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# Schizotypy's shape: structure, items, and dependability

Deborah Michele Stringer  
*University of Iowa*

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SCHIZOTYPY'S SHAPE: STRUCTURE, ITEMS, AND DEPENDABILITY

by

Deborah Michele Stringer

An Abstract

Of a thesis submitted in partial fulfillment  
of the requirements for the Doctor of  
Philosophy degree in Psychology (Clinical Psychology)  
in the Graduate College of  
The University of Iowa

December 2012

Thesis Supervisor: Professor Emeritus Lee Anna Clark

## ABSTRACT

Dimensional models of schizotypy and associated traits have taken on current relevance in the *DSM-5* (<http://www.dsm5.org>) proposal for personality disorder (PD), which includes a personality trait initially conceptualized as a five-facet schizotypy domain and then simplified into a three-facet psychoticism domain that has yet to be evaluated extensively. In this study, I (1) reviewed the literature to develop hypotheses about the content and boundaries of the schizotypy domain, and (2) measured this content in a mixed sample of students and patients with 657 usable protocols at Time 1 (193 Notre Dame students, 301 University of Iowa students; 163 outpatients) and 263 usable protocols (74 Notre Dame students, 76 University of Iowa students, 113 outpatients) at Time 2, at least 1.5 weeks later. I then (3) evaluated confirmatory models including *DSM-5* schizotypy and psychoticism facet models and other empirically grounded models and (4) used the best confirmatory model to provide item pools for classically constructing scales of schizotypy facets. This four-factor structure provided content pools used to create four corresponding scales: Unusual Perceptions, Unusual Beliefs, Dissociation Proneness, and Cognitive and Communicative Peculiarity. Additionally, (5) I used item response theory (IRT)-based analyses to evaluate items in these facet scales, both in terms of the level of schizotypy they best measure and the strength of their relations to the schizotypy construct. I also (6) examined the short-term test-retest reliability of the schizotypy scales, as well as that of the established measures used in this study; new and existing measures were comparably stable. Finally, (7) I evaluated schizotypy's convergent and discriminant validity in relation to three other types of traits: (a) those correlated with the domain (e.g., Obsessive Compulsive Disorder [OCD] and non-delusional mistrust), (b) other higher level traits (i.e., measures of the 3-factor and 5-factor models of higher order personality/temperament), and (c) familially related traits (e.g., social anxiety). Overall, the schizotypy facet measures appeared to assess moderate

amounts of variance that were unexplained by the established measures of personality, temperament, and psychopathology that were included in this study. The implications of adding a schizotypy trait to the overall personality trait taxonomy are discussed.

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Thesis Supervisor: Professor Emeritus Lee Anna Clark

Graduate College  
The University of Iowa  
Iowa City, Iowa

CERTIFICATE OF APPROVAL

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PH.D. THESIS

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This is to certify that the Ph.D. thesis of

Deborah Michele Stringer

has been approved by the Examining Committee  
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To my wonderful family and especially my parents Bruce and Suzette Stringer. Your love and support has preserved my soundness and sanity.

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## CHAPTER 1 INTRODUCTION

### Overview of Historical Context, Research Questions, and the Current Study

The purpose of this study is simultaneously to clarify the structure and develop a measure of a domain that has been labeled variously schizotypy, oddity, schizotypal personality disorder (SPD), oddity, peculiarity, and psychoticism. For simplicity, I refer primarily to schizotypy, except when one of the other names is used for a specific model or construct. In this introduction, I review the history, structure, and correlates of this domain, propose some empirically informed confirmatory models, and provide an overview of the current study's design and goals.

#### Schizotypy and Related Constructs: A Brief History

Syndromes defined by attenuated symptoms of schizophrenia (e.g., pseudoneurotic schizophrenia and latent schizophrenia) have been in the official psychiatric taxonomy since the first edition of the Diagnostic and Statistical Manual of Mental Disorders (*DSM-I*; American Psychiatric Association [APA], 1952). With the separation of PD from major mental disorders in *DSM-III* (APA, 1980), SPD became the official diagnosis for patients with signs and symptoms related to those of schizophrenia, but without a history of a clinical psychotic break. Schizotypal PD criteria were developed by the *DSM-III* (APA, 1980) research team in collaboration with Wender, Kety, and Rosenthal, authors of a major family study of schizophrenia. The criterion set was meant to encompass symptoms found in Wender, Kety, and Rosenthal's "borderline schizophrenia," "uncertain schizophrenia" and other diagnoses suggesting symptoms similar to those of frank schizophrenia but with lesser severity or duration (Spitzer, Endicott, & Gibbon, 1979). The eight most frequent of these symptoms (odd speech, ideas of reference, recurrent illusions or dissociation, magical thinking, constricted or



inappropriate affect, social anxiety, social isolation, and suspiciousness or paranoia) in Wender, Kety, and Rosenthal's 36 "borderline schizophrenics," all of whom were relatives of individuals with frank schizophrenia, became the draft criteria for SPD (Spitzer et al., 1979). Except for some modest (e.g., revised phrasing) to moderate (e.g. changes in the number of criteria needed for a diagnosis, addition of an "odd behavior or appearance" criterion), the 1979 criteria have remained largely consistent in *DSM-III-R* and *DSM-IV* (APA, 1987, 1994).

Meehl (1962) proposed schizotypy as a virtually inevitable consequence of inheriting a schizophrenia vulnerability gene, and conceptualized schizotypy as necessary but not sufficient for the development of schizophrenia. Meehl (1962) further suggested that a tendency toward anxiety plus an aversive environment (particularly a bad or schizotypal mother) produced frank schizophrenia in a schizotype. Meehl (1962) noted contemporary studies that found attenuated symptoms of paranoia and thought disorder in parents of schizophrenia patients and, given these data and his understanding of schizophrenia signs and symptoms, proposed "cognitive slippage" (including body-image aberrations), an attenuated form of schizophrenic thought disorder; "anhedonia, ambivalence, and interpersonal aversiveness" (p. 831) as the four cardinal traits of schizotypy.

Several theoretical schizotypy traits were elaborated and operationalized into psychometric self-report instruments measuring "psychosis proneness" (e.g., L. Chapman, J. Chapman, Raulin, Edell, & Serban, 1978), and high scores on several of these putative psychosis-proneness measures have been linked to the later development of psychotic disorders (L. Chapman, J. Chapman, Kwapil, Eckblad, & Zinser, 1994; Gooding, Tallent, & Matts, 2005; Kwapil, M. Miller, Zinser, J. Chapman, & L. Chapman, 1997). Clinical SPD also recently has been found to be associated with macroscopic changes to the superior temporal gyrus that are similar to those in schizophrenia (e.g., Takahashi et al., 2010). Unsurprisingly, given SPD's origin as a set of signs and

symptoms that occurred at an increased rate in family members of individuals with schizophrenia (Spitzer et al., 1979), more recent research has confirmed that schizotypy and SPD are generally more common in unaffected family members of individuals with schizophrenia than they are in controls from unaffected families, especially in large studies (e.g., Asarnow et al., 2001; Kendler & Walsh, 1995; Nicolson et al., 2003; Tienari et al., 2003). Additionally, some symptoms in individuals with schizophrenia and related psychopathology (e.g., positive and negative symptoms [Fanous, Gardner, Walsh, & Kendler, 2001]; hallucinations, disorganization/cognitive and behavioral dysregulation, negative symptoms, affective symptoms, child/adolescent sociability, scholastic performance, disability/impairment, and prodromal symptoms [McGrath et al., 2009]), were predictive of analogous schizotypy/STD symptoms in non-psychotic relatives. Further, schizophrenia has been shown to occur at a higher rate in families with SPD (e.g., Ritsner, Karas, & Ginath, 1993). However, not all results are straightforward: In a moderately large family study, SPD was not significantly more common among offspring of parents with psychosis diagnoses than in children of unaffected individuals (Goldstein, Buka, Seidman, & Tsuang; 2010). Additionally, in the more numerous, smaller ( $n < 150$ ) family studies, schizotypy and SPD symptoms did not always occur at elevated rates in relatives of individuals with psychotic disorders (e.g. Appels et al., 2004; Bollini et al., 2007; Hans et al., 2009; Irani et al., 2006; Laurent et al., 2000). This may be an issue of statistical power, which may be especially important in schizophrenia family studies: Given schizophrenia's phenotypic and genetic heterogeneity (Fanous & Kendler, 2005; McClellan, Susser, & King, 2007), relatively large samples may be necessary to find that a given schizotypy trait occurs at elevated rates in relatives of psychotic probands. Nevertheless, the converging data from the above studies generally suggest that schizotypal traits and SPD represent vulnerability markers for psychosis.

Schizotypy is an important topic to study not only because of its relation to psychosis generally and schizophrenia more specifically, which are disabling (e.g.,

Jablensky, 2000) and costly disorders, both in terms of medical costs and reduced productivity (e.g., Wu et al., 2005), but also because recent epidemiological evidence indicates that SPD is itself a disabling condition (Pulay et al., 2009) and is associated with subjectively low wellbeing, even when negative affectivity is partialled out (Abbott, Do, & Byrne, 2012). Finally, there is new longitudinal evidence that individuals who develop psychotic disorders often develop transient subclinical psychosis symptoms, such as those seen in schizotypy, initially and these become increasingly frequent and longer lasting over time (Dominguez, Wichers, Lieb, Wittchen, and van Os, 2011).

#### Schizotypy: A categorical construct?

Whether schizotypy is a taxonic or dimensional construct is an important target for study; a clear answer to this question would inform schizotypy's conceptual place in the taxonomy. For example, clear evidence of a categorical construct that occurs primarily in individuals at risk for schizophrenia would suggest that schizotypy is part of an extended schizophrenia phenotype as opposed to a personality trait that is relevant in the general population. Meehl (1962) originally conceptualized schizotypy as dichotomous – a proportion of the population with the vulnerability factor became schizotypal, whereas the rest of the population was free from schizotypy. Although a significant body of evidence appears to support the taxonic status of schizotypy, Rawlings, Williams, Haslam, and Claridge (2008) suggested, based on a simulation, that skewed variables such as population-level psychotic symptoms (e.g., Johns & van Os, 2001) can produce a spurious taxon, and so contended that the taxometric evidence for schizotypy was unconvincing. In a review in favor of schizotypy's taxonicity, Beauchaine, Lenzenweger, & Waller (2008) argued that Rawlings and colleagues had overstated the extent to which their finding undermines evidence of schizotypy's taxonicity. A recent review of taxonic findings suggests that there is some evidence for schizotypy's taxonicity, but that this finding is significantly less robust in newer and

methodologically stronger studies (Haslam, Holland, & Kuppens, 2012).

Even if one accepts schizotypy's taxonicity, its taxonic structure remains unclear. As an example of the difficulty of ascertaining the theoretical significance of latent class versus latent trait models, several latent class studies of schizotypy/SPD are described in detail below. Two studies conducted in Milan—one with a mixed sample of psychiatric patients (Fossati et al., 2001) and the other with a set of 18-to-30 year-old, same-sex twins selected quasi-randomly from a population registry (Battaglia et al., 1999)—found broadly comparable four-class solutions for SPD, although they differed considerably in their particulars. In both samples, the modal group (~65-75% of the samples) had few or no symptoms; both samples also yielded a class of relatively low prevalence (5-10%) with a high rate of criteria met, and two classes of intermediate prevalence/severity. However, among the twins, 12-18% in the low-symptom group exhibited social anxiety or had no close friends, whereas in the patient sample, no SPD criterion reached a 5% prevalence in the low-symptoms group. Similarly, in the three higher symptom groups, specific symptom levels and the particular mix of symptoms differed across the samples. The finding of higher symptoms in the community members versus psychiatric patients in the low-symptom group was particularly surprising, and the most likely explanation for this and the other differences found was that the two studies used different interviews to ascertain SPD, which calls their overall comparability into question. Moreover, the fact that differences between the classes in each study could be conceptualized as a severity gradient calls into question whether the classes represent distinct types or are based on sample-specific cutpoints along a severity dimension.

In a mixed group of patients with psychosis ( $n = 82$ ) and community controls ( $n = 210$ ), using a questionnaire of delusional thinking (Peters et al. Delusions Inventory; PDI; Peters, Joseph, & Garety, 1999, 2004), a two-class solution produced the best fit; however, the classes appeared only to differentiate patient versus community participants (Rocchi et al., 2008). This finding may be regarded as broadly supportive of the

taxonicity of positive schizotypy-like symptoms, but given the oversampling of individuals with psychosis in this sample and the lack of a clinical control group, this finding does not seem highly relevant to the issue of identifying a schizotypy taxon in the general population, and again may suggest a severity gradient as the main class discriminant.

Given the limited informativeness of the two-class solution, Rocchi and colleagues (2008) explored more differentiated solutions; three and five-class solutions appeared to be the most informative, depending on the information criterion used to make this determination. As a compromise, Rocchi and colleagues (2008) selected a four-class solution, although they also presented data from the three-class solution, in which the classes appeared to have a similar pattern of conditional probabilities of item endorsements, but different magnitudes of probabilities; that is, the classes varied quantitatively but not qualitatively. As in the earlier studies, the classes in the four-class solution varied by apparent severity, and those of intermediate severity also varied from each other qualitatively.

Class 1 (33.5% of the sample) was marked by relatively low conditional probability of endorsing most PDI items. Class 2 (41.1% of the sample) was marked by high conditional probability of endorsing suspiciousness items; class 3 (8.6%) was defined by high conditional probability of endorsing grandiosity items, and class 4 (16.8%) was marked by high probabilities of endorsing nearly all symptoms. Generally, this solution is similar to those of both Fossati and colleagues (2001) and Battaglia and colleagues (1999) in terms of the classes differing in severity, although again the different nature of the measure used by Rocchi and colleagues (2008) makes it difficult to compare the results in their particulars.

Shevlin, Adamson, Vollebergh, de Graaf, and van Os (2007) also found a four-class solution using psychosis screening items in two epidemiological studies: The National Comorbidity Survey (NCS; Kessler, 1994) and Netherlands Mental Health

Survey and Incidence Study (NEMESIS; Bijl, van Zessen, Ravelli, de Rijk, & en Langendoen, 1998). Once again, these researchers found classes that appear to mark different severity levels on a continuous psychosis dimension. In both samples, the modal class was non-endorsement of psychosis screening items, followed by classes marked by modest, moderate, or high probability of endorsing psychosis screening items, respectively. As in the Rocchi et al., (2008) study, the modest, moderate, and high endorsement classes were characterized by similar patterns of conditional probability of item endorsement: Specifically, suspiciousness, referential thinking, and visual and auditory hallucinatory experiences were more common than feelings of strange forces, thought insertion, thought broadcasting, and olfactory hallucinations. Despite the similarities between the classes found using the NCS and NEMESIS data, endorsement of psychosis items was more common in the NCS sample; (36.2% in the psychosis-like class or an intermediate class) than in the NEMESIS sample (2.4% in the psychosis-like class or in an intermediate class). Shevlin and colleagues (2007) attribute this apparent mean-level difference to the slightly more normal phrasing of the items used in the NCS, although population level differences also may account for this disparity.

A similar study in a British population sample (Murphy, Shevlin, & Adamson, 2006) yielded broadly comparable results to those of Shevlin and colleagues (2007), except that one of the four classes appeared to vary qualitatively as well as quantitatively. Unlike the other studies, an item intended to screen for hypomania was included in this latent class analysis (LCA); given, however, that over 50% of the population sample endorsed this item, it seems unlikely that the respondents understood the item as the authors intended. It is possible that the hypomania item was meant to be sensitive rather than specific, and Murphy and colleagues (2006) did intend their items to be used as a screening measure, but the endorsement rate of the other items did not exceed 21.2%. Murphy and colleagues (2006) also found a four-class solution in which, again, the modal class (75.9% of sample) endorsed screening items at a rate less than about 10% (except

for the likely flawed hypomania item) and the smallest group (1%) endorsed all items (except hypomania) at a 70% or greater rate. A quantitatively varying intermediate group (16% of sample) had a 10-20% chance of endorsing a screening item other than hypomania, and an apparently qualitatively different group (7.1% of sample) had a high probability of endorsing paranoia (100%), hallucinations (~80% to 90%), and hypomania (70%), and a moderately high rate of endorsing thought insertion and strange experiences (~30% to 40%).

In sum, it appears that the putative schizotypy domain is marked by more than two classes that generally reflect severity differences, and that specific qualitatively distinct classes are not robust. This ambiguity in schizotypy's latent structure, coupled with the recent finding that dimensional instruments typically measure psychopathological constructs more reliably and validly than categorical instruments, regardless of the construct's apparent dimensionality versus discontinuity (Markon, Chmielewski, & Miller, 2011), suggests that it is reasonable to measure schizotypy dimensionally in this study.

### Schizotypy: Structure

To select content comprehensive enough to test a variety of empirically grounded models of the schizotypy domain, it was necessary to review structural studies of dimensional schizotypy carefully. From the beginning, both SPD and schizotypy have been considered phenomenologically diverse; this is likely due, in large part, to their familial and phenomenological relations to the diverse schizophrenia spectrum (see Andreasen & Olsen, 1982, for a brief history of early schizophrenia subtyping). Social isolation, constricted affect, and reduced activity and enjoyment (often labeled negative symptoms), attenuated illusions and odd beliefs (typically called positive symptoms), and a disorganization/ cognitive and behavioral dysregulation facet (most often called "disorganized"), which includes inappropriate behavior and confusion, are all

qualitatively quite dissimilar from each other. Negative schizotypy was not included in the proposed *DSM-5* schizotypy trait domain nor in the original items written for this study, because the higher order domains are intended to be broadly unidimensional.

Eysenck and Barrett (1993) argued that all of the meaningful variance in schizotypy can be explained by neuroticism, extraversion, and psychoticism (disinhibition), but given that they used only one measure of each of these “big 3” traits in their factor analytic study, this claim appears to be premature. More recently, Asai, Sugimori, Bando, and Tanno (2011, p. 185) argued that the five-factor model of personality “could explain schizotypy fairly well.” Again, this appears to be an overstatement: Asai et al. (2011) report that five-factor model measures account for 26 to 40 percent of schizotypy measure variance, depending on the sample and the schizotypy measure used. This leaves a substantial amount of schizotypy variance unexplained.

Schizotypy does indeed have strong relations to both negative emotionality and (low) positive emotionality (Horan, Blanchard, Clark, & Green, 2008; Watson & Naragon-Gainey, 2010), but negative emotionality is related to psychopathology quite broadly, and I argue below that positive emotionality appears rather specifically related to negative schizotypy symptoms (Horan et al., 2008; Watson & Naragon-Gainey, 2010). In contrast, positive and disorganized/ cognitive and behavioral dysregulation schizotypy are quite different phenomenologically from traditional markers of positive and negative emotionality, thus justifying their study as clinical phenomena that are not redundant with the rest of the personality trait space.

Phenomenologically, the social isolation, apathy, and anhedonia of negative schizotypy are fairly similar to other manifestations of low positive emotionality, such as the anhedonia and fatigue found in major depression (Watson & Naragon-Gainey, 2009). As the most phenomenologically unique aspects of schizotypy positive and disorganization/ cognitive and behavioral dysregulation schizotypy are the foci of the proposed *DSM-5* schizotypy trait domain; they also are the focus of the proposed study.



For the last several decades, researchers have attempted to find a structure for SPD and schizotypy that clarifies the relations between the various schizotypal characteristics in participant groups that range from family members of individuals with schizophrenia spectrum disorders (e.g., Bergman, Silverman, Harvey, Smith, & Siever, 2000; Fogelson et al., 1999), to student (e.g., Chmielewski & Watson, 2008; Suhr & Spitznagel, 2001) and community groups (e.g., Mass et al., 2007; Rawlings, Claridge, & Freeman, 2001). Unsurprisingly, the results have varied with the content surveyed (e.g., whether mistrust, eccentricity and Eysenckian psychoticism items are included; the specific measures used, and whether multiple measures of each hypothesized construct are included) and, by extension, with the instruments used. See Tables A-1 and A-2 for summaries of exploratory and confirmatory models, respectively, of schizotypy and SPD.

Raine and colleagues (1994) proposed a three-factor model similar to that described above: (1) cognitive-perceptual = “positive” + paranoid ideation, (2) interpersonal = “negative” + social anxiety + paranoid ideation (i.e. paranoid ideation splits on cognitive-perceptual and interpersonal factors), and (3) “disorganized” (i.e., disorganization/ cognitive and behavioral dysregulation) factors. Raine et al.’s (1994) model has received a great deal of attention as a structural hypothesis for schizotypal personality and, in fact, has been touted as invariant across age, sex, and multiple cultures (e.g., Fossati et al., 2003; Reynolds, Raine, Mellinger, Venables, & Mednick, 2000). However, Raine et al.’s (1994) three factors did not emerge consistently in a recent item-level factor analytic study of the Schizotypal Personality Questionnaire (SPQ; Raine, 1991) with a re-test component: Roughly analogous factors emerged at Time 1, but the disorganization/ cognitive and behavioral dysregulation factor did not emerge at Time 2 (Chmielewski & Watson, 2008). Even using the nine SPQ scales designed to be analogous with SPD symptoms, the three-factor model proposed by Raine has not emerged consistently in exploratory factor analysis (e.g., Braunstein-Bercovitz, 2000; G. Miller & Tal, 2007; Suhr & Spitznagel, 2001) or as a well-fitting model in confirmatory

factor analysis (Stefanis et al, 2004; Wuthrich & Bates, 2006). Further, more than one three-factor model has emerged. For example, in their test development study, Venables & Rector (2000) found a three-factor model in which positive schizotypy, social avoidance, and negative schizotypy were separate factors, with social avoidance separating from negative schizotypy to form its own factor and with disorganization / cognitive and behavioral dysregulation content loading on the positive schizotypy factor. Thus, Raine's three-factor structural model does not appear to be definitive.

Exploratory and confirmatory models have ranged from two to seven factors. As expected, models that used many measures and that had liberal criteria for factor extraction (e.g., eigenvalue > one) tended to yield more factors. For example, Kendler, McGuire, Gruenberg, and Walsh (1995) extracted seven factors: negative schizotypy, positive schizotypy, borderline symptoms, social dysfunction, avoidant symptoms, odd speech, and suspicious behavior. Clearly, they defined the schizotypy domain broadly, and they also used the eigenvalue-greater-than-one criterion for factor extraction, which tends to yield a larger number of factors than many other criteria.

One might hypothesize that systematic differences in structure can be explained by the types of samples used in factor analytic studies. For example, family members of schizophrenia patients might produce a more differentiated structure than undergraduate participants and community adults, due to a typically higher level of schizotypal symptoms. However, the exploratory and confirmatory results in Tables A-1 and A-2 do not support this hypothesis, although this judgment is of limited “conceptual power,” given that there are comparatively few samples of individuals who might be expected to have higher schizotypy symptom levels: Of the 47 studies, there are five samples of relatives of individuals with psychotic disorders, one sample of individuals selected for elevated scores on schizotypy measures, and one sample of individuals with schizophrenia. This small number of samples with theoretically elevated schizotypy,

relative to college and community samples, might not allow real structural differences between sample types to emerge.

Some measure-level differences between structures do emerge (see Tables A-1 and A-2), but these are relatively superficial and non-informative. For example, in studies that use the three most common Chapman scales—Perceptual Aberration (PerAb; L. Chapman, J. Chapman, & Raulin, 1978), Magical Ideation (MagID; Eckblad & L. Chapman, 1983), Physical Anhedonia (L. Chapman, J. Chapman, & Raulin, 1976), and Revised Social Anhedonia (Eckblad & L. Chapman, 1982; Mishlove & Chapman, 1985)—a disorganization/ cognitive and behavioral dysregulation factor does not emerge (e.g., Kwapil, Barrantes-Vidal, & Silva, 2008) likely simply because disorganization/ cognitive and behavioral dysregulation is not measured by these scales.

Despite the variability of published schizotypy and SPD structures, several areas of relative consistency (reviewed below) emerge that are relevant to the proposed structure for the *DSM-5* schizotypy trait domain. First, measures of odd beliefs and odd perceptions typically either mark a single factor (e.g., Chmielewski & Watson, 2008; Fogelson et al., 1999; Venables & Bailes, 1994), or items or measures from these domains intermix in two factors (e.g., Bentall, Claridge, & Slade, 1989; Joseph & Peters, 1995; Mass et al., 2007). In a single confirmatory study in which parcels of PerAb and MagID were the only instruments, a two-factor solution in which PerAb and MagId each marked its own factor was better fitting than a unidimensional solution and, in fact, the fit of the unidimensional solution was unacceptable (RMSEA = .213, AGFI = .65; Fonseca-Pedrero et al., 2009). However, given the relative dearth of markers in this study and the fact that all the markers came from one of two scales, the unique variance of each scale may have taken on an unusual importance in the fit.

The general pattern of odd beliefs and odd perceptions marking a single factor is unsurprising, given the consistently high relations between measures of oddities of perception and belief ( $r_s = .50$  to  $.79$ ) (Bentall, Claridge, & Slade, 1989; Berenbaum et

al., 2006; Brown, Silva, Myin-Germeys, Lewandowski, & Kwapil, 2008; Fonseca-Pedrero et al., 2009; Kelley & Coursey, 1992; Kendler & Hewitt, 1992; Kerns, 2006; Kwapil et al., 2008; Lewandowski et al., 2006; MacDonald, Pogue-Geile, Debski, & Manuck, 2001; Mohanty et al., 2008; Ross, Lutz, & Bailey, 2002; Stringer et al., 2010; Yon, Loas, & Monestes, 2009).

Secondly, odd behavior and odd speech typically (e.g., Chmielewski & Watson, 2008; Fossati, Raine, Carretta, Leonardi, & Maffeti, 2003; Linscott, 2007; Mass et al., 2007; Reynolds, Raine, Mellingen, Venables, & Mednick, 2000; Suhr & Spitznagel, 2001), although not inevitably (Mata, Mataix-Cols, & Peralta, 2005), mark the same factor. However, Mata and colleagues (2005) performed an item-level exploratory factor analysis, so it is likely that idiosyncratic characteristics of the items contributed to a less “clean” solution than is found typically in scale-level analyses.

#### Schizotypy at its Conceptual Borders: A Review of Material Intended to Fill in the Gaps and Extend the Boundaries

The process of rational-empirical scale development requires an over-inclusive item pool (Clark & Watson, 1995; Loevinger, 1957). Thus, in this study it was important to include content that is related to—but hypothesized to be somewhat distinct from—the core target construct. For example, trait dissociation has been conceptualized as either a part of the schizotypy construct (e.g., Cicero & Kerns, 2010) or as one of its close correlates (Watson, 2001). Thus, I reviewed dissociation and several of its correlates to assess dissociation’s proximity with schizotypy and ascertain the importance of including this material in my study protocol. Additionally, the measurement of disorganization/ cognitive and behavioral dysregulation historically has been rather narrow and perhaps oversimplified. Thus, I reviewed disorganization/ cognitive and behavioral dysregulation

content and propose some conceptually related material that may serve to fill gaps in its measurement.

Dissociation and correlated constructs: Extending schizotypy to the non-pathological population?

Dissociation—“disruption in the usually integrated functions of consciousness, memory, identity, or perception” (APA, 2000) or a subjective distancing from normal ways of encountering the world—has been shown to be moderately to strongly related to measures of positive schizotypy, with correlations in the .43-.66 range in students (Giesbrecht, Merkelbach, Kater, & Sluis, 2007; Holmes & Steel, 2004; Irwin, 2001; Moskowitz, Barker-Collo, & Ellson, 2005; Pope & Kwapil, 2000; Watson, 2001), community members (Irwin, 1998; Startup, 1999), and prisoners (Moskowitz et al., 2005). In addition, Watson (2001) found moderate relations between measures of both schizotypy and dissociation and sleep-related experiences involving vivid imagery, intense emotion, and memorable dreams. Chmielewski and Watson (2008) derived five scales from their item-level factor analysis of the SPQ. Scales tapping constructs related to “positive” and “disorganized” schizotypy—that is, Eccentricity/Oddity, Mistrust, and Unusual Beliefs and Experiences—were related moderately to strongly ( $r = .42$  to  $.59$ ) to measures of dissociation. In contrast, Social Anhedonia and Social Anxiety—scales related to “negative” schizotypy—had more modest relations to dissociation.

In an exploratory factor analysis at the item level, Stringer and colleagues (2010) found that items tapping respectively dissociation, unusual perceptions, and/or unusual beliefs marked a single factor. In confirmatory factor analyses at the scale level, Chmielewski and Watson (2008) and Stringer and colleagues (2010) have found very highly related ( $r = .84$  and  $.87$ , respectively), though separable, positive schizotypy and dissociation factors. However, in an item-level confirmatory reanalysis of their scale-level factor analysis, Stringer and colleagues (2010) found that a unidimensional model

marked by both positive schizotypy and dissociation items was more informative (i.e., a better fit-parsimony balance) than a model in which positive schizotypy and dissociation marked separate factors. Similarly, Cicero and Kerns (2010) found that modeling positive schizotypy and dissociation as a single factor was more parsimonious and not significantly worse fitting than modeling them as separate factors.

Although most of the literature suggests a robust relation between dissociation and schizotypy, Marzillier and Steel (2007) found no correlation between scores on a schizotypy and a state-dissociation scale in a study of patients wait-listed for trauma or general psychiatric services. Given that the patients studied by Marzillier and Steel (2007) were distressed, their state-dissociation measures may have been temporarily inflated by trauma and, hence, less relevant to trait schizotypy. In addition, Berenbaum, Thompson, Milanak, Boden, and Bredemeier (2008) found only a small relation between a three-point scale of pathological dissociation and interview-based SPD, although they did find a moderate relation between absorption and SPD. In this case, the single, simple rating of pathological dissociation may have been inadequate in reliability or scope to measure the sample's range of dissociation. In sum, an association between dissociation and positive schizotypy is found relatively consistently in the empirical literature. Dissociation's centrality to the schizotypy construct is somewhat open to interpretation, but it is clear that it is a very close correlate.

Traumatic experiences have been a traditional explanation for the occurrence of dissociation and, by extension, a hypothesized etiology for dissociation's associations with schizotypy, although not all researchers subscribe to this hypothesis.<sup>1</sup> In support of

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<sup>1</sup>See, for example, Giesbrecht, Lynn, Lilienfeld, and Merckelbach, (2008) and Kihlstrom, (2005) for reviews of this issue that suggest, on the contrary, that there is little evidence for the link between externally verified traumatic events and dissociation. Giesbrecht et al. (2008) do not deny a relation between self-report trauma and dissociation, but they attribute much of this link to false memories of trauma. In a critical comment and review in response to Giesbrecht et al. (2008), Bremner (2010) takes exception to Giesbrecht et al.'s (2008) conclusion that dissociation's link with trauma has a limited evidence base. Bremner (2010) also questions Giesbrecht et al.'s (2008) conclusions about the origin of the

this hypothesis, self-reported trauma has been found to correlate with schizotypal symptoms; for example, Berenbaum and colleagues (2008) found weak to moderately strong relations between self-reported childhood trauma and schizotypal symptoms. Moreover, self-reported trauma typically partially mediates—but does not explain completely—the relation between dissociation and schizotypy (Giesbrecht et al., 2007; Irwin, 2001; Merkelbach & Giesbrecht, 2006; Startup, 1999). Similarly, in a recent self-report study of individuals who had experienced auto accidents, Steel, Mahmood, & Holmes (2008) found that post-traumatic stress lacked a unique relation with dissociation in a regression of post-traumatic stress on dissociation and schizotypy, again indicating that trauma did not fully mediate the relation between dissociation and schizotypy.

One goal of this study is to test the extent to which schizotypy can be measured in a non-pathological sample. Thus, I reviewed several traits that are potential manifestations of schizotypy and/or dissociation at a low level of severity. DeYoung, Grazioplene, and Peterson (2011) recently theorized that intelligence, self-reported intellectual interests, aesthetic interests, absorption (discussed further below), and the overinclusive thinking characteristic of schizotypy (in that order) form a "simplex" in which each trait is positively associated with its neighboring trait but the traits on opposite ends of the simplex are unrelated or even negatively related. In line with this theory, I reviewed absorption, fantasy proneness, curious experiences, and other traits that are hypothesized to be near the schizotypy end of the simplex.

Absorption (Tellegen & Atkinson, 1974) and fantasy proneness (e.g., Lynn & Rhue, 1986; Wilson & Barber, 1982) are constructs of normal-level individual personality differences that have phenomenological similarities with dissociation. In addition, they are both theoretically (e.g., Tellegen & Atkinson, 1974; Wilson & Barber,

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self-report trauma-dissociation relation. Giesbrecht, Lynn, Lilienfeld and Merkelbach (2010) reiterate their 2008 conclusions (Giesbrecht et al.) and argue that Bremner's (2010) review is selective.

1982) and empirically (e.g., Lynn & Rhue, 1988; Pekala, Wenger, & Levine, 1985) related to hypnosis. Measures of Absorption and Fantasy Proneness typically are moderately correlated ( $r = .31 - .47$ ; Muris & Merkelbach, 2003; Platt, Lacey, Iobst, & Finkelman, 1998), although a stronger relation was found in a small combined group of individuals who did or did not report contact with space aliens ( $r = .74$ ; French, Santomauro, Hamilton, Fox, & Thalbourne, 2008). The most common self-report scale of Absorption (i.e., Tellegen & Atkinson, 1974) includes content related to aesthetic appreciation, as well as to the frequency and vividness of imagination and day-dreaming, whereas the Creative Experiences Questionnaire (CEQ; Merkelbach, Horselenberg, & Muris, 2001), a commonly used scale of fantasy proneness, is more related to the vividness of fantasy and the childhood experience of imaginative play. In addition, the CEQ has some content in common with the constructs of dissociation and positive schizotypy (e.g., “I often have the feeling that I can predict things that are bound to happen in the future,” “I sometimes feel that I have had an out-of-body experience,” and “When I sing or write something, I sometimes have the feeling that someone or something outside myself directs me”).

Scales that are saturated with aesthetic appreciation content (e.g., self-reported intellectual and cultural interests) are only modestly (i.e.,  $r < .30$ ; Bryson, Grimshaw, & Wilson, 2009; G. M. Grimshaw, personal communication, July 2, 2010; Kwapil, Wrobel & Pope, 2002) to moderately (i.e.,  $r = .30$  to  $.40$ ; G. Miller & Tal, 2007; Rawlings, 2000; Ross et al., 2002) related to schizotypy and dissociation. In contrast, the CEQ is moderately to strongly ( $r = .44$  to  $.67$ ) related to dissociation and schizotypy (Giesbrecht & Merkelbach, 2006; see Merkelbach et al, 2001 for a summary of older findings of this relation; Merkelbach, Campo, Hardy, Giesbrecht, 2005; Merkelbach, Horselenberg, & Schmidt, 2002; Merkelbach & Jelicic, 2004; Merkelbach, Muris, & Rassin, 1999; Merkelbach, Muris, Horselenberg, & Stougie, 2000; Murray, Fox, & Pettifer, 2007;



Pekala, Angelini, & Kumar, 2001; Sanchez-Bernardos & Avia, 2006; van de Ven & Merkelbach, 2003).

Absorption typically has an intermediate relation to dissociation and schizotypy ( $r = .21$  to  $.46$ ; Eisen & Carlson, 1998; Fassler, Knox, & Lynn, 2006; Maltby, Day, McCutcheon, Houran, & Ashe, 2006; Muris & Merkelbach, 2003; Platt et al., 1998; Sheridan, Maltby, & Gillett, 2006). In two groups, however, stronger absorption-dissociation relations were found: In a combined group of equal numbers of individuals who did and did not report contact with aliens ( $r = .76$ ; French et al., 2008) and in a combined group of high and low Absorption Scale (Tellegen & Atkinson, 1974) scorers ( $r = .59$ ; Horselenberg, Merkelbach, Wessel, Verhoeven, & Zeles, 2006). These strong relations likely are due to the atypically large variability in scores caused by the inclusion of extreme samples.

In addition, a factor analysis of an older measure of fantasy proneness suggested that a component characterized by imagination that blurs the line between reality and daydreaming is related much more strongly to measures of schizotypy (as well as other measures of psychopathology and the CEQ) than a component characterized by childhood fantasy and current creativity (Klinger, Henning, & Janssen, 2009). In total, the findings reviewed above suggest that absorption and fantasy-proneness items have a place in the schizotypy domain, at least at the periphery, particularly in the area of magical thinking and unusual perceptual experiences.

#### Eccentricity, cognitive dysregulation, and autism traits

Disorganized/cognitive and behavioral dysregulation schizotypy, including eccentric behavior, confusion, and odd thought processes, is relatively poorly covered in self-report measures (Cicero & Kerns, 2010). In the commonly used SPQ, for example, the assessment of eccentric behavior is dominated by items related to the perception that others (and to a lesser degree, the respondent) find the respondent odd on a general level.

The SPQ's unusual speech content is slightly more differentiated (e.g., there are items about rambling speech and about changing speech content quickly), but there are few items about the internal experience of cognitive slippage. Cognitive difficulties have been a cardinal theoretical aspect of schizotypy from the beginning (Meehl, 1962), and they appear to be a correlate of other schizotypy traits, despite the relative lack of items relevant to this domain in common measures of schizotypy/SPD. Among undergraduates who have scores at least two standard deviations (SDs) above the mean on either PerAb or MagID (PerMag group) or on the Revised-Social Anhedonia Scale, scores on a measure of cognitive slippage were higher than those of controls who scored near the mean on all three scales (Gooding, Tallent, & Hegyi, 2001).

Cicero and Kerns (2010) developed a measure of disorganized schizotypy, the Poor Cognitive Control scale that includes content such as attentional difficulties, difficulty getting started on and completing multi-step tasks, difficulty following directions, poor impulse control, impaired verbal expression and reception, confusion, distractibility and forgetfulness. They did not report on their scale construction method, but the average interitem correlation (AIC) of .21 ( $\alpha = .89$ , 30 items) is rather low, suggesting a broad construct (Clark & Watson, 1995). Indeed, an inspection of item content indicates that the scale is a rather broad measure of schizotypal disorganization/cognitive and behavioral dysregulation including impulse control items and content related to difficulty initiating tasks—areas that are not typically included in schizotypy and that are not in either *DSM-5*'s initially proposed schizotypy trait domain or later proposed psychoticism trait.

As Hurst, Nelson-Gray, Mitchell, and Kwapil (2007) noted, several Asperger's disorder criteria also are logically compatible with SPD criteria. For example, SPD includes odd behavior or appearance, whereas one criterion of Asperger's disorder is specific problems with non-verbal communication (e.g., impaired use of eye-contact, body position, gesture, and facial expression), and other criteria include stereotyped,

repetitive behavior and motor behavior. Although logical compatibility does not guarantee an empirical relation, such phenomenological similarity does warrant exploratory study of the relations between the relevant constructs. Below, I review evidence for Autism's relations to the schizotypy construct.

Hurst and colleagues (2007) administered questionnaires assessing SPD and autism traits to undergraduates, and the schizotypal disorganization/ cognitive and behavioral dysregulation measure related modestly to moderately with the autism instrument as a whole ( $r = .32$ ) and with autistic communication difficulties ( $r = .37$ ). Similarly, an autism trait questionnaire correlated moderately strongly ( $r = .51$ ) with a scale of schizotypal disorganization/ cognitive and behavioral dysregulation in another student sample (Rawlings, 2008), but not in a small study of artists and scientists ( $r = .21$ , *n.s.*; Rawlings & Locarnini, 2008). Overall, this pattern suggests a modest affinity between schizotypal odd speech/behavior and autistic communication difficulties, although relations between autism-traits and schizotypal interpersonal difficulties/ anhedonia were stronger than that with schizotypal disorganization/ cognitive and behavioral dysregulation in both student studies.

In a study of adolescents aged 11 to 18, participants diagnosed via interview with SPD had more autistic traits than participants diagnosed with other or no PD, although autistic traits did not differ in the youths with SPD who developed psychosis versus those who did not (Esterberg, Trotman, Brasfield, Compton, & Walker, 2008). Several parent-reported autism symptoms that are related theoretically to disorganization/ cognitive and behavioral dysregulation were elevated in adolescents with SPD, including current and childhood impaired social smiling, disorganized/ atypical social overtures in childhood, current and childhood inscrutable facial expressions, and current and childhood behavior that is inappropriate to the social context (Esterberg et al., 2008). In sum, to ensure adequate breadth, it seems appropriate to include self-report items with autism content

that can be conceptualized as specific examples of cognitive dysregulation and eccentricity in a schizotypy item pool.

### Schizotypy's Relevance to *DSM-5* Personality Disorder

A wealth of literature suggests that the syndromal PDs described in the Diagnostic and Statistical Manual of Mental Disorders editions III through IV (*DSM-III*; APA 1980; *DSM-III-R*, APA, 1987; *DSM-IV*; APA, 1994) have a variety of problems including within-diagnosis heterogeneity, within-and across-axis comorbidity (e.g., Lenzenweger, Lane, Loranger, & Kessler, 2007; Widiger et al., 1991), instability (see Clark, 2009, for a review), an empirically unsupported implication of discontinuity with normal personality, and a high prevalence of PD-not otherwise specified (PD-NOS; Verheul & Widiger, 2004; Verheul, Bartak, & Widiger, 2007) (see Clark, 2007, for a review of these issues).

In part to address these issues, the *DSM-5* Work Group for Personality and Personality Disorders has proposed incorporating a dimensional trait model of personality pathology to be included among the criteria for diagnosing PD (Skodol et al., 2011a; Skodol et al., 2011b; see Krueger et al., 2011 and Krueger & Eaton, 2010, for rationale and additional references). The initial selection of trait domains was informed largely by a consensus model that comprised four of the five dimensional traits of the well-known five-factor model (FFM) of personality: neuroticism/negative affectivity, extraversion, agreeableness, and conscientiousness (see Krueger et al., 2011; Krueger & Eaton, 2010, for rationale and supporting references). These trait domains all were conceptualized and named in the maladaptive direction, so negative affectivity retained its name, (low) agreeableness became antagonism, (low) conscientiousness became disinhibition, and (low) extraversion became detachment (Skodol, 2011a). For more complete coverage of maladaptive personality traits, the Work Group also has proposed a fifth trait domain, initially called schizotypy (see Krueger & Eaton, 2010), now somewhat revised, and renamed psychoticism (Krueger et al, 2011; Skodol et al, 2011a; Skodol et al., 2011b).

The current study concerns this last domain, as well as empirically and conceptually related traits that form the boundaries of the construct. As part of this endeavor, the original and revised models proposed for *DSM-5* are discussed below in a section on the confirmatory models proposed for this study.

### Overview of the Present Study

As has been discussed, a variety of measures assess content areas similar to those in the schizotypy domain. A primary purpose of this study is to create a structurally informed, rational-empirically derived (e.g., Clark & Watson, 1995; Loevinger, 1957) measure of schizotypy and related content. As also discussed above, test construction and structural analysis can be considered two mutually refining sides of the same coin. Thus, I begin by analyzing the several confirmatory models of the broad schizotypy domain (see methods section), including both models proposed for *DSM-5*.

To evaluate the convergent and discriminant validity of various proposed component traits of schizotypy, I included material on correlated traits such as non-self-referential mistrust (e.g., Watson, Clark, & Chmielewski, 2008) and OCD (e.g., Chmielewski & Watson, 2008; Lee, Cogle, & Telch, 2005; Lee & Telch, 2010). In addition, I included measures of traits associated with self-reportable phenomena that have been found to occur at an elevated rate in family members of individuals with schizophrenia. These phenomena include avoidant PD (Fogelson et al, 2007), “interpersonal” or “negative” traits of *DSM-IV* schizotypal PD or schizotypy (Bora & Veznedaroglu, 2007; L. Chen et al., 2009; Docherty & Sponheim, 2008; Grove et al., 1991; Hans et al., 2009), anxiety disorder (Hans, Auerbach, Styr, & Marcus, 2004), Eysenckian psychoticism (Kendler, Thacker, & Walsh, 1996), physical anhedonia (e.g., L. Chapman, J. Chapman, & Raulin, 1976; Kendler et al., 1996), social anhedonia (Kendler et al., 1996), and depression and other affective disorders (Mortensen, Pedersen, & Pedersen, 2009). Additionally, recent evidence suggests that individuals with high

social anhedonia are more likely to have increased symptoms of “schizophrenia-spectrum” disorders than those with lower social anhedonia (Blanchard, Collins, Aghevli, Leung, & Cohen, 2011).

Several researchers failed to find that poor social adjustment in adolescence (Picchioni et al., 2010), anhedonia, avolition, affective flattening, and other “negative” schizotypy traits were elevated in samples of relatives of individuals with schizophrenia (Appels, Sitskoorn, Vollema, & Kahn, 2004; Bollini et al., 2007; Craver & Pogue-Geile, 1999; Irani et al., 2006; Jones et al., 2000; Laurent et al., 2000; Schurhoff et al., 2003; Vollema et al., 2002; Yaralian et al., 2000). However, some of these researchers (Bollini et al., 2007; Craver & Pogue-Geile, 1999; Yaralain et al., 2000) speculated that these null results were caused by a systematic bias, in which family members with fewer interpersonal deficits were more likely to participate in the research. Relatively small sample size is another likely contributor to null findings of the familial relation between schizophrenia and negative schizotypy; for example, there were fewer than 40 participants in each cell in several of the studies obtaining null results (i.e., Craver & Pogue-Geile, 1999; 2000; Irani et al., 2006; Laurent et al., 2000). Nonetheless, the finding of interpersonal deficits and affective blunting in family members of individuals with schizophrenia is sufficiently common that it is appropriate to include measures of social anxiety and social anhedonia in my protocol.

To orient schizotypy in the general personality space, I included measures of the broad traits of the three-factor (positive emotionality, negative emotionality, and disinhibition) and five-factor (neuroticism, extraversion, conscientiousness, agreeableness, and openness) levels of personality and temperament (e.g., Markon, Krueger, & Watson, 2005). I also used item response theory (IRT; e.g., Lord, 1980) methods to assess the difficulty and psychometric information level of individual objective items in a mixed sample of students and mental health outpatients. I repeated the assessment in a subset of participants to obtain short-term stability data (i.e.,

dependability; Chmielewski & Watson, 2009) on scales derived from these items. In doing so, I obtained important information about schizotypy's construct validity, both internally and in relation to the general personality/ psychopathology taxonomy.

