THE EXAMINATION OF ANOMALOUS WORLD-EXPERIENCE IN SCHIZOPHRENIA AND OTHER DISORDERS: AN EXPLORATORY INVESTIGATION

A DISSERTATION

SUBMITTED TO THE FACULTY

OF

THE GRADUATE SCHOOL OF APPLIED AND PROFESSIONAL PSYCHOLOGY

OF

RUTGERS,

THE STATE UNIVERSITY OF NEW JERSEY

BY

JOSEPH R CONERTY

IN PARTIAL FULFILLMENT OF THE

REQUIREMENTS FOR THE DEGREE

OF

DOCTOR OF PSYCHOLOGY

NEW BRUNSWICK, NEW JERSEY October, 2013

APPROVED: _____
Louis A. Sass, Ph. D.

_____
Steven Silverstein, Ph. D.

DEAN: _____
Stanley Messer, Ph. D.

ABSTRACT

There is extensive literature in the fields of psychiatry and clinical phenomenology documenting a set of sub-psychotic, sometimes subtle, subjective phenomena prominent in the phenomenology of schizophrenia-spectrum disorders. These phenomena are observed to occur pre- and post-psychosis, predict future psychosis of at-risk individuals, and are believed by some to characterize the very essence of schizophrenia. One such conception of these phenomena is called Self-Disorder, and more specifically disturbances in the subjective experience of self, referred to as "Anomalous Self Experience." A semi-structured interview emphasizing such anomalies called the "Examination of Anomalous Self Experience" (EASE) was published in 2005 and has demonstrated that it can discriminate disorders on the schizophrenia spectrum from affective psychosis and groups of non-schizophrenia-spectrum disorders, and has high interrater reliability. The potential utility of analogous measures focusing on experiences of the world rather than the self has yet to be assessed. A novel measure called the "Examination of Anomalous World Experience" (EAWE), composed in a format similar to the EASE, has however been created and is under development (under the leadership of Louis Sass). The purpose of this study was to field test the EAWE as a cohesive measure, including an analysis of interrater reliability, on a sample of psychiatric patients and non-psychiatric controls. Initial analysis suggests good interrater reliability and strong specificity to diagnosis but (like many well-studied psychological and neurocognitive constructs) only modest sensitivity to the schizophrenia spectrum. The data also lend preliminary support to the EAWE's ability to discriminate severe affective disorders from schizophrenia-spectrum disorders and non-psychiatric

controls, suggesting potential for use of the EAWE in future research to clarify affinities and discrepancies between the phenomenal gestalt of schizophrenia spectrum and non-schizophrenia spectrum disorders. A potential sample bias toward chronically ill, lower functioning individuals may have diminished the sensitivity of the EAWE. It is possible that the recent experiences of such individuals (in comparison with that of the younger and more recent-onset patients targeted in past EASE research) are less complex in nature, or that, in general, they have less ability to recall or willingness to describe recent or earlier forms of anomalous experience.

ACKNOWLEDGMENTS

I would like to thank several people for their support and encouragement during the process of this dissertation.

Thank you to my dissertation committee, Dr. Louis Sass and Dr. Steven Silverstein. I thank you, Dr. Sass, for your extraordinarily fine thoughts and feedback. I admire and am humbled by your relentless development and refinement of your work. I consider myself lucky to have contributed to your ongoing, highly unique research. I thank you, Dr. Silverstein, for your generous assistance with the composition and execution of this research, and especially with gaining access to subjects for this work.

Thank you to my colleague, and co-author of the EAWE, Elizabeth Pienkos. You were an invaluable partner on whom I could depend from the outset of this research through to the very end. Thank you, Greg Byrom, for devoting much time to interviewing the subjects in this study. Both of your contributions in no small way made this research and dissertation possible. I am forever indebted.

Finally, thank you to all of the staff, faculty, and my peers at GSAPP who undoubtedly influenced my professional development positively.

TABLE OF CONTENTS

PAGE

LIST OF TABLES

The Examination of Anomalous World Experience in Schizophrenia and Other Disorders: an Exploratory Investigation

The phenomenological approach to clinical psychopathology has regained prominence in recent literature on schizophrenia spectrum disorders. Aiming to foster a cohesive conceptualization of the essence of the schizophrenia spectrum (typically including Schizophrenia, Schizoaffective Disorder, and Schizotypal Personality Disorder), the literature from clinical phenomenology has steadily accumulated empirical support for the notion that disturbances of subjectivity are central to the essence of the schizophrenia spectrum. This literature seems to be making substantial progress in providing a framework within which psychiatrists, phenomenologists, and philosophers alike can think about schizophrenia (Sass, Parnas, & Zahavi, 2011). Furthermore, the focus on disturbances in subjectivity has convincingly implied that those fundamental symptoms can be manifest well before positive and negative symptoms present and after they remit.

The task of identifying those symptoms that may be most essential to schizophrenia has been somewhat challenged in the field of psychiatry by the currently and widely used references for a diagnosis within the schizophrenia spectrum disorders: the DSM-IV-TR (American Psychiatric Association, 2000) and the recently published DSM-5 (American Psychiatric Association, 2013). The DSM-5 (American Psychiatric Association, 2013) and its predecessors, the DSM-IV (American Psychiatric Association, 2000) and DSM-III (American Psychiatric Association, 1980) assume a heterogeneous bio-type of schizophrenia (Andreasen, 1987; Maj, 1998), without postulating a pathognomonic symptom set or attempting to define a cohesive phenotype or syndrome.

