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Anomalous self-experience in depersonalization and schizophrenia: A comparative investigation

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ABSTRACT

Various forms of *anomalous self-experience* can be seen as central to schizophrenia and other psychiatric disorders. We examined similarities and differences between anomalous self-experiences common in schizophrenia-spectrum disorders, as listed in the EASE (Examination of Anomalous Self Experiences), and those described in published accounts of severe depersonalization. Our aims were to consider anomalous self-experience in schizophrenia in a comparative context, to refine and enlarge upon existing descriptions of experiential disturbances in depersonalization, and to explore hypotheses concerning a possible core process in schizophrenia (*diminished self-affection*, an aspect of "ipseity" or minimal self). Numerous affinities between depersonalization and schizophrenia-spectrum experience were found: these demonstrate that rather pure forms of diminished self-affection (depersonalization) can involve many experiences that resemble those of schizophrenia. Important discrepancies also emerged, suggesting that more automatic or deficiency-like factors—probably involving self/world or self/other confusion and erosion of first-person perspective—are more distinctive of schizophrenia-spectrum disorders.

1. Introduction

It has long been recognized that schizophrenic disorders involve profound alterations of mental state, in particular, changes in the experience of subjectivity, that is, varieties of *anomalous self-experience*. Although abnormalities of self or self-experience are not mentioned in the schizophrenia criteria of DSM IV-TR and ICD-10, they feature prominently in classic accounts. Bleuler (1911) stated that the malady always involves an affliction ("*Spaltung*") of the self, writing that the self is never intact ("*Ganz intakt ist dennoch das Ich nirgends*") (p. 58). Joseph Berze (1914) proposed that the primary disorder of schizophrenia was a fundamental alteration or "primary insufficiency" of self-consciousness.

Recently, altered self-experience has again become a key issue in schizophrenia, through a series of theoretical contributions and related empirical studies. Sass and Parnas (2003) hypothesized that the core disturbance in schizophrenia is a particular disturbance of consciousness—an alteration in the sense of "minimal self" or *ipseity* that is normally implicit in each act of awareness. The term *ipseity* comes from *ipse*, Latin for "self" or "itself," and is synonymous with what is sometimes termed basic or minimal self; it refers to a crucial sense of existing as a vital and self-identical subject of experience, with

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an automatic "mineness" of experience (Ricoeur, 1992; Zahavi, 1999). Sass and Parnas (2003, 2007) suggest that this *ipseity* disturbance has two main aspects, which may seem mutually contradictory but are in fact complementary: hyperreflexivity and diminished self-affection.

"Hyperreflexivity" refers to a kind of exaggerated self-consciousness, a (fundamentally non-volitional) tendency for focal, objectifying or alienating attention to be directed toward processes and phenomena that are normally experienced as part of oneself. Although *hyperreflexivity* does include some fairly volitional, quasi-volitional, or intellectual processes (these might be termed "hyper-re*flect*ivity"), the hyperre*flex*ivity in question is not, at its core, an intellectual or volitional kind of self-consciousness. Most basic in schizophrenia (according to Sass and Parnas) is an "operative" hyperreflexivity: the disrupting of awareness and action by means of an automatic popping-up or popping-out of phenomena and processes that would normally remain in the tacit background of awareness (where they normally serve as a medium of implicit self-affection), but that now come to be experienced in an objectified and alienated manner (see Merleau-Ponty, 1962, p. xviii re: "operative intentionality"—*fungierende Intentionalität*). Experientially speaking, hyperreflexivity can be manifest as an emergence or intensification of experience *as such* or a prominence of proximal over distal aspects of stimuli (see, e.g., Sass, 1994, re "phantom concreteness"), or else as focal awareness of kinesthetic bodily sensations, "inner speech," or the processes or presuppositions of thinking.

"Diminished self-affection" refers to a reduction in the very sense of existing as an aware subject or agent of action, i.e., to a diminished sense of existing as a first-person perspective on the world, an experiencing entity. One patient with schizophrenia described the condition of lacking this crucial but ineffable self-affection that is essential to normal ipseity: "I was simply there, only in that place, but without being present" (Blankenburg, 1991, p. 77).

Hyperreflexivity and diminished self-affection are best conceptualized not as separate processes but as mutually implicative aspects or facets of the intentional activity of awareness: whereas the notion of "hyperreflexivity" emphasizes the way in which something normally tacit becomes focal and explicit, "diminished self-affection" emphasizes a complementary aspect of this very same process—the fact that what once *was* "tacit is no longer being inhabited as a medium of taken-for-granted selfhood" (Sass, 2003, p. 170).

This double-faceted disturbance of ipseity disrupts the normal, pre-reflective sense of "presence," that is, of being an experiencing *subject* or *self* oriented toward objects or a world distinct from itself. In Husserlian phenomenology, this self-sense is variously referred to as the "I-center" or "central point of psychic life" or, more colorfully, the vital "source-point of the rays of attention" (Bernet, Kern, & Marbach, 1993). Related work (Sass, 2003; Sass & Parnas, 2007) explores how such a disturbance might play a central explanatory role as the core feature (*trouble générateur*) of schizophrenia. In this model, primary ipseity disturbance underlies the psychopathology, by giving rise to further psychic disturbances that themselves become features of the condition (see Section 4).

Ipseity disturbance has been operationalized in a semi-structured interview, the Examination of Anomalous Self Experience (EASE) (Parnas et al., 2005) which examines experiences highly characteristic of schizophrenia spectrum disorders. Studies using the EASE or proxies thereof have demonstrated that such self-disturbances demarcate schizophrenia from psychotic bipolar illness (Parnas, Handest, Saebye, & Jansson, 2003) and from specific groups of non-schizophrenia-spectrum psychiatric patients (including affective syndromes, non-schizophrenic psychotic syndromes, and non-schizotypal personality disorders) (Haug et al., 2012; Parnas, Handest, Jansson, & Saebye, 2005; Raballo & Parnas, 2011; Raballo, Saebye, & Parnas, 2011), and aggregate selectively in the schizophrenia spectrum disorders identified in an at-risk population (Raballo & Parnas, 2011; Raballo et al., 2011), with high interrater reliability (Møller, Haug, Raballo, Parnas, & Melle, 2011). There is evidence that the presence of such anomalies premorbidly or early in the prodrome predicts later development of schizophrenic psychosis (Nelson, Thompson, & Yung, 2012b; Parnas, Raballo, Handest, Vollmer-Larsen, & Saebye, 2011). Several hypotheses concerning neurocognitive correlates of these ipseity-disturbances have been put forward (Hemsley, 1998, 2005; Legrand & Ruby, 2009; Nelson et al., 2009; Sass, 1992; Taylor, 2011).

Taking this work further requires detailed study of the psychological and phenomenological structure of these anomalous self-experiences. One strategy for addressing this is through comparisons with other conditions involving disturbances of self-experience which, though not identical to those in schizophrenia, may be similar in important respects. Anomalies of self experience occur in other conditions, and at least some items of the EASE do appear in disorders outside the schizophrenia spectrum (Nelson et al., 2012b; Parnas, Handest, et al., 2005). Close comparison between conditions has the potential to reveal which characteristics are shared with other disorders and which are unique to schizophrenia, and may also help to illuminate how a fundamental alteration of self-experience might generate symptoms or structures of experience common in the schizophrenia spectrum. Significant overlaps with other disorders may help to clarify processes involved in schizophrenia, while disparities are also important, for they may suggest where (and perhaps why) processes differ, and what may be specific to the schizophrenia spectrum.

The purpose of the present study was to determine the extent to which depersonalization disorder (DPD)—a non-psychotic condition distinct from schizophrenia yet characterized by a somewhat analogous (we do not say *identical*) form of ipseity disturbance—does and does not involve particular anomalies of conscious experience that are also highly characteristic of schizophrenia.