### Published IRT-based Analyses of Schizotypy and Related Constructs

Several authors recently have completed IRT-based analyses on items relevant to *DSM-5* schizotypy. Because I used IRT methods in this study, I reviewed recent studies that apply IRT methods to schizotypy-like content. Briefly, IRT is a contemporary application of psychometric theory in which the properties of test items are measured at various levels of a trait's difficulty or severity. Individual items are modeled using "difficulty" and "discrimination" parameters, which are analogous to an intercept and factor loading, respectively. I describe IRT in more detail in the methods section.

Shevlin and colleagues (2007) conducted an IRT-based analysis on psychosis screening items from two large epidemiological studies – the NCS and NEMESIS data. The screening items were dichotomously scored (yes vs. no) and included content related primarily to unusual perceptions and beliefs: delusions of reference/mistrust, thought transmission, and odd perceptual experiences, including hallucinations. For the sake of parsimony, they modeled the screening items on a single dimension.

Scored dichotomously, all of these psychosis screening items had difficulty parameters such that the psychosis level had to be greater than 1.8 SDs above the mean for the probability of endorsing the item to be 50% or greater. In the NCS sample, the items diagnostic of the lowest level of psychosis (i.e., the items with difficulty parameters less than 1.9 SDs) measured by its screening interviews reflected mistrust that could be either delusional or non-delusional (i.e., the item with the lowest difficulty parameter was about being spied on or followed, which could be true in a stalking or surveillance situation), and experiencing visual or auditory hallucinations. Most of the items that were

indicative of higher levels of psychosis (i.e., difficulty values  $\geq 2.70$  SDs above the mean) were related to delusions of reference, thought transmission, and the perceptual experience of “strange forces.” In the NEMESIS sample, the endorsement rate of psychosis screening items was lower than in the NCS sample, and the range of difficulties was comparatively narrower than in the NCS sample (2.69 – 3.30 SDs above the mean). The order of item difficulties also differed somewhat from that in the NCS sample, but given the limited range of difficulties and the imperfect reliability of items, this may not represent a substantive difference between the samples.

Jung, Chang, Seo, Hwang, and Shin (2008) performed an IRT-based analysis on a Korean general population sample ( $n = 310$ ) using a dichotomous (present vs. absent), Korean version of the 40-item Peters et al. Delusions Inventory (PDI; Peters et al., 1999), a polytomous instrument designed to measure delusional ideation (primarily content related to unusual beliefs and unusual perceptions) in the general population. Although they extracted 10 content-related dimensions in an exploratory factor analysis, they treated the instrument as unidimensional for the purpose of their IRT-based analysis.

As expected given the PDI’s intended purpose as a measure of low-level delusional ideation, difficulty parameters for the PDI items generally were lower than those of the NCS and NEMESIS (Shevlin et al., 2007). PDI difficulties in the general population ranged from .45 to 2.39 SDs above the mean. Items that were most informative at the low end of delusion proneness (i.e., items with low difficulty parameters on this dimension) typically had multiple interpretations, including some that were relatively benign. For example, the two items that were diagnostic at the lowest level of delusion proneness related, respectively, to whether electronic devices such as computers can influence cognition and whether people feel as if they have a special purpose. Either of these beliefs might be unusual, but they also could relate to differences in cognitive processes when reading or writing on the computer versus on paper, or to common religious ideas. Nonetheless, the *discrimination* parameters of the



items diagnostic of low levels of delusion proneness (i.e., those with lower difficulty parameters) were not outside the range of the discrimination parameters of the rest of the scale (Jung et al., 2008, which indicates that the “low difficulty” items were as central as “more difficult” items to the delusion proneness construct.

The possibility of multiple interpretations of oddity items is not surprising given previous findings: 28.4% of the NCS sample endorsed at least one psychosis screening item (Shevlin et al., 2007), and of the 1.5% of the NCS-R sample who endorsed enough screening items to suggest psychosis, only one third were diagnosed with psychosis in a follow-up clinical interview (Kessler et al. 2005). Nonetheless, using the screening data responses, Shevlin and colleagues (2007) found that latent classes representing full and attenuated psychotic symptoms had similar demographic correlates and similar patterns of greater trauma relative to the class representing no psychotic symptoms. This suggests that even reinterpreted, relatively benign responses to oddity items might relate to the schizotypy factor overall. Simms & Clark (2005; see also Simms, 2003) performed IRT-based analyses on items from the Schedule for Nonadaptive and Adaptive Personality (SNAP; Clark, 1993) and SNAP-Version 2 (SNAP-2<sup>2</sup>; Clark, Simms, Wu, & Casillas, in press) in a large student sample ( $n = 413$ ). The SNAP includes an Eccentric Perceptions scale, with content related to unusual beliefs and perceptions. Item difficulty ranges from .40 SDs below the mean to 1.76 SDs above the mean. As in the Jung and colleagues (2008) paper, items diagnostic at lower levels of eccentric perceptions had potentially benign interpretations: “Sometimes I know that something will happen before it actually does” could be a response to having a definite schedule and “I have an inner world of my own that has its own special meaning” can refer to a strong but still normal-range imagination. Items that were most informative within one SD of the mean related to low-

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<sup>2</sup>SNAP/ SNAP-2 scales used in this study are identical so, for simplicity, I refer only to the SNAP, but provide citations for both.

level dissociative experiences and perceptual oddities, and the most difficult items related to more unusual perceptual oddities and dissociative experiences. Items that were more informative at the lower end of eccentric perceptions (i.e., items with lower difficulty parameters) had a range of discrimination parameters comparable to those of the rest of the instrument (Clark & Simms, 2005; Simms, 2003).

In sum, recent IRT-based analyses of oddity-related domains suggest that oddity items can be useful for identifying schizotypy in the relatively less odd portion of the population, although oddity items do tend to cluster in the higher difficulty range. In the current study, a polytomous response format as well as theoretically less psychopathological items were used to extend the range of item difficulty.

#### Previous Studies

Stringer and colleagues (2010) analyzed "oddity" data from two undergraduate samples, and included constructs relevant to both the *DSM-5*'s initially proposed schizotypy and later proposed psychoticism trait domain. In Study 1, 1410 individuals (1269 with usable scale-level data; 59% female) completed measures of dissociation, constricted emotional experience, OCD, positive schizotypy, negative schizotypy, social anxiety, mistrust, unusual sleep experiences, ideas of reference, suspiciousness and hostility. In Study 2, 529 individuals (519 with usable data; 66% female) completed items related to unusual beliefs and perceptions, cognitive dysregulation, dissociation proneness, OCD, and openness to experience; 326 of these participants (311 with usable data) also completed the SNAP.

We tested several confirmatory models in Study 1. The best fitting model, which also had the best Bayesian Information Criterion (BIC) (Schwarz, 1978), was a four-factor model: suspiciousness, positive schizotypy, OCD traits, and dissociation. See Figure 1 for a diagrammatic representation of this model. Positive schizotypy, marked by PerAb, MagID, and SNAP eccentric perceptions, has its strongest relations with dissociation ( $r =$

.84) and suspiciousness ( $r = .60$ ). This positive schizotypy factor comprises content related to *DSM-5* unusual beliefs and perceptions. Dissociation, positive schizotypy's strongest correlate, had its next strongest relations with suspiciousness ( $r = .66$ ) and OCD traits ( $r = .59$ ). Negative schizotypy's strongest relation was to suspiciousness ( $r = .72$ ), and OCD traits' to dissociation ( $r = .59$ ). These results suggest that positive schizotypy and dissociation form a relatively cohesive oddity construct, mistrust (measured mostly by instruments that lack specific referential content) is a more peripheral part of the oddity construct, and negative schizotypy and OCD are yet more peripheral to the central content of oddity. OCD checking accounts for much of the relation between dissociation and OCD traits. Negative schizotypy, although strongly related to suspiciousness, appears to be related only marginally to the other core oddity constructs in this sample.

In Study 2, we conducted an item-level factor analysis of the putative oddity domain. The four-factor solution was the most qualitatively informative. In this model, the first factor, "general oddity" was marked primarily by unusual perceptual experiences, dissociation proneness, and unusual beliefs. The second factor, "cognitive dysregulation," was marked most strongly by inattention and cognitive dysregulation. The third factor, "checking," was marked by obsessive-compulsive checking and obsessing, and the fourth factor four, "intellectual interests," was defined by the cultural and intellectual aspects of openness to experience. Clearly, the cognitive dysregulation and general oddity factors are the most relevant to the domain measured in the present study. In Stringer and colleagues (2010), scales derived from the factors described above were allowed to correlate; the General Oddity and Cognitive Dysregulation scales were found to be most closely related ( $r = .47$ ). Checking had similar relations with General Oddity ( $r = .42$ ) and Cognitive Dysregulation ( $r = .41$ ). Finally, Intellectual Interests was relatively uncorrelated with the other scales ( $r_s \leq .35$ ). Of clear interest to the current study, unusual beliefs, unusual perceptions, and dissociation proneness content did not mark separate factors at this level of factor extraction.

In Study 2, the scales derived from the item-level factor analysis of oddity content were correlated with SNAP scales. Unsurprisingly, General Oddity was most closely related to SNAP Eccentric Perceptions ( $r = .56$ ). Interestingly, Distractability was most closely related to SNAP Negative Temperament ( $r = .46$ ) and Mistrust ( $r = .47$ ). Checking ( $r = .43$ ) was most closely related to SNAP Negative Temperament. Intellectual Interest's strongest relation was with the Dependency scale ( $r = -.30$ ); its modest relations with the SNAP scales provides suggestive evidence that intellectual interests is not a marker of psychopathology.

In the current study, I built on the results of Stringer and colleagues (2010). Specifically, I added several elements and repeated the structural aspects of those analyses. First, I added items relevant to cognitive dysregulation and eccentricity to measure the schizotypy trait domain more fully. Additionally, I used IRT to measure item difficulties on a common scale for patients and students; these results are helpful to select items for screening versus diagnostic instruments. For example, items that are discriminating (i.e., load highly on the relevant factor), and endorsed at a reasonably high rate in a normal population are more appropriate for screening measures than similarly discriminating items that are endorsed less frequently. Conversely, highly discriminating and moderately to highly difficult items are more appropriate for instruments meant to diagnose psychopathological schizotypy. Finally, I examined the dependability (short-term retest reliability) of the schizotypy construct, which serves as an additional test of construct validity.

## CHAPTER II

### THE STUDY

#### Methods

#### Participants

To test the structure, convergent and discriminant validity, and stability of the schizotypy trait domain, an over-inclusive set of original, objectively scored schizotypy items; original, open-ended schizotypy psychoticism prompts; a set of existing measures of general personality; and existing measures of traits that are empirically or theoretically associated with schizotypy were administered to student participants and mental health outpatient participants. The open-ended prompts are not considered further in this manuscript. Participants who successfully completed the study protocol were invited to repeat the protocol approximately 2 weeks later. A total of 761 participants ( $N = 210$  students at the University of Notre Dame (ND), 371 students at the University of Iowa (UI), and 180 outpatients) submitted protocols at Time 1, and 325 participants submitted protocols at Time 2 ( $N = 88$  ND students, 101 UI students, 136 outpatients).

A portion of Time 1 ( $n = 53$ ; 14 ND students, 29 UI students, 10 outpatients) and Time 2 ( $n = 24$ ; 5 ND students, 12 UI students, 7 outpatients) protocols were excluded from further analysis because they were missing more than 30 of 552 (5.4%) items. Additionally, 71 Time 1 ( $n = 9$  ND students, 48 UI students, 14 outpatients) and 26 Time 2 ( $n = 4$  ND students, 13 UI students, 9 outpatients) protocols were excluded due to strong evidence of random responding (more than four out of 14 true-false infrequency items or more than five out of nine five-point random response-check items). I used a conservative criterion for excluding protocols due to wrong responses on the random response-check items because a number of participants reported that they found these items confusing, and a number of otherwise valid-appearing protocols had a significant number of incorrect responses to these items.

Usable protocols missing fewer than 30 items were included in the analyses. Missing values were imputed using the Multiple Imputation (MI) procedure in SAS 9.2. To prevent imputed data from being more reliable than data produced by respondents, this procedure produces several data sets with an error component included in the imputations. The final data set used the mean values of the imputations from five such sets. The imputation of the items resulted in some non-integer values for these items. To run the IRT models (discussed in the results section), items with non-integer values were rounded to their nearest integer value, and imputed values that were outside the 1-5 response scale were rounded to the nearest within-range integer value. Scale scores, both for existing measures and measures designed for this study, were calculated using rounded item values. Confirmatory and exploratory factor analyses were done with raw item values.

The students were recruited from ND and UI Department of Psychology research participant (RP) pools. Outpatient participants were recruited from participants of other studies in the Center for Advanced Measurement of Personality and Psychopathology (CAMPP) in South Bend, IN. These participants came primarily from a South Bend Community Mental Health center, but some had been recruited via mass e-mails soliciting participation from ND faculty, staff, and students receiving mental health care. Participants were recruited via a flyer in the CAMPP lobby or telephone calls to individuals who had indicated an interest in participating in future studies. Participants who had demonstrated difficulty in validly answering survey questions in previous studies were not recruited. Outpatient participants with strong evidence of random responding at Time 1 were not invited to participate at Time 2. This was not the case for students because, unlike the outpatients, they used an internet sign-up system for both initial and follow-up participation, which made it difficult to prevent follow-up participation based on the quality of initial data. In contrast, outpatients completed the

protocol in the laboratory, so their protocols were inspected for evidence of random responding.

Eligible participants were 18 years or older, and indicated that they were able to read and write English well enough to respond to objectively scored items and to write at least a short sentence in response to open-ended prompts. For outpatient participants, exclusion criteria were lifetime diagnoses (self-reported) of mental retardation, delirium, dementia, and also current psychosis. Student participants were inferred to meet these criteria because they had been admitted to 4-year universities and had met age requirements to participate in research participation pools at their universities. Research Participation students who were interested in the study scheduled a 1-hour online appointment; they received login information for the online survey within 2 business days. Students in the RP pool received credits toward a course requirement (one credit was given for completing each of the two sessions). Outpatient participants came to the laboratory at scheduled times to complete the protocol either on paper or online; on average, outpatients took approximately 90-120 minutes to complete the survey, which was significantly longer than student completion times. Outpatient participants received a \$25 gift card in exchange for their participation in each session.

Demographic information is shown in Table A-3, overall and by subsample. The student samples did not differ from each other in age ( $t_{477.25} = -1.14; p = .26$ ), but the outpatients were older than the students ( $t_{164.56} = 30.1; p < .0001$ ). All samples were majority female, but did vary from each other in proportion female; the UI sample had a significantly higher proportion of females than either the outpatient ( $df = 1, \chi^2 = 7.25, p < .01$ ) or the ND sample ( $df = 1, \chi^2 = 6.28, p < .02$ ). A significant proportion of ND and UI students endorsed at least one mental health consultation with a general or mental health provider; the relatively high proportions reported may be due to the wording of the question, which did not differentiate discussing concerns about mood or anxiety with a

general health provider from a specialized mental-health consultation about more serious issues.

Among the outpatients, the average reported age of first mental health consultation was more than 15 years younger than the sample's average age, which suggests that this is a relatively chronic patient sample. The proportion of minority participants (defined as endorsing at least one ethnicity/race other than non-Hispanic White; i.e., Asian, Black or African American, Hispanic, Native American, or Other) varied by subsample ( $df = 2, \chi^2 = 25.01, p < .0001$ ) with the outpatients endorsing a higher proportion minority than Notre Dame students ( $df = 1, \chi^2 = 6.38, p < .02$ ) and the ND students endorsing a higher proportion minority than the UI students ( $df = 1, \chi^2 = 5.23, p < .03$ ). Overall, the two student samples appear to be relatively similar demographically, despite minor, though statistically significant, differences, whereas the outpatient sample is demographically quite different from the student samples.

## Measures

### Original schizotypy items

I compiled a set of items intended to cover each facet of the proposed schizotypy trait domain (see Table A-5 for paraphrased item content). The items are shown with the schizotypy facet to which they were assigned a priori (i.e., prior to data collection). Because these items were written prior to the release of the *DSM-5* psychoticism proposal, the a priori facet assignments do not reference the psychoticism facets. To maximize the amount of information from each item, a five-point response format will be used (1 = not at all true, 2 = not very true, 3 = neither true nor false, 4 = somewhat true, and 5 = very true).

I used several sources to compose a comprehensive set of items related to schizotypy and its correlates. The *DSM-5* schizotypy proposal, especially the facet descriptions, served as an outline for important content to cover. Additionally, I



examined a variety of existing scales of schizotypy and its correlates including dissociation, psychosis proneness, absorption, imagination, creativity, thought-action fusion, and the autism spectrum, for relevant content. Some new items were written and others were paraphrased from existing measures. I combined items with very similar content (e.g., I combined an item about one's legs feeling longer or shorter than usual with an item about one's arms feeling longer or shorter than usual into an item about ones limbs feeling longer or shorter than usual). I presented the items to a group of clinical psychology graduate students and Ph.D. level psychologists, who suggested edits to improve readability. Finally, the items were assigned a priori to the five original *DSM-5* schizotypy facets to ensure that each facet had adequate coverage and comprehensiveness.

In addition to writing items that tapped content not found in existing instruments, I attempted to maintain continuity with the tradition in schizotypy research of including items that describe experiences similar to those in existing measures of positive schizotypy, disorganized schizotypy, and dissociation. Items that are ostensibly parallel with those in empirically tested instruments also are more likely to have appropriate psychometric properties compared to completely new items.

Nonetheless, I wrote some new items, rather than simply using all existing measures for three main reasons. First, some of the constructs described in the *DSM-5* schizotypy trait domain are not well represented in current measures of schizotypy. The need for more items was especially apparent for the cognitive dysregulation and eccentricity facets, which encompassed items tapping experiences traditionally attributed to other domains that are phenomenologically or empirically related to the schizotypy domain, as reviewed above (e.g., absorption, fantasy proneness, autism and Asperger's symptoms). Second, existing schizotypy and dissociation scales have a great deal of overlapping content, and reducing this redundancy allows for additional items in the pool without overburdening respondents (see example above). Third, using a set of non-

proprietary items allows use of a consistent response format, which makes it easier to evaluate the items' interrelations.

Existing measures included to evaluate convergent and discriminant validity of the schizotypy domain

**Temperament.** *The General Temperament Survey* (GTS; Clark & Watson, 1990) is a three-scale, factor-analytically derived, true-false measure of the higher order temperament dimensions of Positive Temperament (27 items;  $\alpha = .81-.89$ ), Negative Temperament (28 items;  $\alpha = .90$  to  $.92$ ), and Disinhibition (35 items;  $\alpha = .81-.86$ ) (Watson & Clark, 1992). The GTS scales also are included in the SNAP (Clark, 1993; Clark et al., in press).

**Personality.** *The Big Five Inventory* (BFI; John, Donahue, & Kettle, 1991; John, Naumann, & Soto, 2008) is a 44-item instrument that assesses the Big Five trait personality structure. Psychometric characteristics of the scales, including internal consistency, were examined among college students from the United States and Spain (Benet-Martinez & John, 1998); scales include Extraversion (8 items,  $\alpha = .85-.88$ ), Agreeableness (9 items,  $\alpha = .66-.79$ ), Conscientiousness (9 items,  $\alpha = .77-.82$ ), Neuroticism (8 items,  $\alpha = .80-.84$ ), and Openness (10 items,  $\alpha = .79-.81$ ). In both the U.S. and Spanish samples, there were some non-trivial correlations between the scales. For example, in the U.S. sample, Neuroticism correlated  $.29$  with Extraversion and  $-.31$  with Agreeableness. In the U.S. and Spanish samples, Extraversion and Openness correlated  $.25$  and  $.33$ , respectively. Finally, Agreeableness and Conscientiousness correlated  $.27$  in the U.S. sample. With the exception of the negative correlation between Neuroticism and Extraversion, these correlations were not unexpected, given the hierarchical structure of personality (e.g., Markon et al., 2005).

**Anhedonia.** *The Revised Social Anhedonia Scale* (Eckblad et al., 1982) is a 40-item measure of lack of social interest. In recent student samples, scale alphas range from  $.81-$

.84 (Kwapil et al., 2008); therefore, inter-item correlations ranged from .10 to .11, which suggests that the Revised-Social Anhedonia Scale measures a very broad construct.

**Suspiciousness.** *SNAP Mistrust* is a 19-item scale from the SNAP (Clark, 1993; Clark et al., in press). It measures cynicism about others' motives, social alienation, and sensitivity to perceived social slights (Clark et al., in press). In validation samples, alpha ranged from .83-.89; thus, the AIC ranged from .20 to .30, suggesting that Mistrust is a moderately broad construct.

**OCD.** *The Schedule for Compulsions, Obsessions, and Pathological Impulses* (SCOPI; Watson & Wu, 2005), is a factor-analytically derived instrument designed to measure symptoms of OCD as well as theoretically related symptoms such as hoarding. The SCOPI has moderate-to-high within-scale inter-item correlations (range = .27-.62), good test-retest reliability (.81) over a 2-month time frame, and moderate to strong convergent correlations (range = .47-.73) with other measures of OCD.

*The Revised Obsessive Compulsive Inventory* (OCI-R; Foa et al., 2002) is an 18-item measure that measures six OCD symptom dimensions: Washing, Obsessing, Hoarding, Ordering, Checking, and Neutralizing. The alphas of the 3-item scales ranged from .76 to .93 in clinically anxious groups and, except for Neutralizing, whose .34 alpha was an outlier, from .65 to .89 in a non-anxious validation group; dependability coefficients (i.e., test-retest reliability correlations over 1-2 weeks; Chmielewski & Watson, 2009) ranged from .57 to .91, and the OCI-R subscales had inter-item correlations that ranged from .51 to .82, suggesting that each subscale measures a relatively narrow construct (Foa et al., 2002).

**Social Anxiety.** The 19-item *Social Interaction Anxiety Scale* (SIAS; Mattick & Clarke, 1998) is a measure of anxiety about social awkwardness. In validation groups of individuals with various anxiety disorders, unscreened undergraduates, and community adults, the alpha of the SIAS ranged from .88-.94, and test-retest correlations in individuals with social phobia was .92 over both 4- and 12-week intervals (Mattick &

Clarke, 1998). The AIC ranged from .27-.44, which suggests that the SIAS measures a moderately narrow construct.

The 12-item *Brief Fear of Negative Evaluation Scale* (BFNE; Leary, 1983; Watson & Friend, 1969) is a measure of anxiety about being negatively appraised by others and of social behaviors that are meant to reduce the likelihood of such an appraisal. In a small validation group of undergraduates, the alpha of the BFNE was .90 (Leary, 1983) and the AIC was .43, which implies that BFNE measures a moderately narrow construct.

### Confirmatory Models

In this section, I describe in detail the confirmatory models proposed for this study. At the time that this study was designed, the originally proposed *DSM-5* schizotypy trait domain was current, and the items written for this study were intended to assess a broad version of this model. Additionally, several of the confirmatory models tested in this study were simplifications of the *DSM-5* schizotypy model that were informed by my review of structural studies (see above). Thus, I begin with a detailed summary of the *DSM-5* schizotypy model.

The *DSM-5* trait domain of schizotypy was a part of the first, public draft model for *DSM-5* personality and PD. It was conceptualized initially as a superordinate trait domain with five component facets: unusual perceptions, unusual beliefs, eccentricity, cognitive dysregulation, and dissociation proneness (Skodol et al, 2011a; Skodol et al., 2011b). Schizotypy itself was defined briefly as “exhibits a range of odd or unusual behaviors and cognitions, including both process (e.g., perception) and content (e.g., beliefs)” (p. 38, Skodol et al., 2011a). Each facet also was defined with a relatively brief prose description, as follows.

Unusual perceptions was described as the tendency toward “odd experiences in various sensory modalities” including “synesthesia” (p. 40, Skodol et al., 2011a) and is

conceptually similar to experiences that have been described elsewhere in the schizotypy literature as absorption (Tellegen & Atkinson, 1974) and perceptual aberrations (PerAb; L. Chapman, J. Chapman, Raulin, & Edell, 1978; L. Chapman, J. Chapman, & Raulin, 1978). Unusual beliefs, defined as “content of thoughts that is viewed by others of the same culture and society as bizarre; idiosyncratic but deeply held convictions that are not well justified by objective evidence; interest in the occult and in unusual views of reality” (p. 40, Skodol et al., 2011b), is theoretically similar to what has been described elsewhere in the schizotypy literature as magical ideation (e.g., Eckblad & L. Chapman, 1983). Ideas of reference (e.g., Emerson, 1918) and unwarranted/exaggerated mistrust also implicitly fall into this facet. Eccentricity, described as “unusual behavior (e.g., unusual mannerisms; wearing clothes obviously inappropriate to the occasion or season); saying unusual or inappropriate things; frequent use of neologisms; concrete and impoverished speech; seen by others of the same culture and society as bizarre, odd and strange” (p. 40, Skodol et al., 2011a), is theoretically similar to posited behavioral attributes of schizotypal disorganization/ cognitive and behavioral dysregulation (e.g., Venables & Bailes, 1994). Cognitive dysregulation, described as “unusual thought processes; having thoughts and ideas that do not follow logically from each other; derailment of one’s train of thought; making loose associations or non-sequiturs; disorganized and/or confused thought, especially when stressed” (p. 40, Skodol et al., 2011a), is conceptually similar to the commonly described cognitive aspect of schizotypal disorganization/ cognitive and behavioral dysregulation, as well as to cognitive slippage (e.g., Meehl, 1962) and the cognitive/intellectual aspects of “schizophrenism” (Neilsen & Petersen, 1976, p. 17). Finally, dissociation proneness, described as the “tendency to experience disruptions in the flow of conscious experience; ‘losing time’ (e.g., being unaware of how one got to one’s location); experiencing one’s surroundings as strange or unreal” (p. 40, Skodol et al., 2011a), is essentially the same as the experiences described in *DSM-IV* (APA, 1994) depersonalization disorder, dissociative amnesia, and dissociative fugue, as well as

certain perceptual aberrations. After some initial aggregations of items, this five-factor model was tested in this study.

My detailed review of structural studies of schizotypy (see above) suggests that the *DSM-5* schizotypy proposal may be overly differentiated. For example, affinity between current measures of odd behavior and odd beliefs and between current measures of content such as perceptual aberration and magical ideation suggest that it would be appropriate to test models in which content from those pairs of facets are aggregated into single factors. In order to test separately whether these two aggregations were appropriate in my sample, I tested two four-factor models. In the first four-factor model, unusual perceptions and unusual beliefs marked a single factor, but the other factors remained as in the *DSM-5* schizotypy model; in the second, cognitive dysregulation and eccentricity marked a single factor. Additionally, I tested a three-factor model in which unusual beliefs and unusual perceptions marked a single factor, cognitive dysregulation and eccentricity marked a single factor, and dissociation proneness marked its own factor.

The final model that I tested was informed by the revised *DSM-5* trait model (Krueger et al., 2011), which includes psychoticism, an empirically informed, consolidated revision of the approximate content that was encompassed by the schizotypy trait domain in the initial *DSM-5* personality/ PD taxonomy. This model is similar but not identical to my three-factor model based on the structural literature (see above). The most salient differences are that dissociation content is not explicitly included in the psychoticism model, and the boundaries of the psychoticism model's facets also vary somewhat from those of my three-factor model. Psychoticism's facets are described by some of their core content in Krueger et al. (2011) and slightly more comprehensively on the *DSM-5* website.

Eccentricity's core content is reflected in the self-report item, "Other people seem to think my behavior is weird" (p. 327, Krueger et al., 2011). This core content, combined with eccentricity's description on the *DSM-5* website, suggests that eccentricity

corresponds primarily with the originally proposed schizotypy eccentricity facet. Cognitive/Perceptual Dysregulation's core content is characterized in the self-report item, "Things around me often feel unreal, or sometimes more real than usual" (p. 327, Krueger et al., 2011). This core content, combined with cognitive/perceptual dysregulation's description on the *DSM-5* website, suggests that this construct contains content that assess thought *processes* previously included in the dissociation proneness, cognitive dysregulation, and, to a limited degree, sensory aspects of the unusual perceptions facet. Unusual Beliefs and Experience's core content is reflected in the self-report item "Sometimes I can influence other people just by sending my thoughts to them" (p. 327, Krueger et al., 2011). This core content, combined with the description on the *DSM-5* website, suggests that this facet includes material that assesses thought *content* from the initially proposed unusual beliefs and unusual perceptions facets.

In summary, I tested five a priori models of the general schizotypy domain: (1) a five-factor model based on the initial *DSM-5* schizotypy proposal, (2) a four-factor variant of the initial *DSM-5* schizotypy proposal with unusual perceptions and unusual beliefs combined, (3) a four-factor variant of the *DSM-5* schizotypy proposal with eccentricity and cognitive dysregulation combined, (4) a three-factor variant of *DSM-5* schizotypy proposal with both (a) unusual perceptions and unusual beliefs and (b) eccentricity and cognitive dysregulation combined, and (5) a three-factor model based on the current (May, 2012) *DSM-5* psychoticism proposal.

#### Item Response Theory

In this study, I used IRT methods to clarify characteristics of my items and scales; in this section, I describe IRT models and parameters. A typical two-parameter logistic (2PL) IRT analysis (e.g., Lord, 1980) yields the average levels of a given unidimensional ability or personality trait needed for people to pass or endorse, respectively, a set of items (termed *item difficulty*), as well as the degree to which the items measure the trait

(termed *item discrimination*) (Lord, 1980). For such a 2PL analysis, each item has its own “item-characteristic curve,” denoted by equation 1.

$$P \equiv P(\theta) = (1 + e^{-a(\theta - b)})^{-1} \quad [1]$$

$\theta$  = ability or severity level on a given trait,  $P(\theta)$  = function on  $\theta$  of the probability that the item will be endorsed,  $a$  = discrimination parameter, and  $b$  = difficulty parameter

If the items are measures or indicators of the trait as they are expected to be, as  $\theta$  increases, the probability of endorsing the items increases;  $b$  denotes the point on  $\theta$  at which a person has a 50% probability of endorsing the item and the item is most discriminating (as  $b$  increases, the level of  $\theta$  needed to endorse the item increases). The  $a$  parameter is akin to a factor loading—the degree to which  $\theta$  accounts for item variance;  $a$  also can be interpreted as the ability of an item to determine a relatively narrow region of  $\theta$  at which examinees become more likely than not to endorse an item: higher values of  $a$  indicate increasingly narrow regions. In situations in which factor loadings/ $a$  parameters can be modeled as identical for all items without deterioration in information criteria, a one-parameter logistic (1PL) model is appropriate. In such a case, items in the model differ only in their  $b$  parameters. The advantages of IRT-based analyses over classical test theory include the ability to examine the standard error of measurement (and, by extension, information) for each item and at multiple levels of difficulty (Lord, 1980).

For polytomous response formats, several extensions of the 2PL IRT exist. I used the Graded Response Model, which is appropriate for items with ordered polytomous responses (Samejima, 1969; cited in Thissen & Steinberg, 1986). The Graded Response Model provides thresholds at the point at which the probability of giving a response greater than each response option is 50% (e.g., the threshold for response 3 is the point on  $\theta$  at which there is a 50% probability of giving a response greater than 3).



## Results

### Overview

The aims of these analyses were (1) to aggregate schizotypy items empirically for further analysis; (2) to use rational/empirical aggregations of items, often called parcels, to test structural hypotheses about the schizotypy domain; parcels are not intended to be carefully designed scales; rather, they are intended to function as very homogenous partitions of the schizotypy content that can be used to make structural analysis more tractable; (3) to use the best-fitting structure to inform item selection for schizotypy scales, and consider both unidimensionality and comprehensiveness in refining the scales; (4) to examine the intercorrelations and stability of the resulting scales; (5) to obtain IRT parameters on the schizotypy scales, and (6) to examine the convergent and discriminant correlations of the scales with existing measures of personality, temperament, and psychopathology.

In pursuit of these aims, the data analytic procedure was as follows:

(1) I subjected schizotypy items to iterative rounds of maximum likelihood exploratory factor analysis, and used additional, post-hoc rational considerations to aggregate the items into rational-empirical parcels.

(2) Following Markon and Krueger (2005), I subjected the rational-empirical parcels to latent-class and latent-trait modeling and examined the models for fit and information criteria.

(3) Given that latent-trait models generally were more informative than latent-class models, I used the rational-empirical parcels to test confirmatory factor models of the schizotypy domain.

(4) I formed item pools for each scale by combining the items from the rational-empirical parcels that formed each factor in the best confirmatory solution and, as suggested in Clark and Watson (1995), refined the item pools using exploratory factor

analysis and considering the consistency of interitem correlations (i.e., items with very high or very low correlations to a subset other items in the scale were considered for removal, due to their content being redundant or irrelevant, respectively); additionally, items were removed if they did not load on the scale's general factor at Time 2.

(5) I subjected the items in each schizotypy scale to unifactorial IRT-based analyses; these models were examined with loadings held constant (i.e., 1PL) and with factor loadings allowed to vary (i.e., 2PL), and models were run using both the Time 1 and Time 2 data.

(6) I examined the psychometric properties, including intercorrelations and stability, of existing measures, as well as their correlations with the schizotypy scales.

#### Aggregation of Schizotypy Items for Further Analysis

I subjected the original schizotypy items to maximum-likelihood factor analysis because it provides fit statistics and information criteria that allow objective criteria for factor selection. Table A-4 shows fit statistics for maximum-likelihood factor solutions of Time 1 schizotypy content. The BIC was lowest for the 8-factor solution, which indicates that the eight-factor solution strikes the best balance between parsimony and fit according to that criterion. The Akaike's Information Criterion continues to decrease in the 9-factor model, but given that even the 8<sup>th</sup> factor of the 8-factor solution lacks primary loading items, it appears that extracting an additional factor is not sensible. The 8<sup>th</sup> factor was retained, however, because it reduced the number of cross loading items and, hence, clarified the structure. The use of information criteria rather than fit indices alone reduces the likelihood of model overfitting, which results from allowing so many free parameters that a model is able to approximate data that actually have a different functional form than the model (Pitt & Myung, 2002). Hu and Bentler (1999) suggest values of TLI and CFI greater than .95 and a RMSEA less than .06 to constitute a good

fit. Valuing parsimony as well as fit, I followed Watson (2001) and considered RMSEA less than .10 and TLI and CFI greater than .90 to be “adequate” fit.

Table A-5 shows the varimax-rotated maximum-likelihood factor loadings for an eight-factor solution of Time 1 schizotypy content. The eight-factor solution accounted for 58.1% of the common variance. Loadings at or above  $|.35|$  on any factor are bolded. Factor 1 was defined primarily by items that were judged rationally before data collection to reflect unusual perception content, though a significant amount of content that was judged rationally to reflect dissociative processes and unusual beliefs also loaded on this factor. The first factor consisted of heterogeneous content related to poorly defined boundaries of identity, illusions related to perception of the body, a feeling that the environment is dreamlike, auditory and visual illusions, synesthesia, referential thinking with the quality of illusion, and belief in thought transmission and thought-action fusion. Factor 2 was defined primarily by content that was judged rationally to reflect the eccentricity and cognitive dysregulation facets, although some dissociation proneness and unusual perceptions content also loaded onto this factor. The content consisted primarily of a sense of confusion, especially when under stress, subjective difficulty in communicating coherently, and a sense of inattention, including that with a dissociative flavor. Factor 3 consisted primarily of dissociative proneness content but also included content judged rationally to reflect a number of other areas (i.e., unusual perceptions, cognitive dysregulation, unusual beliefs, and eccentricity). The content is primarily related to fantasy, absorption, and dream experiences. Factor 4 was defined primarily by unusual beliefs content interspersed with significant unusual perceptions content. The content is primarily related to belief in and, to some extent, experience with the supernatural, intense spirituality, and other unlikely forms of causation (e.g., extraterrestrials, reincarnation) for typical events. Factor 5 is defined primarily by content that was judged rationally to reflect unusual perceptions content, primarily related to referential thinking. Factor 6 was defined by UB items related to a belief in

superstitions. Factor 7 was defined by dissociation proneness content related to dream experiences. As mentioned earlier, factor 8 did not have any primary loadings.

Given the size and generality of the first four factors, the items from each of these factors were subjected, respectively, to a second round of factor analysis; the results and fit statistics are shown in Tables A-6 through A-13. In each case, the number of factors selected was based on information criteria and interpretability, which is discussed more extensively below. Throughout the second-round factor analyses, I erred toward extracting more rather than fewer factors; this was done to ensure that empirically separable content was not aggregated prematurely. Some of the factors from the second-round factors were separated rationally into multiple parcels as detailed below; this was done to ensure that the content of each parcel was conceptually as well as statistically homogeneous; thus, parcels were assigned via a post-hoc, rational selection of items loading on each second-round factor. Some items were reverse scored, and these are denoted on the relevant Table(s).

Table A-6 shows the fit statistics and information criteria for the first second-round factor analysis of the items that loaded on the first overall factor of the schizotypy factor analysis. Five factors were retained; this solution had the best BIC. Additionally, the 5-factor solution had advantages relative to the 4-factor solution given that the less differentiated solution's first factor was comparatively heterogeneous and difficult to interpret—it was marked by a combination of odd perceptions, bodily distortions, and eccentric behavior. Although the 6-factor solution had a better AIC than the 5-factor solution, its final factor had only one primary marker. Table A-7 shows the loadings from the retained, varimax-rotated, 5-factor solution. This five-factor solution accounted for 85% of the common variance. The first-factor items were separated into eight post-hoc rational-empirical parcels as detailed below. As mentioned above, when markers of second-round factors were conceptually heterogeneous, they were separated rationally into multiple parcels. By design, the items in each parcel all had primary loadings on the

same, and only one, second-round factor. I rationally separated the first second-round factor into two parcels to increase each parcel's conceptual homogeneity: Perceptual Aberration consisted of items related to sensory illusions, and Eccentric Behavior consisted of items related to making up words and dressing wrongly for the occasion—items that had been assigned a priori to the eccentricity content area. Similarly, I rationally separated the markers of the second second-round factor into two parcels: Bodily Detachment, content related to a feeling of detachment from the body, and Illusion, content related to hallucination-type illusions. I rationally separated markers of the third second-round factor into two parcels: Thought Transmission consisted of content reflecting mindreading and telepathy; Referential Meaning consisted of content concerning referential thinking related to assigning idiosyncratic meaning to objects and events. Most markers of the fourth second-round factor comprised a Body Boundaries parcel, whose content reflected poor subjective physical boundaries. Most markers of the fifth second-round factor comprised a Mistrustful Reference parcel, whose content reflected referential thinking that assigns malign intent to others.

Table A-8 shows the fit statistics and information criteria for the second-round factor analysis of the items that loaded on Factor 2 of the overall analysis of the schizotypy items. Five factors were retained; this solution had the best BIC score and, unlike the four-factor solution, separated content related to the sense that others find the respondent strange from content that details actual socially odd behaviors. The 6-factor solution was unsatisfactory because the items with primary loadings on Factor 6 loaded nearly as highly on Factor 1. Table A-9 shows varimax-rotated factor loadings from the retained solution; this 5-factor solution accounted for 89% of the common variance. Items from the second overall factor were separated post-hoc into five rational-empirical parcels. Most items from the first second-round factor (of the overall Factor 2 items) comprised a Confusion/Distraction parcel, whose content related to subjectively incoherent and confused thought, poor memory, and subjectively confused verbal

communication. Markers of the second second-round factor formed a Social Confusion parcel, whose content related to a sense that others are confused by the respondent's speech and behavior, as well as the sense that the respondent is not good at emitting and responding to social cues. Items marking the third second-round factor items comprised a General Eccentricity parcel, whose content related to the sense that both the respondent and others find the respondent strange. Items marking the fourth second-round factor formed an Eye Contact parcel, which was a narrow content factor concerning poor eye-contact. Markers of the fifth second-round factor comprised a Putdown parcel, whose content reflected mistrustful referential thinking that also had the flavor of poor social perception.

Table A-10 shows the fit statistics and information criteria for the second-round factor analysis of the items that loaded primarily on the third factor of the overall analysis of the schizotypy items. Four factors were retained. Although the 5-factor solution had better BIC and AIC scores, it was not satisfactory because the three markers of its fifth factor were not conceptually coherent. The 4-factor solution was more satisfactory conceptually than the 3-factor solution, because it separated content related to relatively normative enjoyment of fantasy from content that described imagination related to poor reality testing. Table A-11 shows the varimax-rotated loadings from the retained solution; this 4-factor solution accounted for 96% of the common variance. Items from this second-round factor analysis (of items that loaded primarily onto the third factor of the overall schizotypy solution) were separated in a post-hoc fashion into five rational-empirical parcels. Most markers of the first factor of this second-round factor analysis were assigned rationally to either a Hidden Meaning or a Sensory Absorption parcel; the content of Hidden Meaning reflected finding or creating idiosyncratic meanings from apparently neutral material, whereas the content of Sensory Absorption reflected intense sensory absorption in objects or experiences. Most primary loaders on the second second-round factor comprised a Vivid Fantasy parcel, which consisted of content

relating very vivid fantasy and sensory absorption with a flavor of unusual perceptions and dissociative experiences. Markers of the third second-round factor comprised a Fantasy parcel, which reflected the sense that the respondents found their fantasy life interesting. Items from the fourth factor formed an Absorption/ Forgetfulness parcel, whose items reflected absorption so strong that it led to sharply reduced attention to other stimuli.

Table A-12 shows the fit statistics and information criteria for the second-round factor analysis of the items that loaded primarily on the fourth factor of the overall analysis of the schizotypy items. Three factors were retained. The 3-factor solution had the best BIC value and, unlike the 2-factor solution, separated relatively normative spiritual content from more frankly supernatural content. Table A-13 shows the varimax-rotated 3-factor solution of the items that load primarily onto the fourth factor of the overall analysis of schizotypy items. The three-factor solution accounted for over 100% of the common variance, which suggests over-extraction. Nonetheless, this solution was retained due to its minimum value on the BIC, the solution's interpretability, and the analysis's overall goal of creating enough homogeneous parcels to define constructs for confirmatory analyses (vs. being the final structural-analytic step in which case overextraction could be problematic). Markers of the first second-round factor of the analysis (of the items that loaded primarily on the fourth factor of the overall schizotypy factor analysis) were separated into three rational-empirical parcels. Markers of the first second-round factor comprised an Odd Causation parcel, with items related to beliefs in unlikely causal agents other than ghosts. Markers of the second second-round factor formed a Supernatural parcel, comprised of items reflecting "ghostlike" supernatural experiences and beliefs. Primary loaders onto the third second-round factor created a narrow Spiritual parcel, with content related to intense spiritual experiences.

Multiple factor solutions of the items on the fifth, sixth, and seventh factors of the overall analysis of the schizotypy items provided worse scores on information criteria

than unifactorial solutions. Therefore, all items that loaded primarily onto Factor 5 of the overall analysis comprised a Referential Focus parcel, whose content reflected general referential thinking. All items that loaded primarily onto Factor 6 formed a Superstition parcel, with content related to belief in superstitions. All items that loaded primarily onto Factor 7 comprised a Nightmare and Recurring Dreams parcel, whose name reflects its content.

Table A-14 shows the fit statistics and information criteria for the second-round factor analysis of items that either (1) did not load onto the 8-factor solution of the full pool of schizotypy items or (2) were not assigned to parcels because their content was not conceptually homogeneous with any parcel's core content. This analysis was done to ascertain whether these remaining items contained rational/empirical aggregations of content that should form additional parcels. Three varimax-rotated factors were retained; the three-factor solution had the best BIC score and contained two factors with markers that were dominated by interpretable aggregations of items and a heterogeneous third factor. Unlike the 2-factor solution, the 3-factor solution separated referential material from cognitive and social dysregulation content. The markers of this three-factor second-round solution, which accounted for 66% of the common variance, are shown in Table A-15. As might be expected from an analysis that was designed to ascertain whether there was any salvageable material in previously rejected content, the factors were somewhat heterogeneous and a somewhat smaller proportion of markers were assigned to parcels. Most of the primary markers of the first second-round factor comprised a Referential/Unusual Perceptions parcel, whose items related to referential thinking with a flavor of magical thinking and perceptual oddity. The second second-round factor was quite heterogeneous, but three primary markers of this factor were closely related conceptually and formed a Dreams parcel, with items relating to dream content. Finally, most of the markers of the third second-round factor were used to create a Cognitive and Social



Poverty parcel, whose items reflected poor social perception and impoverished imagination.

Table A-16 shows descriptive statistics for all the rational-empirical parcels. The parcels are best characterized as rough partitions of the schizotypy item pool compiled for the study rather than as refined psychometric instruments. Only 16 of the 27 parcels had alphas greater than or equal to .80, a common rule of thumb for a minimally acceptable alpha for scales, although often ignored for shorter scales or subscales. Nonetheless, the majority of the parcels had AICs within Clark and Watson's (1995) suggested range of .15 to .50 (range = .21-.60), although several very short parcels (specifically, Eye Contact, Absorption/ Forgetfulness, and Spiritual) had interitem correlations above this range, indicating their content was narrower than would be recommended for a well-designed psychometric scale. Given that these parcels were intended to assess quite specific content, however, they were retained for further analysis.

Table A-17 shows the Time 1 intercorrelations of the rational-empirical parcels. Given that these parcels are meant to assess different aspects of a putatively unified trait domain, it is not surprising that their average intercorrelation was .45, with 16% (57 of 351)  $\geq$  .60. Despite these high intercorrelations, there appears to be enough variability among correlations between parcels overall that it would be reasonable to model multiple constructs from them.

Table A-18 shows the Time 1–Time 2 parcel retest correlations, which ranged from .69 (Eccentric Behavior) to .89 (Confusion/Distraction); *Mean r* = .81. Off-diagonal correlations ranged from -.04 (Time 1 Cognitive and Social Poverty with Time 2 Fantasy) to .73; the average off-diagonal correlation was .44. All Time 2 parcels correlated most strongly with their Time 1 counterparts, and with the exception of Time 1 Body Boundaries, which correlated most strongly with Time 2 Bodily Detachment, all Time 1 parcels correlated most strongly with their Time 2 counterparts. Time 1 and Time 2 parcel correlation matrices were *r*-to-*z* transformed and correlated with each other, and

the matrices correlated .96. In aggregate, these results suggest that the parcels are reasonably stable and that their intercorrelations are comparable from Time 1 to Time 2.

