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What You are Feeling and Why: Two Distinct Types of Emotional Clarity

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Abstract

Individual difference approaches have typically treated emotional clarity (i.e., one's understanding of one's own emotions) as a unitary construct. Based on strong theoretical reasons, in this study we explored two related aspects of emotional clarity in a student sample. The first, type awareness, refers to the extent to which people typically can identify and distinguish the types of emotions they experience. The second, source awareness, refers to the extent to which people typically know the causes of their emotions. We psychometrically distinguished self-report items of source and type awareness. Items measuring type awareness were obtained from traditional measures of the construct, clarity of emotions. As no existing measures assess individual differences in source awareness, we developed a set of items with strong face validity. Our results provide initial evidence that one can measure source and type awareness separately.

Keywords

emotional clarity; emotional awareness; alexithymia; source of emotions

1. Introduction

As described by affective forecasting theories (see Wilson & Gilbert, 2005), and affect as-information theory (Schwarz, 1990), emotions serve as information that people evaluate when making decisions, judgments, and attributions. One factor that influences how useful and adaptive emotions are in this regard is the extent to which they are understood. Previous theory and research has typically treated this understanding as a one-dimensional facet, labeled emotional clarity (see Gohm & Clore, 2000; 2002; Coffey, Berenbaum, & Kerns, 2003; Salovey, Mayer, Goldman, Turvey, & Palfai, 1995). Emotional clarity represents the extent to which people can identify, discriminate between, and understand their feelings. Research using factor analysis, hierarchical cluster analysis and multidimensional scaling (MDS) of self-report scales has identified emotional clarity as one of two dimensions, along with attention to emotions, underlying constructs such as emotional awareness, alexithymia, and emotional intelligence (Coffey et al., 2003; Gohm & Clore, 2000). Attention to

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emotions and emotional clarity are relatively distinct from dimensions representing emotional expression and intensity (Coffey et al., 2003; Gohm & Clore, 2000).

In contrast to previous theory and research, we propose that there are at least two distinguishable, albeit strongly associated, facets of emotional clarity. The first facet, which we refer to as source awareness, is the extent to which people typically know the causes of their emotions. The second facet, which we refer to as type awareness, is the extent to which people can typically identify and distinguish the types of emotion (e.g., anger vs. fear) they experience. The existence of two facets of emotional clarity has been suggested by at least one other study (Baker, Thomas, Thomas, & Owens, 2007). With the current research, we attempted to psychometrically distinguish self-report measures of source and type awareness.

Existing self-report scales of emotional clarity, such as the Trait Meta Mood Scale (TMMS; Salovey et al., 1995) and the Toronto Alexithymia Scale (TAS; Bagby, Parker, & Taylor, 1994; Bagby, Taylor, & Parker, 1994) likely measure what we refer to as type awareness, as most emotional clarity items included on these scales refer to the understanding, or lack thereof, of the *types* of emotion experienced. Therefore, the many studies showing that emotional clarity is associated with a variety of outcomes, such as well-being and coping, (e.g., Gohm & Clore, 2002) suggest that understanding the types of emotion that one experiences (as measured by emotional clarity scales) is an important aspect of emotional understanding.

We propose that understanding the source of emotions is an important and distinct aspect of emotional understanding. This proposal is based on evidence that the manipulation of source awareness has large effects on judgments and attributions (Gasper & Clore, 1998; 2000; Keltner, Locke, & Audrain, 1993; Schwarz & Clore, 1983). For example, Schwarz and Clore (1983) induced unpleasant moods in half the participants and pleasant moods in the other half. By providing participants with an attribution for their moods that was unrelated to a judgment at hand (i.e., manipulation of source of emotions), the mood effects on the judgment were eliminated among participants in the unpleasant mood condition. These studies have been replicated and extended using a variety of mood inductions and source awareness manipulations (see Gasper & Clore, 1998; 2000). These studies provide evidence that the manipulation of source awareness has important consequences for information processing. However, besides a study in which individual differences in the extent to which emotions are attributed to “biological changes” or “food eaten” are measured (Baker et al., 2007), not a single study that we know of has measured individual differences in source awareness.

