Measuring Subtypes of Emotion Regulation: From Broad Behavioural Skills to Idiosyncratic Meaning-making

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The current paper introduces the notion of clinically relevant subtypes of emotion regulation behaviours. A new measure of emotion regulation, the Complexity of Emotional Regulation Scale (CERS), was established as psychometrically sound. It was positively correlated with a measure of emotional awareness ($r = 0.28$, $p < 0.001$) and negatively correlated with measures of self-criticism ($r = -0.28$, $p < 0.001$) and depression ($r = -0.35$, $p = 0.025$), among others. Participants were drawn from two samples: clients from a university counselling centre and a non-clinical student sample. Comparisons were conducted between non-clinical and clinical samples to determine the effects of depression and other symptoms of psychopathology on participant’s generation of strategies for emotion regulation. Participants in the clinical sample more often identified an intention to soothe but did not follow through as compared with the non-clinical group, $F(1, 198) = 4.662$, $p < 0.04$. Furthermore, individuals in the non-clinical sample were more likely to engage in specific, meaning-making strategies when compared with the clinical group, $F(1, 198) = 5.875$, $p < 0.02$. Implications from the current studies suggest the possible applicability of the CERS to clinical settings using an interview rather than questionnaire format.

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Key Practitioner Message:
- Emotion regulation should be thought of as being on a continuum of complexity, where strategies range from general (‘one size fits all’) action to specific (‘personal and idiosyncratic’) meaning. The best emotion regulation strategy depends on a client’s presenting difficulty and level of distress.

Keywords: Emotion regulation, measurement, self-soothing, distress, experiential, behavioural

Emotional processing has been described as a broad mechanism of reducing distress across a number of psychotherapy orientations (e.g., Borkovec, Alcaine, & Behar, 2004; Foa & Kozak, 1986; Fosha, 2000; Greenberg & Pascual-Leone, 2006). Similarly, in the fields of personality and developmental psychology, a number of authors, using the very broadest definition, have discussed all forms of working with emotion as having a ‘regulatory’ purpose. Indeed, emotion regulation has been described as ‘…the processes by which individuals influence which emotions they have, when they have them, and how they experience and express these emotions’ (Gross, 1998, p. 271). From this perspective, emotion regulation is how individuals change their emotional experience to make it more manageable. As Holodynski and Friedlmeyer (2006) explained, individuals do not simply have to accept the emotions they experience; instead, they can actively alter the arousing emotion as a complex strategy for self-regulation. In contrast, a failure to successfully regulate emotion has been posited as a mechanism of, for example, depression in which people struggle with a limited ability to regulate negative affect (Cole & Kaslow, 1988; Aldao, Nolen-Hoeksema, & Schweizer, 2010). These authors further suggest that well-adjusted adults possess an ability to modify their affective experience to match differing situations, thereby accessing a range of emotions and modulating their intensity as a function of the situation.

While these observations are both valuable and incisive, they also expand the definition of emotion regulation to its broadest limits, which risks conflating several distinct subtypes of emotion change that otherwise are both conceptually and operationally distinct. For example, ‘problem-solving’ as an emotion regulation strategy is much more complex and multifaceted than ‘avoidance’ as a strategy; nevertheless, they are sometimes grouped together as comparable forms of ‘emotion regulation’ (see Aldao et al., 2010). On closer examination, however, emotion regulation is variegated: sometimes, best thought
of as a process that applies immediately to coping with arousal in a given moment (i.e., calming oneself down), while at other times, it should be thought of as a more involved process of self-development that elaborates gradually over time (i.e., making personalized meaning). Indeed, this conceptual distinction is supported by a meta-analysis that concluded that aroused amygdale activity could be inhibited either by voluntary suppression or by co-occurring higher-level activity such as language (p. 66, Costafreda, Brammer, David, & Fu, 2008). Moreover, while in personality or developmental research, the distinction between these methods of emotion regulation may seem less important; in clinical work, the distinction can be critical.

From a clinical perspective, emotion regulation in the short-term describes gaining psychological distance from distress, anxiety, hopelessness etc. (Linehan, 1993b; Gendlin, 1996). The goal of emotion regulation in this more immediate situation is ‘turning down the volume’ of affective experience (i.e., a more basic quantitative change in the intensity of a given feeling). In their review of the psychotherapy literature on emotional change, this quantitative change in the short term is what Greenberg and Pascual-Leone (2006) referred to in strict terms as basic emotion regulation.

In contrast, emotion regulation in the longer term (and in its broadest sense, c.f. Holodynski & Friedmeier, 2006) is achieved through a more complex, qualitative process of emotional change (rather than simply changes in intensity). This type of emotional regulation can be considered more complex because, in addition to behavioural strategies such as getting a distance from distressing stimuli, it may also require cognitive and emotional awareness and psychological mindedness in the differentiation of one’s emotional experiences. These forms of modulating the quality of emotional experience, which also eventually lead to improvements in regulated affect, are what Greenberg and Pascual-Leone (2006) identified as either reflection on emotion (e.g., narrative reframing) or transformation of emotion (e.g., changing emotion with emotion). Thus, if immediate reduction of arousal can be described as ‘turning down the volume’, more complex strategies that also eventually contribute to regulating emotion can be thought of as efforts at ‘changing the channel’. With this distinction in mind, it must be emphasized that one strategy is not necessarily superior to another. Rather, the purpose of this study is to highlight that the range of emotion regulation strategies varies widely in practice (e.g., from basic self-distraction to elaborate introspection and meaning-making), and yet, this often goes unrecognized in the theoretical literature. It follows that articulating a conceptual framework that describes some continuum in these subtypes of emotion regulation would be an important contribution to the field.

