Short Communication

Preliminary validation of the construct of trait social intelligence

K.V. Petrides [a,*], Madeleine Mason [b], Nick Sevdalis [c,1]

[a] London Psychometric Laboratory, University College London, UK
[b] Department of Psychology, University College London, UK
[c] Department of Surgery and Cancer, and Centre for Patient Safety and Service Quality Imperial College London, UK

A R T I C L E   I N F O

A B S T R A C T

Trait social intelligence (trait SI or trait social self-efficacy) refers to a constellation of social self-perceptions located at the lower levels of personality hierarchies. We present results from two studies testing the validity of this construct, operationalized via the Trait Social Intelligence Questionnaire (TSIQue). From a pool of 130 individuals, 15 high and 15 low trait SI scorers were selected to participate in two laboratory studies. In Study 1, high trait SI participants were significantly more accurate than their low trait SI peers in identifying facial expressions presented on a computer screen; in Study 2, they were significantly more likely to judge some form of apology as appropriate, following a social transgression described in a short vignette. The results provide preliminary support for the validity of the construct of trait SI and of the TSIQue as its operationalization vehicle.

© 2010 Elsevier Ltd. All rights reserved.

1. Introduction

One advantage of trait emotional intelligence theory is that it can be extended to encompass a number of other *intelligences fausses*, including social, intrapersonal, and interpersonal (the 'trait intelligences'; see Petrides, Pita, & Kokkinaki, 2007). Following trait EI theory, trait social intelligence (*trait SI* or *trait social self-efficacy*) can be defined as a constellation of social self-perceptions located at the lower levels of personality hierarchies. Trait SI essentially concerns people's social self-perceptions of their social abilities and skills. A detailed presentation of the derivation of trait SI theory and its relationship to trait EI is given in Petrides (in press).

The purpose of this short note is to investigate the construct of trait SI empirically in two experiments involving, respectively, the ability to identify facial expressions and the ability to recognize apologizing as an appropriate restorative act following a social transgression. These two criteria were chosen due to their prima facie relevance to trait SI.

1.1. Study 1

Facial expression is widely recognized as an important channel of non-verbal communication (Parkinson, 2005). Facial expressions contribute directly to social interaction, irrespective of whether they are perceived consciously or unconsciously (Frith, 2009). Because they can convey affect-rich information, accurate perception of facial expressions is an important driver of successful social interaction, both in everyday life as well as in specific contexts (e.g., politics; Momm, Blickle, & Liu, 2010). Furthermore, inaccurate or otherwise hampered perception of facial expression is associated with psychopathology (Borod, Martin, Alpert, Brozgold, & Welkowitz, 1993; Hastings, Tangney, & Stuewig, 2008).

Importantly for our purposes, normal individuals differ in their ability to decode facial expressions (e.g., Bate, Parris, Haslam, & Kay, 2010), with those high on trait SI believing themselves to be more able. We hypothesized that such individual differences, to the extent that they can be captured in experimental stimuli, would be positively associated with trait SI scores (Hypothesis H1).

2. Method

2.1. Participants

From an initial pool of 130 undergraduate students, 30 were selected to participate in the experiment based on their scores on the Trait Social Intelligence Questionnaire (+/−1SD away from the

---

* Corresponding author. Address: Department of Psychology, University College London (UCL), 26 Bedford Way, London WC1H 0AP, UK.
   E-mail address: k.petrides@ucl.ac.uk (K.V. Petrides).

mean). The low-scoring group comprised 11 females and 4 males, ranging in age from 19 to 22 years ($M = 19.8$; SD = 0.98), while the high-scoring group comprised 13 females and 2 males, ranging in age from 18 to 46 years ($M = 24.3$; SD = 8.35). The age difference was not significant ($t_{(27)} = 1.99$, p = ns) and the gender split was similar across the two groups ($\chi^2_{(1)} = 0.8$, p = ns), however females were significantly over-represented in the sample as a whole ($\chi^2_{(1)} = 10.8$, $p < .01$).

2.2. Instruments

Trait Social Intelligence Questionnaire (*TSIQue* v. 1.00; Petrides, 2009). We used the first version of the TSIQue, which consists of 145 questions responded to on a 7-point Likert scale. This version yields scores on 14 distinct facets (negotiating, networking, social relationships, understanding others, social adaptability, etc.). A revised version improving the alphas of some of these facets is now available, free of charge, from the corresponding author. On this sample, the internal consistency of global trait SI scores was .95.

