Test of an hypothesized structural model of the relationships between cognitive style and social anxiety: A 12-month prospective study

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ABSTRACT

The aim of this study was to test whether social looming cognitive style accounts for the predictive association between early maladaptive schema domains and social anxiety. We predicted that early maladaptive schema domains would predict the increase of social anxiety over time and that social looming would act as a mediator between schema domains and social anxiety. A three-wave longitudinal design was used. The participants ($N = 471$, 56.95% women) were Spanish adolescents and young adults aged between 16 and 25 years old ($M_{age} = 17.81$, $SD_{age} = 3.19$). The results showed that three schema domains (impaired autonomy and performance, impaired limits, and other-directedness) predicted the increase in social anxiety and that LCS for social threat acted as a mediator between other-directedness and social anxiety at T3. These results are important to improve the knowledge of the cognitive mechanisms that are involved in the occurrence and development of social anxiety.

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1. Introduction

Social anxiety is one of the most prevalent anxiety disorders, with rates between 6.7 and 12.1% in the general population (Caballo, Salazar, Irurtia, Arias, & Hofmann, 2012; Kessler et al., 2012). It is characterized by social shyness, social distress, avoidance of social situations, and fear of evaluation (Clark & Wells, 1995; Heimberg, Brozovich, & Rapee, 2010; Rapee & Heimberg, 1997). Moreover, the symptoms tend to become chronic and worsen over time, affecting the quality of life of the individual (Beidel & Turner, 2007). Epidemiological studies indicate that social anxiety disorder has its onset at around 16 years of age (Olivares, Caballo, García López, Rosa, & López Gollonet, 2003). Consequently, social anxiety can complicate the establishment and maintenance of stable relationships in a life stage in which social support is extremely important (Hebert, Fales, Nangle, Papadakis, & Grover, 2012). Hence, the identification of risk factors involved in the development of social anxiety is very important in terms of prevention and intervention.

In recent years, interest has surged in understanding the critical role of cognitive factors in the etiology, escalation, and treatment of social anxiety disorder. As Ledley, Fresco, and Heimberg (2006)

have noted, most work on cognition to date has focused on proximal or concurrent cognitions such as interpretative biases or automatic thoughts, and, consequently, less is known about distal cognitive antecedents (such as maladaptive beliefs or schemas and negative cognitive styles) that create subsequent vulnerability to such cognitions. Ledley et al. (2006) suggested that it would be helpful to better understand these vulnerability factors. The cognitive mechanisms that underlie the onset and maintenance of social anxiety symptoms might also be better understood if the relationships between vulnerability factors are better understood. Vulnerability factors are unlikely to be present in total isolation (Hong & Paunonen, 2011). The mechanisms by which they contribute to social anxiety may be better understood in the context of the relationships between them.

Cognitive models proposed by Beck and by Young and their colleagues have focused on the role of maladaptive cognitive schemas (which tend to appear early in life) on emotional disorders (Beck, 1976; Beck & Emery, 1985; Young, Klosko, & Weishaar, 2003). Young et al. (2003) in particular developed a measure that identified a set of 18 early maladaptive schemas grouped into five domains that these researchers posited underlie much of psychopathology. The disconnection and rejection domain refers to expectations that needs for security, nurturance, empathy, acceptance, and respect will not be predictably met. It also involves feeling that one is defective, bad and inferior in important aspects, which is consistent with the negative self-view that has been

associated with social anxiety in other cognitive models (Clark & Wells, 1995; Makkar & Grisham, 2011). The impaired autonomy and performance domain consists of expectations about oneself and the environment that interfere with individual perceived ability to separate, survive or function independently, or perform successfully. This schema domain is consistent with the dependent interpersonal style exhibited by socially anxious individuals (Darcy, Davila, & Beck, 2005). The impaired limits domain involves a deficiency in internal limits, responsibility to others, respecting the rights of others, or long-term goal orientation. These characteristics are opposite to those exhibited by socially anxious individuals. The other-directedness domain consists of an excessive focus on the desires, feelings, and responses of relative others, at the expense of a person's own needs in order to gain love and approval or avoid retaliation. These features have been identified as characteristics of socially anxious people (Clark & Wells, 1995; Rapee & Heimberg, 1997). Finally, the over-vigilance and inhibition domain involves emphasis on suppressing one's spontaneous feelings and impulses or on meeting rigid, internalized rules and expectations about performance. This schema domain is consistent with perfectionism and high standards traits, which are characteristic of people with social anxiety disorder (Shumaker & Rodebaugh, 2009).

