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# Adult attachment and emotional awareness impairment: a multimethod assessment

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Our objective was to explore the relationships between adult attachment and various aspects of emotional awareness, including alexithymia and level of emotional awareness. Participants were 112 university students who completed the Attachment Style Questionnaire, the Bermond-Vorst Alexithymia Questionnaire (BVAQ), and the Level of Emotional Awareness Scale. We found that alexithymia was positively related to the avoidant attachment style and negatively with the anxious attachment style. Anxious style-but not avoidance-was also related to the level of emotional awareness. An analysis of the four attachment categories revealed subtle differences regarding the subscales of the BVAQ. Findings are discussed with reference to internal working models of self and others, highlighting the relationship between emotional awareness impairment and interpersonal behaviour.

Keywords: *alexithymia; emotional awareness; attachment; internal working model; BVAQ; LEAS*

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Affect regulation relies on the conscious awareness of emotions, which can be regarded as a continuum along which abilities are more or less highly developed. Emotional awareness has been defined as the ability to recognize emotions in oneself and others, the opposite of alexithymia, a concept coined by Sifneos (1973). Alexithymia refers to an impaired processing of affective stimuli (Luminet, Vermeulen, Demaret, Taylor, & Bagby, 2006), subtended by a deficit in the cognitive regulation of affect. High alexithymic scorers experience difficulty in identifying their own emotions and those of others, and distinguishing between different emotional states. They do not communicate their emotions to others and their daydreaming or fantasizing abilities are impoverished, hence a tendency to use concrete and factual words (Nemiah, 1976, 1977; Nemiah & Sifneos, 1970; Sifneos, 1973, 1996; Sifneos, Apfel-Savitz, & Frankel, 1977; Taylor, Bagby, & Parker, 1997). Alexithymia has been associated to numerous psychopathological conditions or difficulties to regulate emotional consequences of deleterious events (Fantini-Hauwel et al., 2011; Grabe et al. 2010; Stasiewicz et al., in press).

As we have seen, emotion regulation is supported by reflective abilities (i.e. being able to understand one's own and other people's emotions), and these are influenced by childhood experiences with caregivers who may or may not have acknowledged and discussed the child's emotions with him or her. Developmental psychopathology suggests that the attachment process is a key factor in the development of emotional information processing abilities. We believe that this is a more appropriate approach to the emergence of emotional abilities, as an early traumatic experience (McDougall, 1982) cannot fully account for all the subsequent developmental changes. This perspective is less deterministic and is based on the premise that emotional skills develop *during* the stage at which children learn to distinguish emotions. Hence, shortcomings in caregiver-child interactions at this point are the core factor in the failed development of these skills. According to attachment theory (Bowlby, 1982/1969, 1973), positive experiences with a primary caregiver lead to constructive affect regulation and emotional expression abilities, developed in the context of early attachment relationships (Berlin &

Cassidy, 2003; Fonagy, Gergely, Jurist, & Target, 2002). Shortcomings in caregiver–child interactions refer to the primary caregiver’s neglect of or indifference to the child’s emotional states, an inability to reflect self-awareness or provide proper feedback to the child or an inability to deal with the child’s emotions. If the adult is unable to recognize and distinguish either the child’s emotional expressions or his or her own emotional states, this may affect the child’s ability to understand his or her own and others’ expressions of emotions. Alexithymia may thus be viewed as the result of failures of early dyadic relationships between caregivers and the child (Taylor, 1987).