Diagnostic Analysis of Non-verbal Accuracy 2 (*DANVA-2*; Baum & Nowicki, 1998). We used the adult facial expressions subtest of the DANVA-2, which portrays expressions of happiness, sadness, anger, and fear. Participants were asked to rate 24 static color photographic images of adult faces, six photos per emotion, appearing on a 14-inch screen connected to a standard PC. Each photo was projected in the centre of the screen with dimensions of 10×14 cm. Male and female faces were presented in a pseudo-random order for two seconds, after which a grey mask replaced the photograph.

2.3. Procedure

Participants were given written instructions and were informed that there would be two parts to the experiment, one computer-based (Study 1) and one paper-based (Study 2). They began with the computer-based face recognition task and were told that the experimenter would provide more detailed instructions as they progressed into each task. All participants filled out a consent form and received a monetary token for their time. Both tasks were approved by the UCL Psychology ethics committee.

3. Results and discussion

A split-plot 2×4 ANOVA was performed with trait SI group (high versus low) as the between-subjects factor, the four emotional expressions as the within-subjects factor, and number of errors as the dependent variable (see Table 1 for descriptive statistics). There was a significant main effect of trait SI ($F_{(1,28)} = 4.64$, $p < .05$), with the high group decoding the expressions more accurately (i.e., with fewer errors: $M = 1.07$, SE = .14) than the low group ($M = 1.48$, SE = .14). There was also a significant main effect of type of expression ($F_{(3,84)} = 37.56$, $p < .01$). Sidak post-hoc tests indicated that happiness was recognized significantly more accurately than the three other expressions ($p < .01$). In addition, expressions of sadness and fear were recognized significantly more

accurately than expressions of fear. There was no interaction between the two independent variables ($F < 1$).

These results provide support for the experimental hypothesis, with high trait SI participants making significantly fewer errors in decoding facial expressions. They echo findings in Petrides and Furnham (2003), who examined emotion recognition in a slightly different paradigm and with reference to trait emotional intelligence (see also Austin, 2004). Given the central role that expression identification plays in inferring the psychological state of actors in a social context (Russell, Bachorowski, & Fernandez-Dols, 2003), it is possible that the ability to read facial expressions can confer a significant social advantage on high trait SI individuals.

3.1. Study 2

Effective apologizing, especially if triggered by feelings of guilt or shame (Hareli & Eisikovits, 2006), is linked to a reduction in social tension between individuals when a social norm has been violated. Although various factors may moderate their effectiveness (Fehr & Gelfand, 2010), apologies often elicit leniency and compassion, which reduces anger towards the transgressor and minimizes any urge for revenge towards them (Ohbuchi, Kameda, & Agarie, 1989).

For the purposes of this study, we used Scher and Darley's (1997) paradigm (see Section 4) based on the Cross-Cultural Speech Act Realization project that recognizes four different strategies as forming part of the apology act (Blum-Kulka & Olshtain, 1984). These include remorse ('I am sorry'), expression of responsibility ('it was my fault'), promise of forbearance ('it won't happen again'), and offer of repair ('how can I make it up to you?'). Because apologizing plays a central role in sustaining functional relationships, we hypothesized that high trait SI individuals would be significantly more likely than their low trait SI peers to endorse it as an appropriate restorative act following socially objectionable behavior (Hypothesis H2).

4. Method

4.1. Participants

These were the same as in Study 1.

4.2. Measures

Trait Social Intelligence Questionnaire (*TSIQue* v. 1.00; Petrides, 2009). We used the same version as in Study 1.

Apology Acts Vignette (Scher & Darley, 1997). Participants read a vignette in which the protagonist (Ralph) failed to return an important favor to a friend, but eventually gave his friend a call. They had to judge the appropriateness of eight different responses (see 'apology conditions' in Table 2) that Ralph could employ in this situation. Participants had to indicate on a 7-point Likert scale, ranging from 'not appropriate' to 'very appropriate', the overall appropriateness of each response.

The first five conditions consisted of a single component: no apology, remorse, expression of responsibility, promise of forbearance, and offer of repair. The remaining three conditions combined the components of the single apology acts, such that they contained two, three, and finally all four apology components (see Table 2). For example, the following statement describes the eighth condition, which combines the four apology acts in conditions 2 through 5: "I am really sorry I didn't call you the other day with the information ('remorse' – condition 2). I know what I did was wrong ('expression of responsibility' – condition 3) and I promise something like this will never happen again ('promise of

Table 1
Means and standard deviations (number of errors) for the high ($N = 15$) and low ($N = 15$) trait SI groups in the DANVA-2 faces test.