**Behavioural Strategies for Regulating Emotional Intensity: ‘Turning Down the Volume’**

Thus, particularly as they apply to change and emotional process in psychotherapy, Greenberg and Pascual-Leone (2006) have defined emotion regulation more narrowly, referring specifically to client’s concrete efforts in reducing the quantitative intensity of an emotion (i.e., emotion regulation as simply calming oneself down). As a case in point, in reaction to a painful experience, a client may have an experience of global and undifferentiated distress (Pascual-Leone & Greenberg, 2007; Stern, 1997). In a situation like this, the presenting affective experience is immediate, aversive and of high arousal. Intense emotional pain can be disorganizing and often needs to be regulated to allow one to continue functioning (Greenberg, 2002; Haas & Canli, 2008). Still, the meaning or the object of distress may remain inarticulate and unexplored even when the pain is intense. As Stern (1997) explains, ‘[o]ne has information about one’s experience only to the extent that one has tended to communicate it to another or thought about it in the manner of communicative speech. Much of that which is ordinarily said to be repressed is merely unformulated’ (p. 3). In a similar way, when clients express global distress, they often do not know, at first, what they are upset about and they have no sense of direction, only a sense that something is wrong (Pascual-Leone & Greenberg, 2007). This is most likely to occur in clinical cases where individuals suffer from markedly under-regulated emotion (Greenberg, 2002), and is particularly apparent in cases of generalized anxiety, trauma and borderline personality disorder (Haas & Canli, 2008; Linehan, 1993).

In this manner, painful emotion not only remains undisclosed but also unexperienced in specific and idiosyncratic detail. Nonetheless, as demonstrated, for example, by skills training modules in dialectical behavioural therapy (DBT; Linehan, 1993), painful emotion can be alleviated through general skills and actions: e.g., listening to soothing music, enjoying the smell of baking, slowly sipping a hot beverage, putting an ice pack on the back of one’s neck or attending to the sensation of rubbing lotion on oneself. Interestingly, the effectiveness of such an externally focused, behavioural approach to emotion regulation suggests that articulate levels of emotional awareness are not a necessary prerequisite for basic forms of affective regulation and self-soothing (Lynch, Trost, Salsman, & Linehan, 2007). We describe this as a ‘generic behavioural strategy’ of emotion regulation, because it involves evoking a behaviour response that does not necessarily involve the elaboration of either thoughts or feelings to be able to assuage the pain. We use the term ‘generic’ here, because a key characteristic of these strategies is that they have very broad, rather than particularly
unique, conditions of applications. Consequently, this skills-training approach to emotion regulation is one that can be applied across distressing situations and largely irrespective of individual differences (i.e., a ‘one size fits all’ general strategy). Like the DBT approach to distress tolerance (Linehan, 1993), other forms of behavioural emotion regulation have been developed, such as content-free mindfulness (Khoury et al., 2013) and stress inoculation (Meichenbaum, 2007).

**Meaning-making Strategies for Regulating Emotional Experience: ‘Changing the Channel’**

In practice, it stands to reason that treatments use a variety of blended strategies to facilitate emotion regulation. However, a purely behavioural (skill-based) approach contrasts with experiential and meaning-making strategies, which are arguably categorically different methods of self-regulation. Thus, as authors have pointed out (i.e., Gross, 1998; Holodnyński & Friedlmieier, 2006; among others), from a less immediate scope of analysis, emotional arousal can ultimately also be regulated by qualitatively changing the difficult emotion in question. Here, painful emotion is alleviated through the exploration of memories and idiosyncratic meanings. This set of specific and idiosyncratic strategies for ‘emotion regulation’ (broadly defined) are exemplified by Victor Frankl’s (2006; orig. pub. 1946) description of coping with deep physical and emotional suffering by way of the search for higher meaning. In this unique process, painful emotion is soothed through articulating and directly attending to an unmet existential need.

Experiential therapists have long argued that symbolizing bodily felt emotional experience can decrease emotional arousal (Paivio & Laurent, 2001). For example, a study that encouraged girls to use emotion diaries found that the simple practice of disclosing and tracking emotion reduced anxiety symptoms particularly for girls who had difficulty coping with emotion (Thomassin, Morelen, & Suveg, 2012). Research from affective neuroscience has corroborated these clinical and experimental observations: Findings from a study using functional magnetic resonance imaging demonstrated that when healthy participants were presented to distressing images and then given the opportunity to label their feelings with words, it reduced the activity in their amygdala (Lieberman et al., 2007).

Unlike with the use of behavioural strategies for reducing arousal, regulating distress through the experiential search for meaning is predicated on a modicum of emotional awareness and exploration (e.g., one must ‘find the right words’). Indeed, some authors (i.e., Mayer & Salovey, 1997) have argued that emotional awareness is a prerequisite for sophisticated forms of emotion regulation. For example, a study by Dizén, Berenbaum, and Kerns (2005) found that individuals with a decreased capacity for emotional awareness, who were unable to acknowledge or identify an explicit need, endured more variability in their emotional reactions, which resulted in their having uncertainty about how they felt. Other research has similarly shown a negative relationship between alexithymia and regulated emotion (Pandey, Saxena, & Dubey, 2010; Ogrodniczuk, Piper, & Joyce, 2011).

Certainly, from the perspective of interventions developed in experiential psychotherapy, emotional awareness is required to engage in self-compassion and self-soothing (Greenberg, 2002; Greenberg & Pascual-Leone, 2006). In Pascual-Leone and Greenberg’s (2007) sequential model of emotional processing, self-compassion and self-soothing represent an advanced state of emotional processing. It follows then that in psychotherapy, emotional arousal, awareness and engagement are seen as prerequisites for engaging in meaning-laden emotional processing (Greenberg & Pascual-Leone, 2006; Carryer & Greenberg, 2010). Therefore, from this perspective, emotion regulation might be encouraged so as to modulate and maintain (but not extinguish) an optimal level of arousal when working through difficult experiences (Paivio & Pascual-Leone, 2010). From this viewpoint, the act of emotion regulation is essentially a means to some other end: emotional regulation through self-soothing allows one to tolerate painful emotion just enough to turn one’s focus inward and complete a distressing but meaningful task (e.g., overcoming an interpersonal rupture, exploring and accepting painful material, or transforming maladaptive shame).