The symptomatological criteria of schizophrenia include symptoms undoubtedly experienced by cases of full-blown schizophrenia, but are symptoms that, when present, indicate that psychosis has arrived or is likely immanent, and thus omit symptoms – like more subtle disturbances in subjectivity – that present during non-psychotic periods of the illness. In sum, the commonly used symptom criteria for schizophrenia are psychosis-focused, favoring a symptom checklist over a cohesive description of the essence of schizophrenia.

Alterations in Subjectivity. While psychological, psychiatric, and phenomenological literatures alike have long noted alterations in subjectivity to be a common feature in schizophrenia (Gross & Huber, 2010), these aberrations have been characterized in several different ways. The notion that schizophrenia involves a loss of dynamic and vital contact with ambient reality, a diminished pre-reflective sense of connection with the outer world, is one of the more influential conceptions, perhaps best credited to the work of the French psychiatrist Eugene Minkowski (Urfer, 2001). That concept of a specifically schizophrenic "autism" is evident in contemporary phenomenological conceptions of the schizophrenia spectrum (Parnas & Bovet, 1991; Sass, 2001), and provides the basis for more specific concepts, e.g. anomalies in subjective experience (Sass & Parnas, 2001). Other conceptions have stressed qualitative alterations in the experiential background normally responsible for the unquestioned common-sense attachment to and understanding of the outer world (Sass, 2001; Stanghellini, 2004), with schizophrenic symptoms portrayed as, in large measure, expressions or responses to this often idiosyncratic and perplexing experience of the world. Another influential focus has been on the peculiar self-consciousness often seen

in schizophrenia, a "hyperreflexivity" whereby the self seems to be helplessly its' own object of observation, a mental posture difficult for the non-schizophrenic mind to assume and mimic thoroughly for any length of time (Sass, Pienkos, & Nelson, 2013; Sass, 2001).

Focusing on the "self" portion of the self/outer-world continuum, several recent, empirical studies have documented that anomalies in self-experience seem to be ubiquitous across the schizophrenia spectrum, and to present significantly more often in individuals with schizophrenia than with bipolar illness or in mixed groups of individuals with non-schizophrenia-spectrum forms of psychopathology or with no psychiatric disturbances (Parnas, Handest, Jansson, & Sæbye, 2005; Raballo, A., Sæbye, D., & Parnas, 2011). Those anomalous self experiences (ASE) are often reported to present before positive or negative symptoms proper and have been reported to persist into remission of psychosis (Davidsen, 2009; Parnas, Handest, Sæbye, & Jannson, 2003).

In order to operationalize the assessment of anomalous self experiences, Parnas, Møller, et al. (2005) created a semi-structured interview known as the Examination of Anomalous Self-Experience (EASE), which assesses anomalies in self-experience across the following five domains: cognition or stream of consciousness, self-awareness and presence, bodily experiences, demarcation/transitivism, and existential reorientation. Strong interrater reliability (Møller, Haug, Ravallo, Parnas, & Melle, 2011) and a strong relationship between EASE scores and diagnosis on the schizophrenia spectrum (Davidsen, 2009; Haug et al., 2012) have been reported. Each item is scored as either 0 for not present, 1 for questionably present, and 2 for definitely present. The tally of all individual item scores equal the total EASE score, which is considered to be an index of

the overall level of self-disorder present in the individual. While some EASE items are borrowed from other measures like the Bonn Scale for the Assessment of Basic Symptoms (Gross, Huber, Klosterkotter, & Linz 2008), others were based on interviews previously conducted by the authors with individuals on the schizophrenia spectrum (Parnas, Møller et al, 2005).

The EASE is directed at the "self" aspect of the self-outerworld continuum; experience of the world is not a primary focus of the ASE construct. But given that subjectivity is comprised both by self-awareness and perceptions of the world, it seems likely that a thorough examination of the latter might also reveal anomalies characteristic of individuals in the schizophrenia spectrum, and possibly other disorders (Sass, Pienkos, Nelson, & Medford, 2013). The essential complementarity of alterations in what might be termed the subject and the object poles of experience is a central tenet of all phenomenological approaches to consciousness, including those of Husserl, Heidegger, Merleau-Ponty and Sartre (Heidegger, 2010; Merleau-Ponty, 1962). Merleau-Ponty wrote: "subject and object are two abstract moments of a unique structure which is *presence*" (Merleau-Ponty, 1962, p. 430).

Measure

The Examination of Anomalous World-Experience (EAWE) is a tool that attempts to bring together, in a synoptic interview, the many variants of anomalous world experience thought to be prominent in schizophrenia spectrum patients and possibly present, though to a lesser degree, in other psychopathology such as severe affective disorders and depersonalization disorder (Sass, Pienkos, Skodlar, Parnas, & Jones, in preparation).

Formatted similarly to the EASE, the EAWE includes distinct item domains – six in this case – designed to target several theoretically distinguishable—though often overlapping and inter-related—forms of world experience: 1, objects and space; 2, events and time; 3, persons; 4, language; 5, atmosphere; and 6, existential reorientation. When fully developed, the EAWE should be useful for clinical evaluation, for providing theoretical and clinical insight into the structure and dynamics of subjective life, as well as for developing and communicating a deeper understanding of the nature of the patient's illness and personal perspective in treatment contexts (Sass et al., in preparation, p. 3). Like the EASE, it may also be helpful in the early prediction of psychosis in vulnerable individuals (Davidsen, 2009).

