Levels of Emotional Awareness Scale Scores As Predictors of Interactive Behavior: A Validation Study

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Abstract

In order to measure differences in emotional awareness, Lane and Schwartz (1992) developed the Levels of Emotional Awareness Scale (LEAS). Based on the literature depicting associations between emotional awareness and explicit behavior in social contexts it was hypothesized that individuals scoring higher on the LEAS would receive higher ratings on such behavioral dimensions during social interaction. It was also hypothesized that females would receive higher ratings than males on the dimensions being measured as this was suggested by previous research. Eleven video decoders rated the social interactive behaviors of video encoders participating in social interactive tasks. Video encoders with higher LEAS scores received higher ratings on the behavioral dimensions of social deftness and impulse control. The female video encoders however did not receive higher ratings than males on any of the behavioral dimensions. The results confirm that level of emotional awareness does correspond to emotional behavior in interpersonal interaction.

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I. Introduction

Emotions pervade human experience. Nevertheless, and paradoxically, they are poorly understood. There is widespread agreement that the study of emotion is one of the most puzzling areas in the history of psychology (Plutchik, 2001). Emotions have been described in numerous ways; in physiological terms (e.g., sweating), chemical or peptide terms, hormonal terms (e.g., sexual excitement), sociological terms (including cultural, ethical, and political dimensions), and in psychological terms (e.g., linking emotions to instincts and prototypes that help create and deepen meaning) (Freshwater & Robertson, 2002). It has been estimated that more than 90 definitions of "emotion" have been proposed over the previous century (Plutchik, 2001). Beyond the numbers of competing definitions, the lack of agreement surrounding the phenomena of emotion is also likely connected to the traditional view that emotions are "the *'stuff and nonsense'* of our westernized society" (Freshwater, 2004, p. 12).

Emotions are highly personal and often confusing (Plutchik, 2001). A number of emotions can frequently be experienced at once and we often censor our own thoughts and feelings (Plutchik, 2001). As such, trying to study emotions objectively is a difficult task; a task that behaviorists and psychoanalysts of the 20th century deemed largely impossible (Plutchik, 2001). In addition, language introduces significant ambiguity making it difficult to describe mixed emotions such as fear and anxiety in an explicit manner (Plutchik, 2001). However, there is currently growing interest in the study of emotion. In fact, the psychology of emotions has finally begun to receive significant attention.

It is extraordinary that something so fundamental to human existence remained outside of conventional psychology for so long (Izard, 1991). While observers of humanity have recognized the significance of emotions for things like self confidence and social commitments since the beginning of written records, psychology has ignored them until the last few decades (Izard, 1991). Much of this newly inspired interest has likely spawned from awareness of the influence of emotional abuse or neglect on the individual as well as the rising statistics of those experiencing mental illness and personal suffering in recent years (Freshwater, 2004).

There is particular interest growing in the functional aspects of emotion such as emotional abilities and their measurement (Lumley, Gustavson, Partridge, & Labouvie-Vief, 2005). There are a number of emotional abilities, which are viewed as the processes, through which emotions are generated, understood, articulated, and transformed. One emotion ability construct that has received substantial research attention is emotional awareness. This thesis will explore how emotional awareness may contribute to the socio-emotional behavior people engage in when interacting with others.

Emotional awareness includes "attending to, identifying and correctly labeling emotions both in oneself and in others" (Lumley et al., 2005, p. 331). Much of the attention emotional awareness has gained has to do with its functional importance. According to Goleman (1995), emotional awareness is a key component for human adaptation and living. Lumley et al. viewed it as a fundamental ability that allows succeeding steps in emotional regulation. Lane and Schwartz (1987) postulated that emotional awareness is a kind of cognitive processing which undergoes different levels of structural alteration along a cognitive-developmental sequence.

The levels represent a continuum of emotional capacity spanning from the unsophisticated awareness of bodily sensations to the acknowledgement of emotions in oneself and in others (deGroot, Rodin, & Olmsted, 1995). Lane, Quinlan, Schwartz, and Zeitlan (1990) subsequently developed the Levels of Emotional Awareness Scale (LEAS) as a method for measuring the individual differences that correspond to the different levels. A number of studies have been conducted using this emotional awareness scale.

Emotion assessment tools such as the LEAS aid in the development of the study of emotion. These instruments lend themselves to more accurate emotion assessment and in turn, potentially more accurate diagnoses and treatments. The importance of emotion assessment tools is underscored further when we recognize the impact that emotions seem to have on physical health, psychological health, and overall personal and social functioning.

Disturbed Emotional Awareness and Health

The last few years have seen a growing interest in how emotional reactivity and experiencing can influence one's physical and psychological health (Tsaosis & Nikolaou, 2005). Emotional awareness, in particular, has recently gained prominent research focus as it appears to be associated with compromised health. A large subsection of this research focuses on an emotional awareness disturbance labeled alexithymia. Diminished emotional awareness may be considered one feature of alexithymia (Lumley et al., 2005). This deficit in emotional processing has been defined literally as "no words for emotion" (Zonnevijlle-Bendek, van Goozen, Cohen-Keettenis, van Elburg & van England, 2002, p. 380). The deficit comprising alexithymia has been speculated to be based on the reduced capacity for symbolization of emotion (Nemiah &

Sifneos, 1970). In other words, the alexithymic individual has been unsuccessful in developing the customary connections between words and emotions. Without the ability to use words as symbols for emotions, an individual is unable to distinguish the qualities of emotions or express them verbally or in fantasy (Nemiah & Sifneos, 1970).

Lacking the ability to symbolize emotions has been suggested to show itself in different ways including abnormal physiology resulting in disease, susceptibility to impulsive behavior, and uneasiness with and avoidance of social relationships (Nemiah & Sifneos, 1970). Nemiah and Sifneos assumed that these explicit manifestations were expressions of an irregular emotional state; a state that arises from an insufficiency in symbolization. Limited and undifferentiated descriptions of emotional experience were thought to be accurate representations of internal states of alexithymics and as such distinguishable from denial or repression, which assume the existence of well-differentiated emotions that are kept out of conscious awareness (Lane, Sechrest, Reidel, Weldon, Kaszniak, & Schwartz, 1996). Recent research reveals that somatic conditions such as hypertension and inflammatory bowel disease along with disorders such as panic, substance use, eating, and posttraumatic stress (PTSD) have all been associated with this disturbed emotional awareness (Taylor, 2000; Taylor et al., 1996). In particular, disturbances in emotional awareness are more common in women and adolescents with eating disorders such as bulimia nervosa or binge eating (Corcos, Guilbaud, Speranza, Paterniti, Loas, Stephan & Jeammet, 2000; de Groot et al., 1995; Wheeler, Greiner, & Boulton, 2005; Zonnevijille-Bendek et al., 2002). Furthermore, it has been argued that deficits in emotion skills (difficulty understanding emotions, difficulty using emotions to facilitate thought and difficulty

changing how one feels) are related to poor functioning and often psychopathology (Novick-Kline, Turk, Mennin, Hoyt, & Gallagher, 2005). Goleman (1995) has argued that deficient emotional skills are connected with higher rates of depression, anxiety, eating disorders, school drop out, loneliness, bullying, victimization, and addictions. Goleman also revealed associations between emotional skills and greater marital accord, increased friendships, enhanced popularity, and better health outcomes in the face of illness. In fact, a disturbance of emotion may well transpire in every psychiatric diagnostic class; as such it has been argued that emotional disruption is rudimentary to the concept of mental disorder (Lane & Schwartz, 1987). As a result, the importance of emotion as well to the field of psychiatry "cannot be overemphasized" (Lane & Schwartz, 1987, p.133).

The aforementioned diagnostic reality in combination with the evidence that emotional states can affect vulnerability to disease as well as recovery from disease reinforces the need to make emotional assessment a priority. As such, the purpose of the present research was to contribute to the field of emotional assessment by validating an assessment tool created specifically to measure individual differences in emotional awareness, the LEAS.

Emotional Intelligence and Emotional Awareness

The construct of emotional awareness has stemmed from a number of influences including developmental psychology, neuroscience, and linguistics (Lumley et al., 2005). Emotional intelligence, the broadest of the emotional ability constructs, includes emotional awareness. Despite the fact that emotional awareness is thought to be only one component of

emotional intelligence, it is considered a fundamental constituent that allows for the successful execution of subsequent mechanisms of emotional intelligence (Lane, 2000).

Emotional intelligence can be generally defined as the ability to use emotional information constructively so as to enhance adaptation (Lane, 2000). Emotional information is comprised of one's own personal emotional responses as well as the information expressed in the emotional responses of others. This definition is consistent with that provided by the creators of the emotional intelligence construct, Mayer and Salovey, in the early 1990s. Mayer and Salovey (1990; 1997) defined emotional intelligence as a set of mental or emotional abilities. They included in this broad set of abilities the ability to perceive emotions, access and produce emotion to assist thought, understand and reason about emotion, and reflectively adjust emotions to endorse emotional and intellectual growth (Mayer & Salovey, 1997).

According to Mayer and Salovey (1990), a person with emotional intelligence can be thought of as having attained at least some degree of positive mental health. They are conscious of their own feelings and those of others. They are also open to positive and negative aspects of internal experience. Furthermore, a person with emotional intelligence can label internal experiences and communicate them when appropriate. Mayer and Salovey postulate that a person's ability to regulate affect in themselves and others contributes to well being which in turn makes someone a pleasure to be around. This can often be contagious.

By contrast, Mayer and Salovey (1990) see deficits in emotional intelligence as leading to problems in adjustment. Those who cannot recognize emotions in themselves become controlled by them. Individuals who cannot distinguish emotions in others or who make others feel poorly

get viewed as unsophisticated and are often disliked. Mayer and Salovey believe that people who cannot recognize emotions in themselves are unable to plan emotionally fulfilling lives; deficits can lead to depression and suicide. Mayer and Salovey maintain that by recognizing the contribution of emotional intelligence to healthy personality, the ability to identify benefits or needed adjustments in social institutions and cultural practices would likely follow.

A broader view of emotional intelligence is one that connects these basic mental abilities to particular behaviors occurring in social contexts (Lane, 2000). According to Goleman (1995), emotional intelligence is comprised of aspects of overt behaviors in social contexts including impulse control, persistence, zeal and self-motivation, empathy, and social deftness. Such behavioral components can be broadly conceptualized as "the enhancement or suppression of approach or avoidance behavior based on awareness of the current or anticipated subjective emotional state of the self or others" (Lane, 2000, p. 172). Such a definition of emotional intelligence makes it evident that one's subjective awareness of emotions of the self and of others is a vital component.

The Conception of Emotional Awareness

Lane and Schwartz (1987) recognized the importance of the ability to be aware of one's own emotions for emotional intelligence. This prompted the creation of a conceptual framework for understanding individual differences in emotional awareness along with a method for measuring such differences. The major principle guiding the model is that individual differences in this type of awareness represent varying levels of differentiation and integration of the schemata used to process external or internal emotional information (Lane, 2000).

Lane and Schwartz (1987) described five levels of emotional awareness that mimic the structural characteristics of Piaget's stages of cognitive development. Piaget portrayed four major periods of development: sensorimotor, preoperational, concrete operational, and formal operational. He determined that cognitive growth progresses in a hierarchical manner with cognitive schemata transforming from sensorimotor patterns to increasingly abstract mental symbolizations (Lane & Schwartz, 1992). Piaget defined a schema as the mental image of an associated set of observations, ideas, and/or actions; schemata were considered the fundamental building blocks of thinking (Woolfolk, 1987). In Lane and Schwartz's model, the growth of emotional schemata is driven by the words used to describe emotion (Lane, Ahern, Schwartz, & Kasniak, 1997).

According to Lane and Schwartz (1992), the structural characteristics that describe cognitive development in Piaget's model also apply to the transformations that occur developmentally in awareness of emotions. The "structural characteristics" refer to the level of delineation and integration of the cognitive schemata used to process emotional information (Lane et al., 1997). Cognitive development from this perspective consists of the conversion of knowledge from implicit (procedure, sensorimotor) to explicit (conscious thought) through use of language, creating more flexible and adaptable thinking (Lane et al., 1997).

During early phases of development, the ability to assimilate (alter what is taken in to fit with existing schema) is quite restricted (Lane & Schwartz, 1987). Interventions from care givers are needed to add new information which modifies the emotional experience and the schema for that experience. Eventually, the schemata that incorporate emotional arousal become more

distinguished and coalesced so that more information is processed internally. The individual progressively develops more flexible ways of representing experience that capture more emotional arousal information. As such, the individual becomes more able to regulate their own emotional state without depending on caretakers. Research suggests that superior organization of the internal world of emotion is evidenced in the structure of verbal descriptions of emotion. As the ability for self regulation amplifies, the capacity to acclimatize successfully to a multiplicity of environments improves (Lane & Schwartz, 1987).

