

Shorter communication

# A test of the interactive effects of anxiety sensitivity and mindfulness in the prediction of anxious arousal, agoraphobic cognitions, and body vigilance

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## Abstract

The present investigation sought to examine the interactive effects of anxiety sensitivity [AS; Reiss, S., & McNally, R. J. (1985). Expectancy model of fear. In S. Reiss, & R. R. Bootzin (Eds.), *Theoretical issues in behavior therapy* (pp. 107–121). San Diego: Academic Press] and mindfulness [Brown, K. W., & Ryan, R. M. (2003). The benefit of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology*, 84, 822–848] in predicting panic-relevant processes. A community sample of 248 individuals participated in the study by completing a battery of self-report instruments. Consistent with prediction, the interaction between AS and mindfulness significantly predicted anxious arousal symptoms and agoraphobic cognitions, above and beyond the individual main effects, and did not significantly predict anhedonic depression symptoms. Contrary to prediction, the AS by mindfulness interaction did not significantly predict body vigilance. Theoretical implications are discussed and future directions are delineated.

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## Introduction

Anxiety sensitivity (AS) is the fear of anxiety and anxiety-related sensations (Reiss & McNally, 1985). This cognitive factor is theorized to predispose individuals to the development of panic and certain types of other anxiety problems (Reiss & McNally, 1985), a perspective that is empirically supported (Schmidt, Lerew, & Jackson, 1997, 1999). The vast majority of research on AS has focused on demonstrating its role in panic vulnerability (McNally, 2002). A topic that has received significantly less empirical attention is to what extent other theoretically relevant factors interact with AS in terms of predicting panic vulnerability.

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Mindfulness has increasingly been theorized to play an important role in psychological functioning generally and anxiety problems specifically (Zvolensky, Feldner, Leen-Feldner, & Yartz, 2005). Although distinct operationalizations of “mindfulness” have been proposed (e.g., Baer, Smith, & Allen, 2004; Zvolensky et al., 2005), Brown and Ryan (2003) developed a promising theoretically derived self-report measure entitled the Mindful Attention Awareness Scale (MAAS). The MAAS assesses individual differences in the frequency of *mindful attention and awareness* states over time, and thus, we will refer to this construct as “mindfulness.” According to Brown and Ryan (2003), mindfulness, as indexed by the MAAS, denotes conscious “attention to, and awareness of, what is occurring in the present” (p. 824). Here, mindfulness refers to open observation of internal and external processes, a process that may be important in disengaging individuals from automatic thoughts, habits, or maladaptive behavioral patterns (Brown & Ryan, 2003). This construct differs theoretically and empirically from other self-awareness-related constructs, such as objective self-awareness, self-consciousness, and other related constructs that define self-awareness (Brown & Ryan, 2003). This conceptualization of mindfulness also is distinct from the attention training model set forth by Wells, White, and Carter (1997), as attention training is a cognitive technique based on an information processing approach, while Brown and Ryan’s (2003) construct of mindfulness is theorized to offer a basic, *perceptual*—rather than cognitive—display of the current moment, a neutral appraisal or perception of stimuli “as they are” (Brown & Ryan, 2003, p. 824).

Initial work on the MAAS has indicated that it is negatively related to the intensity and frequency of negative affect symptoms over time (Brown & Ryan, 2003; Study 4). For example, high levels of mindfulness, as indexed by the MAAS, have been associated with lower mood disturbance and stress symptoms among cancer patients (Carlson & Brown, 2005). Other studies have found that the MAAS incrementally predicts affective vulnerability relative to negative and positive affectivity and emotional expression and processing associated with approach-oriented coping (Zvolensky et al., *in press*). Building from previous work, it was theorized that mindfulness may interact with established cognitive risk factors, such as AS, to significantly *decrease* vulnerability for panic-relevant symptoms and problems. Here mindfulness may serve to “dampen” the negative effects of an established risk factor like AS. For example, an individual high in AS is likely to fear the negative consequences of aversive stimuli (McNally, 2002) and cope with the corresponding emotional distress through escape/avoidance-oriented tactics (Zvolensky & Forsyth, 2002). Moreover, research on emotional learning suggests that this type of process unfolds rapidly and in a largely automatic fashion (Bechara et al., 1995). To the extent that a high AS individual can allocate attention to, and awareness of, what is occurring in the present moment, however, this cascade of automatic anxiety-related processes may be hindered or forestalled altogether. Specifically, mindfulness may theoretically permit the high AS individual to attend to the current situation, thereby gaining a more objective perception of the level of personal threat, rather than reacting to it in an excessively anxiety-relevant manner (i.e., catastrophizing). Here, we would theorize that only anxiety/panic processes should be related to this interactive process (cf. depressive symptoms) in the immediate situation, as this interactive mechanism seems specific to anxiety-related states. For example, according to Clark’s (1986) cognitive model of panic, individuals who engage in catastrophizing or “what if” future-oriented thinking thereby trigger the physiological symptoms of anxiety, thus leading to panic responses. A high AS individual with little ability to allocate attentional resources to the present moment may be more apt to report catastrophic cognitions and hence a greater range of more intense panic-relevant symptoms. This type of perspective is broadly consistent with models of mindfulness (Zvolensky et al., 2005) and information processing perspectives for anxiety psychopathology (Wells, 1994, 1999).

Together, the current study sought to examine the interactive effects of mindfulness and AS in predicting panic-relevant symptoms. It was expected that AS and mindfulness would interact to differentially relate to panic-relevant criterion variables. This perspective was driven by the conceptual model that if an individual can engage in mindfulness, this person would be at a significantly *lower* risk of experiencing automatic fearful cognitions related to panic symptoms. In addition, to test the specificity of this interactive association with panic-relevant symptoms, it was hypothesized that the AS by mindfulness interaction would *not* be significantly related to anhedonic depressive symptoms (i.e., an effect unique to the panic model and not apparent generally for all negative mood states).

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