With this research, we attempted to psychometrically distinguish source and type awareness. To achieve these goals we developed a small number of self-report items to measure source awareness since we were unable to find items from existing scales that suited this purpose. To measure type awareness we used a subset of self-report items from measures of emotional clarity. As discussed in more detail later, we used self-report measures of both type and source awareness, rather than performance-based or behavioral measures, based on our hypothesis that understanding one’s own emotions is best measured using self-report. This is because understanding the source and type of one’s emotions may be most accessible to introspection by the individual experiencing those emotions.

In this study we used MDS and confirmatory factor analyses (CFA) to psychometrically distinguish items measuring source and type awareness. Unlike factor analysis, MDS emphasizes naturally occurring relations among items with limited preconceived assumptions about the structure of the data (Davison, 1983; MacCallum, 1974; Turkheimer,

Ford, & Oltmanns, 2008). Whereas MDS is good for understanding the structure of the data, factor analysis is good for reproducing data (Turkheimer et al., 2008). By ascertaining structure that can be tested with CFA, here we use MDS as an effective complement to CFA (e.g., Aarons, Goldman, Greenbaum, & Covert, 2003; Palmieri, Boden & Berenbaum, 2009). Using MDS, we tested the hypothesis that a two-factor model with latent factors representing source and type awareness would fit the data well, and that this model would fit better than a single factor model. We also used MDS to determine the items that best represented the source and type awareness domains. We then used CFA on an independent sample to confirm the structure suggested by MDS (Borg & Groenen, 1997). Based on these results, we formed source and type awareness scales that consisted of the items that best represented these respective domains.

2. Methods

2.1 Participants

Participants were college students who received course credit or monetary compensation for partaking in this study. Listwise deletion was used to remove cases for which more than one item for measures of type and source awareness was missing ($n = 10$, 1.6%). Of the remaining 456 cases (51.3% female out of 417 cases reporting gender), the average age was 19.4 years ($SD = 1.7$), and the racial composition was primarily European-American (68.8%), followed by Asian/Asian-American (18.2%), African-American (4.3%), and Hispanic/Latino/a (3.5%). Each participant attended one or two sessions during which he/she completed a variety of measures, including those used in these analyses.

2.2 Measures

2.2.1 Type awareness—Type awareness was measured using selected items from well validated measures of emotional awareness that were chosen based on the recommendations of a study that used MDS and CFA to determine the best representatives of this domain (Palmieri et al., 2009). Eight items came from the clarity scale of the TMMS (Salovey et al., 1995) and four items from the identification subscale of the TAS (Bagby, Parker, et al., 1994; Bagby, Taylor, et al., 1994). Participants responded to items (see Table 1) using a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree). Items were scored so that higher scores represented higher type awareness.

2.2.2 Source awareness—Source awareness was measured using items we designed for this purpose. As shown in Table 1, each item asks the participant if he/she understands the source of particular types of emotions he/she experiences. By providing information about the type of emotion, we hypothesized that participants would infer the degree to which they understood the source of those emotions when rating the item. Participants responded to items using a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree). Items were scored so that higher scores represented higher source awareness.

2.3 Data Analyses

We randomly assigned each of the 456 cases into one of three subsamples: sample A ($n = 78$) was used for an initial MDS analysis; sample B ($n = 78$) was used to replicate sample A; and sample C ($n = 300$) was used for a CFA. In addition, we conducted a third set of MDS analyses on combined samples A and B to further investigate whether the MDS solutions replicate when averaging across samples. MDS represents measurements of similarity (or dissimilarity) of items, such as inter-correlations, as distances among points in multidimensional geometric space, with items of greater similarity being located closer together (Borg & Groenen, 1997). Through regional interpretations, facet theory (Borg & Shye, 1995; Guttman, 1959) provides a systematic way to determine if the clustering of

items in MDS space corresponds with theoretically established groups. Items representing source of emotions clustering together in a domain separate from type of emotions items, which cluster together, would support the distinction of these two domains. A domain in MDS is conceptually similar to a dimension in factor analysis. Dimensionality in factor analysis refers to latent constructs (e.g., type of emotions), whereas dimensionality in MDS refers to the underlying characteristics of the objects or items that meaningfully order the data along a dimension (e.g., negative to positive valence). Whereas psychological interpretations of dimensions in MDS are sometimes meaningful, they are always arbitrarily selected by the researcher and may neither relate to the source and type of emotions items themselves or the manner in which items group together (Borg & Groenen, 1997; Turkheimer et al., 2008). Furthermore, those items that do not closely cluster with other items representing a hypothesized group may not be the best representatives of that group. Replication in MDS means that solutions from samples A, B and A & B can be partitioned in similar ways such that clusters of items are identifiable across both solutions (Borg & Groenen, 1997). By conducting MDS analyses on two independent samples and the combined sample we had ample data by which to judge the stability and generalizability of the results.