**What Does Experimental Research Tell Us About Different Emotion Regulation Strategies?**

In an effort to synthesize the literature, Aldao et al. (2010) conducted a meta-analysis of 114 experimental studies that collectively examined the six most commonly studied emotion-regulation strategies (acceptance, avoidance, problem-solving, reappraisal, rumination and suppression) as related to symptoms of four psychopathologies (anxiety, depression, disordered eating and substance-related disorders). While a seminal contribution, one might also observe that the six strategies identified by Aldao and colleagues from the literature are not simply operationally different but also embody the epistemologically different understandings of what dysregulated affect is and conflate the essential meaning of the emotional arousal they address.

In short, although the six identified strategies regulate emotion and relate to mental health, they also vary widely in their operational and conceptual complexity, and side-by-side comparisons overlook this critical difference. Rumination, for example, which had a large correlation with...
Few studies in the experimental literature are designed to directly compare emotional regulation strategies (Aldao, Nolen-Hoeksema, & Schweizer, 2010). An exception to this is a study by Joorman et al. (2007), which examined the ability of depressed individuals to engage in two different kinds of emotion regulation, distraction versus the recall of happy memories: strategies that parallel the ‘generic behavioural’ and ‘specific experiential meaning-making’ subtypes we are proposing. Findings indicated that non-depressed individuals were successful in regulating their emotion using both the distraction and recall of happy memories. However, depressed individuals were only able to regulate emotion using the distraction technique. Similarly, Garber, Braafladt, and Weiss (1995) found that depressed individuals were more inclined than non-depressed individuals to use avoidance and irrelevant strategies (e.g., distraction) as a means of regulating emotion. These observations suggest that depressed individuals are unable to alter and adapt their emotion regulation strategies in light of differing circumstances. In fact, a correlate of depression is top-down distortions in processing (e.g. an a priori, ‘the glass is half empty’ perspective), which can lead to difficulty in regulating negative arousal (Davidson, Fox, & Kalin, 2007).

In summary, the ‘complexity’ of a given emotion regulation strategy is reflected by several elements, including (a) the action tendency and the degree of effort it entails; (b) the level of (dys)function being coped with; (c) level of awareness regarding one’s personal needs; and (d) one’s psychological mindedness in generating personal meaning for coping with distress. It seems that in moments of high and dysregulating distress (panic, suicidality etc.), individuals are more likely to preferentially benefit from behaviourally oriented strategies of emotion regulation (see Linehan, 1993). These strategies allow one to disengage and immediately create psychological distance, so that one can return to a functional range. It could be, however, that an individual who is depressed following the death of a loved one might benefit more from a more involved and experientially based type of self-soothing (see Neimeyer & Currier, 2009). Thus, while straight behaviour strategies to emotion regulation tend to be more direct and less complex than meaning making strategies, which require the symbolization of experience, this does not suggest that the latter set of strategies is either more sophisticated or more effective. Indeed, often individuals will be best served by the simplest tool that accomplishes the job. The emphasis in our conceptualization is more on the fact that experiential versus behavioural strategies are not easily interchangeable, because they accomplish different kinds of tasks. This supports the position of Kashdan and Rottenberg’s (2010) review of ‘psychological flexibility’ in which they conclude that the ability to adapt one’s responses to match the situation is more important than the specific strategies one deploys.
Current Study: A Pilot Investigation

Objectives. The first purpose of the current paper was to investigate the two different conceptualizations of emotional regulation (i.e., behavioural skills versus personal meaning-making) and examine their relationships to depressive symptomatology and psychopathology. In order to study these relationships, a theoretically derived measure, the Complexity of Emotional Regulation Scale (CERS; Pascual-Leone & Gillespie, 2007), was created, and a preliminary assessment of its psychometric properties was conducted. The CERS was originally constructed as an interpretive-observational tool to explore what the previous research has neglected, namely, to identify the concrete criteria that articulate the subtypes of emotion regulation strategies and behaviours. Previous studies have employed clinical observation and behavioral measures only to study the simple process of distress tolerance, while the trend in recent research has been to increasingly rely on self-report measures self-report measures (Lejeuz, Banducci, & Long, 2013). However, our study expands upon this research by creating an in vivo, empirically testable method of evaluating the complexity of emotion regulation strategies.

The second purpose of this study was to examine the relationship between depressive symptomatology and emotional regulation strategies. Given the conclusion of Aldao et al. (2010) that the clinical severity of samples seems to produce larger effects in studies of emotion regulation, the current study examined this capacity in both non-clinical and clinical samples.

Hypotheses. The present investigation was divided into two studies with one examining a non-clinical, university sample and the other examining a sample of clients from a university-based psychotherapy clinic. The two groups were studied in order to better evaluate the validity of the CERS and to allow an exploratory comparison of the groups. For each, the relationship between measures of depression, emotional awareness and emotion regulation was examined.

Hypothesis 1: As an interpretive-observational measure, the CERS will have adequate inter-rater reliability. Hypothesis 2: CERS scores, which index the strategies of emotion regulation, will be negatively correlated with symptoms of psychopathology (i.e., depression, anxiety and general clinical symptoms), therefore demonstrating convergent validity. Hypothesis 3: CERS scores will be positively related to emotional awareness, indicating that being aware of emotion and attending to it are related, further supporting convergent validity. Hypothesis 4: The clinical sample will be more likely to use maladaptive emotion regulation strategies (self-harm, substance abuse, indiscriminant sexual intercourse etc.) than the non-clinical sample; in keeping with studies that have found that depressed individuals engage in more behaviourally based emotion regulation (e.g., Joorman et al., 2007) and that some of these strategies are maladaptive. Hypothesis 5: CERS scores will be higher for the non-clinical sample than for the clinical sample, thus supporting criterion validity. Moreover, consistent with the experimental literature (i.e., Aldao et al., 2010; Joorman et al., 2007), we hypothesize that the increases in depressive symptomatology will be related to more behaviourally emotion regulation strategies.