### Testing Structural Hypotheses using the Rational-Empirical Parcels

The student and outpatient sample data were aggregated for the structural analyses after determining that it was appropriate to do so by subjecting scores on the rational-empirical parcels to latent class analysis (LCA). This method of ascertainment was used because both traditional taxonic methods and most previous studies that have argued for the taxonicity of schizotypy on the basis of LCA have found classes based primarily on prevalence/severity. As in Markon and Krueger (2005), the parcels were subjected to LCA starting with a two-class solution and continuing until it was no longer computationally feasible to extract additional classes. For comparison's sake, exploratory structural equation models were run on the rational-empirical parcels. The most likely model was the one with the lowest BIC. The results of these analyses are shown on Table A-19. Overall, the results suggest that the latent trait models are better fitting and parsimonious than the latent class models (LCM). Although the BICs of the LCMs decrease further when a 13th class was added, the best LCM had a BIC that was higher than that of even the two-factor latent trait model, which was not the best latent trait model (based on its information criteria).

Fourteen-class and higher LCMs were not examined because there was no theoretical reason to model more complex LCMs. Results that supported a small number of classes would have especially important implications, and as it became clear that these relatively simple solutions were unsupported empirically, the more complex models did not provide practically important information. For example, if the results had supported a simple solution that neatly separated schizotypy versus non-schizotypy class(es), this would imply that a purely dimensional model was inappropriate. Similarly, results that

suggested that students and patients were assigned most parsimoniously to a small set of relatively non-overlapping classes would have provided evidence that the aggregation of samples for dimensional analysis was inappropriate. Clearly, the data did not support either of those scenarios. I modeled solutions up to 13 classes for exploratory reasons, but it did not appear necessary to continue these explorations given that the pattern of the results suggested that latent trait models were more appropriate than latent class models. Overall, then, it appears that modeling latent classes is not necessary in this sample.

Given that it appeared reasonable to run latent trait versus latent class models in these data, the confirmatory factor models described in the methods section were examined. Each rational-empirical parcel was assigned initially to a factor on the basis of the rationally assigned domain that described most of the content in the parcel (see Table A-20 for these mappings). In one case, however, empirical considerations also informed factor assignment: the Putdown parcel consisted largely of referential items that were rationally assigned to the unusual perceptions domain prior to data collection, but Putdown correlated quite strongly with the cognitive dysregulation content in Confusion/Distraction and Cognitive and Social Poverty parcels. Given that the Putdown content (see Table A-7) is explicable as a measure of poor social perception (e.g., if a person is poor at tracking social cues, he or she might be more likely to misattribute benign behavior in a mistrustful fashion), Putdown was allowed to load on the Cognitive Dysregulation factor.

In addition to the parcel mappings shown in Table A-20, some parcels that were assigned to the same confirmatory factor were allowed to correlate with each other above and beyond their common correlation with the latent variable; this was allowed only when the correlations both were appropriate theoretically (i.e., the content in the two parcels was similar) and improved model's information. The pairs that were freed to correlate in all models were Eccentric Behavior with General Eccentricity, Referential Focus with Mistrustful Reference, and Supernatural with Odd Causation; those

additionally freed to correlate in the first four models tested were: Social Confusion—Cognitive and Social Poverty, Putdown—Referential Focus, Putdown—Mistrustful Reference, Hidden Meaning—Vivid Fantasy, and Referential Focus—Referential/Unusual Perceptions; whereas those additionally freed to correlate in the model representing the current three-facet *DSM-5* psychoticism proposal were Odd Causation—Thought Transmission, Putdown—Confusion/Distraction, Bodily Detachment—Illusion, and Perceptual Aberration—Vivid Fantasy.

The results of the confirmatory analyses are shown in Table A-21. As an additional check on the unity of the sample, models were run both with parameters allowed to vary between the Notre Dame, University of Iowa, and outpatient groups, and with the parameters constrained to be equal between these groups. Generally, the models had only fair to poor fit. Paradoxically, the models in which parameters were allowed to vary between groups had lower BICs, but worse conventional fit statistics, as well as more parameters, than the models in which parameters were constrained to be equal between groups. Following the fit criteria in Watson (2001), four of the five Time 1 models in which parameters were constrained to be equal between groups had acceptable RMSEAs below .10, but none of the Time 2 models had acceptable RMSEAs. Although none of the models had both CFIs and TLIs that were greater than .90, some were close at Time 1 when parameters were constrained to be equal between groups.

In all the ways in which it was tested, the four-factor model that combines the parcels from the Eccentricity and Cognitive Dysregulation factors into a single factor marked by cognitive and communicative peculiarity content had the best BIC, although the model based on the 3-facet *DSM-5* psychoticism proposal used a different combination of parcels than the other models and, hence, is not directly comparable using the BIC. Therefore, the four-factor model was selected as a basis for refining scales at the item level. Given that the pattern of fit/informativeness was consistent between Time 1 and Time 2 regardless of whether or not the parameters were allowed to vary between

groups, and given that the degree of increased informativeness of the models in which parameters were allowed to vary between groups was ambiguous, all additional analyses were done on the complete sample for simplicity's sake.

The factor correlation matrices, which are nearly identical across time, are shown in Table A-22. Unsurprisingly, the Unusual Beliefs and Unusual Perceptions latent variables are quite closely correlated (both  $r$ s in the .90s). The most surprising aspect of this correlation matrix, given previous studies in this area (e.g., Cicero & Kerns, 2010), is that the cognitive and communicative peculiarity latent variable is approximately as closely related to Unusual Perceptions as the Dissociation Proneness factor is (.85/.89 vs. .81/.78 at Time 1 and Time 2, respectively). However, this is explicable based on the item content of the parcels: the Soc/Cog factor includes some referential content and much of the theoretical Dissociation Proneness content split between the Unusual Perceptions parcels (mostly content related to a feeling of separation from the body and from conscious experience) and the Soc/Cog parcels (mostly content related to confusion secondary to lost time). Thus, the remaining Dissociation Proneness content was limited primarily to fantasy, absorption, and dream content. This effective redefinition and narrowing of the Dissociation Proneness factor accounts for its slightly distorted pattern of intercorrelations.

#### Construction of Schizotypy Scales on the Basis of the Best Confirmatory Model

All of the items from each parcel assigned to a given latent variable in the 4-factor cognitive and communicative peculiarity model were combined to form item pools for further refinement of the scales. Core items for the scales were selected via a factor-analytic procedure in which two varimax-rotated principal factors were extracted from each set of items. Items that loaded at or above .35 on *both* factors were selected as potential core items for each scale. This method was chosen in order to reject small

clusters of specific content that loaded onto the first principal factor primarily on the basis of their very high intercorrelations while having low to moderate correlations to the remaining items comprising the construct. After items that loaded on both varimax-rotated factors were selected, some items were rejected on the basis of correlations with other items on the scale that exceeded approximately  $r = .60$ , to reduce redundant content. For the scales with a large number of items in their initial pools (Social/Cognitive and Unusual Perceptions), this method provided enough core items to make complete scales (i.e., 16-20 items). For the Unusual Beliefs and Dissociation Proneness scales, this method provided 5-6 core items. The Unusual Beliefs and Dissociation Proneness scales then were expanded by correlating a unit-weighted aggregate of each set of core items with the other items in the initial item pool and selecting additional items on the basis of (1) correlations with the core items that were relatively consistent and close to the target inter-item correlation and (2) relatively low conceptual and empirical redundancy with other items selected for the scale.

#### Content and Internal Reliability of the Schizotypy Scales

Tables A-23 through A-26 show the items of the schizotypy scales, as well as their IRT parameters. As explained more fully in the introduction, models were run with their discrimination parameters ( $a$  parameters, analogous to item loadings) held constant in this polytomous extension of a 1PL IRT model, if this did not adversely affect the BIC at either Time 1 or Time 2. Otherwise, discrimination parameters were allowed to vary (2PL models). Due to the schizotypy items' five-point polytomous response structure, each item had four difficulty parameters, each representing the level on the difficulty scale at which the transition from one response to another provides the most information (e.g.,  $b_1$  represents the point on the difficulty scale at which the choice of response "2-generally untrue" vs. the response "1-not at all true" is the most informative). In the

IRT models of the schizotypy scales, the  $b$  parameters are scaled in centered standard deviation units.

Table A-23 shows the 20 Unusual Perceptions items and their item response parameters. The correlation between the unit-weighted final scale and a unit-weighted scale composed of all the items in the parcels that were used to model the Unusual Perceptions latent variable in the structural models was very high (Time 1  $r = .96$ ; Time 2  $r = .97$ ), which suggests that the final scale covers the vast majority of the variance of the original item pool. Most of the Unusual Perceptions items came from the general Perceptual Aberration parcel, although items from five of the seven parcels that were used to model Unusual Perceptions in the structural models are represented in the final scale. Items from Bodily Detachment, which were related to bodily illusions, were not represented in the final scale, although one PercAb item, "Sometimes my reflection in the mirror looks different than usual," has content related to altered physical appearance. Additionally, there are no items from the Referential Focus parcel (e.g., "It feels as if others watch me particularly carefully") in the final Unusual Perceptions scale, although several items related to idiosyncratic interpretations of environmental stimuli and referential interpretations of others' behavior were represented in the final scale.

At both Time 1 and Time 2, the items of the Unusual Perceptions scale could be modeled as a 1PL model (Time 1 1PL  $BIC = 30610.042$ ; Time 2 1PL  $BIC = 12819.624$ ) without an increase in the BIC relative to the 2PL (Time 1 2PL  $BIC = 30649.501$  Time 2 2PL  $BIC = 12886.682$ ) model. The first difficulty parameter ( $b_1$ ) ranged from  $-.62$  to  $.58$  (median  $= -.09$ ) at Time 1 and from  $-.57$  to  $.37$  at Time 2 (median  $= -.09$ ), and the fourth difficulty parameter ( $b_4$ ) ranged from  $1.87$  to  $3.40$  (median  $= 2.5$ ) at Time 1 and from  $1.57$  to  $2.93$  (median  $= 2.2$ ) at Time 2. This suggests that the items on the schizotypy scale are most informative between approximately the mean and two standard deviations above the mean in this sample.

Table A-24 shows the seven Unusual Beliefs items and their IRT parameters. The correlation between the final unit-weighted Unusual Beliefs scale and a unit-weighted scale composed of the items in the parcels that marked this factor in the structural models is  $r = .96$  at Time 1 and  $r = .95$  at Time 2, which again suggests that the final scale covers the vast majority of the variance represented by the parcels. Most of the items come from the Odd Causation parcel, although three of the four parcels that contributed to this factor in the structural models are represented in the final scale. None of the items on the Supernatural parcel, which concerns belief in and experience with the supernatural world (e.g., “I have experienced supernatural beings”), are represented in the final Unusual Beliefs scale, although the more general items that assess content related to thought transmission, reincarnation, and sensing the future are substantively similar to the more specific supernatural content. At both Time 1 and Time 2, the items of the Unusual Beliefs scale could be modeled as a 1PL (Time 1 1PL  $BIC = 9210.838$ ; Time 2 1PL  $BIC = 3807.014$ ) model without an increase in BIC relative to the 2PL (Time 1 2PL  $BIC = 9237.842$ ; Time 2 2PL  $BIC = 3823.536$ ) model. The first difficulty parameter ( $b_1$ ) ranged from  $-.02$  to  $.89$  at Time 1 (median =  $.48$ ), and from  $.00$  to  $1.24$  at Time 2 (median =  $.38$ ). The fourth difficulty ( $b_4$ ) parameter ranged from  $2.35$  to  $2.81$  (median =  $2.57$ ) at Time 1 and from  $1.72$  to  $2.46$  (median =  $2.24$ ) at Time 2. This suggests that this scale is its most informative from about half a standard deviation above the mean to slightly over two standard deviations above the mean.

Table A-25 shows the Dissociation Proneness scale items and item response parameters. All of the Dissociation Proneness items came from the Vivid Fantasy parcel; Nightmare and Recurring Dreams, Fantasy, and Absorption/ Forgetfulness are not represented in the final scale. Nonetheless, the correlation between the unit-weighted Dissociation Proneness scale and a scale composed of all the items in the parcels that marked the Dissociation Proneness factor in the structural models was high ( $r = .90$  at both Times 1 and 2), which suggests that the final scale covers a large majority of the



variance of the original item pool. Additionally, the content in Fantasy (e.g., “My fantasies are interesting”), and Absorption/ Forgetfulness (e.g., “I have been so absorbed in music that I didn’t notice what was going on around me”) are derived from instruments related to the constructs of imagination and absorption, which are not inherently psychopathological, suggesting that these items may be inappropriate for a measure of a facet of personality disorder. The Nightmare and Recurring Dreams items (e.g., “I have dreams in which I die”) are related to bad and recurring dreams, and none of the items in the final Dissociation Proneness scale refer to specific dream content.

At Time 1, the 1PL model resulted in a less informative model (higher *BIC*) relative to the 2PL (see table notes for specific *BIC* values). Although this was not the case in the Time 2 model, the 2PL model was run at both Time 1 and Time 2, due to the larger size of the Time 1 sample. At both Time 1 and Time 2, the most discriminating item (i.e., the item with the highest *a* value) was "My imaginings or daydreams feel very real." At Time 1, the least discriminating items (i.e., items with the lowest *a* values) were "I have had dreams so strong that they affected my feelings the next day" and "I have had trouble deciding whether I just dreamed about something or if it really happened." At Time 2, the least discriminating item was "I have felt far away from my own behavior and thoughts." The first difficulty parameter ( $b_1$ ) ranged from -.147 to -.34 (median = -.99) and from -1.30 to -.40 at Time 2 (median = -.78). The fourth difficulty parameter ranged from 1.34 to 2.19 at Time 1 (median = 1.93) and from 1.02 to 2.10 at Time 2 (median = 1.64). Thus, it appears that this scale provides the most information between approximately one standard deviation below the mean to between one and a half and 2 standard deviations above the mean.

Table A-26 shows the 16 Cognitive and Communicative Peculiarity scale items and their IRT parameters. The correlation between the final unit-weighted Cognitive and Communicative Peculiarity scale and a scale composed of all the items in the parcels used to model the Cognitive and Communicative Peculiarity factor was quite high ( $r =$

.96 at both Time 1 and Time 2), which suggests that the final scale covers the vast majority of the variance of its initial item pool. Items in the final scale were drawn from five of the seven parcels that were used to model the factor marked by cognitive and communicative peculiarity content in the corresponding structural model. There were no items from the Eccentric Behavior parcel, which is composed of three items, two of which are related to making up words (e.g., “People tell me that I make up words”), or from Eye Contact, a 3-item parcel with items related to poor eye-contact (e.g., “I don’t usually make eye contact when I’m talking to others”). However, the items in the final scale that are related to poor social perception and expression are conceptually consistent with the more specific items in the Eye Contact and Eccentric Behavior parcels.

At Time 1, the 1PL resulted in a decrement in informativeness (i.e., an increase in *BIC*) relative to the 2PL model (see Table A-26 notes for the relevant *BIC* values). Although this was not the case at Time 2, the Time 1 sample was larger and, hence, the 2PL model was run at both Time 1 and Time 2. At Time 1, the most discriminating item was "Other people seem to misunderstand my way of doing things." At Time 2, the most discriminating item was "Other people have trouble following my stories." At Time 1, the least discriminating item was "I'm easily confused," whereas the least discriminating Time-2 item was "It's hard for me to switch to a new task when someone (e.g., a boss, teacher, or parent) tells me to." At Time 1, the first difficulty parameter ( $b_1$ ) ranged from -1.85 to -.39 (median = -1.01) and at Time 2,  $b_1$  ranged from -1.81 to -.62 (median = -1.02). At Time 1, the fourth difficulty parameter ( $b_4$ ) ranged from 1.81 to 2.74 (median = 2.43) and at Time 2, from 1.62 to 2.70 (median = 1.75), indicating that this scale is most informative between approximately one standard deviation below the mean and 2 standard deviations above the mean.

Overall, the use of polytomous items allowed each item to provide information across a range of difficulty levels. This enabled informative scales to be built from fewer items than would be necessary for a scale built from dichotomous items (which, by

definition, have only one difficulty parameter). Additionally, the scales appeared to capture a large majority of the content that was assessed by the rational-empirical parcels that served as the initial item pools, even though items from some parcels were not represented in the content of the final scales. Generally, the final scales contained items that assessed more general thoughts, feelings, and experiences than did the items in the parcels that were not represented. This emphasis on generality rather than specificity is appropriate for a scale that is intended to assess facets of a single trait of the complex *DSM-5* of the trait model.

Table A-27 shows the descriptive statistics of the schizotypy scales by group. Coefficient alphas ranged from .79 to .93 and AICs ranged from .29 to .37, all comfortably within the  $|.15-.50|$  range recommended by Clark and Watson (1995). *T*-tests with Bonferroni corrections for six comparisons (i.e., three comparisons at each measurement x two measurement periods) were run to compare means among the University of Iowa, Notre Dame, and Outpatient groups. At Time 1, the mean score on the Unusual Beliefs scale was significantly higher for University of Iowa than Notre Dame students ( $t_{461.1} = 3.63; p < .0018; \text{Cohen's } d = .33$ ). Otherwise, the means on the schizotypy scales did not vary significantly between the student samples. Given that these data show that most of the schizotypy scales do not vary between the student groups (and the one significant difference, i.e., Unusual Beliefs, had a relatively modest effect size of .33) the student samples were combined for further analysis. Thus, the remaining Bonferroni corrections accounted for only two comparisons (i.e., one for each scale at two measurement occasions). All schizotypy scales were significantly higher in outpatients than in students at at least the  $p < .0006$  level. Thus, as to be expected, university students had lower scores on scales meant to assess psychopathological content than did mental health outpatients.

Table A-28 shows the intercorrelations between the schizotypy scales at both Time 1 and Time 2, both overall and among the student and outpatient subsamples. In

the overall sample correlation matrices, the scores were standardized by outpatient versus student group status before combining them. Intercorrelations among Time 1 measures and among Time 2 measures were nearly identical (mean intercorrelations Time = .62 at Time 1 and .64 at Time 2). The overall sample Time 1 and Time 2 correlation matrices were *r*-to-*z* transformed and correlated; these two matrices correlated very highly with each other ( $r = .96$ ). Additionally, the Time 1 scales all correlated most highly with their Time 2 counterparts (mean convergent correlation = .82; mean off-diagonal correlation of Time 1 and Time 2 scales = .57). A model in which the correlation matrix of the Time 1 schizotypy scales was constrained to be equal between subgroups ( $BIC = 4821.466$ ) was compared to a model in which the correlation matrices were allowed to vary by student versus outpatient status ( $BIC = 4709.718$ ). Given that the model in which the matrices are allowed to vary by student versus outpatient status had the better BIC, outpatient and student matrices are displayed, as well.

The patterns of the outpatient and student correlation matrices are similar to each other and to the overall sample's correlation matrix. The only notable difference between the subsamples is that the schizotypy correlations are somewhat higher in outpatients (average  $r = .69$ ) than in students (average  $r = .61$ ). This pattern of a less differentiated structure of personality or psychopathology instruments in mental health samples versus community samples is not unusual (see, e.g., Clark et al., in press).

### Relations between the Schizotypy Scales and Existing Measures of Personality, Temperament, and Psychopathology

#### Psychometric functioning of existing measures

Table A-29 shows the descriptive statistics of measures of personality and psychopathology separated by subsample (student vs. outpatient). Prior to comparing student and outpatient scores, the two student groups were compared to ascertain whether

they could be aggregated. Bonferroni corrections were used only when comparisons were linearly dependent (i.e., when comparisons included both parent scales and subscales,  $p$  values were multiplied by the number of times a given set of items was used in a scale); they were otherwise unnecessary because there was only one comparison per test. Nonetheless, a relatively conservative alpha ( $p < .01$ ) was used because a number of measures were strongly related (see Table A-30). Brief Fear of Negative Evaluation was slightly higher in Notre Dame than in University of Iowa students ( $t_{492} = -3.07, p < .0022$ ; Cohen's  $d = -.28$ ), although the effect size was relatively small. Given that there were no other significant differences between the two student groups, they were aggregated for presentation in Table A-29 and comparison with the outpatient sample. Means that were significantly higher in one group than the other are bolded in Table A-29. All bolded differences were significant at the  $p < .01$  level. As expected, mean scores on established measures of personality, psychopathology, and temperament were quite different in the general student versus outpatient samples, generally confirming higher psychopathology and related traits, including lower sociability in outpatients than in students. One comparison was significant in the unexpected direction (i.e., students endorsed more psychopathology than outpatients): Students endorsed more GTS Carefree Orientation items than outpatients did ( $t_{655} = -4.42; p < .0002$ ; Cohen's  $d = -.40$ ). This scale's content correlated moderately strongly with conscientiousness in this sample ( $r = -.58$ ), converging evidence suggests that conscientiousness increases with age (e.g., Robert & Mroczek, 2008), and the outpatient sample is considerably older than the student sample. Thus, age-related trends in mean level personality may account for this result, although the fact that BFI Conscientiousness did not differ between the student and outpatient samples argues against this interpretation.

The majority of the established measures of personality, temperament, and psychopathology had coefficient alphas in the .80 range, which is typically considered acceptable, although there are some exceptions: several scales had alphas in the .70s, and

one subscale, GTS Carefree Orientation, had alphas in the .60s in both the student and outpatient samples. Additionally, most of the scales had AICs in the  $r = |.15-.50|$  range recommended by Clark and Watson (1995), but several scales had slightly lower (i.e., Social Anhedonia and GTS Disinhibition in the student sample) or somewhat higher (i.e., several OCI-R subscales) AICs. Overall, then, the descriptive statistics suggested that the existing instruments performed as expected.

Table A-30 shows the Time 1 intercorrelations among the established measures of personality, temperament, and psychopathology in the overall sample. A comparison of an SEM model in which correlation matrices were allowed to vary by student versus outpatient status ( $BIC = 45715.173$ ) versus one in which the correlation matrix was constrained to be equal between subgroups ( $BIC = 45574.484$ ) indicated that it was appropriate to combine the student and outpatient matrices. To avoid issues of collinearity, the SEM models excluded subscales. To correct for the observed level differences between samples, scale scores were standardized by student versus outpatient status prior to computing correlations.

An examination of Table A-30 reveals several salient patterns. First, similarly intended measures have moderate to high intercorrelations (e.g., BFI Neuroticism and GTS Negative Temperament  $r = .84$ , BFI Extraversion with GTS Positive Temperament and its subscale Positive Affectivity,  $r = .62$  and  $.63$ , respectively; GTS Disinhibition with BFI Conscientiousness and Agreeableness,  $r_s = -.58$  and  $-.36$ , respectively; the SCOPI and the OCI-R  $r = .68$ ). Second, several higher than expected correlations between constructs that are intended to be essentially orthogonal (e.g., BFI Extraversion and BFI Neuroticism; GTS Negative Temperament and GTS Positive Temperament) suggest that this sample has a less differentiated structure of personality/psychopathology than do most community adult samples. Given that mental health patients generally display less differentiated responses to non-adaptive personality than do community adults (Clark et al., in press), this is not entirely surprising.

Table A-31 shows the correlations between the Time 1 and Time 2 measures of personality, psychopathology, and temperament. Measures were standardized by student versus outpatient status prior to computing correlations. Except for Time 1 OCI-R Hoarding, which correlates most highly with Time 2 SCOPI Hoarding, each stability correlation is the highest in its row and column. The average stability correlation was  $r = .82$  whereas the average off-diagonal correlation was  $r = .25$ , which suggests that the existing measures were stable and reasonably differentiated from each other.

Table A-32 shows the relations between the schizotypy scales developed in this study and existing measures at Time 1 and Time 2, respectively. All scales were standardized by student versus outpatient status prior to computing correlations. To compare the two matrices, the correlations were transformed using the Fisher  $r$ -to- $z$  transformation, and the transformed correlations from Time 1 were correlated with their Time 2 counterparts. This process yielded a correlation of  $r = .97$ , which indicated that the two matrices were similar enough that all further general comments apply to both measurement occasions. Cognitive and Communicative Peculiarity is the schizotypy scale that is most closely associated with other forms of psychopathology and non-adaptive personality. For approximately 60% of the scales, their highest correlation was with the Cognitive and Communicative Peculiarity scale across the two testings, and a general linear model analysis indicated that the existing measures of personality and psychopathology accounted for approximately 68-70% of the variance in Cognitive and Communicative Peculiarity at each testing (excluding the subscales that are linearly dependent on their parent scales). This schizotypy scale's strongest correlations were with GTS Negative Temperament, BFI Neuroticism, SNAP Mistrust, SIAS, and SCOPI Checking.

Unusual Beliefs had the fewest strong correlations with existing measures of psychopathology, including personality pathology. A general linear model analysis indicated that the existing measures of personality and psychopathology accounted for

only 24% of the variance in Unusual Beliefs across the two testings. Its strongest consistent correlations were with SNAP Mistrust and with SCOPI total score and its Checking, Hoarding, and Pathological Impulses subscales, as well as with the OCI-R total score and its Obsessing and Neutralizing subscales ( $r_s = .29 \sim .40$ ).

Unusual Perceptions' strongest relations across testings also were with SCOPI total score, as well as its Checking and Pathological Impulses subscales, OCI-R total score, and SNAP Mistrust. ( $r_s = .50 \sim .60$ ). A general linear model analysis indicated that the existing measures of personality and psychopathology accounted for about 54-56% of its variance across the two testings.

Dissociation Proneness has its strongest consistent relations with GTS Negative Temperament, SCOPI total scores and its subscales Checking and Pathological Impulses ( $r_s = .45 \sim .60$ ). A general linear model analysis indicated that the existing measures of personality and psychopathology accounted for about 46-47% of its variance across testings. Overall, therefore, the variance of the Cognitive and Communicative Peculiarity scale developed for this study is robustly represented by existing measures of personality, temperament, and psychopathology, although its specific content is not. To a varying degree, the other schizotypy scales both overlap with and explain variability that is not well represented by existing measures. Thus, in summary, this study adds to the literature that suggests that the schizotypy domain may add significant explanatory power to the maladaptive personality taxonomy.

### Discussion

This study was designed to improve our knowledge of the schizotypy trait domain proposed for *DSM-5*. This was done by reviewing the literature related to schizotypy and its empirical and familial correlates, testing structural hypotheses about this domain in a large sample of students and outpatients, constructing structurally informed scales of the schizotypy facets, measuring the stability and intercorrelation of these scales, examining



the IRT parameters of the scales' items, and examining the external correlates of the resulting scales. Given that schizotypy is a trait that is newly proposed for *DSM-5*, that it has not been studied in detail in its proposed form, and that its proposed structure has not yet been finalized, this study provides important results that may inform the development of the PD taxonomy. The main study findings are discussed below.

## Findings and Implications

### Structural study of the schizotypy domain and scale development

A general goal of this study was to develop a scale of the broad schizotypy trait. This scale development was done in the spirit of Loevinger (1957) and Clark and Watson (1995): Scale development and structural examination of the constructs under study were treated as processes that ran in parallel to and mutually refined each other. The initial item pool was proposed as an empirically informed, rational representation of the broad structure of schizotypy. The item pool was overinclusive in the sense that it encompassed material at the conceptual “edges” of its target trait. A series of quantitative analyses clarified the construct’s structure in this study, and this structural information resulted in the selection of a facet model and a winnowing of the item pool. Thus, the scales that resulted from this study represent a summary of the structural knowledge gained. These scales also may serve as a starting point for future structural/ test construction studies in other samples or as instruments to measure functionally relevant traits. Below I recapitulate the process of structural study/ scale development, discuss the unique aspects of the resulting model, and examine the implications of the findings.

*Structural Models at the Parcel Level:* As described earlier, a primary aim of this study was to examine the structure of an overinclusive schizotypy domain. Several models were examined using rational/empirical aggregations of items, and the most informative model was a four-factor structure with latent variables marked by content

related to: (1) unusual perceptions, (2) unusual beliefs, (3) dissociation proneness, and (4) cognitive dysregulation/ eccentricity.

Contrary to hypotheses, the aggregation of Unusual Beliefs and Unusual Perceptions factors resulted in a decrement of fit and in increase in BIC. Nonetheless, Unusual Perceptions and Unusual Beliefs had porous boundaries at the item level; that is, items that were placed a priori in the unusual perceptions and unusual beliefs content areas intermixed in several rational-empirical item clusters. In several content areas (e.g., Supernatural Experiences, Thought Transmissions), items appeared to cluster by specific content, for example, whether the items concerned whether the respondent *believed* that such phenomena were possible or had *experienced* such phenomena. These somewhat unanticipated results raise questions about whether the sample or items distorted the observed structure. This question should be investigated further empirically, although the consistent structure across subsamples suggests that sample characteristics do not entirely account for the findings.

In an analogous fashion, the unusual-perceptions and dissociation-proneness factors correlated less than expected. Nonetheless, a priori unusual-perceptions items and dissociation-proneness items intermixed in several rational-empirical parcels. For example, a priori dissociation-proneness items that related to a general feeling of unreality intermixed with a priori unusual-perceptions items that related to specific unusual-perceptual experiences in the Perceptual Aberration parcel; a priori dissociation-proneness items related to separation from the body intermixed with a priori unusual-perceptions items related to physical distortion of the body and undefined physical bodily boundaries in the Bodily Detachment parcel. As hypothesized, combining a priori eccentricity content and cognitive-dysregulation content into single factor improved the informativeness of the structural models of schizotypy. In short, empirical findings did not support the sharp theoretical distinction between subjective cognitive experiences,

such as slippage and confusion, versus subjective social deficits, such as unclear communication and poor social perception.

Contrary to expectation, however, a significant number of a priori dissociation-proneness items that were intended to assess “lost time” loaded onto the ConDist factor along with a priori cognitive-dysregulation content related to confusion, slippage, and distractibility. This had the effect of limiting the content in the remaining dissociation parcels to content related to absorption, fantasy, porous boundaries between fantasy and reality, porous boundaries between dreams and reality, and intense dream experiences. The combination of a priori dissociation-proneness content and cognitive-dysregulation content is analogous to the cognitive-and-perceptual dysregulation facet proposed for *DSM-5* psychoticism, but the findings of this study are inconsistent with the proposed separation of eccentricity from this facet.

**Content of the final schizotypy scales.** The parcels that marked each factor in the four-factor solution served as the item pool for scales of the schizotypy domain. Items were chosen to be strong general representatives of each factor, both empirically and theoretically. In this section, I describe the scales and compare and contrast the content of each scale with that of the parcels that marked the corresponding factor in the most informative four-factor model. For the final content of the scales, refer to Tables A-23 to A-26.

The Unusual Perceptions scale combined content related to perceptual illusions and assigning idiosyncratic meanings to everyday happenings. The final scale retained a relatively modest amount of absorption content (e.g., “I have trouble distinguishing my daydreams from things that have really happened”) and consisted primarily of content that falls squarely into the traditional perceptual-aberration content area.

The short Unusual Beliefs scale included items related primarily to belief in unlikely causal processes such as fortune telling, extraterrestrials, thought action fusion, and thought transmission. Frankly mistrustful and referential content was not a part of

the final unusual beliefs scale. In fact, most referential content split between the Unusual Perceptions scale and the Cognitive and Communicative Peculiarity scale.

The brief Dissociation Proneness scale contains items that are related to poor boundaries between fantasy or dreams and reality, and to subjective distance from cognitive and behavioral processes. Dream content items generally were rejected because they formed a collection of items with very strong intercorrelations and only mild to moderate associations with the rest of the construct. Although intense fantasy and daydream content formed an important part of the final construct, less explicitly psychopathological content (e.g., related to the simple enjoyment of daydreaming and imagination) was not represented.

The final Cognitive and Communicative Peculiarity scale consisted primarily of items related to unclear thinking and communication. A small amount of a priori dissociation content was retained in the scale (e.g., “Sometimes I get the feeling that I am not aware of the things going on around me”). Additionally, some typical eccentricity content was omitted from the final scale (e.g., respondents believing that others find them odd, respondents’ beliefs that they are odd). This content was not included in the final scale because these items were very strongly related to each other but only moderately related to the rest of the construct. Some very specific social eccentricity content (e.g. poor eye contact, tendency to make up words, tendency to choose the wrong clothes for the occasion) was excluded for similar psychometric reasons.

The schizotypy scales designed for this project cover most of the core content proposed for this domain in *DSM-5* and, with some notable exceptions, the boundaries of the scales were consistent with initial theoretical proposals. Importantly, although not surprisingly, the scales correlated very strongly with the item pools from which they were drawn. Nonetheless, some content that is central to many schizotypy scales was excluded from the final scales.

The most notable “missing” content related to illusions of bodily distortions and altered appearance that is central to the Perceptual Aberration Scale and largely missing from this project’s Unusual Perceptions scale (Chapman et al., 1978). Given the typical emphasis on this bodily distortion material in “positive” schizotypy scales, its relative absence in the Unusual Perceptions scale created for this project raises important questions about the replicability of this study’s findings and, to some extent, about the importance of bodily distortions per se to the “positive” schizotypy construct.

To shed light on the importance of unusual perceptions content that is specific to the body, it is sensible to examine the construction process of the influential Perceptual Aberration scale: L. Chapman and colleagues (1978) created a rational scale of “Body-Image Aberration” items because such symptoms had been widely noted in traditional case studies and conceptualizations of schizotypy. Their results suggested that schizophrenics endorsed significantly more of these items than non-clinical community members, but students and schizophrenics did not differ on these scales. Additionally, L. Chapman and colleagues (1978) found that their 28-item Body-Image Aberration scale correlated strongly enough with a 7-item scale of non-bodily perceptual aberrations ( $r = .76$ ) that these items could be aggregated into the final Perceptual Aberration scale. This Perceptual Aberration scale has been quite influential in the study of schizotypy and related constructs. Given that the construction of the Chapman Perceptual Aberration scale was essentially rational, there did not appear to be empirical reasons for including so many Body-Image Aberration items relative to the number of non-bodily perceptual aberrations in the final scale. In some sense, then, the dominance of bodily content in the measurement of “positive” schizotypy appears to be an accident of history.

The finding that the Unusual Perceptions scale related very strongly (i.e.,  $r > .95$ ) with its structurally informed item pool (which contained both body-related and non-body-related unusual perceptions content) suggests that there is nothing empirically “special” about items measuring unusual perceptions of bodily appearance versus items

measuring more general unusual perceptions. Interestingly, nothing in L. Chapman and colleagues' (1978) description of their initial construction of the Perceptual Aberrations instrument suggests anything that contradicts this.

Another notable example of “missing” and/or “reassigned” content related to lost time, which is central to many dissociation scales and was only minimally represented in the schizotypy scales designed for this project. Additionally, the most explicit examples of this content are included in the Cognitive and Communicative Peculiarity scale (e.g., “Sometimes I get the feeling that I am not aware of the things going on around me”) and on the Unusual Perceptions Scale (e.g., “I have found that my things moved from where I left them, even though nobody else had been near them”) rather than on the Dissociation Proneness scale. Given previous findings, these results are not entirely surprising: for example, Chmielewski and Watson's (2008) SPQ eccentricity/oddity factor (the closest analogue in that study to the Cognitive and Communicative Peculiarity scale) had moderately strong relations with a composite of dissociation measures ( $r = .59$ ). Additionally, this study expanded the item pool for schizotypal cognitive and social dysregulation to include descriptions of cognitive slippage rather than including only the more typical oddity/eccentricity items that are dominated by the subjective sense of social and linguistic oddity. Thus, it is not completely unexpected that the Cognitive and Communicative Peculiarity scale included some content that could be construed as either cognitive slippage or dissociation content. The “lost time” content in the Unusual Perceptions scale is even easier to explain given the typically strong relations between dissociation and “positive” schizotypy.

Overall, then, the schizotypy scales that were created for this study and derived from a combined, iterative, exploratory and confirmatory construction process take a form that is similar but not identical to the *DSM-5* psychoticism proposal. Given that explicit dissociation proneness content is not included in the *DSM-5* psychoticism proposal, the limited representation in the final scales of core dissociation-proneness

content such as “lost time” provides some empirical support for the newly proposed *DSM-5* structure. The boundaries of the final scales of this study differed somewhat from the *DSM-5* psychoticism facets, however. For example, as discussed above, and perhaps contrary to the *DSM5* psychoticism proposal, which includes an Unusual Beliefs and Experiences scale, the study data did not support a combined Unusual Perceptions and Unusual Beliefs scale. Also contrary to the *DSM-5* psychoticism proposal, the study data did support a combined scale for behavioral eccentricity and cognitive dysregulation. In a sense, then, the final scales take on a structure that is something of a hybrid between the initial *DSM-5* schizotypy trait domain and the current psychoticism proposals; the study’s large, mixed sample and consistent results suggest that the *DSM-5* psychoticism proposal may require further refinement.

**Item Response Theory and the schizotypy scales.** Item Response Theory (IRT) was used to examine the degree to which the scales measured schizotypy across the severity gradient. These findings have implications for both practical psychometric uses and for structural validity. At the practical level, scales that are not informative below the mean might not be appropriate for applications in which schizotypal psychopathology is not expected. At the level of construct validation, scales that are not informative in certain parts of the population require further study with additional item content and samples of examinees to ascertain whether the findings support discrete constructs, result from idiosyncratic items or samples, or that the construct has a limited range of applicability.

All of the schizotypy scales have densely distributed difficulty parameters (and, hence, information and discrimination power) over approximately two to three standard deviations, although the range at which each scale is most discriminating varies somewhat. For example, the items of the Unusual Beliefs scale are generally uninformative below the mean in this sample and some of the items have difficulty parameters above the second standard deviation above the mean, whereas the items of the

Cognitive and Communicative Peculiarity scale have difficulty parameters even below one standard deviation below the mean and ranging above two standard deviations above the mean. The items of the other scales fell somewhere between these two extremes in their range of difficulty parameters. In sum, these results suggest that the use of polytomous items has extended downward the informativeness of typical schizotypy items. In contrast, the attempt to include theoretically “easy” items met with more limited success; some of the Social/Cognitive items have content that can assess either everyday absentmindedness or more severe cognitive slippage, but normative absorption and imagination items were excluded from final Unusual Perceptions and Dissociation Proneness scales for psychometric reasons. This difficulty in “grafting” openness, imagination, and absorption to other ostensibly similar content provides some evidence that the “positive” schizotypy domain has firmer natural boundaries than the disorganization/ cognitive and behavioral dysregulation construct.

#### Schizotypy in the larger taxonomy of personality and psychopathology

The scale development portion of this study helped to clarify the internal structure of content in the schizotypy domain. An additional goal of this study was to examine the boundaries of the construct and to locate this material in the larger taxonomy. In the section below, I describe findings in the literature about the diversity of the schizotypy construct and tie these findings to the study results with regard to convergent and discriminant validity.

“Negative”/ “cognitive-interpersonal” schizotypy’s place in the construct. The study of schizotypy and related content is entering its sixth decade, and attention to the phenomena of subclinical psychotic-like experiences and behaviors is, in fact, considerably older. Nonetheless, some very basic issues remain areas of active controversy. For example, even the boundaries of the schizotypy construct are not clear.



Most strikingly, the nature of the relation between “negative”/ “social-interpersonal” schizotypy symptoms, such as social anhedonia and affective blunting, and other aspects of the schizotypy construct is complex, and two primary strains of evidence, familial and psychometric, provide contradictory directions for the schizotypy taxonomy. Converging familial evidence suggests that “negative” and “social-interpersonal” symptoms are familiarly related to the schizophrenia syndrome, perhaps to a greater degree than “positive” schizotypy (see Tarbox & Pogue-Geile, 2011 for a review and meta analysis). In non-familial correlational, studies, however, core “negative”/ “social-interpersonal” symptoms almost invariably form factors separate from and only modestly to moderately related to “positive” and “disorganized” schizotypy; moreover, “negative” schizotypy has external correlations that are notably different from those of “positive” and “disorganized” schizotypy (e.g., Chmielewski & Watson, 2008; Watson & Naragon-Gainey, 2010). These contradictory strains of evidence reflect central questions about the coherence of the schizotypy construct and, ultimately, about the unity of psychopathology across the schizophrenia spectrum.

A close reading of the Tarbox and Pogue-Geile (2011) meta-analysis illustrates the diversity of symptoms that have been assigned to the “negative”/ “social-interpersonal” schizotypy factors. Lack of close friends, constricted affect, and social isolation are assigned to the “negative”/ “social-interpersonal” factor across the studies included in the meta-analysis. In some cases, however, Tarbox and Pogue-Geile (2011) or the original authors of the studies in the meta-analysis aggregate more peripheral material with this core “negative”/ “social-interpersonal” content. For example, Tarbox and Pogue-Geile (2011) aggregate material as diverse as irritability, hypervigilance, social anxiety, odd behavior, and poor rapport with core “social-interpersonal” material when calculating “social-interpersonal” heritability effect sizes in Kendler and colleagues (1995). For several of the studies, suspiciousness and paranoia are aggregated with core “social-interpersonal” material. This broad definition of “negative”/ “social-

interpersonal” content makes it difficult to evaluate the heritability and, to some degree, the relevance of the core “negative”/ “social-interpersonal” material. This dilemma is especially problematic given that some of the material that was aggregated with core “negative”/ “social-interpersonal” content is often assigned to other schizotypy facets: odd behavior is typically treated as a core disorganization/ cognitive and behavioral dysregulation construct, and mistrust and suspiciousness are often assigned either to “positive” schizotypy or to their own factor. These fluctuating boundaries of the “negative”/ “social-interpersonal” concept make it even more difficult to place the core content in the schizotypy construct properly. Altogether, the complex network of relations that surrounds the schizotypy trait underscores the difficult-to-define nature of this domain and the difficulty of carving nature at its joints.

Dissociation’s place in the schizotypy construct. Although not as central to the identity of the schizotypy construct, several other traits abut the borders of the schizotypy/ psychoticism domain. Dissociation, in itself a complex construct, is closely related to (e.g., Watson, 2001)—and sometimes empirically indistinguishable from—magical thinking and unusual perceptual experiences (Cicero & Kerns, 2010). Dissociation is especially interesting in this study because it was included explicitly in the initial *DSM-5* schizotypy proposal but not in the later *DSM-5* psychoticism proposal. This study’s results suggest that excluding dissociation as a separate facet of schizotypy may be premature. Notably, the Dissociation scale appears at least as central to the schizotypy domain as the other scales. In the overall sample, Dissociation has correlations with the other schizotypy scales that range from .47 to .70, and, in fact, its mean correlation with the other schizotypy scales (.60 at both Time 1 and Time 2) slightly exceeds that of the Unusual Beliefs scale (.54 and .59 at Times 1 and 2, respectively). Thus, the Dissociation scale appears to narrow the construct from that proposed initially for *DSM-5* schizotypy, but the findings do not support removing an explicit dissociation facet from the schizotypy construct entirely.

Openness to Experience. Openness to experience is sometimes proposed as a non-pathological manifestation of dissociation and/or positive schizotypy, and rewording openness items with more non-adaptive content increases the relations between openness and schizotypy (e.g. Edmundson, Lynam, Miller, Gore, & Widiger, 2011; Ross et al., 2002). Of note, none of the study's schizotypy scales correlated particularly highly with BFI Openness (i.e.,  $r < .30$  for all scales), perhaps because the BFI Openness scale items are dominated by intellectual and cultural interests—content that would be theorized to be relatively far from schizotypy on the simplex mentioned earlier (DeYoung et al., 2011). In support of DeYoung and colleagues' (2011) theory, some absorption and fantasy content marked the schizotypy factors in the confirmatory models, and some of this material with more affinity to the core schizotypy scale is in the final schizotypy scales.

Correlation of the schizotypy trait domain with existing measures of personality, temperament, and psychopathology. Although this study was concerned largely with clarifying the internal structure of the schizotypy construct, the findings related to schizotypy's external correlates raise provocative questions regarding schizotypy's unity and importance in the taxonomy. These questions were most pressing for the Cognitive and Communicative Peculiarity and Unusual Beliefs scales, which were the most and least correlated with non-schizotypy personality and psychopathology, respectively. In this section, I begin with a discussion of Cognitive and Communicative Peculiarity's overlap with existing psychopathology, move to a discussion of Unusual Beliefs' relative independence from these constructs, and discuss the implications of these findings.

Although its content is quite distinct from that of typical neuroticism/negative items, the Cognitive and Communicative Peculiarity scale has robust relations with BFI Neuroticism, GTS Negative Temperament, SNAP mistrust, SIAS social anxiety, and moderate relations with some OCD facets. Additionally, of the schizotypy scales developed in this project, the Cognitive and Communicative Peculiarity scale has the

strongest relation with the Revised Social Anhedonia scale (although, even so, this relation was only moderate). Additionally, the items in the Cognitive and Communicative Peculiarity scale are able to discriminate at values of the trait below the mean and well above the mean suggesting that this trait, like many of the traits of consensual personality taxonomies, has relevance in a broad segment of the population. In some sense, then, the Cognitive and Communicative Peculiarity scale may be envisioned as the bridge from schizotypy to general psychopathology and, to some extent, to traits, such as social anhedonia and mistrust, that are sometimes described as “negative”/ “social-interpersonal” schizotypy (e.g., in the Tarbox & Pogue-Geile, 2011 meta-analysis of heritability). The content of the scale includes traditional core schizotypy content such as cognitive slippage and behavioral eccentricity, but its significant relations with general psychopathology and its broad range of difficulty has characteristics of more common trait psychopathology. This desirable psychometric characteristic would make this Cognitive and Communicative Peculiarity scale a promising target for study as a familial correlate of schizophrenia and other psychotic disorders, especially given that some of its content and correlates already often are aggregated with the heritable “negative”/ “social-interpersonal” construct (Tarbox & Pogue-Geile, 2011).

The Unusual Perceptions scale and, to a lesser degree, the Dissociation Proneness scale, has a network of moderate relations with negative temperament, neuroticism, and some facets of OCD. Unusual Beliefs, on the other hand, is relatively distinct from the established measures of psychopathology used in this project. It is somewhat difficult to interpret the significance of Unusual Beliefs’ relative independence from established scales of psychopathology. On one hand, its strong discriminant validity and incremental contribution to the taxonomy can be a positive characteristic. On the other hand, Unusual Beliefs’ relative independence from established psychopathological traits might imply that it is not psychopathological, though the higher level of Unusual Beliefs among the

outpatients relative to the students in this sample is at least suggestive that this content is associated with psychopathology. Ultimately, whether to include unusual beliefs content in the taxonomy of psychopathology rests on some empirical questions, including whether unusual beliefs is related to current disability or increases the probability of future distress or impairment.