We conducted Euclidean metric MDS (see Davison, 1983), as implemented by PROXSCAL (Commandeur & Heiser, 1993), on dissimilarity matrices composed of pairs of transformed Pearson correlation coefficients (i.e., $1 - r^2$) for all source and type awareness items. We attempted to avoid local minima and degenerate solutions by implementing 1000 random starts with 1000 iterations. The majorization algorithm (Commandeur & Heiser, 1993) was used to reduce stress, or badness of fit, which was determined by the calculation of the variance accounted for by the MDS solution (r^2) and normalized raw stress (NRS: the square root of normalized residual sum of squares; Kruskal & Wish, 1991). In MDS, added dimensions increase the fit of the model at the expense of capturing error variance (Borg & Groenen, 1997) and decreased interpretability of the solution. For all analyses, Scree plots depicting the incremental decrease in normalized raw stress with the addition of dimensions showed that a 2 dimension solution (*Mean NRS* = .07, *Range* = .05 to .10; *Mean r^2* = .92, *Range* = .90 to .95) or 3 dimension solution (*Mean NRS* = .04, *Range* = .02 to .05; *Mean r^2* = .97, *Range* = .95 to .98) adequately represented the solution. Although the 3 dimension solution increased the goodness-of-fit, similar to several studies utilizing MDS, we chose to retain the 2 dimension solution due to ease of interpretation (e.g., Palmieri et al., 2009).

To determine which items to retain, the authors independently reviewed the MDS results for samples A, B, and the combined sample. Interrater agreement was measured with the kappa statistic (κ). Through discussion, consensus was reached regarding the items on which we disagreed. Using AMOS 6.0 (Arbuckle, 2006) and robust likelihood estimation, a CFA was conducted to psychometrically establish the proposed two-factor, source and type of emotions model. This model was fit to data obtained from participants in sample C. All source items were loaded onto the source awareness factor and all type items onto a type awareness factor. These two factors were allowed to correlate. Multiple indices were used to evaluate goodness of fit (i.e., χ^2 , standardized root mean squared residual [SRMR], root mean square error of approximation [RMSEA], comparative fit index [CFI]; see Hu & Bentler, 1999). Since a variety of factors (e.g., sample size, parameter estimation method) influence these indices, we used common guidelines (SRMR < .08; RMSEA < .06; CFI > .95) to evaluate the adequacy of fit (see Hu & Bentler, 1999). To evaluate the independence of the source and type awareness factors we compared a one-factor model, which we fit to the same data, to the two-factor model according to the above fit indices, and the Akaike and Bayesian Information Criteria [AIC & BIC].

3. Results

3.1 MDS Analyses

As displayed in Figure 1, facet diagrams show that items tended to group together into the domains of source and type awareness, which were clearly distinguished by a partitioning line. The partitioning line was smooth, correctly classified all source and type awareness items into their hypothesized domains with one exception discussed below (i.e., the full sample), and unambiguously distinguished the domains, and the results replicated across samples A and B, and the full sample. This provided evidence that we captured the true spatial structure of the items.

It is noticeable that some items tended to group into the domains of source and type awareness more readily than others. In particular, t1 and t3 tend to lie on the periphery of the other type items in all figures. Both items are also sometimes quite close to the partitioning line, and hence, more highly related to source items. In fact, when scaling data obtained from the full sample using Pearson correlation coefficients (lower right-side panel), t1 lies on the side of the partitioning line with source items. No matter where we drew the line (e.g., to include t1 on the side with other type items), t1 is located relatively far away from other type items. S2 is consistently positioned on the periphery of all other source items in all the diagrams, and s6 tends to lie somewhat away from the main group of source items. In addition, s6 appears to be related to type domain to some extent as it consistently lies close to the partitioning line in all of the diagrams.