Alexithymia is related to attachment style, insofar as attachment contributes to the development of the symbolic representational system, or mentalization, through which affect regulation comes into being (Fonagy, Gergely, Jurist, & Target, 2002). However, the links between insecure attachment and alexithymia are contradictory. A high level of alexithymia has been positively correlated with discomfort with closeness, relationships as secondary and need for approval, and negatively correlated with confidence (Montebarocci, Codispoti, Baldaro, & Rossi, 2004). A detached attitude towards one’s *own* emotions is coherent with a detached interpersonal attitude and is supported by a relationship between avoidance and the cognitive dimension of alexithymia (DeRick & Vanheule, 2006). However, Wear-den Lamberton, Crook, and Walsh (2005) have found that while the anxious attachment style is related to a higher level of alexithymia, the dismissing attachment style is not. These contradictory results may be related to the fact that alexithymia has generally been assessed with a single self-report measure, despite recommendations to use a multiple assessment method. The Toronto Alexithymia Scale (TAS-20) and the Bermond–Vorst Alexithymia Questionnaire (BVAQ), both measure people’s beliefs about their meta-emotional functioning, rather than meta-emotional functioning *per se*. It was the reason why Lane and Schwartz developed a performance-based measure of emotional awareness, called the Level of Emotional Awareness Scale (LEAS) (Lane, Quinlan, Schwartz, Walker, & Zeitlin, 1990). The symbolic representational system of emotion has been conceptualized in a cognitive-developmental model, which posits that conscious emotional awareness can be classified in five ascending levels, from awareness of undifferentiated bodily sensations to complex and differentiated emotional states (Lane & Schwartz, 1987). Our knowledge of emotional states, therefore, becomes increasingly subtle, forming a hierarchy that allows for a more or less accurate depiction of our own and other people’s inner worlds. The development of symbolization and gradual language learning contribute to the development of cognitive schemata of growing complexity, gradually increasing emotional awareness. According to develop-

mental theories, an insecure relationship with a caregiver leads to poorer levels of emotional differentiation and thence to the lowest level of emotional awareness.

Associations between subjective self-measures and performance-based measures are heterogeneous, with studies generally demonstrating either no relationship at all (Carton et al., 2010; Lumley, Gustavson, Partridge, & Labouvie-Vief, 2005; Subic-Wrana, Bruder, Thomas, Lane, & Kohle, 2005) or else positive or negative correlations between them (Lane, Sechrest, & Riedel, 1998; Lane, Sechrest, Riedel, Shapiro, & Kaszniak, 2000). LEAS and TAS-20 scores have also been shown to correlate differently in the presence of psychopathological disorders such as addiction (Jouanne, Edel & Carton, 2005; Lindsay & Ciarrochi, 2009). These varying results highlight the fact that alexithymia and level of emotional awareness measures assess different aspects of a more general emotional awareness construct.

The aim of the present study was to explore emotional abilities regarding attachment styles. We first hypothesized that insecure attachment styles hinder the development of a higher level of emotional awareness, facilitating emotion differentiation and expressive/communicative abilities. As such, we expected insecure attachment to be related to a low level of emotional awareness and a high level of alexithymia. Second, we hypothesized that people with high alexithymia level display low level of emotional awareness.

## Method

### Participants

One hundred and twelve undergraduates (73 women) aged 18–25 years ( $M = 21.27$ ,  $SD = 2.03$ ) took part in the study. They were recruited at three universities where they were enrolled on different academic courses (15% natural science, 56% social science, and 29% economics). They all gave their informed consent.

### Measures

We chose to administer the BVAQ rather than the TAS-20, for although the latter is a widely used questionnaire and a reliable measure of alexithymia, it essentially focuses on the cognitive component of alexithymia. None of the TAS questionnaires (TAS, TAS-26, and TAS-20) simultaneously measures reduced emotionalizing and fantasizing. Fantasizing is a core dimension of alexithymia, described by the originators of the concept (Nemiah & Sifneos, 1970; Sifneos, 1972). The status of emotionalizing is more obvious and criticized but have been previously described as an alexithymia characteristic (Taylor, Ryan & Bagby, 1985; Bermond, Vorst, Gerritsen & Vingerhoets).