The ipseity-disturbance hypothesis views schizophrenic self disorder as having several aspects (Sass & Parnas, 2003, 2007): basic (or "operative") forms of ipseity disturbance, possibly rooted in neurobiological abnormalities unique to schizophrenia, as well as consequential and compensatory (defensive) forms of self-consciousness and self-affection. Although these latter develop secondarily, they become entrenched, quasi-automatized, and interwoven with the foundational

anomalies. Given this model, it is reasonable to suppose that some schizophrenic anomalies of self experience have significant affinities with those in other conditions involving significant ipseity alteration, such as DPD. Identifying these sub-psychotic (or perhaps pre-psychotic) anomalies might aid in predicting the likelihood of a psychotic break in vulnerable individuals. There is already some evidence supporting the use of the EASE for this purpose (Nelson, Thompson, & Yung, 2012a; Parnas et al., 2011) and further studies exploring it are currently underway (Koren et al., 2012). The present study helps identify those EASE items most specifically linked with the schizophrenia spectrum.

In this study we used items from the EASE to assess anomalies of self-experience in a common form of non-psychotic experience: depersonalization. Depersonalization, typically experienced as a spontaneous, non-volitional process, may arise as a psychological defense mechanism against anxiety, in which the sense of vital presence as a subject of experience is unpleasantly compromised, or even lost altogether (Medford, Sierra, Baker, & David, 2005; Noyes & Kletti, 1977). DSM IV-TR describes depersonalization as "a feeling of detachment or estrangement from one's self" (Diagnostic and statistical manual of mental disorders, fourth edition, text revision, 2000), often associated with reduced emotional responsivity and a feeling of loss of agency. Depersonalization was selected because it represents the clearest non-schizophrenic (and non-psychotic) manifestation of *diminished self-affection* (see above). Experiential alterations in depersonalization clearly involve an attenuation of self-presence, that is, of the very sensation of existing as an ego or subject of experience. Depersonalization is found in a variety of psychological disorders, and may be the third most common psychiatric symptom after anxiety and low mood (Simeon, Knutelska, Nelson, & Guralnik, 2003). It can also exist independently of other symptoms or disorders (including the schizophrenia spectrum) in depersonalization disorder (DPD), a non-psychotic condition.

The EASE is probably the richest and most rigorous available compendium of subjective anomalies in psychopathology. Its operationalized descriptions target alterations in the general form or structure of experience; they cover many types of anomalous subjective experience, allowing us to compare such experiences in schizophrenia and depersonalization in great detail. It should be stressed, however, that our use of the EASE in this study is distinctly non-standard. The EASE was designed for use in detailed psychiatric interviews involving extended probing of the patient's experience. Here, however, we have applied it to published descriptions (usually autobiographical) of experiences. Potential problems with such usage are discussed below.

Here it is worth mentioning two plausible sources of skepticism about the possibility of clinically relevant affinities between schizophrenia-spectrum and merely depersonalized experiences.

Firstly, it is sometimes claimed that schizophrenic experiences, particularly delusions, involve a kind of "literalism" that is absent from non-schizophrenic or non-psychotic persons, whose descriptions are said to be merely "metaphoric." It is important to remember, however, that the EASE is intended to capture *sub*-psychotic phenomena, i.e. experiences other than delusions and hallucinations – for example experiences of bodily or thought alienation, experiences that are directly lived, rather than delusional elaborations based on such experiences. Likewise, many experiences reported in the depersonalization literature (e.g., "Thoughts come almost like physical sensations—they pass up and down in my head") describe directly lived psychosensory experiences and fulfill the explicit criteria for a range of EASE items.

A second objection might be that schizophrenic experiences are somehow crucially more extreme or "bizarre" than those in depersonalization. However the depersonalization affinities we found not only fulfill explicit EASE criteria, they are, furthermore, difficult to distinguish in either quality or degree from the schizophrenic examples offered in the EASE (see below, and Table 1).

Our hypothesis was that many, but not all, of the self-anomalies associated with schizophrenia (as listed in the EASE) would also be found in depersonalization. We are aware, of course, that similar-sounding descriptions could be masking significant differences on the phenomenological plane; subtle nuances of experience may evade easy capture in words. And when experiences truly are akin, they might still represent a final common pathway having different causes or sources. We also recognize that there may well be an underlying Gestalt-like essence in schizophrenia, not found in depersonalization disorder, that may give the experiences in question a somewhat different flavor (see Sections 2 and 4.4 below).

Obviously, however, this does not mean that the Gestalt in question may not also *resemble*, in some important respects, certain other conditions. The EASE offers a nuanced way of investigating both similarities and differences that can potentially clarify both the conditions at issue and their possible pathogenetic pathways.

We did not expect the two conditions to manifest *identical* disturbances of self-experience. However, certain similarities between the two conditions can help elucidate the way a key phenomenon might contribute to some aspects of schizophrenia. Discrepancies (i.e. EASE items *not* found in depersonalization) will help to identify what may be more particular or specific to the self-disturbance of schizophrenia, thereby indexing some fundamental feature of schizophrenia that *cannot* be mimicked by the more defensive processes central in depersonalization.

Since the depersonalization subjects were not actually interviewed with the EASE, we cannot offer direct, quantitative comparisons of the frequency of particular anomalies in depersonalization versus schizophrenia spectrum conditions; our focus here is on *whether* certain anomalies seem also to occur in depersonalization. (An interview study using the EASE with depersonalization disorder patients would obviously be of considerable value.) This does not, however, undermine the main goals of this exploratory study, which are, first, to offer a preliminary phenomenological comparison of schizophrenia and depersonalization disorder and, second, to use the depersonalization analogue to support and refine hypotheses about the role of ipseity disturbance in schizophrenia.

2. Materials and methods

2.1. Instruments

We used the Examination of Anomalous Self-Experience (EASE) as a tool for assessing depersonalization experiences (Parnas, Møller, et al., 2005) The items of the EASE were originally taken from the psychopathological literature on schizophrenia and the Bonn Scale for the Assessment of Basic Symptoms (BSABS), (Gross, Huber, Klosterkotter, & Linz, 2008) a validated interview format designed to capture sub-psychotic experiential anomalies in schizophrenia. The EASE consists of 57 items, divided into five domains: (1) cognition and stream of consciousness; (2) self-awareness and presence; (3) bodily experiences; (4) demarcation/transitivism; and (5) existential reorientation. The scale demonstrates very good inter-rater reliability, with Cohen's kappa coefficients for single items ranging between 0.6 and 1.0 (Parnas, Møller, et al., 2005). The EASE was designed to capture anomalies of self experience characteristic of schizophrenia; empirical studies have shown its items to be highly discriminative of schizophrenia as opposed to bipolar psychosis and other groups of non-schizophrenia-spectrum psychiatric disorders (including affective syndromes, non-schizophrenic psychotic syndromes, and non-schizotypal personality disorders) (Haug et al., 2012; Parnas et al., 2003; Raballo & Parnas, 2011; Raballo et al., 2011). In this study, we did not apply the EASE to case examples of schizophrenia; rather, we accepted the EASE as providing a compendium of items highly characteristic of the schizophrenia spectrum, and we examined depersonalization disorder to see which EASE items appeared there as well.

2.2. Data sources

Selected reports of depersonalization experiences were examined, and statements with core similarity to EASE items were selected and retained for inclusion in our data set. In all cases the classification of an experiential description as an instance of a particular EASE item was agreed upon by three authors (LAS, EP, BN), one with extensive training and experience in using the EASE in clinical and research settings (BN), another a co-author of the original ipseity-disturbance hypothesis (LAS), the third with workshop exposure to the EASE (EP). In most cases, the statements selected seemed to be clear examples of the EASE category at issue—see Table 1. On a few occasions, the fit seemed possible but debatable (as agreed by all three judges). These instances are marked in Table 1 with a bracketed question mark ([?]) and were counted as neither affinities nor discrepancies.