3.2 CFA

Items were chosen to be included in the CFA based on the MDS results. The authors generally agreed upon which items to retain for the CFA ($\kappa = .69$ [agreed on 18 of 20 items]). Through discussion, consensus was reached regarding the two items on which we disagreed. Six items were retained as indicators of source awareness (s1, s3, s4, s5, s7, s8) and 10 items as indicators of type awareness (t2, t4, t5, t6, t7, t8, t9, t10, t11, t12).

We conducted a CFA on a two-factor, source and type awareness model. To obtain fitted and standardized residuals, we excluded 5 out of 300 (2%) participants who had missing data for any of the 16 items. Given the large sample size, it was not unexpected that the χ^2 value for the hypothesized two-factor model was significant (216.23, $df = 103$), indicating a lack of model data fit. However, the model adequately fit the data according to the other indices (SRMR = .049; RMSEA = .061, CFI = .93; AIC = 282.24, BIC = 403.91). Furthermore, the fitted residuals were acceptably small (*Median* = .00, *Range* = -0.13 to 0.23), and only one standardized residual (*Range* = -1.68 to 3.13), or .8% had an absolute value greater than 2.0. As shown in Table 1, the loadings of source items on the source factor were all significant and ranged from .46 to .69 ($M = .58$). The loadings of type items on the type factor were also all significant, ranging from .54 to .76 ($Mean = .67$). The source and type awareness factors correlated at .63 ($p < .01$). Finally, we found that the two-factor model fit considerably better than the one-factor model ($\chi^2 = 367.81$, $df = 104$; SRMR = .074; RMSEA = .093, CFI = .84; AIC = 431.81, BIC = 549.80), which provides evidence for these domains being distinct.

3.3 Psychometric Properties

We averaged relevant item responses for all participants included in both the MDS analyses and CFA ($N=451$) to calculate source and type awareness scale scores. The 6-item source awareness scale (SA) exhibited sufficient internal consistency ($\alpha = .78$), as did the 10-item type awareness scale (TA; $\alpha = .89$). The mean of the SA was 4.0 ($SD = 0.7$, *Range* = 1.8 to 5), and the mean of the TA was 3.8 ($SD = 0.7$, *Range* = 1.4 to 5). These means indicate that

on average participants tended to report a moderately high understanding of the source and type of their emotions. The new source and type awareness scales were correlated .53 ($p < .01$), which was expected since they are conceptually related.

4. Discussion

Taken together, the results of this study provide the first empirical evidence that one's understanding of one's own emotions can be separated into two related facets, source and type awareness. Using MDS and CFA, and an item-level approach, we psychometrically distinguished a set of self-report items that measure the extent to which one typically knows the cause of his/her emotions, or source awareness, from a set of items measuring the extent to which one typically can identify and distinguish between different types of emotions, or type awareness. The items used to measure type awareness were obtained from previous measures of emotional clarity, whereas the items used to measure source awareness were developed for that purpose.

Distinguishing individual differences in source awareness from type awareness is important for several reasons. First, source and type awareness provide different types of information that people assess to varying degrees when processing information (Schwarz, 1990). Therefore, it is likely that source and type awareness will differently influence cognition, ranging from judgments to beliefs (see Boden & Berenbaum, 2010). We posit that separately investigating the relations between source and type awareness scales and these types of cognition has the potential to enhance our understanding of when and how emotions influence cognition. Related to this, and second, distinguishing individual differences in source and type awareness may be useful in investigating cognition associated with psychopathology, such as suspiciousness beliefs and delusions. When emotions do not provide useful information (e.g., when source and/or type awareness is low) they can lead to inaccurate beliefs, including suspiciousness and delusions (Boden & Berenbaum, 2004). The extent to which one understands the source of one's own emotions may be especially important in this regard, as attributions of source of emotions, whether correct or not, may serve as a belief object (e.g., I may attribute the cause of my anxiety to the police officer walking past me, which serves as the basis for the belief, "Police officers are out to get me"). Third, the source awareness scale could be useful in predicting individual differences in the motivational effect of affective states. This follows from theories of affect stating that: (a) affect may be more emotion-like if it does not have salient causes, or mood-like if it does have salient causes; and (b) emotions and moods have different influences on motivation (see Russell, 2003).

