

Schizophrenia and the Sense of Self

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Sense of self (SOS)—understood as the foundation upon which individuals experience their daily lives—has been increasingly investigated in schizophrenia. A disrupted SOS is thought to represent a platform for the experience of psychiatric symptoms, social cognitive deficits, and other abnormalities of consciousness. Few studies, however, have investigated the specificity of disrupted SOS to schizophrenia. The primary objective of the present study was to test the hypothesis that SOS is deficient in schizophrenia patients compared to both nonpsychiatric controls and patients with psychotic bipolar disorder. Using select scales from the *Assessment of Self Descriptions*, the present study assessed SOS from spontaneous narratives provided by schizophrenia patients ($N = 50$), bipolar patients with psychotic features ($N = 17$), and nonpsychiatric controls ($N = 24$). Our findings indicate that facets of SOS—in particular, certain aspects of agency and relatedness to others—are deficient in schizophrenia compared to nonpsychiatric controls and bipolar patients with psychotic features, even when overall level of functioning and psychiatric symptoms are accounted for. Implications of these results are discussed.

Key words: self/phenomenology/language/narrative

Introduction

Schizophrenia, despite notable advances, persists as a considerably enigmatic disorder. Much of this mystery is attributable to difficulties determining the nature of the disorder. Thus, researchers have seen value in adopting a phenomenological approach to understanding it.^{1–3} Particular emphasis has been placed on examining disturbances in sense of self (SOS)^{4,5} with the idea that self-disturbance is a core feature of schizophrenia-spectrum disorders.³ Although this area of the schizophrenia literature has expanded, less focus has been placed upon whether self-disturbance is also present in other psychotic illnesses. In the present study, our primary interests were to investigate SOS in schizophrenia patients, comparing

them to both nonpsychiatric controls and patients with psychotic bipolar disorder to assess the specificity of SOS deficiencies to schizophrenia.

Historically, disturbed SOS was considered a core feature of schizophrenia—dating as far back as Bleuler’s writings on “dementia praecox”⁶ and as recently as the Diagnostic and Statistical Manual of Mental Disorders-III (DSM-III).⁷ However, the vagueness of the term “self” and a perceived lack of practical utility were likely contributors to this descriptor being absent in DSM-IV.⁸ Nonetheless, some schizophrenia researchers criticize what they call an overreliance on contemporary diagnostic criteria and conceptualization that overemphasize reliability at the expense of validity.^{3,9} Identifying the neurobiological correlates and underpinnings of psychological disorders has been vital in advancing our understanding of specific mechanisms and risk factors—especially for schizophrenia. However, alterations in the way one experiences the world and the self are important aspects of psychopathology. Therefore, understanding subjective experience in schizophrenia is important in developing a more complete and coherent understanding of the disorder.

Addressing this concern, and the framework for the present study, is the ipseity disturbance model.³ According to this theoretical model, many symptoms and phenomena of schizophrenia are attributable to a disruption in the SOS with the self-disorder occurring as a consequence of abnormalities in the organization of consciousness that alter one’s experiential subjectivity.³ More specifically, this is thought to be caused by two interrelated distortions of consciousness. The first concept in this pair of distortions is *hyperreflexivity*, which describes an exaggerated self-consciousness involving an individual experiencing the self or what would normally be an implicit aspect of the self, as extremely salient.³ The complementary process is *diminished self-affection*, which is characterized by the attenuation of one’s basic SOS presence or a lessening of the “implicit sense of existing as a vital and self-possessed subject of awareness.”^{3(p428)} These concepts are promising in understanding

alterations of consciousness in schizophrenia, specifically how experiences of typically tacit stimuli may become extremely salient. For example, the experience of auditory hallucinations is thought to be related to abnormal perception of internal speech.¹⁰ Many schizophrenia patients report experiencing “running commentary” hallucinations that involve a voice describing the patient’s current thoughts or actions. If a patient fails to recognize the self as the source of the internal speech (diminished self-affectation) and perceives the speech as especially intrusive (hyperreflexivity), he/she will perceive this inner speech as being external (eg, a commenting voice).³ Although the ipseity disturbance model is relevant to understanding schizophrenia, it is not yet firmly operationalized empirically.