The utility of the EAWE is based in part on the premise that self- and world-experience are closely intertwined. Indeed it seems implausible that disturbances in self-experience would be present without corresponding disturbances in experience of the outer world. Also, the very distinction between self- and world-experience can sometimes be ambiguous, as is the case, for example, with alterations of one's metaphysical worldview. It is not surprising, then, that the EASE includes some items that are relevant to world-experience. Accordingly, several items of the EAWE are borrowed directly from the EASE (Parnas, Møller, et al., 2005). This includes all of the items of EASE-Domain 5 (i.e., Existential Reorientation), with some of these EASE items placed as expected in EAWE Domain 6 (Existential Orientation), while others fit more naturally into EAWE Domain 5 (Atmosphere). Additionally, five other EASE items appear in various parts of the EAWE.

As was the case with the EASE, a number of EAWE items are derived from items in the Bonn Scale of Basic Symptoms (Gross et al., 2008) that clearly pertain to anomalous world-experience. The majority of EAWE items are, however, original items based largely on the clinical phenomenology literature and the clinical experience of the authors especially as it pertains to the nature of symptoms and subjectivity in schizophrenia (Sass, Pienkos, Skodlar, Parnas, & Jones, in preparation).

As with the EASE, the individual items of the EAWE should not be understood as describing distinct symptoms that occur independently of one another, but rather as ways of capturing what are likely to be different aspects of some larger, underlying qualitative transformation or set of transformations. Often, a number of EAWE items will address a single underlying structural mutation of experience as this appears from different standpoints, e.g., its spatial aspect, its temporal aspect, etc. (Sass et al., in preparation, p. 5).

Just as anomalies of *self*-experience may occur prominently but not exclusively within the schizophrenia spectrum (Parnas, Handest, et al., 2005; Sass, Pienkos, & Nelson, 2013; Sass, Pienkos, Nelson, & Medford, 2013), it is expected, similarly, that some anomalies in world-experience will be endorsed by non-schizophrenia spectrum patients, but still rarely by non-psychiatric subjects. The authors of the EAWE have, in fact, included a subset of auxiliary items describing anomalous experiences that, though common in schizophrenia, are also likely to be found in certain disorders *outside* the schizophrenia spectrum (e.g., forms of severe or psychotic depression, depersonalization disorder). Successful isolation of those items may help clarify, in more precise terms, just which anomalies in world experience are most discriminating of the schizophrenia

spectrum in particular, and which may be shared by other forms of psychopathology that may resemble schizophrenia on certain dimensions. Such discriminations should be useful in future prediction studies and for differential diagnosis (Sass et al., in preparation, p. 6).

Scoring. Each item on the EAWE is scored either 0 for definitely not present, 1 for questionably present, or 2 for definitely present. Many of the EAWE items permit the rater to indicate subtypes of a particular item when discernable, but those subtypes do not affect the overall score on the EAWE. The total of all item ratings comprise the total EAWE score, the magnitude of which should reflect the severity and pervasiveness of anomalous world experience (Sass et al., in preparation, p. 9). To facilitate the calculations used in the present investigation the item ratings were dichotomized into "definitely present" and "not present" categories (0 and 1, respectively) with "questionably present" ratings collapsed into the "not present" category. This follows past practice in studies with the EASE (Davidsen, 2009; Møller et al., 2011).

Methods

Sample

A total of sixteen subjects were recruited for this study: twelve patients from a hospital-based psychiatric day-treatment program, one patient from a psychiatric inpatient unit from the same hospital, and three student controls from a doctoral graduate program in psychology. Inclusion criteria for the psychiatric subjects were a current psychiatric diagnosis of schizophrenia, schizoaffective disorder, major depressive disorder, or bipolar disorder, and fluency in English. The inclusion criteria for the graduate student control subjects were a history negative for any psychiatric diagnosis.

Exclusion criteria for all subjects included organic brain disorder, and severe aggression or involuntary admission to current inpatient treatment. Patients with a recent history of severe substance abuse were not included as it is unclear whether such a history can affect subjective experiences targeted in the EAWE. The DSM-IV diagnoses of the patients were obtained from hospital medical records.

Data Analysis

The main EAWE items were recoded dichotomously as 0 (absent or questionably present) or 1 (definitely present, all severity levels). The reliability was assessed by calculating Cohen's κ, a statistic that measures agreement between raters corrected for chance agreement and taking frequency into account. The κ value can range from –1 (perfect disagreement) to +1 (perfect agreement); a κ value close to 0 indicates that the two raters show a random level of agreement/disagreement (i.e., there is no relationship between their ratings). The κ value for each of the 6 domains was calculated, as was the κ value for each individual item in the EAWE. It was mathematically impossible to calculate the κ value if one or both raters scored a particular EAWE item as being either always absent or always present (i.e., in every single patient).

Internal consistency of the items on the EAWE was calculated by way of Cronbach's α, a measure of inter-item correlation with a possible coefficient ranging from -1 to 1, indicating, respectively, a perfect inverse correlation and perfect direct correlation. Higher inter-item correlations generally imply greater likelihood that the items analyzed might measure the same underlying construct or else constructs that are closely interrelated.

The agreement between the raters on total EAWE scores was calculated by way of

Spearman's ρ, similarly with a coefficient range of -1 to 1, with coefficients closer to 1 implying better interrater agreement on total EAWE scores.