Following the approach of diagnosing *DSM-5* PD, the most notable of these questions is whether significant functional impairment and disability are uniquely attributable to high levels of unusual beliefs. There is a relatively limited amount of research in this area. In a recent study, the SPQ-B Cognitive-Perceptual factor, which includes unusual beliefs-related items, was not associated with quality of life when negative affect was partialled out (Abbott et al., 2012). These ostensibly relevant findings might not be strongly analogous to this study, however, given that SPQ-B Cognitive-Perceptual scale had significant relations with negative affect ( $r = .46$ ), whereas this study's Unusual Beliefs scale was relatively independent of this trait. Thus, the unique contribution of Unusual Beliefs to psychopathology remains an open question. In aggregate, schizotypy appears to overlap with—but provides additional content and variability to—the existing taxonomy of personality and psychopathology. Additionally, the schizotypy scales created in this study have a relatively broad range of overlap with established measures of personality and psychopathology.

#### Is the measurement of schizotypy necessary?

Through the schizotypy literature are two somewhat opposing strains of theory: One suggests that the schizotypy domain can be modeled adequately by higher order personality traits (e.g., Edmundson et al., 2011; Eysenck and Barrett, 1993; Ross et al., 2002), whereas the other treats schizotypy as a taxon related to schizophrenia and, in effect, irrelevant to the standard personality taxonomy (e.g., Beauchaine et al., 2008). As is often the case with contradictory perspectives, the findings of this study support a third,

integrative view: Schizotypy is a trait that can be measured in a significant portion of the general and outpatient population and that has some relations to higher order personality traits; at the same time, however, it accounts for phenomenology and variability that are modeled inadequately by the standard Big-Three or Big-Five models. This theoretical moderation aligns well with the findings of recent comprehensive structural models of psychopathology (Kotov, Chang, Fochtmann, Mojtabai, Carlson et al., 2011), of PD (Tackett, Silberschmidt, Krueger, & Sponheim, 2008) and, importantly, the proposed *DSM-5* personality trait taxonomy.

### Strengths and Limitations

This study had several significant strengths. First, it used hybrid exploratory and confirmatory methods to examine the structure of schizotypy/psychopathology, both in a normative student sample and in an outpatient sample, and confirmed that the same working model was most informative in both. Second, and relatively uncommonly, this study confirmed the short-term stability (i.e., dependability) of the schizotypy structure and scales. Finally, this study tested an unusually broad array of potential schizotypy content and included a wide variety of existing measures of personality, temperament, and psychopathology with which to examine the convergent and discriminant validity of the domain.

Despite its strengths, the study had limitations, as well, perhaps most notably, the use of college students rather than a community adult sample as the normal comparison sample. Students are quite demographically distinct from general outpatient samples, thus complicating interpretations of sample differences. Given the relative similarity of schizotypy structure across the subsamples, however, this limitation does not greatly undermine the generalizability of the study's main findings. Nonetheless, data in a non-clinical sample with a greater range of age and cognitive ability and more ethnic diversity

would test the generalizability of these findings and have the potential to place these findings on firmer empirical footing.

#### Future Directions

As with any scientific endeavor, the structure of schizotypy suggested by this study requires replication, especially given that this structure has some novel aspects. A large sample of community adults would be an ideal sample to complement the student and outpatient groups used in this study. Additionally, a sample selected to have high psychometric (e.g., through screening of patients or community samples) and/or behavioral schizotypy (e.g., through clinician nomination or recruitment of members of groups associated with unusual beliefs or perceptions) would be a useful complement to this student plus general outpatient sample.

Informant studies would be especially helpful to validate the self-reported schizotypy construct examined in this study. The Cognitive and Communicative Peculiarity scale would be especially appropriate for such studies because it has content related to the respondent's impression of his or her communicative ability. Thus, a study in which informants (e.g., friends or relatives) rate the proband in communicative ability would be a useful addition. In a similar vein, a protocol with a clinical evaluation of social skills and psychometric measures of attention, task switching, and verbal skills would help to clarify whether individuals who endorse high levels of Cognitive and Communicative Peculiarity have objectively measurable difficulties or whether Cognitive and Communicative Peculiarity amounts to subjective difficulties that reflect negative temperament and the poor subjective attention associated with low positive temperament.

In addition to a simple replication of this study, it is necessary to flesh out the functional implications of an addition of schizotypy to the taxonomy. Sixty years of scientific scrutiny has provided some insight into what schizotypy *is* from a descriptive perspective, but there has been relatively less convincing study about what schizotypy

*does* from a functional perspective. Although there is a long history of cognitive and behavioral schizotypy research, much of this has been done in the selective deficit framework, which has significant epistemological problems (see, e.g., Chapman & Chapman, 1973). In short, this influential paper underscores the fact that the study of specific behavioral and cognitive deficits in schizotypy is not necessarily informative because high schizotypy is often associated with generally lower cognitive function that undermine the validity of individual findings of deficit.

Language processing differences have been a part of the schizotypy construct from its theoretical infancy (Meehl, 1962), and they are a promising area of cognitive and behavioral study of schizotypy because these *differences* are not inherently *deficits*, and recent research suggests that language processes vary with level of schizotypy (see Kiang, 2010 for a review). For example, naturalistic speech differences have been associated with schizotypy. Lenzenweger, A. Miller, Maher, and Manschreck (2007) found that high scorers on MagID or the Perceptual Aberration scale produced more normative word associations in naturalistic speech than mean scorers on these instruments. Moreover, SPQ-Disorganized and SPQ-Reality Distortion scales were moderately ( $r = .30$ ) associated, whereas SPQ-negative scales were unrelated to the rate of normative associations. Langdon and Coltheart (2004) found that participants above the median on an SPD measure were less likely than those below the median to recognize the appropriateness of concrete or ironic language in stories, whereas the groups were equally likely to recognize the appropriateness of metaphorical language in the stories.

In a similar paradigm, Humphrey, Bryson, and Grimshaw (2010) found that participants in the upper quartile of the SPQ-Cognitive Perceptual scale demonstrated a bias in which they were more likely than those in the lowest quartile to endorse any story ending as appropriate (whether or not it actually was appropriate). Nonetheless, the high and low schizotypy groups were equivalent in their sensitivity in distinguishing appropriate from inappropriate endings (where sensitivity =  $z(\text{hit rate}) - z(\text{false alarm})$



rate)) (Humphrey et al., 2010). Duchene, Graves, and Brugger (1996) asked participants to produce as many words as possible beginning with given letters within a certain time limit, and individuals above the median on MagID produced more uncommon words than those below the median, although the total number of words did not vary with magical ideation score.

In sum, these studies suggest that individuals high in positive schizotypy are less constricted in their use of language than those lower in this trait. These findings open the opportunity to study open-ended prompts and their natural language responses in the light of schizotypy. The naturalistic study of language is especially important in the area of Cognitive and Communicative Peculiarity / disorganized/ cognitive and behavioral dysregulation schizotypy. Given that subjective differences in linguistic processing are an important part of this construct, linguistic studies are an especially important bridge between subjective difficulties and objective differences or dysfunctions. Such a bridge is especially promising, given that interviewer rated linguistic and social oddity appears to be more heritable than self-reported difficulties (Tarbox & Pogue-Geile, 2011). This segue from structure to explorations of naturalistic function is an important part of the ongoing process of validating the schizotypy construct.

APPENDIX A  
TABLES

Table A-1. Summarized Results from Published Exploratory Factor Analyses of the Schizotypy and SPD Domains

| Source                              | Measure(s)   | Participants                  | Primary or large secondary loadings by factor                                  |  |                       |   |   |   |  |
|-------------------------------------|--|-------------------------------|--|--|-----------------------|---|---|---|--|
|                                     |  |                               | 1  | 2  | 3                     | 4 | 5 | 6 |  |
| Muntaner et al., (1988)             | EPQ, STA, STB, PerAb, R-SAS, PhyAn (Catalan Language)                  | 735 Spanish undergraduates    | STA, STB*, EPQ-N, PerAb, MagID   | EPQ-E (-), PhyAn, SocAn                  | EPQ-P, EPQ-L (-), STB |   |   |   |  |
| Kelley & Coursey (1992) (unrotated) | PerAb, NP ImpNon, Amb, MagID, CogSl, SocFe, Schizoidia, Mini-Mult, STA | 266 White male undergraduates | All scales except PhyAn  | PhyAn                                    |                       |   |   |   |  |
| Braunstein-Bercovitz (2000)         | SPQ 9 sx scales  | 219 mostly undergraduates     | SPQ SocAnx<br>SPQ Behav<br>SPQ Friends<br>SPQ Speech<br>SPQ Affect<br>SPQ Susp | SPQ Ideas<br>SPQ Odd Bel<br>SPQ Odd Perc |                       |   |   |   |  |

(table continues)

Table A-1 (cont)

| Source                  | Measure(s)                                      | Participants  | Primary or large secondary loadings by factor                          |   |   |   |   |   |  |
|-------------------------|---|---|--|---|---|---|---|---|--|
|                         |   |   | 1  | 2   | 3 | 4 | 5 | 6 |  |
| Aycicegi et al., (2005) | SPQ-B in Turkish and English                    | Turkish sample = 190 undergraduates<br><br>English sample = 193 US undergraduates | primarily Interpersonal & Disorganized items                           | primarily Cognitive-Perceptual & Disorganized items |   |   |   |   |  |
| G Miller & Tal (2007)   | SPQ   | 225 undergraduates  | SPQ Odd Perc<br>SPQ Odd Bel<br>SPQ Ideas<br>SPQ Speech<br>SPQ Behavior | SPQ Affect<br>SPQ Friends<br>SPQ SocAnx<br>SPQ Susp |   |   |   |   |  |
| Yon et al. (2009)       | PerAb, MagID, CogSI, FCQ, SocFe, Samb, R-SAS    | 399 university students   | MagID, PerAb, SAM, FCQ   | R-SAS, PhyAn  |   |   |   |   |  |
| Bradbury et al. (2009)  | LSHS-R, PDI, RGY, RTS, SPQ-B, SOC, RPBS, DES-II | 130 community members   | LSHS-R*<br>PDI, RTS,<br>SPQ-B,<br>SOC (-),<br>RPBS, DES                | LSHS-R<br>RGY, RPBS*<br>TRB                         |   |   |   |   |  |

(table continues)

Table A-1 (cont)

| Source                           | Measure(s)   | Participants                       | Primary or large secondary loadings by factor   |   |                                      |   |   |   |  |
|----------------------------------|--|------------------------------------|---|---|--------------------------------------|---|---|---|--|
|                                  |  |                                    | 1   | 2   | 3                                    | 4 | 5 | 6 |  |
| Bentall, Claridge & Slade (1989) | EPQ, STA, MagID, HyP, LSHS, NP Schizoidia, PerAb, STB        | 180 students & community members   | MagID, EPQ P, EPQ L (-), LSHS, STA, HyP*, STB   | EPQ E (-), EPQ N, STA, STB, NP, Schizoidia, PerAb | EPQ E* (-), SocAnh, PhyAnh           |   |   |   |  |
| Hewitt & Claridge (1989)         | STA  | 420 adults (twins)                 | Magical Thinking & Perceptual Experiences items | Perceptual Experiences items                      | Paranoia items                       |   |   |   |  |
| Kendler & Hewitt (1992)          | Abbreviated: MagID, PerMag, ImpNon, STA, LSHS,1 PhyAn, SocAn | 377 individuals from twin registry | PerAb, StaPer*, MagID, StaMag, PhyAn, LSHS      | ImpNon*, PhyAn*, EPQ P                            | StaPar, SocAn, StaPer                |   |   |   |  |
| Montag et al., (1992)            | STA,   | 347 high school students (female)  | Perceptual Aberration items                     | Items related to telepathy                        | Items related to social difficulties |   |   |   |  |

(table continues)

Table A-1 (cont)

| Source                 | Measure(s) | Participants  | Primary or large secondary loadings by factor   |   |  |   |   |   |  |
|------------------------|------------|---|---|---|--|---|---|---|--|
|                        |            |   | 1   | 2   | 3  | 4 | 5 | 6 |  |
| Joseph & Peters (1995) | STA        | 268 students & community members  | Magical thinking & Perceptual items   | Mistrust, sensitivity, & social anhedonia items   | Perceptual experiences, magical thinking items & 1 odd speech item   |   |   |   |  |
| Calkins et al. (2004)  | SPQ        | Study 1: 135 non-psychotic first-degree relatives of schizophrenic individuals<br>Study 2: 112 nonpsychiatric community members | Component 1 correlates most strongly with Cognitive-Perceptual scale in both samples ( $r = .94, .93$ , respectively) (nearest discriminant correlations $r = .58, .56$ , respectively) | Component 2 correlates most strongly with Social-Interpersonal scale in both samples ( $r = .89, .80$ , respectively) (nearest discriminant correlations $r = .58, .56$ , respectively) | Component 3 correlates most strongly with Disorganization scale in both samples ( $r = .95, .94$ , respectively) (nearest discriminant correlations $r = .53, .46$ , respectively) |   |   |   |  |

(table continues)

Table A-1 (cont)

| Source                      | Measure(s)    | Participants                          | Primary or large secondary loadings by factor        |   |   |   |   |   |  |
|-----------------------------|---------------|---------------------------------------|--|---|---|---|---|---|--|
|                             |               |                                       | 1  | 2   | 3   | 4 | 5 | 6 |  |
| Cyhlarova & Claridge (2005) | STA           | 317 11-15 year-old community children | Items related to unusual perceptions and experiences | Items related to referential thinking/paranoia/social anxiety   | Items related to magical thinking and unusual experiences |   |   |   |  |
| Mata et al. (2005)          | Spanish SPQ-B | 443 undergraduates                    | Social anxiety, social anhedonia, & odd speech items | Odd speech, (1 item), perceptual, (1 item) & mistrust (3 items) | Odd behavior & odd beliefs items                          |   |   |   |  |

*(table continues)*

Table A-1 (cont)

| Source                   | Measure(s)              | Participants   | Primary or large secondary loadings by factor                |  |                                    |                         |   |   |  |
|--------------------------|-------------------------|--|--|--|------------------------------------|-------------------------|---|---|--|
|                          |                         |  | 1  | 2  | 3                                  | 4                       | 5 | 6 |  |
| Suhr & Spitznagel (2001) | SPQ PerAb<br>MagId      | Study 1:<br>1366<br>undergraduates   | PerAb,*<br>MagID,<br>SPQ Ideas,<br>SPQ Odd Perc<br>SPQ Susp* | SPQ SocAnx,<br>SPQ Friends,<br>SPQ Affect,<br>SPQ Susp | PerAb,<br>SPQ Behav,<br>SPQ Speech |                         |   |   |  |
|                          |                         | Study 2:<br>348 high<br>scorers on<br>PerAb and<br>MagID<br>(subset of<br>study 1<br>participants) | PerAb*,<br>MagID<br>SPQ Odd Bel<br>SPQ Odd Perc              | SPQ SocAnx,<br>SPQ Friends,<br>SPQ Affect,<br>SPQ Susp | PerAb,<br>SPQ Behav,<br>SPQ Speech | SPQ Ideas,<br>SPQ Susp* |   |   |  |
| Ericson et al., (2011)   | SPQ<br>Child<br>Version | 1457<br>adolescents<br>who are<br>twins or<br>triplets   | Referential<br>and odd<br>experiences<br>items               | Oddity/<br>eccentricity<br>items                       | Mistrust<br>and social<br>anxiety  |                         |   |   |  |

(table continues)



Table A-1 (cont)

| Source                 | Measure(s)  | Participants   | Primary or large secondary loadings by factor   |   |   |   |   |   |  |
|------------------------|-------------|--|---|---|---|---|---|---|--|
|                        |             |  | 1   | 2   | 3   | 4 | 5 | 6 |  |
| Therman et al., (2011) | PROD-Screen | 6636 15-to-16 year-old members of a 9340 person 1985-1986 Finnish birth cohort | “Positive” (disorganized behavior and speech, magical thinking, mistrust, thought disorder) | “Negative” (social isolation and poor self functioning) | “General” (depressive and anxiety symptoms) |   |   |   |  |

(table continues)

Table A-1 (cont)

| Source          | Measure(s) | Participants   | Primary or large secondary loadings by factor   |  |   |  |   |   |  |  |
|-----------------|------------|--|---|--|---|--|---|---|--|--|
|                 |            |  | 1   | 2  | 3   | 4  | 5 | 6 |  |  |
| P Miller (2002) | SIS        | 212 community members: (155 relatives of schizophrenia patients, 37 first episode patients, 36 "healthy controls") | High loadings (>.50) on items related to social anxiety & isolation. modest to moderately high (.30-.49) loadings on items related to high functioning, affect & suspicion. | High loadings on items related to dissociation, PerMag, irritability, suspicion impulsiveness & irritability. Modest to moderately loadings on affective instability, childhood antisocial traits, suicidal threats, emptiness & social anxiety. | High loadings on items related to interpersonal functioning and positive affect. Modest to moderate (.30-.40) loadings on childhood antisocial illusions. suicidal threats grooming & social isolation. | High loadings on items related to attention seeking, odd behavior irritability & observed suspicion. modest to Moderately high loadings on speech organization, grooming & |   |   |  |  |

(table continues)

Table A-1 (cont)

| Source                   | Measure(s)                            | Participants  | Primary or large secondary loadings by factor                     |   |   |   |   |   |
|--------------------------|---------------------------------------|---|---|---|---|---|---|---|
|                          |                                       |   | 1   | 2   | 3   | 4   | 5 | 6 |
| Linscott & Knight (2004) | TPSQ                                  | 216 undergraduates                                    | Magical ideation & self-referential ideation items                | Social paranoia & negative evaluation items                                     | Physical anhedonia & social anhedonia items                             | Hallucination, thought disorder & perceptual illusion items |   |   |
| Rawlings et al. (2001)   | STA                                   | 1073 British participants age > 16                    | Odd belief & odd perceptions items                                | Mistrust & social anhedonia items   | Odd perceptions items   | Sensitivity/neuroticism items                               |   |   |
| Venables & Bailes (1994) | Experimental 30 item schizotypy scale | 770 church group members (adults and adolescents)     | Odd perceptions, odd beliefs & ambivalence content                | Passive dependency, shyness, confusion, self consciousness content              | Physical anhedonia,* social anhedonia content                           | Social anhedonia,* physical anhedonia content               |   |   |
| Lien et al. (2010)       | DIGS                                  | 1513 first degree Relatives of schizophrenia patients | Irritability, aloofness, guardedness, suspiciousness* odd speech* | Suspiciousness, psychotic-like magical thinking, ideas of reference, odd speech | Odd speech (-), social anxiety, sensitivity, anger to perceived slights | Introversion, social isolation                              |   |   |

(table continues)

Table A-1 (cont)

| Source                      | Measure(s)  | Participants  | Primary or large secondary loadings by factor  |  |  |   |   |                      |
|-----------------------------|---|---|--|--|--|---|---|----------------------|
|                             |   |   | 1  | 2  | 3  | 4   | 5                                       | 6                    |
| Chmielewski & Watson (2008) | SPQ - item level analysis                                     | 556 undergraduate students: 444 of these participated at T2 | Social anhedonia content   | Social anxiety content   | Eccentricity/ oddity content   | Mistrust content  | Unusual beliefs and experiences content |                      |
| Linscott (2007)             | TPSQ, VSAE Schizoidia, TPSQ Ex, SPQ, STA, Short CPT, SCL-90-R | 299 undergraduates  | SPQ SocAnx, TPSQ Susp, VSAE schiz, Schizoidia, SPQ Susp*, SPQ Ideas, STA, SPQ Friend, & SPQ Affect | SPQ Ideas*, STA*, TPSQ Magic, SPQ Odd Bel, VSAE Magic, SPQ Odd Perc, TPSQ Halluc & TPSQ Perc | STA, SPQ Odd Perc, TPSQ Speech, TPSQ Speech, SPQ Behav, TPSQ Thought | TPSQ Social, VSAE Social, Emotion, SPQ Friends*, SPQ Affect*, TPSQ TaSm | VSAE PhyAn, TPSQ Aesth                  | TPSQ TaSm*, TPSQ TAC |

(table continues)

Table A-1 (cont)

| Source                | Measure(s)                  | Participants               | Primary or large secondary loadings by factor         |  |   |   |                                      |                     |
|-----------------------|-----------------------------|----------------------------|---|--|---|---|--------------------------------------|---------------------|
|                       |                             |                            | 1   | 2  | 3   | 4   | 5                                    | 6                   |
| Mass et al. (2007)    | PerAb STA<br>SPQ SPI<br>ESI | 200<br>"healthy<br>adults" | SPI Social<br>SPQ Friends<br>SPI Affect<br>SPQ Affect | ESI Perc<br>ESI ATTSP<br>PerAb<br>ESI Auditory<br>ESI Reference<br>SPQ Odd Perc<br>STA | SPI Paranoid<br>SPQ Susp<br>SPI Reference<br>SPQ Ideas<br>SPI IAffect | SPI Behavior<br>SPI Speech<br>SPQ Behav<br>SPQ Speech | SPI Magic<br>SPQ Odd Bel<br>SPI Perc | SPQ & SPI<br>SocAnx |
| Kendler et al. (1995) | see text                    |                            |   |  |   |   |                                      |                     |
| Fossati et al. (2003) | see text                    |                            |   |  |   |   |                                      |                     |

*Notes.* When multiple factors load on a scale, the scale name is followed by \* for the factor onto which it loads the most highly. (-) = significant negative loading. EPQ = Eysenck Personality Questionnaire (Eysenck & Eysenck, 1975) (N = Neuroticism, EPQ E = Extraversion, EPQ P = Psychoticism, EPQ L = Lie); STA = Schizotypy Traits Questionnaire (Claridge & Broks, 1984) (StaMag = Magical Ideation; StaPer = Perceptual Experiences; StaPar = Paranoia Scale); STB = Borderline Personality Scale (Claridge & Broks, 1984); MagID = Magical Ideation Scale; HyP = Hypomanic Personality Scale (Eckblad & Chapman, 1986); LSHS = Launay-Slade Hallucination Scale (1981); LSHS-R = LSHS-revised (Bentall & Slade, 1985); NP = Nielsen Petersen Schizophrenism Scale (1976); Schizoidia = Golden & Meehl Schizoidia (1979); PerAb = Perceptual Aberration Scale; PerMag = items related to perceptual illusions and magical thinking; PROD = the Prodromal Questionnaire (Loewry, Bearden, Johnson, Raine, and Cannon (2005); SocAn = Social Anhedonia Scale; ImpNon = Impulsive Nonconformity Scale (L. Chapman et al., 1984); Amb = Intense Ambivalence Scale (Raulin, 1984); CogSl = Cognitive Slippage Scale (Miers & Raulin, 1985); SocFe = Social Fear Scale (Raulin & Wee, 1984); Mini-Mult (Kincannon, 1968); SPQ = Schizotypal Personality Questionnaire (SPQ Ideas = Ideas of reference, SPQ Odd Perc = Odd Perceptions, SPQ Susp = Suspiciousness; SPQ SocAnx = Social Anxiety; SPQ Friends = No Close Friends, SPQ Affect = Constricted or Inappropriate Affect; SPQ Behav = Odd Behavior, SPQ Speech = Odd Speech; SPQ Odd Bel = Unusual Beliefs or Magical Thinking); TPSQ = Thinking and Perceptual Style Questionnaire (Linscott & Knight, 2004) (TPSQ Susp = , TPSQ magic = magical and self-referential ideation, TPSQ halluc = Hallucinatory Tendency, TPSQ Perc = Perceptual Aberration, TPSQ Thought = Disordered Thought, TPSQ social = Social Fear, TPSQ Emotion = Emotional, TPSQ TaSm = Taste and Smell, TPSQ Ex = Exertion, TPSQ Tac = Tactile); SPQ-B = Brief SPQ (Raine, n.d.); (Table cont.)

Table A-1 (cont)

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*Notes.* VSAE = Venables et al. Survey of Attitudes and Experiences (Venables, , Wilkins, Mitchell, Raine, & Bailes, 1990) (VSAE Schiz = VSAE Schizophrenism, VSAE Magic = Magical Ideation, VSAE PhyAn = Physical Hypohedonia; VSAE Social = Social Hypohedonia); ESI = Eppendorf Schizophrenia Inventory (Mass et al., 2007) (ESI Perc = Deviant Perception, ESI ATTSP = Attention and Speech Impairment, ESI Auditory = Auditory Uncertainty, ESI Reference = Ideas of Reference); SPI = Schizotypal Personality Inventory (Andresen n.d) (SPI Social = Social Isolation, SPI Affect = Constructed Affect, SPI Paranoid = Paranoid Thinking, SPI Reference = Ideas of Reference, SPI affect = inadequate affect, SPI Behavior = Eccentric Behavior, SPI Speech = Unusual Speech, SPI Magic = Magical Thinking, SPI SocAn = Social Anxiety); PDI = Peters et al Delusions Inventory; RGY = Religiosity (Gorsuch & McPherson, 1989); RTS = Revised Transliminality Scale (Lange, Thalbourne, Gouran, & Storm, 2000).; SOC = Sense of Coherence (Antovonsky, 1993); RPBS = Revised Paranormal Beliefs Scale (Tobacyk, 2004) (RPBS TRB = Traditional Religious Beliefs); DES-II = Dissociative Experiences Scale (Carlson & Putnam, 1992); FCQ = Frankfort Complaint Questionnaire (Sullwold, 1986); Samb = Schizotypal Ambivalence Scale (Kwapil, Mann, & Raulin, 2002); DIGS = Diagnostic Interview for Genetic Studies (Nurenberger et al., 1994).

Table A-2 Summarized Results from Published Confirmatory Factor Analyses of the Schizotypy and SPD Domains

| Source                 | Measure(s)   | Participants                                 | Fit  | Primary or secondary loadings by factor              |   |                             |   |   |
|------------------------|--|--|--|--|---|-----------------------------|---|---|
|                        |  |  |  | 1  | 2   | 3                           | 4 | 5 |
| Kwapil et al. (2008)   | PerAb, MagID, R-SAS, PhyAn,                                  | 6137 undergraduates                          | GFI = .99<br>CFI = .99<br>RMSEA = .032   | MagID, PerAb, & R-SAS<br>Parcels                     | R-SAS & PhyAn<br>Parcels                      |                             |   |   |
| Kwapil et al. (2012)   | PerAb, MagID, R-SAS, PhyAn (Spanish sample Spanish versions) | Spain: 547 students<br>U.S.A.: 2171 students | Most informative:<br>Spain:<br>GFI = .98<br>AGFI = .95<br>CFI = .99<br>RMSEA = .043<br>U.S.A.:<br>GFI = .99<br>AGFI = .98<br>CFI = .99<br>RMSEA = .029 | PerAb, MagID, & R-SAS                                | R-SAS, PhyAn                                  |                             |   |   |
| W. Chen et al., (1997) | SPQ, PerAb   | 345 adults and 115 adolescents from Taiwan   | Adolescent:<br>GFI = .90<br>AGFI = .80<br>TLI = .88<br>NFI = .88<br>Adult:<br>GFI = .94<br>AGFI = .88<br>TLI = .87<br>NFI = .90                        | SPQ Ideas<br>SPQ Odd Bel<br>SPQ Odd Perc<br>SPQ Susp | SPQ SocAnx, SPQ Friends, SPQ Affect, SPQ Susp | SPQ Odd Speech, SPQ Odd Beh |   |   |

(table continues)

Table A-2 (cont)

| Source                              | Measure(s)   | Participants                                   | Fit   | Primary or secondary loadings by factor               |  |  |   |   |
|-------------------------------------|--|--|---|---|--|--|---|---|
|                                     |  |  |   | 1   | 2  | 3  | 4 | 5 |
| Wuthrich & Bates (2006) Study 1 & 2 | SPQ  | Study 1: 558<br>Study 2: 274<br>undergraduates | Most informative:<br>Study 1:<br>CFI = .978<br>RMSEA = .069<br>Study 2:<br>CFI = .981<br>RMSEA = .069 | SPQ Friends<br>SPQ Affect<br>SPQ SocAnx<br>SPQ Susp   | SPQ SocAnx<br>SPQ Susp<br>SPQ Odd Bel<br>SPQ Odd Perc<br>SPQ Ideas | SPQ Speech<br>SPQ Behav                          |   |   |
| Kerns (2006)                        | PerAb,<br>MagID,<br>R-SAS,<br>CogSlp<br>RestEx,<br>SPQ | 261<br>under-<br>graduates                     | CFI = .955<br>RMSEA = .071  | R-SAS,<br>SPQ<br>Friends,<br>SPQ<br>Affect,<br>RestEx | CogSlp,<br>SPQ<br>Speech   | MagID, ,<br>PerAb<br>SPQ Odd Bel<br>SPQ Odd Perc |   |   |
| Lewandowski et al. (2006)           | PerAb,<br>MagID,<br>R-SAS,<br>PhyAn,<br>BAI,<br>BDI-II | 1258<br>under-<br>graduates                    | Best fitting:<br>CFI = .99<br>GFI = .99<br>RMSEA = .031   | PerAb,<br>MagID<br>& R-SAS<br>parcels                 | R-SAS &<br>PhyAn<br>parcels  | BDI<br>BAI                                       |   |   |
| Compton et al. (2009b)              | SPQ-B  | 825<br>under-<br>graduates                     | Best Fitting:<br>RMSEA = .068<br>CFI = .82  | Cognitive-<br>Perceptual                              | Interpersonal  | Disorganized                                     |   |   |

(table continues)



Table A-2 (cont)

| Source                   | Measure(s)  | Participants   | Fit  | Primary or secondary loadings by factor                            |  |                                   |   |   |
|--------------------------|---|--|--|--|--|-----------------------------------|---|---|
|                          |   |  |  | 1  | 2  | 3                                 | 4 | 5 |
| Raine et al.<br>(1994)   | SPQ   | Best Fitting:<br>Study 1:<br>803<br>under-<br>graduates<br>Study 2:<br>102<br>community<br>members | Study 1:<br>GFI = .96<br>TLI = .90<br>NFI = .93<br>Study 2:<br>GFI = .92<br>TLI = .94<br>NFI = .91 | SPQ Ideas<br>SPQ Odd Bel<br>SPQ<br>Odd Perc<br>SPQ Susp            | SPQ Susp<br>SPQ SocAnx<br>SPQ Friends<br>SPQ Affect                        | SPQ Behav<br>SPQ Speech           |   |   |
| Rossi et al.<br>(2002)   | SPQ 9 sx<br>scale scoring   | Study 1: 93<br>schizophrenia<br>patients<br>Study 2: 172<br>under-<br>graduates                    | Study 1:<br>CFI = .95<br>GFI = .91<br>NFI = .91<br>Study 2:<br>CFI = .90<br>GFI = .93<br>NFI = .86 | SPQ Ideas<br>SPQ Odd Bel<br>SPQ<br>Odd Perc<br>SPQ Susp            | SPQ Susp<br>SPQ SocAnx<br>SPQ Friends<br>SPQ Affect                        | SPQ Behav<br>SPQ Speech           |   |   |
| Bergman et al.<br>(2000) | SIDP-R<br>with additional<br>SPD items<br>scored on<br>4-point<br>scale | 172 relatives<br>of people with<br>schizophrenia   | Best fitting:<br>CFI = .98<br>GFI = .96<br>RMSEA<br>= .048   | Ideas,<br>odd<br>beliefs,<br>odd<br>perceptions,<br>suspiciousness | No friends,<br>lack of<br>affect,<br>social<br>anxiety,<br>suspiciousness* | Odd<br>behavior,<br>Odd<br>speech |   |   |

(table continues)

Table A-2 (cont)

| Source                  | Measure(s)           | Participants   | Fit  | Primary or secondary loadings by factor   |   |   |   |   |
|-------------------------|----------------------|--|--|---|---|---|---|---|
|                         |                      |  |  | 1   | 2   | 3   | 4 | 5 |
| Compton et al. (2007)   | SPQ-B                | 61 relatives of people with Sz-spectrum<br>57 "non-psychiatric Controls" | Best fitting:<br>RMSEA = .080                          | Theoretical<br>Cognitive-<br>Perceptual<br>items                                      | Theoretical<br>Interpersonal<br>Items   | Theoretical<br>Disorganization<br>Items   |   |   |
| Reynolds et al. (2000)  | SPQ                  | 1201 people from Mauritius   | Best fitting:<br>CFI = .95<br>TLI = .92<br>RMSEA = .09 | SPQ Ideas<br>SPQ odd bel<br>SPQ odd perc<br>SPQ Susp                                  | SPQ Susp<br>SPQ SocAnx<br>SPQ Friends<br>SPQ Affect   | SPQ Behav<br>SPQ Speech   |   |   |
| Stefanis et al. (2002)  | CAPE (Greek Version) | 1413 Male Greek Conscripts   | Most informative:<br>RMSEA = .045                      | "Positive" items  | "Negative" items  | "Depressive" items  |   |   |
| Hergovich et al. (2008) | RPBS, SPQ-B, MagID   | 571 mostly under 16 years old  | CFI = .926<br>RMSEA = .073                             | SPQ-B<br>Cog-Per,<br>SPQ-B<br>Interp,<br>SPQ-B<br>Disorgan,<br>MagID<br>Mag/ref items | RPBS<br>superstition,<br>RPBS life<br>forms, RPBS<br>Religiosity<br>RPBS Magical<br>Superstition. | RPBS<br>Witchcraft,<br>RPBS<br>precognition,<br>RPBS Psi,<br>RPBS<br>Spiritualism |   |   |

(table continues)

Table A-2 (cont)

| Source                 | Measure(s)   | Participants  | Fit   | Primary or secondary loadings by factor |   |                         |                                     |   |
|------------------------|--|---|---|---|---|-------------------------|-------------------------------------|---|
|                        |  |   |   | 1                                       | 2   | 3                       | 4                                   | 5 |
| Mason (1995)           | EPQ, STA, STB, PhyAn, SAS, MagID, PerAb, HoP, LSHS, NP, Schizoidia, DSSI | 1095 Participants: 180 from Bentall et al., (1989) 695 from McCreery (1993) | Best fitting: NFI = .917                                | STA, MagID, PerAb, HoP, LSHS            | EPQ N, STA, STB, NP, Schizoidia                     | EPQ E, SAS, PhyAn       | EPQ P<br>EPQ L<br>STB HoP           |   |
| Stefanis et al. (2004) | SPQ 9 sx scale scoring   | 2243 Male Greek Conscripts  | Most informative: GFI = .99<br>TLI = .97<br>SPQ Friends | SPQ Odd Perc<br>SPQ Odd Bel             | SPQ Susp<br>SPQ SocAnx<br>SPQ Friends<br>SPQ Affect | SPQ Behav<br>SPQ Speech | SPQ Susp<br>SPQ SocAnx<br>SPQ Ideas |   |

*(table continues)*

Table A-2 (cont)

| Source                   | Measure(s)                       | Participants   | Fit  | Primary or secondary loadings by factor |                                |  |   |                       |
|--------------------------|----------------------------------|--|--|---|--------------------------------|--|---|-----------------------|
|                          |                                  |  |  | 1                                       | 2                              | 3  | 4   | 5                     |
| Compton et al. (2009a)   | SPQ                              | 825 under-graduates  | Most informative: RMSEA = .044 CFI = .99   | SPQ Odd Bel<br>SPQ Odd Perc             | SPQ Ideas<br>SPQ susp          | SPQ susp<br>SPQ SocAnx<br>SPQ SocAnx<br>SPQ Affect | SPQ Behavior<br>SPQ Speech<br>SPQ Friends |                       |
| Sacks et al, (2012)      | MagID,<br>SPQ-B<br>O-LIFE<br>BCI | 420 under-graduates  | RMSEA = .05<br>CFI = .98   | O-LIFE UE<br>MagID<br>SPQ-B<br>CogPer   | O-LIFE UA<br>SPQ-B<br>Interper | O-LIFE CD<br>SPQ-B<br>Disorgan                     | O-LIFE IN<br>BCI                          |                       |
| Wigman et al., (2011)    | CAPE                             | Study 1:<br>5422<br>12-16<br>year-old<br>Europeans<br>& North<br>Americans<br>Study 2:<br>1816<br>Dutch<br>Adolescents<br>In TRAILS<br>study | Study 1:<br>RMSEA =<br>.028<br>CFI = .95<br><br>Study 2:<br>RMSEA =<br>.038<br>CFI = .92 | Hallucin-<br>ations                     | Paranoia                       | Grandiosity  | Delusions                                 | Paranormal<br>Beliefs |
| Venables & Rector (2000) | see text                         |  |  |   |                                |  |   |                       |

Notes. CAPE = Community Assessment of Psychic Experiences (van Os, Verdoux, & Hanssen, n.d.); (table continues)

Table A-2 (cont)

STA = Schizotypy Traits Questionnaire (StaMag = Magical Ideation; StaPer = Perceptual Experiences; StaPar = Paranoia Scale); STB = Borderline Personality Scale (Claridge & Broks, 1984); MagID = Magical Ideation Scale; HyP = Hypomanic Personality Scale (Eckblad & Chapman, 1986); SIDP-R = Structured Interview for *DSM-III-R* Personality (Pfohl, Blum, Zimmerman, & Stangl, 1989); LSHS = Launay-Slade Hallucination Scale (1981); LSHS-R = LSHS-revised (Bentall & Slade, 1985); NP = Nielsen Petersen Schizophrenism Scale (1976); Schizoidia = Golden & Meehl Schizoidia (1979); PerAb= Perceptual Aberration Scale; SocAn = Social Anhedonia Scale; ImpNon = Impulsive Nonconformity Scale (L. Chapman et al., 1984); Amb = Intense Ambivalence Scale (Raulin, 1984); CogSl = Cognitive Slippage Scale (Miers & Raulin, 1985); SocFe = Social Fear Scale (Raulin & Wee, 1984); Mini-Mult (Kincannon, 1968); SPQ = Schizotypal Personality Questionnaire (SPQ Ideas = Ideas of reference, SPQ Odd Perc = Odd Perceptions, SPQ Susp = Suspiciousness; SPQ SocAnx = Social Anxiety; SPQ Friends = No Close Friends, SPQ Affect = constricted or inappropriate affect; SPQ Behav = Odd Behavior, SPQ Speech = Odd Speech; SPQ Odd Bel = Unusual Beliefs or Magical Thinking); SPQ-B = Brief SPQ (Raine, n.d.); DSSI = Delusions Symptoms States Inventory (Foulds & Bedford, 1975) (dC = Delusions of contrition, dP = Delusions of Persecution, dG = Delusions of Grandeur, Dd = Delusions of Disintegration) RPBS = Revised Paranormal Beliefs Scale (Tobacyk, 2004) (RPBS TRB = Traditional Religious Beliefs); DES-II = Dissociative Experiences Scale (Carlson & Putnam, 1992) SQASS = Supplemental Questions for Assessing Schizotypal Symptoms (Silverman et al., 1998); O-LIFE = Oxford-Liverpool Inventory of Feelings and Experiences (Mason & Claridge, 2006; UE = Unusual Experiences, IA = Introvertive Anhedonia; CD = Cognitive Disorganization; IN = Impulsive Nonconformity), BCI = Beck Cognitive Insight Scale (Beck et al., 2004). RMSEA = Root Mean Square Error of Approximation; CFI = Comparative Fit Index; NFI = Normed Fit Index; TLI = Tucker-Lewis Index; GFI = Goodness of Fit Index; AGFI = Adjusted Goodness of Fit Index.

Table A-3 Demographic Data in Student and Outpatient Samples

|   | Students                 |                    | Outpatients              |
|---|--------------------------|--------------------|--------------------------|
|   | University of Notre Dame | University of Iowa |                          |
| Age (SD)                                | 19.3 (1.7)               | 19.1 (2.2)         | 45.4 (11.0) <sup>a</sup> |
| % female                                | 64.6                     | 75.1               | 63.1 <sup>b</sup>        |
| % any Mental Health Consultation        | 43 <sup>c</sup>          | 37 <sup>d</sup>    | 100                      |
| Age at first Mental Health Consultation | -                        | -                  | 27.7(12.9) <sup>e</sup>  |
| % minority                              | 22                       | 14                 | 34 <sup>f</sup>          |

*Notes.*  $N = 657$  (301 University of Iowa students, 193 University of Notre Dame students, 163 Outpatients). Samples with missing demographic data are noted: <sup>a</sup> $N = 162$ . <sup>b</sup> $N = 160$ , <sup>c</sup> $N = 296$ , <sup>d</sup> $N = 192$ , <sup>e</sup> $N = 156$ , <sup>f</sup> $N = 160$ .

Table A-4 Maximum-Likelihood Factor Analysis of Schizotypy Items: Fit Statistics and Information Criteria

| Solution | $\chi^2$ <sup>a</sup> | BIC <sup>b</sup> | AIC <sup>c</sup> | TLC <sup>d</sup> |
|----------|-----------------------|------------------|------------------|------------------|
| 1-factor | 72351.75              | -116829.12       | 14031.75         | .50              |
| 2-factor | 65625.56              | -121985.29       | 7789.56          | .58              |
| 3-factor | 60439.65              | -125607.66       | 3085.65          | .64              |
| 4-factor | 57993.63              | -126496.64       | 1119.63          | .67              |
| 5-factor | 55818.25              | -127121.47       | -577.75          | .69              |
| 6-factor | 53920.45              | -127475.20       | -1999.55         | .71              |
| 7-factor | 52313.15              | -127544.91       | -3132.85         | .73              |
| 8-factor | 50767.10              | -127559.88       | -4206.90         | .74              |
| 9-factor | 49394.83              | -127407.53       | -5109.17         | .76              |

Notes.  $N = 657$  (193 Notre Dame University students, 301 University of Iowa students, 163 Outpatients). <sup>a</sup>Chi-square without Bartlett's Correction. <sup>b</sup>Bayesian Information Criterion. <sup>c</sup>Akaike's Information Criterion. <sup>d</sup>Tucker and Lewis's Reliability Coefficient.