Given the fundamental subjectivity of the self, objective conceptualization is a demanding task. Furthermore, subjective experience and the underlying SOS are inherently difficult to measure. We utilized a relatively unstructured approach (ie, obtaining minimally prompted self-descriptions) to allow a spontaneous response that, although grounded in conscious description, might permit access to experiences of which one is not directly aware by means of verbal report.¹¹ According to the ipseity disturbance model, SOS disruptions occur at a prereflective level of consciousness. We chose to elicit self-descriptions to assess SOS with the understanding that these narratives contain the reflective manifestation of these prereflective contents. This approach provides an important opportunity to assess aspects of SOS that might remain otherwise untestable. Using *The Assessment of Self Descriptions* manual,¹¹ we systematically analyzed self-descriptions to assess several domains of the narrative SOS: relatedness to others, sense of agency, modes of description of the self, and integration of the self. Previous work with these scales in a different sample (Rhinewine, 2004, unpublished data) revealed that schizophrenia patients and their first-degree relatives exhibited abnormalities in their SOS compared with matched controls. Presently, we assessed the extent to which SOS is disrupted in schizophrenia and whether this disruption is specific to schizophrenia rather than to psychosis in general. Accordingly, we examined SOS scale score differences between patients with schizophrenia, patients with psychotic bipolar disorder, and nonpsychiatric controls. We anticipated that schizophrenia patients would demonstrate significantly lower SOS scale scores on selected subscales than either the nonpsychiatric controls or the patients with bipolar disorder with psychotic features.

Methods

Participants

Participants ($N = 91$) were drawn from a larger study of cognition and language in schizophrenia.¹² The current sample included three groups: schizophrenia patients, bipolar patients, and nonpsychiatric controls. A summary of mean ages, years of education, ethnicity, and

gender proportions by group appear in [table 1](#). Criteria for participant exclusion from the study were: history of seizures, current substance abuse, history of drug or alcohol dependence warranting inpatient detoxification, history of traumatic brain injury or history consistent with or indicative of any other sort of organic brain damage, mental retardation, or any history of inhalant use. Participants spoke English as their primary language. Subjects were financially compensated commensurate with time and travel associated with study participation. All participants provided written informed consent using a protocol approved by the Kent State University Institutional Review Board. Participants did not receive treatment as part of this study.

Schizophrenia Patients. The schizophrenia patient group ($N = 50$) included stable outpatients being treated at community mental health centers in Akron, OH. Participants met DSM-IV-TR⁸ criteria for schizophrenia as determined using the Schedule for Affective Disorders and Schizophrenia (SADS).¹³ SADS interviews were conducted by graduate-level psychology students with appropriate backgrounds in the study of schizophrenia and psychosis. Diagnoses were confirmed under the supervision of a licensed clinical psychologist (N.M.D.).

Bipolar Patients. The bipolar patient group ($N = 17$) included stable outpatients being treated at community mental health centers in Akron, OH. Participants met DSM-IV-TR⁸ criteria for bipolar disorder with psychotic features. Patients were in a current manic, hypomanic, or euthymic phase of illness; individuals currently in a depressive phase of illness were not included.

Control Participants. Control participants ($N = 24$) were recruited from the Akron, OH area by means of flyers placed in churches, community centers, social service agencies, and throughout the university campus. A diagnostic interview was administered to rule out history of psychotic symptoms. These participants were comparable to the psychiatric participants in terms of age, gender, and ethnicity.

Measures

Self-descriptions. Following the method of Blatt et al,¹¹ interviewers elicited self-descriptions with the simple instruction to “describe yourself as fully as you can.” Participants responded spontaneously to this prompt for 5 min, and their responses were audio recorded. Interviewers did not speak during the self-descriptions with the exception of a single probe of “is there anything more you can say to describe yourself?” if the participant stopped speaking for more than 30 s. The narratives were later transcribed for analysis.