While the authors of the EAWE wish eventually to conduct a regression analysis on the relationship between subject diagnoses and total scores of the EAWE, the total number of subjects (N = 16) in this initial study was too small currently to provide adequate power for this analysis (Green, 1991). Therefore, the relationship between diagnosis and total EAWE scores from this investigation will be described but not evaluated with formal quantitative analysis. As noted above, an ongoing research question for the EAWE involves the validity of an auxiliary subset of psychopathology items that are suspected to occur *both* in schizophrenia spectrum and in certain forms of non-schizophrenia-spectrum phenomenology, but rarely in non-psychiatric subjects. Again, however, the low N (N=16) for this study does not allow for valid conclusions to be drawn from formal quantitative analysis; the relationship between diagnosis and the auxiliary items will therefore be reported using basic descriptive statistics.

Results

The initial sample (N=16) included 13 subjects from our hospital population, and 3 non-psychiatric graduate students. One hospital subject, whose interview was too brief to assess items from two of the six domains, was dropped from the analysis. The analysis below is therefore based on the 12 remaining hospital subjects (4 males, 8 females; mean ages 47 and 44, respectively), diagnosed either with a schizophrenia spectrum disorder (n = 9) or a non-psychotic major depression diagnosis (n = 3). The three non-psychiatric graduate student controls included 1 female (age 27) and 2 males (mean age 25) with no history of psychiatric diagnoses. One of the two raters (E.P.) was present for both the

hospital and graduate student interviews; the other rater (J.C. for the graduate student sample, G.B. for psychiatric patient sample) differed across the two samples. Consequently, the data were analyzed separately across the two sets of interviews.

Within the hospital subjects, the EAWE as a whole measure showed excellent internal consistency for each of the two raters (Rater 1 Cronbach's $\alpha = 0.95$; Rater 2 Cronbach's $\alpha = 0.95$). Interrater reliability for the EAWE total scores was also excellent ($\rho = 0.95$). The κ values for the 5 domains were: 0.89 (Objects & Space), 0.79 (Events & Time), 0.74 (Persons), 0.79 (Language) 0.87 (Atmosphere), and 0.73 (Existential Reorientation). Such values would generally be considered to fall either in the substantial (0.61-0.80) or almost perfect (0.81-1.00) range (Landis, 1977). Average κ over the 5 domains was 0.8. The 23 items with incalculable κ values and values of 0 were not included in the average κ for the domains; however, the raters still had a high percentage agreement as to absence or presence (Percent Agreement = 95%) for those 23 items. On the single-item level, an almost perfect κ (0.81-1.00) was found in 28 items, a substantial κ (0.61–0.80) in 13 items, a moderate κ value (0.41–0.60) in 7 items, and a fair κ value (0.21–0.40) in 3 items (see Table 1).

Across all interviews with the non-psychiatric graduate student controls, only 12 of the 74 EAWE items were endorsed at all, and only 6 with both raters in agreement, somewhat limiting the inferences that can be drawn from the data. Internal consistency was good (Rater 1 Cronbach's $\alpha = 0.78$, Rater 2 Cronbach's $\alpha = 0.55$). Overall interrater correlation of the EAWE total scores was excellent (Spearman's $\rho = 1$) and total percent agreement between the two raters was high (Percent Agreement = 95%). The κ values were calculated for 4 of 5 domains, with domain 4 (i.e., language) not included due to an

absolute lack of endorsement of any items from that domain. The κ values were as follows: 1 (Objects & Space), 0.4 (Events & Time), 1 (Persons), 1 (Atmosphere), and 0.4 (existential reorientation). Average κ over the 5 domains was 0.7. On the single-item level, a fair κ value (0.21-0.40) was found in 3 items, and an almost perfect κ value (0.81 - 1) was found for 3 items. For 6 items, Cohen's κ was incalculable for mathematical reasons. (see Table 2)

The total EAWE scores support the measure's specificity to diagnoses on the schizophrenia spectrum. Of the hospital patients with diagnoses of major depressive disorder and of the graduate student controls, none scored higher than 11 out of a possible 74 points, while total scores as high as 21 and 40 were found only within the schizophrenia spectrum subjects. In regards to sensitivity to diagnoses on the schizophrenia spectrum, 4 of the 9 schizophrenia spectrum subjects scored higher (total EAWE score range = 16-40) than the highest scoring non-schizophrenia spectrum subjects, with the remaining 5 scoring (total EAWE score range = 2-4), within the same range as the non-psychiatric subjects. The frequency of the auxiliary psychopathology items fell within the ranges of 0-9 (M = 2.9) for the schizophrenia spectrum group, 2-5 (M = 3) for the major depressive disorder group, and 0-1 (M = 0.3) for the graduate student group (see Table 3).

Discussion

This investigation of the EAWE sought preliminary data on the interrater reliability of the measure, on the sensitivity and specificity of total scores to the schizophrenia spectrum, and on the plausibility of a subset of items targeting non-schizophrenia-spectrum conditions. The data from the present investigation suggest the

EAWE is characterized by good interrater reliability and internal consistency. In terms of validity, there was strong specificity for high EAWE scores to be associated with schizophrenia. However, overall sensitivity was only modest as only 4 of 9 schizophrenia spectrum patients scored highly on the measure. The data were supportive of the concept of the auxiliary subset, demonstrating similar levels of endorsement in both the schizophrenia and major depressive disorder subjects, but with almost no occurrences in the graduate-student control group.

