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The influence of context on the implementation of adaptive emotion regulation strategies

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ABSTRACT

Putatively adaptive emotion regulation strategies (e.g., acceptance, problem solving, reappraisal) show weaker associations with psychopathology than putatively maladaptive strategies (e.g., avoidance, self-criticism, hiding expression, suppression of experience, worry, rumination). This is puzzling, given the central role that adaptive strategies play in a wide range of psychotherapeutic approaches. We explored this asymmetry by examining the effects of context (i.e., emotion intensity, type of emotion, social vs. academic circumstances) on the implementation of adaptive and maladaptive strategies. We asked 111 participants to describe 8 emotion-eliciting situations and identify which strategies they used in order to regulate their affect. We found support for a contextual model of emotion regulation, in which adaptive strategies were implemented with more cross-situational variability than maladaptive strategies. In addition, the variability in implementation of two adaptive strategies (acceptance, problem solving) predicted lower levels of psychopathology, suggesting that flexible implementation of such strategies in line with contextual demands is associated with better mental health. We discuss these findings by underscoring the importance of adopting a functional approach to the delineation of contextual factors that influence the implementation of emotion regulation strategies.

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Background

Emotion regulation, which has been conceptualized as the process by which individuals modify their emotions or the situations eliciting emotions in order to respond appropriately to environmental demands (Gross, 1998), is a transdiagnostic factor associated with a range of types of psychopathology (e.g., Aldao & Nolen-Hoeksema, 2010, 2011; Aldao, Nolen-Hoeksema, & Schweizer, 2010; Harvey, Watkins, Mansell, & Shafran, 2004; Kring &

Sloan, 2010). Specific emotion regulation strategies have been argued to be either adaptive or maladaptive based on their immediate effects on affect, behavior, and cognition, as well as on their relationships to psychopathology (see reviews in Aldao et al., 2010; Gross, 1998; Kring & Sloan, 2010; Nolen-Hoeksema & Watkins, 2011).[1]

Putatively maladaptive strategies, such as avoidance of emotions and/or situations, hiding or suppressing the expression or experience of emotions, worrying or ruminating, and self-criticism, have been found to produce detrimental outcomes in experimental studies, including rebounds in negative affect following exposure to emotion-eliciting stimuli (e.g., Campbell-Sills, Barlow, Brown, & Hofmann, 2006), increases (and rebounds) in sympathetic activation (e.g., Gross, 1998; Gross & Levenson, 1993; Wegner, Broome, & Blumberg, 1997), diminished autonomic flexibility (e.g., Hofmann et al., 2005), memory difficulties (e.g., Richards, Butler, & Gross, 2003), and declines in instrumental behavior and social support (e.g., Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008). Moreover, self-reports of the use of these strategies have been associated with the development and maintenance of a wide range of mental disorders, including depression (e.g., Nolen-Hoeksema et al., 2008), anxiety disorders (e.g., Mennin, Holaway, Fresco, Moore, & Heimberg, 2007; Salters-Pedneault, Roemer, Tull, Rucker, & Mennin, 2006; Werner, Goldin, Ball, Heimberg, & Gross, 2011),

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[1] Although a useful heuristic given the available empirical evidence, conceptualizing strategies as adaptive or maladaptive can be considered the functional equivalent of labeling an emotion like anxiety as "bad" and an emotion like happiness as "good." Not only does this notion seem bizarre to anyone who has ever noticed the motivating function of anxiety or gotten "too carried away" by a state of happiness, but it is also in direct contradiction with the conceptual underpinnings of the emotion regulation framework, which underscores the importance of evaluating the effectiveness of strategies in relation to the particular context in which they are implemented (unfortunately, this is rarely reflected in study designs). In this investigation, we propose a first step in the departure from such problematic nomenclature by conducting a systematic modeling of the influences of contextual factors on the implementation of strategies.

eating disorders (e.g., Evers, Stok, & de Ridder, 2010; Nolen-Hoeksema, Stice, Wade, & Bohon, 2007), and borderline personality disorder (e.g., Dixon-Gordon, Chapman, Lovasz, & Walters, 2011; Lynch, Trost, Salsman, & Linehan, 2007; Neasciu, Rizvi, & Linehan, 2010).

Conversely, putatively adaptive strategies, such as acceptance, problem solving, and cognitive reappraisal (i.e., thinking differently about a situation in order to downregulate the amount of emotion felt; Gross, 1998) have been shown in experimental studies to lead to beneficial outcomes, including reductions in the experience of negative affect (e.g., Goldin, McRae, Rame, & Gross, 2007), increased pain tolerance (e.g., Hayes, Bissett, et al., 1999), effective interpersonal functioning (e.g., Richards & Gross, 2000), and diminished cardiac reactivity (e.g., Campbell-Sills et al., 2006). In self-report studies, they have also been associated with low levels of symptoms of psychopathology (e.g., Aldao et al., 2010). Thus, adaptive and maladaptive regulation strategies have been associated with symptoms of psychopathology, albeit in different directions.