The five levels within Lane and Schwartz's model in ascending order are: physical sensations, action tendencies, single emotions, blends of emotions, and blends of blends of emotional experience. The model maintains that the first three levels (physiology, motor expression, and conscious awareness of emotion) represent different manners of representing experience that are hierarchically related. Level four involves a transformation from level three that includes the ability to experience and describe combinations of emotions. The fifth and final level represents the ability to understand the intricacy in the emotional experiences of the self and of others. The hierarchical layout comprises increasingly conscious elaboration of activated emotion; performance at each subsequent level adds to and amends the function of previous levels while not eliminating them. Overall, each new level comprises an increase in the complexity of the representation of emotion (Lane & Schwartz, 1992).

The five levels of awareness rely heavily on the development of emotion information schemata. The nature of the conscious emotional experience and the ability to appreciate intricacy in one's own experience and that of others is affected by what one knows about

emotions. What a person knows about emotions is based on the words used to describe emotions beforehand. In other words, "the ability to appreciate complexity in one's own experience and that of others is influenced by what one knows about emotion which itself is based on how emotion has been represented in the past" (Lane, 2000, p. 174).

From the descriptions here of the LEA model, the levels are qualitatively different and build on one another progressively. This model shows that conscious cognition appears to play a pivotal role in emotional experience; hence the term "emotional awareness". Furthermore, although the developmental trajectory is not discussed by the authors, its explicit incorporation of Piaget's theoretical basis suggests a similar trajectory to Piaget's model. Emotional awareness happens concurrently with other areas of cognitive growth in development as discussed by Piaget.

As a person advances from level to level within the levels of emotional awareness model, there is a growth in the variety of emotional experience and a progressive increase in the ability to precisely describe emotional states in words (Lane & Schwartz, 1992). Accordingly, as the cognitive complexity of self and object representation amplifies as expressed in increased schema complexity, self and other distinctions also magnify. Furthermore, as empathy is a cognitive skill that involves applying one's knowledge of one's inner world to the situation of another, there is an increase in empathy as levels of emotional awareness increase. Having a greater capacity for awareness of the emotions of self and other also implies an amplified flexibility in interpersonal interactions and superior adaptational achievement The structural organization of the cognitive process in the levels of emotional awareness model is intimately

linked to the increasing structure of knowledge about the internal and external world, the ego, and the ability to take part in interpersonal relationships (Bydlowski, Corcos, Jeammet, Paterniti, Berthoz, Laurier et al., 2005). Therefore, functioning at higher levels of emotional awareness is more desirable than functioning at lower levels. People functioning at the lower levels may have difficulties interacting and operating. Limitations in emotional awareness restrict a person's adaptive flexibility in life. This is likely to influence many important adaptational outcomes and overall quality of life.

Measuring Components of Emotional Abilities

To advance understanding of concepts of emotion abilities, it is necessary to devise means of measuring them. Historically, a number of different approaches have been used to assess emotional abilities (Lumley et al., 2005). However, the most common method by far is the self-report method. The self report method is most common because of its convenience and the belief that introspection provides special access to emotional processes (Lumley et al.). However, it has been argued that there are limits to self-report measures of emotion abilities that involve deficient or damaged introspection to begin with. This is demonstrated when attempting to measure emotional awareness capacity in alexithymics who have a diminished capacity. As Lane et al. (1997) ironically pointed out, "valid judgments about one's ability to monitor and report on internal emotional states accurately may require the relative absence of the trait being measured" (p. 835). Therefore, exclusive reliance on self-report in such circumstances is likely to be unreliable. As a result, a number of non-self-report methods used to assess emotional abilities have been developed (Lumley et al., 2005). Lumley at al. identified four of these alternative

methods beginning with the structured clinical interview. The clinical interview takes advantage of the ability to investigate issues in depth, challenge answers, and acquire ratings from trained interviewers. Second, they highlighted the method derived from personality research which obtains reports from collaterals such as friends or relatives. They also identified the evaluation of performance on emotion-relevant tasks, particularly tasks that reflect cognitive intelligence. And finally, they identified the method that stems from linguistic research in developmental psychology. In this approach, a person can assess the degree to which a person's language about emotional circumstances reflects emotional awareness and complexity as opposed to an absence of such understanding. Lane et al. (1990) employed this approach to create a scale of emotional awareness, the Levels of Emotional Awareness Scale, to avoid the pitfalls of self-rating and other common emotion assessment techniques.

The Levels of Emotional Awareness Scale (LEAS)

While the levels of emotional awareness model was created to capture differences involving the ability to be aware of and depict emotion (Lane & Schwartz, 1987), the Levels of Emotional Awareness Scale (LEAS) was produced to explore many of the empirical questions raised by the model (Lane & Schwartz, 1992). Lane et al. (1990) developed the LEAS as an assessment device to rate emotional awareness from the complexity of emotional language that people used (Lumley et al., 2005). Lane and Schwartz (1987) maintain that the degree of structural organization of emotional awareness is reflected in the verbal material used to describe emotional experiences (Bydlowski et al., 2005). As language helps to establish and give structure to concepts it consequently helps to discriminate between distinct emotional states.

The LEAS is a written performance measure that requires an individual to describe his or her own anticipated feelings and the feelings of others in response to a series of short scenarios (Lane, 2000). It consists of 20 separate scenes each described in two to four sentences and involving two persons (Lane et al., 1990). The participant performing the LEAS becomes the first person in the scenario in conjunction with the hypothetical "other" in the scene. One scene is presented per page and individuals are asked to write their responses on the remainder of the page addressing the following questions only; "How would you feel?" and "How would the other person feel?". Individuals are instructed to use as much or as little of the page they need to answer the two questions (See Appendix A).

The scoring of the LEAS is based on analysis of verbal responses to the 20 scenarios. Scoring is based on structural criteria that determine the degree of differentiation in the use of emotion words and the degree of differentiation of self from other (Lane, 2000). The scoring system involves selecting out the emotion terms, assigning a level score to each term from a pre-determined level-specified glossary of emotion words and assigning a level score to each of the scenes (Lane & Schwartz, 1992). Responses are scored separately for each scene with each reply receiving separate scores for the emotion described for self and the emotion described for other. Scoring guidelines and glossary by level can be found in the *LEAS Scoring Manual & Glossary* (Lane, 1991).

Responses for each scene receive a score of 0 to 5; a scale that corresponds to the primary cognitive developmental premise of five levels of emotional awareness (Lane et al., 2000). The maximum total score that one can achieve is 100. The lowest individual score (Level 0) is for

nonemotion responses in which the word feel is used to describe a thought rather than a feeling. Level 1 reflects an awareness of physiological cues (e.g. I'd feel tired). Level 2 consists of words that are typically used in alternate contexts but are frequently used to describe undifferentiated emotion (e.g. I'd feel bad) or the use of "feel" to describe an action tendency (e.g. I'd feel like punching the wall). Level 3 responses involve the use of one word conveying typical, differentiated emotion (e.g. happy, sad or angry). The highest score for the self and the other person, level 4, is given when two or more level 3 words are used that convey greater emotional differentiation than either word alone. Therefore, each individual receives a separate score for the self response and for the other response from 0 to 4. In addition, a third "total" score is given equal to the higher of the two scores except in cases where both self and other received Level 4 scores. When this occurs, a total score Level 5 is given for the scene if the emotions for the self and other could be differentiated from one another. Only the total score is reported. The ratings are based entirely on structure, involve no inference of the meaning of words, and do not require ratings for the appropriateness of the responses (Lane et al, 1990).

At the time of creation of the LEAS, the customary approach to the assessment of emotional experience was to depict an emotion or mood in a word or phrase and then have the participant rate its intensity. Although such an approach may be useful, it does not capture the variability between individuals in the ability to observe internal states (Lane et al., 1990). The LEAS is able to capture the intricacy of the experience by coding the level of differentiation in the words the participants use. Furthermore, as the LEAS requires the participants to respond to emotional scenarios that are consequently coded for level of emotional awareness by an

objective rater, individuals are not asked to assess their own emotion skills (Novick-Kline et al., 2005).

As a test of emotional awareness the LEAS has been viewed as an enhancement over previous tests of emotional awareness (Novick-Kline et al., 2005). The endorsement of this scale is likely attributable to the number of studies that have examined its psychometric properties. The LEAS has demonstrated consistently high inter-rater reliability; intraclass $r = 0.84$ (Lane et al., 1990) and Pearson product moment correlation $r = .97$ (Lane, Kivley, Du Bois, Shamasundara & Schwartz, 1995). It has also displayed good construct and discriminant validity in relation to other psychological tests (Lane et al., 1990). The lack of correlation between the LEAS and other emotion scales targeting different constructs suggests that it is the level of emotion and not the specific quality of emotion that is measured by the LEAS. (Lane et al., 1990) In addition, the lack of association between the LEAS score and the number of words used in the LEAS answers indicates that intricacy is not equal to simple verbal output. For instance, a high level response on the LEAS need not be considerable in length as long as it describes an emotional reply with a wealth of complexity and understanding (Novick-Kline et al., 2005).

The finding that the emotional complexity of responses on the LEAS is not synonymous with quality or quantity is particularly important as it further supports the objective nature of this scale's scoring method and thus its reliability. The scoring for the LEAS involves fundamentally no inference by raters since the system evaluates the structure of the experience and not its content. The participants are unable to modify their responses to enhance their score as is often

the case with self-report measures (Lane, 2000). Arguably, the LEAS may be "superior when one is seeking a performance measure rather than self-rated judgments that may be influenced by demand effects" (Lane, Sechrest, & Riedel, 1998, p. 383).

Validity of the LEAS

The LEAS has been found to correlate highly with other measures of cognitive-developmental complexity including the Blatt, Wein, Chevron, and Quinlan (1979) cognitive complexity of the descriptions of parents and the Lovinger and Wessler (1970) Washington University Sentence Completion Test of Ego Development (Lane et al., 1990). These findings appear to validate the basic tenets of the levels of emotional awareness model (Lane & Schwartz, 1992). The LEAS has also been found to correlate positively with openness to experience and perception of emotion (Lane et al., 1990; Lane et al., 1995).

Nevertheless, despite its highly reliable structural scoring criteria, its positive correlations with cognitive-developmental measures, its good construct and discriminant validity and its inter-rater reliability, there are some studies that do raise concerns regarding the validity of the LEAS (Novick-Kline et al., 2005). More precisely, there are concerns regarding whether the LEAS really evaluates skillful awareness of one's emotions.

According to Lane (2000) a central concern is whether the LEAS is merely another gauge of verbal capacity. While the LEAS correlated .38 ($p < .001$) with the vocabulary subtest of the Wechsler Adult Intelligence Scale-Revised (WAIS-R) in one sample, in another sample it only correlated .17 (not significantly) with a multiple choice measure of verbal ability, the Shipley

Institute of Living Scale (Lane et al., 1990; Lane et al., 1995). Therefore, it is possible that verbal ability may in fact contribute to LEAS performance.

There are studies that have addressed and later dismissed the possibility that the LEAS may be a measure of verbal aptitude. Barrett, Lane, Sechrest and Schwartz (2000) examined sex differences in the complexity and differentiation of people's depictions of emotional experience. Female participants from seven different samples ranging in age, scholastic performance, socioeconomic status and cultures were included. The results demonstrated that women displayed more emotional awareness than men. On average, women participants scored higher than men on the LEAS, signifying that the women used emotional language that was more complex and differentiated to symbolize their own and others' emotional experience (Barrett et al., 2000). More importantly, the sex difference was observed even when controlling for verbal intelligence using the WAIS-R and the Shipley Institute of Living Scales Vocabulary subtest. Finding that sex differences existed even when holding verbal intelligence constant confirms that the women's enhanced performance on the LEAS was not determined by differences in verbal ability; this finding challenges past claims that sex differences in emotion may be partly attributable to differences in the development of language (Barrett et al., 2000).

When some of the key principles underlying the levels of emotional awareness model are considered, the possibility of the LEAS being entirely dependent on verbal aptitude seems less likely. According to Lane (2000), one important assumption of the levels of emotional awareness model is that language promotes the growth of schemata for the processing of emotional information. More importantly, once the schemata are established, they should influence the

processing of emotional information whether the information is verbal or nonverbal. Accordingly, Lane believes that the LEAS should correlate with the capacity to distinguish and categorize external emotional stimuli and this correlation should hold whether the external stimulus and the responses are purely verbal or purely non-verbal.

