



## Cognitive reappraisal and acceptance: An experimental comparison of two emotion regulation strategies

Martin Wolgast\*, Lars-Gunnar Lundh, Gardar Viborg

Department of Psychology, Lund University, Box 213, 221 00 Lund, Sweden

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### ABSTRACT

The purpose of the present study was to compare the effect of cognitive reappraisal and acceptance on subjective distress, physiological reactions and behavioral avoidance in relation to aversive emotional states elicited by film-clips. Ninety-four participants were randomized to one of three groups. The Reappraisal group was instructed to think about what they saw in a way that minimized negative emotional reactions, the Acceptance group was told to let their feelings come and go without trying to control or avoid them, while the Watch (control) group was told just to watch the film-clips. Compared to the control condition, both reappraisal and acceptance led to significant reductions of subjective distress, physiological reactions associated with aversive emotions and behavioral avoidance. On the three types of measures there were few significant differences between the Reappraisal and Acceptance groups, but when such differences existed they were to the benefit of the Reappraisal condition. In the reappraisal condition there was however a positive correlation between elicited aversive emotion and avoidance, while no such correlation existed in the acceptance condition. The results are interpreted and discussed in relation to the theories underlying reappraisal and acceptance as well as the conceptual framework for emotion regulation established by Gross (2007).

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### Introduction

The empirical study of emotion regulation has been a growing research area the last decade (Rottenberg & Gross, 2007) and the field has seen an increasing number of both experimental (e.g. Eifert & Heffner, 2003; Feldner, Zvolensky, Eifert, & Spira, 2003; Gross, 1998; Hofmann, Heering, Sawyer, & Asnaani, 2009; Liverant, Brown, Barlow, & Roemer, 2008) and individual differences studies (e.g. Gross & John, 2003; Kashdan, Barrios, Forsyth, & Steger, 2006; Stewart, Zvolensky, & Eifert, 2002) regarding the process and outcome of different strategies for emotion regulation. In parallel with this development clinical psychology, and especially the field of cognitive and behavioral therapies, has seen a rising discussion regarding the clinical usefulness of strategies focusing on changing versus accepting experiential content as a process of change in psychotherapy (e.g. Arch & Craske, 2008; Clark, 1999; Hayes, 2008; Hayes, Strosahl, & Wilson, 1999; Mathews, 2006).

In traditional cognitive behavioral therapies cognitive restructuring, i.e. modifying dysfunctional cognitions that contribute to

psychological distress, is a corner stone of the therapeutic process (Beck, Rush, Shaw, & Emery, 1979; Clark, 1999) and is supposed to be a central mediator of the therapeutic outcome (Clark, 1999; Wishman, 1993). In contrast, facilitating acceptance of experiential content is a central part of the therapeutic process in the so called “third wave of behavioral therapies” (Hayes, Folette, & Linehan, 2004) and most notably so in Acceptance and Commitment Therapy (Hayes et al., 1999). Acceptance in this context is defined as an approach that encourages individuals to experience their emotions, thoughts, and bodily sensations fully without trying to change, control, or avoid them, entailing openness to internal experiences and willingness to remain in contact with those experiences even if they are uncomfortable (Hayes et al., 1999).

When comparing psychotherapeutic paradigms, a complimentary approach to randomized controlled trials of broad treatment protocols is to conduct what Hayes, Luoma, Bond, Masuda, and Lillis (2006) called “micro studies”, i.e. experimental studies on key processes of different therapies to see if they are psychologically active and work in a fashion that accords with theory. The present study seeks to provide such an experimental comparison of the effects of cognitive reappraisal and acceptance on subjective distress, avoidance tendencies, and physiological reactions in relation to aversive emotional states. This is done in the context of Gross' (1998, 2007) model of emotion regulation, where emotion

\* Corresponding author. Tel.: +46 704872585.

E-mail address: [martin.wolgast@psychology.lu.se](mailto:martin.wolgast@psychology.lu.se) (M. Wolgast).

regulation is defined as attempts individuals make to influence which emotions they have, when they have them and how these emotions are experienced and expressed (Gross, 1998; Sloan & Kring, 2007). In this temporal model of emotion regulation which broadly distinguishes between *antecedent focused* and *response focused* emotion regulation. Antecedent focused emotion regulation involves attempts to alter emotional experiences before the emotion is fully generated; while response focused strategies involve attempts to alter emotional responding after the emotion has been generated.

Cognitive reappraisal is a form of antecedent focused emotion regulation that involves cognitively construing a potentially emotion-eliciting situation in a way that changes its emotional impact (Gross & John, 2003). In an experimental study cognitive reappraisal was found to decrease both experiential and physiological expression of negative emotion compared to the response focused strategy of emotional response suppression (Gross, 1998). Compared to a neutral control condition, cognitive reappraisal was found to be associated with less experienced negative emotion, less expressed emotion and a non-significant tendency toward reduction of physiological responding.