Table A-5 Varimax-Rotated Maximum-Likelihood Factor Loadings for an 8-Factor Solution of Time 1 Schizotypy Content

| Domain <sup>a</sup> | Item Content <sup>b</sup>                  | Factor     |     |     |      |      |      |      |      |
|---------------------|--|------------|-----|-----|------|------|------|------|------|
|                     |  | 1          | 2   | 3   | 4    | 5    | 6    | 7    | 8    |
| UP/DP               | Felt I was another person.                 | <b>.67</b> | .10 | .10 | .10  | .00  | .04  | .04  | -.01 |
| UP                  | Felt body was weird shape                  | <b>.66</b> | .09 | .05 | .07  | .04  | .14  | .06  | -.06 |
| DP                  | Objects/People felt unreal                 | <b>.66</b> | .22 | .18 | .11  | .08  | .07  | .06  | -.02 |
| UP                  | Body parts detached from me                | <b>.64</b> | .07 | .10 | .14  | -.05 | .02  | .06  | .09  |
| UP                  | Sensed I was more than one person          | <b>.64</b> | .09 | .06 | .17  | -.02 | .13  | .09  | .08  |
| UP                  | My body looked like another person's       | <b>.63</b> | .09 | .02 | .09  | .10  | .11  | .05  | -.05 |
| UP/UB               | Radio or TV person knew I listened         | <b>.59</b> | .00 | .12 | .09  | .17  | .15  | -.01 | -.10 |
| UP                  | Normal things seem to be wrong size        | <b>.59</b> | .28 | .16 | .13  | .15  | .04  | .03  | -.12 |
| UP                  | Felt strangers probe my brain              | <b>.59</b> | .15 | .03 | .13  | .22  | .11  | .13  | .08  |
| DP                  | Pinched self to remind me I was there      | <b>.58</b> | .21 | .24 | .09  | .09  | .12  | .10  | -.01 |
| UP                  | It's strange that many use my highway exit | <b>.58</b> | .07 | .12 | .01  | .12  | .15  | .04  | -.02 |
| UB                  | I can tell when someone dreams of me       | <b>.57</b> | .04 | .05 | .08  | .04  | .25  | -.10 | -.11 |
| UP                  | Typical objects have seemed strange        | <b>.55</b> | .21 | .17 | -.05 | .07  | .11  | -.07 | -.15 |
| UP/DP               | I have felt that I might not be a person   | <b>.54</b> | .08 | .24 | .18  | .03  | .05  | .08  | .09  |
| UP                  | Heard voice that said thoughts out loud    | <b>.53</b> | .17 | .20 | .19  | .16  | .03  | .15  | .05  |
| UP                  | Regular colors have seemed too intense     | <b>.53</b> | .22 | .18 | .13  | .05  | .05  | -.03 | .03  |
| UP                  | Some of my body parts felt dead or fake    | <b>.53</b> | .16 | .15 | .18  | .05  | -.04 | .19  | .11  |
| UP                  | Felt that I blended in with nearby things  | <b>.53</b> | .09 | .16 | .21  | .08  | .03  | .12  | .11  |
| UP                  | Felt body was rotting inside               | <b>.53</b> | .13 | .05 | .15  | .05  | .04  | .08  | .08  |
| UP                  | Felt body was very strange                 | <b>.53</b> | .26 | .24 | .16  | .06  | -.07 | .11  | -.03 |
| UP                  | Felt body blend in with nearby things      | <b>.52</b> | .13 | .20 | .20  | .10  | -.05 | .10  | .06  |
| UB                  | If I tried, I could learn to read minds    | <b>.52</b> | .10 | .11 | .29  | .10  | .21  | -.05 | -.10 |

(table continues)



Table A-5 (cont.)

| Domain <sup>a</sup> | Item Content <sup>b</sup>                              | Factor     |     |            |            |            |      |      |      |
|---------------------|--|------------|-----|------------|------------|------------|------|------|------|
|                     |  | 1          | 2   | 3          | 4          | 5          | 6    | 7    | 8    |
| UP                  | Felt the world around me was tilted                    | <b>.51</b> | .24 | .12        | .10        | .04        | .05  | .11  | .02  |
| UP                  | Familiar people can look like strangers                | <b>.51</b> | .40 | .13        | .07        | .08        | .05  | .08  | .09  |
| UP                  | Noticed new sounds in familiar music                   | <b>.50</b> | .20 | .30        | .08        | .16        | .02  | -.04 | -.04 |
| DP                  | Behaved like someone else, felt like me                | <b>.49</b> | .15 | .24        | .04        | .09        | .08  | -.02 | -.12 |
| UP                  | Textures remind me of sounds or colors                 | <b>.49</b> | .09 | .31        | .06        | .08        | .04  | -.12 | -.09 |
| UP                  | Sensed that I share a body                             | <b>.48</b> | .11 | .06        | .25        | -.03       | .07  | .13  | .15  |
| DP                  | Took on different identity/perspective                 | <b>.48</b> | .29 | .23        | .10        | .13        | .01  | .00  | -.07 |
| UB                  | Bad thoughts can cause bad events                      | <b>.48</b> | .14 | .13        | .18        | .17        | .32  | .08  | .10  |
| UP                  | Media item have special meaning                        | <b>.48</b> | .18 | .13        | .08        | .16        | .09  | .07  | .04  |
| UP/UB               | Thought someone was only a look alike                  | <b>.46</b> | .21 | .07        | .16        | .20        | .05  | -.01 | .07  |
| UP/UB               | Animals focus on me more than others                   | <b>.46</b> | .22 | .08        | .03        | .17        | .13  | .03  | -.06 |
| UP/UB               | When I see broken things, I wonder if others blame me  | <b>.45</b> | .09 | .15        | <b>.40</b> | .11        | .21  | .08  | .10  |
| UP/UB               | Communicated via mindreading                           | <b>.45</b> | .12 | .14        | <b>.38</b> | .01        | .08  | .18  | .09  |
| UP/UB               | Felt someone was in bed with me when there wasn't      | <b>.44</b> | .30 | <b>.35</b> | .10        | .13        | .11  | .05  | .00  |
| DP                  | Life feels like a dream                                | <b>.44</b> | .17 | .22        | <b>.37</b> | .05        | -.10 | .30  | .17  |
| DP                  | I have felt as if I left my body                       | <b>.43</b> | .28 | .16        | .17        | .17        | .27  | .11  | .07  |
| UP/DP               | My things have moved, though nobody else was around    | <b>.43</b> | .28 | .16        | .17        | .17        | .27  | .11  | .07  |
| UP/UB               | Others around me say things with hidden meanings       | <b>.43</b> | .26 | .23        | .07        | <b>.35</b> | .09  | -.05 | -.09 |
| ECC                 | People tell me that I make up words                    | <b>.43</b> | .21 | .27        | -.07       | .04        | .11  | -.15 | .03  |
| UP/UB               | Strangers make mocking faces at me                     | <b>.43</b> | .19 | .06        | .05        | <b>.35</b> | .10  | .04  | .12  |
| UP                  | At times my reflection looks different from usual      | <b>.43</b> | .26 | .34        | .03        | .12        | .02  | .05  | -.10 |
| UP                  | I have seen things that weren't visible to others      | <b>.43</b> | .19 | .23        | <b>.40</b> | .17        | .05  | .04  | .03  |
| UB                  | People who are not present can feel my emotions        | <b>.42</b> | .10 | .13        | <b>.36</b> | .19        | .22  | .07  | -.04 |
| UP                  | I have felt that my body (or part of it) wasn't my own | <b>.42</b> | .16 | .18        | .22        | -.02       | -.07 | .29  | .10  |

(table continues)

Table A-5 (cont.)

| Domain <sup>a</sup> | Item Content <sup>b</sup>  | Factor     |            |            |      |            |      |      |      |
|---------------------|--|------------|------------|------------|------|------------|------|------|------|
|                     |  | 1          | 2          | 3          | 4    | 5          | 6    | 7    | 8    |
| UP/UB               | I feel that other people are out to get me   | <b>.41</b> | <b>.38</b> | .04        | .12  | <b>.39</b> | .22  | .25  | .18  |
| UP                  | Have seen illusions of people/ heard illusions of voices                             | <b>.41</b> | .29        | .25        | .27  | .13        | .04  | .18  | .16  |
| DP                  | Have trouble telling daydreams from real events                                      | <b>.41</b> | .29        | .29        | .06  | .15        | .23  | .12  | .13  |
| UP                  | Felt someone was out to harm me (without evidence)                                   | <b>.40</b> | <b>.36</b> | .09        | .14  | <b>.35</b> | .19  | .20  | .13  |
| UP                  | Smells are connected in my mind with colors  | <b>.40</b> | .10        | .32        | .08  | .13        | .06  | -.07 | -.11 |
| UB                  | People sometimes literally read my mind  | <b>.40</b> | .13        | .18        | .20  | .15        | .27  | -.07 | -.15 |
| UP                  | Parts of my body seemed bigger or smaller than usual                                 | <b>.40</b> | .15        | .23        | .14  | .12        | .09  | .05  | -.15 |
| UP/UB               | Felt that lecture, speech, etc., was designed just for me                            | <b>.40</b> | .09        | .20        | .20  | .21        | .04  | -.01 | -.26 |
| CD                  | I don't get point of people's gestures   | <b>.40</b> | .33        | -.10       | .15  | .23        | .01  | -.03 | -.04 |
| DP                  | I imagine my limbs are so heavy I find I can't lift them                             | <b>.38</b> | .20        | .29        | .04  | .01        | -.06 | .06  | .05  |
| ECC                 | When I talk, I make up words   | <b>.38</b> | .22        | .32        | -.03 | .04        | .07  | -.14 | .05  |
| CD                  | It's hard to follow stories about characters' emotions                               | <b>.37</b> | .31        | -.14       | -.06 | .15        | .05  | -.03 | .00  |
| UB                  | People were acting like they were part of an experiment                              | <b>.37</b> | .14        | <b>.36</b> | .05  | .23        | .09  | .03  | .00  |
| UP                  | I can make myself sick by thinking of eating rotten food                             | <b>.37</b> | .14        | .05        | .05  | .08        | .04  | -.03 | -.08 |
| UB/UP               | I wonder if people are where I go <i>because</i> I go there                          | <b>.37</b> | .08        | .19        | .04  | .29        | .20  | -.01 | -.15 |
| UP                  | Store displays, ads, etc., have special meanings for me                              | <b>.37</b> | .12        | .19        | .22  | .24        | .11  | .01  | -.03 |
| ECC                 | People tell me I've chosen the wrong clothes for situations                          | <b>.36</b> | .35        | .14        | -.03 | .16        | -.04 | -.09 | .01  |
| UB                  | Thinking about bad things happening increases the likelihood they really will happen | <b>.36</b> | .25        | .15        | .18  | .17        | .20  | .03  | -.13 |
| UP                  | At times, normal lights are so intense they hurt my eyes                             | <b>.35</b> | .32        | .19        | .20  | .12        | -.01 | .00  | -.10 |
| UP                  | Music reminds me of changing, shifting scenes  | .34        | .10        | .32        | .16  | .15        | -.12 | -.10 | -.02 |
| UP/UB               | I've felt a stranger was in love with me   | .33        | .08        | .19        | .17  | .32        | .02  | .02  | -.07 |
| UP                  | I have an unusually strong sense of smell  | .32        | .15        | .11        | .21  | .17        | .02  | .00  | -.12 |
| UP                  | I have such sharp hearing normal sounds bother me                                    | .31        | .21        | .22        | .20  | .11        | -.03 | -.07 | -.04 |

(table continues)

Table A-5 (cont.)

| Domain <sup>a</sup> | Item Content <sup>b</sup>                                | Factor     |            |      |      |      |      |      |      |
|---------------------|--|------------|------------|------|------|------|------|------|------|
|                     |  | 1          | 2          | 3    | 4    | 5    | 6    | 7    | 8    |
| ECC                 | I don't go into as much detail as others                 | .30        | .23        | -.09 | -.01 | .08  | -.03 | -.05 | -.04 |
| UP                  | Television violence feels so real I feel what victims do | .29        | .16        | .25  | .15  | .14  | .02  | .07  | -.08 |
| UP                  | I feel warm when I think of warm things                  | .25        | .06        | .19  | .09  | .17  | .05  | -.13 | -.15 |
| ECC                 | I don't attend to the season when I choose my clothes    | .22        | .18        | .12  | .04  | .09  | .02  | -.05 | .14  |
| UP                  | I always know my body's boundaries                       | -.27       | -.09       | .07  | -.01 | -.06 | -.08 | -.05 | .06  |
| UP/UB               | I haven't felt that my thoughts belonged to someone else | -.31       | -.04       | -.01 | -.13 | -.11 | -.13 | -.03 | -.03 |
| CD                  | It's hard for me to keep my mind focused                 | .09        | .68        | .15  | .13  | .01  | .11  | .09  | -.03 |
| CD                  | My thoughts are often jumbled/confusing                  | .29        | .65        | .18  | .11  | .08  | .14  | -.02 | -.06 |
| CD                  | I have trouble thinking clearly when life is chaotic     | .05        | .62        | .18  | .09  | .06  | .06  | .13  | -.16 |
| CD                  | I find that I can't remember what I want to say          | .13        | <b>.61</b> | .25  | .09  | .08  | .02  | .10  | -.13 |
| ECC                 | I jump from one subject to another                       | .11        | <b>.60</b> | .25  | .13  | .06  | .06  | -.11 | -.06 |
| ECC                 | I have trouble making sense to others                    | .32        | <b>.60</b> | .15  | .03  | .11  | .01  | -.06 | .09  |
| ECC                 | Others misunderstand my ways                             | .23        | <b>.60</b> | .22  | .17  | .31  | -.02 | -.04 | .17  |
| CD                  | I'm easily confused                                      | .17        | <b>.59</b> | .08  | .07  | .02  | .19  | .05  | -.01 |
| CD                  | When life is chaotic, my thoughts are chaotic            | -.03       | <b>.59</b> | .24  | .08  | .10  | .06  | .14  | -.15 |
| CD                  | It's hard to understand others when I'm stressed         | .14        | <b>.58</b> | .16  | .09  | .06  | .06  | .08  | -.13 |
| CD                  | My mind wanders when I try to focus                      | .05        | <b>.58</b> | .18  | .06  | .02  | .13  | .14  | -.02 |
| ECC                 | I ramble or get off topic when I speak                   | .06        | <b>.58</b> | .29  | .10  | .07  | .13  | -.02 | -.01 |
| CD                  | I have trouble communicating when life is stressful      | .13        | <b>.58</b> | .11  | -.01 | .09  | -.02 | .08  | -.05 |
| CD                  | Others have trouble following my stories                 | .31        | <b>.57</b> | .07  | .06  | .12  | .09  | -.16 | -.02 |
| ECC/CD              | I go off topic when I talk                               | .04        | <b>.57</b> | .34  | .07  | .03  | .11  | -.02 | .02  |
| ECC                 | I try hard to be understood but I'm still confusing      | <b>.39</b> | <b>.56</b> | .10  | .08  | .23  | .03  | -.12 | .02  |

(table continues)

Table A-5 (cont.)

| Domain <sup>a</sup> | Item Content <sup>b</sup>                                 | Factor     |            |            |      |            |      |      |            |
|---------------------|---|------------|------------|------------|------|------------|------|------|------------|
|                     |   | 1          | 2          | 3          | 4    | 5          | 6    | 7    | 8          |
| ECC                 | People think I'm odd or weird                             | .13        | <b>.54</b> | .29        | .14  | .17        | .03  | -.09 | <b>.41</b> |
| DP                  | I don't always hear what others say                       | .21        | <b>.54</b> | .21        | .07  | .07        | .06  | -.02 | -.12       |
| ECC                 | I tend to fidget or squirm                                | .04        | <b>.53</b> | .29        | .03  | -.06       | .06  | .05  | -.03       |
| CD                  | My mind seems to wander                                   | -.10       | <b>.52</b> | <b>.40</b> | .07  | -.03       | .05  | .08  | -.05       |
| DP                  | I look for things I thoughtlessly put down                | .10        | <b>.51</b> | .31        | .12  | .05        | .00  | .11  | -.11       |
| CD                  | I forget things   | -.01       | <b>.51</b> | .27        | .11  | -.04       | .01  | .13  | -.02       |
| CD                  | It's hard to follow an idea from start to finish          | .14        | <b>.51</b> | .00        | .08  | .01        | .07  | .08  | .10        |
| CD                  | It's hard to change tasks when I'm told to                | .30        | <b>.51</b> | .12        | .12  | .11        | .02  | -.01 | .04        |
| ECC                 | I'm bad at responding to social cues                      | .34        | <b>.49</b> | -.01       | .07  | .18        | -.03 | .01  | .19        |
| CD/ECC              | I can't follow the flow of conversations                  | <b>.36</b> | <b>.49</b> | -.07       | .05  | .22        | -.03 | -.05 | .13        |
| UP                  | I notice sounds that others don't                         | .21        | <b>.49</b> | .27        | .22  | .14        | .02  | .07  | -.06       |
| ECC                 | People say I talk unclearly                               | <b>.36</b> | <b>.49</b> | .05        | .03  | .10        | .04  | -.17 | .00        |
| DP                  | I sense I'm unaware of happenings around me               | .30        | <b>.48</b> | <b>.35</b> | .04  | .10        | .07  | .07  | -.05       |
| CD                  | It's stressful to look people in the eye                  | .27        | <b>.48</b> | -.04       | .00  | .08        | -.07 | .06  | .18        |
| UP                  | I feel that people blame me for things (without evidence) | .13        | <b>.48</b> | .14        | .02  | .28        | .03  | .27  | .07        |
| ECC                 | I think that I am unusual or weird                        | .06        | <b>.48</b> | <b>.36</b> | .10  | .05        | -.02 | -.09 | <b>.41</b> |
| CD                  | Things I write when I'm busy don't make sense later       | .27        | <b>.48</b> | .16        | .03  | .08        | .07  | .05  | -.10       |
| ECC/CD              | Normal things I do seem unusual to others                 | .24        | <b>.48</b> | .31        | .15  | .14        | .00  | .01  | .31        |
| CD                  | I get distracted when I reading                           | .03        | <b>.47</b> | .12        | -.06 | .05        | .14  | .06  | -.19       |
| UP/UB               | Others see parts of my personality I try to hide          | .25        | <b>.46</b> | .16        | .12  | .26        | .10  | .03  | -.02       |
| DP                  | People say I did something I can't remember               | .16        | <b>.46</b> | .26        | .15  | .12        | .04  | .14  | -.14       |
| ECC                 | I have some odd or unusual habits                         | .11        | <b>.45</b> | <b>.44</b> | .09  | .11        | .09  | -.02 | .19        |
| UP/UB               | When I hear talking, I wonder if I'm being criticized     | .32        | <b>.45</b> | .03        | .06  | <b>.42</b> | .08  | .19  | .07        |
| ECC/CD              | I'm calmer when I do some repetitive motion               | .16        | <b>.45</b> | .18        | .08  | .05        | .05  | .07  | -.12       |
| UP/UB               | People put me down in subtle ways                         | .19        | <b>.44</b> | .17        | .08  | <b>.43</b> | .08  | .19  | .05        |
| ECC                 | I don't usually make eye contact when I talk to others    | .34        | <b>.44</b> | -.05       | -.06 | .07        | -.03 | .00  | .15        |
| UB                  | Others talk about me behind my back                       | .11        | <b>.44</b> | .04        | .13  | <b>.36</b> | .13  | .28  | .11        |
| ECC                 | Others are shocked by my speech; I don't mean to shock    | .24        | <b>.44</b> | .12        | .17  | .23        | .08  | .05  | .20        |

(table continues)

Table A-5 (cont.)

| Domain <sup>a</sup> | Item Content <sup>b</sup>                                  | Factor     |            |            |      |            |      |      |      |
|---------------------|--|------------|------------|------------|------|------------|------|------|------|
|                     |  | 1          | 2          | 3          | 4    | 5          | 6    | 7    | 8    |
| ECC                 | People say I'm in my own world                             | .29        | <b>.43</b> | .35        | .13  | .13        | .12  | -.09 | .19  |
| CD                  | I'm slow to tell when others are teasing                   | .23        | <b>.43</b> | .09        | .11  | .07        | -.02 | -.02 | .06  |
| CD                  | It's hard to tell when others are joking                   | .30        | <b>.43</b> | -.01       | .07  | .24        | .04  | .10  | .07  |
| UP/UB               | When people laugh, I wonder if they're laughing at me      | .31        | <b>.42</b> | .05        | .01  | <b>.38</b> | .05  | .20  | .10  |
| CD                  | It's hard to attend to a whole movie or TV show            | .17        | <b>.42</b> | .04        | .11  | .06        | .10  | .19  | .01  |
| ECC                 | I'm bad at non-verbal communication                        | <b>.35</b> | <b>.41</b> | -.12       | -.02 | .08        | -.07 | -.01 | .11  |
| DP                  | Can't remember if I did something or only meant to         | .27        | <b>.40</b> | .32        | .04  | .08        | .00  | .13  | -.12 |
| DP/UP               | It's hard to imagine detailed scenes                       | .21        | <b>.39</b> | -.25       | -.02 | .06        | .04  | .00  | -.09 |
| CD                  | Others' driving directions are confusing                   | .14        | <b>.39</b> | .11        | .04  | .05        | .08  | -.01 | -.01 |
| DP                  | I have blocks of time that I can't remember                | <b>.35</b> | <b>.38</b> | .17        | .18  | .12        | .02  | .24  | -.01 |
| DP                  | I've gone somewhere and then forgotten why                 | .06        | <b>.38</b> | .33        | .07  | -.07       | .06  | .14  | -.10 |
| ECC                 | I use gestures that others find odd                        | .34        | <b>.37</b> | .34        | -.01 | .22        | .07  | -.05 | .21  |
| ECC                 | My voice is kind of bland                                  | .13        | <b>.37</b> | .03        | .03  | -.03       | -.11 | .00  | .07  |
| ECC                 | My ideas take people by surprise                           | .21        | <b>.36</b> | .34        | .19  | .26        | -.06 | -.12 | .25  |
| CD                  | It's hard to tune out conversations                        | .06        | <b>.36</b> | .22        | -.02 | .10        | .04  | .02  | -.06 |
| ECC/CD              | It's easier to listen when I don't make eye contact        | .19        | <b>.36</b> | .01        | .03  | .03        | -.03 | .05  | .11  |
| ECC                 | Others have trouble "reading" my face                      | .27        | <b>.36</b> | .10        | .09  | .21        | .00  | -.01 | .06  |
| DP                  | I don't always remember the whole road trip                | .15        | <b>.35</b> | .27        | .07  | .01        | -.04 | .13  | -.08 |
| CD/ECC              | People expect me to understand without telling me directly | .21        | <b>.35</b> | .10        | .05  | .30        | .10  | .08  | .04  |
| ECC                 | I choose clothes for unusual reasons                       | .28        | .34        | .21        | .13  | .26        | -.01 | -.15 | .10  |
| ECC                 | I put things in the wrong place                            | .14        | .33        | .29        | -.04 | -.07       | .05  | .18  | -.03 |
| DP                  | I forget what happened in the past day or two              | .30        | .32        | .20        | .16  | .12        | -.03 | .17  | .01  |
| UP                  | When I'm emotional, my muscles suddenly get weak           | .24        | .29        | .12        | .08  | .17        | .10  | .13  | -.12 |
| CD                  | It's hard for me to "read" others' faces                   | .28        | .29        | -.12       | .03  | .09        | -.07 | -.07 | .03  |
| CD                  | I'm good at giving clear directions                        | -.11       | -.27       | .02        | .08  | .17        | -.14 | .07  | -.05 |
| CD                  | It's easy to understand others' jokes or stories           | -.23       | -.30       | .16        | -.01 | -.03       | -.06 | .00  | .05  |
| UP/CD               | It's easy to tune out background noise                     | .07        | -.33       | .04        | -.01 | .01        | -.04 | -.07 | -.01 |
| DP/UP               | My fantasies are interesting                               | .01        | .01        | <b>.61</b> | .03  | .04        | .04  | -.05 | .15  |

(table continues)

Table A-5 (cont.)

| Domain <sup>a</sup> | Item Content <sup>b</sup>  | Factor |            |            |      |      |      |      |      |
|---------------------|--|--------|------------|------------|------|------|------|------|------|
|                     |  | 1      | 2          | 3          | 4    | 5    | 6    | 7    | 8    |
| DP                  | My daydreams are as interesting as a good movie                  | .19    | .08        | <b>.60</b> | .07  | .07  | .07  | .06  | .12  |
| DP/UP               | I fantasize to deal with boredom                                 | .13    | .10        | <b>.60</b> | -.04 | .04  | .12  | -.05 | .16  |
| DP/UP               | My imaginings/daydreams feel very real                           | .26    | .20        | <b>.55</b> | .15  | .13  | .09  | .23  | .07  |
| DP/UP               | I have a strong imagination                                      | .04    | .01        | <b>.54</b> | .13  | .12  | .04  | -.04 | .21  |
| DP/UP               | I spend a lot of time daydreaming                                | .10    | .27        | <b>.53</b> | -.01 | .05  | .18  | .08  | .16  |
| DP/UP               | I have seen dreamlike images as I started to wake up             | .26    | .18        | <b>.52</b> | .14  | .04  | .04  | .09  | -.02 |
| UP                  | I had dreamlike images as I started to drift to sleep            | .13    | .09        | <b>.50</b> | .04  | .06  | .05  | .20  | .05  |
| CD                  | I have random thoughts   | -.08   | <b>.40</b> | <b>.49</b> | .08  | -.01 | .07  | .01  | -.02 |
| UP                  | I can sometimes nearly hear my intense thoughts                  | .34    | .24        | <b>.48</b> | .20  | .15  | -.06 | .13  | .08  |
| DP/UP               | I can imagine the past almost as if I'm reliving it              | .14    | .15        | <b>.48</b> | .16  | .17  | .07  | .10  | -.09 |
| UP                  | Images just pop into my mind                                     | .18    | .29        | <b>.48</b> | .17  | .17  | -.01 | -.02 | .09  |
| DP                  | Absorption in music can stop me from noticing what's going on    | .11    | .23        | <b>.47</b> | .04  | -.01 | .03  | .09  | .01  |
| ECC                 | I sometimes use words in unusual ways                            | .21    | .33        | <b>.47</b> | .06  | .20  | -.07 | -.18 | .11  |
| UP                  | My sensory impressions can linger                                | .15    | .15        | <b>.47</b> | .16  | .13  | .07  | .08  | -.12 |
| DP/UP               | Things have felt more real than usual                            | .27    | .28        | <b>.46</b> | .14  | .13  | -.02 | .04  | -.17 |
| DP                  | Absorption in movie/TV, etc can make me forget self/surroundings | .12    | .20        | <b>.46</b> | .06  | -.01 | .07  | .02  | -.03 |
| UP                  | After I stare at something, the afterimage seems real            | .34    | .13        | <b>.45</b> | .22  | .08  | .09  | .01  | -.18 |
| CD                  | I see connections between apparently unrelated ideas             | .21    | .24        | <b>.44</b> | .22  | .23  | -.10 | -.14 | -.03 |
| UP                  | My strong dreams can affect my feelings the next day             | .09    | .25        | <b>.44</b> | .25  | .12  | .02  | .27  | -.01 |
| DP/UP               | As a child, I easily played the role of an imaginary self        | .15    | .03        | <b>.44</b> | .06  | .00  | .09  | .03  | .06  |
| DP                  | Absorption in a movie can make me forget my surroundings         | .13    | .19        | <b>.43</b> | .03  | .02  | .07  | .07  | -.07 |
| UP                  | Colors, shapes, or sounds have special meanings to me            | .30    | .14        | <b>.43</b> | .27  | .22  | .03  | -.03 | -.04 |
| DP/UP               | I like to imagine doing exciting things                          | .02    | .00        | <b>.43</b> | .03  | .20  | .03  | .04  | -.02 |
| DP                  | My absorption in things can make me lose track of time           | -.14   | .30        | <b>.43</b> | .08  | -.01 | -.12 | .08  | -.15 |
| UP                  | I tend to look for hidden meanings                               | .26    | .14        | <b>.42</b> | .24  | .24  | .06  | -.10 | -.15 |

(table continues)

Table A-5 (cont.)

| Domain <sup>a</sup> | Item Content <sup>b</sup>                            | Factor     |      |            |            |      |      |      |      |
|---------------------|--|------------|------|------------|------------|------|------|------|------|
|                     |  | 1          | 2    | 3          | 4          | 5    | 6    | 7    | 8    |
| CD/UP               | I find meaning in the apparently meaningless         | .12        | .18  | <b>.42</b> | .31        | .19  | .01  | -.13 | -.12 |
| DP                  | I do things without paying attention                 | -.03       | .34  | <b>.41</b> | .09        | -.06 | -.02 | .09  | -.04 |
| DP/UP               | I can visualize a very interesting scene             | .00        | -.18 | <b>.41</b> | .18        | .00  | -.02 | .01  | .02  |
| UP                  | Powerful music moves me in a nearly physical way     | .28        | .20  | <b>.40</b> | .16        | .13  | -.02 | -.11 | -.15 |
| CD                  | I see details that others miss                       | .11        | .08  | <b>.40</b> | .19        | .22  | -.10 | -.04 | -.13 |
| DP                  | I can't always distinguish dreams and reality        | .25        | .28  | <b>.40</b> | .09        | .05  | .11  | .21  | .01  |
| DP                  | My involvement in a scene changed my awareness       | .27        | .18  | <b>.39</b> | .27        | .09  | -.14 | .00  | -.12 |
| UP                  | I have dreamed of flying                             | .16        | -.02 | <b>.38</b> | .09        | -.05 | -.01 | .10  | .02  |
| DP                  | I can feel far from my behavior/thoughts             | <b>.35</b> | .34  | <b>.37</b> | .18        | .07  | -.06 | .22  | .02  |
| UB/UP               | A normal object/event seemed like a sign for me      | .27        | .21  | <b>.36</b> | .32        | .24  | .13  | .04  | -.15 |
| UP                  | Strangers' expressions/gestures have influenced me   | .26        | .21  | <b>.35</b> | .16        | .21  | .02  | -.03 | -.21 |
| UP                  | My childhood toys seemed real                        | .14        | .06  | <b>.35</b> | -.06       | -.05 | .19  | .11  | .04  |
| UP                  | I've dreamed of awakening                            | .10        | .11  | .34        | .02        | -.06 | .04  | .27  | -.03 |
| UP/UB               | I've read books very similar to my life              | .12        | .05  | .33        | .11        | .16  | .22  | .12  | -.17 |
| UP                  | I can't always tune out noises/sights                | .08        | .30  | .31        | .10        | .08  | .04  | .14  | -.05 |
| UP/UB               | I've seen movies about my life story\                | .28        | .12  | .31        | .10        | .23  | .27  | .12  | -.14 |
| DP                  | When I do something boring/routine, I lack awareness | .09        | .09  | .30        | -.05       | -.02 | .04  | -.13 | -.16 |
| ECC                 | I march to my own drummer                            | .03        | .11  | .30        | .23        | .05  | .01  | -.11 | .07  |
| CD                  | It's easier to see what people feel in children's TV | .19        | .08  | .30        | .03        | .11  | .06  | -.12 | .04  |
| UP                  | A (sleeping) dream came true                         | .14        | .07  | .30        | .20        | .03  | .03  | .23  | -.09 |
| UB                  | My dreams come from my own mind                      | -.20       | -.05 | .25        | -.08       | -.07 | -.12 | .05  | -.01 |
| UP/CD               | I focus on details that others don't notice          | .05        | .18  | .23        | .10        | .16  | -.08 | .04  | -.01 |
| DP/UP               | I had an imaginary friend/animal as a child          | .14        | .09  | .22        | .09        | -.02 | .17  | .20  | .12  |
| UB                  | As a child, I believed in imaginary creatures        | .09        | .12  | .20        | .10        | -.02 | .15  | .01  | -.01 |
| DP/UP               | My feelings/reactions are like those I had as a kid  | .02        | .18  | .19        | .10        | .11  | .02  | -.09 | -.01 |
| UP/UB               | I have experienced supernatural beings               | .27        | .11  | .12        | <b>.61</b> | .10  | .12  | .20  | .15  |
| UP                  | I understand mystical/deep spiritual experiences     | .19        | .01  | .27        | <b>.61</b> | .11  | -.09 | .05  | -.03 |
| UP/UB               | I have felt an invisible person/spirit               | .32        | .16  | .21        | <b>.60</b> | .18  | .01  | .17  | .06  |

(table continues)

Table A-5 (cont.)

| Domain <sup>a</sup> | Item Content <sup>b</sup>                                 | Factor     |            |     |            |            |            |      |      |
|---------------------|---|------------|------------|-----|------------|------------|------------|------|------|
|                     |   | 1          | 2          | 3   | 4          | 5          | 6          | 7    | 8    |
| UB                  | I believe in the supernatural                             | .05        | .12        | .20 | <b>.60</b> | .00        | .15        | .03  | .02  |
| UP                  | I have had intense spiritual experiences                  | .25        | .05        | .17 | <b>.54</b> | .13        | -.14       | .14  | -.08 |
| UP/UB               | I've had experience with aliens/ESP/fortune telling, etc  | .30        | .09        | .14 | <b>.53</b> | .00        | .11        | .07  | -.01 |
| UB                  | The living can communicate with the dead                  | .28        | .18        | .11 | <b>.53</b> | .01        | .28        | .02  | .03  |
| UB                  | I believe in mind reading                                 | .29        | .15        | .16 | <b>.50</b> | .11        | .25        | .06  | .04  |
| UB                  | New age healing works                                     | .17        | .12        | .05 | <b>.47</b> | .09        | .13        | -.03 | -.01 |
| UB                  | Extraterrestrials influence happenings on earth           | <b>.38</b> | .09        | .09 | <b>.43</b> | .06        | .26        | -.11 | .05  |
| UB                  | The government is hiding something about UFOs, etc        | .26        | .07        | .08 | <b>.43</b> | .04        | .21        | -.09 | .02  |
| UP/UB               | Reincarnation would explain some of my experiences        | <b>.38</b> | .19        | .14 | <b>.40</b> | .02        | .31        | .05  | .17  |
| UP                  | I sense a presence before I can actually see or hear it   | .34        | .03        | .27 | <b>.38</b> | .21        | .10        | .03  | -.03 |
| UP                  | People can exchange energy by looking at/ touching others | .18        | .12        | .21 | <b>.36</b> | .16        | .12        | .03  | -.10 |
| UB                  | Thinking good thoughts brings good luck for me            | .04        | -.01       | .17 | .30        | .17        | .19        | -.01 | -.23 |
| UP                  | People seem to look at me a lot                           | .24        | .21        | .17 | .09        | <b>.53</b> | .08        | -.03 | -.07 |
| UP                  | People seem unusually focused on me                       | .24        | .21        | .17 | .09        | <b>.53</b> | .08        | -.03 | -.07 |
| UP/UB               | It seems that others watch me carefully                   | <b>.36</b> | <b>.36</b> | .13 | .17        | <b>.47</b> | .08        | .08  | .04  |
| UP                  | I don't know why, but people pay lots of attention to me  | .27        | .16        | .19 | .24        | <b>.47</b> | .10        | .00  | .02  |
| UP/UB               | I have sensed that others talked about me                 | .14        | .36        | .21 | .17        | <b>.45</b> | .11        | .30  | .00  |
| UB/ECC              | People talk about my habits or gestures                   | .24        | .40        | .22 | .09        | <b>.43</b> | .11        | -.04 | .12  |
| UB/ECC/             |   |            |            |     |            |            |            |      |      |
| UP                  | Strangers notice how I dress                              | .23        | .07        | .10 | .10        | <b>.38</b> | .07        | -.05 | -.17 |
| CD                  | People say they're joking when they're just mean/rude     | .17        | .23        | .02 | .06        | <b>.38</b> | .02        | .16  | .07  |
| UP/UB               | Others copy things about me (e.g., clothing or speech)    | .20        | -.03       | .23 | .08        | .33        | .13        | -.07 | -.27 |
| UP/UB               | Strangers notice me when I'm going about normal routines  | .19        | .09        | .15 | .11        | .33        | .07        | .09  | .06  |
| UP                  | Complete strangers wave at me                             | .28        | .13        | .13 | .19        | .33        | .08        | .07  | .00  |
| UP/UB               | People shift when I enter a room                          | .29        | .30        | .07 | .09        | .33        | .05        | -.04 | .12  |
| UP                  | I've never sensed that one of my limbs had grown          | -.05       | .03        | .00 | .00        | -.14       | -.01       | .03  | .06  |
| UB                  | It's bad luck to break a mirror                           | .24        | .16        | .10 | .09        | .13        | <b>.58</b> | .03  | -.09 |
| UB                  | It's bad luck to wear black to a wedding                  | .20        | .04        | .06 | .00        | .09        | <b>.49</b> | -.07 | -.05 |

(table continues)



Table A-5 (cont.)

| Domain <sup>a</sup>                | Item Content <sup>b</sup>                         | Factor |            |      |            |      |             |            |      |
|------------------------------------|---|--------|------------|------|------------|------|-------------|------------|------|
|                                    |   | 1      | 2          | 3    | 4          | 5    | 6           | 7          | 8    |
| UB                                 | I believe in fortune telling/horoscopes           | .22    | .17        | .08  | <b>.39</b> | .02  | <b>.49</b>  | .03        | -.10 |
| UB                                 | Bad luck comes in threes                          | .24    | .19        | .02  | .23        | .16  | .34         | .09        | -.01 |
| UB                                 | I've been afraid to step on sidewalk cracks       | .26    | .20        | .17  | .07        | .03  | .32         | .08        | .10  |
| UB                                 | Good thoughts about people bring them good luck   | .23    | .08        | .13  | .25        | .16  | .28         | -.12       | -.21 |
| UP/UB                              | Traffic lights turn red on me when I'm in a hurry | .12    | .09        | .04  | .08        | .17  | .21         | .15        | -.12 |
| UB                                 | I don't believe in lucky numbers (R)              | -.07   | -.03       | -.07 | -.11       | .01  | <b>-.44</b> | -.05       | .01  |
| UB                                 | Lucky charms don't work (R)                       | -.11   | -.02       | -.01 | -.12       | -.06 | <b>-.55</b> | .09        | -.01 |
| UB                                 | Walking under a ladder isn't unlucky (R)          | -.15   | -.08       | -.02 | -.09       | -.12 | <b>-.55</b> | .00        | .04  |
| DP/UP                              | I have dreams in which I die                      | .18    | .25        | .19  | .01        | .06  | .02         | <b>.44</b> | .07  |
| DP/UP                              | I have had a dream in which I died                | .23    | .21        | .24  | .05        | -.04 | -.02        | <b>.39</b> | .00  |
| DP/UP                              | I have bad dreams                                 | .13    | <b>.35</b> | .17  | .06        | .06  | .10         | <b>.39</b> | .12  |
| DP/UP                              | I have recurring dreams                           | -.04   | .19        | .30  | .14        | .01  | .02         | <b>.35</b> | -.01 |
| DP/UP                              | I have dreamed of falling                         | .00    | .17        | .24  | .13        | -.01 | -.01        | .28        | -.09 |
| ECC                                | I'd prefer not to be considered odd/weird         | .01    | .06        | -.11 | .00        | .13  | -.10        | .27        | -.07 |
| UB                                 | Bad thoughts about others do them no direct harm  | -.03   | .00        | .01  | -.05       | -.02 | -.11        | .09        | .13  |
| ECC                                | It's important for me to look normal/mainstream   | .04    | .11        | -.05 | -.09       | .13  | .13         | .06        | -.24 |
| % of common variance accounted for |   | 15.7   | 14.6       | 10.5 | 5.3        | 4.6  | 3.0         | 2.3        | 1.9  |

Notes.  $N = 657$  (193 University of Notre Dame students, 301 University of Iowa students, 163 Outpatients). <sup>a</sup>Domains were assigned a priori based on the facets of the original *DSM-5* schizotypy trait domain proposal. *UB* = Unusual Beliefs; *UP* = Unusual Perceptions; *DP* = Dissociation Proneness; *CD* = Cognitive Dysregulation; *ECC* = Eccentricity. Some domain assignments were revised for consistency (i.e., all sleep experience/dream items were given a primary DP domain loading). <sup>b</sup>Item content is rephrased/shortened to better fit the tabular format. Loadings  $\geq |.35|$  are **bold**. <sup>c</sup>(R) denotes an item that is reverse-scored in its parcel.

Table A-6 Second-Round Maximum-Likelihood Factor Analysis of Items that Loaded onto the First Overall Schizotypy Factor: Fit Statistics and Information Criteria

| Solution | $\chi^2$ <sup>a</sup> | BIC <sup>b</sup> | AIC <sup>c</sup> | TLC <sup>d</sup> |
|----------|-----------------------|------------------|------------------|------------------|
| 1-factor | 6774.83               | -6297.85         | 2744.83          | .76              |
| 2-factor | 5988.10               | -6669.38         | 2086.10          | .79              |
| 3-factor | 5358.57               | -6890.18         | 1582.57          | .81              |
| 4-factor | 4828.75               | -7017.77         | 1176.75          | .83              |
| 5-factor | 4329.16               | -7121.60         | 799.16           | .85              |
| 6-factor | 3961.84               | -7099.66         | 551.84           | .87              |

*Notes.*  $N = 657$  (193 University of Notre Dame students, 301 University of Iowa students, 163 Outpatients). <sup>a</sup>Chi-Square without Bartlett's Correction. <sup>b</sup>Bayesian Information Criterion. <sup>c</sup>Akaike's Information Criterion. <sup>d</sup>Tucker and Lewis's Reliability Coefficient.

Table A-7 Second-Round Varimax Rotated Maximum-Likelihood Factor Analysis of Items that Loaded Factor-1 of an 8-Factor Solution of Time 1 Schizotypy Content

| Domain <sup>a</sup> | Item Content <sup>b</sup>                                     | Factor     |            |     |            |     | Parcel <sup>c</sup> |
|---------------------|---|------------|------------|-----|------------|-----|---------------------|
|                     |   | 1          | 2          | 3   | 4          | 5   |                     |
| UP                  | Textures remind me of sounds or colors                        | <b>.54</b> | .20        | .24 | .17        | .02 | PercAb              |
| UP                  | Typical objects have seemed strange                           | <b>.53</b> | .05        | .18 | <b>.38</b> | .15 | PercAb              |
| UP                  | Noticed new sounds in familiar music                          | <b>.50</b> | .19        | .22 | .18        | .23 | PercAb              |
| UP                  | At times my reflection looks different than usual             | <b>.50</b> | .26        | .15 | .11        | .19 | PercAb              |
| UP                  | Smells are connected in my mind with colors                   | <b>.49</b> | .14        | .24 | .12        | .07 | PercAb              |
| UP/UB               | Others around me say things with hidden meanings              | <b>.48</b> | .13        | .25 | .15        | .32 | PercAb              |
| DP                  | Took on different identity/perspective                        | <b>.47</b> | .17        | .16 | .29        | .25 | PercAb              |
| UP                  | Normal things seem to be wrong size                           | <b>.47</b> | .22        | .23 | .34        | .27 | PercAb              |
| ECC                 | People tell me that I make up words                           | <b>.46</b> | .15        | .11 | .20        | .14 | EccBeh              |
| UP                  | Felt body was very strange                                    | <b>.45</b> | <b>.36</b> | .02 | .32        | .22 | PercAb              |
| ECC                 | When I talk, I make up words                                  | <b>.45</b> | .21        | .14 | .09        | .11 | EccBeh              |
| DP                  | Life feels like a dream                                       | <b>.44</b> | .30        | .25 | .13        | .26 | PercAb              |
| DP                  | Objects/People felt unreal                                    | <b>.43</b> | .32        | .23 | <b>.41</b> | .22 | PercAb              |
| DP                  | Behaved like someone else, felt like me                       | <b>.42</b> | .17        | .20 | <b>.35</b> | .09 | PercAb              |
| UB                  | People acted like they were part of an experiment or joke     | <b>.41</b> | .16        | .24 | .06        | .30 | PercAb              |
| UP                  | Parts of my body seemed bigger or smaller than usual          | <b>.41</b> | .21        | .08 | .22        | .20 | PercAb              |
| UP                  | At times, normal lights are so intense that they hurt my eyes | <b>.40</b> | .22        | .19 | .08        | .19 | PercAb              |
| UP                  | Things in media have special meaning for me                   | <b>.39</b> | .07        | .37 | .26        | .25 | PercAb              |
| ECC                 | People tell me I've chosen the wrong                          | <b>.35</b> | .09        | .07 | .22        | .27 | EccBeh              |
| DP                  | clothes for the situation                                     | .33        | .33        | .09 | .13        | .13 | N/A                 |
| UP                  | I can make myself sick by thinking of eating rotten food      | .26        | .12        | .20 | .15        | .14 | N/A                 |
| DP                  | I have felt as if I left my body                              | .20        | <b>.67</b> | .16 | .08        | .19 | BdlyDeta            |

(table continues)

Table A-7 (cont.)

| Domain <sup>a</sup> | Item Content <sup>b</sup>  | Factor     |            |            |            |            | Parcel <sup>c</sup> |
|---------------------|--|------------|------------|------------|------------|------------|---------------------|
|                     |  | 1          | 2          | 3          | 4          | 5          |                     |
| UP                  | I have felt that my body (or part of it) wasn't my own                               | .20        | <b>.61</b> | .05        | .12        | .12        | BdlyDeta            |
| UP                  | Some of my body parts felt dead or fake  | .21        | <b>.58</b> | .03        | .32        | .21        | BdlyDeta            |
| UP                  | Body parts detached from me  | .15        | <b>.52</b> | .13        | <b>.50</b> | .09        | BdlyDeta            |
| UP                  | Felt body blend in with nearby things  | .27        | <b>.51</b> | <b>.37</b> | .08        | .09        | BdlyDeta            |
| UP                  | Sensed that I share a body   | .05        | <b>.50</b> | .33        | .20        | .12        | BdlyDeta            |
| UP                  | Felt that I blended in with nearby things  | .17        | <b>.50</b> | <b>.46</b> | .09        | .13        | BdlyDeta            |
| UP/UB               | Felt someone was in bed with me when there wasn't                                    | .14        | <b>.47</b> | .25        | .22        | .21        | BdlyDeta            |
| UP                  | Have seen illusions of people/heard illusions of voices                              | .33        | <b>.42</b> | .16        | .06        | <b>.38</b> | Illusion            |
| UP                  | I have seen things that weren't visible to others                                    | .31        | <b>.40</b> | .25        | .15        | .25        | Illusion            |
| UP/DP               | I have felt that I might not be a person   | .28        | <b>.38</b> | .22        | .30        | .16        | BdlyDeta            |
| UP                  | Heard voice that said thoughts out loud  | .27        | <b>.38</b> | .28        | .22        | .31        | Illusion            |
| DP                  | Pinched self to remind me I was there  | <b>.36</b> | <b>.37</b> | .28        | .27        | .25        | BdlyDeta            |
| UP                  | Regular colors have seemed too intense   | .32        | <b>.35</b> | .34        | .21        | .12        | N/A                 |
| UP                  | Felt the world around me was tilted  | .30        | .34        | .15        | .22        | .26        | N/A                 |
| UB                  | If I tried, I could learn to read minds  | .23        | .19        | <b>.54</b> | .28        | .15        | ThgtTrans           |
| UP/UB               | Communicated via mindreading   | .07        | <b>.35</b> | <b>.50</b> | .21        | .27        | ThgtTrans           |
| UB                  | People sometimes literally read my mind  | .26        | .13        | <b>.48</b> | .17        | .15        | ThgtTrans           |
| UB                  | People who are not present can feel my emotions                                      | .17        | .28        | <b>.48</b> | .14        | .26        | ThgtTrans           |
| UB                  | I can tell when someone dreams of me   | .29        | .04        | <b>.45</b> | <b>.42</b> | .07        | ThgtTrans           |
| UP/UB               | Radio or TV person knew I listened   | .29        | .15        | <b>.44</b> | .32        | .17        | ThgtTrans           |
| UB                  | Bad thoughts can cause bad events  | .19        | .23        | <b>.40</b> | .23        | <b>.38</b> | ThgtTrans           |
| UB                  | Thought someone was only a look alike  | .28        | <b>.35</b> | <b>.38</b> | .06        | .18        | N/A                 |
| UP/UB               | Felt that lecture, speech, etc., was designed just for me                            | <b>.35</b> | .11        | <b>.38</b> | .15        | .15        | RefMng              |
| UB/UP               | I wonder if people are where I go <i>because</i> I go there                          | .29        | .07        | <b>.38</b> | .13        | .20        | RefMng              |
| UP                  | Store displays, ads, etc., have special meanings for me                              | .24        | .28        | <b>.36</b> | .04        | .21        | RefMng              |
| UB                  | Thinking about bad things happening increases the likelihood they really will happen | .29        | .14        | .30        | .16        | .29        | N/A                 |
| UP                  | Felt body was weird shape  | .29        | .21        | .20        | <b>.60</b> | .17        | BdyBndrs            |
| UP/DP               | Felt I was another person  | .30        | .26        | .24        | <b>.58</b> | .11        | BdyBndrs            |

(table continues)

Table A-7 (cont.)

| Domain <sup>a</sup>                | Item Content <sup>b</sup>                              | Factor |            |            |            |            | Parcel <sup>c</sup> |
|------------------------------------|--|--------|------------|------------|------------|------------|---------------------|
|                                    |  | 1      | 2          | 3          | 4          | 5          |                     |
| UP                                 | My body looked like another person's                   | .29    | .15        | .17        | <b>.57</b> | .22        | BdyBndrs            |
| UP                                 | Sensed I was more than one person                      | .12    | <b>.37</b> | <b>.36</b> | <b>.48</b> | .16        | BdyBndrs            |
| UP                                 | Felt body was rotting inside                           | .17    | .34        | .08        | <b>.40</b> | .26        | BdyBndrs            |
| UP                                 | It's strange that many use my highway exit             | .24    | .18        | .31        | <b>.39</b> | .22        | N/A                 |
| UP                                 | Felt strangers probe my brain                          | .18    | .32        | .26        | <b>.37</b> | <b>.36</b> | N/A                 |
| UP/UB                              | I feel that other people are out to get me             | .19    | .23        | .19        | .16        | <b>.73</b> | MstrstRf            |
| UP                                 | Felt someone was out to harm me (without evidence)     | .21    | .25        | .17        | .14        | <b>.70</b> | MstrstRf            |
| UP/UB                              | Strangers make mocking faces at me                     | .18    | .20        | .22        | .19        | <b>.44</b> | MstrstRf            |
| UP                                 | Familiar people can look like strangers                | .34    | .33        | .14        | .20        | <b>.39</b> | MstrstRf            |
| UP/DP                              | My things have moved, though nobody else was around    | .31    | .23        | .32        | .14        | <b>.39</b> | N/A                 |
| DP                                 | Have trouble telling daydreams from real events        | .31    | .24        | .30        | .12        | <b>.37</b> | N/A                 |
| UP/UB                              | When I see broken things, I wonder if others blame me  | .29    | .05        | .26        | .28        | <b>.35</b> | MstrstRf            |
| UP/UB                              | Animals focus on me more than on others                | .27    | .15        | .19        | .32        | .32        | N/A                 |
| CD                                 | I don't get point of people's gestures                 | .20    | .23        | .23        | .11        | .29        | N/A                 |
| CD                                 | It's hard to follow stories about characters' emotions | .22    | .06        | .13        | .20        | .26        | N/A                 |
| % of common variance accounted for |  | 21.9   | 18.7       | 15.7       | 14.6       | 14.3       |                     |

Notes.  $N = 657$  (193 University of Notre Dame students, 301 University of Iowa students, 163 Outpatients). <sup>a</sup>Domains were assigned a priori based on the facets of the original *DSM-5* schizotypy trait domain proposal. *UB* = Unusual Beliefs; *UP* = Unusual Perceptions; *DP* = Dissociation Proneness; *CD* = Cognitive Dysregulation; *ECC* = Eccentricity. Some domain assignments were revised for consistency (i.e., all sleep experience/dream items were given a primary DP domain loading). <sup>b</sup>Item content is rephrased/shortened to better fit the tabular format. Loadings  $\geq .35$  are **bold**. <sup>c</sup>Parcels were assigned via rational selection of loaders on each factor; each factor may have more than one rational parcel, but all items in each parcel have primary loadings on the same factor. *N/A* = not assigned to a parcel; *PercAb* = Perceptual Aberration content; *EccBeh* = Eccentric Behavior content; *BdlyDeta* = Bodily Detachment content; *Illusion* = content related to hallucinations/sensory illusions; *ThgtTrans* = content related to Thought Transmission; *RefMng* = content related to referential thinking related to assigning idiosyncratic meaning; *BdyBndrs* = content related to bodily shape/bodily boundaries; *MstrstRf* = content related to referential thinking that assigns malign intent to others.