Lane et al. (1996) set out to examine whether alexithymic individuals, or individuals that correspond to the lower end of the emotional awareness continuum have a deficit in their ability to recognize emotional stimuli and whether this deficit is not simply due to a problem in verbal labeling (Bydlowski et al., 2005). Three hundred and eighty participants in a community survey completed two independent measures of alexithymia [the LEAS and the Toronto Alexithymia Scale (TAS-20)] and the perception of Affect Task (PAT), a 140-item measure of the ability to match emotion stimuli during verbal and non verbal tasks. All participants were without current and past histories of a psychiatric disorder. Across the entire sample, higher (alexithymic) TAS - 20 and lower LEAS scores were correlated with lower accuracy scores on each subtask of the PAT. In other words, "the ability to recognize emotions decreases as alexithymia scores increase and this decreased ability is both verbal and nonverbal" (Lane et al., 1996, p. 207), a finding consistent with the theory of levels of emotional awareness and one that negates the possibility that the scale only measures verbal aptitude. As outlined by the levels of emotional awareness model, using words to describe emotions creates schemata that determine how emotion information is processed regardless of whether that information is verbal or nonverbal in content (Lane et al., 1996).

There are studies, however, that suggest the LEAS measures verbal aptitude. Novick-Kline et al. (2005) sought to distinguish individuals with generalized anxiety disorder (GAD) from controls on the basis of fundamental differences in levels of emotional awareness between the two groups. These authors based their hypothesis on the assumption that the central feature of GAD is worry, a feature which allows individuals to avoid uncomfortable emotional experiences. According to Novick-Kline et al., by utilizing worry as an avoidance response, individuals with GAD prevent themselves from effectively processing all situationally pertinent information, including emotions, making the information they process incomplete and causing them to respond less adaptively to the environment. However, contrary to their hypothesis, they found that individuals with GAD performed at a significantly higher level of emotional awareness on the total LEAS than controls. One possible explanation offered by the authors centered on the notion that since LEAS requires verbalization of emotion states, individuals with GAD may articulate their emotions to imaginary scenes with immense skill on paper. However, when faced with the task of identifying and recounting one's genuine emotions in daily life, individuals with GAD may have greater difficulty. In other words, it may be different to imagine how one might feel in response to an assortment of imagined scenarios compared to when one is facing emotions in real life. The authors speculated that individuals with GAD may be good at naming emotions, even complex emotions, as they have had a potentially good deal of practice at cognitively analyzing their emotions in efforts to avoid experiencing them. Therefore, the LEAS may measure the ability to verbalize emotions rather than the ability to be aware of one's emotions.

It seems apparent that despite the research supporting the LEAS, there is still some concern about its validity, particularly regarding the possibility that it simply measures a verbal aptitude. Clarification of the nature of the construct being measured by the LEAS is likely to be obtained by examining the ability of the scale to predict other aspects of individuals' behavior in circumstances designed to elicit emotion and styles of response to emotion. In other words, to validate the construct of levels of emotional awareness, it would be helpful to observe variations in emotionally relevant behavior that are theoretically presumed to covary with levels of emotional awareness. Apart from the behaviors measured by the LEAS itself and the correlates of levels of emotional awareness that have been studied in existing validation studies, what kinds of behavior would be expected to covary with scores on the LEAS? In the present study, a set of behaviors that have been identified in the literature as likely markers or consequences of emotional awareness was examined as potential correlates of LEAS scores.

Studies of the Accuracy of Personality Judgment

One root of the approach to be used in the present study can be found in studies of the accuracy of personality judgment. The observations of people made in order to draw conclusions about their character can be referred to as personality judgments. Personality judgments are efforts to recognize people's traits that assist in explaining their past behaviors and in predicting their future behaviors (Funder, 1991). For example, a person may judge whether another is trustworthy or dependable in order to help predict whether he or she will work at a job well. A person may also make those same judgments to determine why a person was previously involved

in a conflict at work. These types of judgments are common in the lab and in daily life and have frequently been the focus of psychological research (Funder, 1995).

From a methodological standpoint, human judgments of individual characteristics are an important source of data that can be utilized in many areas of psychology including developmental and clinical psychology (Funder, 1995). A number of studies ask informants, sometimes lay persons or even medical experts, to use a set of rating scales to describe their impressions of subjects. Such judgments are used as data about the character or qualities of the subjects they depict. However, the quality of such data relies on the accuracy of the judgments made in the first place (Funder, 1995).

The most common criterion for accuracy in personality judgments is interjudge agreement (Kolar, Funder, & Colvin, 1996). Kolar et al. compared the accuracy of personality judgments made by the self and by informed others. Their results favored the validity of personality judgments made by single associates instead of self-judgments; this is compatible with theoretical views that emphasize that one's personality is more visible from an external than an internal perspective. The authors' findings also noticeably favored the collective personality judgments of two acquaintances over self judgments. The superiority of the cumulative judgments of two data points implies that the most dependable judgments are not found in self judgments but in the consensus of judgments made by a community of one's peers (Kolar et al., 1996).

A great deal of the verification for the precision of personality judgments about the self and others comes from research on interjudge agreement (Kolar et al., 1996). Such research has

been able to show persuasively that agreement is normally quite good (Kenrick & Funder, 1988). However, agreement alone does not essentially involve accuracy; two judges can agree with one another and yet both be completely wrong (Funder & West, 1993). Instead, inter-judge agreement should be confirmed by a criterion measure (Kolar et al., 1996), usually a related or adjacent measure or scale. Furthermore, and as we are attempting to do here, the criterion measure (such as a personality scale or adjacent judgments made by a separate population) is similarly considered accurate to the extent that it forecasts independent assessments of the behavior of the person being judged (Funder & West, 1993). In other words, a criterion measure informs us whether the personality judgments distinguish real characteristics of the persons who are judged.

Overt Behaviors Corresponding to Levels of Emotional Awareness

In order to identify a set of behaviors likely to reflect varying degrees of emotional awareness, a comprehensive review of the theoretical literature on levels of emotional awareness was conducted. Out of that review, some 36 behaviors or characteristics postulated to be consequences or correlates of emotional awareness were identified. For reasons that are explained in the method section, nine of these characteristics were identified for further study. This section provides background concerning the theoretical relations between levels of emotional awareness and nine characteristics: social deftness, insight into how others may be feeling, empathic ability, flexibility in interpersonal interactions, certainty/awareness of one's own feelings, ability to identify the feelings of others, openness to experience and ideas, comfort with social interaction, and impulse control.

Social deftness is a key variable thought to be a correlate or consequence of emotional awareness. In Lane's (2000) view the requirements for optimal social adaptation include the ability to understand the differentiated feelings of self and other and incorporate this information into actions that allow achievement of personal goals in a manner suitable in terms of the social context. Lane predicts that the more a person digresses from a level 5 on the LEAS, the more information about self and others will be left out during social interaction leading to a less agreeable fit with the social context. It could then be predicted that "the higher the level of emotional awareness, the greater the appropriateness of emotional expression in social constructs" (Lane, 2000, p. 185). As such, it is suggested that those individuals with low emotional awareness (emotion skills deficits) may have dysregulated emotions and corresponding dysregulated behaviors. According to Novick et al. (2005) emotionally dysregulated individuals have trouble affecting the latency, scale, length, and expression of their emotions as suitable to the given circumstances. This may lead them to exhibit unsuitable or maladaptive behavior at times when interrelating with other people.

Being unable to select appropriate emotional responses for different environmental contexts may disrupt and hence prevent positive social experiences. Such individuals lack social deftness, "the ability to successfully negotiate social interactions in order to achieve one's goals in a social context" (Lane, 2000, p. 172). Social deftness is one of the aspects of overt behavior in social contexts that is closely linked to the concept of emotional intelligence (Lane, 2000). As emotional awareness is considered a fundamental component of emotional intelligence, it is also

linked to social deftness. Hence, one's level of social deftness should correspond to one's level of emotional awareness.

Included in aspects of the social deftness concept is the ability to avoid the creation of negative responses in others (Lane, 2000). Social deftness requires the ability to accurately supervise oneself and others and to integrate the interests of self and others for successful achievement. Therefore, avoiding the creation of negative responses in others is paramount and involves "enhancement of one's own avoidance responses in certain key areas" or, in other words, "not doing the wrong thing" (Lane, 2000, p.172). Hence, one's ability to have insight into how others may be feeling in a certain situation is automatically linked to one's emotional awareness as well. This ability to have insight into others' feelings is heavily linked to the concept of empathy; another social behavior thought to correlate with one's emotional awareness.

The simplified conception of empathy involves inserting yourself in the place of another and then envisioning how one would feel (Lane, 2000). According to Lane et al. (1996) higher scores on the LEAS reflect "greater differentiation in emotions, greater awareness of emotional complexity in the self and others, and a relative absence of alexithymia" (p. 494). This progressive differentiation and integration of emotional knowledge then leads to incisive empathy and is precisely associated with the capacity to take part in interpersonal relationships (Bydlowski et al., 2005). By this conception, a person's empathic ability increases as their level of emotional awareness increases which in turn leads to augmented flexibility in interpersonal interactions and better adaptive achievement (Lane & Schwartz, 1992). Hence, a persons'

empathic behavior, including their ability to be accommodating and flexible with others, can be expected to covary with level of emotional awareness. Furthermore, as awareness of one's own emotions is a requirement for empathy, it relies emphatically on certainty/awareness of one's own feelings (Lane, 2000). Therefore a person's ability to identify their own feelings and consequently identify the feelings of others should correspond to their level of emotional awareness as well.

Lane et al. (1990) reported that participants who displayed high levels of complexity of emotion, or high emotional awareness, displayed greater openness to experience and ideas. More specifically, emotionally complex individuals showed a greater openness to values. Having a greater openness to values is likely to overlap with and contribute to ones' ability to be flexible in interpersonal interactions. Therefore, those participants who reveal a greater openness to others' ideas or new experiences are likely to score on the higher end of the emotional awareness spectrum.

As recognition of emotional stimuli is important in social relationships, impairment in empathy then can lead to strained relationships (Lane et al., 1996). Furthermore, this can create a tendency to avoid social relationships and or a preference for social isolation. As such, a person's comfort with social interaction should also be related to their level of emotional awareness.

Another manifestation of low levels of emotional awareness is believed to be propensity to act in an impulsive manner (Lane et al., 1996). Impulse control involves the ability to deny a particular action aimed at short term fulfillment in order to avoid a possible negative long-term outcome (Lane, 2000). According to Lane, to prevent acting on an impulse, a mental

representation of the possible consequences of a given action is needed. This mental representation then impacts the behavioral expression of the impulse before it occurs. Therefore, impulse control, the "suppression of approach behavior," inevitably involves an ability to anticipate how self and others would feel if the impulse action were taken (Lane, 2000, p. 172). As such, one's impulse control becomes an expected correlate of emotional awareness.

It was hypothesized in the present study that participants involved in social interactions during previously recorded video clips who scored higher on the LEAS would also score higher on ratings of these hypothesized overt markers of emotional awareness. (In keeping with the conventions of communication research, the performers in the video clips will be called "encoders.") As suggested by the theoretical underpinnings surrounding emotional awareness, individuals or encoders with higher LEAS scores should be rated as having greater social deftness, greater insight into how others might feel (in a situation), greater empathy, greater flexibility with others, greater certainty about their own feelings, greater ability to identify emotions in others, greater openness to experience or ideas, greater social comfort, and greater impulse control. Furthermore, as females have been found to typically score higher on the LEAS than males, (Barrett et al., 2000; Lane et al., 1998) it was additionally hypothesized that women would also receive higher ratings on observer measures of emotional awareness in social interactive settings. Even though previous researchers have argued that sex differences in emotional knowledge may be due to differences in development of verbal language (specifically emotional vocabulary) females have been found to display higher LEAS scores, even when controlling for verbal intelligence (Barett et al., 2000). The present study will assist in addressing

concerns that the LEAS is a biased measure of emotional awareness as opposed to reflecting true sex differences. The LEAS may only reflect how people may describe responses to hypothetical scenarios, not how they would respond to actual situations. As such, if women are truly more emotionally aware, it should be reflected in their emotional awareness behavior during authentic interactions with others.

II. Methodological Issues

There are two core methodological issues that need to be addressed. The first pertains to the contexts in which differences between people who score high on the LEAS and people who score low are likely to be seen. The second pertains to the techniques for measuring such differences.