	High trait SI		Low trait SI	
	Mean	SD	Mean	SD
Total no. of errors	4.27	1.57	5.93	2.54
Happy	0.17	0.26	0.20	0.41
Sad	1.00	0.85	1.40	0.99
Angry	2.13	0.74	2.47	1.24
Fearful	1.07	0.88	1.87	1.12

Table 2
Means and standard deviations (ratings of appropriateness) for the high (N = 15) and low (N = 15) trait SI groups in the apology acts vignette.

	High trait SI		Low trait SI	
	Mean	SD	Mean	SD
Apology conditions				
1. No apology	1.0	0.00	1.9	1.24
2. Remorse	3.9	1.33	3.4	1.72
3. Expression of responsibility	3.9	2.01	3.7	1.58
4. Forbearance	4.3	1.75	3.5	1.59
5. Offer of repair	5.7	1.39	5.4	1.29
6. Combination of 2 and 3	5.5	0.99	4.3	1.44
7. Combination of 2, 3 and 4	5.5	1.50	4.6	1.24
8. Combination of 2, 3, 4 and 5	6.3	1.03	5.0	1.41

Note: All participants in the high trait SI group rated the 'No apology' condition (1) as 'not appropriate' yielding an SD value of 0.

forbearance' – condition 4). If there is any way I can make it up to you, please let me know ('offer of repair'– condition 5)". The eight conditions were counterbalanced across both groups using an 8 × 8 Latin square design.

4.3. Procedure

This was the same as in Study 1. Altogether, completion of the questionnaire and the two experimental tasks took approximately 45 min.

5. Results and discussion

Ratings on the 'no apology' condition were reverse-scored in order to align them with ratings on the other seven conditions. Subsequently, a split-plot 2 × 8 ANOVA was performed with trait SI group (high versus low) as the between-subjects factor, the eight apology conditions as the within-subjects factor, and ratings of appropriateness as the dependent variable. There was a significant main effect of trait SI ($F_{(1,28)}$ = 7.02, p < .05), with the high group giving overall higher ratings across conditions (M = 5.27, SE = .20) than the low group (M = 4.51, SE = .20). Less importantly for the purposes of this study, there was a significant main effect of apology condition ($F_{(7196)}$ = 19.93, p < .01). There was no interaction between the two independent variables (F < 1).

The results supported the hypothesis that high trait SI individuals are more likely than their low trait SI peers to consider some form of apology as appropriate following a social transgression. Acts of apology reduce the anger victims feel after the transgression and also help improve the victims' perception of the transgressor (Ohbuchi et al., 1989). It follows that those who are committed to respecting social norms and maintaining successful interpersonal relationships, as high trait SI individuals believe themselves to be, will be more likely to endorse such acts.

Future research could fruitfully investigate whether high trait SI individuals are, in fact, more likely to apologize than their low trait SI peers, when the right circumstances arise. This would be a step forward from our design, which was based on a hypothetical vignette. Although when it comes to forgiveness situational variables are generally more important than dispositional variables (Fehr, Gelfand, & Nag, 2010), it would also be interesting to explore links between trait SI and dispositional forgiveness because the latter has been shown to facilitate interpersonal adjustment, social relationships, and mental well-being (Tse & Yip, 2009). Last, it would be worthwhile to explore whether individual differences in trait SI are linked to particular motivations for apologizing (e.g., guilt versus pity; Hareli & Eisikovits, 2006) or whether they moderate the links between motivation for apologizing and the effectiveness of the apology.

6. Conclusion

The data confirmed both hypotheses, thus providing initial support for the validity of the trait SI construct and the TSIQue as its operationalization vehicle. It will not have escaped notice that the experimental paradigm we adopted circumvented the ubiquitous limitations of item overlap and common method variance, whose importance, nevertheless, appears to be routinely exaggerated (Williams, Daley, Burnside, & Hammond-Rowley, 2010). On the negative side, the two samples are fairly small and predominantly female. We were also unable to test average-scoring individuals on the experimental tasks, which means that it remains unclear whether the present findings are generalizable over the entire continuum of trait SI scores.