### Alexithymia

Alexithymia was assessed with the French version of the BVAQ and rated on a 5-point Likert scale (Müller, Bühner, & Ellgring, 2004; Vorst & Bermond, 2001; Zech, Luminet, Rimé, & Wagner, 1999). The 40 items were divided into five subscales corresponding to five dimensions (eight items per dimension): (1) Verbalizing (Cronbach's  $\alpha=0.82$ ): the ability to verbalize one's own emotions, (2) Fantasizing ( $\alpha=0.82$ ): the degree to which someone is inclined to imagine or daydream, (3) Identification ( $\alpha=0.64$ ): the ability to identify one's own emotions, (4) Emotionalizing: the degree to which someone is emotionally aroused by an emotion-inducing event ( $\alpha=0.61$ ), and (5) Analyzing ( $\alpha=0.72$ ): the ability to explain and analyze emotions. These five subscales described two higher-order factors. The affective factor ( $\alpha=0.73$ ) contained the Emotionalizing and Fantasizing subscales, while the cognitive factor ( $\alpha=0.81$ ) contained the Verbalizing, Analyzing, and Identifying subscales. The sum of the five BVAQ subscales yielded a total alexithymia score.

### Attachment style

The Attachment Style Questionnaire (ASQ) was used to measure general attitudes in adult attachment relationships (Feeney, Noller, & Hanrahan, 1994). The ASQ is a self-report questionnaire with items rated on a 6-point Likert-type scale ranging from 1 = 'totally disagree' to 6 = 'totally agree'. Respondents rate the extent to which the statements describe their feelings. The authors' original factorial analysis yielded a 5-factor solution accounting for 43.3% of the total variance. The ASQ contains five subscales, one of which (Confidence) reflects secure attachment, the other four representing particular aspects of insecure attachment: Preoccupation with relationships, Relationships as secondary, Discomfort with closeness, and Need for approval. The Confidence subscale corresponds to secure attachment. The other four correspond to two more general styles: avoidant (Discomfort and Relationships as secondary) and anxious (Preoccupation and Need for approval). As we were looking for evidence of these two general dimensions of attachment insecurity, we performed an exploratory analysis using principal components analysis (PCA) and a two-factor solution. Factor loadings  $\geq 0.40$  were retained and the model was then rerun. All the remaining items, except for Items 35 and 5, which were dropped, loaded on either the Avoidant or the Anxious dimension, as per the original questionnaire (Need for approval and Preoccupation: Anxious, Relationships as secondary and Discomfort: Avoidant). The final factor analysis yielded an anxious attachment factor comprising 10 items (all from the original Preoccupation and Need for approval subscales), with loadings ranging from 0.49 to 0.71, and an avoidant attachment factor

including 13 items (all from the Discomfort with closeness and Relationships as secondary subscales), with loadings ranging from 0.37 to 0.71. Reliability analyses revealed satisfactory consistency for both the anxiety factor ( $\alpha=0.79$ ) and the avoidance factor ( $\alpha=0.80$ ). These two subscales were also not correlated between them ( $r=0.12$ , ns).

### The Level of Emotional Awareness Scale

The LEAS, a self-rating questionnaire with a validated French version, measures emotional awareness by asking participants to indicate the feelings they imagine for themselves ('How would you feel?') and for others ('How would the other person feel?') in 20 emotion-evoking scenes (Lane, Quinlan, Schwartz, Walker, & Zeitlin, 1990; Bydlowski et al. 2002). Each scene is designed to elicit one of four types of emotion (anger, fear, happiness, or sadness). Each response is rated in accordance with the LEAS scoring manual (Lane, 1991). The scale therefore yields a 'self' score (awareness of one's own emotions) and an 'others' score (awareness of others' emotions), each ranging from 0 to 5, reflecting different levels of emotional complexity. The total score (total emotional awareness) is obtained by summing the highest LEAS self or others scores for each scene. Total scores can range from 0 to 100 ( $\alpha=0.90$ ).