Context for Observing Differences in the Correlates of Emotional Awareness

Literature on the validity of the LEAS has, to date, involved studies of its correlates on other psychometric measures or on performance tasks. As noted above, much of the theoretical discussion of the context relates to differences in behaviour in social and interactive contexts. Curiously, there have been few, if any, studies that have attempted to observe likely consequences of emotional awareness during actual social interaction.

In the present study, this shortcoming was addressed by studying the behaviour of people in an explicit social interaction relevant to emotion. Although simulated social interaction lacks the authenticity of real-life and unscripted interaction, the protocols used in this study were social and interpersonal stresses that were developed to be relevant to the lives of participants The simulation protocols used were interpersonal challenges created by Larkin, Semenchuk,

Frazer and Taylor (1998). Larkin et al. (1998) developed and tested a laboratory based social confrontation procedure involving standardized interactions. The standardized interactions involve two different scenes; the "Mess" Scene and the "Noise" Scene (See Appendix B). While observing the video encoders during a variety of interactions would have been ideal, the availability of video data for the encoders was limited. Clips involving the encoders discussing a happy or angry event in their lives were available, however, it was felt the subject matter of those tapings was too personal in scope to be viewed then subsequently rated by a group of judges or decoders. In addition, it already took significant time for the decoders to rate the chosen video clips from the one scene. Any more video footage would just have made the task too long and therefore presented possible fatigue confounds.

Techniques for Measuring Expected Correlates of Emotional Awareness

The behavioral characteristics that the literature implicates as correlates of levels of emotional awareness raise methodological challenges of their own. In particular, behaviours (or constructs) such as "social deftness," may be seen as broad and subjective and consequently difficult to measure. However, research in social and personality psychology suggests that people can be surprisingly precise in the judgments they make on the basis of minimal information and cognitive processing. For example, Ambady and Rosenthal (1992) set out to examine the accuracy of predictions from brief observations, or what they called, 'thin slices' of expressive behaviors, by conducting a meta-analysis of such studies. Their findings revealed that thin slices of behavior provide considerable information and allow significantly accurate predictions. Furthermore, the thinness of the slice did not seem to affect the accuracy of

predictions. For example, the level of accuracy of predictions from thin slices of behavior did not differ significantly between 30 seconds, 1-, 2-, 3-, 4- and 5 minutes of observations. Ambady and Rosenthal (1992) also pointed out that although certain behaviors displayed in a given situation may vary considerably, there appears to be some stable underlying essence that is picked up by observers. The authors concluded that specific affective, interpersonally-oriented dimensions of personality can be judged quite quickly, competently, and precisely. In other words, "the probabilistic expectancies we form about others from very limited information are more accurate than we would expect" (Ambady & Rosenthal, 1992, p. 269). The authors maintained that researchers can save time and costs by using thin slices of behavior to evaluate affective variables without having to forfeit accuracy. Furthermore, they postulated that ratings of thin slices of behavior can be employed to predict significant criterion variables, especially those that are interpersonally oriented. Ambady and Rosenthal (1992) also found that when exposures are very brief, the channel of communication (verbal or nonverbal) does not affect the accuracy of ratings and therefore ratings can be based on any channels that can be easily recorded. These authors also maintained that raters of the behavior may not have to be familiar with the target and multiple observations of the behavior may not be required if the dimensions getting rated are truly applicable to the outcome being suggested (Ambady & Rosenthal, 1992).

Likewise, in a subsequent study, Ambady and Rosenthal (1993) examined the precision of strangers' consensual judgments of personality based on 'thin slices' of the targets' nonverbal behavior in relation to an ecologically legitimate criterion variable. The criterion they chose was teacher efficacy which is usually measured by any one or some combination of student ratings,

peer ratings, and supervisor ratings. Ambady and Rosenthal found that the ratings of strangers based on very thin slices of teachers' non-verbal behavior (2 seconds to 10 seconds long) forecast with astonishing accuracy the ratings of the same teachers by people who had substantial interactions with those teachers (students and supervisors). More specifically, stranger's judgments based on 30 seconds of exposure were not significantly more accurate than judgments based on 6 seconds of exposures. Ambady and Rosenthal (1993) discovered that the judges were accurate as specified by the high degree of agreement in their judgments. Moreover, the authors discovered that the judges were precise on the basis of "the high correlations between their judgments and a real-life criterion variable" (Ambady & Rosenthal, 1993, p. 438). Ambady and Rosenthal concluded that judgments should be based on real observations of the person in a circumstance where the criterion is valid, collective judgments should be used rather than judgments made by single individuals and, finally that judgments based on thin slices are more accurate for interpersonal or emotional variables. Based on the properties of "thin-slice" judgment studies, articulated by Ambady and Rosenthal, the present study made use of similar methodology in order to evaluate the validity of the LEAS.

III. Methods

Participant Recruitment

Participants were recruited through the use of a recruitment e-mail sent to all psychology graduate students attending the University of Northern British Columbia during the summer semester. A total of eleven psychology graduate students participated in this rating study (9 females and 2 males). The average age of the participants was 33.7 yrs (SD = 12.35 yrs, range =

22 - 53 yrs). (In keeping with the conventions of communication research, the participants recruited to watch and rate the videos will be called "decoders").

Video Samples

Permission had previously been obtained to utilize video clips of two scenes ("Mess" or "Noise") from the Larkin et al. (1998) social confrontation procedure. The encoders' data was previously collected as part of another study and provided the data to be rated by the eleven decoders.

In the "Mess" Scene, the encoder was informed that the apartment that they share is a mess as the result of a roommate who fails to clean-up. The encoder was told that they themselves always do their share and must confront the messy roommate in an effort to reach a specific goal. Their specific goal was to get their roommate to agree to clean up the apartment within the four minutes allotted to the role-play scenario. The role of the messy roommate was played by a confederate who had a list of standardized prompts with which they responded using as minimal variation as possible. Similarly, in the "Noise" scene, the encoder was told that they have a noisy neighbor playing their stereo full blast. The encoder was informed that they have to get to sleep reasonably early as they have a major exam first thing in the morning. The goal outlined for the encoder in that scene was to have the neighbor agree to turn off the stereo within the four minutes allotted. The role of the neighbor was played by the same confederate who responded with standardized prompts. For each scene, the confederate's behaviour was programmed so as not to comply with the requests of the encoder. The interactions ran for four minutes and were videotaped in their entirety. The video camera was focused on the encoder

only and recorded the audio responses for both participants in the interaction. The encoders and confederates in the scenes were matched for gender in order to avoid the effects that opposite-gendered interactions may create.

Prior to their participation in the "noise" and "mess" scenes, the video encoders had completed the 10 question version of the LEAS. LEAS protocols were coded by two research assistants according to the guidelines and instructions described in the LEAS scoring manual (Lane, 1991). Inter-rater reliability of coding was evaluated by calculating Pearson's r on 40 protocols. The scoring reliability was r = .93.

Variables

Video clips of fifteen male and fifteen female video encoders scoring at the extremes of the LEAS distribution (i.e., 60 altogether) were selected and compiled onto a master DVD to be rated. The clips of the encoders were ordered randomly on the DVD irregardless of LEAS score or gender.

Measures

Decoder ratings of the encoders in the video clips of the social confrontation procedure were collected. The decoders rated each of the encoders in the video clips on nine different behavioral dimensions. The dimensions were assessed via 9-point Likert scales ranging from 1 (*description does not apply*) to 9 (*description totally applies*) (See Appendix C). Ambady and Rosenthal (1993) previously utilized a similar rating scale in their judgment study.

The nine behavioral dimensions rated were chosen from among thirty-six potential dimensions derived from the literature pertaining to emotional awareness. In order to decrease

the number of dimensions and hence utilize only the most effective in terms of ratability, a group of psychology students from a university lab group participated in a focus group in which the appropriateness of the 36 dimensions was discussed. Based on this discussion, the focus group excluded 17 dimensions on the basis of rating difficulty leaving 19 possible dimensions for use. Subsequently, a pilot study was conducted with seven psychology graduate students from the same university psychology lab group. The students judged five randomly selected clips of encoders involved in the social interaction procedure.

The effective reliability (Rosenthal, 1987) of the judges' ratings on each dimension was calculated (see Appendix D). Only those dimensions on which the effective reliability exceeded .70 were retained. These dimensions were: (1) socially deft, (2) insightful about how others might feel (in a situation), (3) empathetic, (4) flexible with others, (5) certain/aware of one's feelings, (6) able to identify emotions in others, (7) open to ideas or experience, (8) comfortable with social interaction, (9) able to control one's impulses, (10) receptive, (11) socially reactive or impulsive with others and (12) overly positive about oneself.

During the pilot study, the seven graduate students unanimously rejected two of the 12 dimensions with reliabilities greater than .7 as they deemed them difficult to rate. The rejected dimensions were *receptive* and *overly positive about ones' self.* The *socially reactive or impulsive with others* dimension was also subsequently rejected based on the fact that it seemed to overlap considerably with the dimension *able to control one's impulses.* As a result, these three dimensions were also excluded from the final list of dimensions despite the fact they had

displayed an effective reliability greater than .7. This left nine dimensions in total to be used for the study

Apparatus and Materials

One master DVD was derived from the 60 encoders selected. Similar to the method described by Ambady and Rosenthal (1993), for each encoder 10 seconds of video from the beginning of the social confrontation procedure that focused on the encoder alone, 10 seconds from the middle, and 10 seconds from the end were assembled and recorded onto one DVD. Each clip was carefully selected and edited to only include the encoder's voice and picture at all times. The voices and faces of the confederates in each scene were never apparent. The 30 seconds of video selected was either from the "Noise" scene or the "Mess", whichever scene the encoder had participated in second during the original study. This was done in order to limit the effects of encoders' adaptation to the role-play scenarios. Again following Ambady and Rosenthal (1993), the order of the three clips (beginning, middle, and end) for each of the 60 encoders (180 clips in total) was randomized.

A desktop computer in the research lab was used to play the DVD of the 60 encoders. Audio was played for all the clips as well. There was a 23 second pause between each of the 60 individual encoders' 30 second clips in order to give the decoder time to rate the encoder on all nine dimensions.

Procedure

Decoders entered the lab and were oriented to the computer station where they were to perform the ratings. The researcher verbally discussed an information sheet (See Appendix F)

which described the entire study in detail. Once the information sheet was discussed thoroughly, the decoders signed an informed consent form (see Appendix G). At this point the decoders were given an opportunity to ask any questions. When the decoders were ready to begin, they were instructed to start the DVD on the computer. Decoders rated the video clips individually. They were blind to encoders' LEAS scores.

After each encoder segment ended, the decoder rated the encoder on the 9 dimensions during the programmed 23 second pause. If the decoder needed more time to rate any of the encoders they simply paused the video until they had completed the ratings for the particular clip. During the first few ratings, it was common for the decoders to pause the video to allow themselves more time. However, the decoders were not permitted to re-watch any of the video clips. The entire task took approximately an hour and fifteen minutes for each decoder. The decoders were debriefed and given the opportunity to ask any questions regarding the research before they left the lab.

IV. Results

Reliability of Decoders Ratings

Following Ambady and Rosenthal (1993), the reliabilities of the decoders' ratings of the nine behavioral dimensions were computed by using interclass correlations. The reliabilities of the mean of 11 decoders' ratings ranged from .93 to .98 with a mean of .96. These reliabilities are presented in Table 1. For all nine dimensions, the reliabilities firmly exceeded the minimal .70 requirement that was set beforehand.

Table 1

Reliabilities (intraclass correlations) of Decoder Ratings of Encoder Behavioral Dimensions

Behavioral dimensions	*Intraclass Correlation*
Social deftness	.96
Empathy	.97
Flexibility	.94
Identify (ability to-feelings others)	.98
Insightful (feelings-others)	.98
Uncertain (feelings-self)	.95
Openness (to experience)	.95
Socially comfortable	.94
Impulse control	.93

Behavioral Dimensions and LEAS Scores

Because the foregoing analyses indicated that decoders' ratings were sufficiently consistent, an overall score for each behavioural dimension was determined by computing the mean of the decoders' ratings of each of the nine behavioral dimensions across the 60 video encoders. Each behavioral dimension rating was correlated with the encoders' LEAS scores (see Table 2). Correlational techniques were utilized in order to capture the continuous nature of the scale, preventing the loss of information that may have occurred by breaking the LEAS scores up.