STUDY #1: EMOTION REGULATION SUBTYPES IN A STUDENT SAMPLE

Method

Participants

A sample of 160 undergraduate university students (90% women) with mean age of 21.3 years (standard deviation (SD) = 3.4) were drawn from a Southwestern Ontario university undergraduate participant pool. Participants were compensated with partial course credit for their involvement.

Measures

Depressive Experiences Questionnaire. The Depressive Experiences Questionnaire (DEQ; Blatt, D’Afflitti, & Quinlan, 1976) is a measure of an individual’s vulnerability to depression. The 66 items on the DEQ reflect a range of experiences that are correlated with depression but are not symptoms of depression (Zuroff, Moskowitz, Wielgus, Powers, & Franko, 1983). Factor analysis of this questionnaire consistently indicates that there are three scales that comprise this measure: self-criticism, dependency and efficacy (Blatt et al., 1976). The dependency and self-criticism scores have been found to have significant test–retest correlations (Zuroff et al., 1983), which is consistent with the conceptualization of these constructs as personality-based.

Levels of Emotional Awareness Scale. The Levels of Emotional Awareness Scale (LEAS; Lane, Quinlan, Schwartz, Walker, & Zeitlan, 1990) is a performance measure of emotional awareness and consists of 10 short, fictional, emotionally charged vignettes about situations involving
the reader and another person. After reading the vignette, the participant is asked to write a response to the following questions: ‘How would you feel?’ and ‘How would [the other person] feel?’ Participant responses are coded by raters in terms of the use of emotive evocative language. Responses were scored independently by three trained raters following the five-point scale described in the LEAS manual (Lane et al., 1990). The LEAS has good internal consistency (α = 0.81) and good concurrent and discriminant validity. The measure provides scores for emotional awareness from the perspective of the ‘self’ and from the perceived perspective of the ‘other’ and a total score.

**Instruments for the Measurement of Emotion Regulation Strategies**

**Stimuli vignettes to solicit reports of emotion regulation.** In the current study, participants were presented with a subset of six vignettes based on the LEAS (described above; Lane et al., 1990) but on this second occasion to solicit reports of emotion regulation. The specific subset of vignettes used were selected, because they involved potentially upsetting events. However, instructions were modified to address emotion regulation behaviours. One vignette states, for example, ‘You receive an unexpected long-distance phone call from a doctor informing you that your mother has died. This situation leaves you feeling emotionally upset in some way (i.e., afraid, ashamed, angry…). What would you do to make yourself feel better?’ (Italics indicate modifications to the LEAS instructions). Thus, participants provided open-ended written responses that were later scored by trained raters. Each of the six vignettes was coded separately. This method is similar with that used by Reijntjes et al. (2007) to study the regulation of negative affect in response to vignettes depicting emotion-eliciting events.

**Complexity of Emotional Regulation Scale.** To assess the complexity of strategies with which individuals regulate emotion, the first two authors developed the CERS (Pascual-Leone & Gillespie, 2007) based on a comprehensive review of the emotion-regulation and self-soothing literatures. It was concluded that four dimensions are particularly relevant to coping with distress. These dimensions include the following: action tendency, expression, adaptive need and meaning. Therefore, based on these dimensions, the CERS is intended as an ordinal scale that an observer may use to appraise the complexity of strategies from any personal accounts that describe an individual’s emotion regulation. For the purposes of the current study, the CERS was applied as a coding system to responses solicited by six vignettes (described above). In the original version of the CERS, the accounts from participants are rated on an eight-point scale, ranging from −1 up to 6. Appendix A presents each of the scoring categories, describes responses within this category and provides examples of typical responses. Moreover, the scale is conceptualized as a qualitative continuum so that emotion regulation strategies are organized in terms of their increasing complexity both operationally and conceptually.

In the current study, the rating scale was collapsed, from eight points to four points, to best represent the nature of data at hand (see Table 1). These scaled scores are conceptually congruent with the original measure and indicate four distinct groups of emotion regulation strategies that each has weighted scores: (−1) Maladaptive strategies reflect destructive approaches (e.g., avoidant substance abuse and self-harm); (1) no action to soothe reflects a general intention to regulate without mobilizing any resources (e.g., passivity and rumination); (2) general strategies entail behavioural interventions (e.g., avoidance, suppression and pleasant distraction); and (3) specific strategies reflect experiential meaning-making (e.g., reappraisal and problem solving). Finally, participants were also assigned a score of 3 if they expressed both a general strategy and a specific strategy.

The overall scaled scores for the CERS were calculated beginning with the frequency with which an individual used different emotion regulation strategies from each of the four groups. These ‘raw score’ frequencies had a possible maximum of six, given the administration of six vignettes. Once a frequency was obtained for each of the four scaled-score categories, it was multiplied by a corresponding weighting (i.e., −1, 1, 2, 3; see Table 1). Once calculated, the scaled scores were summed across the six CERS vignettes. Thus, it is possible for participants’ scores to range from −6 (indicating all maladaptive strategies) to 18 (indicating all specific meaning-making strategies). In short, higher scaled scores reflect the frequency and complexity of emotion regulation strategies, such that scaled scores represent an overall index.

**Results**

**Inter-observer Reliability of the CERS and LEAS**

The LEAS and CERS required scoring by trained raters, and so, in order to establish inter-rater reliability, a random subset of half the data (50% of the narrative responses) were rescored. Inter-rater reliability between two raters using the LEAS protocol was excellent (min. κ = 0.75; average κ = 0.87). Similarly, inter-rater reliability on the CERS was calculated based on the original eight-point scoring. The average inter-rater reliability for the CERS data was κ = 0.79, which is considered an excellent level of agreement above chance (Fleiss, 1981); this is the first published index of reliability for the CERS.

