and intervention strategies*. New York: Guilford Press.
- Charbonneau, D., & Nicol, A. A. M. (2002). Emotional intelligence and prosocial behaviors in adolescents. *Psychological Reports*, 90, 361–370.
- Coie, J. D., Lochman, J. E., Terry, R., & Hyman, C. (1992). Predicting early adolescent disorder from childhood aggression and peer rejection. *Journal of Consulting and Clinical Psychology*, 60, 783–792.
- Collishaw, S., Pickles, A., Messer, J., Rutter, M., Shearer, C., & Maughan, B. (2007). Resilience to adult psychopathology following childhood maltreatment: Evidence from a community sample. *Child Abuse & Neglect*, 31, 211–229.
- Czeschlik, T., & Rost, D. H. (1995). Sociometric types and children's intelligence. *British Journal of Developmental Psychology*, 13, 177–189.
- DiBartolo, P. M., & Grills, A. E. (2006). Who is best at predicting children's anxiety in response to a social evaluative task? A comparison of child, parent, and teacher reports. *Anxiety Disorders*, 20, 630–645.
- Ferguson, F., & Austin, E. J. (2010). Associations of trait and ability emotional intelligence with performance on Theory of Mind tasks in an adult sample. *Personality and Individual Differences*, 49, 414–418.
- Frederickson, N. L., & Furnham, A. F. (1998). Sociometric classification methods in school peer groups: A comparative investigation. *Journal of Child Psychology and Psychiatry*, 39, 921–934.
- Frederickson, N., & Graham, B. (1999). *Social skills and emotional intelligence*. Windsor, UK: NFER-Nelson.
- Goodman, R., Meltzer, H., & Bailey, V. (1998). The strengths and difficulties questionnaire: A pilot study on the validity of the self-report version. *European Child & Adolescent Psychiatry*, 7, 125–130.
- Greenberg, M. T., Kusche, C. A., Cook, E. T., & Quamma, J. P. (1995). Promoting emotional competence in school aged children: The effects of the PATHS curriculum. *Development and Psychopathology*, 7, 117–136.
- Joreskog, K. G., & Sorbom, D. (1996). *LISREL 8: User's reference guide*. Chicago: Scientific Software International.
- La Greca, A. M., & Harrison, H. M. (2005). Adolescent peer relations, friendships, and romantic relationships: Do they predict social anxiety and depression? *Journal of Clinical Child and Adolescent Psychology*, 34, 49–61.
- Lewkowicz, A. B. (2007). *Teaching emotional intelligence: Strategies and activities for helping students make effective choices* (2nd ed.). Thousand Oaks, CA: Corwin Press.
- Loeber, R., Green, S. M., Lahey, B. B., & Stouthamer-Loeber, M. (1991). Differences and similarities between children, mothers, and teachers as informants on disruptive child behavior. *Journal of Abnormal Child Psychology*, 19, 75–95.
- Lohman, D. F., Thorndike, R. L., Hagen, E. P., Smith, P., Fernandes, C., & Strand, S. (2001). *Cognitive abilities test* (3rd ed.). Windsor, UK: NFER-Nelson.
- Martins, A., Ramalho, N., & Morin, E. (2010). A comprehensive meta-analysis of the relationship between emotional intelligence and health. *Personality and Individual Differences*, 49, 554–564.
- Mavroveli, S., Petrides, K. V., Rieffe, C., & Bakker, F. (2007). Trait emotional intelligence, psychological well-being, and peer-rated social competence in adolescence. *British Journal of Developmental Psychology*, 25, 263–275.
- Mavroveli, S., Petrides, K. V., Sangareau, Y., & Furnham, A. (2009). Exploring the relationships between trait emotional intelligence and objective socioemotional outcomes in childhood. *British Journal of Educational Psychology*, 79, 259–272.
- Mavroveli, S., Petrides, K. V., Shove, C., & Whitehead, A. (2008). Investigation of the construct of trait emotional intelligence in children. *European Child and Adolescent Psychiatry*, 17, 516–526.
- Mavroveli, S., & Sánchez-Ruiz, M. J. (2011). Trait emotional intelligence influences on academic achievement and school behaviour. *British Journal of Educational Psychology*, 81(1), 112–134.
- Nelis, D., Quoidbach, J., Mikolajczak, M., & Hansenne, M. (2009). Increasing emotional intelligence: (How) is it possible? *Personality and Individual Differences*, 47, 36–41.