### Statistics

All analyses were performed with PASW Statistics 18. We began by examining the descriptive data, performing Student's *t*-tests to explore gender differences. There was a significant effect of gender on attachment, alexithymia, and level of emotional awareness. Women had significantly higher scores on 'need of approval' than men ( $t[110]=2.42$ ,  $p \leq 0.05$ , Cohen's  $d=0.14$ , small effect size). They also had higher level of emotional awareness than men ( $t[110]=2.71$ ,  $p \leq 0.01$ , Cohen's  $d=0.52$ , medium effect size) and particularly higher level of emotional self awareness ( $t[110]=2.53$ ,  $p \leq 0.05$ , Cohen's  $d=0.50$ , medium effect size).

We have also observed gender differences on the alexithymia subdimensions. Women experienced less emotionalizing difficulties than men ( $t[110]=-4.36$ ,  $p \leq 0.01$ , Cohen's  $d=0.85$ , large effect size) and less difficulty analyzing their emotions than men ( $t[110]=-2.08$ ,  $p \leq 0.05$ , Cohen's  $d=0.41$ , medium effect size). They scored lesser on the affective dimension of the BVAQ ( $t[110]=-3.27$ ,  $p \leq 0.01$ , Cohen's  $d=0.65$ , medium effect size) and had lesser total alexithymia scores ( $t[110]=-2.84$ ,  $p \leq 0.01$ , Cohen's  $d=0.56$ , medium effect size). These differences were in line with the literature (Bartholomew & Horowitz, 1991; Bekker, Bachrach, & Croon, 2007; Fantini-Hauwel & Pedinielli, 2008). These differences would not be further considered as

no differential effect was reported regarding gender on the subsequent analyses.

We then computed Pearson's correlation coefficients to explore relationships between alexithymia, attachment, and level of emotional awareness. The effect sizes of all significant effects are provided (Cohen, 1988, 1992).

## Results

### Descriptive statistics

Table 1 shows means and standard deviations for attachment, alexithymia, and level of emotional awareness.

In relation to the ASQ subscales, Self-emotional awareness and Total emotional awareness were positively correlated with Anxious attachment and Need for approval, with a medium effect size (Cohen gives the following guidelines for the social sciences: small effect size,  $r = 0.1$ – $0.23$ ; medium,  $r = 0.24$ – $0.36$ ; large,  $r = 0.37$  or higher). We observed the same pattern for Others emotional awareness, although the effect size was small for Anxious attachment. In relation to the BVAQ subscales, Self-emotional awareness was negatively correlated with Emotionalizing, and Total emotional awareness was negatively correlated with both Emotionalizing and Analyzing. All effect sizes were small.

When we examined relations between attachment and alexithymia, we found that Avoidant attachment

correlated positively with the total alexithymia score (small effect size) and, more particularly, with the Cognitive dimension and the Verbalizing subscale of the BVAQ, both with medium effect sizes. The more avoidant the participants were, the more likely they were to experience difficulty verbalizing feelings and encounter problems with the cognitive processing of emotional information. The Discomfort with closeness subscale had a similar pattern of correlation with the BVAQ total score and the Cognitive dimension of alexithymia, with medium effect sizes. The effect was large for the correlation with the Verbalizing subscale. Relationships as secondary were positively correlated with Emotionalizing (medium effect size), the Affective dimension, and the BVAQ total score (small effect sizes).

Interestingly, Anxious attachment correlated negatively with the BVAQ total score (medium effect size). We found negative correlations with the Affective dimension of alexithymia and Emotionalizing (medium effect size). The cognitive dimension tend to reach significance due to the negative association between analysing and anxious attachment (small effect size). The more anxious the participants were, the clearer their awareness of their feelings and the less difficulty they had dealing with those feelings (i.e. no alexithymic characteristics). Need for approval was inversely related to Emotionalizing, Fantasizing and the Affective dimension of alexithymia