Table A-8 Second-Round Maximum-Likelihood Factor Analysis of Items that Loaded onto the Second Overall Schizotypy Factor: Fit Statistics and Information Criteria

| Solution | $\chi^2$ <sup>a</sup> | BIC <sup>b</sup> | AIC <sup>c</sup> | TLC <sup>d</sup> |
|----------|-----------------------|------------------|------------------|------------------|
| 1-factor | 6788.25               | -5473.47         | 3008.25          | .74              |
| 2-factor | 5498.84               | -6360.65         | 1842.84          | .80              |
| 3-factor | 4674.64               | -6789.09         | 1140.64          | .84              |
| 4-factor | 4056.72               | -7017.76         | 642.72           | .86              |
| 5-factor | 3514.18               | -7177.52         | 218.18           | .89              |
| 6-factor | 3128.61               | -7186.81         | -51.39           | .91              |
| 7-factor | 2787.15               | -7158.47         | -278.85          | .92              |

Notes.  $N = 657$  (193 University of Notre Dame students, 301 University of Iowa students, 163 Outpatients). <sup>a</sup>Chi-Square without Bartlett's Correction. <sup>b</sup>Bayesian Information Criterion. <sup>c</sup>Akaike's Information Criterion. <sup>d</sup>Tucker and Lewis's Reliability Coefficient.

Table A-9 Varimax-Rotated Maximum-Likelihood Factor Loadings for a Second-Round Maximum-Likelihood Factor Analysis of the Items that Load on Factor 2 of an 8-Factor Solution of Time 1 Schizotypy Content

| Domain <sup>a</sup> | Item Content <sup>b</sup>                                   | Factor     |            |     |      |     | Parcel <sup>c</sup> |
|---------------------|---|------------|------------|-----|------|-----|---------------------|
|                     |   | 1          | 2          | 3   | 4    | 5   |                     |
| CD                  | My mind seems to wander                                     | <b>.65</b> | .01        | .21 | .12  | .05 | ConfDist            |
| CD                  | I have trouble thinking clearly when life is chaotic        | <b>.64</b> | .21        | .10 | .17  | .12 | ConfDist            |
| CD                  | When life is chaotic, my thoughts are chaotic               | <b>.63</b> | .18        | .13 | .08  | .15 | ConfDist            |
| CD                  | It's hard for me to keep my mind focused                    | <b>.63</b> | .23        | .19 | .26  | .07 | ConfDist            |
| CD                  | My mind wanders when I try to focus                         | <b>.62</b> | .12        | .13 | .23  | .10 | ConfDist            |
| CD                  | I find that I can't remember what I want to say             | <b>.57</b> | .31        | .17 | .09  | .16 | ConfDist            |
| ECC/CD              | I go off topic when I talk                                  | <b>.56</b> | .21        | .34 | .08  | .04 | ConfDist            |
| DP                  | I look for things I thoughtlessly put down                  | <b>.56</b> | .21        | .18 | .06  | .12 | ConfDist            |
| ECC                 | I jump from one subject to another                          | <b>.55</b> | <b>.35</b> | .26 | .08  | .00 | ConfDist            |
| CD                  | It's hard to understand others when I'm stressed            | <b>.54</b> | .31        | .10 | .17  | .07 | ConfDist            |
| ECC                 | I tend to fidget or squirm                                  | <b>.54</b> | .12        | .20 | .12  | .11 | N/A                 |
| CD                  | My thoughts are often jumbled/confusing                     | <b>.53</b> | <b>.47</b> | .23 | .16  | .09 | ConfDist            |
| CD                  | I forget things   | <b>.52</b> | .12        | .21 | .08  | .10 | ConfDist            |
| ECC                 | I tend to ramble or get off topic when I speak              | <b>.52</b> | .28        | .31 | .09  | .07 | ConfDist            |
| CD                  | I get distracted when I'm reading                           | <b>.50</b> | .14        | .01 | .17  | .03 | ConfDist            |
| DP                  | I have walked somewhere and then forgotten why              | <b>.49</b> | .14        | .13 | -.08 | .11 | ConfDist            |
| DP                  | I sometimes don't hear what someone says to me              | <b>.47</b> | <b>.37</b> | .15 | .11  | .11 | ConfDist            |
| UP                  | I am distracted by little sounds that others don't notice   | <b>.46</b> | .29        | .26 | .09  | .16 | ConfDist            |
| DP                  | People say I did something I can't remember                 | <b>.45</b> | .33        | .16 | -.07 | .19 | ConfDist            |
| CD                  | I'm easily confused   | <b>.44</b> | .34        | .17 | .22  | .09 | ConfDist            |
| CD                  | I'm calmer when I do some repetitive motion                 | <b>.44</b> | .22        | .10 | .14  | .13 | N/A                 |
| CD                  | I have trouble communicating when life is stressful         | <b>.43</b> | .28        | .12 | .30  | .11 | ConfDist            |
| DP                  | I can't always remember if I did something or only meant to | <b>.42</b> | .27        | .17 | .02  | .22 | ConfDist            |

(table continues)

Table A-9 (cont.)

| Domain <sup>a</sup> | Item Content <sup>b</sup>                                   | Factor     |            |            |            |     | Parcel <sup>c</sup> |
|---------------------|---|------------|------------|------------|------------|-----|---------------------|
|                     |   | 1          | 2          | 3          | 4          | 5   |                     |
| DP                  | I sense I'm unaware of happenings around me                 | <b>.42</b> | <b>.35</b> | .25        | .13        | .21 | ConfDist            |
| CD                  | It's hard to tune out conversations                         | <b>.40</b> | .06        | .13        | .13        | .10 | ConfDist            |
| CD                  | It's hard to attend to a whole movie or TV show             | <b>.39</b> | .20        | .12        | .12        | .14 | ConfDist            |
| DP                  | I don't always remember my whole driving trip               | <b>.38</b> | .18        | .16        | .02        | .09 | ConfDist            |
| CD                  | It's hard to follow an idea from start to finish            | <b>.35</b> | .25        | .15        | .30        | .06 | ConfDist            |
| ECC                 | I try hard to be understood but I'm still confusing         | .26        | <b>.66</b> | .24        | .16        | .14 | SocConf             |
| CD                  | Others have trouble following my stories                    | .28        | <b>.62</b> | .18        | .18        | .04 | SocConf             |
| ECC                 | People say I talk unclearly                                 | .22        | <b>.56</b> | .14        | .20        | .08 | SocConf             |
| CD/ECC              | I have trouble choosing language that makes sense to others | .32        | <b>.52</b> | .26        | .30        | .12 | SocConf             |
| CD/ECC              | I can't follow the flow of conversations                    | .12        | <b>.50</b> | .17        | <b>.39</b> | .17 | SocConf             |
| ECC                 | Others misunderstand my ways                                | .32        | <b>.47</b> | <b>.44</b> | .19        | .21 | SocConf             |
| UP/UB               | Others see parts of my personality I try to hide            | .31        | <b>.47</b> | .21        | .08        | .21 | N/A                 |
| CD                  | It's hard to tell when others are joking                    | .17        | <b>.45</b> | .13        | .18        | .29 | SocConf             |
| ECC                 | I'm bad at responding to social cues                        | .18        | <b>.45</b> | .23        | .27        | .24 | N/A                 |
| CD                  | I'm slow to tell when others are teasing                    | .20        | <b>.44</b> | .20        | .13        | .07 | SocConf             |
| ECC                 | I'm bad at non-verbal communication                         | .08        | <b>.42</b> | .10        | <b>.36</b> | .10 | SocConf             |
| CD                  | Things I write when I'm busy don't make sense later         | <b>.36</b> | <b>.41</b> | .12        | .09        | .14 | SocConf             |
| CD/ECC              | People expect me to understand too much without telling me  | .20        | <b>.39</b> | .15        | .10        | .20 | SocConf             |
| ECC                 | Others have trouble "reading" my face                       | .17        | <b>.39</b> | .18        | .15        | .19 | SocConf             |
| CD                  | It's hard to change tasks when I'm told to                  | <b>.35</b> | <b>.37</b> | .19        | .21        | .17 | SocConf             |
| DP                  | I have blocks of time that I can't remember                 | .34        | <b>.35</b> | .17        | .07        | .23 | SocConf             |
| DP/UP               | It's hard to imagine detailed scenes                        | .14        | .32        | -.01       | .17        | .10 | N/A                 |
| CD                  | Others' driving directions are confusing                    | .27        | .31        | .13        | .02        | .13 | N/A                 |
| ECC                 | People think I'm odd or weird                               | .27        | .22        | <b>.74</b> | .16        | .14 | GenEcc              |
| ECC                 | I think that I am unusual or weird                          | .28        | .06        | <b>.73</b> | .14        | .10 | GenEcc              |
| ECC/CD              | Normal things I do seem unusual to others                   | .27        | .25        | <b>.62</b> | .16        | .15 | GenEcc              |
| ECC                 | I have some odd or unusual habits                           | <b>.37</b> | .20        | <b>.54</b> | .03        | .12 | GenEcc              |
| ECC                 | My ideas seem to take people by surprise                    | .21        | .30        | <b>.50</b> | .12        | .12 | GenEcc              |
| ECC                 | I use gestures that others find odd                         | .24        | <b>.35</b> | <b>.46</b> | .08        | .14 | GenEcc              |

(table continues)



Table A-9 (cont.)

| Domain <sup>a</sup>                | Item Content <sup>b</sup>  | Factor |            |            |            |            | Parcel <sup>c</sup> |
|------------------------------------|--|--------|------------|------------|------------|------------|---------------------|
|                                    |  | 1      | 2          | 3          | 4          | 5          |                     |
| ECC/DP                             | People say I'm in my own world                                   | .32    | <b>.35</b> | <b>.44</b> | .10        | .13        | GenEcc              |
| ECC                                | Others find my speech shocking though I don't mean it to be      | .23    | <b>.36</b> | <b>.36</b> | .13        | .19        | GenEcc              |
| ECC/CD                             | It's stressful to look people in the eye                         | .16    | .19        | .14        | <b>.76</b> | .16        | EyeCont             |
| ECC                                | I don't usually make eye contact when I'm talking to others      | .11    | .26        | .10        | <b>.75</b> | .13        | EyeCont             |
| ECC/CD                             | It's easier to listen when I don't make eye contact              | .15    | .17        | .09        | <b>.54</b> | .05        | EyeCont             |
| ECC                                | My voice is kind of bland  | .18    | .16        | .16        | .25        | .08        | N/A                 |
| UP/UB                              | When I hear talking, I wonder if the speakers are criticizing me | .19    | .33        | .16        | .22        | <b>.74</b> | Putdown             |
| UP/UB                              | When people laugh, I wonder if they're laughing at me            | .16    | .32        | .17        | .19        | <b>.73</b> | Putdown             |
| UP                                 | I feel that people blame me for things (without evidence)        | .34    | .17        | .23        | .21        | <b>.41</b> | Putdown             |
| UB                                 | Others talk about me behind my back                              | .32    | .21        | .21        | .10        | <b>.40</b> | Putdown             |
| UP/UB                              | People put me down in subtle ways                                | .33    | .33        | .25        | .09        | <b>.36</b> | Putdown             |
| % of common variance accounted for |  | 28.2   | 21.2       | 16.1       | 11.7       | 11.6       |                     |

Notes.  $N = 657$  (193 University of Notre Dame students, 301 University of Iowa students, 163 Outpatients). <sup>a</sup>Domains were assigned a priori based on the facets of the original *DSM-5* schizotypy trait domain proposal. *UB* = Unusual Beliefs; *UP* = Unusual Perceptions; *DP* = Dissociation Proneness; *CD* = Cognitive Dysregulation; *ECC* = Eccentricity. Some domain assignments were revised for consistency (i.e., all sleep experience/dream items were given a primary DP domain loading). <sup>b</sup>Item content is rephrased/shortened to better fit the tabular format. Loadings  $\geq .35$  are **bold**. <sup>c</sup>Parcels were assigned via rational selection of loaders on each factor; each factor may have more than one rational parcel, but all items in each parcel have primary loadings on the same factor. *N/A* = not assigned to a parcel; *ConfDist* = content related to confusion and distractibility; *SocConf* = confusion/difficulty related to social/linguistic communication; *GenEcc* = general eccentricity content -- generally defined ideosyncratic behavior; *EyeCont* = content related to poor eye-contact; *Putdown* = content related to the perception that others are critical.

Table A-10 Second-Round Maximum-Likelihood Factor Analysis of Items that Loaded onto the Third Overall Schizotypy Factor: Fit Statistics and Information Criteria

| Solution | $\chi^2$ <sup>a</sup> | BIC <sup>b</sup> | AIC <sup>c</sup> | TLC <sup>d</sup> |
|----------|-----------------------|------------------|------------------|------------------|
| 1-factor | 2553.56               | -1760.75         | 1223.56          | .78              |
| 2-factor | 1955.33               | -2158.93         | 659.33           | .84              |
| 3-factor | 1464.36               | -2376.35         | 280.36           | .89              |
| 4-factor | 1164.64               | -2450.00         | 49.64            | .92              |
| 5-factor | 979.96                | -2413.10         | -66.04           | .93              |

Notes.  $N = 657$  (193 University of Notre Dame students, 301 University of Iowa students, 163 Outpatients). <sup>a</sup>Chi-Square without Bartlett's Correction. <sup>b</sup>Bayesian Information Criterion. <sup>c</sup>Akaike's Information Criterion. <sup>d</sup>Tucker and Lewis's Reliability Coefficient.

Table A-11 Varimax-Rotated Maximum-Likelihood Factor Loadings for a Second-Round Maximum-Likelihood Factor Analysis of the Items that Loaded on Factor 3 of an 8-Factor Solution of Time 1 Schizotypy Content

| Domain <sup>a</sup> | Item Content <sup>b</sup>                             | Factor     |            |     |     | Parcel <sup>c</sup> |
|---------------------|---|------------|------------|-----|-----|---------------------|
|                     |   | 1          | 2          | 3   | 4   |                     |
| CD/UP               | I find meaning in the apparently meaningless          | <b>.67</b> | .08        | .16 | .14 | HidMean             |
| UP                  | I tend to look for hidden meanings                    | <b>.63</b> | .14        | .19 | .14 | HidMean             |
| CD                  | I see connections between apparently unrelated ideas  | <b>.61</b> | .17        | .25 | .09 | HidMean             |
| UP                  | Colors, shapes, or sounds have special meanings to me | <b>.57</b> | .27        | .18 | .12 | HidMean             |
| UB/UP               | A normal object/event seemed like a sign for me       | <b>.55</b> | .31        | .11 | .14 | HidMean             |
| UP                  | Strangers' expressions/gestures have influenced me    | <b>.46</b> | .26        | .11 | .17 | HidMean             |
| DP/UP               | Things have felt more real than usual                 | <b>.46</b> | <b>.42</b> | .17 | .12 | SenseAbs            |
| ECC                 | I sometimes use words in unusual ways                 | <b>.46</b> | .24        | .32 | .08 | N/A                 |
| UP                  | Powerful music moves me in a nearly physical way      | <b>.43</b> | .26        | .15 | .21 | SenseAbs            |
| DP                  | My involvement in a scene changed my awareness        | <b>.42</b> | .34        | .13 | .18 | SenseAbs            |
| UP/CD               | I see details that others miss                        | <b>.41</b> | .17        | .21 | .09 | HidMean             |
| UP                  | My sensory impressions can linger                     | <b>.40</b> | .34        | .16 | .18 | SenseAbs            |
| DP/UP               | My imaginings/daydreams feel very real                | .24        | <b>.62</b> | .33 | .16 | VivFant             |
| DP                  | I can feel far from my behavior/thoughts              | .32        | <b>.54</b> | .12 | .12 | VivFant             |
| UP                  | I can sometimes nearly hear my intense thoughts       | <b>.35</b> | <b>.54</b> | .25 | .14 | VivFant             |
| DP                  | I can't always distinguish dreams and reality         | .24        | <b>.53</b> | .12 | .16 | VivFant             |
| DP/UP               | I have seen dreamlike images as I started to wake up  | .34        | <b>.46</b> | .27 | .16 | VivFant             |
| UP                  | My strong dreams can affect my feelings the next day  | .30        | <b>.43</b> | .25 | .17 | VivFant             |
| UP                  | had dreamlike images as I started to drift to sleep   | .17        | <b>.42</b> | .29 | .12 | VivFant             |
| UP                  | Images just pop into my mind                          | <b>.37</b> | <b>.41</b> | .28 | .08 | VivFant             |
| UP                  | After I stare at something, the afterimage seems real | <b>.40</b> | <b>.41</b> | .17 | .18 | VivFant             |
| DP/UP               | I can imagine the past almost as if I'm reliving it   | .32        | <b>.38</b> | .26 | .15 | VivFant             |
| UP                  | My childhood toys seemed real                         | .06        | .33        | .17 | .11 | N/A                 |

(table continues)

Table A-11 (cont.)

| Domain <sup>a</sup>                | Item Content <sup>b</sup>  | Factor |            |            |            | Parcel <sup>c</sup> |
|------------------------------------|--|--------|------------|------------|------------|---------------------|
|                                    |  | 1      | 2          | 3          | 4          |                     |
| DP                                 | I have done things without paying attention                      | .20    | .26        | .23        | .20        | N/A                 |
| DP/UP                              | My fantasies are interesting                                     | .12    | .12        | <b>.79</b> | .10        | Fantasy             |
| DP/UP                              | I fantasize to deal with boredom                                 | .16    | .16        | <b>.66</b> | .25        | Fantasy             |
| DP                                 | My daydreams are as interesting as a good movie                  | .16    | <b>.38</b> | <b>.58</b> | .17        | Fantasy             |
| DP/UP                              | I have a strong imagination                                      | .20    | .23        | <b>.58</b> | -.01       | Fantasy             |
| DP/UP                              | I spend a lot of time daydreaming                                | .16    | .33        | <b>.51</b> | .22        | Fantasy             |
| DP/UP                              | I like to imagine doing exciting things                          | .23    | .08        | <b>.44</b> | .07        | Fantasy             |
| DP/UP                              | As a child, I easily played the role of an imaginary self        | .11    | .25        | .32        | .19        | N/A                 |
| DP/UP                              | I can visualize a very interesting scene                         | .15    | .11        | .31        | .03        | N/A                 |
| CD                                 | I have random thoughts   | .27    | .28        | .30        | .16        | N/A                 |
| UP                                 | I have dreamed of flying   | .16    | .19        | .24        | .16        | N/A                 |
| DP                                 | Absorption in a movie can make me forget my surroundings         | .17    | .16        | .11        | <b>.85</b> | AbsrbFgt            |
| DP                                 | Absorption in movie/TV, etc can make me forget self/surroundings | .20    | .20        | .16        | <b>.69</b> | AbsrbFgt            |
| DP                                 | Absorption in music can stop me from noticing what's going on    | .22    | .27        | .20        | <b>.47</b> | AbsrbFgt            |
| % of common variance accounted for |  | 30.7   | 26.4       | 24.5       | 14.8       |                     |

*Notes.*  $N = 657$  (193 University of Notre Dame students, 301 University of Iowa students, 163 Outpatients). <sup>a</sup>Domains were assigned a priori based on the facets of the original *DSM-5* schizotypy trait domain proposal. *UB* = Unusual Beliefs; *UP* = Unusual Perceptions; *DP* = Dissociation Proneness; *CD* = Cognitive Dysregulation; *ECC* = Eccentricity. Some domain assignments were revised for consistency (i.e., all sleep experience/dream items were given a primary DP domain loading). <sup>b</sup>Item content is rephrased/shortened to better fit the tabular format. Loadings  $\geq |.35|$  are **bold**. <sup>c</sup>Parcels were assigned via rational selection of loaders on each factor; each factor may have more than one rational parcel, but all items in each parcel have primary loadings on the same factor. *N/A* = not assigned to a parcel; *HidMean* = content related to interest in or attunement to hidden meaning; *SenseAbs* = content related to absorption/immersion in sensory experience; *VivFant* = content related to fantasy or dreamlike experiences that feel nearly real; *Fantasy* = content related to finding fantasies/daydreams subjectively engaging; *AbsrbFgt* = content related to absorption in an artistic experience and simultaneous lack of focus on environment.

Table A-12 Second-Round Maximum-Likelihood Factor Analysis of Items that Loaded onto the Fourth Overall Schizotypy Factor: Fit Statistics and Information Criteria

| Solution | $\chi^2$ <sup>a</sup> | BIC <sup>b</sup> | AIC <sup>c</sup> | TLC <sup>d</sup> |
|----------|-----------------------|------------------|------------------|------------------|
| 1-factor | 535.39                | 35.85            | 381.39           | .85              |
| 2-factor | 243.22                | -171.99          | 115.22           | .93              |
| 3-factor | 152.98                | -184.38          | 48.98            | .95              |
| 4-factor | 91.15                 | -174.84          | 9.15             | .97              |

Notes.  $N = 657$  (193 University of Notre Dame students, 301 University of Iowa students, 163 Outpatients). <sup>a</sup>Chi-Square without Bartlett's Correction. <sup>b</sup>Bayesian Information Criterion. <sup>c</sup>Akaike's Information Criterion. <sup>d</sup>Tucker and Lewis's Reliability Coefficient.

Table A-13 Varimax-Rotated Second-Round Maximum-Likelihood Factor Loadings for an analysis of the items that load on factor 4 of 8-Factor Solution of Time 1 Schizotypy Content

| Domain <sup>a</sup>                | Item Content <sup>b</sup>  | Factor 1   | Factor 2   | Factor 3   | Parcel <sup>c</sup> |
|------------------------------------|--|------------|------------|------------|---------------------|
| UB                                 | Extraterrestrials influence happenings on earth                  | <b>.68</b> | .23        | .10        | OddCause            |
| UB                                 | The government is hiding something about UFOs or alien visitors  | <b>.66</b> | .13        | .11        | OddCause            |
| UB                                 | I believe in mind reading  | <b>.55</b> | .30        | .21        | OddCause            |
| UB                                 | The living can communicate with the dead                         | <b>.54</b> | <b>.37</b> | .24        | OddCause            |
| UB                                 | Reincarnation would explain some of my unusual experiences       | <b>.52</b> | <b>.44</b> | .09        | OddCause            |
| UP/UB                              | New age healing works (e.g., ch'i, chakras, or spiritual energy) | <b>.46</b> | .13        | .30        | OddCause            |
| UP/UB                              | I I've had experience with aliens/ESP/fortune telling/6th sense  | <b>.46</b> | .33        | .33        | OddCause            |
| UP/UB                              | People can exchange energy by looking at/ touching each other    | <b>.36</b> | .23        | .23        | OddCause            |
| UP/UB                              | I have experienced supernatural beings                           | .28        | <b>.70</b> | .32        | SprNtrl             |
| UP/UB                              | I have felt an invisible person/ spirit with me                  | .27        | <b>.59</b> | <b>.45</b> | SprNtrl             |
| UB                                 | I believe in the supernatural                                    | <b>.39</b> | <b>.40</b> | .30        | SprNtrl             |
| UP                                 | I can sense a presence before I can actually see or hear it      | .33        | <b>.38</b> | .25        | SprNtrl             |
| UP                                 | I have had intense spiritual experiences                         | .09        | .26        | <b>.81</b> | Spirit              |
| UP                                 | I understand the idea of mystical/ deep spiritual experiences    | .31        | .25        | <b>.64</b> | Spirit              |
| % of common variance accounted for |  | 35.7       | 29.9       | 34.4       |                     |

Notes.  $N = 657$  (193 University of Notre Dame students, 301 University of Iowa students, 163 Outpatients). <sup>a</sup>Domains were assigned a priori based on the facets of the original *DSM-5* schizotypy trait domain proposal. *UB* = Unusual Beliefs; *UP* = Unusual Perceptions; *DP* = Dissociation Proneness; *CD* = Cognitive Dysregulation; *ECC* = Eccentricity. Some domain assignments were revised for consistency (i.e., all sleep experience/dream items were given a primary DP domain loading). <sup>b</sup>Item content is rephrased/shortened to better fit the tabular format. Loadings  $\geq |.35|$  are **bold**. <sup>c</sup>Parcels were assigned via rational selection of loaders on each factor; each factor may have more than one rational parcel, but all items in each parcel have primary loadings on the same factor. *OddCause* = content related to belief in or experience with non-mainstream causal agents; *SprNtrl* = content related to belief in or experience with the supernatural; *Spirit* = content related to spiritual experiences.

Table A-14 Second-Round Maximum-Likelihood Factor Analysis of Items that either did not Load on an 8-Factor Solution of Time 1 Schizotypy Content or that are Excluded from other Parcels for Rational or Empirical Reasons

| Solution | $\chi^2$ <sup>a</sup> | BIC <sup>b</sup> | AIC <sup>c</sup> | TLC <sup>d</sup> |
|----------|-----------------------|------------------|------------------|------------------|
| 1-factor | 6399.64               | -8813.98         | 1709.64          | .59              |
| 2-factor | 5292.29               | -9473.58         | 740.39           | .69              |
| 3-factor | 4648.44               | -9676.37         | 232.44           | .74              |
| 4-factor | 4246.28               | -9643.85         | -35.72           | .77              |

Notes.  $N = 657$  (193 University of Notre Dame students, 301 University of Iowa students, 163 Outpatients). <sup>a</sup>Chi-Square without Bartlett's Correction. <sup>b</sup>Bayesian Information Criterion. <sup>c</sup>Akaike's Information Criterion. <sup>d</sup>Tucker and Lewis's Reliability Coefficient.

Table A-15 Varimax-Rotated Maximum-Likelihood Factor Loadings for an analysis of the items that either do not load on 8-Factor Solution of Time 1 Schizotypy Content or that are Excluded from other Parcels for Rational or Empirical Reasons

| Domain <sup>a</sup> | Item Content <sup>b</sup>   | Factor     |            |      | Parcel <sup>c</sup> |
|---------------------|---|------------|------------|------|---------------------|
|                     |   | 1          | 2          | 3    |                     |
| UB/UP               | I've seen movies about my life story  | <b>.51</b> | .29        | .03  | RfrntlUP            |
| UP                  | It's strange that many use my highway exit  | <b>.50</b> | .11        | .22  | RfrntlUP            |
| UB                  | Good thoughts about people bring them good luck   | <b>.49</b> | .08        | .05  | RfrntlUP            |
| UP                  | Felt strangers probe my brain   | <b>.49</b> | .13        | .32  | RfrntlUP            |
| UP/DP               | My things have moved, though nobody else was around                                       | <b>.46</b> | .30        | .29  | RfrntlUP            |
| UP/UB               | I've felt a stranger was in love with me  | <b>.46</b> | .20        | .09  | RfrntlUP            |
| UP                  | Complete strangers wave at me   | <b>.46</b> | .19        | .12  | RfrntlUP            |
| UP                  | Regular colors have seemed too intense  | <b>.45</b> | .25        | .30  | N/A                 |
| UP                  | Thought someone was only a look alike   | <b>.44</b> | .20        | .28  | N/A                 |
| UB                  | Thinking about bad things happening increases likelihood<br>bad things will really happen | <b>.42</b> | .23        | .22  | RfrntlUP            |
| UP                  | Felt the world around me was tilted   | <b>.42</b> | .21        | .33  | N/A                 |
| UB                  | Thinking good thoughts brings good luck for me  | <b>.41</b> | .09        | -.15 | RfrntlUP            |
| UP/UB               | Others copy things about me (e.g., clothing or speech)                                    | <b>.41</b> | .16        | -.06 | RfrntlUP            |
| DP                  | Have trouble telling daydreams from real events   | <b>.40</b> | <b>.35</b> | .29  | RfrntlUP            |
| UP/UB               | Strangers notice me when I'm going about normal routines                                  | <b>.40</b> | .18        | .00  | RfrntlUP            |
| UP                  | I feel warm when I think of warm things   | <b>.40</b> | .12        | .06  | RfrntlUP            |
| UP                  | Music reminds me of changing, shifting scenes   | <b>.39</b> | .24        | .08  | N/A                 |
| UP/UB               | Animals focus on me more than on others   | <b>.38</b> | .19        | .29  | RfrntlUP            |
| UP/UB               | I've read books very similar to my life   | <b>.37</b> | .27        | -.08 | RfrntlUP            |
| UP                  | Television violence feels so real I feel what victims do                                  | <b>.37</b> | .28        | .12  | N/A                 |

(table continues)



Table A-15, (Cont)

| Domain <sup>a</sup> | Item Content <sup>b</sup>                                 | Factor      |            |      | Parcel <sup>c</sup> |
|---------------------|---|-------------|------------|------|---------------------|
|                     |   | 1           | 2          | 3    |                     |
| UP                  | I have an unusually strong sense of smell                 | <b>.36</b>  | .20        | .18  | N/A                 |
| ECC                 | I choose clothes for unusual reasons                      | .34         | .29        | .32  | N/A                 |
| UP/UB               | People shift when I enter a room                          | .33         | .19        | .32  | N/A                 |
| UP                  | I have such sharp hearing that normal sounds bother me    | .32         | .29        | .20  | N/A                 |
| UP                  | I can make myself sick by thinking of eating rotten food  | .31         | .11        | .25  | N/A                 |
| UP                  | When I'm emotional, my muscles suddenly get weak          | .30         | .20        | .29  | N/A                 |
| UB/UP               | I've been afraid to step on sidewalk cracks               | .28         | .24        | .21  | N/A                 |
| CD                  | It's easier to see what people feel in children's TV      | .27         | .23        | .05  | N/A                 |
| UP/UB               | Traffic lights turn red on me when I'm in a hurry         | .24         | .12        | .11  | N/A                 |
| UB                  | Bad thoughts about others do them no direct harm          | -.16        | .08        | .02  | N/A                 |
| UP                  | I've never sensed that one of my limbs had grown          | -.22        | .14        | .03  | N/A                 |
| UP                  | I always know my body's boundaries                        | -.24        | .07        | -.24 | N/A                 |
| UB/UP               | I haven't felt that my thoughts belonged to someone else  | <b>-.36</b> | .04        | -.16 | N/A                 |
| DP                  | I have done things without paying attention               | -.05        | <b>.57</b> | .06  | N/A                 |
| CD                  | I have random thoughts                                    | .00         | <b>.56</b> | .10  | N/A                 |
| ECC                 | I tend to fidget or squirm                                | .00         | <b>.53</b> | .26  | N/A                 |
| ECC                 | I sometimes use words in unusual ways                     | .25         | <b>.46</b> | .20  | N/A                 |
| ECC                 | I put things in the wrong place                           | .05         | <b>.45</b> | .22  | N/A                 |
| DP                  | As a child, I easily played the role of an imaginary self | .21         | <b>.43</b> | -.10 | N/A                 |
| UP                  | I can't always tune out noises/sights                     | .16         | <b>.42</b> | .10  | N/A                 |
| DP/UP               | I've dreamed of awakening                                 | .09         | <b>.42</b> | -.04 | Dreams              |
| ECC/CD              | I'm calmer when I do some repetitive motion               | .15         | <b>.40</b> | .28  | N/A                 |
| DP/UP               | I have dreamed of falling                                 | .02         | <b>.39</b> | -.01 | Dreams              |
| DP/UP               | I have dreamed of flying                                  | .14         | <b>.37</b> | -.13 | Dreams              |
| UP                  | My childhood toys seemed real                             | .13         | <b>.36</b> | -.01 | N/A                 |
| UP                  | A (sleeping) dream came true                              | .23         | .34        | -.05 | N/A                 |
| DP                  | I imagine my limbs are so heavy I find I can't lift them  | .28         | .33        | .19  | N/A                 |
| DP                  | I forget what happened in the past day or so              | .28         | .33        | .32  | N/A                 |
| UB                  | As a child, I believed in imaginary creatures             | .09         | .32        | .05  | N/A                 |

(table continues)

Table A-15, (Cont)

| Domain <sup>a</sup>                | Item Content <sup>b</sup>                                 | Factor     |      |             | Parcel <sup>c</sup> |
|------------------------------------|---|------------|------|-------------|---------------------|
|                                    |   | 1          | 2    | 3           |                     |
| ECC                                | I march to my own drummer                                 | .19        | .31  | -.06        | N/A                 |
| DP                                 | When I do something boring/routine, I lack awareness      | .07        | .30  | -.02        | N/A                 |
| CD                                 | Others' driving directions are confusing                  | .08        | .29  | .29         | N/A                 |
| DP/UP                              | I had an imaginary friend/animal as a child               | .18        | .29  | .05         | N/A                 |
| UB                                 | My dreams come from my own mind                           | -.22       | .24  | -.22        | N/A                 |
| UP/CD                              | I focus on details that others don't notice               | .17        | .23  | .06         | N/A                 |
| DP/UP                              | My feelings/reactions are like those I had as a kid       | .12        | .20  | .09         | N/A                 |
| CD                                 | I don't get point of people's gestures                    | <b>.40</b> | .00  | <b>.52</b>  | CgScIPv             |
| CD                                 | It's hard to follow stories about characters' emotions    | .25        | -.02 | <b>.51</b>  | CgScIPv             |
| DP/UP                              | It's hard to imagine detailed scenes                      | .12        | -.06 | <b>.51</b>  | CgScIPv             |
| CD                                 | It's hard for me to "read" others' faces                  | .14        | .00  | <b>.46</b>  | CgScIPv             |
| UP/UB                              | Others see parts of my personality I try to hide          | .31        | .32  | <b>.39</b>  | CgScIPv             |
| ECC                                | I don't go into as much detail as others                  | .19        | -.01 | <b>.37</b>  | CgScIPv             |
| Ecc                                | My voice is kind of bland                                 | -.04       | .21  | <b>.36</b>  | CgScIPv             |
| ECC                                | I don't attend to the season when I choose my clothes     | .19        | .15  | .22         | N/A                 |
| ECC                                | It's important for me to look normal/mainstream           | .11        | -.02 | .13         | N/A                 |
| ECC                                | I'd prefer not to be considered odd/weird                 | -.02       | -.02 | .11         | N/A                 |
| UP/CD                              | It's easy to tune out background noise                    | .09        | -.12 | -.23        | N/A                 |
| CD                                 | I'm good at giving clear directions                       | .06        | -.10 | -.29        | N/A                 |
| DP/UP                              | I can visualize a very interesting scene (R) <sup>c</sup> | .16        | .31  | <b>-.39</b> | CgScIPv             |
| CD                                 | It's easy to understand others' jokes or stories (R)      | -.11       | .01  | <b>-.39</b> | CgScIPv             |
| % of common variance accounted for |   | 26.5       | 22.1 | 17.5        |                     |

Notes.  $N = 657$  (193 University of Notre Dame students, 301 University of Iowa students, 163 Outpatients). <sup>a</sup>Domains were assigned a priori based on the facets of the original *DSM-5* schizotypy trait domain proposal. *UB* = Unusual Beliefs; *UP* = Unusual Perceptions; *DP* = Dissociation Proneness; *CD* = Cognitive Dysregulation; *ECC* = Eccentricity. Some domain assignments were revised for consistency (i.e., all sleep experience/dream items were given a primary DP domain loading). (*table continues*)

Table A-15 (cont.)

<sup>b</sup>Item content is rephrased/shortened to better fit the tabular format. Loadings  $\geq |.35|$  are **bold**. <sup>c</sup>Parcels were assigned via rational selection of loaders on each factor; each factor may have more than one rational parcel, but all items in each parcel have primary loadings on the same factor. *N/A* = not assigned to a parcel; *RfrntlUP* = content related to referential thinking with a flavor of odd sensory experiences and/or magical thinking; *Dreams* = content related to dream experiences; *CgScIPv* = content related to impoverished cognition in social and communicative domains. <sup>c</sup>(R) denotes items that are reverse scored in their parcels.

Table A-16 Descriptive Statistics of Rational Empirical Parcels

| Parcel (# items) | Mean | SD   | Range   | Alpha <sup>a</sup> | AIC |
|------------------|------|------|---------|--------------------|-----|
| PercAb (16)      | 1.96 | .74  | 1.0-4.8 | .91                | .39 |
| EccBeh (3)       | 1.85 | .78  | .8-5.0  | .66                | .39 |
| Illusion (3)     | 1.90 | .98  | .9-5.0  | .72                | .46 |
| BdlyDeta (10)    | 1.51 | .66  | .9-4.8  | .87                | .40 |
| ThgtTrans (7)    | 1.55 | .68  | 1.0-4.7 | .83                | .41 |
| RefMng (3)       | 1.92 | .82  | .9-5.0  | .54                | .28 |
| BdyBndrs (5)     | 1.40 | .65  | 1.0-4.6 | .82                | .48 |
| MstrstRf (5)     | 1.76 | .78  | .6-5.0  | .80                | .44 |
| ConfDist (26)    | 2.95 | .75  | 1.1-4.8 | .94                | .37 |
| SocConf (14)     | 2.31 | .73  | 1.0-4.9 | .89                | .37 |
| GenEcc (8)       | 2.60 | .87  | 1.0-5.0 | .88                | .48 |
| EyeCont (3)      | 2.27 | 1.00 | 1.0-5.0 | .80                | .57 |
| Putdown (5)      | 2.53 | .93  | 1.0-5.0 | .83                | .49 |
| HidMean (7)      | 2.69 | .87  | 1.0-5.0 | .82                | .39 |
| SenseAbs (4)     | 2.69 | .95  | 1.0-5.0 | .68                | .35 |
| VivFant (10)     | 2.72 | .86  | 1.0-5.0 | .87                | .40 |
| Fantasy (6)      | 3.25 | .88  | 1.0-5.0 | .83                | .45 |
| AbsrbFgt (3)     | 3.14 | 1.13 | 1.0-5.0 | .78                | .54 |
| OddCause (8)     | 1.93 | .81  | .9-5.0  | .83                | .38 |
| SprNtrl (4)      | 2.19 | 1.03 | 1.0-5.0 | .78                | .47 |
| Spirit (2)       | 2.44 | 1.24 | 1.0-5.0 | .75                | .60 |
| RefFocus (8)     | 2.37 | .79  | 1.0-5.0 | .84                | .40 |
| Sprsttn (6)      | 2.03 | .79  | 1.0-4.7 | .73                | .31 |
| NgtmrRcr (4)     | 2.89 | .96  | 1.0-5.6 | .74                | .42 |
| RfrntlUP (13)    | 2.25 | .63  | 1.0-4.9 | .81                | .25 |
| Dreams (3)       | 3.30 | 1.06 | 1.0-5.0 | .56                | .30 |
| CgScIPv (9)      | 2.21 | .56  | 1.0-4.1 | .70                | .21 |

*Notes.*  $N = 657$  (193 University of Notre Dame students, 301 University of Iowa students, 163 Outpatients). Parcels were means of their constituent items. *EccBeh* = Eccentric Behavior content; *BdlyDeta* = Bodily Detachment content; *Illusion* = content related to hallucinations/sensory illusions; *ThgtTrans* = content related to Thought Transmission; *RefMng* = content related to referential thinking related to assigning idiosyncratic meaning; *BdyBndrs* = content related to bodily shape/bodily boundaries; *MstrstRf* = content related to referential thinking that assigns malign intent to others; *ConfDist* = content related to confusion and distractibility; *SocConf* = confusion/difficulty related to social/linguistic communication; *GenEcc* = general eccentricity content -- generally defined ideosyncratic behavior; *EyeCont* = content related to poor eye-contact; *Putdown* = content related to the perception that others are critical; *HidMean* = content related to interest in or attunement to hidden meaning; *SenseAbs* = content related to absorption/immersion in sensory experience; *VivFant* = content related to fantasy or dreamlike experiences that feel nearly real; *Fantasy* = content related to finding fantasies/daydreams subjectively engaging; *AbsrbFgt* = content related to absorption in an artistic experience and simultaneous lack of focus on environment; *OddCause* = content related to belief in or experience with non-mainstream causal agents; (*table continues*)

Table A-16 (cont.)

*SprNtrl* = content related to belief in or experience with the supernatural; *Spirit* = content related to spiritual experiences; *RefFocus* = content related to the idea that others are unusually attentive to the respondent's day to day behavior; *Sprsttn* = content related to belief in superstitions; *NgtmrRcr* = content related to unpleasant or recurring dreams; *RfrntlUP* = content related to referential thinking with a flavor of odd sensory experiences and/or magical thinking; *Dreams* = content related to dream experiences; *CgScIPv* = content related to impoverished cognition in social and communicative domains. <sup>a</sup>Cronbach's coefficient alpha.

Table A-17 Intercorrelations of Rational Empirical Parcels, Time 1

| Measure     | 1         | 2         | 3         | 4         | 5         | 6         | 7         | 8         | 9         | 10        | 11        | 12        |
|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| 1 PercAb    |           |           |           |           |           |           |           |           |           |           |           |           |
| 2 EccBeh    | <b>60</b> |           |           |           |           |           |           |           |           |           |           |           |
| 3 Illusion  | <b>70</b> | <u>43</u> |           |           |           |           |           |           |           |           |           |           |
| 4 BdlyDeta  | <b>72</b> | <u>46</u> | <b>72</b> |           |           |           |           |           |           |           |           |           |
| 5 ThgtTrans | <b>72</b> | <u>45</u> | <b>62</b> | <b>69</b> |           |           |           |           |           |           |           |           |
| 6 RefMng    | <b>66</b> | <u>38</u> | <u>54</u> | <u>55</u> | <b>65</b> |           |           |           |           |           |           |           |
| 7 BdyBndrs  | <b>73</b> | <u>47</u> | <u>59</u> | <b>70</b> | <b>68</b> | <u>51</u> |           |           |           |           |           |           |
| 8 MstrstRf  | <b>70</b> | <u>51</u> | <b>64</b> | <b>64</b> | <b>64</b> | <u>52</u> | <u>62</u> |           |           |           |           |           |
| 9 ConfDist  | <b>61</b> | <u>46</u> | <u>51</u> | <u>47</u> | <u>40</u> | <u>41</u> | <u>35</u> | <u>57</u> |           |           |           |           |
| 10 SocConf  | <b>68</b> | <u>55</u> | <b>60</b> | <u>57</u> | <u>52</u> | <u>50</u> | <u>51</u> | <b>73</b> | <b>77</b> |           |           |           |
| 11 GenEcc   | <b>61</b> | <u>52</u> | <u>58</u> | <u>52</u> | <u>43</u> | <u>38</u> | <u>39</u> | <b>60</b> | <b>71</b> | <b>71</b> |           |           |
| 12 EyeCont  | <u>35</u> | <u>28</u> | <u>33</u> | <u>35</u> | <u>27</u> | <u>18</u> | <u>28</u> | <u>39</u> | <u>44</u> | <u>54</u> | <u>40</u> |           |
| 13 Putdown  | <u>57</u> | <u>40</u> | <u>51</u> | <u>45</u> | <u>42</u> | <u>38</u> | <u>36</u> | <b>68</b> | <b>64</b> | <b>69</b> | <b>61</b> | <u>43</u> |
| 14 HidMean  | <b>69</b> | <u>46</u> | <u>57</u> | <u>52</u> | <u>55</u> | <u>57</u> | <u>39</u> | <u>49</u> | <u>55</u> | <u>51</u> | <u>55</u> | <u>22</u> |
| 15 SenseAbs | <b>68</b> | <u>44</u> | <u>52</u> | <u>51</u> | <u>47</u> | <u>53</u> | <u>38</u> | <u>44</u> | <u>56</u> | <u>52</u> | <u>54</u> | <u>24</u> |
| 16 VivFant  | <b>70</b> | <u>44</u> | <b>65</b> | <b>62</b> | <u>52</u> | <u>52</u> | <u>43</u> | <u>53</u> | <b>65</b> | <u>57</u> | <b>64</b> | <u>27</u> |
| 17 Fantasy  | <u>42</u> | <u>33</u> | <u>38</u> | <u>34</u> | <u>29</u> | <u>31</u> | <u>21</u> | <u>29</u> | <u>40</u> | <u>30</u> | <u>49</u> | <u>15</u> |
| 18 AbsrbFgt | <u>39</u> | <u>31</u> | <u>31</u> | <u>33</u> | <u>28</u> | <u>29</u> | <u>20</u> | <u>29</u> | <u>43</u> | <u>37</u> | <u>41</u> | <u>19</u> |
| 19 OddCause | <u>57</u> | <u>31</u> | <u>59</u> | <u>59</u> | <b>67</b> | <u>47</u> | <u>51</u> | <u>51</u> | <u>41</u> | <u>45</u> | <u>44</u> | <u>23</u> |
| 20 SprNtrl  | <u>51</u> | <u>27</u> | <b>62</b> | <u>59</u> | <u>56</u> | <u>47</u> | <u>43</u> | <u>46</u> | <u>39</u> | <u>42</u> | <u>45</u> | <u>19</u> |
| 21 Spirit   | <u>40</u> | <u>15</u> | <u>46</u> | <u>45</u> | <u>42</u> | <u>38</u> | <u>34</u> | <u>30</u> | <u>25</u> | <u>28</u> | <u>29</u> | <u>06</u> |
| 22 RefFocus | <b>66</b> | <u>41</u> | <u>57</u> | <u>51</u> | <u>57</u> | <u>56</u> | <u>47</u> | <b>66</b> | <u>56</u> | <b>64</b> | <u>58</u> | <u>34</u> |
| 23 Sprsttn  | <u>38</u> | <u>26</u> | <u>35</u> | <u>33</u> | <u>51</u> | <u>36</u> | <u>33</u> | <u>41</u> | <u>29</u> | <u>32</u> | <u>26</u> | <u>12</u> |
| 24 NgtmrRcr | <u>37</u> | <u>25</u> | <u>36</u> | <u>39</u> | <u>26</u> | <u>21</u> | <u>29</u> | <u>37</u> | <u>47</u> | <u>38</u> | <u>40</u> | <u>23</u> |
| 25 RfrntlUP | <b>74</b> | <u>47</u> | <b>64</b> | <b>65</b> | <b>73</b> | <b>72</b> | <b>61</b> | <b>66</b> | <u>52</u> | <u>59</u> | <u>52</u> | <u>26</u> |
| 26 Dreams   | <u>30</u> | <u>19</u> | <u>27</u> | <u>29</u> | <u>20</u> | <u>25</u> | <u>17</u> | <u>23</u> | <u>32</u> | <u>21</u> | <u>27</u> | <u>09</u> |
| 27 CgScIPv  | <u>46</u> | <u>36</u> | <u>37</u> | <u>37</u> | <u>38</u> | <u>33</u> | <u>38</u> | <u>52</u> | <u>48</u> | <b>70</b> | <u>41</u> | <u>44</u> |

(table continues)

Table A-17 (cont.)

| Measure     | 13        | 14        | 15        | 16        | 17        | 18        | 19        | 20        | 21 | 22        | 23        | 24        | 25        | 26 | 27 |
|-------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----|-----------|-----------|-----------|-----------|----|----|
| 14 HidMean  | <u>43</u> |           |           |           |           |           |           |           |    |           |           |           |           |    |    |
| 15 SenseAbs | <u>40</u> | <b>70</b> |           |           |           |           |           |           |    |           |           |           |           |    |    |
| 16 VivFant  | <u>51</u> | <b>69</b> | <b>73</b> |           |           |           |           |           |    |           |           |           |           |    |    |
| 17 Fantasy  | 29        | <u>51</u> | <u>49</u> | <b>64</b> |           |           |           |           |    |           |           |           |           |    |    |
| 18 AbsrbFgt | 27        | <u>45</u> | <u>51</u> | <u>53</u> | 44        |           |           |           |    |           |           |           |           |    |    |
| 19 OddCaus  | <u>39</u> | <u>54</u> | <u>46</u> | <u>51</u> | 30        | 27        |           |           |    |           |           |           |           |    |    |
| 20 SprNtrl  | 37        | <u>56</u> | <u>48</u> | <u>56</u> | 32        | 32        | <b>71</b> |           |    |           |           |           |           |    |    |
| 21 Spirit   | 27        | <u>48</u> | <u>45</u> | <u>46</u> | 27        | 18        | <u>52</u> | <b>63</b> |    |           |           |           |           |    |    |
| 22 RefFocus | <b>69</b> | <u>57</u> | <u>47</u> | <u>54</u> | 33        | 27        | <u>50</u> | <u>47</u> | 33 |           |           |           |           |    |    |
| 23 Sprsttn  | 29        | 32        | 27        | 30        | 17        | 18        | <u>51</u> | <u>40</u> | 14 | 34        |           |           |           |    |    |
| 24 NgtmrRcr | <u>43</u> | 27        | <u>35</u> | <u>50</u> | 29        | 29        | 26        | 33        | 22 | 33        | 16        |           |           |    |    |
| 25 RfrntlUP | <u>51</u> | <b>63</b> | <u>59</u> | <b>62</b> | <u>40</u> | <u>35</u> | <u>59</u> | <u>57</u> | 41 | <b>69</b> | <u>50</u> | 31        |           |    |    |
| 26 Dreams   | 22        | 32        | <u>36</u> | 44        | 34        | <u>36</u> | 24        | 26        | 23 | 19        | 11        | <u>46</u> | 24        |    |    |
| 27 CgScIPv  | <u>51</u> | 25        | 25        | 23        | -02       | 18        | 25        | 21        | 14 | <u>40</u> | 23        | 21        | <u>37</u> | 00 |    |

Note.  $N = 657$  (193 University of Notre Dame students, 301 University of Iowa students, 163 Outpatients). Decimals are omitted. Underlined correlations are between  $|.35|$  and  $|.59|$ . **Bold** correlations are  $\geq |.60|$ .