While we specifically examined facial expression recognition and apologizing, future validation research can look more broadly into the implications of trait SI for the entire gamut of social behavior. Indeed, such work is absolutely essential in the light of the preliminary nature of this report. As a broad bandwidth construct, trait SI should be expected to correlate with a wide range of behaviors and outcomes. Thus, it should be considered as a key variable in research designs and applications focusing on social outcomes. It is in connection with such outcomes that we expect trait SI to show its strongest predictive utility, just as trait emotional intelligence has shown it strongest predictive validity in connection with emotion-related outcomes (Martins, Ramalho, & Morin, 2010).

References

Austin, E. J. (2004). An investigation of the relationship between trait emotional intelligence and emotional task performance. *Personality and Individual Differences, 36*, 1855–1864.

Bate, S., Parris, B., Haslam, C., & Kay, J. (2010). Socio-emotional functioning and face recognition ability in the normal population. *Personality and Individual Differences, 48*, 239–242.

Baum, K., & Nowicki, S. Jr, (1998). Perception of emotion: Measuring decoding accuracy of adult prosodic cues varying in intensity. *Journal of Nonverbal Behavior, 22*, 89–109.

Blum-Kulka, S., & Olshtain, E. (1984). Requests and apologies: A cross-cultural study of speech act realization patterns (CCSARP). *Applied Linguistics, 5*, 196–213.

Borod, J. C., Martin, C. C., Alpert, M., Brozgold, A., & Welkowitz, J. (1993). Perception of facial emotion in schizophrenic and right-brain-damaged patients. *Journal of Nervous and Mental Diseases, 181*, 494–502.

Fehr, R., & Gelfand, M. (2010). When apologies work: How matching apology components to victims' self-construals facilitates forgiveness. *Organizational Behavior and Human Decision Processes, 113*, 37–50.

Fehr, R., Gelfand, M. J., & Nag, M. (2010). The road to forgiveness: A meta-analytic synthesis of its situational and dispositional correlates. *Psychological Bulletin, 136*, 894–914.

Frith, C. (2009). Role of facial expressions in social interactions. *Philosophical Transactions of the Royal Society B: Biological Sciences, 364*, 3453–3458.

Hareli, S., & Eisikovits, Z. (2006). The role of communicating social emotions accompanying apologies in forgiveness. *Motivation and Emotion, 30*, 189–197.

Hastings, M. E., Tangney, J. P., & Stuewig, J. (2008). Psychopathy and identification of facial expressions of emotion. *Personality and Individual Differences, 44*, 1474–1483.

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.

Momm, T., Blickle, G., & Liu, Y. (2010). Political skill and emotional cue learning. *Personality and Individual Differences, 49*, 396–401.

Ohbuchi, K., Kameda, M., & Agarie, N. (1989). Apology as aggression control: Its role in mediating appraisal of and response to harm. *Journal of Personality and Social Psychology, 56*, 219–227.

Parkinson, B. (2005). Do facial movements express emotions or communicate motives? *Personality and Social Psychology Review, 9*, 278–311.

Petrides, K. V. (2009). Trait social intelligence: Continuing the incorporation of intelligences fausses into mainstream personality hierarchies. *Paper presented at the 14th Biennial Meeting of the International Society for the Study of Individual Differences*. Evanston, USA.

Petrides, K. V. (in press). Social intelligence. *Encyclopedia of adolescence*. New York: Elsevier.

Petrides, K. V., & Furnham, A. (2003). Trait emotional intelligence. Behavioural validation in two studies of emotion recognition and reactivity to mood induction. *European Journal of Personality, 17*, 39–57.

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.

Russell, J. A., Bachorowski, J. A., & Fernandez-Dols, J. M. (2003). Facial and vocal expressions of emotion. *Annual Review of Psychology, 54*, 329–349.

Scher, S. J., & Darley, J. M. (1997). How effective are the things people say to apologize? Effects of the realization of the apology speech act. *Journal of Psycholinguistic Research, 16*, 127–139.

Tse, W. S., & Yip, T. H. J. (2009). Relationship among dispositional forgiveness of others, interpersonal adjustment and psychological well-being: Implication for interpersonal theory of depression. *Personality and Individual Differences, 46*, 365–368.

Williams, C., Daley, D., Burnside, E., & Hammond-Rowley, S. (2010). Does item overlap account for the relationship between trait emotional intelligence and psychopathology in preadolescents? *Personality and Individual Differences, 48*, 867–871.