**Table 1.** Mean attachment, alexithymia and level of emotional awareness scores, and standard deviations

	Overall group, $n = 112$		Women, $n = 73$		Men, $n = 39$	
	Mean	SD	Mean	SD	Mean	SD
Level of Emotional Awareness Scale						
Self-emotional awareness	49.52	9.26	51.10	5.80	46.56	9.46
Others emotional awareness	44.68	9.84	45.84	8.69	42.51	11.54
Total emotional awareness	55.48	9.10	57.15	8.29	52.38	9.82
Attachment Style Questionnaire						
Avoidant Attachment	40.86	10.62	41.71	10.25	39.26	11.24
Anxious Attachment	35.80	9.19	35.21	8.24	36.92	10.77
Confidence	3.85	0.43	3.87	0.43	3.81	0.44
Discomfort	3.66	0.85	3.58	0.87	3.80	0.80
Need for approval	3.71	0.72	3.82	0.71	3.48	0.68
Preoccupation	3.18	0.79	3.25	0.82	3.06	0.70
Relationships as secondary	2.39	0.81	2.28	0.84	2.58	0.71
Bermond Vorst Alexithymia Questionnaire						
Verbalizing	24.26	7.38	23.45	7.45	25.77	7.09
Fantasizing	19.30	7.54	18.67	7.50	20.49	7.57
Identification	20.42	5.41	20.47	5.80	20.33	4.66
Emotionalizing	18.08	5.04	16.67	4.46	20.72	5.05
Analyzing	16.74	5.54	15.96	5.40	18.51	5.54
Affective dimension	37.38	9.43	35.35	9.35	41.21	8.45
Cognitive dimension	61.42	13.40	59.88	13.60	64.31	12.68
BVAQ total score	98.80	18.83	95.22	18.37	105.51	18.05



**Table 2.** Pearson's correlation coefficients between level of emotional awareness, alexithymia dimensions, and attachment

Variables	Self-emotional awareness	Others emotional awareness	Total emotional awareness
<b>Alexithymia</b>			
(1) Verbalizing	−0.02	−0.03	−0.01
(2) Fantasizing	−0.04	−0.07	−0.08
(3) Identification	−0.10	−0.10	−0.08
(4) Emotionalizing	−0.19*	−0.17	−0.22*
(5) Analyzing	−0.12	−0.18	−0.19*
(6) Affective dimension	−0.13	−0.15	−0.18
(7) Cognitive dimension	−0.10	−0.13	−0.12
(8) BVAQ total scores	−0.14	−0.17	−0.18
<b>Attachment</b>			
Avoidant attachment	−0.03	0.02	−0.03
Anxious attachment	0.26**	0.20*	0.30**
Confidence	−0.07	−0.10	−0.09
Discomfort	−0.06	−0.04	−0.06
Relationships as secondary	−0.03	0.02	−0.08
Need for approval	0.32**	0.31**	0.33**
Preoccupation	0.10	0.06	0.15

\* $p \leq 0.05$ , \*\* $p \leq 0.01$ , Italic font indicate that the significance is  $\leq 0.07$

(medium effect size except for fantasizing). Finally, Pre-occupation with relationships was inversely related to the BVAQ total score, the Affective and Cognitive alexithymia dimensions, and the Emotionalizing, verbalizing and Analyzing subscales. All effect sizes were small, except for Analyzing, the cognitive dimension and the BVAQ total score (medium effect size).

## Discussion

The aim of this study was to explore the relationship between attachment style, alexithymia, and level of emotional awareness. We hypothesized that insecure attachment is associated with alexithymic features and low levels of emotional awareness. We began by examining the relationships between the measures of alexithymia

and emotional awareness in order to clarify or support existing data.