While the high interrater reliability is in accordance with that found with the EASE by Moller et al. (2011), the relationship between the total EAWE scores and diagnoses seemed somewhat less robust than other studies examining the relationship between self-disorder and diagnoses (Davidsen, 2009; Haug et al., 2012; Parnas, Handest, Jansson, & Sæbye, 2005; Raballo, Sæbye, & Parnas, 2011). Although the relationship in the present investigation was in the direction expected (e.g., higher EAWE scores aggregate around schizophrenia diagnoses), about half (5 of 9) of the schizophrenia spectrum subjects had scores in the same low range as the major depressive disorder subjects and graduate student controls. Before concluding the sensitivity finding to be weak, two points should be noted. First, statistically significant regression analyses, the kind found in the aforementioned self-disorder studies, are not immediately comparable to the informal examination of low-N results found in the present investigation (Davidsen, 2009; Haug et al., 2012; Parnas, Handest, Jansson, & Sæbye, 2005; Raballo, Sæbye, & Parnas, 2011;). Secondly, meta-analyses examining the predictive power of other potential markers of schizophrenia (e.g. neurobiological anomalies) have noted that while some markers distinguish schizophrenia with statistical significance, any one of

those markers alone occur in no more than roughly half of the schizophrenia population (Heinrichs, 2003). That being said, while the authors of the EAWE hope to maximize sensitivity to schizophrenia as well as other disorders that share some aspects of phenomenology, the modest sensitivity found in this study is in fact quite comparable to the sensitivity of other known markers of schizophrenia.

Within the context of that conclusion, there are a number of factors that may still have decreased the sensitivity of the EAWE to schizophrenia. First, it may simply be that anomalous world experiences, as defined in the EAWE, occur less frequently in individuals than do anomalous self experiences as defined in the EASE; this would suggest that anomalous world experiences—as defined in the EAWE—are a less adequate indication of the kind of disturbed subjective experience that is distinctive of disorders on the schizophrenia spectrum. This, in turn, could reflect either a lesser degree of distinctive anomalies of world-experience, or perhaps a greater difficulty in describing and assessing such experiences.

The modest sensitivity of the EAWE in discriminating the schizophrenia-spectrum might also be due to the characteristics of the sample used in this study. The psychiatric subjects were recruited from a day-hospital program designed to support individuals with chronic mental illness and/or unemployability. It is likely that the sample, while including individuals with recent positive and psychotic symptoms, may have had a bias toward individuals in more negative, residual, late stages of schizophrenia. Prior research has documented that, as a group, individuals with schizophrenia have difficulty in reflecting on internal states and producing detailed narratives when compared to individuals without schizophrenia, a trend that also applies

to recalling details about their respective psychopathology (Corcoran & Frith, 2003; Lysaker, 2010). Of greater relevance to this study, it appears that prominent negative features predict a more significant paucity of narrative details than is the case for schizophrenia patients with fewer negative symptoms (Corcoran & Frith, 2003). Consideration of the 5 low-scoring schizophrenia spectrum subjects shows that two were older (age > 50) individuals, decades since their first hospitalization and with (according to hospital records) no history of psychosis within at least one year from the EAWE interview. As no formal measure of positive or negative symptoms were administered as part of this study, a definitive relationship between negative symptoms and EAWE scores cannot be drawn; however, the clinical history of those subjects does support the possibility that a sample bias may have occurred and influenced the results.

Lending further support is that, in contrast to our sample, most of the successful research on anomalous self experience (and all research with the EASE) has indeed been with subjects that tend toward recently acute, and first-episode psychosis (Moller et al., 2011; Parnas, Handest, et al., 2005). It should be noted, however, that one study on related disturbances in subjectivity – though not with the EASE proper – did compare schizophrenia and bipolar patients who were enrolled in a day-hospital program and in late stages of their respective illnesses. In this study, schizophrenia subjects showed significantly higher scores on perplexity, disturbances of cognitive and perception, and "self-disorder" (the latter including only 4 items, three involving forms of depersonalization). Discriminatory power using odds-ratios was calculated with a multivariate regression model, and here only "self-disorder" was predictive of schizophrenia diagnosis. These patients were, however, considerably younger on average

than the present schizophrenia spectrum population *(M* = 33.9*;* SD = 8.2 versus *M* = 45; *SD* = 13.1 in the present sample) (Parnas et al., 2003). In sum, the present study's likely sample bias toward lower functioning, chronically ill patients may have diminished the sensitivity of the EAWE to the schizophrenia spectrum; however, the above-mentioned study (Parnas et al., 2003) with similar demographics suggests that this may not have been the only factor.

One final influence on sensitivity to consider is the possibility of heterogeneity within the schizophrenia spectrum itself, given that some subtypes of schizophrenia may be more likely than others to present with anomalies in subjectivity. It does not appear that schizophrenia patients were distinct from schizoaffective patients in this data; however, there might be other dimensions, as yet undetermined, that might correlate with higher EAWE scores

One goal for the EAWE is to develop a valid and reliable way of discriminating schizophrenia spectrum disorders from other forms of psychopathology, and perhaps of predicting later onset of certain forms of psychosis. Future research should help to determine just which subset of EAWE items are most discriminating of schizophrenia spectrum conditions or outcomes. Another goal of the EAWE, however, is to provide a broad-ranging way of exploring anomalous forms of subjectivity in general, and thus to investigate, in more detail, the phenomenological dimension of psychopathology—both in the schizophrenia spectrum and beyond. While firmer conclusions must be reserved for investigations with a larger N and a greater sample diversity of non-schizophrenia psychopathology, the concept of the auxiliary psychopathology items, while still in development, was supported by the trend in the data from this study: certain key items

were endorsed by patients on the schizophrenia spectrum and patients with major depressive disorder, but rarely by non-psychiatric controls. In regards to the 6 items endorsed across the graduate student controls, it would be premature, on this basis, to omit items for being non-specific to the phenomenology of serious psychiatric conditions. Future research may demonstrate, however, that some of these items (e.g., "other difficulties in interacting with others" [Sass et al, p. 15, in preparation]) are either too non-specific to be included in the EAWE, or else might require refinement in order to avoid overlap with common, non-pathological forms of experience.

