Psychopathology of Lived Time: Abnormal Time Experience in Persons With Schizophrenia

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Abnormal time experience (ATE) in schizophrenia is a long-standing theme of phenomenological psychopathology. This is because temporality constitutes the bedrock of any experience and its integrity is fundamental for the sense of coherence and continuity of selfhood and personal identity. To characterize ATE in schizophrenia patients as compared to major depressives we interviewed, in a clinical setting over a period of 15 years, 550 consecutive patients affected by schizophrenic and affective disorders. Clinical files were analyzed by means of Consensual Qualitative Research (CQR), an inductive method suited to research that requires rich descriptions of inner experiences. Of the whole sample, 109 persons affected by schizophrenic (n = 95 acute, n = 14 chronic) and 37 by major depression reported at least 1 ATE. ATE are more represented in acute (N = 109 out of 198; 55%) than in chronic schizophrenic patients (N = 14 out of 103; 13%). The main feature of ATE in people with schizophrenia is the fragmentation of time experience (71 out of 109 patients), an impairment of the automatic and prereflexive synthesis of primal impression-retention-potentiation. This includes 4 subcategories: disruption of time flowing, déjá vu vecu, premonitions about oneself and the external world. We contrasted ATE in schizophrenia and in major depression, finding relevant differences: in major depressives there is no disarticulation of time experience, rather timelessness because time lacks duration, not articulation. These core features of the schizophrenic pheno-phenotype may be related to self-disorders and to the manifold of characteristic schizophrenic symptoms, including so-called bizarre delusions and verbal-acoustic hallucinations.

Key words: Pheno-phenotype/qualitative method/recovery model/schizophrenia/self-disorders/temporality

Introduction

The scientific picture of schizophrenia presents us very seldom with the concrete, real-world picture of the patients’ existence. Mainly focusing on full-blown symptoms that are supposed to be relevant for diagnosis, or on subpersonal dysfunctional mechanisms, it downplays more subtle anomalies of patients’ experience, regarding them as nonmeasurable, difficult to assess, and as such somehow unscientific. This is the case of the manifold disturbances of embodiment,1 lived space, and time, that characterize schizophrenia.2,3

Recent phenomenological research has addressed this issue adopting the concept of pheno-phenotype4 to reinsert in current empirical research important descriptive features that have been marginalized by contemporary overemphasis on behavioral descriptors. This concept aims to describe the phenomenal world of a given patient, ie, phenomena as they are experienced in the first-person perspective, preserving their peculiar feel, meaning and value for the patient himself. The utility of the concept of pheno-phenotype is to produce a systematic description of subtle and often elusive changes in the person’s subjective experience and to reconstruct the ontological framework within which they are generated.5 This concept is a supportive tool for the phenomenological dissection of psychopathological disorders. The experience of time, space, body, self and others, and their modifications, are the guidelines to this dissection whose aim is to enlarge our awareness of the life-world people affected by mental disorders live in, understand their behavior and experiences, refine diagnostic criteria and establish homogenous categories for neurobiological research. In this study we wish to specifically focus on abnormal time experience (ATE).
Temporal and Time Experience

Time experience is a long-standing theme of phenomenological psychopathology\(^6\)\(^7\)\(^8\)\(^9\) and of phenomenological philosophy.\(^6\)\(^7\)\(^8\)\(^9\)\(^10\)\(^11\) as temporality constitutes the bedrock of any experience. It comprises both awareness of external objects and their temporal characters (outer time consciousness) and awareness of one’s own stream of consciousness itself (inner time consciousness). The integrity of time consciousness is the condition of possibility of the identity through time of an object of perception as well as of the person who perceives it. Our experience of the permanence in time of a given object whose aspects cannot exist simultaneously but only appear across time (e.g., a melody, or a tridimensional object seen from different perspectives) would be impossible if our consciousness were only aware of what is given in a punctual “now.” We can perceive an object as a unitary and identical object because our consciousness is not caught in the “now,” but the now-moment has a “width” that extends toward the recollection of past and the expectation of the future. Time consciousness has a 3-fold intentional structure: primal impressions are articulated with the retention of the just-elapsed and the protention or anticipation of the just-about-to-occur. Also, the feel we have of ourselves as unitary subjects of experience permanent through time is due to the integrity of time consciousness. If we have the feel of our mental life as a streaming self-awareness this is a consequence of the continuity of inner time consciousness as the innermost structure of our acts of perception. Thanks to the unified, prerreflexive (i.e., implicit and tacit), operation of primal impression, protention and retention underlying our experience of the present our consciousness is internally related to itself and self-affecting.\(^12\)\(^13\) Temporal fragmentation has been considered as a generative disturbance in schizophrenia. Major schizophrenic symptoms (e.g., thought insertion, hallucinations or passivity experiences) have been regarded as manifesting a disturbance of the constitutive synthesis of time consciousness.\(^14\) With the fracturing of the time flow, we observe an itemization of now-moments in consciousness.\(^26\) so that each now-moment in a person’s stream of consciousness will be experienced as detached from the previous one and from the following, hence as extraneous to one’s stream of consciousness and sense of selfhood.\(^14\)\(^26\) In schizophrenia, as compared to mood disorders, the collapse of the very vector-like nature of the present moment occurs; as a result, rather than merely experiencing time flow as slowing (major depression) or accelerating (mania),\(^2\)\(^7\)\(^27\)\(^28\) life itself can turn into a series of stills as time turns wholly strange and unpredictable. Unlike in major depression, in which the crisis of life-drive that projects into the future leaves the person dominated by the past; in schizophrenia, temporality may lose all organization and meaning.\(^3\) All this seems to suggest that persons affected by ATE are unable to act or speak in any recognizably temporally coherent way. This is not the case. Even in acute episodes of psychosis patients may still be able to differentiate between the past and the present, e.g., or form sentences that are grammatically correct. The reason is that ATE are not identical to so called disorders of “objective” time.\(^30\)\(^31\) The latter include disorientation in time (e.g., the inability to correctly tell the time without recourse to a clock), age disorientation, or disorders of chronology. These disorders are often associated with disturbances of consciousness, attention, and memory. Disorders of subjective time like ATE may or may not be associated with disorders of objective time.