**CERS Descriptive Data**

The frequency with which participants used the various categories of emotion regulation strategies (i.e., based on
the scaled scores) is presented in Table 2. The mean scaled scores are as follows: maladaptive strategies $M = 0.019$ (SD = 0.237); no action to soothe $M = 0.88$ (SD = 1.012); general behavioural strategies $M = 2.75$ (SD = 2.149); specific meaning-making strategies $M = 11.18$ (SD = 4.106); and the total CERS scaled $M = 14.79$ (SD = 2.409). Given our conceptualization of emotion regulation, we do not regard the alpha coefficient as a suitable index of internal consistency; however, for the sake of completeness, it was calculated as 0.501.

Correlations

Bivariate correlations with other measures of clinical interest were calculated to investigate their relationship with the CERS. The relationships between the data obtained from the CERS, LEAS, BDI-II and DEQ data are presented in Table 3. The results suggest that the CERS is significantly positively correlated with all three scores of the LEAS and significantly negatively correlated with the self-criticism scale of the DEQ (all $|r|’s > 0.26$; $p’s < 0.002$). Thus, as the participants reported more complex and specific strategies (i.e., meaning-making) for emotion regulation, they also indicated higher scores of emotional awareness. Moreover, as the participants used more general strategies (i.e., behavioural distraction), they were also more likely to report a higher degree of depressogenic self-critical style.

STUDY #2: EMOTION REGULATION SUBTYPES IN A CLINICAL SAMPLE

Method

Participants

In the second study, a sample of 40 clients from the same university’s outpatient mental healthcare centre were recruited. As before, these participants were students at a university in Southwestern Ontario but were also seeking treatment for psychological distress. The sample (80% woman) had a mean age of 22.0 years (SD = 3.6 years). Client diagnoses differed but conformed with the psychological service centre’s mandate of providing treatment to individuals with depression and anxiety and whose primary presenting concern was neither a substance-use problem, an eating disorder nor an immediate crisis (i.e., imminent suicide risk). Participants in this study were asked to fill out a screening battery prior to their first
therapy session as part of the standard protocol of the healthcare centre. Participants were anonymous to the researchers and gave informed consent for their data to also be used for this study.

**Measures**

The BDI-II and CERS were administered (as described above) to treatment-seeking individuals as part of the centre’s standard intake battery. This battery also contained the following measures of interest.

**Symptom Check-List-90-Revised.** The Symptom Check-List-90-Revised (SCL-90R; Derogatis, 1977) is a widely used measure of psychopathology consisting of 90 items. The measures subscales reflect somatization, obsessive–compulsive disorder, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation and psychoticism, as well as a global severity index (GSI). In the present study, the GSI alone was used as a measure of symptom distress. The SCL-90R has been shown to be reliable and valid in a range of clinical populations, with internal consistency coefficients ranging from 0.64 to 0.86 (Cohen, 2002).

**State-Trait Anxiety Inventory.** The State-Trait Anxiety Inventory (STAI; Spielberger, Gorsuch, & Lushene, 1970) is a widely used clinical measure of anxiety, consisting of self-report items on a Likert scale about experiences of anxiety from 1 (not at all) to 4 (very much so). Separate subscales on the measure are used to represent state and trait anxiety. Research indicates that the validity and reliability of the STAI is adequate, with a reported Cronbach alpha of 0.91 and 0.87 for the state and trait scales, respectively (Evren, Sar, Evren, Semiz, Dalbudak & Cakmak, 2008).

**Results**

**Inter-observer Reliability of the CERS**

The CERS was scored according to the procedures outlined in Study 1. Again, 50% of the narratives were rescored independently by a second rater. The average inter-rater reliability for CERS in the second study was \( \kappa = 0.83 \), which is considered excellent (Fleiss, 1981).

**CERS Descriptive Data**

The frequency with which participants reported using the various categories of emotion regulation strategies (i.e., based on scaled scores) is presented in Table 4. The mean scaled scores are as follows: maladaptive strategies \( M = -0.125 \) (SD = 0.563); no action to soothe \( M = 1.28 \) (SD = 1.012); general behavioural strategies \( M = 2.95 \) (SD = 2.218); specific meaning-making strategies \( M = 9.38 \) (SD = 4.567); and total emotion regulation scaled \( M = 13.48 \) (SD = 3.105). Again, alpha coefficient is not considered to be a suitable index for theoretical reasons but is, nonetheless, calculated to be 0.467.

**Correlations**

The CERS was correlated with the BDI-II, SCL-90 and STAI; these data are presented in Table 5. The results suggest that the CERS is significantly negatively correlated with all clinical measures (all \( r’s < -0.35; p’s < 0.04 \)). Thus, as the participants indicated more complex and specific emotion regulation strategies (i.e., experiential meaning-making), they evidenced lower scores on the measures of depression symptoms, anxiety symptoms and general psychological distress.

**Analyses Comparing the Data in Study 1 with Study 2**

The two studies present samples with similar demographics. Of the 160 students from the normal university population, 80% were female, with an average age of 21.3 years. By comparison, among the 40 students from the clinical setting, 90% were female, with an average age of 22.0 years. That similarity permitted us to conduct some comparisons across the samples.