*The Assessment of Self Descriptions*¹¹ was used to assess SOS from the transcribed self-descriptions. We selected 9

Table 1. Demographic and Descriptive Statistics

	Schizophrenia ¹	Bipolar ²	Control ³	Group Difference Statistics
<i>N</i>	50	17	24	
Mean age (<i>SD</i>)	39.09 (9.87)	37.24 (9.02)	38.22 (9.17)	$F(2,89) = 0.252, P = .778$
Gender (%)				
Male	25 (50)	10 (59)	13 (54)	$\chi^2 = 0.431, df = 2, P = .806$
Female	25 (50)	7 (41)	1 (46)	
Race (%)				$\chi^2 = 15.692, df = 2, P = .016^*$
African American	36 (72)	5 (29)	14 (58)	
Caucasian	14 (28)	10 (59)	10 (42)	
Native American	—	1 (6)	—	
Asian	—	1 (6)	—	
Mean years of education (<i>SD</i>)	11.74 (1.84)	12.59 (2.09)	15.13 (2.24)	$F(2,89) = 22.828, P < .001^*$
Total duration of psychiatric hospitalization in days (<i>SD</i>)	310.43 (542.61)	269.05 (337.50)	—	$t(65) = 0.314, P = .754$
Mean GAF (<i>SD</i>)	47.64 (13.38)	56.00 (8.10)	83.07 (8.71)	$F(2,89) = 52.077, P < .001^*$
Mean PANSS (<i>SD</i>)	66.05 (17.99)	52.87 (12.75)	—	$t(58) = 2.615, P = .011^*$
Positive	17.15 (6.83)	13.31 (4.18)	—	
Negative	15.15 (4.80)	10.81 (3.97)	—	
General	33.41 (9.63)	28.40 (8.24)	—	
Mean word count for narratives (<i>SD</i>)	541.20 (231.51)	484.00 (262.56)	579.08 (200.31)	$F(2,89) = 0.852, P = .430$
Mean SOS scores (<i>SD</i>)				
Articulation of relatedness	4.20 (0.97)	4.06 (1.25)	4.50 (0.89)	
Quality of relatedness	3.59 (1.36)	4.02 (1.54)	4.87 (1.51)	
Level of relatedness	4.57 (1.39)	5.44 (1.66)	6.43 (1.21)	
Level of self-definition	4.50 (1.54)	6.18 (1.67)	7.25 (1.65)	
Negative-positive self-regard	4.08 (1.21)	4.88 (0.93)	5.42 (1.10)	
Self-critical	3.98 (1.02)	4.19 (0.83)	4.45 (0.67)	
Striving/ambitious	2.51 (0.81)	2.82 (0.99)	3.37 (0.86)	
Substantiality	2.88 (0.94)	3.06 (0.90)	3.46 (0.59)	
Differentiation/integration	3.48 (1.07)	3.88 (1.27)	5.54 (1.22)	

Note: GAF, Global Assessment of Functioning; PANSS, Positive and Negative Syndrome Scale for Schizophrenia; SOS, sense of self. * $P < .05$.

subscales as the most relevant to the measurement of self—as conceptualized in the present study—to assess aspects of relatedness (articulation of relatedness, quality of relatedness, and level of relatedness), sense of agency (negative-positive self-regard, self-critical, striving/ambitious, and level of self-definition), modes of self-description (substantiality), and integration of the self (differentiation/integration). Of particular interest in the present study were the variables related to the sense of agency, as previous research has indicated that agency is diminished in schizophrenia patients^{14,15} and is also associated with functional outcome.¹⁶ Descriptions for the SOS scales appear in [table 2](#).

Previous research with the SOS scales has demonstrated validity in discrimination of psychiatric patients from non-patients.¹⁷ Work in our laboratory with different samples¹⁸ has demonstrated predictive validity of the level of self-definition, substantiality, differentiation/integration, and quality of relatedness scales in differentiating schizophrenia patients, controls, and relatives of both groups (Rhinewine, 2004, unpublished data). Presently, the Cronbach's alpha for the SOS scales was within an acceptable range ($\alpha = .792$).

The self-descriptions were rated by the primary author (A.M.M.). A subsample was also rated by the second

author (N.M.D.). Intraclass correlation coefficients (ICCs) calculated for each subscale on a subset of 15 self-descriptions demonstrated good interrater reliability (0.701–0.959).

Global Functioning. The Global Assessment of Functioning (GAF) from the DSM-IV-TR⁸ was administered to evaluate current level of functioning. The GAF measures psychiatric disturbance and its impact on psychological, social, and occupational functioning. Scores range from 1 to 100 based upon level of impairment; lower scores indicate more severe disturbance.