- Pakaslahti, L., & Keltikangas-Jarvinen, L. (2000). Comparison of peer, teacher and self-assessments on adolescent direct and indirect aggression. *Educational Psychology*, 20, 177–190.
- Parkhurst, J. T., & Asher, S. R. (1992). Peer rejection in middle school: Subgroup differences in behavior, loneliness and interpersonal concerns. *Developmental Psychology*, 28, 231–241.
- Petrides, K. V. (2011). Ability and trait emotional intelligence. In T. Chamorro-Premuzic, A. Furnham, & S. von Stumm (Eds.), *The blackwell-wiley handbook of individual differences*. New York: Wiley.
- Petrides, K. V., Frederickson, N., & Furnham, A. (2004). The role of trait emotional intelligence in academic performance and deviant behavior at school. *Personality and Individual Differences*, 36, 277–293.
- Petrides, K. V., Mason, M., & Sevdalis, N. (2011). Preliminary validation of the construct of trait social intelligence. *Personality and Individual Differences*, 50, 874–877.
- Petrides, K. V., Pita, R., & Kokkinaki, F. (2007). The location of trait emotional intelligence in personality factor space. *British Journal of Psychology*, 98, 273–289.
- Petrides, K. V., Sangareau, Y., Furnham, A., & Frederickson, N. (2006). Trait emotional intelligence and children's peer relations at school. *Social Development*, 15, 537–547.
- Prinstein, M. J., & La Greca, A. M. (2004). Childhood peer rejection and aggression as predictors of adolescent girls' externalizing and health risk behaviors: A 6-year longitudinal study. *Journal of Consulting & Clinical Psychology*, 72, 103–112.
- Qualter, P., Whiteley, H. E., Hutchinson, J. M., & Pope, D. J. (2007). Supporting the development of emotional competencies to ease the transition from primary to high school. *Educational Psychology in Practice*, 23, 9–95.
- Roberts, B. W., Harms, P., Smith, J. L., Wood, D., & Webb, M. (2006). Using multiple methods in personality psychology. In M. Eid & E. Diener (Eds.), *Handbook of multimethod measurement in psychology* (pp. 321–335). Washington, DC: American Psychological Association.
- Rubin, K. H., Bukowski, W. M., & Parker, J. G. (2006). Peer interactions, relationships, and groups. In N. Eisenberg, W. Damon, & R. Lerner (Eds.), *Handbook of child psychology: Social, emotional, and personality development* (6th ed.) (Vol. 3, pp. 571–645). Hoboken, NJ: Wiley.

- Siu, A. F. Y. (2009). Trait emotional intelligence and its relationships with problem behavior in Hong Kong adolescents. *Personality and Individual Differences, 47*, 553–557.
- Strand, S. (2004). Consistency in reasoning test scores over time. *British Journal of Educational Psychology, 74*, 617–631.
- Strand, S. (2006). Comparing the predictive validity of reasoning tests and national end of Key Stage 2 tests: Which tests are the best? *British Educational Research Journal, 32*, 209–225.
- Ulutas, I., & Omeroglu, E. (2007). The effects of an emotional intelligence education program on the emotional intelligence of children. *Social Behavior and Personality, 35*, 1365–1372.
- Williams, C., Daley, D., Burnside, E., & Hammond-Rowley, S. (2009). Measuring emotional intelligence in preadolescence. *Personality and Individual Differences, 47*, 316–320.
- Williams, C., Daley, D., Burnside, E., & Hammond-Rowley, S. (2010a). Can trait emotional intelligence and objective measures of emotional ability predict psychopathology across the transition to secondary school? *Personality and Individual Differences, 48*, 161–165.
- Williams, C., Daley, D., Burnside, E., & Hammond-Rowley, S. (2010b). Does item overlap account for the relationship between trait emotional intelligence and psychopathology in preadolescents? *Personality and Individual Differences, 48*, 867–871.
- Witvliet, M., van Lier, P. A. C., Cuijpers, P., & Koot, H. M. (2009). Testing links between childhood positive peer relations and externalizing outcomes through a randomized controlled intervention study. *Journal of Consulting and Clinical Psychology, 77*, 905–915.
- Zins, J. E., Elias, M. J., & Greenberg, M. T. (2007). School practices to build social-emotional competence as the foundation of academic and life success. In R. Bar-On, J. G. Maree, & M. J. Elias (Eds.), *Educating people to be emotionally intelligent* (pp. 79–94). Westport, CT: Praeger Publishers/Greenwood Publishing Group.