Table A-18 Correlations of Time 1 Rational Empirical Parcels with Time 2 Counterpoints

| Time 1 Measure | Time 2 Measure |            |            |            |            |            |            |            |            |
|----------------|----------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                | PercAb         | EccBeh     | Illusion   | BdlyDeta   | ThgtTrans  | RefMng     | BdyBndrs   | MstrstRf   | ConfDist   |
| PercAb         | <b>.82</b>     | .56        | .68        | .71        | .68        | .61        | .59        | .71        | .58        |
| EccBeh         | .57            | <b>.69</b> | .49        | .52        | .50        | .44        | .50        | .53        | .44        |
| Illusion       | .64            | .47        | <b>.81</b> | .66        | .57        | .51        | .47        | .62        | .54        |
| BdlyDeta       | .73            | .52        | .66        | <b>.82</b> | .65        | .57        | .62        | .65        | .47        |
| ThgtTrans      | .69            | .49        | .64        | .65        | <b>.80</b> | .60        | .54        | .65        | .44        |
| RefMng         | .63            | .42        | .56        | .51        | .61        | <b>.73</b> | .45        | .53        | .43        |
| BdyBndrs       | .69            | .49        | .58        | .72        | .64        | .51        | <b>.70</b> | .63        | .42        |
| MstrstRf       | .62            | .43        | .65        | .56        | .55        | .48        | .48        | <b>.78</b> | .58        |
| ConfDist       | .50            | .42        | .54        | .41        | .37        | .35        | .33        | .56        | <b>.89</b> |
| SocConf        | .60            | .50        | .66        | .55        | .47        | .45        | .45        | .72        | .73        |
| GenEcc         | .55            | .50        | .58        | .47        | .42        | .39        | .36        | .55        | .67        |
| EyeCont        | .36            | .29        | .35        | .35        | .30        | .24        | .33        | .48        | .46        |
| Putdown        | .56            | .38        | .56        | .46        | .44        | .43        | .40        | .68        | .59        |
| HidMean        | .60            | .42        | .56        | .50        | .52        | .52        | .35        | .46        | .51        |
| SenseAbs       | .61            | .41        | .53        | .50        | .43        | .46        | .35        | .48        | .55        |
| VivFant        | .62            | .47        | .62        | .56        | .48        | .46        | .37        | .53        | .63        |
| Fantasy        | .38            | .32        | .36        | .28        | .33        | .30        | .25        | .26        | .41        |
| AbsrbFgt       | .35            | .30        | .24        | .28        | .27        | .19        | .25        | .28        | .34        |
| OddCause       | .50            | .33        | .61        | .60        | .59        | .43        | .39        | .55        | .43        |
| SprNtrl        | .47            | .29        | .58        | .54        | .46        | .41        | .29        | .47        | .38        |
| Spirit         | .34            | .14        | .44        | .41        | .31        | .27        | .21        | .29        | .22        |
| RefFocus       | .63            | .46        | .58        | .51        | .59        | .57        | .47        | .62        | .52        |
| Sprsttn        | .41            | .30        | .43        | .37        | .52        | .41        | .32        | .47        | .36        |

(table continues)



Table A-18 (cont.)

| Time 1 Measure | Time 2 Measure |        |          |          |           |        |          |          |          |
|----------------|----------------|--------|----------|----------|-----------|--------|----------|----------|----------|
|                | PercAb         | EccBeh | Illusion | BdlyDeta | ThgtTrans | RefMng | BdyBndrs | MstrstRf | ConfDist |
| NgtmrRcr       | .36            | .29    | .36      | .37      | .27       | .20    | .27      | .40      | .54      |
| RfrntlUP       | .72            | .44    | .62      | .63      | .70       | .64    | .52      | .65      | .53      |
| Dreams         | .23            | .14    | .24      | .22      | .15       | .20    | .07      | .23      | .37      |
| CgScIPv        | .38            | .30    | .41      | .37      | .28       | .31    | .32      | .51      | .44      |

*(table continues)*

Table A-18 (cont.)

| Time 1 Measure | Time 2 Measure |            |            |            |            |            |            |            |            |
|----------------|----------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                | SocConf        | GenEcc     | EyeCont    | Putdown    | HidMean    | SenseAbs   | VivFant    | Fantasy    | AbsrbFgt   |
| PercAb         | .65            | .64        | .40        | .64        | .65        | .63        | .67        | .39        | .45        |
| EccBeh         | .53            | .56        | .31        | .44        | .42        | .41        | .47        | .30        | .38        |
| Illusion       | .60            | .58        | .39        | .58        | .56        | .52        | .64        | .32        | .34        |
| BdlyDeta       | .60            | .58        | .37        | .51        | .57        | .54        | .61        | .28        | .33        |
| ThgtTrans      | .56            | .51        | .34        | .53        | .56        | .51        | .53        | .26        | .32        |
| RefMng         | .52            | .48        | .25        | .49        | .58        | .53        | .49        | .33        | .27        |
| BdyBndrs       | .55            | .49        | .32        | .48        | .46        | .46        | .51        | .22        | .28        |
| MstrstRf       | .67            | .59        | .48        | .70        | .45        | .43        | .49        | .17        | .28        |
| ConfDist       | .71            | .67        | .46        | .62        | .49        | .38        | .60        | .35        | .37        |
| SocConf        | <b>.85</b>     | .69        | .55        | .69        | .43        | .40        | .55        | .23        | .29        |
| GenEcc         | .65            | <b>.88</b> | .41        | .58        | .50        | .47        | .58        | .42        | .39        |
| EyeCont        | .52            | .39        | <b>.80</b> | .48        | .20        | .18        | .28        | .04        | .10        |
| Putdown        | .65            | .57        | .50        | <b>.84</b> | .41        | .40        | .52        | .22        | .26        |
| HidMean        | .47            | .58        | .25        | .46        | <b>.77</b> | .63        | .63        | .50        | .48        |
| SenseAbs       | .50            | .53        | .22        | .40        | .65        | <b>.76</b> | .72        | .49        | .53        |
| VivFant        | .57            | .65        | .30        | .52        | .63        | .68        | <b>.85</b> | .57        | .61        |
| Fantasy        | .31            | .47        | .11        | .29        | .48        | .49        | .57        | <b>.84</b> | .46        |
| AbsrbFgt       | .27            | .39        | .16        | .26        | .37        | .45        | .46        | .38        | <b>.75</b> |
| OddCause       | .47            | .48        | .29        | .44        | .52        | .44        | .51        | .28        | .26        |
| SprNtrl        | .40            | .44        | .17        | .39        | .54        | .51        | .54        | .26        | .33        |
| Spirit         | .25            | .28        | .07        | .24        | .46        | .44        | .45        | .24        | .26        |
| RefFocus       | .60            | .60        | .40        | .70        | .57        | .50        | .52        | .29        | .29        |
| Sprsttn        | .39            | .34        | .29        | .43        | .35        | .33        | .34        | .18        | .28        |
| NgtmrRcr       | .45            | .43        | .25        | .41        | .33        | .36        | .57        | .24        | .32        |
| RfrntlUP       | .59            | .56        | .30        | .57        | .64        | .60        | .60        | .35        | .39        |
| Dreams         | .24            | .26        | .07        | .24        | .30        | .34        | .39        | .32        | .28        |
| CgScIPv        | .60            | .41        | .50        | .47        | .18        | .16        | .27        | -.04       | .11        |

(table continues)

Table A-18 (cont.)

| Time 1 Measure | Time 2 Measure |            |            |            |            |            |            |            |            |
|----------------|----------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                | OddCause       | SprNtrl    | Spirit     | RefFocus   | Sprsttn    | NgtmrRcr   | RfrntlUP   | Dreams     | CgScIPv    |
| PercAb         | .55            | .51        | .29        | .67        | .47        | .47        | .73        | .36        | .51        |
| EccBeh         | .34            | .32        | .10        | .46        | .31        | .33        | .53        | .30        | .45        |
| Illusion       | .57            | .64        | .41        | .62        | .46        | .45        | .64        | .27        | .40        |
| BdlyDeta       | .58            | .57        | .35        | .61        | .42        | .46        | .67        | .30        | .43        |
| ThgtTrans      | .67            | .57        | .31        | .68        | .56        | .35        | .72        | .24        | .45        |
| RefMng         | .51            | .46        | .27        | .62        | .47        | .30        | .72        | .24        | .36        |
| BdyBndrs       | .50            | .46        | .24        | .56        | .40        | .42        | .61        | .28        | .41        |
| MstrstRf       | .46            | .46        | .16        | .67        | .44        | .41        | .61        | .24        | .57        |
| ConfDist       | .35            | .38        | .14        | .52        | .32        | .48        | .47        | .39        | .51        |
| SocConf        | .42            | .42        | .16        | .64        | .34        | .48        | .55        | .27        | .72        |
| GenEcc         | .39            | .41        | .18        | .55        | .35        | .42        | .48        | .29        | .44        |
| EyeCont        | .22            | .23        | .02        | .38        | .15        | .22        | .30        | .12        | .49        |
| Putdown        | .38            | .39        | .19        | .64        | .37        | .41        | .51        | .26        | .54        |
| HidMean        | .53            | .51        | .40        | .54        | .40        | .38        | .60        | .35        | .25        |
| SenseAbs       | .42            | .42        | .39        | .49        | .31        | .43        | .57        | .38        | .26        |
| VivFant        | .48            | .51        | .39        | .52        | .38        | .54        | .55        | .44        | .31        |
| Fantasy        | .36            | .30        | .22        | .29        | .24        | .30        | .35        | .35        | .07        |
| AbsrbFgt       | .21            | .26        | .13        | .23        | .21        | .38        | .30        | .36        | .17        |
| OddCause       | <b>.85</b>     | .73        | .46        | .55        | .52        | .39        | .57        | .31        | .28        |
| SprNtrl        | .66            | <b>.83</b> | .57        | .50        | .37        | .37        | .51        | .30        | .17        |
| Spirit         | .49            | .60        | <b>.77</b> | .38        | .17        | .28        | .34        | .23        | .06        |
| RefFocus       | .52            | .47        | .29        | <b>.83</b> | .46        | .34        | .70        | .17        | .47        |
| Sprsttn        | .47            | .38        | .09        | .43        | <b>.78</b> | .25        | .54        | .15        | .30        |
| NgtmrRcr       | .29            | .33        | .17        | .33        | .22        | <b>.80</b> | .31        | .45        | .29        |
| RfrntlUP       | .61            | .53        | .32        | .73        | .55        | .37        | <b>.86</b> | .23        | .43        |
| Dreams         | .23            | .27        | .17        | .22        | .17        | .50        | .20        | <b>.73</b> | .05        |
| CgScIPv        | .20            | .24        | .06        | .46        | .22        | .28        | .35        | .11        | <b>.76</b> |

(table continues)

Table A-18 (cont.)

*Notes.*  $N = 263$  (74 University of Notre Dame students, 76 University of Iowa students, 113 Outpatients). **Bold** correlations are the highest in their column. Underlined correlations are the highest in their row. *PercAb* = perceptual aberration content; *EccBeh* = eccentric bBehavior content; *BdlyDeta* = bodily detachment content; *Illusion* = content related to hallucinations/sensory illusions; *ThgtTrans* = content related to thought transmission; *RefMng* = content related to referential thinking related to assigning idiosyncratic meaning; *BdyBndrs* = content related to bodily shape/bodily boundaries; *MstrstRf* = content related to referential thinking that assigns malign intent to others; *ConfDist* = content related to confusion and distractibility; *SocConf* = confusion/difficulty related to social/linguistic communication; *GenEcc* = general eccentricity content -- generally defined ideosyncratic behavior; *EyeCont* = content related to poor eye-contact; *Putdown* = content related to the perception that others are critical; *HidMean* = content related to interest in or attunement to hidden meaning; *SenseAbs* = content related to absorption/immersion in sensory experience; *VivFant* = content related to fantasy or dreamlike experiences that feel nearly real; *Fantasy* = content related to finding fantasies/daydreams subjectively engaging; *AbsrbFgt* = content related to absorption in an artistic experience and simultaneous lack of focus on environment; *OddCause* = content related to belief in or experience with non-mainstream causal agents; *SprNtrl* = content related to belief in or experience with the supernatural; *Spirit* = content related to spiritual experiences; *RefFocus* = content related to the idea that others are unusually attentive to the respondent's day to day behavior; *Sprsttn* = content related to belief in superstitions; *NgtmrRcr* = content related to unpleasant or recurring dreams; *RfrntlUP* = content related to referential thinking with a flavor of odd sensory experiences and/or magical thinking; *Dreams* = content related to dream experiences; *CgScIPv* = content related to impoverished cognition in social and communicative domains.

Table A-19 Fit Criteria for Discrete and Continuous Liability models for Time 1  
Schizotypy Rational/Empirical Parcels

| Model                      | k <sup>a</sup> | ln(L) <sup>b</sup> | BIC              |
|----------------------------|----------------|--------------------|------------------|
| <b>Latent class models</b> |                |                    |                  |
| 2 classes                  | 82             | -50622.017         | 101776.024       |
| 3 classes                  | 110            | -49515.051         | 99743.746        |
| 4 classes                  | 138            | -48943.918         | 98783.136        |
| 5 classes                  | 166            | -48635.853         | 98348.66         |
| 6 classes                  | 194            | -48417.125         | 98092.861        |
| 7 classes                  | 222            | -48193.109         | 97826.485        |
| 8 classes                  | 250            | -47992.929         | 97607.779        |
| 9 classes                  | 278            | -47838.087         | 97479.751        |
| 10 classes                 | 306            | -47708.007         | 97401.245        |
| 11 classes                 | 334            | -47589.188         | 97345.263        |
| 12 classes                 | 362            | -47485.364         | 97319.270        |
| 13 classes                 | 390            | -47392.950         | 97316.097        |
| <b>Latent Trait Models</b> |                |                    |                  |
| 1 factor                   | 81             | -48747.551         | 98020.605        |
| 2 factors                  | 107            | -48152.101         | 96998.384        |
| 3 factors                  | 132            | -47547.796         | 95951.966        |
| 4 factors                  | 156            | -47329.179         | 95670.438        |
| 5 factors                  | 179            | -47156.199         | 95473.693        |
| 6 factors                  | 201            | -47025.251         | 95354.527        |
| 7 factors                  | 222            | -46935.699         | 95311.665        |
| 8 factors                  | 242            | -46865.516         | <b>95301.052</b> |
| 9 factors                  | 261            | <b>-46809.982</b>  | 95313.250        |

Notes.  $N = 657$  (193 University of Notre Dame students, 301 University of Iowa students, 163 Outpatients). <sup>a</sup>k is the number of free parameters in the model. <sup>b</sup>ln(L) is the natural log of the model's likelihood. The values indicating the best solution overall for each index is in **bold**; that for the best latent class analysis is in *italics*.

Table A-20 Mapping of Parcels to Factors of Parcel Level Confirmatory Factor Models

| Parcel    | Model   |  |  |   |  |
|-----------|---|--|--|---|--|
|           | Model 1:<br><i>DSM-5</i><br>Original 5 <sup>a</sup> | Model 2:<br>Combines<br>UP-UB <sup>b</sup> | Model 3:<br>Combines<br>EccCD <sup>c</sup> | Model 4:<br>Combines<br>Models 2-3 <sup>d</sup> | Model 5:<br><i>DSM-5</i><br>Revised 3 <sup>e</sup> |
| PercAb    | UP  | PerMag                                     | UP   | PerMag  | CPD  |
| Illusion  | UP  | PerMag                                     | UP   | PerMag  | CPD  |
| BdlyDeta  | UP  | PerMag                                     | UP   | PerMag  | CPD  |
| HidMean   | UP  | PerMag                                     | UP   | PerMag  | CPD  |
| MstrstRf  | UP  | PerMag                                     | UP   | PerMag  | UBE  |
| RefFocus  | UP  | PerMag                                     | UP   | PerMag  | UBE  |
| RfrntlUP  | UP  | PerMag                                     | UP   | PerMag  | UBE  |
| ThgtTrans | UB  | PerMag                                     | UB   | PerMag  | UBE  |
| OddCause  | UB  | PerMag                                     | UB   | PerMag  | UBE  |
| SprNtrl   | UB  | PerMag                                     | UB   | PerMag  | UBE  |
| RerMng    |   |  |  |   | UBE  |
| Sprsttn   | UB  | PerMag                                     | UB   | PerMag  |  |
| NgtmrRcr  | DP  | DP   | DP   | DP  |  |
| VivFant   | DP  | DP   | DP   | DP  | CPD  |
| Fantasy   | DP  | DP   | DP   | DP  |  |
| AbsrbFgt  | DP  | DP   | DP   | DP  | CPD  |
| EccBeh    | ECC   | ECC  | CCP  | CCP   | ECC  |
| SocConf   | ECC   | ECC  | CCP  | CCP   | ECC  |
| GenEcc    | ECC   | ECC  | CCP  | CCP   | ECC  |
| EyeCont   | ECC   | ECC  | CCP  | CCP   | ECC  |
| ConfDist  | CD  | CD   | CCP  | CCP   | CPD  |
| Putdown   | CD  | CD   | CCP  | CCP   | CPD  |
| CgScIPv   | CD  | CD   | CCP  | CCP   |  |

*Notes.* Time 1  $N = 657$  (193 University of Notre Dame students, 301 University of Iowa students, 163 Outpatients).. Several parcels did not contribute to model fit: BdyBndrs, SenseAbs, Dreams, and Spirit. Within factors, some parcels were allowed to correlate above and beyond their common correlation with the latent variable.

<sup>a</sup>Model 1 is based on the initial *DSM-5* schizotypy facet proposal; Models 2-4 are variations on this model. <sup>b</sup>Model 2 combines unusual perceptions and unusual beliefs; <sup>c</sup>Model 3 combines eccentricity and cognitive dysregulation; <sup>d</sup>Model 4 combined unusual beliefs and unusual perceptions as well as eccentricity with cognitive dysregulation; <sup>e</sup>Model 5 is based on the current *DSM-5* psychoticism facet proposal.

(table continues)

Table A-20 (cont.)

*UP* = content related to *DSM-5* Unusual Perceptions facet; *UB* = Unusual Beliefs; *DP* = Dissociation Proneness; *ECC* = Eccentricity; *CD* = Cognitive Dysregulation; *PerMag* = unusual beliefs and experiences content; *CCPCCP* = cognitive and communicative peculiarity content; *PercAb* = perceptual aberration content; *EccBeh* = eccentric behavior content; *BdlyDeta* = bodily detachment content; *Illusion* = content related to hallucinations/sensory illusions; *ThgtTrans* = content related to thought transmission; *RefMng* = content related to referential thinking related to assigning idiosyncratic meaning; *BdyBndrs* = content related to bodily shape/bodily boundaries; *MstrstRf* = content related to referential thinking that assigns malign intent to others; *ConfDist* = content related to confusion and distractibility; *SocConf* = confusion/difficulty related to social/linguistic communication; *GenEcc* = general eccentricity content -- generally defined ideosyncratic behavior; *EyeCont* = content related to poor eye-contact; *Putdown* = content related to the perception that others are critical; *HidMean* = content related to interest in or attunement to hidden meaning; *SenseAbs* = content related to absorption/immersion in sensory experience; *VivFant* = content related to fantasy or dreamlike experiences that feel nearly real; *Fantasy* = content related to finding fantasies/daydreams subjectively engaging; *AbsrbFgt* = content related to absorption in an artistic experience and simultaneous lack of focus on environment; *OddCause* = content related to belief in or experience with non-mainstream causal agents; *SprNtrl* = content related to belief in or experience with the supernatural; *Spirit* = content related to spiritual experiences; *RefFocus* = content related to the idea that others are unusually attentive to the respondent's day to day behavior; *Sprsttn* = content related to belief in superstitions; *NgtnrRcr* = content related to unpleasant or recurring dreams; *RfrntlUP* = content related to referential thinking with a flavor of odd sensory experiences and/or magical thinking; *Dreams* = content related to dream experiences; *CgScIPv* = content related to impoverished cognition in social and communicative domains.

Table A-21 Fit and Information Criteria for Parcel Level Confirmatory Factor Models

| Model  | K                | ln(L)             | BIC              | CFI          | TLI          | RMSEA        |
|--|------------------|-------------------|------------------|--------------|--------------|--------------|
| <b>Time 1-parameters constrained to be equal between ND, UI and Outpatient groups</b>  |                  |                   |                  |              |              |              |
| Model 1 <sup>a</sup>   | 84               | -40447.792        | 81440.548        | 0.903        | 0.882        | 0.091        |
| Model 2 <sup>b</sup>   | 80               | -40527.489        | 81573.992        | 0.888        | 0.867        | 0.096        |
| <i>Model 3<sup>c</sup></i>   | <i>80</i>        | <i>-40454.177</i> | <i>81427.369</i> | <i>0.902</i> | <i>0.884</i> | <i>0.090</i> |
| Model 4 <sup>d</sup>   | 77               | -40532.135        | 81563.822        | 0.887        | 0.868        | 0.096        |
| Model 5 <sup>e</sup>   | 67               | -34811.019        | 70056.713        | 0.861        | 0.833        | 0.120        |
| <b>Time 1-parameters allowed to vary between ND, UI and Outpatient groups</b>          |                  |                   |                  |              |              |              |
| Model 1  | <sup>f</sup> 164 | -40163.488        | 81390.956        | 0.839        | 0.832        | 0.105        |
| Model 2  | <sup>f</sup> 152 | -40252.42         | 81490.984        | 0.823        | 0.818        | 0.110        |
| <i>Model 3</i>   | <i>152</i>       | <i>-40178.769</i> | <i>81343.667</i> | <i>0.838</i> | <i>0.833</i> | <i>0.105</i> |
| Model 4  | 143              | -40266.343        | 81460.425        | 0.821        | 0.818        | 0.109        |
| Model 5  | 125              | -34511.976        | 69834.913        | 0.801        | 0.805        | 0.125        |
| <b>Time 2- parameters constrained to be equal between ND, UI and Outpatient groups</b> |                  |                   |                  |              |              |              |
| Model 1  | 84               | -16519.192        | 33506.764        | 0.890        | 0.867        | 0.106        |
| Model 2  | 80               | -16558.279        | 33562.634        | 0.876        | 0.853        | 0.112        |
| <i>Model 3</i>   | <i>80</i>        | <i>-16521.410</i> | <i>33488.896</i> | <i>0.890</i> | <i>0.870</i> | <i>0.105</i> |
| Model 4  | 77               | -16559.947        | 33549.243        | 0.876        | 0.855        | 0.111        |
| Model 5  | 67               | -14266.933        | 28907.454        | 0.840        | 0.807        | 0.141        |
| <b>Time 2-parameters allowed to vary between ND, UI and Outpatient groups</b>          |                  |                   |                  |              |              |              |
| Model 1  | <sup>f</sup> 164 | -16287.085        | 33488.004        | 0.799        | 0.789        | 0.130        |
| Model 2  | <sup>f</sup> 152 | -16330.029        | 33507.026        | 0.784        | 0.777        | 0.134        |
| <i>Model 3</i>   | <sup>j</sup> 152 | <i>-16293.746</i> | <i>33434.459</i> | <i>0.798</i> | <i>0.792</i> | <i>0.129</i> |
| Model 4  | <sup>f</sup> 143 | -16335.152        | 33467.123        | 0.782        | 0.780        | 0.133        |
| Model 5  | <sup>f</sup> 124 | -14045.721        | 28787.962        | 0.764        | 0.759        | 0.194        |

*Notes.* K = number of free parameters; ln(L) = log likelihood; BIC = Bayesian Information Criteria; CFI = Comparative Fit Index, TLI = Tucker and Lewis Index, RMSEA = Root Mean Square Error of Approximation. Time 1  $N = 657$  (193 University of Notre Dame students, 301 University of Iowa students, 163 Outpatients); Time 2  $N = 263$  (74 University of Notre Dame students, 76 University of Iowa students, 113 Outpatients).. Within factors, some parcels were allowed to correlate above and beyond their common correlation with the latent variable. The model chosen for further analyses is shown in *italics*. <sup>a</sup>Model based on the initial DSM-5 schizotypy facet proposal; <sup>b</sup>Model that combines unusual perceptions and unusual beliefs; <sup>c</sup>Model that combines eccentricity and cognitive dysregulation; <sup>d</sup>Model with combined unusual beliefs and unusual perceptions as well as eccentricity with cognitive dysregulation.; <sup>e</sup>Model based on current DSM-5 psychoticism facet proposal. Results may not be valid because at least one of the group covariance matrices was not positive definite.



Table A-22 Correlations Between Latent Variables for the Four-Factor Confirmatory Model in Which the CD and ECC Content was Combined into a Single Factor

| Latent Variable | 1   | 2   | 3   |
|-----------------|-----|-----|-----|
| <b>Time 1</b>   |     |     |     |
| 1. CCP          |     |     |     |
| 2. UP           | .85 |     |     |
| 3. DP           | .76 | .81 |     |
| 4. UB           | .64 | .91 | .65 |
| <b>Time 2</b>   |     |     |     |
| 1. CCP          |     |     |     |
| 2. UP           | .89 |     |     |
| 3. DP           | .78 | .78 |     |
| 4. UB           | .68 | .93 | .61 |

*Notes.* Time 1  $N = 657$  (193 University of Notre Dame students, 301 University of Iowa students, 163 Outpatients).. Time 2  $N = 263$  (74 University of Notre Dame students, 76 University of Iowa students, 113 Outpatients). CD = Cognitive Dysregulation, ECC=Eccentricity, CCP = Cognitive and Communicative Peculiarity,, UP = Unusual Perceptions, DP = Dissociation Proneness, UB = Unusual Beliefs

Table A-23 Items in Unusual Perceptions Scale with 1PL Graded Response Model IRT Parameters

| Item Content  | Parcel <sup>a</sup> | Time 1 Parameters |       |       |       | Time 2 Parameters |       |       |       |
|---|---------------------|-------------------|-------|-------|-------|-------------------|-------|-------|-------|
|   |                     | $b_1^b$           | $b_2$ | $b_3$ | $b_4$ | $b_1$             | $b_2$ | $b_3$ | $b_4$ |
| Normal things sometimes seem to be wrong size           | PercAb              | 0.31              | 1.19  | 1.75  | 2.86  | 0.16              | 0.96  | 1.84  | 2.51  |
| Life feels like a dream                                 | PercAb              | -0.34             | 0.72  | 1.44  | 2.41  | -0.50             | 0.61  | 1.24  | 2.20  |
| Have noticed sounds in music that aren't always there   | PercAb              | -0.31             | 0.78  | 1.49  | 2.53  | -0.37             | 0.61  | 1.13  | 2.11  |
| My reflection sometimes looks different than usual      | PercAb              | -0.59             | 0.59  | 1.19  | 2.39  | 0.46              | 0.43  | 0.97  | 2.04  |
| Taken on completely different identity/perspective      | PercAb              | 0.21              | 1.03  | 1.59  | 2.66  | 0.00              | 0.93  | 1.55  | 2.59  |
| Typical objects have seemed strange to me               | PercAb              | 0.33              | 1.26  | 1.92  | 3.02  | 0.16              | 1.17  | 1.88  | 2.79  |
| I have behaved like someone else but felt like me       | PercAb              | 0.38              | 1.05  | 1.66  | 3.16  | 0.19              | 0.85  | 1.44  | 2.53  |
| Normal lights can look uncomfortably intense            | PercAb              | -0.50             | 0.57  | 1.10  | 2.04  | -0.48             | 0.45  | 0.75  | 1.57  |
| Others around me say things with hidden meanings        | PercAb              | -0.38             | 0.79  | 1.49  | 2.53  | -0.47             | 0.57  | 1.17  | 2.43  |
| Media have meanings especially for me                   | PercAb              | -0.10             | 0.93  | 1.65  | 2.92  | -0.07             | 0.77  | 1.55  | 2.73  |
| People have acted so oddly                              |                     |                   |       |       |       |                   |       |       |       |
| that I thought they were part of an experiment or joke  | PercAb              | -0.33             | 0.71  | 1.32  | 2.39  | -0.32             | 0.60  | 1.07  | 2.12  |
| Specific smells and colors are connected in my mind     | PercAb              | -0.08             | 0.79  | 1.38  | 2.42  | 0.05              | 0.65  | 1.36  | 2.07  |
| Have seen things that were invisible to others          | Illusion            | 0.11              | 1.01  | 1.52  | 2.30  | -0.04             | 0.71  | 1.18  | 1.98  |
| A normal object/ event felt like a sign just for me     | HidMean             | -0.54             | 0.21  | 0.80  | 2.11  | -0.45             | 0.29  | 0.78  | 1.65  |
| Shapes/ colors/ sounds are especially meaningful for me | HidMean             | -0.62             | 0.30  | 0.87  | 1.87  | -0.35             | 0.44  | 0.91  | 1.63  |
| Other people are out to get me                          | MstrstRf            | 0.08              | 1.22  | 1.86  | 2.73  | -0.10             | 0.86  | 1.45  | 2.28  |
| Strangers make mocking faces at me                      | MstrstRf            | 0.58              | 1.83  | 2.66  | 3.40  | 0.37              | 1.50  | 2.24  | 2.93  |

(table continues)

Table A-23 (cont.)

| Item Content   | Parcel <sup>a</sup> | Time 1 Parameters |       |       |       | Time 2 Parameters |       |       |       |
|--|---------------------|-------------------|-------|-------|-------|-------------------|-------|-------|-------|
|  |                     | $b_1^b$           | $b_2$ | $b_3$ | $b_4$ | $b_1$             | $b_2$ | $b_3$ | $b_4$ |
| My things have moved from where I left them,<br>though nobody else had been around | RfrntlUP            | 0.02              | 1.07  | 1.71  | 2.74  | 0.02              | 0.97  | 1.44  | 2.06  |
| I can't always distinguish daydreams from reality                                  | RfrntlUP            | -0.08             | 1.14  | 1.78  | 2.52  | -0.20             | 0.94  | 1.44  | 2.42  |
| Thinking about bad things happening to me<br>makes this likelier                   | RfrntlUP            | -0.33             | 0.69  | 1.31  | 2.52  | -0.22             | 0.59  | 1.16  | 2.27  |

*Notes.*IRT = Item Response Theory; 1PL = One Parameter Logistic Model. Time 1  $N = 657$  (193 University of Notre Dame students, 301 University of Iowa students, 163 Outpatients).. Time 2  $N = 263$  (74 University of Notre Dame students, 76 University of Iowa students, 113 Outpatients). <sup>a</sup>Parcel denotes the parcel from which each item was drawn. <sup>b</sup> $b$  are difficulty parameters scaled in standard deviation units; because each item has five response points, it has four  $b$  parameters. Each  $b$  parameter represents the ability level point at which the transition from one item response to another is the most informative (e.g., the  $b_1$  parameter represents the point on the difficulty scale at which the transition from response option 1 to response option 2 is the most informative).

Table A-24 Items in Unusual Beliefs Scale with 1PL Graded Response Model IRT Parameters

| Item Content   | <sup>a</sup> Parcel | Time 1 Parameters  |       |       |       | Time 2 Parameters |       |       |       |
|--|---------------------|--------------------|-------|-------|-------|-------------------|-------|-------|-------|
|  |                     | <sup>b</sup> $b_1$ | $b_2$ | $b_3$ | $b_4$ | $b_1$             | $b_2$ | $b_3$ | $b_4$ |
| People who aren't present can feel my emotions                       | ThtTrans            | 0.48               | 1.46  | 2.00  | 2.79  | 0.38              | 1.10  | 1.58  | 2.46  |
| People's bad things about me can bring me bad luck                   | ThtTrans            | 0.45               | 1.33  | 1.97  | 2.65  | 0.34              | 1.09  | 1.67  | 2.24  |
| Reincarnation can explain some of my experiences                     | OddCause            | 0.48               | 1.09  | 1.88  | 2.57  | 0.43              | 0.96  | 1.60  | 2.09  |
| Extraterrestrials influence happenings on earth                      | OddCause            | 0.57               | 1.10  | 2.10  | 2.81  | 1.24              | 2.13  | 2.00  | 2.35  |
| I believe in mind reading  | OddCause            | 0.20               | .96   | 1.68  | 2.53  | 0.21              | 0.83  | 1.51  | 2.36  |
| I have experienced aliens/ ESP/ fortune telling/ a sixth sense, etc. | OddCause            | 0.89               | 1.31  | 1.61  | 2.28  | 0.71              | 1.03  | 1.28  | 1.94  |
| I believe in fortune telling/ horoscopes, etc.                       | SprSttn             | -0.02              | .68   | 1.32  | 2.35  | 0.00              | 0.61  | 1.05  | 1.72  |

*Notes.* IRT = Item Response Theory; 1PL = One Parameter Logistic Model. Time 1  $N = 657$  (193 University of Notre Dame students, 301 University of Iowa students, 163 Outpatients). Time 2  $N = 263$  (74 University of Notre Dame students, 76 University of Iowa students, 113 Outpatients). <sup>a</sup>Parcel denotes the parcel from which each item was drawn. <sup>b</sup> $b$  are difficulty parameters scaled in standard deviation units; because each item has five response points, it has four  $b$  parameters. Each  $b$  parameter represents the ability level point at which the transition from one item response to another is the most informative (e.g., the  $b_1$  parameter represents the point on the difficulty scale at which the transition from response option 1 to response option 2 is the most informative).

Table A-25 Items in Dissociation Proneness Scale with 2PL Graded Response Model IRT Parameters<sup>a</sup>

| Item Content   | Parcel <sup>b</sup> | Time 1 Parameters |       |       |       |       | Time 2 Parameters |       |       |       |      |
|--|---------------------|-------------------|-------|-------|-------|-------|-------------------|-------|-------|-------|------|
|  |                     | $b_1^c$           | $b_2$ | $b_3$ | $b_4$ | $a^d$ | $b_1$             | $b_2$ | $b_3$ | $b_4$ | $a$  |
| My imaginings/ daydreams feel very real              | VivFant             | -0.88             | 0.03  | 0.61  | 1.61  | 1.53  | -0.80             | -0.05 | 0.51  | 1.46  | 1.72 |
| Intense dreams can affect my feelings the next day   | VivFant             | -1.47             | -0.47 | 0.10  | 1.34  | 0.85  | -1.30             | -0.44 | -0.03 | 1.02  | 1.22 |
| I have felt far away from my own behavior            |                     |                   |       |       |       |       |                   |       |       |       |      |
| I can feel far from my actions and thoughts          | VivFant             | -0.47             | 0.56  | 1.21  | 2.18  | 1.05  | -0.55             | 0.27  | 0.92  | 2.10  | .99  |
| It can be hard to distinguish my dreams from reality | VivFant             | -1.25             | 0.11  | 0.63  | 2.06  | 0.85  | -1.07             | 0.03  | 0.48  | 1.73  | 1.06 |
| I have nearly heard my intense thoughts              | VivFant             | -0.34             | 0.36  | 0.90  | 1.79  | 1.28  | -0.40             | 0.34  | 0.77  | 1.67  | 1.34 |
| I have seen dreamlike images as I awakened           | VivFant             | -1.09             | 0.03  | 0.64  | 2.19  | 0.93  | -0.76             | -0.13 | 0.45  | 1.61  | 1.06 |

Notes. IRT = Item Response Theory; 2PL = Two Parameter Logistic model. Time 1  $N = 657$  (193 University of Notre Dame students, 301 University of Iowa students, 163 Outpatients). Time 2  $N = 263$  (74 University of Notre Dame students, 76 University of Iowa students, 113 Outpatients). <sup>a</sup>At Time 1, the 2PL model was *more* informative than the 1PL model ( $BIC = 10968.508$  and  $10978.733$ , respectively), whereas at time 2, the 2PL model was *less* informative than the 1PL model ( $BIC = 4422.717$  and  $4409.988$ , respectively). <sup>b</sup>Parcel denotes the parcel from which each item was drawn. <sup>c</sup> $b$  are difficulty parameters scaled in standard deviation units; because each item has five response points, it has four  $b$  parameters. Each  $b$  parameter represents the ability level point at which the transition from one item response to another is the most informative (e.g., the  $b_1$  parameter represents the point on the difficulty scale at which the transition from response option 1 to response option 2 is the most informative). <sup>d</sup> $a$  is a discrimination parameter that is proportionate to the loading of each item on the latent variable.

Table A-26 Items in Cognitive and Communicative Peculiarity Scale with 2PL Graded Response Model IRT Parameters<sup>a</sup>

| Item Content  | Parcel <sup>b</sup> | Time 1 Parameters |       |       |       |       | Time 2 Parameters |       |       |       |      |
|---|---------------------|-------------------|-------|-------|-------|-------|-------------------|-------|-------|-------|------|
|   |                     | $b_1^c$           | $b_2$ | $b_3$ | $b_4$ | $a^d$ | $b_1$             | $b_2$ | $b_3$ | $b_4$ | $a$  |
| My thoughts can be jumbled/ confusing                 | ConfDist            | -1.01             | 0.26  | 0.89  | 1.94  | 2.02  | -1.04             | 0.11  | 0.67  | 1.68  | 1.40 |
| At times I sense I'm unaware of my surroundings       | ConfDist            | -0.67             | 0.36  | 0.91  | 2.24  | 1.57  | -0.84             | 0.27  | 0.71  | 2.10  | 1.01 |
| I'm easily confused                                   | ConfDist            | -1.65             | 0.18  | 1.04  | 2.74  | 1.32  | -1.45             | 0.24  | 0.82  | 1.70  | 1.01 |
| When I'm stressed it can be hard to communicate       | ConfDist            | -1.85             | -0.11 | 0.52  | 1.97  | 1.27  | -1.45             | -0.31 | 0.24  | 1.75  | 1.12 |
| Others misunderstand my way of doing things           | SocConf             | -0.96             | 0.15  | 0.73  | 1.81  | 2.28  | -1.14             | -0.01 | 0.54  | 1.71  | 1.35 |
| I try to communicate clearly; others seem confused    | SocConf             | -0.73             | 0.52  | 1.12  | 2.44  | 1.98  | -0.95             | 0.40  | 0.84  | 1.75  | 1.23 |
| It's hard to choose phrases that make sense to others | SocConf             | -0.91             | 0.32  | 0.97  | 2.00  | 1.87  | -0.83             | 0.22  | 0.74  | 1.75  | 1.29 |
| Other people have trouble following my stories        | SocConf             | -0.83             | 0.56  | 1.35  | 2.52  | 1.76  | -0.83             | 0.49  | 0.96  | 1.83  | 1.47 |
| It's hard to change tasks when someone asks me to     | SocConf             | -1.01             | 0.66  | 1.39  | 2.74  | 1.35  | -1.21             | 0.64  | 1.07  | 2.41  | 0.76 |
| Things I write when I'm stressed don't make sense     | SocConf             | -1.09             | 0.39  | 1.10  | 2.53  | 1.33  | -1.17             | 0.14  | 0.79  | 2.15  | 0.83 |
| My behavior is normal to me but odd to others         | GenEcc              | -1.78             | -0.07 | 0.75  | 2.23  | 1.45  | -1.81             | -0.17 | 0.53  | 1.69  | 1.08 |
| Others find my gestures odd or strange                | GenEcc              | -0.39             | 0.85  | 1.61  | 2.68  | 1.50  | -0.54             | 0.71  | 1.46  | 2.70  | 0.88 |
| My speech shocks people though I don't mean it to     | GenEcc              | -0.91             | 0.51  | 1.33  | 2.49  | 1.34  | -0.62             | 0.49  | 1.09  | 2.20  | 0.95 |
| People put me down in a hidden/ subtle ways           | Putdown             | -1.22             | 0.18  | 0.99  | 2.53  | 1.40  | -1.14             | 0.10  | 0.63  | 1.71  | 1.15 |
| It seems that others blame me; I have no evidence     | Putdown             | -1.32             | -0.09 | 0.65  | 2.11  | 1.18  | -1.00             | 0.02  | 0.49  | 1.83  | 0.98 |
| Others notice parts of my personality I try to hide   | CogScIPv            | -1.20             | 0.16  | 0.95  | 2.42  | 1.56  | -0.93             | 0.07  | 0.71  | 1.62  | 1.20 |

Notes. IRT = Item Response Theory; 2PL = Two Parameter Logistic model. Time 1  $N = 657$  (193 University of Notre Dame students, 301 University of Iowa students, 163 Outpatients). Time 2  $N = 263$  (74 University of Notre Dame students, 76 University of Iowa students, 113 Outpatients). <sup>a</sup>At time 1, the 2PL model was *more* informative than the 1PL model ( $BIC = 26975.156$  and  $27000.650$ , respectively), whereas at time 2, the 2PL model was *less* informative than the 1PL model ( $BIC = 11070.549$  and  $11037.675$ , respectively); given that the time 1 sample was larger and more varied, the 2PL results are displayed at both times.

<sup>b</sup>Parcel denotes the parcel from which each item was drawn. <sup>c</sup> $b$  are difficulty parameters scaled in standard deviation units; because each item has five response points, it has four  $b$  parameters. Each  $b$  parameter represents the ability level point at which the transition from one item response to another is the most informative (e.g., the  $b_1$  parameter represents the point on the difficulty scale at which the transition from response option 1 to response option 2 is the most informative). <sup>d</sup> $a$  is a discrimination parameter that is proportionate to the loading of each item on the latent variable.