Psychiatric Symptoms. The schizophrenia and bipolar patients were administered the Positive and Negative Syndrome Scale for Schizophrenia (PANSS)¹⁹ to assess current psychiatric symptoms. The PANSS is a 30-item interviewer-rated, semistructured assessment. Separate subscales exist for positive, negative, and general symptoms. Each item is rated on a scale of 1 (“Not Present”) to 7 (“Extreme”). Ratings are obtained for individual items, and scores for subscales and total scores are obtained by summing the appropriate items. Presently, the subscale scores for Positive, Negative, General, and Total

Table 2. Sense of Self (SOS) Scales

Domains of Self and Scales	Description
Relatedness to others	
Articulation of relatedness	The extent to which relationships with others are mentioned; this scale measures the articulation and specificity, but not quality, of interpersonal relationships.
Quality of relatedness	The quality of the individual's feelings for and perceptions of others, and how the individual perceives people as impacting the self positively or negatively.
Level of relatedness	The extent to which the relationships are described as reciprocal and empathic. Lower scores indicate feelings of being indistinguishable from others or isolated; higher scores indicate mutuality and reciprocal caring in relationships.
Sense of agency	
Negative-positive self-regard	Evaluates the primary way the self is viewed. Lower scores indicate a negative and harsh view of the self, whereas higher scores indicate a stable SOS with feelings of confidence and strength.
Self-critical	The degree to which specific harsh judgments about the self are made, indicating a lack of satisfaction with oneself. Both the intensity and pervasiveness of self-criticism are taken into account. Scores were reversed for data analysis so that lower scores indicated higher levels of self-criticism.
Striving/ambitious	Measures the individual's drivenness and striving for accomplishments. Interests, occupations, and other work central to the individual's SOS are scored; these motivations may be either self or externally generated.
Level of self-definition	Examines the extent to which the self-description conveys that the individual has a clearly defined identity, along with goals and values that demonstrate agency. Lower scores indicate no articulation of SOS or a reactive preoccupation with defining or protecting one's individuality. Higher scores demonstrate integration of past and present experiences into an identity that allows the articulation of values and a sense of purpose.
Modes of self-description	
Substantiality	Assesses the modes of representation an individual uses when describing the self. Four modes are counted: (1) physical and demographic properties, (2) overt behavioral features, (3) personality traits, and (4) inner thoughts, feelings, and values.
Integration of the self	
Differentiation/integration	The degree to which a self-description is characterized by multiple life domains, including social life, leisure activities, interests, work, school, family, and personal qualities. The integration of the domains as articulated in the self-description adjusts this total up by 1 point for high integration, or down 1 point for low integration.

Note: From *The Assessment of Self Descriptions*.¹¹

symptoms were utilized. ICCs for these subscales (0.927–0.978) demonstrated excellent interrater reliability.

Statistical Analyses

To assess the hypothesis related to group differences in SOS, schizophrenia patient, bipolar patient, and non-psychiatric control groups were compared on the SOS scales. This was accomplished with a group-by-variable MANOVA including each of the 9 standardized SOS subscales. Given the conceptual interrelatedness and intercorrelation of the SOS scores, a multivariate analysis was appropriate. Planned simple contrasts were utilized with the schizophrenia patients as the comparison group.

Due to group differences in overall pathology and functioning (PANSS and GAF; table 1) between the bipolar and schizophrenia patients, a follow-up group-by-variable multivariate ANCOVA (MANCOVA) was conducted. The SOS scores found to be significantly different between the patient groups in the first MANOVA were entered as dependent variables, and the PANSS and GAF scores were specified as covariates. Given group differences on race and level of education, secondary

analyses tested whether these differences were related to within-group SOS scale scores.

Missing Data. Three of the SOS variables (quality of relatedness, level of relatedness, and striving/ambitious) cannot always be scored from self-descriptions. This is a byproduct of the spontaneous nature of the speech samples (ie, not all individuals articulate necessary components to score these variables). To deal with these missing data, we followed the guidelines described by Blatt et al¹¹ in *the Assessment of Self Descriptions* manual, which advocates the use of mean replacement. Mean values by group were calculated for these three variables, and missing values were replaced prior to analysis. This method allowed us to retain our group sample sizes. Of note, we also performed our statistical analyses excluding participants with missing data and obtained qualitatively equivalent results.