The non-clinical sample had a mean score of 10.88 (SD = 8.481) on the BDI-II, which was a comparable score to available norms of a non-depressed population, as

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**Table 4. Occurrences of regulation strategies across six vignettes—clinical sample**

<table>
<thead>
<tr>
<th>Frequency out of six vignettes</th>
<th>Maladaptive</th>
<th>No action</th>
<th>General</th>
<th>Specific</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>38</td>
<td>12</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>1</td>
<td>13</td>
<td>7</td>
<td>8</td>
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<tr>
<td>Total</td>
<td>40</td>
<td>40</td>
<td>40</td>
<td>40</td>
</tr>
</tbody>
</table>

Note: Only one emotion regulation strategy was coded per participant, per vignette. When more than one strategy was present the higher code was used.

**Table 5. Correlation of scaled score with clinical measures—clinical sample \((n = 40)\)**

<table>
<thead>
<tr>
<th>Measure</th>
<th>( r )</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>BDI-II</td>
<td>-0.35</td>
<td>0.025*</td>
</tr>
<tr>
<td>SCL-90 GSI Score</td>
<td>-0.35</td>
<td>0.027*</td>
</tr>
<tr>
<td>STAI State</td>
<td>-0.35</td>
<td>0.031*</td>
</tr>
<tr>
<td>STAI Trait</td>
<td>-0.42</td>
<td>0.008*</td>
</tr>
</tbody>
</table>

*\( p < 0.04 \)

BDI = Beck Depression Inventory. SCL-90 GSI = Symptom Checklist-90 Global Severity Index. STAI = State-Trait Anxiety Inventory.
outlined by Steer, Brown, Beck, and Sanderson (2001). The clinical sample had a mean score of 21.85 (SD = 11.329) on the BDI-II, which was indicative of a moderate level of depression, according to Steer et al. (2001). As expected, results indicated that the clinical sample was significantly more depressed ($t(198) = -6.813, p < 0.001$).

In order to investigate the differences in emotion regulation, as indicated by the CERS, a one-way analysis of variance was conducted in order to investigate the differences in mean scaled scores between the non-clinical sample of Study 1 and the clinical sample of Study 2. This analysis revealed that there were some significant differences between the groups: no action to soothe, $F(1, 198) = 4.662, p < 0.04$; use of specific meaning-making strategies, $F(1, 198) = 5.875, p < 0.02$; and overall CERS score, $F(1, 198) = 8.404, p < 0.01$. These results suggest that the participants in the clinical sample were more likely to report no action to either soothe or to regulate themselves at times of distress. Related specifically to the differential use of emotion regulation strategies, there was no observed difference between the two groups in their use of general behavioural strategies. However, there was a difference between the groups in the use of specific meaning-making strategies. Participants in the non-clinical sample were more likely to use experiential meaning-making strategies. Thus, the non-clinical sample seemed to use more complex strategies in addition to the general behavioural strategies. In short, the non-clinical sample reports a broader range of emotion regulation strategies.

Discussion

The goal of this pilot study was to empirically investigate a conceptualization of emotion regulation subtypes and their relationship to depressive symptomatology and psychopathology. Therefore, a further aim of the study was an initial examination of the CERS’s psychometric properties. Finally, this study sought to expand our understanding of emotion regulation by studying both clinical and non-clinical population from within this theoretical framework.

Key Findings

Reliability. Consistent with the hypothesis 1, the CERS evidenced excellent inter-rater reliability when used with either non-clinical or clinical samples (representing a combined sample of $n = 200$), with kappa ranging from 0.79 to 0.83. Moreover, this rater reliability was comparable across all six vignettes in the CERS. As expected, however, the CERS did not demonstrate high internal consistency when considered across vignettes. This latter finding was likely due to the fact that emotion regulation is a highly context-specific process. For example, an individual is likely to use different types of strategies when one gets news of one’s mother’s death, as compared with when one twists an ankle during a running race (cf. the vignettes used). Given this observation, apart from inter-rater reliability (as reported), test–retest reliability showing stability for responses to a given vignette could be another suitable index.

Validity. As proposed by hypothesis 2, more complex strategies for emotion regulation (i.e., higher CERS scores) were consistently associated with fewer symptoms of depression, anxiety and general psychological distress. Furthermore, consistent with hypothesis 3, individuals who reported more specific emotion regulation strategies (i.e., specific meaning-making) were also found to be more emotionally aware and less self-critical than those who engaged in emotion regulation strategies that were more generic and behavioural. Taken together, these two findings suggest that the CERS demonstrates good convergent validity.

Comparative findings. The non-clinical sample scored below the cutoff for depression, whereas the clinical sample was found to be suffering from moderate depression. However, contrary to hypothesis 4, individuals in the clinical group did not appear to be more likely to describe maladaptive emotion regulation strategies when responding to distressing vignettes, as compared with those in the non-clinical group. In examining hypothesis 5, we found that those in the clinical group were, however, less likely to engage in actions to soothe (i.e., they used more passive responding, rumination), often expressing some intention to soothe but a failure to actually engage in self-regulation. Conceptualization of these strategies as passive and even maladaptive (e.g., Aldao et al., 2010; McEvoy et al., 2013) should not be confused with individuals’ internal process in this regard. Rumination and worry are often subjectively experienced as active attempts to lessen distress. Nonetheless, this finding is consistent with Aldao et al. (2010) who showed rumination to have a strong positive relationship with general psychopathology, and highest specifically for depression (i.e., $r = 0.55$). Such a finding may be accounted for by the anhedonic and decreased motivational features of depression. The general intention to soothe, while still not taking action, might also be explained by the fact that depressed individuals tend to engage in passive avoidance that manifests as behavioural and social withdrawal (Campbell-Sills & Barlow, 2007). However, even more than the issue of passivity, this finding also opens the possible interpretation that depressed individuals may not actually have a clear sense of what they need to assuage their distress, further eroding their sense of hope for feeling better.

