



The effects of cognitive defusion and thought distraction on emotional discomfort and believability of negative self-referential thoughts

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ABSTRACT

Previous research has shown that rapid vocal repetition of a one-word version of negative self-referential thought reduces the stimulus functions (e.g., emotional discomfort and believability) associated with that thought. The present study compares the effects of that defusion strategy with thought distraction and distraction-based experimental control tasks on a negative self-referential thought. Non-clinical undergraduates were randomly assigned to one of three protocols. The cognitive defusion condition reduced the emotional discomfort and believability of negative self-referential thoughts significantly greater than comparison conditions. Favorable results were also found for the defusion technique with participants with elevated depressive symptoms.

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1. Introduction

In recent years, acceptance- and mindfulness-based interventions (see Hayes, Follette, & Linehan, 2004) have been widely discussed and studied in the field of cognitive behavior therapy (CBT). As a group, these therapies generally focus more on the functional effects of private events (e.g., thoughts, feelings, physiological sensations, memories) than on content and frequency of these events in understanding and treating psychopathology (e.g., Fisher & Wells, 2005; Linehan, 1993; Segal, Teasdale, & Williams, 2004). An example of these interventions is Acceptance and Commitment Therapy (ACT) (Hayes, Strosahl, & Wilson, 1999).

ACT includes various techniques to change the *function* of private events in order to promote psychological health (e.g., Hayes, Luoma, Bond, Masuda, & Lillis, 2006). One set of techniques used particularly for this purpose are *cognitive defusion* strategies (see Luoma & Hayes, 2009). Cognitive defusion is roughly conceptualized as

altering the literal meaning and behavior-regulatory function of private events without necessarily altering the form, frequency, or situational sensitivity of these events (Blackledge, 2007). In ACT, defusion techniques are often employed in contexts where clients are excessively entangled or *fused* with their private events, such as negative self-referential thought (e.g., “I am depressed”; “I” = “depression”).

Control-based strategies, such as avoidance, thought suppression, and distraction are conventional coping methods for unwanted private events (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). Research has shown that these strategies, which directly target the form and frequency of unwanted private events, may be ineffective and potentially paradoxical (e.g., Eifert & Heffner, 2003; Gutiérrez, Luciano, Rodríguez, & Fink, 2004). Among these, the iatrogenic effect is especially clear in the case of suppression methods (e.g., Feldner, Zvolensky, Eifert, & Spira, 2003; Levitt, Brown, Orsillo, & Barlow, 2004; Marcks & Woods, 2007). For example, in a study by Marcks and Woods (2005) participants instructed to suppress their personally relevant intrusive thoughts were found to report difficulty in doing so and increased distress after suppression attempt. For this reason, ACT aims at strengthening the process of cognitive defusion for difficult private events, instead of employing control-based coping strategies.

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¹ A copy of the complete intervention manual is available from the first author.

Several focused studies have investigated the effects of specific cognitive defusion techniques on negative self-referential thoughts (e.g., Healy et al., 2008; Masuda, Hayes, Sackett, & Twohig, 2004; Masuda et al., 2009). One study investigated the effects of a commonly used cognitive defusion technique, “I am having a thought that...” (Healy et al., 2008). The study suggests that negative self-referential statements (e.g., “my life is pointless”) when presented in the defused format (e.g., “I am having a thought that my life is pointless”) can decrease the emotional discomfort associated with that statement and increase willingness to be exposed to these statements.

Another study examined the effects of rapid vocal repetition of a one-word version of a negative self-referential thought—another commonly used defusion technique (Masuda et al., 2004). This technique is derived from the observation that when a word is rapidly repeated out loud, the context required for the word to have its literal meaning is altered, and the literal meaning of the word disappears (Titchener, 1910). In the study, the defusion protocol consisted of a defusion rationale, training, and 30-s rapid vocal repetition of a one-word version of the negative self-referential thought. The defusion condition was compared to a distraction-based experimental control task (reading an article on Japan) and thought-control task. Primary dependent variables were reductions in emotional discomfort and believability of the self-referential negative thoughts. Results revealed that the defusion condition decreased the stimulus functions (i.e., emotional discomfort and believability) associated with these thoughts more so than comparison conditions across all participants.

A subsequent group parametric study examined whether the duration of one-word thought repetition systematically altered the impact of this defusion strategy (Masuda et al., 2009). The reduction of emotional discomfort was found to bottom out after 3–10 s of rapid repetition, whereas the maximum reduction of believability occurred after 20–30 s of repetition. These findings additionally suggest that the actual experiential exercise of rapid thought repetition is crucial for altering the stimulus function of negative self-referential thoughts, and that emotional discomfort and believability may be distinctive functional aspects of cognitive events.