Conclusion

Our results lend preliminary support to the development of a phenomenological measure of anomalies in world experience thought to be common in schizophrenia spectrum and other select forms of psychopathology. The data suggest that item ratings can be made with high interrater reliability, and that high total scores appear specific to schizophrenia spectrum disorders. The sensitivity of the total EAWE scores regarding schizophrenia spectrum conditions were less robust; however, low N and sample bias limit conclusions concerning the measure's sensitivity at this time. It should be noted, as well, that trends suggest the plausibility of a subset of EAWE items that, though *common* in schizophrenia-spectrum, are expected to be less *specific* to such conditions since they are also found in some other forms of serious psychopathology, such as severe depression (thus suggesting that they may have a secondary rather than primary status as indicators of schizophrenia). In the context of these preliminary data, especially documenting good interrater reliability, data collection should continue in order to obtain a sample size adequate for formal statistical analyses of the relationship between diagnosis, total

EAWE scores, and the auxiliary psychopathology items, as well as to explore which specific EAWE items or sub-items might be most specific or sensitive to schizophrenia spectrum patients.

References

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Washington, DC: American Psychiatric Association.

American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed., text rev.). Washington, DC: American Psychiatric Association.

American Psychiatric Association. (1980). *Diagnostic and statistical manual of mental disorders* (3rd ed.). Washington, DC: American Psychiatric Association.

Andreasen, N. C. (1987). The diagnosis of schizophrenia. *Schizophrenia Bulletin, 13*(1), 9-22.

Davidsen, K. A. (2009). Anomalous self experience in adolescents at risk of psychosis. *Psychopathology, 42,* 361-369.

Green, S. B. (1991). How many subjects does it take to do a regression analysis. *Multivariate Behavioral Research, 26(3),* 499-510.

Gross, G., Huber, G. (2010). The history of the basic symptom concept [Supplemental material]. *Acta Clinica Croatica, 49(2),* 47-59.

Gross, G., Huber, G., Klosterkotter, J., & Linz, M. (2008). *Bonn scale for the assessment of basic symptoms: 1st complete english edition.* Germany: Shaker Verlag GmbH.

Heideger, M. (2010). Being and time. (trans. Stambaugh, J.) Albany, NY: State University of New York Press.

Landis, J. (1977). The measurement of observer agreement for categorical data. *Biometrics, 33,* 159-174.

Maj, M. (2008). Critique of the DSM-IV operational diagnostic criteria for schizophrenia. *British Journal of Psychiatry. 172,* 458-460.

McGlashan, T. H. (1996). Early detection and intervention with schizophrenia: Rationale. *Schizophrenia Bulletin*, *22*(2), *201-222*.

Merleau-Pontif, M. (2012). Phenomenology of perception. (trans. Smith, C). New York, NY: Routledge.

Møller, P., Haug, E., Raballo, A., Parnas, J., & Melle, I. (2011) Examination of anomalous self-experience in first-episode psychosis: Interrater reliability. *Psychopathology, 44,* 386-390.

Parnas, J., Handest, P., Sæbye, D., Jannson, L. (2003) Anomalies of subjective experience in schizophrenia and psychotic bipolar illness. *Acta Psychiatrica Scandinavica, 108,* 126-133.

Parnas, J., Handest, P., Jansson, L., Sæbye, D. (2005) Anomalous subjective experiences among first-admitted schizophrenia spectrum patients: Empirical investigation. *Psychopathology, 36,* 259-267.

Parnas, J., Møller, P., Kircher, T., Jørgen, T., Jansson, L., Handest, P., & Zahavi, D. (2005). EASE: Examination of anomalous self-experience. *Psychopathology*. *38,* 236-258.

Raballo, A., Sæbye, D., & Parnas, J. (2011). Looking at the schizophrenia spectrum through the prism of self disorders: An empirical study. *Schizophrenia Bulletin, 37*(2), 344-351.

Sass, L. (2001). Self and world in schizophrenia: Three classic approaches. *Philosophy, Psychiatry, and Phenomenology. 8*(4), 251-270.

Sass, L. A., Parnas, J. (2001) Schizophrenia, consciousness, and the self. *Schizophrenia Bulletin, 29*(3), 427-444.

Sass, L. A., Parnas, J., Zahavi, D. (2011). Phenomenological psychopathology and schizophrenia. . *Philosophy, Psychiatry, and Psychology. 18*(1), 1-23.

Sass, L. A., Pienkos, E., Nelson, B. (2013). Introspection and schizophrenia: A comparative investigation of anomalous self experience. *Consciousness and Cognition, 22*, 853-867.

Sass, L.A., Pienkos, E., Nelson, B., Medford, N. (2013). Anomalous self-experience in depersonalization and Schizophrenia: a comparative investigation. *Consciousness and Cognition, 22*(2), 430-441.

Sass, L. A., Pienkos, E., Skodlar, B., Parnas, J., Jones, N. (2013). *The examination of anomalous world experience.* Unpublished manuscript.

