

# Sensory-processing sensitivity in social anxiety disorder: Relationship to harm avoidance and diagnostic subtypes

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## Abstract

Sensory-processing sensitivity is assumed to be a heritable vulnerability factor for shyness. The present study is the first to examine sensory-processing sensitivity among individuals with social anxiety disorder. The results showed that the construct is separate from social anxiety, but it is highly correlated with harm avoidance and agoraphobic avoidance. Individuals with a generalized subtype of social anxiety disorder reported higher levels of sensory-processing sensitivity than individuals with a non-generalized subtype. These preliminary findings suggest that sensory-processing sensitivity is uniquely associated with the generalized subtype of social anxiety disorder.

Recommendations for future research are discussed.

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*Keywords:* Sensory-processing sensitivity; Social anxiety disorder; Harm avoidance; Diagnostic subtypes

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## 1. Introduction

Social anxiety disorder (SAD) is defined as “a marked and persistent fear of one or more social or performance situations in which the person is exposed to unfamiliar people or to possible scrutiny by others” (APA, 1994, p. 416). Results from the National Comorbidity Survey-Replication indicate that the lifetime prevalence rate of SAD is 12.1% (Kessler, Berglund, Demler, Jin, & Walters, 2005). If untreated, the disorder typically follows a chronic, unremitting course, leading to substantial impairments in vocational and social functioning (e.g., Stein & Kean, 2001; Stein, Torgrud, & Walker, 2000).

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SAD often begins in the mid-teens, but can also occur in early childhood and can manifest itself early on as childhood shyness (Hayward, Killen, Kraemer, & Taylor, 1998; Mick & Telch, 1998; Neal, Edelmann, & Glachan, 2002; Neal & Edelmann, 2003; Rosenbaum, Biederman, Hirshfeld, Bolduc, & Chaloff, 1991; Rosenbaum, Biederman, Pollack, & Hirshfeld, 1994; Schwartz, Snidman, & Kagan, 1999). Childhood shyness (also known as behavioral inhibition) refers to a person's degree of wariness and timidity when encountering novel people, objects, or events (Kagan, 2001) and related constructs have been discussed by others (e.g., Cloninger, 1987a,b; Eysenck, 1981; Gray & McNaughton, 1996). Similarly, SAD and adult shyness are greatly overlapping (Chavira, Stein, & Malcarne, 2002; Heiser, Turner, & Beidel, 2003).

Shyness is a stable and highly heritable personality trait (e.g., Daniels & Plomin, 1985). A number of family studies (e.g., Fyer, Mannuzza, Chapman, Liebowitz, & Klein, 1993; Lieb et al., 2000), twin studies (Skre, Onstad, Torgersen, Lygren, & Kringlen, 1993), and high-risk studies (Mancini, van Ameringen, Szatmari, Fugere, & Boyle, 1996) suggest that SAD is genetically transmitted, especially the generalized subtype of SAD (Mannuzza et al., 1995; Stein et al., 1998). For example, a direct-interview family study estimated the relative risks for generalized SAD to be 10-fold greater among first-degree relatives of probands with generalized SAD than among first-degree relatives of non-anxious controls (Stein et al., 1998). In contrast, the relative risks for developing SAD were not significantly different among first-degree relatives of probands with non-generalized SAD and non-anxious controls. Moreover, Mannuzza et al. (1995) reported that patients with generalized SAD had a significantly earlier age of onset of the disorder than patients with non-generalized SAD. These findings suggest that the generalized subtype begins at an earlier age and is more heritable than the non-generalized subtype of SAD. However, some researchers (e.g., Stein, Chartier, Lizak, & Jang, 2001) pointed out that it is unlikely that SAD itself, at the level of an Axis I disorder, is genetically transmitted. Instead, it is more likely that one or more temperamental risk factors for SAD are transmitted.

One of these possible temperamental risk factors is sensory-processing sensitivity (Aron & Aron, 1997; Aron, Aron, & Davies, 2005). This construct, which can be reliably measured with the 27-item Highly Sensitive Person Scale (HSPS; Aron & Aron, 1997), is conceptualized as a unidimensional personality trait that manifests itself in the form of avoidance of overstimulation. It has been proposed that sensory-processing sensitivity can lead to shyness when negative affect is triggered through an adverse childhood experience (Aron et al., 2005). In other words, sensory-processing sensitivity might be a heritable vulnerability factor for shyness under certain environmental conditions.

A conceptually related temperamental trait is harm avoidance of Cloninger's psychobiological model of temperament (Cloninger, 1987a,b).<sup>1</sup> Harm avoidance measures the tendency towards behavioral inhibition to avoid punishment, novel stimuli, and non-reward. The 100-item Tridimensional Personality Questionnaire (TPQ; Cloninger, 1987a,b) was designed to measure harm avoidance and two other personality traits—novelty seeking and reward dependence. Several studies have reported greater harm avoidance in individuals with SAD when compared to

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<sup>1</sup> Other related constructs include introversion, inhibition, shyness, and sociability. A discussion of the conceptual difference and overlap between these constructs and sensory-processing sensitivity with preliminary data to support this distinction is provided elsewhere (Aron & Aron, 1997; Aron et al., 2005). One of the reviewers further pointed out that neuroticism and negative affectivity might be other related constructs.

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