Notably, the putatively maladaptive strategies have shown a larger magnitude in their relationship to psychopathology than adaptive strategies (e.g., Aldao & Nolen-Hoeksema, 2010, 2011; Aldao et al., 2010). The weak inverse association between adaptive strategies and psychopathology is particularly noteworthy, as adaptive strategies are important components of a variety of treatment modalities, ranging from traditional CBT to newer, third-wave approaches (e.g., Beck, 1976; Hayes, 2008; Hofmann & Asmundson, 2008; Linehan, 1993; Roemer, Orsillo, & Salters-Pedeneault, 2008; Segal, Williams, & Teasdale, 2001).

A contextual approach

One potential explanation for this weaker predictive power of adaptive strategies is that their effective implementation might be more susceptible to contextual demands. In other words, whereas maladaptive strategies, such as avoidance or rumination, may produce detrimental outcomes in most contexts in which they are implemented (e.g., Hayes, Bissett, et al., 1999; Nolen-Hoeksema et al., 2008), putatively adaptive strategies might in fact lead to desirable outcomes only when deployed in the appropriate context (Aldao & Nolen-Hoeksema, 2010, 2011; Aldao et al., 2010). Indeed, in the study of emotion regulation and psychopathology, there has been an emerging interest in the importance of flexibility in implementing strategies that match contextual demands as key to psychological health (e.g., Bonanno, Pat-Horenczyk, & Noll, 2011; Cheng, 2001; Kashdan & Rottenberg, 2010). Bonanno and colleagues have shown that expressive flexibility, that is, the ability to flexibly enhance or suppress emotional expression, predicts long term adjustment (Bonanno, Papa, Lalande, Westphal, & Coifman, 2004), protects against the deleterious effects of cumulative life stress (Westphal, Seivert, & Bonanno, 2010), and is negatively associated with complicated grief (Gupta & Bonanno, 2011). Similarly, Rottenberg and colleagues (Rottenberg, Gross, & Gotlib, 2005) have shown that depression is characterized by emotion context insensitivity, that is, valence-independent blunted emotional reactivity. Conversely, context sensitivity when describing negative emotions regarding a recent loss has been associated with fewer depressive symptoms prospectively (Coifman & Bonanno, 2010) and flexible emotional responsiveness to a wide range of stimuli has been shown to predict resiliency (Waugh, Thompson, & Gotlib, 2011). Relatedly, symptoms of depression have been associated with the inflexible implementation of experiential avoidance (Shahar & Herr, 2011), a strategy conceptualized as functionally inverse to acceptance (e.g., Hayes, Strosahl, & Wilson, 1999). From a treatment standpoint, Hayes, Strosahl et al. (1999) have

incorporated the framework of functional contextualism and psychological flexibility into their treatment approach, Acceptance and Commitment Therapy (ACT).

Current investigation

Despite much recent interest in the influence of context on the adaptiveness of emotion regulation, most of the work has narrowly focused on two methodological approaches: administration of trait self-report measures of emotion regulation and/or emotion inductions in controlled laboratory settings (c.f., a handful of experience sampling studies, e.g., Moberly & Watkins, 2008). Therefore, very little is known about the process by which individuals spontaneously implement strategies in response to naturally fluctuating contexts. To address this limitation, we developed a new approach to assess the implementation of emotion regulation strategies across varying contexts. We asked participants to retrospectively identify 24 situations over the past two weeks that varied in the type of emotion they elicited (i.e., anger, anxiety, happiness, sadness), their intensity (i.e., low, medium, high), and the circumstances (i.e., social, achievement). We included happiness, given recent theoretical and empirical work underscoring the potential deleterious effects of positive affect (e.g., Mauss, Tamir, Anderson, & Savino, 2011) and the subsequent need for its regulation. We then asked participants to rate the extent to which they implemented specific emotion regulation strategies in response to each of the events. In line with a transdiagnostic model of emotion regulation (e.g., Aldao & Nolen-Hoeksema, 2010; Aldao et al., 2010; Harvey et al., 2004; Kring & Sloan, 2010), we assessed for symptoms of a wide range of disorders, namely, depression, anxiety, eating pathologies, and borderline personality features.

In addition, the study of emotion regulation strategies and flexibility has been characterized by comparisons between a small and narrow range of strategies (most often reappraisal and expressive suppression; c.f., Hofmann, Heering, Sawyer, & Asnaani, 2009 examined three). Therefore, in this investigation, we simultaneously examined the implementation of 7 emotion regulation strategies: acceptance, problem solving, and reappraisal (i.e., adaptive strategies) and self-criticism, hiding expressions of emotions, suppressing experience of emotions, and worry/rumination (i.e., maladaptive).

We tested the following hypotheses. First, we examined whether putatively adaptive strategies would be implemented to a greater or lesser extent than putatively maladaptive strategies. Second, we predicted that the implementation of adaptive strategies would show more variability across situations than that of maladaptive strategies, supporting the notion that the implementation of adaptive strategies is more context-dependent than that of maladaptive strategies. Third, we predicted that, in line with the literature on the importance of flexibility for well-being (e.g., Bonanno, Papa, O'Neill, Westphal, & Coifman, 2004; Hayes, Strosahl, et al., 1999; Rottenberg et al., 2005) the variability in the implementation of strategies, particularly adaptive strategies, would add to the prediction of psychopathology above their mere implementation.

Method

Participants

Recruitment

Participants were recruited using Amazon's Mechanical Turk (mTurk.com), an internet-based platform that allows one to request jobs, such as survey completions, from participants seeking monetary compensation. mTurk.com facilitates high quality data