Results

Group Demographics, Symptoms, and Functioning

Groups were compared on demographic, symptom, and functioning variables (table 1). Analyses revealed

significant group differences on years of education, race, GAF, and total PANSS score.

Due to differences on race between groups, *t* tests examined differences in SOS scores between African American and Caucasian participants. In both schizophrenia and bipolar patient groups, none of the SOS scale scores were significantly different between African Americans and Caucasians. In the nonpsychiatric control group, articulation of relatedness scores was higher for Caucasians than that for African Americans ($t = 2.453$, $df = 21$, $P = .022$); no other SOS scale scores were significantly different between racial groups. Additionally, level of education differed between groups. As previous research has demonstrated that level of education is related to outcome measures in schizophrenia patients,^{20,21} we examined bivariate correlations between the SOS variables and education in the schizophrenia group. None of the SOS variables were significantly correlated with education.

SOS Scale Scores

Bivariate correlations were computed for the SOS scale scores. Scores tended to correlate positively with each other.

MANOVA for SOS Scores. To examine group differences on the SOS variables, a 1 (group) \times 9 (standardized dependent variables) MANOVA was conducted. This model yielded a significant multivariate effect with significant group differences for quality of relatedness, level of relatedness, level of self-definition, negative-positive self-regard, striving/ambitious, substantiality, and differentiation/integration. Simple multivariate contrasts, with the schizophrenia group as the comparison group, revealed significant differences between the schizophrenia patients and control participants on quality of relatedness, level of relatedness, level of self-definition, negative-positive self-regard, striving/ambitious, substantiality, and differentiation/integration, as well as a trend-level difference

on self-critical; multivariate simple contrasts revealed significant differences between the schizophrenia and bipolar patients on level of relatedness, level of self-definition, and negative-positive self-regard. Results for these analyses appear in [table 3](#).

Follow-up MANCOVA. To examine differences between the schizophrenia and bipolar patient groups on the SOS variables found to be significantly different in the previous analysis (level of relatedness, level of self-definition, and negative-positive self-regard) when overall level of pathology (PANSS and GAF) was accounted for, a 1 (group) \times 3 (standardized dependent variables) MANCOVA was conducted. The GAF and total PANSS score were entered as covariates in the first block of the analysis with the SOS scale scores entered in the second block. With all variables in the model, a significant multivariate main effect for group was observed (Wilks' $\Lambda = 0.850$, $F[3,51] = 2.993$, $P = .039$, partial $\eta^2 = 0.213$). Tests of between-subjects effects yielded significant group effects for level of relatedness ($F[3,57] = 5.246$, $P = .003$, partial $\eta^2 = 0.229$), level of self-definition ($F[3,57] = 5.822$, $P = .010$, partial $\eta^2 = 0.192$), and negative-positive self-regard ($F[3,57] = 5.386$, $P = .003$, partial $\eta^2 = 0.234$).

Discussion

The present study demonstrated significant support for our first hypothesis: schizophrenia patients demonstrated deficient SOS overall as measured by the SOS scales compared to healthy controls. This is consistent with previous research demonstrating significant differences in SOS between schizophrenia patients and healthy controls.¹⁸ Our findings also demonstrate that SOS in the schizophrenia patients was deficient in terms of specific aspects of agency and relatedness compared to patients with psychotic bipolar disorder. These findings are consistent with other recent studies finding that abnormalities in self—assessed with different methodology—seem