2.3. Selection of literature

In selecting reports of altered self-experience in depersonalization patients, we generally preferred direct quotations from patients but sometimes used instances in which a clinician offers a close paraphrase of a patient's report. Our sources for these reports included seven classic reports of clinical cases of depersonalization, selected for their rich characterization and extensive use of patient examples (Ackner, 1954; Dugas, 1898; Lewis, 1949; Mayer-Gross, 1935; Saperstein, 1949; Schilder, 1950; Shorvon, 1946); all these included many direct quotations and close paraphrases of patient statements. We also examined a number of contemporary works that also include direct reports of individuals with depersonalization disorder. These include: a recent conceptualization of depersonalization symptoms (Hunter, Phillips, Chalder, Sierra, & David, 2003), a major overview of depersonalization (Simeon & Abugel, 2006), and an operationalized scale that includes descriptions of the core symptoms of depersonalization (Sierra & Berrios, 2000). We also examined one report of transient depersonalization experiences in healthy individuals (Roberts, 1960), and one depersonalization treatment study (Sookman & Solyom, 1978); these were cited either in the major overview or in a recent summary article on DPD (Medford et al., 2005; Simeon & Abugel, 2006). Because diagnostic criteria change over time, it is possible that earlier diagnoses of depersonalization may not fully reflect current criteria. However, a published analysis of 200 DPD case reports published between 1898 and 1996 concluded that these reports show a high degree of phenomenological stability over time, with the key features of DPD being consistent throughout this extensive literature (Sierra & Berrios, 2001). A clinician with expertise in the assessment of DPD (NM) concluded that the descriptions of DPD in the sources used for this study would very likely fit current diagnostic criteria for DPD, and we excluded reports which showed evidence of comorbid psychosis.

2.4. Depersonalization – description

In DSM IV-TR, depersonalization disorder (DPD) is listed as a dissociative disorder defined by "a feeling of detachment or estrangement from one's self" (Diagnostic and statistical manual of mental disorders, fourth edition, text revision, 2000). Characteristic symptoms include emotional numbing, loss of sense of agency, inability to focus, feelings of the unreality of the external world, altered experience of the body, time, and space, and heightened self-observation (Simeon & Abugel, 2006). Most people have experienced some of these symptoms in mild and transient form, but to diagnose depersonalization as a disorder (DPD) requires that such phenomena be persistent, pervasive, and debilitating.

Depersonalization was first identified in 1898, but remains poorly understood and frequently misdiagnosed, despite its prevalence. The DSM IV-TR highlights DPD's co-occurrence with highly traumatic events or symptoms of anxiety, panic,

and depression, suggesting that depersonalization may function as a coping mechanism in response to severe stress. As a symptom, depersonalization is common in schizophrenia as well as in PTSD, severe depression, Panic Disorder, and other diagnoses (Sierra, 2009). The DSM stipulates that, for a diagnosis of depersonalization disorder, reality testing must remain intact (Diagnostic and statistical manual of mental disorders, fourth edition, text revision, 2000) and that DPD cannot be diagnosed if symptoms occur exclusively during an episode of another disorder. The reports used in the present study are clearly from individuals with severe and prominent depersonalization symptoms, but it is difficult to be certain that each would fulfill the DSM criterion stipulating absence of such comorbidity; however the information available in the reports does not indicate such comorbidity. Recent empirical studies of co-morbidity in DPD suggest that although symptoms of depression and anxiety sometimes co-occur with chronic depersonalization, these associations are not strong enough to support the notion that DPD symptoms simply reflect an unusual anxiety or depressive disorder – rather the data strongly support the idea of DPD as a distinct condition (Michal et al., 2011; Sierra, Medford, Wyatt, & David, 2012). Indeed the latter study found that DPD and anxiety were associated only in milder cases of DPD, patients with severe DPD showing no such association. Again this implies that DPD is best considered as a disorder in its own right (Sierra et al., 2012). Reports in which patients were described as having psychotic diagnoses were excluded from our analysis.

All the depersonalization experiences categorized in the present study are observed in patients who fulfill DSM IV criteria for DPD. Here it is important to note that DPD typically encompasses a range of symptoms, including anomalies of bodily perception and reduced emotional reactivity. "Depersonalization" is thus not just a single symptom: it is more properly considered as a syndrome (Sierra, 2009). There is strong empirical support for this view from two independent studies that have applied factor analysis to responses on the Cambridge Depersonalization Scale (Sierra, Baker, Medford, & David, 2005; Simeon et al., 2008).

3. Results

3.1. Overview of results

Table 1, included as Supplementary material, lists all the items of the EASE, and where depersonalization experiences match specific EASE items, examples of this are given. Key examples across all five EASE domains are described in narrative form below. Examining the source reports on depersonalization yielded clear endorsements (by one or more subjects from our sample of depersonalization reports) of 41 of the 57 EASE items (71.9%) ("affinities"). This included 12 of the 17 items (70.6%) in Domain 1, Cognition and Stream of Consciousness; 16 of 18 items (88.9%) in Domain 2, Self-Awareness and Presence; 8 of 9 items (88.9%) in Domain 3, Bodily Experience; 2 of 5 items (40%) in Domain 4, Demarcation/Transitivism; and 3 of 8 (37.5%) items in Domain 5, Existential Reorientation. Three additional items (items 1.3, 1.16, and 4.3) were included as questionable (marked with [?]), representing examples that seemed noteworthy but not convincing enough to merit full acceptance, and are not included as affinities or discrepancies. The nature of this study argues against statistical-significance analysis: however the generally high level of affinity clearly suggests some major similarities in experiences of disturbed ipseity.

3.2. Affinities grouped by EASE domain

Domain 1: *Cognition and Stream of Consciousness.* Affinities were found in depersonalization literature for 12 of the 17 items. Some notable examples follow. *Loss of thought ipseity* (1.2) was apparent in a depersonalized patient: "Thoughts running through his brain again seemed somehow foreign." Depersonalized patients described *Perceptualization of inner speech or thought* (1.7): "It's like my thoughts are on a big movie screen in huge type, or shouted at me in an unpleasant voice." Depersonalized individuals also experienced *Spatialization of experience* (1.8): "Thoughts come almost like physical sensations—they pass up and down in my head." (EASE example: "*Thoughts always pass down obliquely into the very same spot*."). *Attentional disturbances* (1.12) were apparent in a depersonalized person who was "unable to take a panoramic view of the forest but could still see the precise contour of each tree, and the shape and shade of each leaf."

Depersonalization affinities were also found for the following EASE categories: Thought interference, Thought block, Ruminations-obsessions, Ambivalence, Inability to discriminate modalities of intentionality, Disturbance of thought initiative/intentionality, Disturbance in experience of time, Discontinuous awareness of own action, and Disturbance in expressive language function.

Two items in this domain were classed as 'questionable': firstly Item 1.3, *Thought pressure*, was strongly suggested by a description of a patient for whom "[N]oise and static and confusion often filled his head with an exhausting overawareness of every small thing what went on within it." Although this suggests overwhelming mental pressure and confusion, it is difficult to be sure that the patient here is experiencing *meaningful* thoughts or images that are nevertheless unrelated (as required by the EASE description). Secondly Item 1.16, *Discordance between intended expression and expressed* was suggested by this extract: "One of my patients remarked on her own surprise at this paradox [of *suffering* despite a claimed loss of feeling], viz. that she should weep in the very act of complaining about loss of feeling." Here there is clearly "discordance," but we were not sure the patient could be said to experience her own expressivity as "disfigured and distorted." However, the

co-occurrence of diminished emotional responsivity to external events (“de-affectualization”) with subjective emotional distress is characteristic of DPD (Sims, 1995, p. 204).