Table A-27 Descriptive Statistics of Schizotypy Measures by Subsample

| Measure (# items)          | Notre Dame |     |         |                             | University of Iowa |     |         |              | Outpatient |      |         |              |
|----------------------------|------------|-----|---------|-----------------------------|--------------------|-----|---------|--------------|------------|------|---------|--------------|
|                            | Mean       | SD  | Range   | $\alpha^a$ AIC <sup>b</sup> | Mean               | SD  | Range   | $\alpha$ AIC | Mean       | SD   | Range   | $\alpha$ AIC |
| <b>Time 1 Measures</b>     |            |     |         |                             |                    |     |         |              |            |      |         |              |
| Unusual Perceptions (20)   | 1.85       | .63 | 1.0-4.4 | .91 .34                     | 1.95               | .67 | 1.0-4.3 | .91 .34      | 2.32       | .84  | 1.1-4.8 | .91 .34      |
| Unusual Beliefs (7)        | 1.46       | .56 | 1.0-3.9 | .79 .35                     | 1.67               | .68 | .99-4.1 | .80 .29      | 2.09       | .94  | 1.0-4.9 | .82 .29      |
| Dissociation Proneness (8) | 2.52       | .88 | 1.0-4.8 | .81 .35                     | 2.44               | .89 | 1.0-5.0 | .80 .33      | 3.03       | .98  | 1.0-5.0 | .82 .36      |
| CCP (16)                   | 2.29       | .67 | 1.0-3.9 | .90 .36                     | 2.34               | .68 | 1.1-4.3 | .90 .36      | 2.93       | .89  | 1.0-4.9 | .92 .42      |
| <b>Time 2 Measures</b>     |            |     |         |                             |                    |     |         |              |            |      |         |              |
| Unusual Perceptions (20)   | 1.89       | .59 | 1.0-3.5 | .89 .29                     | 1.94               | .71 | 1.0-3.8 | .93 .40      | 2.32       | .89  | 1.0-4.9 | .92 .37      |
| Unusual Beliefs (7)        | 1.51       | .58 | 1.0-3.0 | .80 .36                     | 1.72               | .73 | 1.0-3.6 | .86 .47      | 2.02       | .99  | 1.0-5.0 | .84 .43      |
| Dissociation Proneness (8) | 2.59       | .90 | 1.0-4.5 | .83 .37                     | 2.27               | .91 | 1.0-4.5 | .84 .40      | 3.02       | 1.05 | 1.0-5.0 | .83 .37      |
| CCP (16)                   | 2.32       | .74 | 1.0-3.9 | .92 .42                     | 2.31               | .66 | 1.1-4.3 | .89 .34      | 2.92       | .93  | 1.0-5.0 | .93 .45      |

Notes. CCP = Cognitive and Communicative Peculiarity. Time 1  $N = 657$  (193 University of Notre Dame students, 301 University of Iowa students, 163 Outpatients). Time 2  $N = 263$  (74 Notre Dame, 76 University of Iowa, 113 Outpatient). <sup>a</sup> $\alpha$  = Cronbach's alpha. <sup>b</sup>AIC = inter-item correlation.

Table A-28 Intercorrelations of Schizotypy Measures Overall and by Subsample

| Measure                           | 1          | 2          | 3          | 4          | 5          | 6          | 7          | 8          |
|-----------------------------------|------------|------------|------------|------------|------------|------------|------------|------------|
| <b>OVERALL SAMPLE<sup>a</sup></b> |            |            |            |            |            |            |            |            |
| <b>Time 1</b>                     |            |            |            |            |            |            |            |            |
| 1. CCP                            |            |            |            |            |            |            |            |            |
| 2. Unusual Beliefs                | .47        |            |            |            |            |            |            |            |
| 3. Unusual Perceptions            | .75        | .67        |            |            |            |            |            |            |
| 4. Dissociation Proneness         | .62        | .47        | .70        |            |            |            |            |            |
| <b>Time 2</b>                     |            |            |            |            |            |            |            |            |
| 5. CCP                            | <b>.83</b> | .45        | .66        | .58        |            |            |            |            |
| 6. Unusual Beliefs                | .42        | <b>.82</b> | .63        | .45        | .50        |            |            |            |
| 7. Unusual Perceptions            | .64        | .63        | <b>.82</b> | .63        | .75        | .73        |            |            |
| 8. Dissociation Proneness         | .55        | .44        | .65        | <b>.81</b> | .61        | .49        | .69        |            |
| <b>SUBSAMPLES<sup>b</sup></b>     |            |            |            |            |            |            |            |            |
| <b>Time 1</b>                     |            |            |            |            |            |            |            |            |
| 1. CCP                            |            | .44        | .72        | .59        | <b>.88</b> | .44        | .68        | .59        |
| 2. Unusual Beliefs                | .47        |            | .70        | .60        | .51        | <b>.87</b> | .74        | .59        |
| 3. Unusual Perceptions            | .77        | .67        |            | .76        | .70        | .71        | <b>.89</b> | .69        |
| 4. Dissociation Proneness         | .64        | .42        | .68        |            | .63        | .59        | .72        | <b>.82</b> |
| <b>Time 2</b>                     |            |            |            |            |            |            |            |            |
| 5. CCP                            | <b>.80</b> | .42        | .63        | .55        |            | .47        | .73        | .66        |
| 6. Unusual Beliefs                | .41        | <b>.79</b> | .56        | .34        | .53        |            | .72        | .59        |
| 7. Unusual Perceptions            | .62        | .55        | <b>.77</b> | .57        | .76        | .73        |            | .75        |
| 8. Dissociation Proneness         | .52        | .33        | .62        | <b>.80</b> | .58        | .42        | .65        |            |

Notes. CCP = Cognitive and Communicative Peculiarity. <sup>a</sup>In the overall sample, scores were standardized by student versus outpatient status before they were correlated.

<sup>b</sup>Student intercorrelations are below the diagonal and outpatient intercorrelations are above the diagonal. Time 1  $N = 657$  (193 University of Notre Dame students, 301 University of Iowa students, 163 Outpatients). Time 2  $N = 263$  (74 University of Notre Dame students, 76 University of Iowa students, 113 Outpatients). Measures with missing data are noted. <sup>a</sup> $N = 262$  (73 University of Notre Dame students, 76 University of Iowa students, 113 Outpatients). Stability correlations are **bold**.



Table A-29 Descriptive Statistics of Existing Instruments by Student Versus Outpatient Status, Time 1

| Measure (# items)             | Student     |       |         |          |     | Outpatient   |       |         |          |     |
|-------------------------------|-------------|-------|---------|----------|-----|--------------|-------|---------|----------|-----|
|                               | Mean        | SD    | Range   | $\alpha$ | AIC | Mean         | SD    | Range   | $\alpha$ | AIC |
| <b>BFI (44)</b>               |             |       |         |          |     |              |       |         |          |     |
| Extraversion (8)              | <b>3.4</b>  | .84   | 1.4-5   | .89      | .50 | 3.1          | .86   | 1.1-4.9 | .83      | .38 |
| Agreeableness (9)             | 3.9         | .58   | 1.9-5   | .79      | .29 | 3.8          | .67   | 1.2-5   | .78      | .28 |
| Conscientiousness (9)         | 3.7         | .58   | 1.3-5   | .79      | .29 | 3.6          | .74   | 1.7-5   | .81      | .32 |
| Neuroticism (8)               | 2.8         | .81   | 1-4.9   | .86      | .43 | <b>3.6</b>   | 1.00  | 1-5     | .89      | .50 |
| Openness (10)                 | 3.4         | .58   | 1.5-4.9 | .75      | .23 | 3.5          | .70   | 1.4-4.8 | .78      | .26 |
| <b>GTS (90)</b>               |             |       |         |          |     |              |       |         |          |     |
| NT (28)                       | 13.1        | 7.20  | 0-28    | .91      | .27 | <b>19.0</b>  | 7.73  | 0-28    | .94      | .36 |
| PT (27)                       | <b>19.4</b> | 5.41  | 0-27    | .86      | .19 | 16.0         | 6.84  | 0-27    | .90      | .25 |
| Energy (12)                   | <b>8.1</b>  | 2.70  | 0-12    | .74      | .19 | 7.0          | 3.33  | 0-12    | .82      | .28 |
| PA (11)                       | <b>8.1</b>  | 2.72  | 0-11    | .80      | .27 | 6.2          | 3.31  | 0-11    | .85      | .34 |
| Disinhibition (35)            | 11.5        | 6.10  | 0-29    | .84      | .13 | 10.6         | 6.03  | 0-31    | .84      | .13 |
| CO (12)                       | <b>4.3</b>  | 2.54  | 0-11    | .69      | .16 | 3.3          | 2.40  | 0-11    | .66      | .14 |
| AB (10)                       | 3.1         | 2.33  | 0-10    | .72      | .20 | 3.0          | 2.45  | 0-10    | .74      | .22 |
| <b>SNAP Mistrust (19)</b>     | 5.7         | 4.19  | 0-19    | .83      | .20 | <b>10.6</b>  | 5.62  | 0-19    | .91      | .35 |
| <b>Social Anhedonia (40)</b>  | 8.2         | 6.06  | 0-37    | .86      | .13 | <b>16.1</b>  | 8.43  | 1-37    | .90      | .18 |
| <b>BFNE (12)</b>              | 38.1        | 9.51  | 13-60   | .89      | .40 | <b>40.9</b>  | 10.30 | 16-60   | .87      | .36 |
| <b>SIAS (19)</b>              | 48.1        | 14.39 | 20-85   | .93      | .41 | <b>56.8</b>  | 16.62 | 19-91   | .93      | .41 |
| <b>SCOPI (34)</b>             | 95.0        | 19.70 | 43-151  | .91      | .23 | <b>104.3</b> | 24.90 | 50-166  | .93      | .28 |
| Checking (14)                 | 41.5        | 11.30 | 17-69   | .90      | .39 | <b>45.2</b>  | 13.30 | 18-70   | .91      | .42 |
| Cleanliness (12)              | 31.8        | 6.82  | 14-55   | .80      | .25 | <b>36.0</b>  | 9.70  | 15-58   | .87      | .36 |
| Rituals (8)                   | 21.7        | 7.11  | 8-40    | .85      | .41 | 23.1         | 8.31  | 8-40    | .87      | .47 |
| Hoarding (5)                  | 12.7        | 4.54  | 5-25    | .81      | .46 | <b>15.3</b>  | 5.43  | 5-25    | .81      | .46 |
| Impulses (8)                  | 15.9        | 6.31  | 8-36    | .84      | .40 | 16.1         | 6.53  | 8-37    | .78      | .31 |
| <b>OCI-R (18)<sup>a</sup></b> | 15.7        | 11.82 | 0-66    | .91      | .36 | <b>24.2</b>  | 15.57 | 0-69    | .91      | .36 |
| Washing <sup>a</sup>          | 1.8         | 2.31  | 0-11    | .76      | .51 | <b>3.2</b>   | 3.53  | 0-12    | .82      | .60 |
| Obsessing <sup>a</sup>        | 2.9         | 2.93  | 0-12    | .82      | .60 | <b>5.3</b>   | 3.67  | 0-12    | .78      | .54 |
| Hoarding <sup>a</sup>         | 2.9         | 2.44  | 0-12    | .68      | .41 | <b>4.7</b>   | 3.50  | 0-12    | .83      | .62 |
| Ordering <sup>a</sup>         | 3.7         | 3.05  | 0-12    | .84      | .64 | <b>4.9</b>   | 3.75  | 0-12    | .86      | .67 |
| Checking <sup>a</sup>         | 2.7         | 2.70  | 0-12    | .83      | .62 | <b>4.0</b>   | 3.74  | 0-12    | .85      | .65 |
| Neutralizing <sup>a</sup>     | 1.7         | 2.41  | 0-12    | .74      | .49 | 2.3          | 2.96  | 0-12    | .72      | .46 |

Notes.  $N = 657$  (193 University of Notre Dame students, 301 University of Iowa students, 163 Outpatients). Measures with missing data are noted. <sup>a</sup> $N = (190$  University of Notre Dame students, 301 University of Iowa students, 163 Outpatients). Means that were significantly higher in one group than another were **bolded**. *BFI* = Big Five Inventory; *GTS* = General Temperament Survey (*NT* = Negative Temperament, *PT* = Positive Temperament, *PA* = Positive Affectivity, *CO* = Carefree Orientation, *AB* = Antisocial Behavior);

(table continues)

Table A-29 (cont.)

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*SNAP Mistrust* = Schedule for Adaptive and Non-Adaptive Personality Mistrust scale;  
*Social Anhedonia* = Revised Social Anhedonia Scale; *BFNE* = Brief Fear of Negative  
Evaluation Scale

*SIAS* = Social Interaction Anxiety Scale -- 19 item version as published in Mattick &  
Clarke, 1998; *SCOPI* = Schedule of Compulsions, Obsessions, and Pathological  
Impulses (Checking = Obsessive Checking, Cleanliness = Obsessive Cleanliness,  
Rituals = Compulsive Rituals, Impulses = Pathological Impulses); *OCI-R* =  
Obsessive Compulsive Inventory-Revised

Table A-30 Intercorrelations of Existing Instruments, Time 1, Mixed Sample,  
Standardized by Student versus Outpatient Status

| Measure                       | 1          | 2          | 3          | 4          | 5   | 6         | 7          | 8         | 9          | 10        | 11        | 12        |
|-------------------------------|------------|------------|------------|------------|-----|-----------|------------|-----------|------------|-----------|-----------|-----------|
| <b>BFI</b>                    |            |            |            |            |     |           |            |           |            |           |           |           |
| 1 Extraversion                |            |            |            |            |     |           |            |           |            |           |           |           |
| 2 Agreeableness               | 26         |            |            |            |     |           |            |           |            |           |           |           |
| 3 Conscientiousness           | 20         | 44         |            |            |     |           |            |           |            |           |           |           |
| 4 Neuroticism                 | -36        | -38        | -30        |            |     |           |            |           |            |           |           |           |
| 5 Openness                    | 16         | 01         | 08         | -10        |     |           |            |           |            |           |           |           |
| <b>GTS</b>                    |            |            |            |            |     |           |            |           |            |           |           |           |
| 6 NT                          | -27        | -38        | -29        | <b>84</b>  | -08 |           |            |           |            |           |           |           |
| 7 PT                          | <b>62</b>  | <u>37</u>  | <u>41</u>  | <u>-36</u> | 25  | -28       |            |           |            |           |           |           |
| 8 Energy                      | <u>49</u>  | <u>26</u>  | <u>42</u>  | <u>-22</u> | 19  | -14       | <b>88</b>  |           |            |           |           |           |
| 9 PA                          | <b>63</b>  | <u>38</u>  | <u>28</u>  | <u>-41</u> | 27  | -32       | <b>90</b>  | <b>62</b> |            |           |           |           |
| 10 Disinhibition              | 15         | <u>-36</u> | <u>-59</u> | <u>14</u>  | 02  | 24        | -11        | -15       | 02         |           |           |           |
| 11 CO                         | 13         | -22        | <u>-58</u> | 04         | -07 | 10        | -15        | -23       | 01         | <b>84</b> |           |           |
| 12 AB                         | 08         | <u>-40</u> | <u>-39</u> | 14         | 11  | 27        | -07        | -08       | -01        | <b>81</b> | <b>49</b> |           |
| 13. SNAP Mistrust             | -14        | <u>-41</u> | -32        | <u>46</u>  | -07 | <u>56</u> | -23        | -10       | -25        | <u>35</u> | 18        | <u>39</u> |
| 14. Social Anhedonia          | <u>-47</u> | <u>-50</u> | -34        | <u>37</u>  | -08 | <u>37</u> | <u>-50</u> | -32       | <u>-53</u> | 20        | 06        | <u>26</u> |
| 15. BFNE                      | <u>-36</u> | -23        | -17        | <u>58</u>  | 00  | <u>56</u> | -24        | -12       | -30        | 00        | -10       | 10        |
| 16. SIAS                      | <b>-70</b> | <u>-37</u> | -34        | <u>59</u>  | -13 | <u>54</u> | <u>-49</u> | -34       | <u>-51</u> | 05        | -02       | 12        |
| 17. SCOPI                     | -15        | -14        | -04        | <u>45</u>  | -03 | <u>52</u> | -03        | 05        | -08        | 02        | -10       | 10        |
| 18. Checking                  | -20        | -18        | -18        | <u>53</u>  | 01  | <b>60</b> | -12        | -03       | -14        | 15        | 01        | 21        |
| 19. Cleanliness               | -02        | -03        | 06         | 17         | -04 | 20        | 05         | 09        | 01         | -13       | -16       | -09       |
| 20. Rituals                   | -09        | -08        | 10         | 26         | -05 | 30        | 05         | 10        | 00         | -05       | -14       | 04        |
| 21. Hoarding                  | -07        | -11        | -20        | 29         | 07  | <u>35</u> | -04        | -04       | -02        | 17        | 07        | 22        |
| 22. Impulses                  | -12        | <u>-38</u> | <u>-37</u> | 28         | 09  | <u>36</u> | -13        | -08       | -10        | <u>49</u> | 28        | <u>52</u> |
| 23. OCI-R <sup>a</sup>        | -08        | -14        | -11        | 36         | 02  | <u>45</u> | 00         | 08        | -04        | 19        | 06        | 22        |
| 24. Washing <sup>a</sup>      | -04        | -06        | -05        | 15         | 00  | 20        | 06         | 09        | 03         | 09        | 04        | 09        |
| 25. Obsessing <sup>a</sup>    | -10        | -19        | -28        | <u>45</u>  | 06  | <u>52</u> | -11        | -03       | -13        | 25        | 13        | 25        |
| 26. Hoarding <sup>a</sup>     | -07        | -10        | -13        | 25         | 03  | 33        | -02        | 01        | -02        | 15        | 07        | 18        |
| 27. Ordering <sup>a</sup>     | -02        | -06        | 08         | 29         | 01  | <u>35</u> | 03         | 09        | -02        | 05        | -05       | 13        |
| 28. Checking <sup>a</sup>     | -08        | -08        | -02        | 27         | -02 | <u>35</u> | 02         | 08        | -02        | 11        | 01        | 13        |
| 29. Neutralizing <sup>a</sup> | -02        | -13        | -09        | 15         | 00  | 24        | 04         | 10        | -01        | 19        | 08        | 21        |

(table continues)

Table A-30 (cont.)

| Measure                       | 13        | 14        | 15        | 16        | 17        | 18        | 19        | 20        | 21        | 22        |
|-------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| <b>14. Social Anhedonia</b>   | <u>55</u> |           |           |           |           |           |           |           |           |           |
| <b>15. BFNE</b>               | <u>37</u> | 21        |           |           |           |           |           |           |           |           |
| <b>16. SIAS</b>               | <u>37</u> | <u>50</u> | <b>61</b> |           |           |           |           |           |           |           |
| <b>17. SCOPI</b>              | <u>38</u> | 25        | <u>41</u> | <u>38</u> |           |           |           |           |           |           |
| 18. Checking                  | <u>45</u> | 30        | <u>46</u> | <u>46</u> | <b>85</b> |           |           |           |           |           |
| 19. Cleanliness               | 16        | 08        | 18        | 13        | <b>68</b> | 32        |           |           |           |           |
| 20. Rituals                   | 19        | 14        | 24        | 21        | <b>78</b> | <u>50</u> | <u>40</u> |           |           |           |
| 21. Hoarding                  | 29        | 19        | 24        | 23        | <u>43</u> | <u>46</u> | 15        | 34        |           |           |
| 22. Impulses                  | <u>43</u> | <u>37</u> | 22        | 32        | 30        | <u>40</u> | 02        | 19        | <u>35</u> |           |
| <b>23. OCI-R<sup>a</sup></b>  | <u>35</u> | 26        | 31        | 29        | <b>68</b> | <b>63</b> | <u>41</u> | <u>52</u> | <u>45</u> | <u>38</u> |
| 24. Washing <sup>a</sup>      | 18        | 14        | 13        | 16        | <u>52</u> | 32        | <b>60</b> | <u>35</u> | 17        | 16        |
| 25. Obsessing <sup>a</sup>    | <u>36</u> | 28        | 36        | 33        | <u>42</u> | <u>51</u> | 14        | 24        | <u>36</u> | <u>43</u> |
| 26. Hoarding <sup>a</sup>     | 26        | 19        | 21        | 19        | <u>39</u> | <u>40</u> | 16        | 30        | <u>58</u> | 30        |
| 27. Ordering <sup>a</sup>     | 22        | 15        | 26        | 17        | <b>61</b> | <u>47</u> | <u>37</u> | <b>61</b> | 31        | 24        |
| 28. Checking <sup>a</sup>     | 26        | 19        | 24        | 25        | <b>62</b> | <b>65</b> | 39        | <u>40</u> | 28        | 23        |
| 29. Neutralizing <sup>a</sup> | 27        | 20        | 14        | 18        | <u>47</u> | <u>42</u> | 26        | 39        | 29        | 33        |

(table continues)

Table A-30 (cont)

| Measure                       | 23        | 24        | 25        | 26        | 27        | 28        |
|-------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| <b>23. OCI-R<sup>a</sup></b>  |           |           |           |           |           |           |
| 24. Washing <sup>a</sup>      | <b>72</b> |           |           |           |           |           |
| 25. Obsessing <sup>a</sup>    | <b>71</b> | <u>38</u> |           |           |           |           |
| 26. Hoarding <sup>a</sup>     | <b>71</b> | <u>38</u> | <u>45</u> |           |           |           |
| 27. Ordering <sup>a</sup>     | <b>78</b> | <u>51</u> | <u>38</u> | <u>45</u> |           |           |
| 28. Checking <sup>a</sup>     | <b>79</b> | <u>52</u> | <u>42</u> | <u>49</u> | <u>56</u> |           |
| 29. Neutralizing <sup>a</sup> | <b>74</b> | <u>48</u> | <u>43</u> | <u>43</u> | <u>50</u> | <u>52</u> |

*Notes.*  $N = 657$  (193 University of Notre Dame students, 301 University of Iowa students, 163 Outpatients). Decimals are omitted. Measures with missing data are noted. <sup>a</sup> $N =$  (190 University of Notre Dame students, 301 University of Iowa students, 163 Outpatients). Underlined correlations are between  $|.35|$  and  $|.59|$ . **Bold** correlations are  $\geq |.60|$ . *BFI* = Big Five Inventory; *GTS* = General Temperament Survey (*NT* = Negative Temperament, *PT* = Positive Temperament, *PA* = Positive Affectivity, *CO* = Carefree Orientation, *AB* = Antisocial Behavior); *SNAP Mistrust* = Schedule for Adaptive and Non-Adaptive Personality Mistrust scale; *Social Anhedonia* = Revised Social Anhedonia Scale; *BFNE* = Brief Fear of Negative Evaluation Scale; *SIAS* = Social Interaction Anxiety Scale -- 19 item version as published in Mattick & Clarke, 1998; *SCOPI* = Schedule of Compulsions, Obsessions, and Pathological Impulses (Checking = Obsessive Checking, Cleanliness = Obsessive Cleanliness, Rituals = Compulsive Rituals, Impulses = Pathological Impulses); *OCI-R* = Obsessive Compulsive Inventory-Revised

Table A-31 Correlations of time 1 Existing Measures with time 2 Existing Measures Standardized by Student Versus Outpatient Status

| Time 1 Measure          | Time 2 Measure |            |            |            |            |            |            |            |            |            |            |
|-------------------------|----------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                         | BFI-E          | BFI-A      | BFI-C      | BFI-N      | BFI-O      | GTS-NT     | GTS-PT     | GTS-E      | GTS-PA     | GTS-D      | GTS-CO     |
| BFI Extraversion        | <b>.90</b>     | .17        | .16        | -.34       | .21        | -.27       | .58        | .45        | .60        | .20        | .15        |
| BFI Agreeableness       | .19            | <b>.78</b> | .39        | -.35       | -.04       | -.39       | .30        | .21        | .31        | -.30       | -.12       |
| BFI Conscientiousness   | .21            | .38        | <b>.83</b> | -.31       | .13        | -.32       | .39        | .42        | .29        | -.50       | -.50       |
| BFI Neuroticism         | -.36           | -.30       | -.28       | <b>.85</b> | -.16       | .76        | -.30       | -.14       | -.38       | .16        | .05        |
| BFI Openness            | .15            | -.02       | .10        | -.18       | <b>.85</b> | -.10       | .36        | .23        | .42        | .12        | -.01       |
| GTS NT                  | -.27           | -.38       | -.27       | .78        | -.10       | <b>.86</b> | -.21       | -.06       | -.30       | .29        | .13        |
| GTS PT                  | .57            | .29        | .36        | -.35       | .36        | -.29       | <b>.84</b> | .73        | .79        | .03        | -.07       |
| GTS Energy              | .45            | .21        | .36        | -.23       | .29        | -.15       | .76        | <b>.82</b> | .60        | -.02       | -.14       |
| GTS PA                  | .57            | .30        | .26        | -.36       | .34        | -.32       | .75        | .54        | <b>.81</b> | .09        | .03        |
| GTS Disinhibition       | .21            | -.33       | -.51       | .17        | .11        | .31        | -.01       | -.05       | .06        | <b>.90</b> | .70        |
| GTS CO                  | .18            | -.20       | -.53       | .08        | -.05       | .17        | -.11       | -.16       | -.01       | .74        | <b>.77</b> |
| GTS AB                  | .17            | -.35       | -.33       | .19        | .19        | .37        | .04        | .04        | .08        | .78        | .46        |
| <b>SNAP Mistrust</b>    | -.14           | -.34       | -.21       | .45        | -.13       | .55        | -.11       | .05        | -.21       | .26        | .08        |
| <b>Social Anhedonia</b> | -.46           | -.40       | -.22       | .40        | -.09       | .42        | -.42       | -.24       | -.47       | .09        | -.03       |
| <b>BFNE</b>             | -.34           | -.14       | -.15       | .54        | -.05       | .52        | -.18       | -.07       | -.24       | .02        | -.06       |
| <b>SIAS</b>             | -.67           | -.35       | -.28       | .60        | -.19       | .54        | -.43       | -.27       | -.48       | -.02       | -.07       |
| <b>SCOPI</b>            | -.22           | -.04       | .00        | .36        | -.03       | .44        | .03        | .11        | -.02       | .03        | -.09       |
| Checking                | -.21           | -.09       | -.13       | .45        | -.02       | .54        | -.04       | .06        | -.10       | .16        | .05        |
| Cleanliness             | -.13           | .00        | .04        | .13        | -.04       | .15        | .07        | .06        | .06        | -.09       | -.14       |
| Rituals                 | -.13           | .02        | .17        | .19        | -.01       | .25        | .07        | .15        | .02        | -.06       | -.19       |
| Hoarding                | -.09           | -.09       | -.12       | .28        | .01        | .34        | -.04       | -.04       | -.03       | .07        | -.11       |
| Impulses                | .01            | -.25       | -.23       | .27        | .13        | .35        | .02        | .03        | -.02       | .04        | -.06       |

(table continues)

Table A-31 (cont.)

| Time 1 Measure            | Time 2 Measure |       |       |       |       |        |        |       |        |       |        |
|---------------------------|----------------|-------|-------|-------|-------|--------|--------|-------|--------|-------|--------|
|                           | BFI-E          | BFI-A | BFI-C | BFI-N | BFI-O | GTS-NT | GTS-PT | GTS-E | GTS-PA | GTS-D | GTS-CO |
| <b>OCI-R<sup>a</sup></b>  | -.13           | -.09  | -.07  | .37   | -.01  | .43    | .03    | .11   | -.03   | .14   | -.02   |
| Washing <sup>a</sup>      | -.10           | -.01  | -.03  | .21   | -.01  | .21    | .09    | .10   | .08    | .03   | -.06   |
| Obsessing <sup>a</sup>    | -.11           | -.16  | -.26  | .42   | -.03  | .48    | -.08   | -.02  | -.12   | .26   | .15    |
| Hoarding <sup>a</sup>     | -.10           | -.06  | -.12  | .28   | -.05  | .32    | -.08   | -.05  | -.08   | .09   | .01    |
| Ordering <sup>a</sup>     | -.08           | -.08  | .09   | .23   | .05   | .30    | .05    | .03   | -.02   | .08   | -.09   |
| Checking <sup>a</sup>     | -.12           | .00   | .05   | .29   | -.06  | .34    | .06    | .14   | .00    | .04   | -.04   |
| Neutralizing <sup>a</sup> | -.03           | -.08  | -.04  | .18   | .06   | .26    | .09    | .14   | .04    | .11   | -.04   |

*(table continues)*

Table A-31 (cont.)

| Time 1 Measure            | Time 2 Measure |            |            |            |            |            |            |            |            |            |            |
|---------------------------|----------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
|                           | GTS-AB         | MST        | R-SAS      | BFNE       | SIAS       | SCOPI      | Check      | Clean      | Ritual     | Hoard      | PI         |
| BFI Extraversion          | .17            | -.15       | -.42       | -.31       | -.60       | -.19       | -.23       | -.11       | -.09       | -.03       | .07        |
| BFI Agreeableness         | -.35           | -.40       | -.42       | -.14       | -.37       | -.12       | -.14       | -.08       | -.03       | -.08       | -.22       |
| BFI Conscientiousness     | -.30           | -.27       | -.28       | -.19       | -.34       | -.09       | -.21       | -.01       | .10        | -.27       | -.31       |
| BFI Neuroticism           | .16            | .46        | .36        | .52        | .56        | .34        | .44        | .12        | .17        | .25        | .23        |
| BFI Openness              | .13            | -.12       | -.12       | -.07       | -.15       | -.05       | -.02       | -.05       | -.06       | .04        | .14        |
| GTS NT                    | .31            | .56        | .40        | .53        | .54        | .39        | .50        | .16        | .21        | .30        | .35        |
| GTS PT                    | .09            | -.18       | -.46       | -.18       | -.41       | .01        | -.08       | .06        | .09        | -.05       | .06        |
| GTS Energy                | .08            | -.06       | -.26       | -.12       | -.28       | .09        | .02        | .08        | .15        | -.09       | .07        |
| GTS PA                    | .10            | -.20       | -.49       | -.20       | -.42       | -.03       | -.11       | .04        | .05        | .00        | .08        |
| GTS Disinhibition         | .75            | .32        | .16        | .00        | .04        | .06        | .17        | -.07       | -.03       | .22        | .51        |
| GTS CO                    | .48            | .15        | .04        | -.08       | -.03       | -.07       | .05        | -.14       | -.15       | .13        | .30        |
| GTS AB                    | <b>.87</b>     | .38        | .19        | .10        | .12        | .15        | .20        | -.01       | .12        | .25        | .54        |
| <b>SNAP Mistrust</b>      | .30            | <b>.85</b> | .51        | .33        | .34        | .34        | .40        | .20        | .16        | .19        | .34        |
| <b>Social Anhedonia</b>   | .18            | .56        | <b>.83</b> | .19        | .46        | .26        | .31        | .12        | .15        | .09        | .16        |
| <b>BFNE</b>               | .05            | .39        | .21        | <b>.81</b> | .56        | .36        | .45        | .16        | .19        | .14        | .19        |
| <b>SIAS</b>               | .04            | .37        | .46        | .57        | <b>.88</b> | .35        | .42        | .16        | .20        | .17        | .19        |
| <b>SCOPI</b>              | .12            | .35        | .26        | .37        | .39        | <b>.88</b> | .79        | .60        | .68        | .38        | .31        |
| Checking                  | .19            | .40        | .29        | .44        | .44        | .73        | <b>.87</b> | .27        | .48        | .41        | .39        |
| Cleanliness               | .00            | .19        | .12        | .17        | .18        | .63        | .36        | <b>.87</b> | .37        | .13        | .09        |
| Rituals                   | .06            | .15        | .17        | .20        | .25        | .72        | .53        | .40        | <b>.84</b> | .29        | .18        |
| Hoarding                  | .17            | .22        | .12        | .25        | .27        | .41        | .44        | .13        | .36        | <b>.79</b> | .33        |
| Impulses                  | .45            | .34        | .27        | .18        | .25        | .28        | .38        | .02        | .19        | .35        | <b>.83</b> |
| <b>OCI-R<sup>a</sup></b>  | .21            | .34        | .30        | .33        | .37        | .68        | .65        | .43        | .52        | .41        | .37        |
| Washing <sup>a</sup>      | .08            | .20        | .19        | .19        | .22        | .58        | .39        | .67        | .39        | .13        | .15        |
| Obsessing <sup>a</sup>    | .27            | .32        | .27        | .35        | .34        | .34        | .44        | .10        | .20        | .26        | .43        |
| Hoarding <sup>a</sup>     | .12            | .24        | .14        | .27        | .29        | .36        | .39        | .14        | .31        | <b>.59</b> | .24        |
| Ordering <sup>a</sup>     | .21            | .23        | .26        | .23        | .24        | .60        | .51        | .36        | .58        | .28        | .27        |
| Checking <sup>a</sup>     | .07            | .26        | .21        | .25        | .28        | .62        | .68        | .30        | .43        | .27        | .24        |
| Neutralizing <sup>a</sup> | .18            | .26        | .25        | .17        | .25        | .47        | .41        | .36        | .36        | .29        | .29        |

(table continues)



Table A-31 (cont.)

| Time 1 Measure          | Time 2 Measure |      |        |       |       |       | OCI-R-N |
|-------------------------|----------------|------|--------|-------|-------|-------|---------|
|                         | OCI            |      |        |       |       |       |         |
|                         | OCI-R          | Wash | Obsess | Hoard | Order | Check |         |
| BFI Extraversion        | -.09           | -.09 | -.13   | -.06  | -.06  | -.07  | .01     |
| BFI Agreeableness       | -.08           | -.06 | -.06   | -.12  | -.08  | .01   | -.08    |
| BFI Conscientiousness   | -.17           | -.07 | -.22   | -.32  | .03   | -.06  | -.14    |
| BFI Neuroticism         | .34            | .19  | .39    | .24   | .23   | .27   | .19     |
| BFI Openness            | .04            | -.02 | .05    | .04   | .02   | -.02  | .11     |
| GTS NT                  | .42            | .24  | .43    | .32   | .27   | .32   | .29     |
| GTS PT                  | .00            | .02  | -.11   | -.08  | .04   | .05   | .06     |
| GTS Energy              | .05            | .04  | -.07   | -.08  | .12   | .10   | .11     |
| GTS PA                  | -.01           | .02  | -.10   | -.05  | -.01  | .03   | .05     |
| GTS Disinhibition       | .21            | .07  | .24    | .22   | .10   | .09   | .24     |
| GTS CO                  | .11            | .04  | .14    | .19   | -.01  | .01   | .15     |
| GTS AB                  | .21            | .05  | .25    | .18   | .17   | .08   | .23     |
| <b>SNAP Mistrust</b>    | .29            | .22  | .27    | .21   | .17   | .23   | .23     |
| <b>Social Anhedonia</b> | .22            | .19  | .22    | .08   | .19   | .17   | .14     |
| <b>BFNE</b>             | .31            | .18  | .30    | .23   | .19   | .27   | .20     |
| <b>SIAS</b>             | .31            | .22  | .34    | .21   | .18   | .24   | .18     |
| <b>SCOPI</b>            | .62            | .48  | .39    | .30   | .57   | .60   | .42     |
| Checking                | .61            | .30  | .47    | .38   | .45   | .66   | .43     |
| Cleanliness             | .37            | .58  | .12    | .09   | .36   | .26   | .27     |
| Rituals                 | .44            | .29  | .24    | .16   | .57   | .41   | .26     |
| Hoarding                | .36            | .08  | .26    | .44   | .25   | .30   | .25     |
| Impulses                | .32            | .12  | .35    | .18   | .22   | .21   | .35     |

(table continues)

Table A-31 (cont.)

| Time 1 Measure            | Time 2 Measure    |                   |                   |                   |                   |                   | OCI-R-N           |
|---------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|
|                           | OCI               |                   |                   |                   |                   |                   |                   |
|                           | OCI-R             | Wash              | Obsess            | Hoard             | Order             | Check             |                   |
| <b>OCI-R<sup>a</sup></b>  | <b><u>.74</u></b> | .55               | .54               | .42               | .65               | .61               | .53               |
| Washing <sup>a</sup>      | .53               | <b><u>.73</u></b> | .31               | .16               | .48               | .37               | .33               |
| Obsessing <sup>a</sup>    | .49               | .27               | <b><u>.64</u></b> | .33               | .30               | .34               | .33               |
| Hoarding <sup>a</sup>     | .44               | .16               | .30               | <b><u>.47</u></b> | .37               | .33               | .29               |
| Ordering <sup>a</sup>     | .56               | .42               | .35               | .25               | <b><u>.72</u></b> | .42               | .34               |
| Checking <sup>a</sup>     | .63               | .42               | .40               | .28               | .48               | <b><u>.76</u></b> | .44               |
| Neutralizing <sup>a</sup> | .59               | .41               | .35               | .36               | .48               | .40               | <b><u>.65</u></b> |

Notes.  $N = 263$  (74 University of Notre Dame students, 76 University of Iowa students, 113 Outpatients). Measures with missing data are noted. <sup>a</sup> $N = 262$  (73 Notre Dame, 76 University of Iowa, 113 Outpatient). **Bold** correlations are the highest in their row. Underlined correlations are the highest in their column. *BFI* = Big Five Inventory (*E* = Extraversion, *A* = Agreeableness, *C* = Conscientiousness, *N* = Neuroticism, *O* = Openness); *GTS* = General Temperament Survey (*NT* = Negative Temperament, *PT* = Positive Temperament, *PA* = Positive Affectivity, *E* = Energy, *D* = Disinhibition, *CO* = Carefree Orientation, *AB* = Antisocial Behavior); *SNAP Mistrust* = *MST* = Schedule for Adaptive and Non-Adaptive Personality Mistrust scale; *Social Anhedonia* = *R-SAS* = Revised Social Anhedonia Scale; *BFNE* = Brief Fear of Negative Evaluation Scale; *SIAS* = Social Interaction Anxiety Scale -- 19 item version as published in Mattick and Clarke (1998); *SCOPI* = Schedule of Compulsions, Obsessions, and Pathological Impulses (*Checking* = *Check* = Obsessive Checking, *Cleanliness* = *Clean* = Obsessive Cleanliness, *Rituals* = *Ritual* = Compulsive Rituals, *Impulses* = *PI* = Pathological Impulses); *OCI-R* = Obsessive Compulsive Inventory-Revised (*OCI-R-Wash* = Washing, *OCI-R-Obsess* = Obsessing, *OCI-R-Hoard* = Hoarding, *OCI-R-Order* = Ordering, *OCI-R-Check* = Checking, *OCI-R-N* = Neutralizing)

TableA- 32 Correlations of Schizotypy Scales with Existing Measures of Personality and Psychopathology, Time 1

| Measure                   | CCP   |       | Unusual Beliefs |      | Unusual Perceptions |       | Dissociation Proneness |      |
|---------------------------|-------|-------|-----------------|------|---------------------|-------|------------------------|------|
|                           | T1    | T2    | T1              | T2   | T1                  | T2    | T1                     | T2   |
| <b>BFI</b>                |       |       |                 |      |                     |       |                        |      |
| Extraversion              | -.20* | -.20* | .01             | -.05 | -.09                | -.11  | -.08                   | -.19 |
| Agreeableness             | -.39* | -.37  | -.15            | -.22 | -.25                | -.29  | -.16                   | -.19 |
| Conscientiousness         | -.49* | -.50* | -.23            | -.24 | -.31                | -.30  | -.25                   | -.23 |
| Neuroticism               | .55*  | .58*  | .26             | .22  | .35                 | .33   | .35                    | .45  |
| Openness                  | -.01  | -.09  | .11             | .10  | .13                 | .06   | .28*                   | .16* |
| <b>GTS</b>                |       |       |                 |      |                     |       |                        |      |
| NT                        | .60*  | .63*† | .26             | .25  | .41                 | .40   | .44                    | .51  |
| PT                        | -.19* | -.16* | -.03            | .03  | -.03                | -.01  | -.03                   | .00  |
| Energy                    | -.09* | -.05* | -.02            | .03  | .01                 | .05*  | .01                    | .02  |
| PA                        | -.16* | -.18* | -.01            | .05  | -.01                | -.01  | -.02                   | .01  |
| Disinhibition             | .41*  | .35*  | .25             | .22  | .30                 | .26   | .29                    | .22  |
| CO                        | .25*  | .23*  | .13             | .10  | .14                 | .12   | .13                    | .13  |
| AB                        | .41*  | .28*  | .22             | .15  | .31                 | .21   | .33                    | .17  |
| <b>SNAP Mistrust</b>      | .61*  | .59*  | .34             | .31  | .52                 | .50   | .41                    | .38  |
| <b>Social Anhedonia</b>   | .44*  | .43*  | .22             | .26  | .36                 | .40   | .27                    | .25  |
| <b>BFNE</b>               | .42*  | .47*  | .09             | .15  | .26                 | .30   | .28                    | .40  |
| <b>SIAS</b>               | .57*  | .59*  | .16             | .23  | .34                 | .40   | .31                    | .40  |
| <b>SCOPI</b>              | .51   | .55   | .30             | .32  | .53*                | .56*  | .46                    | .53  |
| Checking                  | .60*  | .61*  | .33             | .35  | .55                 | .56   | .53                    | .58† |
| Cleanliness               | .17   | .27   | .13             | .17  | .23*                | .34*  | .17                    | .26  |
| Rituals                   | .31   | .37   | .21             | .20  | .37*                | .41*  | .30                    | .37  |
| Hoarding                  | .42   | .42*  | .34             | .31  | .44*                | .41   | .37                    | .34  |
| Impulses                  | .61*† | .53   | .39†            | .41† | .60*†               | .59†* | .54†                   | .51  |
| <b>OCI-R<sup>a</sup></b>  | .44   | .55   | .32             | .41  | .50*                | .59*  | .36                    | .42  |
| Washing <sup>a</sup>      | .25   | .33   | .21             | .29  | .33*                | .43*  | .20                    | .26  |
| Obsessing <sup>a</sup>    | .51*  | .57*  | .29             | .40  | .47                 | .52   | .41                    | .47  |
| Hoarding <sup>a</sup>     | .35   | .45*  | .25             | .33  | .37*                | .44   | .24                    | .26  |
| Ordering <sup>a</sup>     | .27   | .35   | .21             | .23  | .34*                | .38*  | .26                    | .24  |
| Checking <sup>a</sup>     | .34   | .47   | .23             | .31  | .40*                | .48*  | .32                    | .39  |
| Neutralizing <sup>a</sup> | .32   | .39   | .31             | .39  | .43*                | .52*  | .24                    | .33  |

(table continues)

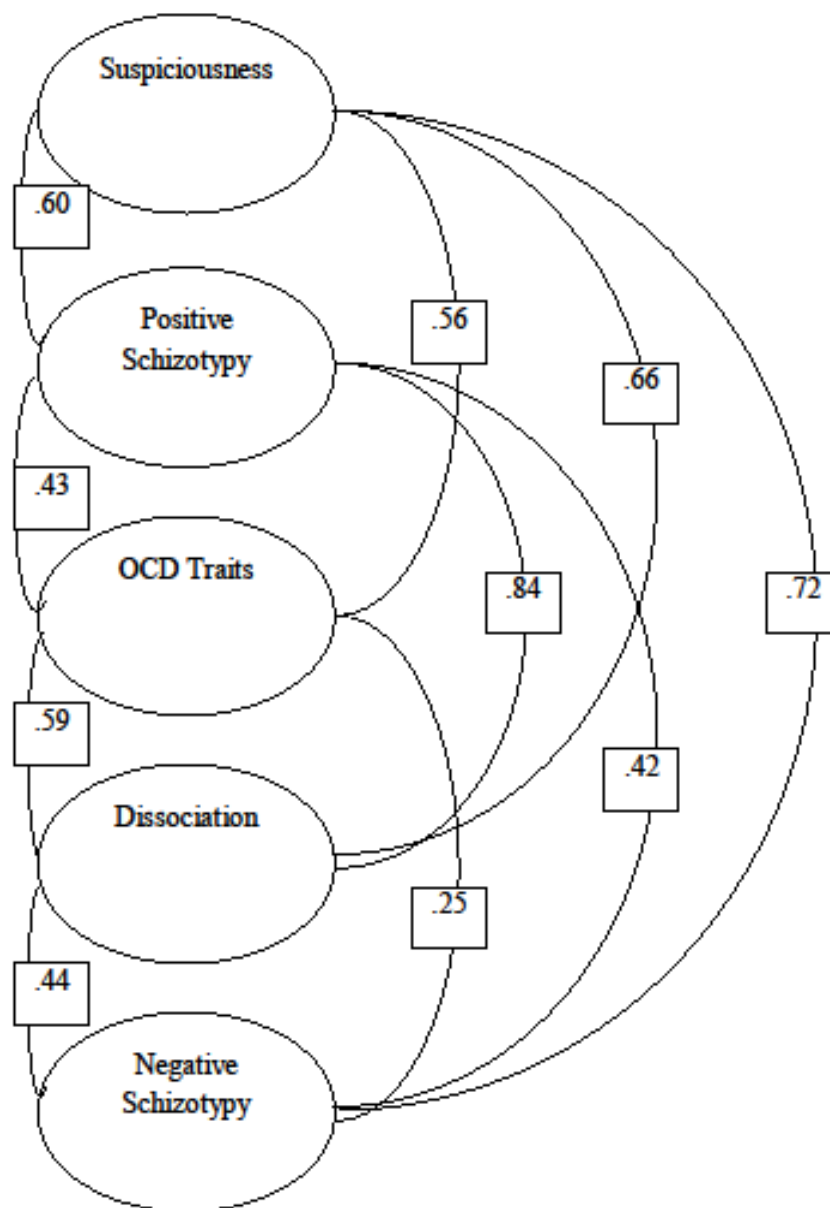
Table A-32 (cont.)

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*Notes.* CCP = Cognitive and Communicative Peculiarity. Time 1  $N = 657$  (193 University of Notre Dame students, 301 University of Iowa students, 163 Outpatients). Time 2  $N = 263$  (74 Notre Dame, 76 University of Iowa, 113 Outpatient). Measures with missing data are noted. \*Strongest value in row (within measurement occasion). †Strongest value in column. <sup>a</sup>Time 1  $N = 190$  University of Notre Dame students, 301 University of Iowa students, 163 Outpatients; <sup>a</sup>Time 2  $N = 262$  (73 University of Notre Dame students, 76 University of Iowa students, 113 Outpatients). Underlined correlations are between  $|.35|$  and  $|.59|$ . **Bold** correlations are  $\geq |.60|$ . *BFI* = Big Five Inventory; *GTS* = General Temperament Survey (*NT* = Negative Temperament, *PT* = Positive Temperament, *PA* = Positive Affectivity, *CO* = Carefree Orientation, *AB* = Antisocial Behavior); *SNAP Mistrust* = Schedule for Adaptive and Non-Adaptive Personality Mistrust scale; *Social Anhedonia* = Revised Social Anhedonia Scale; *BFNE* = Brief Fear of Negative Evaluation Scale; *SIAS* = Social Interaction Anxiety Scale -- 19 item version as published in Mattick & Clarke, 1998; *SCOPI* = Schedule of Compulsions, Obsessions, and Pathological Impulses (Checking = Obsessive Checking, Cleanliness = Obsessive Cleanliness, Rituals = Compulsive Rituals, Impulses = Pathological Impulses); *OCI-R* = Obsessive Compulsive Inventory-Revised

APPENDIX B  
FIGURES

Figure B-1 Diagrammatic Representation of Best-Fitting Model in Stringer and Colleagues (2010)



*Note.* Adapted from Stringer and colleagues (2010) – Loadings of latent variables on observed variables are omitted for readability. Loadings are standardized.

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