We demonstrated that our general measure of source awareness is unequivocally, psychometrically distinguishable from a scale composed of specific items we identified as measures of type awareness. As this is the first study to use the source and type awareness scales, future research is needed to establish the associations between these scales and related constructs, and to establish the discriminant and incremental validity of source and type awareness in predicting psychological outcomes. It will be important to investigate relations between source and type awareness scales and constructs, such as trait affect, emotional creativity, emotion differentiation, emotion regulation, and self-awareness. Source and type awareness are likely to be similarly related to some of these constructs, as they refer to closely related aspects of emotional understanding. However, they may differ in their relations to constructs such as self-awareness, as source and type awareness are contingent upon related, but different kinds of information, each of which has the potential to be integrated into broader self-awareness. It will also be important for future research to explore more specific dimensions of source awareness. We note that there are different kinds of sources of emotion (e.g., person-focused versus event-focused) and that individuals

may vary in their abilities to identify different kinds of sources. Future research can explore these different aspects of source awareness by expanding our general measure to assess multiple dimensions.

Future research would also benefit from exploring the use of non-self-report measures of clarity of one's own emotions. The present research, like all previous studies examining the understanding of one's own emotions, used self-report measures (e.g., Gohm & Clore, 2002). This is in contrast to the assessment of one's understanding of *other peoples'* emotions, which has often included performance based measures (e.g., Brackett & Mayer, 2003). For performance-based measures, all participants provide answers to a common set of questions for which the correct answer is judged by a third party, and is the same for all individuals. Whereas these measures might adequately measure one's understanding of other people's emotions since there will likely be a high degree of consensus regarding the correct answer, they will never provide an adequate measure of source and type of one's own emotions. This is because the validity of an outside observer's inferences regarding another's emotions will necessarily be limited (e.g., different individuals respond to the same event with different emotions). We propose that understanding one's own emotions might best be measured using a combination of self-report and idiographic behavioral assessments. Type awareness could be measured by computing the degree of concordance between individuals' self-reports of what they were feeling and their facial or vocal expressions (used to infer what was truly being experienced). Source awareness could be measured by computing the degree of concordance between peer-report and self-report.

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Highlights

1. We psychometrically distinguished self-report items of source and type awareness
2. Type awareness is the extent to which type of emotion experienced can be identified
3. Source awareness is the extent to which causes of emotions are typically known
4. Items were developed by us or obtained from measures of emotional clarity
5. Results show that type and source awareness are separable facets of emotional clarity

Figure 1.

Facet diagrams for MDS analyses.

Note. The left-most panel represents scaling of responses from sample A, the middle panel represents scaling of responses from sample B, and the right-most panel represents scaling of responses from combined samples A & B. Type awareness (labeled “t”), and source awareness (labeled “s”) are separated by the partitioning line.

Table 1

Standardized Factor Loadings for items included in the CFA (n = 295).

Item Label and Item Content	
Source awareness	
S1. I often have to think for a while to figure out what made me happy or excited.	.58
S2. When I am sad, angry, or scared, I usually know who caused it.	
S3. I usually don't know who caused me to become happy or excited.	.47
S4. It does not take me long to determine who made me sad, angry, or scared.	.46
S5. It takes me a long time to figure out why I am happy or excited.	.62
S6. I often have to search for a reason why I am sad, angry, or scared.	
S7. I sometimes have to think for a while to determine who made me happy or excited.	.68
S8. I often have to think for a while to figure out who made me sad, angry, or scared.	.69
Type awareness	
T1. I usually know my feelings... *	
T2. I can't make sense... *	.64
T3. I am rarely confused... *	
T4. Sometimes I can't tell... *	.76
T5. I am usually very clear... *	.54
T6. I can never tell... *	.64
T7. I almost always know... *	.70
T8. I am usually confused... *	.69
T9. I am often confused... ^	.74
T10. When I am upset... ^	.60
T11. I have feelings that I... ^	.69
T12. I don't know what's... ^	.66

Note.

* Items from Trait Meta Mood Scale, Clarity of Emotions subscale.

^ Items from Toronto Alexithymia Scale, Identification subscale. All items were keyed so that higher item responses indicated higher levels of type and source awareness.