Social deftness was positively correlated with the LEAS variable; video encoders who scored higher on the LEAS received higher ratings of social deftness. Higher LEAS scores were also associated with greater ratings of impulse control. However, LEAS scores were not found to be significantly related to the behavioral dimensions of empathy, flexibility with others, the

ability to identify feelings of others, insight into how others are feeling, uncertainty about one's feelings, openness to experience, and social comfortablilty.

Table 2

Correlations of Behavioral Dimensions Ratings with LEAS Scores

	Deftness	Insightful	Empathy	Flexibility	Uncertain	Identify	Openness	Comfortable	Impulse Control	LEAS
Deftness	1	.86**	.82**	.75**	-.45**	.82**	.75**	.82**	.80**	.26*
Insightful		1	.96**	.91**	-.25	.96**	.87**	.64**	.87**	.15
Empathy			1	.95**	-.093	.96**	.89**	.53**	.91**	.17
Flexibility				1	-.02	.93**	.95**	.48**	.86**	.16
Uncertain					1	-.14	-.12	-.70**	-.04	-.05
Identify						1	.90**	.55**	.88**	.15
Openness							1	.54**	.78**	.05
Comfortable								*1*	*.51***	*.21*
Impulse Control									*1*	*.32**

* $p < .05$, two tailed. ** $p < .01$, two-tailed

Encoder gender and behavioral dimensions.

An independent samples t-test was conducted to evaluate if there were significant differences in mean rating scores between genders on each behavioral dimension. After using a conservative Type 1 error rate of .01 to compensate for multiple tests being run, the socially comfortable dimension, t (58) = 2.76, p = .008, was the only dimension that demonstrated significantly different ratings between males and females. Female video encoders (M= 5.0, SD = 1.21) were rated as less socially comfortable than male video encoders (M = 5.83, SD = 1.13). There were near significant differences between the genders on the uncertainty about one's feelings dimensions, t (58) = -2.12, p = .038, and on the social deftness dimension, t (58) = 1.81, p = .076. Female video encoders (M = 3.57, SD = .99) were rated as more uncertain about their feelings than male video encoders (M = 3.07, SD = .84). Female video encoders (M = 5.27, SD = 1.12) were also rated as being less socially deft than males (M = 5.78, SD = 5.78). Descriptive statistics are presented in Table 3.

Table 3

Descriptive Statistics for Male and Female Encoders

	Male Encoders		Female Encoders	
	Avg	Std Dev	Avg	Std. Dev.
Deftness	5.78	1.04	5.27	1.12
Insight	4.96	1.14	4.55	1.27
Empathy	5.01	1.37	4.82	1.51
Flexibility	5.41	1.71	5.07	1.85
Uncertainty	3.07	0.84	3.57	0.99
Identify	4.89	1.13	4.53	1.38
Open	5.31	1.60	4.64	1.72
Comfortable*	5.83	1.12	5.0	1.20
Impulsive	5.90	1.36	5.41	1.73

* = $P < .01$, two-tailed

V. Discussion

The findings of the present study indicate that video encoders with higher LEAS scores were judged as possessing greater social deftness than those with lower LEAS scores during the social confrontation procedure. Video encoders with higher LEAS scores were also judged as having greater impulse control compared to video encoders with lower LEAS scores during the social confrontation. However, LEAS scores were not related to any of the other seven behavioral dimensions being judged. Female encoders were rated as being less socially comfortable than males during the social interaction. Although there were no other significant gender differences found on the ratings of the other behavioral dimensions, it is noteworthy to mention that females were rated as being less socially deft and more uncertain about their feelings at nearly significant levels.

LEAS and Behavioral Ratings

It was hypothesized that video encoders who had previously received higher ratings on the LEAS would subsequently be given higher ratings on behavioral dimensions associated with emotional awareness. This prediction flowed from literature views that emotional intelligence is connected to characteristics of overt behavior in social contexts (Lane, 2000; Goleman, 1995). As emotional awareness is viewed as a "primary component" (p. 171) of emotional intelligence, it follows that emotional awareness should be coupled with equivalent types of explicit social behavior (Lane, 2000). However, the degree to which one's level of emotional awareness

corresponds to real interpersonal behavior is an imperative question that has not previously been explored.

It has been suggested that the higher a person's level of emotional awareness, the more appropriate emotional expression will be in social circumstances (Lane, 2000). One of the ways it has been suggested that emotional awareness can influence social interaction is through the variation of emotional expressions. In other words, a person can alter their emotional expression to fit with the demands of the social context. Coordinating emotional expression in this way does require increasing degrees of differentiation and complexity in expressive behavior (Lane, 2000). The finding that higher LEAS scores were significantly correlated with ratings of social deftness and good impulse control is then paramount. It helps to validate the LEAS, lending support to its importance as a tool for emotional assessment.

Finding a correlation between behaviors linked to emotional awareness and LEAS scores helps to dispel specific concerns over the validity of the LEAS. As discussed previously, there is considerable uncertainty over whether or not the LEAS tool is simply a measure of verbal aptitude (Bydlowski et al., 2005; Lane, 2005; Novick-Kline et al., 2005). In other words, it has been suspected that the LEAS may only represent a person's ability to articulate their emotions on paper; an activity that does not necessarily translate into one's authentic emotional behavior (Novick-Kline et al., 2005). In the present study, higher scores on the LEAS were associated with higher scores on behavioral dimensions correlated with the LEAS in social interactive settings. The behavioral dimensions moved far beyond simply verbal ability as they were rated

during social interactions which encapsulated the full spectrum of verbal, physical, social, and emotional behavioral displays.

The scenarios presented in the LEAS tool require written responses to imaginary situations. When responding to the LEAS a respondent is not exposed to time pressure as they would be when encountering real life scenarios. When only writing about possibilities (imaginary scenes) on paper, there are no concerns over the consequences of chosen responses. Written responses to imaginary scenarios, without real impacts, would likely differ considerably from actions that lead to real life outcomes. It is likely that respondents would react very differently if the scenarios would have real life impacts. The findings in the present study help to confirm that the LEAS can be used to generalize about real life emotional behaviors. Similarly, the findings aren't limited to performance on a paper questionnaire only. Even though the LEAS tool itself only looks at scenarios on paper, the findings in the present study demonstrate that scores on this tool correspond to ratings of behavioral correlates such as impulse control during social interactive settings. Therefore, if someone scores poorly on the LEAS, it can be assumed they would show low levels of social deftness in a social interactive setting.

The finding that people who scored higher on the LEAS also received higher ratings on behaviors related to emotional awareness or intelligence helps to confirm the correspondence of this measurement to real life emotional behavior. It appears as though the LEAS can account for emotional behavior and is not limited to verbal speculations documented at leisure on paper. Even more importantly, this finding suggests that emotional awareness does correspond to interactive behavior, something that has not, as yet, been empirically addressed.

The full range of expressive channels observed during the social confrontation video scenes help to dispel concerns about limitations of the LEAS as well. The recruited video decoders were rating the encoders in the videos on all aspects of behavior presented (verbal and non verbal). As such, impressions of the encoder's behavior moved far beyond ratings of verbal ability and encompassed the entire expressive presentation. People's expressive behaviors, or the amalgamations of a person's speech, movements, gestures, expressions, and postures, contribute to the creation of impressions others generate about them (Ambady & Rosenthal, 1992). According to Gordon Allport (1937) expressive behaviors are imperative measures of personality and impressions formed from only brief exchanges with people are often confirmed upon further association. In other words, impressions made during only short interactions are usually congruent with impressions made after more extensive interactions. Allport and Vernon (1933) established that people's expressive behaviors were quite reliable across a multiplicity of situations. The accuracy of the LEAS measurement tool seems verified further here in that it predicted independent evaluations of the expressive behaviors of the persons being judged as they behaved in a social context.

The validation of the LEAS measurement tool highlights its utility and therefore the positive impact it could have on the future of emotional assessment. With such a tool we can measure emotional awareness with enhanced acuity. This in turn should improve our ability to predict a person's emotional well being, interactive success, and overall adaptability in a number of life domains including school, work, family, and other relationships. Furthermore, as lower

levels of emotional awareness are correlated with poorer health outcomes, this tool can potentially aid in health promotion and in the development of prevention strategies.

Non-Significant Dimensions

While social deftness and good impulse control were significantly correlated with LEAS scores, it is interesting that the seven remaining behavioral dimensions believed to be associated with emotional awareness were not. The lack of association between the LEAS and the seven remaining behavioral dimensions (empathy, flexibility with others, the ability to identify feelings of others, insight into how others are feeling, uncertainty about one's feelings, openness to experience, and social comfortablilty) is discussed here as being attributable to a variety of variables, most of which center on the contextual confines of the social confrontation procedure being rated.

Contextual restrictions on behavioral display.

The disassociation found between the remaining behavioral dimensions and the LEAS variable may be a result of the confines of the context within which the encoders were being rated. The video clips being rated were excerpts of the encoders involved in the Larkin et al. (1998) social confrontation procedure. In this procedure, video encoders were instructed to convince the confederate in their scene to agree to their own terms regarding a prescribed issue. Capturing an authentically occurring interaction between two individuals on video is ethically difficult because video taping of individuals without their written consent is inconsistent with the requirements of many research ethics boards. While the social interaction procedure provided a strong alternative to a natural communication between two people, the regimented parameters set

up for the encoder during the interaction may have inherently denied the visibility of some of the rated behaviors. It is suspected that many of the behavioral dimensions that weren't found to be associated with LEAS scores may have been had they been evaluated during less restrictive situations.

The working premise of the social confrontation procedure likely diminished the appearance of those insignificantly correlated dimensions while, on the contrary, enhancing the visibility of those dimensions that were significantly correlated. For instance, when working to convince another person (who explicitly opposes you) to agree to your terms, the level of empathy you would reveal would likely be minimized. Conversely, the empathy displayed during an interaction where the other person was instructed to agree with or help you, would likely be maximized. Trying to persuade another to agree to one's own terms could also make one seem less flexible, less open to the experiences or ideas of another, and make one appear to have less insight into how others may be feeling, regardless of how flagrant these behavioral dimensions are ordinarily. As the confederate, the other person interacting with the rated encoder in the scene, was instructed to refute the suggestions of the encoder as well, the encoder was further encouraged to remain consistently rigid in their responses and negate the confederate's ideas. This forced display of refutation may have simultaneously caused the encoder to seem less socially comfortable and perhaps more uncertain about their own feelings. In other words, where at times the encoder may have found it more sensible to agree with the confederate's ideas, they were forced away from their natural instincts.

On the contrary, social deftness and impulse control are two variables that were likely highlighted by the confines of the social confrontation procedure; providing they were behavioral skills or dimensions inherent to the encoder to begin with. During the socially prescribed scenario, the encoder had to be socially skilled in order to successfully convince their counterpart to consent to their terms. In addition to having social skill, a person must refrain from impulsivity when attempting to persuade a resistant counterpart. When another person refuses to accept or adopt your opinions in a rigid manner, the impulses to get angry or make sharp comments are likely to surface. Therefore, in this study, during the encoder's efforts to convince the confederate to agree to their own terms their social skills were visible in combination with their ability to refrain from temptations to act on less than desirable impulses. It is likely that what the raters would see was composure in their expression rather than outbursts or displays of anger.

With respect to the rationale discussed above, future validations of the LEAS would need to examine encoders' behaviors in alternate settings where the confines of the situation did not dictate a person's behavior to such a degree. Although the remaining dimensions rated were found to be uncorrelated, it is possible they would be far more related in an alternative interaction. However, the fact that two of the dimensions were highly correlated with higher levels of social awareness despite the contextual confines is an indication that their associations are quite powerful.

Indirect links between behavioral dimensions and the LEAS.

The lack of correlation between many of the behavioral dimensions and the LEAS could also be related to the level of association between the dimensions and emotional awareness in the first place. The literature indicates that the dimensions being measured in the present study are correlates of emotional awareness. However, there are likely varying degrees of correlation between each dimension and the LEAS. Alternatively stated, the significantly correlated dimensions of social deftness and impulse control may have stronger or, more direct links to emotional awareness due to their broader or more complex compositions. When actually examining the literature that defines each of these dimensions, this appears further verified.

