



# Does mindfulness attenuate thoughts emphasizing negativity, but not positivity?



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## ARTICLE INFO

### Article history:

Available online 25 August 2014

### Keywords:

Mindfulness  
Cognition  
Thought  
Bias  
Rumination  
Valence  
Negative  
Positive

## ABSTRACT

The current research investigated whether mindfulness is differentially associated with thoughts that emphasize positive or negative valence. In Study 1, trait mindfulness was inversely associated with negative rumination but unassociated with positive rumination, controlling for state affect. In Study 2, participants completed either a mindful breathing meditation or a comparable control exercise, followed by a thought listing while viewing affective images. Compared to the control condition, the mindfulness condition listed proportionately fewer negative thoughts, particularly in response to negative images, and more non-valenced thoughts. The conditions did not differ in their proportions of positive thoughts. These results suggest that mindfulness may attenuate thoughts that emphasize negativity but not those that emphasize positivity.

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## 1. Introduction

Mindfulness involves using awareness to direct attention to current experiences as they unfold from moment to moment in a receptive or nonjudgmental way (cf. Kabat-Zinn, 1990). Mindfulness has been studied as a trait, in terms of individual differences in the tendency to be mindful in daily life (e.g., Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006; Brown & Ryan, 2003) and as a practicable state in mindfulness meditation and meditation-based interventions (cf. Brown, Ryan, & Creswell, 2007). Much of this evidence base concerns the benefits of mindfulness for preventing and reducing psychological distress and disorder, both in clinical and nonclinical populations (Keng, Smoski, & Robins, 2011; Khoury et al., 2013). Recent investigations have started to investigate potential mechanisms for such outcomes, raising questions about how mindfulness relates to more basic psychological processes. Though mindfulness might influence several facets of basic psychological processes, an important yet rather neglected aspect to investigate is thoughts that emphasize, or are weighted toward, positivity or negativity.

Individuals generally have and presumably need a mix of positive, negative, and neutral thoughts, but it is important to consider the degree to which they tend to emphasize the affective valence of

incoming information with thoughts that are weighted toward positivity or negativity. Although the terms ‘positive thinking’ and ‘negative thinking’ are common shorthand for the notion that thoughts of a particular valence are relatively dominant compared to thoughts of the opposite valence or neutral thoughts, we primarily employ the terms *emphasis* on, and *weighting* toward, positivity or negativity for greater clarity. The valence emphasized in thoughts typically is consequential for psychological distress and well-being. A large body of psychological evidence implicates thoughts that emphasize negativity in stress and depression, whereas thoughts that emphasize positivity often, although not always, can benefit well-being (cf. Aspinwall & Tedeschi, 2010; Beck, 2008). For example, from the standpoint of emotion regulation, thoughts that emphasize the valence of affective information (e.g., negatively weighted thoughts in response to negative emotions) can upregulate that affective state, increasing its intensity and duration (Watkins, 2008). This is one reason why rumination (i.e., repetitively thinking about an experience that has passed) on negative emotions tends to be more consistently problematic (e.g., promotes depression) than rumination on positive emotions (e.g., promotes positive affect that is beneficial to many populations; cf. Watkins, 2008).

Such tendencies influence psychological health through other means, beyond emotion regulation, as well. For example, negatively biased cognitive styles (marked by dysfunctional beliefs and attitudes, biased information processing, and cognitive distortions; cf. Beck,

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2008) predict negative life events, at least among depression-prone individuals (Safford, Alloy, Abramson, & Crossfield, 2007). Pessimism predicts avoidance and less persistence in response to stressors and can lead to health-damaging behavior (Carver, Scheier, & Segerstrom, 2010). Perhaps for these types of reasons, better psychological adjustment in nonclinical populations generally is marked by less negatively weighted thoughts, based on evidence from several studies using a simple thought-listing task (cf. Cacioppo, von Hippel, & Ernst, 1997).

At the same time, several types of positively weighted thoughts appear to contribute to well-being. Optimism and benefit finding enhance coping processes (Aspinwall & Tedeschi, 2010; Carver et al., 2010). Savoring, which in some forms is similar to rumination on positive affect but is not necessarily focused on past experience, can contribute to beneficial positive affect both in depressed (Höhn et al., 2013) and healthy individuals (Quoidbach, Berry, Hansenne, & Mikolajczak, 2010). It should be noted that thoughts that emphasize positivity might promote dysfunction among individuals who are predisposed to bipolar disorder (Johnson, McKenzie, & McMurrich, 2008), and there may be other cases in which positively weighted thoughts could have disadvantages (Carver et al., 2010; Crocker & Park, 2004). Even with those caveats, there are clearer and more consistent risks to psychological health from thoughts emphasizing negativity compared to positivity, and the latter has potential for benefits.