Results failed to show an overall relationship between BVAQ and LEAS scores but revealed associations between specific subscales. First, a lower level of emotional awareness was associated with difficulty reacting to emotionally arousing events (Emotionalizing). Lane and Schwartz have conceptualized emotional awareness as an ability to cognitively process emotional arousal resulting from an emotion-inducing event. Accordingly, emotionalizing when confronted with an event that normally results in the experience of emotions requires a high level of emotional awareness. Second, Analyzing was also related to the LEAS scores. This BVAQ subscale is similar to the 'externally oriented thinking' subscale of the TAS-20 (Taylor, Bagby, & Parker, 1992) with

**Table 3.** Pearson's correlation coefficients between alexithymia dimensions and attachment style

Variables	Verbalizing	Fantasizing	Identification	Emotionalizing	Analyzing	Affective dimension	Cognitive dimension	BVAQ total score
<b>Attachment</b>								
Avoidant attachment	0.32**	0.06	0.10	0.13	0.07	0.11	0.24**	0.23**
Anxious attachment	−0.15	−0.17	0.00	−0.24**	−0.23*	−0.27**	−0.17	−0.26**
Confidence	0.02	0.03	0.00	0.16	0.15	0.11	0.07	0.11
Discomfort	0.43**	0.14	0.11	0.13	0.07	0.17	0.31**	0.31**
Relationships as secondary	0.18	0.08	0.00	0.31**	0.10	0.23*	0.14	0.22*
Need for approval	−0.14	−0.20*	0.06	−0.29**	−0.17	−0.32**	−0.13	−0.25**
Preoccupation	−0.21*	−0.11	−0.04	−0.21*	−0.27**	−0.21*	−0.25**	−0.28**

\* $p \leq 0.05$ , \*\* $p \leq 0.01$ , Italic font indicate that the significance is  $\leq 0.07$

which it has been found to be closely correlated (Vorst & Bermond, 2001). From a developmental perspective, a low level of emotional awareness reflects poorer differentiation between emotions and a less well-developed emotional symbolic system. This relationship has already been described, in the form of correlations between externally oriented thinking and level of emotional awareness (Subic-Wrana, Bruder, Thomas, Lane, & Kohle, 2005). The lack of a more general relationship between the BVAQ total score and LEAS supports the hypothesis of a discrepancy between self-reported emotional skills and actual emotional ability (Ciarrochi, Caputi, & Mayer, 2003; Lindsay & Ciarrochi, 2009). The alexithymia scale may measure people's *beliefs* about their meta-emotional functioning rather than their meta-emotional functioning (Lundh, Johnsson, Sundqvist, & Olsson, 2002). People may consider themselves to be particularly skilled or unskilled at perceiving emotions when, in fact, they prove to be not different from other people when performance-based measures are administered.

Although Avoidant attachment was not associated with a lower level of emotional awareness here, participants experiencing this type of attachment relationship were nonetheless prone to display impaired affect regulation abilities (i.e. alexithymia). These deficits mainly concerned the Cognitive dimension of alexithymia, with avoidant participants being uncomfortable with the expressive aspect of alexithymia (Verbalizing). People characterized by an avoidant attachment style feel uncomfortable when they find themselves close to others and have difficulty trusting others completely. Voicing their feelings to others is, therefore, somewhat problematic for avoidant individuals, who tend to shun interpersonal relationships and whose level of emotional expressiveness has been found to be lower than that of those displaying secure attachment (Searle & Meara, 1999). This suggests that a detached attitude towards one's *own* emotions is coherent with a detached interpersonal attitude.

When we looked at finer distinctions such as Discomfort with closeness and Relationships as secondary, we found subtle differences highlighting some specific features. Thus, individuals who feel uncomfortable with interpersonal relationships avoid relationships because closer interpersonal relations lead them to experience anxiety and may hurt them, while, not surprisingly, they experience difficulty voicing their emotions to others (Verbalizing). Conversely, people who regard relationships as secondary display greater difficulty emotionally reacting to arousing events (Emotionalizing) but do not have any problem verbalizing their feelings. Relationship as secondary is closer to the dismissive attachment style (Bartholomew, 1990) that is associated with a lower level of expressiveness (Searle & Meara, 1999)

and is characterized by a positive model of the self and a negative model of others. Withdrawal and cold/distant social functioning has been advanced to highlight the relationship between Avoidant attachment and alexithymia (Vanheule, Desmet, Meganck, & Bogaerts, 2007). The individual's position regarding self and others may be the key to enabling us to identify whether interpersonal avoidance stems from an affective detachment (Relationship as secondary) or a defensive attitude centered around difficulty sharing feelings with others (Discomfort with closeness).