Stenghellini, G. (2004*). Disembodied spirits and deanimated bodies: The psychopathology of common sense*. USA; Oxford University Press.

Urfer, A. (2001). Phenomenology and psychopathology of schizophrenia: The views of Eugene Minkowski. *Philosophy, Psychiatry, and Psychology, 8*(4), 279-289.

Table 1

Interrater reliability for the EAWE items: Psychiatric Patients

EAWE item No. and Designation		Cohen's Kappa	Percentage Agreement
1	**Objects and space**		
1.1	Blindness or partial blindness	0.75	92
1.2	Disturbed integrity of objects and scenes	0.625	92
1.3	Captivation of attention by isolated details	0.75	92
1.4	Abnormal awareness of background sensations: visual	1	100
1.5	Recurrence or prolongation of visual stimuli	1	100
1.6	Changes in intensity of visual perception	0.8	92
1.7	Changes in quality, size, or shape of visual	1	100
1.8	Disturbances of distance perception	1	100
1.9	Disturbances in reality of visual perceptions	1	100
1.10	Auditory fragmentations	1	100
1.11	Recurrence of auditory stimuli	1	100
1.12	Abnormal awareness of background sensations: auditory	1	100
1.13	Changes in intensity of auditory perception	1	100
1.14	Problems localizing sounds	n/c	100
1.15	Disturbances in reality of auditory perceptions	0.83	92
1.16	Other sensory disturbances	0.56	83
1.17	Synaesthesia	0.57	83
1.18	Geometric preoccupation – morbid geometrism	1	100
1.19	Distorted experiences of space	1	100
1.20	Loss of boundaries with the physical world* (EASE 3.9)	1	100
2	**Events and time**		
2.1	Disturbed experience of the past	0.57	83
2.2	Disturbed awareness of the future	1	100
2.3	Disturbed or diminished anticipation	1	100
2.4	Time appears to move faster or slower (in the present moment)	0.75	92
2.5	Experience of time as infinite or standing still	n/c	92
2.6	Sense of time as mere agitation	n/c	100
2.7	Experience of time as disjointed	0.63	92
3	**Persons**		
3.1	Difficulties in interpersonal rapport	0.25	75
3.2	Other difficulties with others	0.5	75
3.3	Reactions to interpersonal difficulties	0.31	75
3.4	Abnormally strong empathy or identification	1	100
3.5	Dissolution of ego boundaries in interpersonal* (EASE 4.1)	1	100
3.6	Decreased ability to tolerate social situations	0.64	83
3.7	Anomalous behavioral responses to others	0.66	83
3.8	Depersonalization of others	0	92
3.9	Changes in familiarity of others	1	100
3.10	Changes in others' appearance	1	100
3.11	People seem as if they are communicating something special	1	100

Table 1 (continued)

EAWE item No. and Designation	Cohen's Kappa	Percentage Agreement
4 **Language**		
4.1 General speech anomalies (visual and acoustic)	0.75	92
4.2 Difficulty understanding nonverbal communication	0.63	92
4.3 Words seem absurd/arbitrary	n/c	100
4.4 Unconventional semantic determination	n/c	100
4.5 Words or language seem alive	n/c	92
4.6 Disturbances of the abstract and the concrete	n/c	92
4.7 Difficulty with emotional/expressive aspects of speech (aprosody)	n/c	92
4.8 Anomalous word choice	n/c	92
4.9 Anomalous use of grammar and discourse	1	100
4.10 Anomalous style of speech	n/c	83
5 **Atmosphere**		
5.1 Déjà vu or jamais vu experiences	0.75	92
5.2 Hyperbolic identity	n/c	100
5.3 Inanimate things seem alive or intentional	n/c	92
5.4 Derealization* (EASE 2.5, 5.5)	1	100
5.5 Perplexity	0.83	92
5.6 Disturbances of ontological quality* (EASE 5.5, 5.3, 5.6)	n/c	83
5.7 Quasi-mystical experiences	1	100
5.8 Splitting between perception and meaning	n/c	100
5.9 Apophanous mood* (EASE 5.1)	1	100
5.10 All-inclusive self-consciousness	1	100
5.11 Anomalous meaning	0.625	92
5.12 Anomalous classification	n/c	100
5.13 Anomalous sense of causal relationships	1	100
5.14 Conceptual freedom	0.625	92
5.15 Experiences of the end of the world	n/c	100
6 **Existential reorientation**		
6.1 Disinclination for human society	n/c	92
6.2 Psychotic guilt	.4	83
6.3 Willful eccentricity and sense of specialness	1	100
6.4 "As if" feelings of extraordinary power or insight* (EASE 5.4)	0.625	92
6.5 Sense of loss of freedom or uniqueness	n/c	100
6.6 Adherence to abstract, intellectualistic, and/or autonomous rules	n/c	100
6.7 Adherence to other idiosyncratic rules	n/c	100
6.8 Existential or intellectual change* (EASE 5.7)	.625	92
6.9 Pervasive disbelief	n/c	92
6.10 Feeling of centrality* (EASE 5.2)	n/c	92
6.11 Decentering of self relative to universe	1	100

Note. n/c = not calculable

* Denotes EAWE item based on EASE item.