Table 3. Results of MANOVA for Sense of Self (SOS) Scores

	Wilks' Λ	<i>F</i>	<i>P</i>	Partial η^2	Contrast Estimates	
					Scz vs Controls	Scz vs Bipolar
Overall model	0.441	4.489	<.001	0.336	—	—
Articulation of relatedness	—	1.111	.334	0.025	0.303, $P = .233$	-0.143, $P = .618$
Quality of relatedness	—	6.363	.003	0.126	0.835, $P = .001^*$	0.277, $P = .289$
Level of relatedness	—	14.508	<.001	0.248	1.149, $P < .001^{**}$	0.538, $P = .030^*$
Level of self-definition	—	25.822	<.001	0.370	1.386, $P < .001^{**}$	0.845, $P < .001^{**}$
Negative-positive self-regard	—	11.984	<.001	0.214	1.081, $P < .001^{**}$	0.649, $P = .014^*$
Self-critical	—	2.118	.126	0.046	-0.456, $P = .057$	0.038, $P = .890$
Striving/ambitious	—	8.249	.003	0.158	0.956, $P < .001^{**}$	0.347, $P = .197$
Substantiality	—	3.719	.028	0.078	0.664, $P = .008^*$	0.205, $P = .458$
Differentiation and integration	—	26.470	<.001	0.376	1.418, $P < .001^{**}$	0.277, $P = .216$

Note: Scz, schizophrenia. * $P < .05$ and ** $P < .001$.

to aggregate selectively in schizophrenia.^{22,23} Additionally, when psychiatric symptoms and global functioning were accounted for, these components of SOS remained significantly different between patient groups. This finding indicates that observed group differences between schizophrenia and bipolar patients on the SOS scale scores are unlikely attributable to differences in overall pathology or functioning.

Although schizophrenia and bipolar disorder may be more similar than previously thought in terms of cognitive and genetic profiles,^{24,25} our findings support the idea that some experiential components of the two disorders may be significantly different. The SOS scales associated with agency (ie, level of self-definition, negative-positive self-regard) emerged as significant differentiators of schizophrenia from psychotic bipolar illness. Furthermore, level of relatedness also differentiated the patients. As defined in *The Assessment of Self Descriptions* manual,¹¹ scoring level of relatedness requires consideration of the impact that self-development has on the formation of personal relationships, and lower scores indicate difficulties with understanding boundaries between the self and others. Given this definition and our findings, the level of relatedness variable may also reflect agency in a way that the other relatedness variables did not. As measured presently, agency was directly reflective of the basic SOS and is conceptually consistent with the construct of *diminished self-affection*.³ More specifically, a lessening in one's basic experience of themselves as a consistent and implicit entity may underlie disruptions in agency. For example, an individual unable to understand the self as the agent of his/her own actions, feelings, or daily life will experience significant difficulty in integrating experiences in a meaningful way, difficulty in goal setting, and a subsequent negative or confusing experience of the self. Outside of phenomenological research, researchers from the fields of cognitive neuroscience²⁶ and cognitive psychology²⁷ also note agency as a core deficiency in schizophrenia. Specifically, findings from experimental neuroscience indicate that some schizophrenia patients demonstrate anomalous premotor movement intentionality²⁸ and abnormalities in body ownership²⁹ that may be related to problems with self-monitoring and personal agency. Finally, given that the SOS variables related to agency significantly differentiated psychiatric diagnostic groups in this stable outpatient sample may indicate that disrupted agency is an especially prominent feature of schizophrenic illness. However, this finding must be interpreted with caution. Although overall SOS was different between groups, we cannot rule out the possibility that the specific facets of SOS that surpassed statistical significance were truly significantly more different than those that did not. Further studies should endeavor to expand upon these findings, and to further examine the specificity of disruptions in the sense of agency to schizophrenia.

It is also important to acknowledge the portions of our hypotheses that were not presently supported. Although the majority of the SOS subscales significantly differentiated the schizophrenia patients and healthy control participants, only 3 of these variables (level of relatedness, level of self-definition, and negative-positive self-regard) significantly differed between the psychiatric groups. This finding indicates that although schizophrenia patients exhibited some significant SOS differences compared to bipolar patients, the groups were comparable in terms of differentiation, substantiality, articulation and quality of relatedness, striving/ambition, and self-criticism. Although not statistically significant, the group differences were still in the expected direction; the exception was the articulation of relatedness variable, on which schizophrenia patients obtained slightly higher scores than bipolar patients. These similarities between the psychiatric patient groups indicate that certain aspects of the self may not be related specifically to schizophrenic pathology but rather to psychosis or psychopathology more broadly. Two variables related to agency were not found to significantly differentiate patient groups (self-critical and striving/ambitious). These aspects of SOS measure explicitly harsh self-judgments and specific accomplishments and goals. As they are defined, these variables may represent aspects of SOS that are ultimately more attributable to problems with general functioning that one may incur as the result of having a psychiatric disorder.