Regarding Anxious attachment, and more particularly Preoccupation with relationships, we found a negative relationship with alexithymia that has seldom been described up to now. People with strong dependence and low avoidance of others have less difficulty expressing (Verbalizing) their own affective experience and being aroused by emotion-inducing events. We can assume that the higher level of distress expressed by anxiously attached individuals, as well as the fear of abandonment and the need to solicit relationships in order to avoid abandonment representations, is linked to greater awareness of their own feelings and to their expression to others in order to attract attention. Emotional expression, particularly the expression of negative affect, is a key signal for obtaining support and care from others (Cassidy, 1994). This is in line with our results highlighting the relation between the Anxious attachment style and a higher level of emotional awareness. Moreover, anxiously attached individuals are particularly sensitive to others and there is evidence to suggest that the more sensitive one is to others, the more one is aroused by emotion-inducing events (Bekker, Croon, van Balkom, & Vermees, 2008). Furthermore, research focusing on empathy (the ability to identify and express one's own emotions and those of others is regarded as a component of empathy) has similarly demonstrated that anxious people experience a higher level of emotional empathy than secure or dismissing individuals (Sonnby-Borgstrom & Jonsson, 2004; Trusty & Ng, 2005). While Preoccupation with relationships was related to the alexithymia construct through its affective and cognitive components, Need for approval was also inversely correlated with total alexithymia scores, only through the affective dimension, with fewer difficulties to fantasizing and greater abilities to be aroused by emotional situations. These individuals have both a negative self-perception and a positive view of others. They react to emotion-inducing events, do not experience a lack of imaginative abilities, but tend to experience difficulties analysing their feelings.

## Conclusion, limitations, and recommendations

Emotional dysregulation was observed through the prism of emotional awareness and attachment and the

relationship between the two. The direction of this relationship was in line with the scientific literature regarding the avoidant/dismissing attachment style but quite unexpected regarding anxious attachment, albeit congruent with the theoretical considerations set out above. Our results suggest that attachment styles should systematically be given a detailed classification, instead of simply being labelled either secure or insecure, due to subtle differences observed in participants' emotion regulation abilities. The relevance of the two internal working models of self and others to understanding relationships between alexithymia and attachment styles needs to be further investigated, particularly not only with self-report questionnaires but also with clinical interview since self-evaluating measures of attachment are controversial regarding their psychometric properties.

Our results tend to confirm that the LEAS and BVAQ (or TAS-20) should be regarded as performance-based and self-report measures, respectively (Lundh, Johnsson, Sundqvist, & Olsson, 2002; Parling, Mortazavi, & Ghaderi, 2010), as they appear to measure different aspects of emotional understanding. However, as the LEAS has been shown to be correlated with verbal intelligence, it may actually measure emotional verbal skills rather than awareness of one's emotional abilities (Novick-Kline, Turk, Mennin, Hoyt, & Gallagher, 2005). The relationship between reflective functioning and attachment was recently demonstrated through the use of narrative excerpts (Bouchard et al., 2008), highlighting the relevance of using mixed measures to assess emotional awareness. Our student population was probably skilled in verbal intelligence, so our results need to be replicated within psychopathological populations. Finally, we need to ask whether individual alexithymia dimensions, as opposed to the total score, are sufficiently representative of the alexithymia construct. We do not believe that we can talk about alexithymia on the strength of difficulty on a single subscale. It manifests itself in a wide variety of situations, and one may have difficulty expressing feelings for reasons other than because one is alexithymic (i.e. because of shame, difficulties with social sharing, shyness, etc.). This question needs to be debated.

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