Some theory and evidence suggest that mindfulness may differentially relate to thoughts emphasizing negativity or positivity. According to Buddhist-derived theories, mindfulness entails or enables a decentered awareness of thoughts that may reduce the tendency to be habitually swept away in and attached to certain streams of thought, regardless of whether they concern pleasant or unpleasant information (Grabovac, Lau, & Willett, 2011; Gunaratana, 2002). It thus might be reasonable to hypothesize that more mindful individuals may be less mired in thoughts that emphasize valence in general, regardless of whether the valence is positive or negative. Alternatively, it also has been proposed that mindfulness may promote cognitive flexibility and choicefulness to use thoughts in more wholesome and adaptive ways (cf. Brown et al., 2007; Garland, Gaylord, & Fredrickson, 2011). This (rather than habitual attachments) could promote fewer negatively weighted and more positively weighted thoughts, particularly within a larger milieu that encourages valence differences. Not only might Western lay psychology provide such a context, but at least some Buddhist teachings are relatively consistent with Western empirical psychology in that negative thoughts require particular care (i.e., by not dwelling on or being influenced by them) because they tend to manifest harm to the self or others more readily than neutral or positive thoughts (Groth-Marnat, 1992). Concomitantly, mindfulness often is taught (e.g., as in Mindfulness-Based Stress Reduction; Kabat-Zinn, 1990) in conjunction with practices and philosophies that prescribe intentional cultivation of certain positive thoughts. Examples include statements silently repeated in lovingkindness, or *metta*, meditation, such as “may all beings live with ease,” and exercises that aim to increase awareness of pleasant experiences.

Preliminary empirical evidence suggests that mindfulness may affect the valence of thoughts, although much of this research was not designed to examine valence differences and has not adequately controlled for alternative explanations. Correlational studies suggest that trait mindfulness is inversely associated with tendencies toward negatively weighted thoughts including depressive rumination (cf. Keng et al., 2011), frequent and persistent dysfunctional thoughts (Frewen, Evans, Maraj, Dozois, & Partridge, 2008), and negative cognitive styles that characterize depression

and anxiety (Kiken & Shook, 2012). Other correlational evidence suggests that trait mindfulness is positively associated with tendencies toward positively weighted thoughts, including optimism (cf. Brown et al., 2007), positive reappraisals (Garland et al., 2011), and self-enhancing positive illusions that may protect psychological health (Boatright & McIntosh, 2008). One correlational study on mindfulness was designed to examine valence differences as a dimension of repetitive thinking, and found that several facets of trait mindfulness were associated with less negatively valenced and more positively valenced repetitive thought (Evans & Segerstrom, 2011).

Still, these correlational studies have not adequately controlled for potential alternative explanations, such as affect. Affect is associated with trait mindfulness and can play a role in responses to measures of valenced cognition (e.g., individuals with more negative affect may be less mindful and also report more negative thoughts and fewer positive thoughts; cf. Fresco, Heimberg, Abramowitz, & Bertram, 2006; Jislin-Goldberg, Tanay, & Bernstein, 2012; Keng et al., 2011). Therefore, affect needs to be accounted for in a correlational design to determine whether trait mindfulness uniquely relates to thoughts that emphasize positive or negative valence. In addition, an experimental design would help to isolate mindfulness from other potential third variables that may relate to the valence of thoughts. For experimental designs, inducing mindfulness through meditation in the laboratory can provide a tightly controlled test of effects of a more mindful state than typical mental states. Although the “dose” of mindfulness may be modest, this method helps to isolate aspects of mindfulness from other constructs and potential experimental contaminants typically introduced in longer meditation trainings.

Although several studies have employed such induction methods, only two studies, to our knowledge, have done so to directly examine how mindfulness affects the valence of thoughts, or cognition more broadly. Alberts and Thewissen (2011) found that a brief mindful breathing meditation, compared to a control condition that did not meditate, reduced recall of negative words but not positive words on a memorization task. This effect was not due to differences in affect or total number of words recalled. However, an active, comparable control condition is ideal for eliminating potential confounds. Kiken and Shook (2011) compared a mindful breathing meditation to an active control condition, an unfocused attention exercise, and found that the mindful breathing condition subsequently reported more optimism but there was no difference for pessimism. In sum, these experiments found inconsistent effects for positive and negative cognitions, perhaps due to either different control conditions or different measures of cognition. Altogether, these experimental studies of mindfulness induced by meditation, along with correlational studies of trait mindfulness, introduce but do not sufficiently answer the question of whether mindfulness differentially affects thoughts that emphasize positivity and negativity.

More research is needed to directly examine mindfulness and thought valence, examining both positivity and negativity, while controlling for the role of affect and more generally attempting to isolate mindfulness from related constructs. The current research aimed to fill this gap in the literature through two studies that examined thoughts emphasizing positivity and negativity in response to affective information. The general hypothesis was that, after controlling for state affect (Study 1) and experimentally inducing mindfulness (Study 2), more mindful individuals would demonstrate less negatively weighted thoughts. We did not have a specific *a priori* hypothesis regarding mindfulness and positively weighted thoughts due to mixed theoretical perspectives and evidence in the literature, but we aimed to explore this potential relation with greater precision.

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