

# The specificity of referential thinking: A comparison of schizotypy and social anxiety

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## Abstract

Ideas of reference are considered hallmarks of schizophrenia-related psychopathology. However, the specificity of referential thinking to schizophrenia-related psychopathology has not been examined empirically. Schizotypy reflects the latent liability for schizophrenia and is associated with referential thinking. Referential thinking may occur in other forms of psychopathology, such as social anxiety, which is characterized by cognitive distortions in which the thoughts and judgments of others are viewed as having reference to the self. Our primary aim was to examine the specificity of referential thinking to schizotypy. A sample of 830 college students completed a psychometric screening, of which 102 met criteria for inclusion in one of three groups: schizotypy ( $n=30$ ), social anxiety ( $n=28$ ), normal controls ( $n=44$ ). Participants completed the Referential Thinking Scale (REF), and other measures of schizotypy (Schizotypal Personality Questionnaire, Peters et al Delusion Index, Schizophrenia Proneness Scale, Social Anhedonia Scale), affect, and intellectual functioning. The schizotypy group exhibited higher REF scores than both comparison groups. REF scores were associated with other schizotypy measures and loaded onto a positive schizotypy factor, but not onto a negative schizotypy or negative affect factor. These findings support the specificity of high levels of referential thinking to schizotypy and the construct validity of the REF.

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## 1. Introduction

Ideas of reference have long been recognized as pathological thought processes most commonly associ-

ated with schizophrenia-related conditions such as schizotypic and paranoid pathologies and with schizophrenia itself. However, few measurement strategies exist for assessing referential thinking. Ideas of reference are listed in the fourth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV, American Psychiatric Association, 1994) as a diagnostic criterion for schizotypal personality disorder that is clearly distinct from frankly psychotic phenomena. DSM-IV defines ideas of reference as “incorrect interpretations of casual incidents and external events as having a particular and unusual meaning specifically

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for the person. These should be distinguished from delusions of reference, in which the beliefs are held with delusional conviction” (p. 641). As discussed by Lenzenweger et al. (1997), Wing et al. (1974) identified both simple and guilty ideas of reference. In simple ideas of reference, a person may believe that others take notice of them. In more severe forms, or in the context of a negative mood state, the person may believe that others are critical of or laughing at them. In guilty ideas of reference, the individual believes that they are being blamed for some action or attribute.

The cognitive distortions that give rise to referential thinking may be viewed as a manifestation of the cognitive “slippage” central to Meehl’s (1962; 1990) model of schizotypy and schizophrenia. Briefly, Meehl hypothesized that schizophrenia develops as a result of the interactions among a major genetic factor, additional genetically determined potentiators (e.g., social introversion, anxiety), and environmental stressors. Meehl posited that the primary genetic diathesis codes for an integrative neural defect called “schizotaxia” that results in diffuse synaptic “slippage”. Through social learning experiences and maturation, virtually all schizotaxic individuals develop schizotypy, or the personality organization reflecting the latent liability for schizophrenia. This personality organization manifests itself in psychological and behavioral signs that vary widely in terms of severity and include referential thinking, interpersonal aversiveness, pan-anxiety, hypohedonia, mild depression, and mild neurocognitive deficits. Meehl’s model predicts that the majority of schizotypic individuals will remain clinically compensated throughout their lives, while a minority will go on to develop schizophrenia through an as yet ill-defined “second hit”. Schizotypic individuals do not necessarily meet criteria for schizotypal personality disorder according to DSM-IV (American Psychiatric Association, 1994), although some may meet criteria for this diagnosis, which may be viewed as an alternate expression of schizophrenia liability (Lenzenweger, 1998).

The Referential Thinking Scale (REF; Lenzenweger et al., 1997) was designed as a comprehensive, self-report measure of ideas of reference. To our knowledge, the REF is the only psychometric measure exclusively focused on referential thinking. The REF covers a broad range of ideas of reference, including both simple and guilty forms. The validity of the REF as a measure of schizotypy has been supported via associations with established measures of schizotypal psychopathology (Lenzenweger et al., 1997; Lenzenweger, 1999). In addition, Lenzenweger (1999) found evidence for taxonicity, or clear-cut latent discontinuity as opposed to simple quantitative

variability, in the distribution of REF scores, a finding that is consistent with other well-validated schizotypy indicators (e.g., Lenzenweger and Korfine, 1992a). Higher REF scores are also associated with poor performance on laboratory tasks known to be impaired in schizophrenia and schizotypy (Hooley and Delgado, 2001; Lenzenweger and Maher, 2002; Lenzenweger, 2000).

The specific association between referential thinking and schizophrenia-related conditions has not been examined empirically, and it is therefore unclear whether referential thinking may occur in other forms of psychopathology. For example, social anxiety is characterized by negative affect and cognitive distortions in which external events, particularly behaviors, thoughts, and judgments of others, are viewed as having reference to the self (Turk et al., 2001; Clark, 2005). DSM-IV states that individuals who experience social anxiety “are afraid that others will judge them to be anxious, weak, crazy, or stupid” (p. 412). It is possible that the effect of negative affect on interpretations of social situations may lead to moderate levels of referential thinking among socially anxious individuals.

Our primary goal in this study was to examine the specificity of referential thinking to schizotypy. This is the first study to compare referential thinking between individuals with schizotypal features and a comparison group that might be expected to exhibit some degree of referential thinking (socially anxious individuals). We predicted that the schizotypy group would exhibit higher levels of referential thinking (as measured by the REF) relative to the social anxiety group and normal controls. In addition, we predicted that the social anxiety group would exhibit increased referential thinking relative to normal controls, and that this difference would be related to negative affect. Our secondary goal was to extend previous work by Lenzenweger et al. (1997) in examining the construct validity of the REF. We hypothesized that the REF would be associated with other established measures of schizotypy (i.e., convergent validity), and would distinguish between the two pathological groups and be relatively independent from measures of negative affect, depression, and anxiety (i.e., discriminant validity).

## 2. Method

### 2.1. Participants

A group of 830 Binghamton University undergraduates participated in a psychometric screening procedure in exchange for course credit. During the screening, participants completed a set of questionnaires that included the schizotypy and social anxiety screening measures, a

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