While interesting and encouraging, previous studies did not clearly reveal the relative effects of rapid thought repetition. Although the original defusion study (Masuda et al., 2004) reported the superiority of the defusion condition to comparison conditions, multiple treatment interference likely occurred because each participant in the study received multiple interventions. Additionally, the thought-control condition in the study was employed for controlling gross demand characteristics. The subsequent parametric study (Masuda et al., 2009) did not compare the defusion protocol with an active comparison condition, either.

Additionally, the effects of this cognitive defusion technique have not been examined in clinical or sub-clinical samples. To date, there are several focused experimental studies reporting the positive effects of an acceptance-based emotion regulation strategy in clinical samples with emotional disorders (Campbell-Sills, Barlow, Brown, & Hofmann, 2006; Liverant, Brown, Barlow, & Roemer, 2008). These results are relevant to the present study in part because the acceptance-based strategy shares aims with defusion strategies (i.e., changes in the stimulus function of aversive private events). Given the lack of empirical evidence, it is worthwhile to investigate the effects of defusion using a subgroup from a non-clinical sample, such as non-clinical college undergraduates who report elevated psychological symptoms.

As a response to these emerging questions, the present study investigates the relative impact of the cognitive defusion technique (i.e., rapid thought repetition) on a self-referential negative

thought, as compared to a thought distraction strategy. The present study had several methodological and conceptual advantages over previous defusion studies (Masuda et al., 2004, 2009). The study employed a group design format in order to reduce extraneous variables, such as multiple treatment interference, and it more clearly identified the active comparison condition. The thought distraction strategy, which is roughly defined as an effort of selectively attending to an emotionally less distressing event or situation (Gross, 1998), was selected as the active comparison condition for several reasons. First, a distraction technique is a defined control strategy (e.g., McCaul & Malott, 1984) that appears theoretically distinct from cognitive defusion because of its primary focus on reducing the frequency of an unwanted private event by shifting attention away from it. Second, distraction can be an appropriate active comparison condition because it has been found effective in some contexts, especially in the situations of mildly and moderately aversive events (e.g., Gutiérrez et al., 2004). Finally, the distraction-based experimental control condition (e.g., reading an article about Japan) was also added to the study as a control group in order to control non-specific factors. Based on previous research findings (e.g., Gutiérrez et al., 2004; Masuda et al., 2004, 2009), it was hypothesized that the cognitive defusion condition would reduce the emotional discomfort and believability of negative self-referential thoughts greater than the comparison conditions. It was further predicted that positive effects of cognitive defusion also would be seen among participants who reported “elevated depressive symptoms.”

2. Method

2.1. Participants and settings

The study was conducted at a large public 4-year university in Georgia. Participants were 132 students (77%, $n_{Female} = 102$) recruited from undergraduate psychology courses through a web-based research participant pool. The age of the participants ranged from 17 to 60 years ($M = 20.91$, $SD = 6.96$). The ethnic composition of the sample was diverse with 39% ($n = 50$) identifying as “European American,” 33% ($n = 43$) identifying as “African American,” 14% ($n = 19$) identifying as “Asian American/Pacific Islander American,” 9% ($n = 11$) identifying as “Hispanic American,” and 5% ($n = 7$) identifying as “other” or “bicultural.”

2.2. Demographic and screening form

Following the consent procedure, participants completed a demographic form and the BDI-II. The demographic variables included gender, age, and ethnicity.

2.2.1. Beck Depression Inventory-II

The Beck Depression Inventory-II (BDI-II) (Beck, Steer, & Brown, 1996) is often used as a screening form for general psychological functioning. The measure appeared to be particularly relevant because of the link between negative self-referential thoughts (the dependent variables of the study) and depression (the event measured by the BDI-II). The BDI-II is a 21-item self-report questionnaire that is designed to assess recent depressive symptoms. Each item is rated using a 4-point severity scale, ranging from 0 to 3. The total score ranges from 0 to 63 with greater scores suggesting greater depressive symptoms. The BDI-II has shown good test-retest reliability ($r = .93$) and has demonstrated a high correlation with the original BDI ($r = .93$, Beck et al., 1996). In the present study, the mean BDI-II score was used as the cutoff for selecting a subsample of participants with elevated depressive symptoms.

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