Interestingly, when individuals in the clinical group were presented with distressing situations, our findings...
did not show them to be significantly different from the non-clinical group in the frequency with which they used generic and behavioural strategies for emotion regulation (i.e., active avoidance, distraction and physical comforts), while, at first, this seems inconsistent with the robust finding of Aldao et al. (2010) that higher levels of psychopathology were also associated with the increased use of avoidance and suppression. However, our inclusion of ‘using physical comforts or exercise’ into the broader CERS’s conceptualization of behavioural strategies makes side-by-side comparisons difficult. Furthermore, Aldao et al. (2010) examined emotion regulation strategies as isolated constructs (i.e., avoidance alone versus reappraisal alone), whereas the CERS treats these as hierarchically organized (i.e., on a continuum of complexity), such that when general action strategies (e.g., self-distraction by avoiding cues to a recent heartbreak) are combined with specific meaning strategies (e.g., meaning-making through the exploration of new romantic possibilities), the overall effort in emotion regulation is considered a nested and more complex set of strategies. We believe that these differences in measurement explain the mixed findings.

In contrast, the specific and more complex strategies described by the CERS (e.g., reappraisal, positive self-talk, active self-nurturing and combined strategy sets) successfully differentiated the clinical and non-clinical groups. The non-clinical controls were more likely to engage in experiential meaning-making as a type of emotion regulation strategy. That is, they were more likely to use meaning-making to mitigate their negative affect: a top-down processing that is known to go awry in depressed individuals (Davidson, Fox, & Kalin, 2007). Moreover, the sum effect of these differences was that the non-clinical group in the frequency with which they used generic and behavioural strategies for emotion regulation (i.e., active avoidance, distraction and physical comforts), while, at first, this seems inconsistent with the robust finding of Aldao et al. (2010) that higher levels of psychopathology were also associated with the increased use of avoidance and suppression. However, our inclusion of ‘using physical comforts or exercise’ into the broader CERS’s conceptualization of behavioural strategies makes side-by-side comparisons difficult. Furthermore, Aldao et al. (2010) examined emotion regulation strategies as isolated constructs (i.e., avoidance alone versus reappraisal alone), whereas the CERS treats these as hierarchically organized (i.e., on a continuum of complexity), such that when general action strategies (e.g., self-distraction by avoiding cues to a recent heartbreak) are combined with specific meaning strategies (e.g., meaning-making through the exploration of new romantic possibilities), the overall effort in emotion regulation is considered a nested and more complex set of strategies. We believe that these differences in measurement explain the mixed findings.

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In a different scenario, the individual experiences intense and painful emotion, but it remains bearable nonetheless, at least for the time being. Distress that is intense yet tolerable is better mitigated by reappraisal, problem-solving and acceptance, which help facilitate the articulation of idiosyncratic meanings and unmet needs underlying ones emotional pain. The long-term goal of this approach to regulation is to help that person develop a better repertoire of strategies for coping with such intense feelings.

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Clinical and Theoretical Implications
Together, these findings suggest a promising framework for conceptualizing emotion regulation, not only in terms of one or another strategy but also in terms of its complexity, as well as the overall range or repertoire of strategies that an individual seems to make use of. While more development in both research and theory is needed, the CERS offers a preliminary conceptualization of emotion regulation that considers the complexity of a given strategy in terms of its general (‘one size fits all’) action versus specific (‘personal and idiosyncratic’) meaning—or a combination thereof. The study has also provided data to suggest that a basic difference between our samples is that the clinical group spontaneously reported a range of strategies that entail passive responding and generic behavioural regulation. In contrast, the repertoire of participants in the non-clinical control sample coped with distress by using the same behavioural strategies as did the clinical sample, as well as additional meaning-making strategies, that were unique to the non-clinical control group.

From this perspective, one type of regulation strategy is not necessarily superior to another; it depends on the context. It stands to reason that emotion regulation is an ongoing process for all individuals, whether suffering from clinical symptoms or not, but we might consider an individual’s moment-by-moment level of distress as an indicator of which skill set might be most suitable, particularly given the tolerance for distress that is required to generate meaning in times of distress. For example, emotion that is overwhelming, highly aversive and disorganizing is more suited to immediate and non-evocative forms of emotion regulation. Thus, the indicated interventions (e.g., distraction, suppression of feeling and generic self-comforting behaviours) do not rely on meaning-making as such and avoid sustained engagement with intolerable distress. When overwhelming and intolerable distress is typical for an individual, the long-term goal of facilitating emotion regulation is to help that person develop a better repertoire of strategies for coping with such intense feelings.

Limitations and Future Research Directions
As mentioned, test–retest reliability would likely be a useful additional index of reliability given the nature of varying CERS vignettes. On one hand, the nature of emotion regulation is unique to both a particular situation and the coping repertoire of a given individual. However, one might explore the possibility of there being some kind of stability in the strategies that a given person uses to regulate emotion across situations. Moreover, given that the CERS has low to moderate correlations with the measure of characterological features (i.e., trait anxiety, depressive style and emotional awareness), it suggests that the construct might similarly be understood as some trait reflection of emotional competence. Future research should be directed at establishing the consistency of emotion regulation strategies in the CERS over time while recognizing the possibility of differential strategies based on the types of situation presented.
For pragmatic reasons, the current non-clinical and clinical samples are also mostly limited to the representation of women (80–90% women, across the two studies). The gender differences in emotional awareness and expression are well known (Barrett, Lane, Sechrest, & Schwartz, 2000). However, given that emotion regulation, particularly behavioural forms of self-soothing, can be tacit and outside of one’s awareness, it is difficult to know what the impact of gender might be on this different kind of emotional process. With an eye to this issue, future studies should seek an equal representation of men and women. The deliberate study of gender differences in emotional regulation should be undertaken using the CERS. Also, due to practical constraints, Study 2 was limited in its clinical sample size (n = 40), which is why its findings are taken as pilot exploration of the issues at hand. Although there is some potential to generalize the study’s findings to broader clinical populations, it is also important to note that these participants were recruited at a university counselling centre. As such, this particular clinical population of women in their early 20s was also more likely to be of higher than average intelligence, have more insight and be motivated for treatment. Therefore, future studies using the CERS would benefit from using a non-university sample to generalize the results and establish the usefulness of the measure.