Domain 2: Disturbances of *Self Awareness and Presence*. Affinities were found for 16 of the 18 EASE items in this domain. These included item 2.1, *Diminished sense of basic self*, noted by the depersonalized individual who “feels like she just does not exist.” (EASE example: “*A feeling of total emptiness frequently overwhelms me, as if I ceased to exist*.”), Item 2.3, *Psychic depersonalization*, described by patients who state, “My mind is apart from my body” or who feel “unreal, like an actor in a play, going through the motions of daily life without any sense that he was an active participant in charge of his thoughts and feelings.” *Derealization* (2.5) is apparent in a patient who states, “The world looks perfectly still, like a postcard. It is standing still, there is no point in it. A bus moves along without purpose, it does not feel real. Everything in vision is dead . . .” (EASE example: “*Things are no longer the way they used to be. They are strange, as if they were only silhouettes*.”) *I-split* (2.7) was apparent in this statement: “Two minds are working in me, they seem struggling to control myself.” (EASE example: “*She feels it as if there were two different parts of her which ‘carry out a war with each other’*.”) *Loss of common sense* (2.12) was apparent in the depersonalized patient who stated, “Familiar objects seem foreign . . . it’s as if I’ve forgotten ever seeing the flag before.”

Depersonalized patients also reported Distorted first-person perspective, Diminished presence, Hyperreflectivity, Dissociative depersonalization, Identity confusion, Anxiety, Ontological anxiety, Diminished transparency of consciousness, Diminished initiative, Hypohedonia, and Diminished vitality.

Domain 3: *Bodily experience.* Affinities were found for 8 of the 9 items. *Morphological change* (3.1) was observed by the patient who stated, “I know my head has shrunk, I think my legs must have shrunk, in fact everything has shrunk.” Another patient described *Mirror-related phenomena* (3.2): “If I look in the mirror, there is something different. Maybe it is just the eyes.” (EASE: “*When she looked at herself in the mirror, she focused on the eye, which she suddenly saw as a ball in her head . . . she felt that her face was changed*.”) Indeed the so-called ‘mirror sign’ is characteristic in DPD (Sierra, 2009), patients often saying their reflection does not seem as if it is really them, even though rationally they know that it is (i.e. reality testing is intact: the experience is not subject to delusional elaboration, as might be seen in psychosis). *Psychophysical misfit* or incongruence (3.4) is apparent in the following: “Parts of my body feel as if they didn’t belong to me.” *Spatialization of bodily experiences* (3.6), which involves “*a kind of unusual introspective access to normally mute body parts of physiological processes*,” was described by depersonalization patients who complained of “bubbles in the head, and sensations in the heart.”

Other experiences in this domain that were reported include Somatic depersonalization, Bodily disintegration, Cenesthetic experiences, and Motor disturbances.

Domain 4: *Demarcation/Transitivism.* Affinities were found for 2 of 5 items. *Passivity mood* (4.4) was evident: “I am like an automaton led about without a will of his own.” *Other transitivistic phenomena* (4.5) are described by the depersonalized patient who feels “flustered, confused, and unable to concentrate” due to feeling invaded by ordinary background noises, ranging from “low-playing music to conversations in the hall to the sounds of the heating/ventilation systems.”

Item 4.3, *Threatening bodily contact*, was classed as ‘questionable’, on the basis of a report of feeling “detached and uninvolved when in the midst of a sexual encounter . . . [the patient] lost his usual affection, acted distant and mechanical, and seemed *almost relieved* when it was all over . . . [and at other times] had suffered feelings of depersonalization in settings where he somehow felt threatened, closed in, or violated.” Here the sense of threat was clearly present, but we were uncertain whether this involved a true fear of fusion, or of loss of self or identity.

Domain 5: *Existential reorientation.* Affinities were found for 3 of the 8 items. *Feelings of extraordinary creative power or insight* (5.4) occurred as a kind of existential revelation: “I knew a great change had taken place . . . God is neither the see-er or the seen, but the ‘seeing’ . . . the mind had finally come to rest, and rejoice in its own understanding.” Unsurprisingly, given that derealization symptoms represent a core element of the depersonalization syndrome, many patients described an *‘As if’ feeling that the experienced world is not real* (5.5), e.g. “Reality appears to him as a play, and his perceptions as being the result of theatrical fiction.” Finally, *Existential or intellectual change* (5.7) was observed in the patient who “lay awake all night thinking endlessly on the infinity of time and space, the nature of God, and the strangeness of his own existence.”

3.3. Discrepancies

We did not find affinities for the following 13 items (22.8% of the 57 EASE items):

Domain 1: Thought interference (1.1), Silent Thought Echo (1.5), Disorder of short-term memory (1.13).
Domain 2: Sense of change in chronological age (2.10), Sense of change in gender (2.11).
Domain 3: Mimetic experience (3.9).
Domain 4: Confusion with the other (4.1), Confusion with own specular image (4.2).
Domain 5: Primary self-reference phenomena (5.1), Feelings of centrality (5.2), Feeling as if experiential field is only extant reality (5.3), Magical ideas (5.6), and Solipsistic grandiosity (5.8).

It is noteworthy that the proportion of discrepancies is greater in domains 4 and especially 5. These have been identified in independent studies as the domains that may have a weaker relationship to core disturbances of self or be less predictive of conversion to psychosis in prodromal patients (Nelson et al., 2012b; Parnas, Handest, et al., 2005).

4. Discussion

We begin our discussion by assessing the nature and possible significance for descriptive psychopathology, first of the affinities and then of the discrepancies discovered through use of the EASE. Later we address more theoretical questions concerning implications for the disturbed-ipseity model and alternative approaches to schizophrenia.

4.1. Descriptive psychopathology

4.1.1. Affinities

A key finding of the present study is that EASE items are found prominently in reports of depersonalization, particularly in DPD. This condition, which is outside the schizophrenia spectrum, appears to involve or bring about many of the alterations of self-experience that have been found (in past studies and clinical descriptions) to be common in or characteristic of schizophrenia and schizophrenic vulnerability. In DPD, there can be a marked alteration in the quality of subjective experience, including a diminishment of the sense of ownership or agentic control over one's thoughts, feelings, or bodily sensations that has parallels with "first rank symptoms" of schizophrenia, despite the lack of delusional elaboration or frank hallucinatory experience in DPD. A number of these anomalies involve alterations in experience of the world or meaning that are also common in schizophrenia: e.g. loss of common sense, disturbance of time experience, and attentional disturbances. Previous comparative research using EASE and EASE-analogues has suggested that patients outside the schizophrenia spectrum (mainly patients with mood and anxiety disorders) report only very few EASE items (Handest, 2003; Huber, 1986; Parnas & Handest, 2003). This may well be true for the great majority of non-schizophrenic or non-schizotypal groups. It should be noted, however, that past comparison groups have included mixed groups of non-schizophrenia-spectrum psychiatric patients; the only comparisons with another specific diagnostic group have been with remitted bipolar patients. Other groups have not yet been specifically targeted.

4.1.2. Discrepancies

It is possible that some discrepancies may be chance products: perhaps the EASE item at issue *would* turn up if more reports of depersonalization were examined, or if current DPD patients were specifically asked about them. But this seems unlikely: not only did the discrepancies we found show a certain theoretical consistency (discussed below), they were also consistent with clinical impressions based on extensive experience in diagnosing and treating DPD patients (as attested to by co-author NM), and with detailed clinical descriptions of DPD in contemporary reviews.(Medford et al., 2005; Reutens, Nielsen, Sachdev, & Benes, 2010) Thus, these discrepancies are likely to index the presence of core aspects of schizophrenic disturbance not mimicked by depersonalization.