In its composition, social deftness seems to include many of the other behavioral dimensions that the encoders were rated on. As such, with its broader domain, social deftness may have a more robust association with emotional awareness. Involved in social deftness is the ability to affect social interaction in order to achieve one's goals (Lane, 2000). Inherent to successful social interaction is the simultaneous monitoring and integrating of self and others' interests (Lane, 2000). Social deftness can be considered similar to the concept of social intelligence. Social intelligence involves the ability to connect with others effortlessly, read their reactions and feelings accurately, lead and organize and handle disputes successfully (Goleman, 1995). Therefore, insight into how others may be feeling, the ability to identify the feelings of others and level of certainty about one's own feelings are dimensions that fall under the social deftness ambit. In a similar vein, avoiding the creation of negative responses in others is also

important for social deftness (Lane, 2000); the ability for which is achieved through empathy. It could also be argued that in order to avoid the creation of negative responses in others (key aspect of social deftness) one must also be flexible with others and even open to experience or ideas; two more of the insignificantly correlated dimensions (Lane, 2000). Social comfortablilty may also fall under the social deftness domain; comfortability with a scenario may make one appear more skillful. It could also be said that impulse control is a component of social deftness as well. Nearly all the uncorrelated dimensions seem to fall under the larger 'social deftness' realm. A weaker correlation with emotional awareness may simply mean that the latter dimensions are less related to emotional or social deftness.

A number of the uncorrelated dimensions comprise the impulse control dimension as well. With its broader domain, impulse control is perhaps also more correlated with emotional awareness and thus more visible. Feeling states are usually followed by impulses to act (Plutchik, 2001). For instance, emotion can cause muscles to tense such as seen in fist clenching, running, attacking, or even yelling. However, impulses to action are not always followed by action due to fear of possible consequences such as retaliation or embarrassment (Plutchik, 2001). Impulse control involves not taking a particular action that is aimed at short-term gratification in order to evade the probable long-term costs (Lane, 2000). Therefore, the ability to foresee the negative consequences of a course of action likely includes depictions of how the self and other would feel if that specific action were taken (Lane, 2000). This type of foresight is achieved only through insight into how others may be feeling; the ability to identify the feelings of others, certainty about one's own feelings and empathy; all four of which belong to the group of

insignificantly correlated dimensions. Exercising flexibility with others, another one of the dimensions found to be insignificantly related to LEAS, could also be considered a required premise of impulse control.

From this discussion, it appears as though social deftness and impulse control house nearly all of, or, at least some combination of all the other dimensions within their domains. In fact, these two dimensions overlap one another to some degree. As a result, it seems conceivable that these two were the broadest of the group of dimensions, involving more emotional complexity and in turn were more likely to be correlated with emotional awareness. Being more correlated makes them naturally more visible among those with higher levels of emotional awareness. However, despite what the literary evidence seems to convey, after examining the actual correlations between all of the dimensions themselves (see Table 2) it seems less likely for this explanation to be solely responsible for the two correlations with the LEAS scores. In other words, for the majority of the dimensions nearly all the other dimensions are also highly correlated with each dimension. As such, the breadth of the social deftness dimension and the impulse control dimension cannot fully explain the significant correlations with the LEAS scores that the other comparatively encompassing dimensions did not reveal. In all likelihood, an additional feature that is exclusive to these two dimensions has enabled such significant correlations.

Dimensions visibility.

Other than a focus group discussing the ratability of the selected dimensions, there was no manipulation done to determine the individual strength of ratability of the chosen dimensions.

Ratability could be a result of dimension familiarity or visibility. In terms of behavior or dimensions that can be rated in thin slices, the behaviors should be observable, or, more precisely, publicly observable (Ambady & Rosenthal, 1992; Kenrick & Funder, 1988). Perhaps those dimensions that are more observable, by the nature of the dimensions themselves, naturally receive higher ratings by the decoders. For instance, it is likely that awareness of emotions or the ability to identify emotions in others is harder to observe than social skill or deftness. Perhaps if all of the dimensions in the present study had been described in explicit behavioral terms, making them more "observable", there may have been more significant correlations between each of the dimensions and the LEAS. For example, empathy could have been phrased as "The person expresses understanding and identification with the other person's feelings through their words or actions." It is very possible that social skill and impulse control were two dimensions that were more observable. It may be a good idea to ensure all the dimensions being rated in future studies are observable to a similar degree.

LEAS and Gender Differences

It was hypothesized that women would receiver higher ratings on objective measures of emotional awareness (behavioral dimensions) in the social confrontation video clips. This prediction was based on the substantial literature that has found females to display higher levels of emotional awareness than males even after controlling for possible confounds such as verbal intelligence (Bajgar, Ciarocchi, Lane, & Deane, 2005; Barret et al., 2000; Boden & Berenbaum, 2007; Ciarocchi, Hynes, & Crittenden, 2005;). Past research has also indicated that women are more accurate at recognizing the emotional expressions of others (Hall, 1984). If females have

been found to display higher levels of emotional awareness, then it would follow they would receive higher ratings on dimensions of behavior believed to be associated with emotional awareness.

Despite what past literature has demonstrated, the females in the present study did not receive significantly higher ratings on the behavioral dimensions believed to be linked to emotional awareness. In fact, females received significantly lower ratings on one of the behavioral correlates of emotional awareness. The females in the social confrontation procedure were actually rated as displaying significantly lower levels of social comfortability than the males. It is also notable that women were rated as less certain about their own feelings (more uncertain) and less socially deft than males at a near significant level for each dimension. The lack of findings here may be partly attributable to the fact that the encoders being rated in the videos were students from psychology classes. Being in a program that tends to attract people with an interest in emotion, the participants may have more similar levels of emotional awareness than is typically found in other populations. This was suspected by Lumley et al. (2005) when they failed to find gender differences on the LEAS in their psychology student population. However, there are a number of other possible explanations that move beyond this sample–related speculation.

Impacts of motivation on emotional awareness.

Regardless of the substantial literature supporting women's higher emotional awareness, there is also evidence that differences in emotion expressions can be reduced by situational cues (Ciarocchi, Hynes, & Crittenden, 2005). According to Ciarocchi et al., motivational instruction

or intervention can significantly increase both men's and women's levels of emotional awareness. In their study, these authors found that motivated men were able to achieve levels of performance equal to that of unmotivated women on the LEAS. The authors concluded that motivation does play a role in emotional awareness and therefore emotional awareness may not be an entirely stable trait. Ciarrocchi et al. further suspected that as motivation can often be situation specific, men may be more motivated than women in specific contexts. As such, if motivation can improve performance on the LEAS written task itself, it is suspected that motivation can improve emotional behavior on an emotionally relevant interaction task as well.

With this motivational effect in mind, it is possible that the men in the present study were more motivated than the women to do well during the social confrontational procedure being rated. It is possible that the instrumental and implicitly competitive nature of the social confrontation procedure may have been a context that is particularly motivating for males. With such motivation, men may have raised their performance to the extent it was on par with the women. As a result, women did not score significantly higher than men on behavioral dimensions associated with emotional awareness. If men and women vary on emotional awareness levels depending on the situation, it seems plausible that either gender could enhance their own level of emotional awareness through consistent motivational training. As Ciarrocchi et al. (2005) suggested repeated motivational interventions over time could result in longer lasting improvements in emotional awareness. This is an important possibility in that it suggests that not only can emotional awareness help in the prediction of a person's emotionally related outcomes, but there may be ways to prevent poor emotional outcomes or promote positive ones.

It is conceivable that the men were motivated by goals of the social confrontation task, while the women were not. It is also conceivable that men were motivated by a scenario that elicited anger, while the women were not. This possibility is further supported when one considers the long tradition of feminine and masculine trait clusters. Numerous writers over the centuries have repeated the suggestion that men are cognitive and analytical while women are emotional and non-analytical (Hall, 1984). Self- report research definitely reveals a decisive feminine and masculine trait discrepancy. While women exceed men on a cluster of traits surrounding socioemotional expression and interpersonal orientation, men exceed women on clusters of task oriented and instrumental traits despite considerable overlap between the sexes (Hall, 1984). The encoders in the video were instructed to reach specific social-interaction goals; mainly to convince the confederate to agree to their own terms. With such an instrumental task at hand, the men may have been more in their element. In the case of appearing socially comfortable, men may have exceeded women as they have felt particularly comfortable working on such a goal-oriented exercise. If the men and women were perhaps observed during a natural interaction without the task oriented pressures to perform, the women would have likely flourished as they are known to exceed on traits associated with interpersonal orientation and emotional expression (Hall, 1984). It is possible that women are better at articulating their emotional responses when not under pressure to reach task specific goals.

The impact of situational variables on gender differences in emotional awareness was also revealed in a study by Croyle and Waltz (2002). These authors examined the role of emotional awareness in couples' relationship satisfaction. Contrary to the literature, Croyle and

Waltz (2002) found that women were more emotionally aware than men in response to couples situations but not in response to general situations outside the relationship. The greater emotional awareness ability displayed by the women was more pronounced when dealing with content surrounding close male–female relationships rather than content surrounding difficult life situations in general. When responding to salient male–female relationship situations, their interest and familiarity with such scenarios likely motivated and as such enhanced their emotional behavioral performance. As a result, it is conceivable that the social confrontational procedure utilized for the encoders in the present study, may have centered on situations which the women didn't find particularly salient and as such their emotional awareness performance did not exceed male performance.

Croyle and Waltz 's (2002) finding that women preformed better on the LEAS scenarios that had to do with close male and female relationships challenges the finding that women score significantly higher on levels of emotional awareness when measured by the LEAS. It may be that because there are a number of relationship-oriented questions on the instrument, the women end up scoring higher than men on average. It would be important for future investigations of gender differences on the LEAS to control for male-female close relationship scenarios.

Gender and social comfortablity.

As mentioned earlier, females were actually rated as significantly less socially comfortable then men during the social interaction. This finding was contrary to the predicted hypothesis. It has already been suggested that the task-oriented social confrontation procedure may have been a source of motivation for males who have been traditionally reported to exceed

females on traits surrounding task orientation. With such motivation the males may have appeared more comfortable with the whole situation. However, the level of comfortability may also be a result of how women and men variously express themselves emotionally. Men with lower scores on the LEAS are more likely to represent their emotions in action oriented terms (Barret et al., 2000). As such, men may be able to manage their behavior in an automatic manner while women who represent experience with complex language may be more likely to use self-reflecting coping strategies that are more language-based (Barrett et al., 2000). As result, when placed in an intensive social confrontational procedure the reflexive and automatic responses of the men may make them appear more socially comfortable and even skillful than the women. The women may take longer to respond as they work to self-reflect and come up with appropriate verbal expressions based on those reflections. As such, women may invariably come across as hesitant or even uncomfortable when placed in a social confrontation that demands quick action and responses. This contrasts performance on the LEAS measure where the women would have time to self-reflect and come up with appropriate verbal expressions and consequently score higher.

Women have traditionally been stereotyped as being interpersonally sensitive (Hall, 1984). One explanation behind this long-held stereotype is that the women's interpersonal penchant is derived from their nearly universal accountability for child rearing which predisposes them to be prosocial and nurturing (Hall, 1984). The need to decipher children's nonverbal cues of emotion, intention and need could also generate the anticipation that woman are generally responsive and accurate in judging people's emotions (Hall, 1984). With this stereotype in mind,

the women in the social confrontational procedure may have come across as more uncomfortable simply because they were more attuned to and more aware of the other person's disparate emotions in the scenario. With more awareness of the confederate's disappointment, the women may have felt more uneasy about persisting in such a discordant manner with the confederate than the males who are traditionally less emotionally aware to begin with. If the women had been able to proceed as they chose or were naturally inclined to, they likely would have appeared far more socially comfortable.

Gender prescribed societal pressures may have also affected the female's social comfortablilty during the confrontation procedure. In other words, instead of being motivated to succeed at the prescribed task, females may have felt vulnerable to extraneous pressures to act in a pleasing manner. In a study that examined ability and motivation as reasons for gender differences in negative affect displays, Davis (1995) found that girls hid disappointment more than boys when they received a disappointing gift in front of an experimenter. Davis (1995) cited socialization practices as one of the possible reasons for the gender difference and speculated that society may exert more pressure on females to act agreeably. While Davis was only looking at children in her particular study, the impact of socialization generally relates to what is known as 'display rules' (Ekmann, Friesen and Ellsworth, 1972) or rules that govern the appropriateness of expressive behavior. Such rules, presumably learned in childhood, are used to regulate one's affective behavior and may be culturally prescribed or represent social conventions (Saarni, 1984). It is also quite likely that there are more social pressures put onto females to be more agreeable despite how they are really feeling (Saarni, 1984). In the present study, perhaps the

female encoders felt more pressure to act in an agreeable manner than the males. However, acting in an agreeable manner conflicted with the goals of the social confrontation procedure. As such, the females may have struggled somewhat more than the males did and therefore came across as less socially comfortable during this particular interaction. Perhaps during another interaction where the females were not required to convince a demanding person to agree to their terms, their social comfort level would have been equal to if not greater than the males.