In this study, vignettes were used to solicit participant responses, and those responses were subsequently rated on the CERS. However, the CERS as a rating scale is likely to be useful even without the use of vignettes. Indeed, future researchers working on clinical difficulty, health psychology or psychotherapy case formulation may find it useful to conduct the CERS rating within an interview context, rather than using the standardized questionnaire format. In doing so, one could use more spontaneous questions, without the cues or prompts for regulating, that were implicit in the instructions we presented with vignettes (i.e., ‘...What would you do to make yourself feel better?’). In keeping with this effort to minimize cues or prompts, careful attention must also be paid to ensuring other measures in the study that do not inadvertently facilitate the emotion regulation process.

Furthermore, by using an interview, researchers would be able to determine whether individuals can regulate emotion successfully based on a participant’s spontaneous account of what happened in the way of emotion regulation, whether or not the action was within the participant’s emotional awareness. This would allow individuals to reveal their preferred emotion regulation strategies indirectly, rather than being prompted through an explicit inquiry about self-regulation. Additionally, clinical researchers could administer the CERS in a pre-post treatment format, perhaps from the client narratives or observed accounts, as a measure of client progress and treatment efficacy.

REFERENCES


### APPENDIX A
#### COMPLEXITY OF EMOTION REGULATION SCALE (CERS)

<table>
<thead>
<tr>
<th>Category (−1 to 6)</th>
<th>Action tendency</th>
<th>Level of functioning</th>
<th>Need</th>
<th>Meaning</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>(0) No Response</td>
<td>No deliberate action to interrupt or act on situation</td>
<td>Arousal is moderate to high, possibly interfering with functioning</td>
<td>No mention of any need</td>
<td>No acknowledgment or reference to negative feelings</td>
<td>'I would do nothing. /I don’t know, I would let it pass. /There isn’t anything I could do’</td>
</tr>
<tr>
<td>(1) No action to soothe (despite any general intention)</td>
<td>No deliberate action to interrupt or act on situation, rumination</td>
<td>Arousal is moderate to high, possibly interfering with functioning</td>
<td>Mention of a need to feel differently</td>
<td>Negative feeling(s) acknowledged</td>
<td>'I would remain calm, feel the pain and do nothing. /It isn’t my house on fire, so I won’t get upset. /Grit my teeth until it goes away’</td>
</tr>
<tr>
<td>(2) General distraction: unrelated interruption</td>
<td>Implementation of a behaviour to interrupt, distract, avoid or suppress negative feeling</td>
<td>Arousal is moderate to high, possibly interfering with functioning</td>
<td>No mention of a need that they have for healthy functioning</td>
<td>Negative feeling(s) and a need to reduce emotion arousal both acknowledged</td>
<td>'I would count backward from 100. /Run away, avoid. /Distract by reading, working. /Watch TV, play loud music’</td>
</tr>
<tr>
<td>(3) General distraction: comforting sensory experience</td>
<td>Implementation of a behaviour to create a new sensory–motor experience to reduce negative feelings</td>
<td>Arousal is moderate to high, possibly interfering with functioning</td>
<td>No mention of a need that they have for healthy functioning</td>
<td>Negative feeling(s) and a need to reduce emotion arousal both acknowledged</td>
<td>'I would sit at home and eat ice cream or my favourite food. /Take a shower. /Splash cold water on my face. /Go for a 5 km run. /Smell flowers. /Listen to soft calming music. /Relaxation meditation’</td>
</tr>
<tr>
<td>(4) Specific meaning: generation</td>
<td>Presence of self-directed reappraisal for caring, tenderness, soothing or nurturing</td>
<td>If arousal present, it is regulated</td>
<td>Mention of a need that they have for healthy functioning</td>
<td>Detailed reflection or general reappraisal of personal meaning related to painful experience</td>
<td>'I would look on the bright side’</td>
</tr>
<tr>
<td>(5) Specific meaning: transformation</td>
<td>Presence of self-directed reappraisal and related goal-directed action for caring, tenderness, soothing or nurturing</td>
<td>If arousal present, it is regulated</td>
<td>Attention to unmet need through positive self-evaluation and experiential problem-solving</td>
<td>Detailed reflection, imagery or associated memories that elaborate difficult experience. Elaborated reappraisals that lead to problem-solving though new meaning</td>
<td>‘Call my best friend and catch up’</td>
</tr>
<tr>
<td>(6) Combined regulation strategies</td>
<td>Presence of general AND specific meaning-making strategies</td>
<td>If arousal present, it is regulated</td>
<td>Attention to unmet need is adaptive and healthy</td>
<td>Acknowledgment of need for different strategies or to organize strategies</td>
<td>‘Remind myself that it isn’t a life or death situation’</td>
</tr>
</tbody>
</table>

(Continues)
### APPENDIX (Continued)

<table>
<thead>
<tr>
<th>Category (-1 to 6)</th>
<th>Action tendency</th>
<th>Level of functioning</th>
<th>Need</th>
<th>Meaning</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>(-1) Maladaptive emotion regulation</td>
<td>Attempts are self-destructive or reckless</td>
<td>Arousal moderate to high, often interfering with functioning</td>
<td>Need may or may not be mentioned</td>
<td>Action is self-destructive, reckless or hateful meaning</td>
<td>bath. Then I would sit down and probably write in my journal. ‘I would cut myself to feel better.’ Go to the bar and find someone to sleep with. ‘I would send him hate-mail.’</td>
</tr>
</tbody>
</table>

*Note: Reader may contact the first author for the unabridged version of the measure’s coding criteria or go to [http://www1.uwindsor.ca/people/apl/29/research-tools](http://www1.uwindsor.ca/people/apl/29/research-tools).*