Examination of the twelve EASE discrepancies suggests the possibility of dividing them into four groups. Unlike persons in the schizophrenia spectrum, Depersonalized subjects do not report:

1. Three forms of experience (from Domain 1) suggestive of a fundamental cognitive disruption: The first is *Thought interference* (1.1), which involves disruption of one's line of thinking by irrelevant thought contents that are typically emotionally neutral. In DPD we *did* find descriptions suggestive of thought echo and intrusive voices; but these latter were *critical* voices ("If I was talking to someone else [the voice in my mind] would interrupt my thoughts and mock the words coming out of my mouth" (Simeon & Abugel, 2006, p. 45). Critical voices also occur in schizophrenia, but EASE 1.1 specifies random or neutral thoughts unrelated to the ongoing line of thinking. Incidentally, it is doubtful that these descriptions from depersonalization patients represent frank hallucinatory experiences: the two recent case series of DPD referenced above are notable for the lack of frank psychotic symptoms found in DPD, and it is typical that in DPD, anomalous experiences are explained using the qualifier "*as if*" ("as *if* the world is unreal", "*as if* my hands do not belong to me"); again this reflects the intact reality testing required for a diagnosis of DPD. (This is not to say, incidentally, that "as if" descriptions are not found in schizophrenia; they are common there as well, as various scholars have noted (Parnas, Møller, et al., 2005; Sass, 1994).) Thus these are more likely to represent 'pseudo-hallucinations'. Another discrepant item is *Disorder of short-term memory* (1.13), which might better be termed "Disorder of short-term *or working* memory" since the EASE describes an inability to keep in mind an orienting memory or sense of context necessary for following a theme. Depersonalized patients *do* experience certain attentional disturbances (1.12), disturbances in the experience of time (1.14), and loss of common sense (2.12) that are also found in schizophrenia. But they do not appear to manifest cognitive disturbances that would undermine one's very ability to pursue a coherent line of thought or action. Such difficulties have classically been described as a peculiarly schizophrenic "perplexity" (*Ratlosigkeit*, "not knowing where to turn") (Störring, 1939/1987). A third discrepancy is *Silent thought echo* (1.5), in which one's thoughts are felt to be automatically or involuntarily repeated or doubled, without being perceptualized, and typically just *after* being thought (thus contrasting with the reified "thoughts aloud" or *Gedankenlautwerden* of item 1.7). The more passive or automatic quality of Silent thought echo, together with absence of perceptualization, suggest that item 1.5 may not arise from the reifying, introspective, and defensive processes central to depersonalization.
2. Certain profound disturbances of selfhood or self/world boundaries that indicate either an inability to distinguish between one's own movements and those of external objects or persons, or else a tendency to confuse oneself with another person or with one's own image in a mirror: namely, *Mimetic experience* (3.9), *Confusion with the other* (4.1),

and *Confusion with own specular image* (4.2). These items seem to involve something more specific to psychosis than the feelings of passivity, fading of self or world, or alienation from thoughts, feelings, or body that are common in both DPD and schizophrenia. *Mimetic experience,* which involves "resonance between own movement and others' movement" and has "affinities with solipsistic experience"(Parnas, Møller, et al., 2005), suggests severe distortions of self-world relationship bound up with kinesthesia or experience of bodily motion. Here we find forms of fusion or confusion that suggest the disturbance or diminishment of the most basic sense of occupying a distinct, subjective position as an identifiable or embodied first-person perspective. Depersonalization does not appear to encompass these.

3. A set of experiences (all from Domain 5) that ascribe (or simply assume) an unusual or even solipsistic centrality, superiority, significance, or power either to one's own self or to one's field of experience: namely, *Primary self-reference phenomena* (5.1), *Feelings of centrality* (5.2), *Feeling as if experiential field is only extant reality* (5.3), *Magical ideas* (5.6), and *Solipsistic grandiosity* (5.8). Depersonalized patients may well feel that something is gravely wrong or altered in their perception of themselves and the world; certainly they can have feelings of great insight or of intellectual change and the sense that things are unreal. What they do *not* show are tendencies to entertain grandiose ideas of controlling or creating the world, or solipsistic experiences of being the center or source of all that exists.
4. Also noteworthy is the absence of two items suggesting profound disturbance of self-identity: namely, *Sense of change in relation to chronological age* (2.10) or *Sense of change in relation to gender* (2.11). These may suggest an absence, in depersonalization, of certain fundamental distortions of the lived body or social identity that do occur in schizophrenia.

Notwithstanding these qualitative differences, these findings may point towards a model of ipseity disturbance such that some states, such as depersonalization, exist on a continuum that has schizophrenia at the extreme end. (Perhaps ipseity disturbance or depersonalization should be a "research-domain construct," in accord with the recent NIMH RDoC initiative.) The 'endpoint' of the continuum would however be characterized not only by a sense of passivity and alienation from aspects of self and experience, but also by a *dis*location of first-person perspective such that self and other or self and world may seem to be non-distinguishable, or in which the individual self or field of consciousness takes on an inordinate significance in relation to the objective or intersubjective world. It does appear that schizophrenia involves disruptions of self-experience that are distinctive and, perhaps, more foundational and profound than anything to be found in depersonalization.

4.2. A possible objection; an alternative view

A possible objection would be to argue that DPD is not, in fact, distinct from the schizophrenia spectrum. It has been argued (Parnas & Handest, 2003) that descriptions of DPD are underspecified, and do not convincingly differentiate DPD from the schizophrenia spectrum. However, this claim is out of step with historical concepts of DPD (Sierra, 2009) and runs contrary to a considerable body of more recent literature which provides strong empirical support for the view that DPD is a disorder in its own right and cannot be regarded as part of the schizophrenia spectrum. Large DPD case series (Baker et al., 2003; Simeon et al., 2003) and detailed analysis of symptoms (Sierra et al., 2005; Simeon et al., 2008) demonstrate that DPD is a reliable construct with consistent clinical features. While the phenomenology of DPD encompasses some of the anomalies of self-experience seen in schizophrenia, DPD cannot be seen as a schizophreniform disorder, as the core features of psychosis are notably absent. Published case series (Baker et al., 2003; Simeon et al., 2008) emphasize that patients with DPD almost never develop schizophrenia or other psychotic conditions, and a study examining the co-morbidity of DPD with personality disorders found a striking lack of schizotypal personality features among patients diagnosed with DPD (Simeon et al., 1997). Thus it is very unlikely that core depersonalization symptoms could be accounted for as byproducts of some schizotypal factor—at least as schizotypy is conceived in DSM IV-TR Axis II. It is important to recall, however, that psychiatric diagnosis is *not* a purely empirical matter, but always implicates various assumptions and preferences at deeper levels of theoretical commitment (Kendler, 1990). For many disorders, it is a matter of legitimate debate what should count as the defining features. For instance, one might, on theoretical grounds, be inclined to view the self anomalies described in the EASE as the *criteria* of schizophrenia-spectrum illness, such that anyone showing such features to a significant degree would have to be, by definition, a schizotype. This would imply a much broader definition of schizotypal personality than is found in DSM IV-TR, but might be congruent with some other conceptions.(Parnas & Handest, 2003; Parnas, Licht, & Bovet, 2005) For reasons given above, we are skeptical about this view. But it is important to recognize that even if this latter view of the nature of DPD *were* correct, it would not undermine the interest of our findings—which would then need to be interpreted as indicating which self anomalies are associated with the more severe *forms* of schizotypy or with the forms prone to lead to psychosis.

4.3. Theoretical Implications for the ipseity-disturbance view

Our findings largely support the ipseity-disturbance view of schizophrenia, and raise questions that should stimulate further work. A noteworthy point is evidence of close linkage between the two postulated facets of ipseity disturbance—hyperreflexivity and diminished self-affection. Sass and Parnas (Sass & Parnas, 2003, 2007) argue that there is a complementarity between these two aspects of schizophrenia. Our data clearly accord with this claim, for they show that depersonalization also involves forms of hyperreflexive awareness (e.g., most obviously, 1.6, *Ruminations-obsessions*, and 2.6, *Hyperreflectivity*). Depersonalization is, by definition, a way of feeling the self to be unreal (diminished self-affection), yet it apparently involves

or engenders experiences involving intense self-consciousness (hyperreflexivity). This is consistent with previous observations of depersonalization disorder e.g. the tendency of depersonalization patients to develop "obsessive self-monitoring and self-observation" which often exacerbates the feeling of depersonalization "by heightening the sense of unreality and existential unease, and thus contributing to the perpetuation of the symptoms."(Medford et al., 2005), and see Torch (1978) for a detailed discussion of the relationship between depersonalization and obsessionality. A depersonalized subject in our data set stated that he/she had "to think of everything you do ... every step you take." All this is consistent with the claim (Sass & Parnas, 2003, 2007) that hyperreflexivity and diminished self-affection are interdependent or complementary aspects of anomalous self-experience.