When conceptualized as an emotion regulation strategy within the framework established by Gross (1998, 2007) acceptance is most logically construed as a response focused strategy aimed at allowing the experience of emotion without attempts to alter or suppress it (Hofmann & Asmundson, 2008). Acceptance may also however be said to contain an antecedent focused cognitive change component regarding the acceptability of an emerging emotional experience (Liverant et al., 2008). In experimental research on the consequences of emotional acceptance (e.g. Campbell-Sills, Barlow, Brown, & Hofmann, 2006a, 2006b; Eifert & Heffner, 2003; Feldner et al., 2003; Levitt, Brown, Orsillo, & Barlow, 2004) it has been shown that acceptance is associated with experiencing less fear, catastrophic thoughts, avoidance behavior and better recovery from negative affect as compared to suppression. Interestingly, many of the experimental studies made on acceptance as emotion regulation strategy indicate that, in comparison to people with low levels of emotional acceptance, people with high levels do not experience less physiological arousal or bodily sensations related to the elicited reaction, but they report lower levels of subjective distress (Eifert & Heffner, 2003; Feldner et al., 2003; Karekla, Forsyth, & Kelly, 2004). These findings indicate that acceptance is more related to how bodily arousal or other forms of physiological emotional responses are experienced and evaluated rather than how they actually occur, and thus support the supposition that acceptance is primarily a response focused strategy of emotion regulation.

To our knowledge, only two previous studies have experimentally compared the effects of cognitive reappraisal and acceptance. Hofmann et al. (2009) studied the effects on anxious arousal of using acceptance, reappraisal or suppression in a situation where the participants were asked to give an impromptu speech in front of a video camera. The results suggested that that both reappraisal and acceptance strategies were more effective than suppression for moderating the physiological arousal while the reappraisal strategy was more effective for moderating subjective feelings of anxiety than attempts to suppress or accept the emotional experience. The authors of the study remarked however that the differences overall were small and that a more potent stimulus for emotion elicitation might have been used (Hofmann et al., 2009). None the less the study suggests that cognitive reappraisal generally was the most adaptive strategy in terms of reducing anxiety responses. Furthermore when it comes to acceptance, the study suggest an outcome pattern that somewhat contrasts with what has been found in other experimental studies of acceptance, in that the most obvious

adaptive effect were found for the physiological outcome measure and not the subjective, thus to some extent strengthening the supposition that acceptance also has antecedent focused components. The second study (Szasz, Szentagotai, & Hofmann, 2011) compared the effects of reappraisal, acceptance and suppression on anger and frustration tolerance. In this study as well, reappraisal was found to have the most adaptive effects in that it led to lower self-reported anger and higher frustration tolerance than the other strategies.

As far as we know, none of the studies on emotion regulation where participants have been randomly assigned to use a certain regulatory strategy have studied whether individual differences in habitual tendencies to regulate emotions in one way or another moderates the effects of the experimental manipulation, though Hofmann et al. (2009) suggested the need for future studies to examine the role of individual differences in this regard. No such effect would be expected if the different strategies are readily accessible to all and used repeatedly in everyday life, even if the relative extent to which we use them varies across individuals. If on the other hand the different strategies are viewed as skills or abilities that we need training to learn effectively or reflect more stable and rigid approaches to emotional responses, one might suspect that individual differences would moderate the effects of the experimental instructions in that participants would find it more easy to use a strategy they habitually use. The studies referred to above comparing groups defined by scoring high or low on experiential avoidance (Eifert & Heffner, 2003; Feldner et al., 2003; Karekla et al., 2004) suggest that individual differences do affect the responses to experimental elicitations of emotional reactions.

The construct of 'avoidance' refers to refraining from, or escaping from, an action, person or thing (Ottenbreit & Dobson, 2004). Behavioral or situational avoidance is an important aspect in many emotional disorders, both with regard to descriptive diagnostic criteria (American Psychiatric Association, 1994), and as an important maintaining factor in the pathological condition (e.g. Barlow, 2008; Martell, Addis, & Jacobson, 2001). Accordingly, both cognitive reappraisal and acceptance have distinct and important relationships to behavioral avoidance, especially within the frameworks of traditional CBT and ACT.

In traditional CBT, an important aspect of working with cognitive reappraisal is to identify how a particular cognitive process (for example an automatic thought) in a given situation affects our subsequent emotions and behaviors and to develop and test alternative cognitions that lead to other behavioral response patterns (Beck et al., 1979). Behavioral avoidance is thus seen as an important target for therapeutic interventions, but the effect is assumed to occur indirectly, as the result of altered cognitive processes. From this perspective one would expect a causal chain from altered appraisals to reduced negative emotional reactions which in turn lead to reduced behavioral avoidance. Thus the default association between emotional distress and behavioral avoidance, that we tend to avoid situations or stimuli that we associate with aversive emotions, is likely to be maintained when using reappraisal and a reduction in avoidance would be achieved mainly by the fact that we change our cognitive and emotional reaction to the emotionally relevant situations or stimuli.

By acceptance as construed within ACT on the other hand, behavioral avoidance is more directly addressed. In fact, one of the main purposes of establishing experiential acceptance is to alter the social or verbal context in such a way that our behavior is less regulated by aversive private events (Hayes, 2008). If such a strategy is employed and works according to the underlying theory, one would expect a deviation from the default association

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