

# Sensed presence as a correlate of sleep paralysis distress, social anxiety and waking state social imagery

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## Abstract

Isolated sleep paralysis (ISP) is a common parasomnia characterized by an inability to move or speak and often accompanied by hallucinations of a sensed presence nearby. Recent research has linked ISP, and sensed presence more particularly, with social anxiety and other psychopathologies. The present study used a large sample of respondents to an internet questionnaire ( $N = 193$ ) to test whether these associations are due to a general personality factor, affect distress, which is implicated in nightmare suffering and hypothesized to involve dysfunctional social imagery processes. A new measure, ISP distress, was examined in relation to features of ISP experiences, to self-reported psychopathological diagnosis, to scores on the Leibowitz Social Anxiety Scale and to scores on a new questionnaire subscale assessing social imagery in a variety of waking states. Three main results were found: (1) ISP experiences are only weakly associated with a prior diagnosis of mental disorder, (2) sensed presence during ISP is associated preferentially with ISP distress, and (3) ISP distress is associated with dysfunctional social imagery. A general predisposition to affective distress may influence the distress associated with ISP experiences; overly passive social imagery may, in turn, be implicated in this affect distress influence.

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## 1. Introduction

Isolated sleep paralysis (ISP), more recently renamed as recurrent ISP, is a common, generally benign, parasomnia characterized by brief episodes of inability to move or speak combined with waking consciousness

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(ICSD-2; American Sleep Disorders Association, 2005). During these episodes of paralysis, there are often intrusions of frightening, dreamlike hallucinations. Episodes frequently occur either at sleep onset, when they are termed hypnagogic, or upon awakening from sleep, when they are termed hypnopompic. ISP is distinguished from narcolepsy which is characterized by cataplexy and excessive daytime sleepiness in addition to sleep paralysis and hypnagogic hallucinations (American Sleep Disorders Association, 2005). Feelings of fear and terror are the most prevalent emotional reactions during ISP experiences (Cheyne, Rueffer, & Newby-Clark, 1999). Variations in ISP prevalence estimates (5–40%) depend upon differences in operational definitions, age of subjects and sociocultural factors (Fukuda, Miyasita, Inugami, & Ishihara, 1987; Kotorii et al., 2001; Ohayon, Guilleminault, & Priest, 1999).

Among the various hypnagogic and hypnopompic hallucinations (HHs) accompanying ISP, the sensed presence is one of the most prevalent and frightening (Cheyne et al., 1999; Hufford, 1982). Sensed presence is a vivid perception-like impression that a sentient being is nearby. The apparent realism of this impression is not based upon real sensory information; nor does it appear to depend upon imagined sensations of seeing, hearing or being touched by the presence. Rather, the phenomenon appears to be hallucinatory activity of a purely spatial nature, akin to dreaming among the congenitally blind (Kerr, Foulkes, & Schmidt, 1982) (see also accompanying commentary, Nielsen, 2007). Pseudosensory HHs, such as footsteps, fleeting shadows or movements of the bed may nonetheless accompany these spatial occurrences and may render them even more concrete and realistic (for detailed case accounts see Hufford, 1982; James, 1890). Sensed presences are often perceived to be watching or showing interest in the individual and/or to possess malevolent intentions. In more extreme cases, the sensed presence may take the form of an assault, with accompanying fictive sensations of pressure on the chest, choking, battering or even rape (Cheyne, 2001; Firestone, 1985; Hufford, 1982).

Sensed presence experiences have also been documented for a wide range of situations and conditions that are independent of sleep paralysis *per se*. For example, we have observed that new mothers frequently experience the vivid presence of their infants in bed during non-ISP nightmares and confusional arousals that are accompanied by, not paralysis, but behavioral enactments (movements, speaking, emoting) of their dreams (Nielsen & Paquette, *in press*). Sensed presence is also seen in a variety of waking states, e.g., as a component of epileptic auras (Landtblom, 2006) and brain lesions (Brugger, Regard, & Landis, 1996), as a consequence of partial sensory deprivation (Tiller & Persinger, 1994) or as a side-effect of surviving extreme environments (Brugger, Regard, Landis, & Oelz, 1999). Experimental elicitation of sensed presence with transcranial temporal lobe stimulation has been reported in numerous studies (Cook & Persinger, 1997; Persinger & Healey, 2002) but has not withstood recent replication attempts using a double-blind design (Granqvist et al., 2005). It remains unknown what relationships such versions of sensed presence have to the commoner ISP variety; in the present study, such relationships are explored with a new measure of social imagery during wakefulness, a 7-item subscale of the Other Experiences Questionnaire (OEQ7).

### 1.1. Sensed presence, psychopathology and social anxiety

Several studies have linked ISP to various neurological and psychiatric disorders. For example, ISP is predicted by bipolar disorder, automatic behavior and use of anxiolytic medications (Ohayon et al., 1999). ISP, with or without sensed presence, is also linked to PTSD (Hinton, Pich, Chhean, Pollack, & McNally, 2005; Ohayon & Shapiro, 2000; Yeung, Xu, & Chang, 2005), panic disorder (Yeung et al., 2005), depression symptoms (McNally & Clancy, 2005a, 2005b), anxiety disorder with agoraphobia (Alfonso, 1991), panic disorder (Bell, Dixie-Bell, & Thompson, 1986; Bell, Hildreth, Jenkins, & Carter, 1988; Friedman & Paradis, 2002; Paradis & Friedman, 2005; Yeung et al., 2005), generalized anxiety disorder and social anxiety (Otto et al., 2006; Simard & Nielsen, 2005).

One explanation for the specific link between ISP sensed presence and social anxiety suggested by Simard and Nielsen (2005) was based on the notion that sensed presence during ISP and other states derives from a common mechanism governing production of social imagery. A dysfunction of this imagery mechanism would have ramifications in several spheres of functioning (Nielsen, 2007; Nielsen & Lara-Carrasco, 2007). In the case of social anxiety, social imagery comes into play during anticipatory images of threatening social situations or the vicarious fear of being exposed to others' scrutiny (American Psychiatric Association, 2000) and

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