4.3.1. Theoretical implications of affinities

Our finding of affinities suggests the non-specificity to schizophrenia of many of the manifestations of self-disorders described in the ipseity-disturbance model and operationalized in the EASE. A relatively pure, non-schizophrenic form of diminished self-affection (depersonalization) is associated with many alterations of experience that are also characteristic of schizophrenia. Although this may be unsurprising in the case of certain EASE items, particularly those that reflect experiences that are typically found in DPD (e.g., 2.4, *Diminished presence*, and 2.8, *Dissociative depersonalization*), it should be noted that the affinities include many EASE items that are not obviously manifestations of depersonalization itself: e.g., 1.9, 1.10, 1.12, 1.14, 1.17, 2.12, 3.1). This implies that some key schizophrenic symptoms might be understood as consequences of an altered overall stance or attitude akin to extreme and prolonged forms of depersonalization. Such a view ascribes a significant (though certainly not exclusive) pathogenetic role to the patient's general experiential/affective orientation, rather than only to perceptual, cognitive, or intellectual deficits. Such a view is congruent with the well-known *variability* of many schizophrenic symptoms, which typically wax and wane in correlation with situational, affective, and motivational factors. Emphasizing attitudinal factors does not imply any downplaying of neurobiology (attitudinal factors have their own neural correlates), but it fosters a more dynamic, holistic, and multi-leveled conception of pathogenesis.

Our findings support the possibility that defensive forms of diminished self-affection play a significant role in the pathogenesis of some schizophrenia symptoms. As Sass and Parnas have argued (Sass & Parnas, 2003, 2007) the ipseity disturbance found in schizophrenia is not likely to be solely the direct manifestation of some inborn essence, but also the layered product of complex psychological processes that develop over time and that involve, among other things, consequential and defensive reactions—as in the case of some instances of schizophrenic withdrawal and hyper-self-consciousness. This emphasis on the pathogenetic role of defensive and attitudinal processes is congruent with recent research suggesting the possible etiological role of traumatic experience and perhaps of dissociation in the development of schizophrenia (Bendall, Jackson, Hulbert, & McGorry, 2008) and also the association of depersonalization and self-focused attention with auditory hallucinations (Bleuler, 1911; Perona-Garcelan et al., 2011; Read, van Os, Morrison, & Ross, 2005). It is also consistent with current thinking on the potential efficacy of early intervention in preventing the onset of schizophrenia, and with recent speculation concerning the potential dangers of therapeutic interventions that might encourage dysfunctional forms of rumination or self-consciousness (Bach & Hayes, 2002; McGorry et al., 2009; Nelson, Sass, & Skodlar, 2009).

4.3.2. Theoretical implications of discrepancies

That there should also be significant discrepancies between depersonalization and the EASE is unsurprising. Depersonalized patients are *not* schizophrenic, so one would not expect them to show all the subjective or self-related features of the schizophrenia spectrum. Further, the ipseity-disturbance model postulates different *kinds* or *aspects* of ipseity disturbance—some of a basic or "operative" kind, and others that are more "consequential" or "compensatory" (Sass & Parnas, 2003, 2007). Given the largely defensive origins of the depersonalization process in DPD, one might view the EASE affinities as more likely to involve compensatory or defensive aspects of schizophrenic ipseity disturbance; whereas the discrepancies may point to more basal or operative aspects of schizophrenia. The discrepancies we found are indeed consistent with the notion that schizophrenia involves a fundamental disturbance of ipseity disrupting the most profound level of ipseity or minimal selfhood (the very sense of existing as a distinct origin of awareness or perspective on the world). One may hypothesize that this core uncertainty would lead to compensatory forms of self-withdrawal (diminished self-affection) as well as heightened monitoring of one's own consciousness (associated hyperreflexivity).

4.4. Methodological limitations

Our investigation is exploratory and heuristic, and lacks many features of more standard experimental studies: subjects were not randomly selected, or subject to conditions under our control. There is no quantitative index of *frequency* of particular self-disorder items in our depersonalization sample, only indications of *whether* certain anomalies occur (which however is our primary concern). Frequency data would not be very meaningful, in any case, given the absence of an interview in which various possibilities would be specifically queried. The EASE is normally administered through an interview that probes for each item, whereas here we studied preexisting reports gathered for other purposes. Also, in sorting reported experiences into EASE categories, we were not blind to the status (depersonalization case) of subjects. However, past users of the EASE or EASE-analogues with clinical populations (as with many psychopathology instruments) have often not been blind to the diagnosis of the individual being interviewed (Davidsen, 2009; Handest & Parnas, 2005; Nelson et al., 2012b). It is possible that our use of written reports rather than interview data could have artificially inflated the finding of affinities:

deeper probing of apparent affinities might have shown some of them to lack the distinctive qualities of the related EASE items. However, most of the affinities are highly specified in terms of the detail allowing such classification. It should be remembered as well that the EASE targets aspects of the form or structure of subjectivity, namely, *how* self and world are experienced, rather than mere issues of "content" (Parnas, Sass, & Zahavi, 2012). Any affinities in DPD, then, would similarly suggest anomalies of experience at the level of structure, rather than content. Although we would certainly not claim that the overall form or "Gestalt" of DPD is identical to that of schizophrenia – indeed it is our assumption that it is not i.e. that they are separate and distinct disorders-, our findings indicate some important parallels at the level of certain structural aspects of experience. Furthermore, clinical descriptions and empirical data on depersonalization disorder (Baker et al., 2003; Medford et al., 2005; Sierra, 2009; Simeon et al., 2003) show that anomalies such as those identified here are indeed common and prominent aspects of DPD. It should be noted as well that application of the EASE to preexisting vignettes and case reports could not only have the effect of *inflating*, but also of *deflating* the number of EASE items revealed. This is because asking *explicitly* for a given EASE item, or pursuing in-depth conversation with a patient (as is done in EASE interviews, but not with our vignettes), will often reveal an instance of anomalous self experience that might otherwise have gone unnoticed (Nordgaard, Sass, & Parnas, 2012).

4.5. Implications for research and treatment

More empirical and theoretical work is needed to explore the nature and specificity of anomalous self-experience in schizophrenia, DPD, and other disorders. This would include:

1. More rigorous research using actual EASE interviews with DPD patients in order to corroborate and extend our findings.
2. More specific comparisons, not just with affective disorders or mixed psychiatric populations (as in past research), but with other, non-pathological varieties of anomalous self experience (e.g. in Introspectionism and Meditation). Targeted studies of self-anomalies in certain other psychiatric conditions (e.g. PTSD, borderline personality disorder) would also be of interest. Is it possible to specify the problem in schizophrenia more precisely by discovering which anomalies of self-experience are shared, and which are not shared, with other persons outside the schizophrenia spectrum?
3. Closer examination of the structure of self-disturbances as manifest on the EASE in schizophrenia (and other disorders). For example, what would statistical re-analysis of past research show to be the most discriminating items on the EASE, either for diagnostic comparisons or for prediction of psychotic outcomes? Useful additional lines of research might be the use of cautious induction of transient depersonalization experiences in healthy subjects. The use of 'virtual reality' environments may have a role here: indeed in computer science there is already a considerable literature on the topic of 'presence', which relates to how 'real' a virtual environment feels to a participant in that environment (Sanchez-Vives & Slater, 2005). This technology may have interesting applications for the study of psychiatric phenomenology; with appropriate samples, it could fruitfully be combined with functional brain imaging to explore the neural correlates of particular anomalous experiences.
4. Finally, we suggest the development and empirical testing of psychotherapeutic interventions that target diminished self-affection in schizophrenia. Here we also note the need to beware of interventions for patients with, or at risk of, schizophrenia spectrum disorders that might be conducive to depersonalization experiences (e.g., self-monitoring of negative or delusional thinking), as these might exacerbate core pathological tendencies of such individuals. Interventions targeted at reducing such experiences could be useful, as could interventions that might enhance the sense of minimal self. This may require fostering a stronger orientation outward toward the world as well as an increase in the experience of motivation and emotional involvement (consistent with recommendations in several recent articles (Bach & Hayes, 2002; Nelson, Sass, et al., 2009; Perez-Alvarez, Garcia-Montes, Perona-Garcela, & Vallina-Fernandez, 2008; Skodlar, Henriksen, Sass, Nelson, & Parnas, 2012).