Table 2

Interrater reliability for the EAWE items: Graduate Student Controls

EAWE item Number and Designation		Cohen's Kappa	Percentage Agreement
1	**Objects and space**		
1.1	Blindness or partial blindness	n/c	100
1.2	Disturbed integrity of objects and scenes	n/c	100
1.3	Captivation of attention by isolated details	n/c	100
1.4	Abnormal awareness of background sensations: visual	n/c	100
1.5	Recurrence or prolongation of visual stimuli	n/c	100
1.6	Changes in intensity of visual perception	n/c	33
1.7	Changes in quality, size, or shape of visual	n/c	100
1.8	Disturbances of distance perception	n/c	100
1.9	Disturbances in reality of visual perceptions	n/c	33
1.10	Auditory fragmentations	n/c	67
1.11	Recurrence of auditory stimuli	1	100
1.12	Abnormal awareness of background sensations: auditory	n/c	100
1.13	Changes in intensity of auditory perception	n/c	100
1.14	Problems localizing sounds	n/c	100
1.15	Disturbances in reality of auditory perceptions	n/c	67
1.16	Other sensory disturbances	n/c	67
1.17	Synaesthesia	n/c	100
1.18	Geometric preoccupation – morbid geometrism	n/c	100
1.19	Distorted experiences of space	n/c	100
1.20	Loss of boundaries with the physical world* (EASE 3.9)	n/c	100
2	**Events and time**		
2.1	Disturbed experience of the past	n/c	100
2.2	Disturbed awareness of the future	n/c	100
2.3	Disturbed or diminished anticipation	n/c	100
2.4	Time appears to move faster or slower (in the present moment)	0.4	67
2.5	Experience of time as infinite or standing still	n/c	100
2.6	Sense of time as mere agitation	n/c	100
2.7	Experience of time as disjointed	n/c	100
3	**Persons**		
3.1	Difficulties in interpersonal rapport	n/c	100
3.2	Other difficulties with others	1	100
3.3	Reactions to interpersonal difficulties	n/c	100
3.4	Abnormally strong empathy or identification	n/c	100
3.5	Dissolution of ego boundaries in interpersonal* (EASE 4.1)	n/c	100
3.6	Decreased ability to tolerate social situations	n/c	100
3.7	Anomalous behavioral responses to others	n/c	100
3.8	Depersonalization of others	n/c	100
3.9	Changes in familiarity of others	n/c	100
3.10	Changes in others' appearance	n/c	100
3.11	People seem as if they are communicating something special	n/c	100

Table 2 (continued)

EAWE item Number and Designation	Cohen's Kappa	Percentage Agreement
4 **Language**		
4.1 General speech anomalies (visual and acoustic)	n/c	100
4.2 Difficulty understanding nonverbal communication	n/c	100
4.3 Words seem absurd/arbitrary	n/c	100
4.4 Unconventional semantic determination	n/c	100
4.5 Words or language seem alive	n/c	100
4.6 Disturbances of the abstract and the concrete	n/c	100
4.7 Difficulty with emotional/expressive aspects of speech (aprosody)	n/c	100
4.8 Anomalous word choice	n/c	100
4.9 Anomalous use of grammar and discourse	n/c	100
4.10 Anomalous style of speech	n/c	100
5 **Atmosphere**		
5.1 Déjà vu or jamais vu experiences	n/c	100
5.2 Hyperbolic identity	n/c	100
5.3 Inanimate things seem alive or intentional	n/c	100
5.4 Derealization* (EASE 2.5, 5.5)	1	100
5.5 Perplexity	n/c	67
5.6 Disturbances of ontological quality* (EASE 5.5, 5.3, 5.6)	n/c	100
5.7 Quasi-mystical experiences	n/c	100
5.8 Splitting between perception and meaning	n/c	100
5.9 Apophanous mood* (EASE 5.1)	n/c	100
5.10 All-inclusive self-consciousness	n/c	100
5.11 Anomalous meaning	n/c	100
5.12 Anomalous classification	n/c	100
5.13 Anomalous sense of causal relationships	n/c	100
5.14 Conceptual freedom	n/c	100
5.15 Experiences of the end of the world	n/c	100
6 **Existential reorientation**		
6.1 Disinclination for human society	0.4	67
6.2 Psychotic guilt	n/c	100
6.3 Willful eccentricity and sense of specialness	0.4	67
6.4 "As if" feelings of extraordinary power or insight* (EASE 5.4)	n/c	100
6.5 Sense of loss of freedom or uniqueness	n/c	100
6.6 Adherence to abstract, intellectualistic, and/or autonomous rules	n/c	100
6.7 Adherence to other idiosyncratic rules	n/c	100
6.8 Existential or intellectual change* (EASE 5.7)	n/c	100
6.9 Pervasive disbelief	n/c	100
6.10 Feeling of centrality* (EASE 5.2)	n/c	100
6.11 Decentering of self relative to universe	n/c	100

Note. n/c = not calculable

* Denotes EAWE item based on EASE item.

Table 3

Individual Subject Scores

Subject Diagnosis	EAWE Total Score	Number of Auxiliary Items Endorsed
SZ-AF	3	1
SZ-AF	40	6
SZ-AF	19	9
SZ-AF	3	1
SZ-AF	21	4
SZ-AF	2	2
SZ-AF	16	3
SZ	3	0
SZ	3	0
	M = 12.2	*M* = 2.9
MDD	10	5
MDD	5	2
MDD	3	2
	M = 6	*M* = 3
None	2	1
None	4	0
None	9	0
	M = 5	*M* = 0.3

Note: SZ-AF = Schizoaffective Disorder; SZ = Schizophrenia; MDD = Major Depressive Disorder