It is apparent from this investigation that the gender differences in emotional awareness revealed previously in the literature need further investigation. It may be that females are better at discussing their emotional responses on paper when they have time to self reflect and put their feelings into thoughtful written responses. Males on the other hand, may simply be more action-oriented. As a result, male's responses on the written LEAS questionnaire may reflect their action-oriented thinking resulting in lower scores, regardless of verbal aptitude which has been controlled for in the past. It is also conceivable that questions on the LEAS often center on relationship issues between genders which women characteristically spend more time thinking about and have more interest in. It is also feasible that women's astute emotional awareness is compromised when faced with social interactive dissonance. Perhaps women don't have higher levels of emotional awareness in general, but differences in emotional awareness between the genders may vary depending on the situation in which one's awareness is measured.

Limitations

One limitation of the present study may have been the uneven gender breakdown of the decoders. Of the 11 decoders utilized, nine were female. There were a small number of

psychology graduate students (who were disproportionately female) to draw from. Graduate students were chosen based on their mature student status and thus their likely ability to better understand the importance of maintaining confidentiality. Psychology graduate students in particular were chosen due to their experience with human research. Greater exposure in this case was equated with a greater understanding around the issues of confidentiality. The decoders' ratings may have been different if there was a more even gender distribution. However, it is important to note that research has consistently shown that females are superior decoders of nonverbal expressions than males (Hall, 1984). It is also noteworthy that in the Ambady and Rosenthal (1993) judgment study only female raters were used; a deliberate choice based on the evidence of strong female decoding abilities. As the possibility for a gender interaction between encoder and decoder was not the focus of the present study, this uneven gender breakdown is not of grave concern. The present study focused on a collective judgment and making sure such judgments' displayed strong reliabilities. As high reliabilities were found for all the measures, it is possible to be comfortable with the quality of the judgment data despite the uneven gender split.

Another limitation of this work is the use of a simulated social interaction. The Larkin et al. (1998) social confrontation procedure was created as part of an attempt to produce a standard procedure for examining cardiovascular reactivity to interpersonal challenges that would alleviate many of the difficulties associated with previous methods. The authors selected specific stimuli that would be pertinent to the sample, choosing scenes that were rated by undergraduate students as the most realistic, most likely to happen, and most stressful. They also chose scenes

that could be played by both males and females. Despite the pertinence of the interaction, it was a simulated scene nonetheless. The level of authenticity of the different encoders in the data clips varied considerably. As a result, the simulated nature of the interaction was likely apparent to the raters at times. The diminished authenticity of the clips of encoders may have distracted the decoders and prevented them from taking the encoder behavior seriously. In addition, the lack of authenticity may have biased the decoders, causing them to rate the encoder more negatively. Furthermore, the unnaturalness of standardized confederate responses likely affected encoder responses. Perhaps a better alternative would be to videotape participants during natural interactions with their prior consent. Performing manipulation checks to ascertain the level of authenticity for each encoder clip would also help eliminate this confound.

A related limitation of this study was that it involved the rating of encoders during only one type of interaction. The instructions of the social confrontation likely restricted the behavior of the encoders considerably. Instead of responding freely, the encoders were obliged to achieve scene-specific goals while responding to a discordant confederate. The scene itself was actually designed to elicit anger on the part of the encoders (Larkin et al., 1998) while it instructed the encoder to gain confederate consent. Perhaps more generalizable ratings would be achieved if the person in the video got rated during a variety of different interactions; interactions that evoked different emotions such as happiness, sadness, fear or no specific emotions at all. This would enhance the relevancy, representativeness, and in turn, the ecological validity of the behavior being judged, which is believed to be important for accurate prediction (Ambady & Rosenthal,

1992). Future validation studies of the LEAS should attempt to correlate the LEAS with behavior presented in a variety of interactive settings.

The use of more explicitly defined behavioral dimensions might have improved the rating task as well. Many of the behavioral dimensions being rated were very broad, subjective, and perhaps hard to detect or observe. Elaborating on the behavioral dimensions to make them more objective could have eased the rating task. This could have been done by describing each dimension as a behavior or something observable. Performing a pilot study or manipulation check to determine which dimensions were most observable could improve the quality of the ratings made. Shortening the length of the rating task could also improve this study. In the present study, each decoder watched 60 different encoders for 30 seconds each. Shortening the length of exposure to rating material is supported when one considers the finding that judgments based on 30 seconds of exposure are not significantly more accurate than judgments based on six seconds of exposure (Ambady & Rosenthal, 1993).

An improvement to the present study could have been to include emotional awareness self-report measures. This could have potentially added to the quality of the judgment data. The present study looked at the consensus (degree to which two judgments by diverse observers of the same individual concur with each other) and accuracy (the degree to which personality judgments distinguish real qualities of the individuals being judged) (Funder & West, 1993). However, the third interrelated question about personality judgment was not addressed; self-other agreement. Addressing this question would potentially add to the quality of the judgments being made as the issues of consensus, accuracy, and self-other agreement all influence the

primary value of the data that form the basis of personality research (Funder & West, 1993). This would be interesting to look at as research has demonstrated that there are some close experimental associations between consensus and self- other agreement (Funder & West 1993). Research into the precision of self-judgments has shown that self-judgments often concur with judgments made by others and that they can be effective at forecasting behavior (Kolar et al., 1996).

A final way in which to improve on the current study would be to assess the influence of physical attractiveness on ratings of behavioral dimensions. Although Ambady and Rosenthal (1993) did not find that judges were strongly influenced by physical attractiveness, the dimensions being measured in their own studies were considerably different dimensions in considerably different contexts than in the present study. The Ambady and Rosenthal study looked at teacher effectiveness ratings and perhaps it is genuinely accepted that appearance has very little to do with quality in teaching. On the other hand, it is possible that measuring social skill or empathy may be impacted by how attractive someone is. Comparing the dimension ratings with attractiveness would be worthwhile in order to eliminate this potential confound.

Implications

The results of the present study indicate that emotional awareness, as operationalized by the LEAS, does correspond to actual interpersonal behavior. This is an important finding as this question has not been formally addressed in empirical literature before this. As it has been suspected that one's awareness is correlated with interpersonal behavior, this finding is paramount. The ability of someone to alter their emotional expression in order to accommodate

the needs of social context requires a considerable degree of differentiation and complexity (Lane, 2000). This complexity, we have now confirmed, is found in higher levels of emotional awareness and is displayed during social interaction.

These findings provide strong validation for the LEAS as an emotional assessment tool. Scores on the LEAS were associated with behaviors believed to be correlated with emotional awareness during a social interaction. As a result, the LEAS can be viewed as a valid measure of a person's emotional awareness. Finding valid tools in this increasingly important area of emotional assessment is invaluable.

Validating the LEAS tool has some far-reaching practical and clinical utility associated with it. Higher levels of emotional awareness appear to be associated with increases in adaptational success. According to Plutchik (2001) successful adaptation involves the ability to feel and express all emotions in appropriate settings. Therefore, with the importance of emotional awareness to nearly all of life's domains (Goleman, 1995) the LEAS might assist in making many practical predictions. In particular, knowing a person's level of emotional awareness might help predict how well they do in school, how well they make friends, and how well they handle stress. Such a measure can also help predict how a person performs at a job, how successful their marriage might be, how well they will lead a group of people and even whether or not they will be bullied (Goleman, 1995). Low levels of emotional awareness or the lack of ability to symbolize emotions has also been suggested to show itself in terms of discomfort or avoidance of social relationships (Nemiah & Sifneos, 1970). Somatic conditions such as hypertension or irritable bowel syndrome or disorders such as panic and eating disorders

in particular have also been associated with disturbed emotional awareness as well (Taylor, 2000; Taylor et al., 1996). As such, determining a person's emotional awareness may aid in predicting their health status or long-term health outcomes. This also opens up the possibility for preventing the suspected outcomes. Knowing that a person has lower levels of emotional awareness highlights an opportunity to work on avoiding expected negative outcomes.

Despite these exciting findings, it is important to note that the associations found here came from observations of a provocative social confrontation. For further validation this study should be repeated in a variety of social interactive settings in order to permit greater generalization of the results. In other words, it needs to be determined whether the LEAS scores would be correlated with emotional awareness dimensions in the same way during everyday conversations or during interactions that provoked alternative emotions such as sadness or fear. It is anticipated here that because the "confrontation" was a challenging social interaction the associations would likely be apparent in less emotionally tense scenarios. The relevancy of the behavior being judged is vital in terms of improving predictions of behavior (Ambady & Rosenthal, 1992); looking at a variety of situations improves the relevancy.

The finding that women did not receive higher ratings on behavior dimensions correlated with emotional awareness makes it apparent that further investigation into previously documented gender difference is worthwhile. Women and men may display varying levels of emotional awareness depending on the situation they are involved in. While considerable literature has found females to display higher levels of emotional awareness than males (Barret et al., 2000, Ciarocchi, Hynes, & Crittenden, 2005; Bajgar, Ciarocchi, Lane, & Deane, 2005; Boden

& Berenbaum, 2007) the present study did not find the same gender differences apparent in the behavioral ratings. It is possible that when writing one's feelings down on paper without time pressures to respond, women may show higher emotional awareness than men; particularly when the subject matter appeals to them (close male-female relationships). However, when faced with real-life pressures to respond, women may be equally or even less emotionally aware than men. Furthermore, in situations involving provocation, women may have difficulty maintaining high levels of emotional deftness due to ingrained social expectations to please. As such, emotional awareness and the skill of emotional behaviour may be more situationally dependent (less stable) than previously assumed.

According to Ciarocchi et al. (2005), motivational instruction or intervention can significantly increase both men's and women's level of emotional awareness. This may have accounted for the lack of gender differences obtained in the present study and the contradictory finding that women were rated as less socially comfortable than men. Whatever the case, the gender differences in emotional awareness are obviously complex. Further behavioral verification of the previously reported gender differences is recommended.

The possibility that emotional awareness can be affected by situational cues or motivation has some important implications for training and development. Certain motivational strategies may make it possible to heighten a person's emotional awareness over time. As such, a person may be able to gain emotional awareness skills which in turn may increase their interactive success and adaptation. Increasing these attributes in a person is paramount as such improvements can be expected to increase their overall life satisfaction and health.

In conclusion, the LEAS assessment tool can be considered more than just a measure of verbal aptitude. Instead, it can be conceptualized as an effective tool for measuring one's emotional awareness and in turn, predicting aspects of their emotional interactive behavior. Such verification enhances our understanding of emotional assessment by offering increased support to the instrument. At this time, further investigations into the impacts of motivations or interventions on emotional awareness would be important. The prospect that one's emotional awareness could be manipulated offers exciting possibilities for developing and increasing emotional awareness in individuals. Being able to increase a skill that is associated with better adaptation and health is invaluable. The benefits associated with increased emotional awareness make finding ways to measure and subsequently alter it a high priority.

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VII. Appendices

Appendix A Levels of Emotional Awareness Scale (Lane et al., 1990)

Subject#:_____ Study#:_____

INSTRUCTIONS

Please describe what you would feel in the following situations. The only requirement is that you use the word "feel" in your answers. You may make your answers as brief or as long as necessary to express how you would feel. In each situation there is another person mentioned. Please indicate how you think that other person would feel as well.

Each of the following questions is presented on a separate page with room left for the participant to write as much or as little as they like.

1. A neighbor asks you to repair a piece of furniture. As the neighbor looks on, you begin hammering the nail but then miss the nail and hit your finger. How would you feel? How would the neighbor feel?

2. You are walking through the desert with a guide. You ran out of water hours ago. The nearest well is two miles away according to the guide's map. How would you feel? How would the guide feel?

3. A loved one gives you a back rub after you return from a hard day's work. How would you feel? How would your partner feel?

4. You are running in a race with a friend with whom you have trained for some time. As you near the finish line, you twist your ankle, fall to the ground, and are unable to continue. How would you feel? How would your friend feel?

5. You are traveling in a foreign country. An acquaintance makes derogatory remarks about your native country. How would you feel? How would your acquaintance feel?

6. As you drive over a suspension bridge you see a person standing on the other side of the guardrail, looking down at the water. How would you feel? How would the person feel?

7. Your sweetheart has been gone for several weeks but finally comes home. As your sweetheart opens the door....how would you feel? How would your sweetheart feel?

8. Your boss tells you that your work has been unacceptable and needs to be improved. How would you feel? How would your boss feel?
9. You are standing in line at the bank. The person in front of you steps up to the window and begins a very complicated transaction. How would you feel? How would the person in front of you feel?