4.6. Conclusions

Our findings regarding depersonalization experiences are consistent with the ipseity-disturbance view of schizophrenia in several ways. First they demonstrate the complementarity of *hyperreflexivity* and *diminished self-affection*. The affinities between depersonalization and schizophrenia demonstrate that alteration of self-experience involving rather pure instances of diminished self-affection (one facet of ipseity disturbance) can indeed engender many experiences that resemble those of schizophrenia, thus supporting the hypothesis that such alterations could function as a kind of *trouble générateur*. The discrepancies support the claim that more automatic, "operative," or deficiency-like factors (Sass, 2003; Sass & Parnas, 2007)—probably involving self/world or self/other confusion and erosion of first-person perspective—are likely to play a key role either in schizophrenia-spectrum disorders in general or in the vulnerability for schizophrenic psychosis in particular. We suggest that schizophrenic self-disorder be viewed as a multi-faceted phenomenon that develops over time, in which more basic or "operative" factors precede as well as motivate defensive and consequential ones, with which they come to be inextricably intertwined.

Appendix A. Supplementary material

Supplementary data associated with this article can be found, in the online version, at http://dx.doi.org/10.1016/j.concog.2013.01.009.

References

Ackner, B. (1954). Depersonalization i: Aetiology and phenomenology. *Journal of Mental Sciences, 100*, 838–853.

Bach, P., & Hayes, S. C. (2002). The use of acceptance and commitment therapy to prevent the rehospitalization of psychotic patients: A randomized controlled trial. *Journal of Consulting and Clinical Psychology, 70*, 1129–1139.

Baker, D., Hunter, E., Lawrence, E., Medford, N., Patel, M., Senior, C., et al (2003). Depersonalization disorder: Clinical features of 204 cases. *British Journal of Psychiatry, 182*, 428–433.

Bendall, S., Jackson, H. J., Hulbert, C. A., & McGorry, P. D. (2008). Childhood trauma and psychotic disorders: A systematic, critical review of the evidence. *Schizophrenia Bulletin, 34*(3), 568–579.

Bernet, R., Kern, I., & Marbach, E. (1993). *An introduction to husserlian phenomenology*. Evanston, IL: Northwestern University Press.

Blankenburg, W. (1991). *La perte de l'evidence naturelle: Une contribution a la psychopathologie des schizophrenies pauci-symptomatiques (J.-M. Azorin & Y. Totyan, Trans.)*. Paris: Presses Universitaires de France.

Bleuler, E. (1911). *Dementia praecox or the group of schizophrenias (J Zinkin, Trans.)*. New York: International Universities Press.

Davidsen, K. A. (2009). Anomalous self-experience in adolescents at risk of psycosis: Clinical and conceptual elucidation. *Psychopathology, 42*(6), 361–369.

Diagnostic and statistical manual of mental disorders, fourth edition, text revision (2000). Arlington, VA: American Psychiatric Association.

Dugas, L. (1898). Un cas de depersonalisation. *Revue Philosophique, 45*, 500–507.

Gross, G., Huber, G., Klosterkotter, J., & Linz, M. (2008). *Bsabs: Bonn scale for the assessment of basic symptoms* (1st English ed.). Aachen, Germany: Shaker Verlag.

Handest, P. (2003). *The prodromes of schizophrenia*. Doctoral thesis, University of Copenhagen, Copenhagen.

Handest, P., & Parnas, J. (2005). Clinical characteristics of first-admitted patients with icd-10. *British Journal of Psychiatry – Supplementum, 48*, s49–54.

Haug, E., Lien, L., Raballo, A., Bratlien, L., Oie, M., Parnas, J., et al (2012). Self-disorders and early differential diagnosis in first episode psychosis. *Journal of Nervous and Mental Disease, 200*, 632–636.

Hemsley, D. (1998). Disruption of the "sense of self" in schizophrenia: Potential links to disturbances of information processing. *British Journal of Medical Psychology, 71*, 115–124.

Hemsley, D. (2005). The development of a cognitive model of schizophrenia: Placing it in context. *Neuroscience and Biobehavioral Reviews, 29*(977–988).

Huber, G. (1986). Negative of basic symptoms in schizophrenia and affective illness. In C. Shagass, R. Josiassen, W. Bridger, K. Weiss, D. Stoff, & G. Simpson (Eds.), *Biological psychiatry* (pp. 1136–1141). New York: Elsevier.

Hunter, E., Phillips, M., Chalder, T., Sierra, M., & David, A. (2003). Depersonalization disorder: A cognitive-behavioral conceptualisation. *Behaviour Research and Therapy, 41*, 1451–1467.

Kendler, K. S. (1990). Toward a scientific psychiatric nosology: Strengths and limitations. *Archives of General Psychiatry, 47*, 969–973.

Legrand, D., & Ruby, P. (2009). What is self-specific? Theoretical investigation and critical review of neuroimaging results. *Psychological Review, 116*, 252–282.

Lewis, N. (1949). Criteria for early differential diagnosis of psychoneurosis and schizophrenia. *American Journal of Psychotherapy, 3*, 4–18.

Mayer-Gross, W. (1935). On depersonalization. *British Journal of Medical Psychology, 15*, 103–126.

McGorry, P. D., Nelson, B., Amminger, G. P., Bechdolf, A., Francey, S. M., Berger, G., et al (2009). Intervention in the pre-psychotic period: A review and future directions. *Journal of Clinical Psychiatry, 70*(9), 1206–1212.

Medford, N., Sierra, M., Baker, D., & David, A. (2005). Understanding and treating depersonalization disorder. *Advances in Psychiatric Treatment, 11*, 92–100.

Merleau-Ponty, M. (1962). *Phenomenology of perception*. New York: Routledge.

Michal, M., Wiltink, J., Till, Y., Wild, P., Blettner, B., & Beutel, M. (2011). Distinctiveness and overlap of depersonalization with anxiety and depression in a community sample: Results from the Gutenberg Heart Study. *Psychiatry Research, 188*, 264–268.

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.

Nelson, B., Fornito, A., Harrison, B. J., Yucel, M., Sass, L. A., Yung, A. R., et al (2009). A disturbed sense of self in the psychosis prodrome: Linking phenomenology and neurobiology. *Neuroscience and Biobehavioral Reviews, 33*, 817–897.

Nelson, B., Sass, L. A., & Skodlar, B. (2009). The phenomenological model of psychotic vulnerability and its possible implications for psychological interventions in the ultra-high risk (prodromal) population. *Psychopathology, 42*(5), 283–292.

Nelson, B., Thompson, A., & Yung, A. R. (2012a). Basic self-distrubance predicts psychosis onset in the ultra high risk for psychosis ("prodromal") population. *Schizophrenia Bulletin, 38*(6), 1277–1287.

Nelson, B., Thompson, A., & Yung, A. R. (2012b). Not all first episode psychosis is the same: Preliminary evidence of greater basic self-disturbance in schizophrenia spectrum cases. *Early Intervention in Psychiatry*, in press.