Evidence from several studies with clinical (Lee Taylor, & Dunn, 1999; Rijkeboer, & van de Bergh, 2006) and nonclinical samples (Calvete, Estévez, López de Arroyabe & Ruiz, 2005; Calvete, Orue, & González-Diez, 2013) has provided support for these hypothesized schemas. Moreover, there have been a handful of recent studies that have examined the relations between early maladaptive schemas and social anxiety (Calvete & Orue, 2008; Pinto-Gouveia, Castilho, Galhardo, & Cunha, 2006). For example, Pinto-Gouveia et al. (2006) found that the schema domains of disconnection and rejection, impaired autonomy and performance, and other-directedness were related to social anxiety symptoms in a clinical sample. Calvete and Orue (2008) concluded that some schemas pertaining to the disconnection and rejection domain and the impaired autonomy and performance domain were associated with social anxiety in a college sample. As yet, only three longitudinal studies (Calvete, 2014; Calvete, Orue, & Hankin, 2013; Calvete, Orue, & Hankin, 2014) have studied the relationship between schema domains and social anxiety. These studies found that the other-directedness domain was particularly relevant for social anxiety. However, a limitation of the handful of cases that have examined the associations between early maladaptive schemas and social anxiety with prospective longitudinal designs is that they only measured three of the five schema domains. As a consequence, the predictive associations between the impaired limits and overvigilance and inhibition domain and social anxiety could not be tested.

The construct of looming cognitive style (LCS; Riskind, Williams, Gessner, Chrosniak, & Cortina, 2000) is based on the looming vulnerability model. The LCS assumes that an anxious person's vulnerability and expectations about the future are not lifeless, static mental events or structures, but dynamic simulations of incipient threats as escalating and coming rapidly closer in time and space. This model proposes that anxious individuals have a looming cognitive style (or LCS; Riskind & Williams, 2006; Riskind et al., 2000) and that socially anxious individuals in particular have a specific habitual cognitive style of generating mental simulations of social threats of future rejection and mistreatment. Support for this proposition has been provided by studies showing that individuals/with this LCS tend to exhibit stronger memory bias and interpretative bias for threat, as well as anxiety (Riskind et al., 2000). Moreover, individuals with LCS are also more vulnerable to future increases in anxiety after negative life events occur (Adler & Strunk, 2010; Riskind, Tzur, Williams, Mann, & Shahar, 2007). LCS is also elevated in patients with anxiety disorders (Riskind, Rector, & Cassin, 2011; Riskind & Williams, 2005). The LCS

measure is divided into two subtypes: social looming, which pertains to mental simulation style for socially threatening scenarios, and physical looming, which refers to scenarios that are physically dangerous (Riskind et al., 2000). In the present study we focus on social looming, which is the most relevant for social anxiety. LCS for social threats has been found to be significantly and independently associated with social anxiety after controlling for depression and trait anxiety in college students (Brown & Stopa, 2008; González-Díez, Orue, Calvete, & Riskind, 2014; Haikal & Hong, 2010; Riskind et al., 2013; Williams, Shahar, Joiner, & Riskind, 2005) and is elevated in DSM-IV diagnosed patients with social anxiety disorder (Riskind et al., 2011).

1.1. Hypothesis and overview of the present study

The present study was designed to test a mediational structural model that sought to advance understanding of early maladaptive schemas and looming cognitive style as vulnerability factors to subsequent social anxiety symptoms. As schema-oriented theories such as Beck et al. and Young et al. have characterized them, early maladaptive schemas are derived from early formative experiences such as rejection and mistreatment by family members and peers in childhood. Given that people often anticipate what they have experienced in the past, it seems reasonable to hypothesize that individuals high in early maladaptive schemas may be prone to generate dynamic mental scenarios, in anticipation of future social rejection. Put otherwise, individuals having early maladaptive schemas may not only have schema-driven appraisals of ambiguous interactions that have occurred as mistreatment, but also routinely anticipate looming mistreatment and confrontations. As a result, they may proactively simulate and rehearse future mistreatment scenarios that they anticipate. What could happen next is that this continuing rehearsal of mental scenarios of this kind then leads such people to subsequently develop as well as to sustain a maladaptive pattern of dynamic mental simulation, namely, a looming cognitive style for social threats. It follows from this line of reasoning that LCS functions as a subsequent intermediary vulnerability for anxiety symptoms downstream. Thus, we expected that the influence of schema domains on future social anxiety may be carried and mediated in part by the influence of such early maladaptive schema domains on LCS.

Grounded on this theoretical logic, we used a longitudinal design over a 12-month period to test a proposed structural model of the hypothesized mediational relationship between these two cognitive vulnerabilities, schema domains and LCS, and changes in social anxiety symptoms 12 months later. Although no research to our knowledge has previously examined such a mediational model, a handful of previous studies have found evidence for a mediational chain of events whereby early maladaptive schema domains predict other cognitive processes that predict the onset of behavioral and emotional problems. For instance, it has been found that early maladaptive schemas predict aggressive information processing, which in turn predicts aggressive behavior (Calvete & Orue, 2012); likewise, early maladaptive schemas predict socially anxious automatic thoughts, which in turn predict the increase of social anxiety symptoms (Calvete, Orue, & González-Díez, 2013; Calvete, Orue, & Hankin, 2013).

To test this hypothesized mediational model, the present study used a three-wave longitudinal prospective design, with measurements collected on three occasions spaced 6 months apart. This design helped to provide a relatively stringent test of our proposed structural model. By this design, we could test whether the presence of prior early maladaptive schemas at T1 serves to precede and sustain LCS for social threat at T2 6 months later, and whether LCS for social threat at T2 precedes and predicts social anxiety symptom changes at T3 over the next ensuing 6 months.