10. You and your spouse are driving home from an evening out with friends. As you turn onto your block you see fire-trucks parked near your home. How would you feel? How would your spouse feel?

11. You have been working hard on a project for several months. Several days after submitting it, your boss stops by to tell you that your work was excellent. How would you feel? How would your boss feel?

12. You receive an unexpected long-distance phone call from a doctor informing you that your mother has died. How would you feel? How would the doctor feel?

13. You tell a friend who is feeling lonely that she/he can call you whenever she/he needs to talk. One night she/he calls at 4:00 a.m. How would you feel? How would your friend feel?
14. Your dentist has told you that you have several cavities and schedules you for a return visit. How would you feel? How would the dentist feel?

15. Someone who has been critical of you in the past pays you a compliment. How would you feel? How would the other person feel?

16. Your doctor told you to avoid fatty foods. A new colleague at work calls to say that she/he is going out for pizza and invites you to go along. How would you feel? How would your colleague feel?

17. You and a friend agree to invest money together to begin a new business venture. Several days later you call the friend back only to learn that she/he changed her/his mind. How would you feel? How would your friend feel?

18. You sell a favorite possession of your own in order to buy an expensive gift for your spouse. When you give him/her the gift, he/she asks whether you sold the possession. How would you feel? How would your spouse feel?

19. You fall in love with someone who is both attractive and intelligent. Although this person is not well off financially, this doesn't matter to you -- your income is adequate. When you begin to discuss marriage, you learn that she/he is actually from an extremely wealthy family. She/he did not want that known for fear that people would only be interested in her/him for her/his money. How would you feel? How would she/he feel?

20. You and your best friend are in the same line of work. There is a prize given annually to the best performance of the year. The two of you work hard to win the prize. One night the winner is announced: your friend. How would you feel? How would your friend feel?

Appendix B Social Confrontation Procedure (As taken from Larkin et al., 1998)

The "Mess" Scene

Your roommate is a slob and the apartment is a mess.

You always do your share. You ask him/her to do the dishes because you have a date/friends coming over. You get back home and the place is worse that when you left it.

GOAL: Get your roommate to agree to clean up the apartment.

CONFEDERATE PROMPTS:

--I do my share, I pick up after myself

--It's not that bad

--It's not exactly dust-free, but it looks OK

--I'll get to it later

--You should have given me more notice

--I cleaned as much as I could, but I had to go to class

--I didn't have time

--I'm busy. I've got to study for an exam.

--I've got things to do. I can't clean the apartment now.

--You mess up the apartment too.

--I get tired of picking up after you.

--They're you friends.

--If it bothers you so much, you do it!

The "Noise" Scene

You've got to go to bed early tonight because you have a major test first things in the morning. Your neighbor comes home and turns on the stereo full blast.

GOAL: Get your neighbor to agree to turn off the stereo.

CONFEDERATE PROMPTS:

--I didn't know you were at home.

--It wasn't that loud

--I wasn't playing it that long.

--It's still early.

--You could fall asleep with it on.

--It's a stress release for me and my friends during exams.

--Come one, we won't be playing that much longer, only a couple of hours.

--We can't hear our music from outside.

--It's my place. I can play my music if I choose.

--You play your music real loud.

--At least I have better taste in music.

--Get some earplugs. I'll be glad to get you some cotton if you don't have any.

Appendix C Likert Scales for Behavioral Ratings of Video Clips.

Based on Ambady and Rosenthal (1993).

Rating Forms

On each of the following pages are a series of 9 personal descriptors followed by scales ranging from 0 to 9. Please rate each individual person in the video samples you view in terms of how correct each descriptor is for them by circling the most appropriate point on the scale. There are 60 different people in the video samples to rate and a separate rating form for each of those 60 people. Rate each person after viewing the 30 second video sample of them. As shown in the sample scale below, **a score of 0 means the descriptor does *NOT* apply** to the person; a score of **9 means the descriptor totally applies** to the person. Please do not make your ratings until each sample is finished and you are asked to rate.

SAMPLE: Descriptor would go here.
0 - - - -1 - - - -2 - - - - 3 - - - - 4 - - - - 5 - - - - 6 - - - - 7- - - - 8- - - -9

Description does totally apply

PLEASE START RATING ON THE NEXT PAGE BEGINNING WITH VIDEO SAMPLE 1.

0 - - - -1 - - - -2 - - - - 3 - - - - 4 - - - - 5 - - - - 6 - - - - 7- - - - 8- - - -9
Description does *Description*
***not** apply* *totally applies*

1. Is socially deft or skillful.

0 - - - -1 - - - -2 - - - - 3 - - - - 4 - - - - 5 - - - - 6 - - - - 7- - - - 8- - - -9

2. Has good insight into how others may be feeling.

0 - - - -1 - - - -2 - - - - 3 - - - - 4 - - - - 5 - - - - 6 - - - - 7- - - - 8- - - -9

3. Has empathy for others.

0 - - - -1 - - - -2 - - - - 3 - - - - 4 - - - - 5 - - - - 6 - - - - 7- - - - 8- - - -9

4. Is flexible with others.

0 - - - -1 - - - -2 - - - - 3 - - - - 4 - - - - 5 - - - - 6 - - - - 7- - - - 8- - - -9

5. Is uncertain about his/her own feelings.

0 - - - -1 - - - -2 - - - - 3 - - - - 4 - - - - 5 - - - - 6 - - - - 7- - - - 8- - - -9

6. Is able to identify the feelings of others.

0 - - - -1 - - - -2 - - - - 3 - - - - 4 - - - - 5 - - - - 6 - - - - 7- - - - 8- - - -9

7. Is open to experiences or ideas.

0 - - - -1 - - - -2 - - - - 3 - - - - 4 - - - - 5 - - - - 6 - - - - 7- - - - 8- - - -9

8. Is socially comfortable.

0 - - - -1 - - - -2 - - - - 3 - - - - 4 - - - - 5 - - - - 6 - - - - 7- - - - 8- - - -9

9. Has good impulse control.

0 - - - -1 - - - -2 - - - - 3 - - - - 4 - - - - 5 - - - - 6 - - - - 7- - - - 8- - - -9

Appendix D Pilot Study; Effective Reliability of the Ratings of all the Judges

Rosenthal's (1987) intraclass correlations

$$\mathbf{R\ (est.)} = \frac{\textit{MS}\ \textbf{encoders} - \textit{MS}\ \textbf{residual}}{\textit{MS}\ \textbf{encoders}}$$

1. Has good insight into how others may be feeling. (R = .77)

2. Has empathy for others. (R = .779)

3. Is open to experiences or ideas. (R= .752)

4. Is receptive to other's values. (R = .777)

5. Has solid knowledge of one's own thinking and experiencing. (R <.70)

6. Is flexible with others. (R= .863)

7. Is able to adapt to situations easily. (R = < .70)

8. Is impulsive and reactive when interacting with others. (R= .876)

9. Is socially comfortable. (R = .7303)

10. Recognizes the emotions of others. (R = .7016)

11. Prefers social isolation. (R <.70)

12. Uses emotions to communicate to others. (R < .70)

13. Uses emotions to assist one's reasoning. (R <.70)

14. Has good impulse control. (R= 0.918)

15. Is generally zealous or enthusiastic. (R < .70)

16. Is socially deft or skillful. (R = .745)

17. Is uncertain about one's feelings. (R = .845)

18. Is genuine or real. (R < .70)

19. Has an overly positive view of self. (R = .733)

Appendix E Ten Question Version of the LEAS (Lane et al, 1990)

LEAS-A

Subject#:_____ Study#:_____

INSTRUCTIONS

Please describe what you would feel in the following situations. The only requirement is that you use the word "feel" in your answers. You may make your answers as brief or as long as necessary to express how you would feel. In each situation there is another person mentioned. Please indicate how you think that other person would feel as well.

1. A neighbor asks you to repair a piece of furniture. As the neighbor looks on, you begin hammering the nail but then miss the nail and hit your finger. How would you feel? How would the neighbor feel?

2. A loved one gives you a back rub after you return from a hard day's work. How would you feel? How would your partner feel?

3. As you drive over a suspension bridge you see a person standing on the other side of the guardrail, looking down at the water. How would you feel? How would the person feel?

4. Your boss tells you that your work has been unacceptable and needs to be improved. How would you feel? How would your boss feel?

5. You are standing in line at the bank. The person in front of you steps up to the window and begins a very complicated transaction. How would you feel? How would the person in front of you feel?

6. You have been working hard on a project for several months. Several days after submitting it, your boss stops by to tell you that your work was excellent. How would you feel? How would your boss feel?

7. Your dentist has told you that you have several cavities and schedules you for a return visit. How would you feel? How would the dentist feel?

8. Your doctor told you to avoid fatty foods. A new colleague at work calls to say that she/he is going out for pizza and invites you to go along. How would you feel? How would your colleague feel?

9. You and a friend agree to invest money together to begin a new business venture. Several days later you call the friend back only to learn that she/he changed her/his mind. How would you feel? How would your friend feel?

10. You fall in love with someone who is both attractive and intelligent. Although this person is not well off financially, this doesn't matter to you -- your income is adequate. When you begin to discuss marriage, you learn that she/he is actually from an extremely wealthy family. She/he did not want that known for fear that people would only be interested in her/him for her/his money. How would you feel? How would she/he feel?

Appendix F Information Sheet

Psychology Study Information Letter
Study Title: Judging the Interactive Behavior of Different Personality Types

Investigator: Karen Shepherd,
Candidate for Master of Science in Psychology,
Phone: 960-5747,
E-mail: shepherk@unbc.ca
Supervisor: Dr. Ken Prkachin
Phone: 960-6633
E-mail: kmprk@unbc.ca

The purpose of the present study is to compare how people with different personalities get rated on interactive behavior dimensions during social interaction. The findings may reveal a correlation between certain personality traits and expressed behavior during social interactions. Your selection for participation in this study was based on your graduate student status.

This study will take place in one session that will last approximately one hour. You will complete the study individually with the researcher present at all times in case you need their assistance in any way. After reading this information form, you will be asked to sign (and retain a copy of) the consent form indicating you understand the study and what you are being asked to do.

Once the consent form is complete you will be handed 60 identical rating forms in a specific order. Each form contains 9 separate rating questions each addressing a specific behavioral dimension. You will be asked to use the rating forms to rate the 60 different persons you will see in the video you will watch (9 behavioral dimensions to rate for each person in the video). The video will show 60 different persons during interactive behavioral tasks. After each clip ends there is a pause during which we would like you to complete the rating form. Once you have watched all 60 different persons in the video and subsequently rated each one you will be asked to hand in the completed rating forms.

After handing in the rating forms you will be debriefed by the experimenter. During this time you are invited to ask any questions you may have. Full details will be sent to you via e-mail letter once all data has been collected, should you wish.

Please note that your participation in this study is completely voluntary. You are free to withdraw from participation at any time. If you do choose to withdraw at any time any responses you contributed will be destroyed and discarded immediately at your request. There are no known risks involved in participating in this study. The benefit to participating is the opportunity to be a part of research and be exposed to the processes research involves. Note as well that all the information you provide will be completely confidential. It will be stored securely in the laboratory indefinitely and will only be made available to staff working on this project or related projects. Your anonymous responses may

be re-examined or utilized to contribute to future research conducted in this laboratory only. Any concerns about the project can be made to the Office of Research, located in the Administration Building at UNBC, on the main floor (960-5820 or by email: reb@unbc.ca).

Appendix G Informed Consent

Note: the Office of Research at UNBC is available to protect your rights. This office will receive any complaints or concerns you may have with regard to your involvement in this study. The office is located on the main floor of the Administration Building (960-5820 or by email: reb@unbc.ca).

I, _____, have read the description of the study **"Judging the Interactive Behavior of Different Personality Types"** described in the foregoing information letter.

I understand that, as a participant, I will be asked to perform the tasks outlined in the information letter. I further understand that any information collected through my participation in this study is to be used for research purposes only and that my anonymity will be protected at all times. I have been assured that my participation in the study is voluntary and I may withdraw at any time. I further understand that once I withdraw I can request to have any of my responses destroyed immediately. I understand there are no known risks involved in participating in this study. I recognize that the benefit to being involved in this study is the opportunity to be a part of research and be exposed to the research process.

I have read and understood the foregoing and the information letter and give my consent to participate.

Date: _____/_____/_____\
Day Month Year

Participant's name (Please print):_____

Age:_____

Participant's signature:_____

Witness:_____

Would you like to receive a brief e-mail summary of the results? YES NO