Nordgaard, J., Sass, L. A., & Parnas, J. (2012). The psychiatric interview: Validity, structure, and subjectivity. *European Archives of Psychiatry and Clinical Neuroscience*. http://dx.doi.org/10.1007/s00406-012-0366-z.

Noyes, R., & Kletti, R. (1977). Depersonalization in response to life-threatening danger. *Comprehensive Psychiatry, 18*(4), 375–384.

Parnas, J., Raballo, A., Handest, P., Vollmer-Larsen, A., & Saebye, D. (2011). Self-experience in the early phases of schizophrenia: 5 years follow-up of the copenhagen prodromal study. *World Psychiatry, 10*, 200–204.

Parnas, J., & Handest, P. (2003). Phenomenology of anomalous self-experience in early schizophrenia. *Comprehensive Psychiatry, 44*(2), 121–134.

Parnas, J., Handest, P., Jansson, L., & Saebye, D. (2005). Anomalous subjective experience among first-admitted schizophrenia spectrum patients: Empirical investigations. *Psychopathology, 38*(5), 259–267.

Parnas, J., Handest, P., Saebye, D., & Jansson, L. (2003). Anomalies of subjective experience in schizophrenia and psychotic bipolar illness. *Acta Psychiatr Scand, 108*(2), 126–133.

Parnas, J., Licht, D., & Bovet, P. (2005). The cluster a personality disorders: A review. In M. Maj, H. Akiskal, J. Mezzich, & A. Okasha (Eds.), *Personality disorders* (pp. 1–74). New York: John Wiley and Sons.

Parnas, J., Møller, P., Kircher, T., Thalbitzer, J., Jansson, L., Handest, P., et al (2005). Ease: Examination of anomalous self-experience. *Psychopathology, 38*, 236–258.

Parnas, J., Sass, L. A., & Zahavi, D. (2012). Rediscovering psychopathology: The epistemology and phenomenology of the psychiatric object. *Schizophrenia Bulletin* (epub 23.12.12).

Perez-Alvarez, M., Garcia-Montes, J., Perona-Garcela, S., & Vallina-Fernandez, O. (2008). Changing relationship with voices: New therapeutic perspectives of treating hallucinations. *Clinical Psychology and Psychotherapy, 15*, 75–85.

Perona-Garcelan, S., Carrascoso-Lopez, F., Garcia-Montes, J., Vallina-Fernandez, O., Perez-Alvarez, M., Ductor-Recuerda, M. J., et al (2011). Depersonalization as a mediator in the relationship between self-focused attention and auditory hallucinations. *Journal of Trauma and Dissociation, 12*(5), 535–548.

Raballo, A., & Parnas, J. (2011). The silent side of the sprectrum: Schizotypy and the schizotaxic self. *Schizophrenia Bulletin, 37*, 1017–1026.

Raballo, A., Saebye, D., & Parnas, J. (2011). Looking at the schizophrenia spectrum through the prism of self-disorders: An empirical study. *Schizophrenia Bulletin, 37*(2), 344–351.
Read, J., van Os, J., Morrison, A. P., & Ross, C. A. (2005). Childhood trauma, psychosis and schizophrenia: A literature review with theoretical and clinical implications. *Acta Psychiatrica Scandinavica, 112*, 330–350.
Reutens, S., Nielsen, O., Sachdev, P., & Benes, F. M. (2010). Depersonalization disorder. *Current Opinion in Psychiatry, 23*(3), 278–283.
Ricoeur, P. (1992). *Oneself as another*. Chicago: University of Chicago Press.
Roberts, W. (1960). Normal and abnormal depersonalization. *Journal of Mental Sciences, 106*, 478–493.
Sanchez-Vives, M. V., & Slater, M. (2005). From presence to consciousness through virtual reality. *Nature Reviews Neuroscience, 6*, 332–339.
Saperstein, J. L. (1949). On the phenomena of depersonalization. *Journal of Nervous and Mental Disorders, 110*, 236–251.
Sass, L. A. (1992). *Madness and modernism: Insanity in the light of modern art, literature, and thought*. New York: Basic Books.
Sass, L. A. (1994). *The paradoxes of delusion: Wittgenstein, Schreber, and the schizophrenic mind*. Ithaca, NY: Cornell University Press.
Sass, L. A. (2003). Negative symptoms, schizophrenia, and the self. *International Journal of Psychology and Psychological Therapy, 3*, 153–180.
Sass, L. A., & Parnas, J. (2003). Schizophrenia, consciousness, and the self. *Schizophrenia Bulletin, 29*, 427–444.
Sass, L. A., & Parnas, J. (2007). Explaining schizophrenia: The relevance of phenomenology. In M. Chung, W. Fulford, & G. Graham (Eds.), *Reconceiving schizophrenia* (pp. 63–96). Oxford: Oxford University Press.
Schilder, P. (1950). *The image and appearance of the human body*. New York: International University Press.
Shorvon, H. (1946). The depersonalization syndrome. *Proceedings of the Royal Society of Medicine, 29*, 779–792.
Sierra, M. (2009). *Depersonalization: A new look at a neglected syndrome*. Oxford: Oxford University Press.
Sierra, M., Baker, D., Medford, N., & David, A. (2005). Unpacking the depersonalization syndrome: An exploratory factor analysis on the Cambridge depersonalization scale. *Psychological Medicine, 35*, 1523–1532.
Sierra, M., & Berrios, G. E. (2000). The Cambridge depersonalization scale: A new instrument for the measurement of depersonalization. *Psychiatry Research, 93*, 153–164.
Sierra, M., & Berrios, G. E. (2001). The phenomenological stability of depersonalization: Comparing the old with the new. *Journal of Nervous and Mental Disease, 189*(9), 629–636.
Sierra, M., Medford, N., Wyatt, G., & David, A. (2012). Depersonalization and anxiety: A special relationship? *Psychiatry Research, 197*, 123–127.
Simeon, D., & Abugel, J. (2006). *Feeling unreal: Depersonalization disorder and the loss of self*. New York: Oxford University Press.
Simeon, D., Gross, S., Guralnik, O., Stein, D. J., Schmeidler, J., & Hollander, E. (1997). Feeling unreal: 30 cases of dsm-iii r depersonalization disorder. *American Journal of Psychiatry, 154*(8), 1107–1113.
Simeon, D., Knutelska, M., Nelson, D., & Guralnik, O. (2003). Feeling unreal: A depersonalization disorder update of 117 cases. *Journal of Clinical Psychiatry, 64*, 990–997.
Simeon, D., Kozin, D. S., Segal, K., Lerch, B., Dujour, R., & Giesbrecht, T. (2008). De-constructing depersonalization: Further evidence for symptom clusters. *Psychiatry Research, 157*(1–3), 303–306.
Sims, A. (1995). *Symptoms in the mind* (2nd ed.). London: Saunders.
Skodlar, B., Henriksen, M. G., Sass, L. A., Nelson, B., & Parnas, J. (2012). Cognitive behavior therapy for schizophrenia – A critical evaluation of its theoretical framework from a clinical–phenomenological perspective. 2012 [Epub ahead of print].
Sookman, D., & Solyom, L. (1978). Severe depersonalization treated by behavior therapy. *American Journal of Psychiatry, 135*, 1543–1545.
Störring, G. (1939/1987). Perplexity. In J. Cutting & M. Shepherd (Eds.), *The clinical roots of the schizophrenia concept* (pp. 79–82). Cambridge, UK: Cambridge University Press.
Taylor, J. (2011). A neural model of the loss of self in schizophrenia. *Schizophrenia Bulletin, 37*, 1229–1247.
Torch, E. M. (1978). Review of the relationship between obsession and depersonalization. *Acta Psychiatrica Scandinavica, 58*, 191–198.
Zahavi, D. (1999). *Self-awareness and alterity: A phenomenological investigation*. Evanston, IL: Northwestern University Press.