The present study has several notable limitations. First, only stable outpatients were included in the sample. Similar work with inpatients might yield different results. However, the inclusion of stable outpatients only allowed us to examine participants with generally lower levels of acute positive symptoms, so our narratives and ultimately our findings were less influenced by this potentially complicating factor. Second, raters could not be entirely blinded to diagnostic status of the participants when coding narratives. Participant information was not included on the transcriptions of the self-descriptions, but participants sometimes mentioned mental health treatment histories in the narratives. Patients did not tend to make references to specific diagnoses. Third, multiple comparisons were conducted with no statistical correction, and, therefore, the results must be interpreted very cautiously. Furthermore, our sample size was limited. Future work with larger groups may allow for more powerful empirical testing of differences in SOS. Finally, the potential influence of formal thought disorder on the self-descriptions was not assessed. However, the outpatient participants were in a less severe state of illness than might have been the case in an acute patient group, and in general, the raters did not encounter difficulty in understanding their narratives.

In terms of future directions, the concept of SOS merits continued attention as an important and potentially central component of schizophrenia. Additionally, the

use of narrative to assess SOS was effective and had some advantages. This approach allowed us to circumvent some of the measurement difficulties associated with self-report measures and their potential biases. Previous research utilizing narrative to assess SOS¹⁸ has shown evidence of diminished SOS in schizophrenia probands and their nonschizophrenic relatives; future work may utilize similar methodology to examine SOS in subclinical manifestations of schizophrenia (eg, schizotypy). Given the complexity of schizophrenia, continued integration of phenomenology, neuroscience, cognitive psychology, and other approaches is vital. Future studies may benefit from the integration of theoretical perspectives, in either parallel or single experimental designs. Finally, the potential role of cognitive deficits in the formation of self-descriptions was not investigated. Future research may strive to assess the relationship between neurocognition and SOS.

As previously mentioned, the agency component of SOS as measured in the present study is most similar to Sass & Parnas³ concept of *diminished self-affection*. Future research may endeavor to incorporate both this element and the *hyperreflexivity* component of the ipseity disturbance model in order to better support the underlying theoretical foundations. For example, previous research has utilized self-report methodology to assess “self-disorders,” or anomalous self-experiences, that may be more reflective of the *hyperreflexivity* component. The inclusion of measures tapping more specifically into both facets of ipseity disturbance will be important to further the empirical development of the theory.

Furthermore, the divergence of assessment of SOS in the present study from the ipseity disturbance model warrants attention. As discussed previously, the alterations of consciousness, implicated in this model, occur at a level of awareness that is inherently difficult to measure, with spontaneous narrative providing an important opportunity to assess subjective aspects of the self. Thus, although our present approach is related to ipseity disturbance, it does not represent an explicit operationalization of the model. Participants did not directly address their ipseity experiences on the SOS variables but instead communicated self-experiences that are understood as consequences of underlying ipseity disturbances. For this reason, the SOS variables utilized in the present study may also be relevant to other more structured assessments of self-experience. Of note, Lysaker and colleagues have developed a scale to assess development and understanding of one’s life story in schizophrenia patients.³⁰ Additionally, the phenomenologically-based Examination of Anomalous Self Experience³¹ instrument from Parnas and colleagues has been utilized to assess disorders of self-awareness in schizophrenia. Future research may investigate the relationship between the SOS variables in the present study and other empirical assessments of self-experience with an emphasis on

assessing convergent validity and refining our understanding of how self-disturbance manifests in the lives of those living with schizophrenia.

These findings may also have implications for treatment. Phenomenologically oriented psychotherapies for schizophrenia are emerging,^{30,32} and their further development and empirical testing are encouraged. More specifically, psychotherapy that allows for integration of the self into treatment and emphasizes how the individual experiences and thinks about the self may yield improved outcomes. Given recent findings that development of personal narrative may represent an important aspect of recovery in schizophrenia,¹⁶ well-designed and soundly executed treatment studies of self-focused therapies would be especially relevant.

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