With these studies in place, we have developed an empirical analysis of the subjective experience of time in people with schizophrenia based on qualitative methodology. The clinical utility of this approach is 3-fold: improving the characterization of the schizophrenic pheno-phenotypes, enhancing our understanding of schizophrenic life-world, and providing the bases for empirical research correlating real-world experiences of disordered time experience with clinical symptomatology and biological substrates.

Materials and Methods

Materials

This is a retrospective study on clinical files of 550 consecutive patients affected by schizophrenia and affective disorders interviewed in the period between 1979 and 1993 by J.C. (an experienced senior psychiatrist). In this period of time, the patients were assessed through clinical interviews in a “second opinion” programme for South-East England. Details of the interview process are given in the section on Methods. The subjects were not originally
enrolled in this research study. The interviewer was not at that time considering publishing this particular research; he wanted to obtain clinical data to refine diagnoses. The subjects were under the interviewer's care as consultant or second opinions under other consultants. Appropriate consent was obtained from all patients for the purpose of the interviews. The study is in accordance with the ethical code of the Association of Italian Psychologists and Legislative Decree no. 196 of June 30, 2003 (Italian personal data protection code). All data were gathered prior to Italian Law 675/96 and D.Lgs. 196/03; as these norms are not retroactive, approval of ethical committee does not apply. Diffusion of data within the European Community was in accordance with present legislation (“Diffusion of data abroad”—Section 42 “Diffusion of data within the European Community”, Subsection 1 “these norms cannot be applied retroactively in such a way that this may restrict or obstacle the free circulation of personal data between the nations members of the European Community”).

Diagnoses, which were at the time of the first interview assigned according to DSM-III-R (Diagnostic and Statistical Manual of Mental Disorders—revised third edition) criteria, were reassigned according to DSM-5 (Diagnostic and Statistical Manual of Mental Disorders 5th edition) criteria. Disagreement among investigators about diagnosis was a case of exclusion. Patients with substance abuse, severe head injury, medical illness, neurological diseases, and mental retardation were also excluded. Of the original 550 patients, 72.90% (N = 401) were retained for subsequent qualitative analysis: 301 schizophrenia patients and 100 patients affected by major depression (this second sample was used as a control group). Chronic schizophrenia patients (N = 103) were those with stable course of the disorder lasting for at least 2 years, without clinical exacerbations in the last month; acute schizophrenia patients (N = 198) included patients with clinical exacerbation occurring in the last month confirmed by major changes in pharmacotherapy. Sample extraction is detailed in figure 1, whereas the demographic features of the final sample are shown in table 1.

In the present study, we restricted our analysis of the clinical material to subjective anomalies in one's feelings, sensations, and perceptions arising in the domain of

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**Fig. 1.** Sample extraction.
lived time (ATE). Our *a priori* definition of ATE was the following: a disruption of the unified, prereflexive, integration of primal impression, protention, and retention affecting the temporal character of one’s awareness of external objects and situations and of oneself as unified subject of experience. Of the whole sample, 109 schizophrenic patients (*n* = 95 acute, *n* = 14 chronic) and 37 depressive patients reported ATE.

### Method

Data were collected by J.C. via a semistructured interview with open questions. The interviewer adopted an interactive conversational style exploring life-time symptoms and abnormal phenomena, the latter including subtle, strange, and disturbing fringe experiences usually neglected in routine clinical examination. The aim of the interview was specifically to extract experiential patterns through self-descriptions, therefore patients were asked open questions and subsequently requested to offer descriptive examples of their experiences, particularly with regard to time, space, body, and self. Interviews sought to uncover the qualitative features of experiences and to illuminate them through vivid self-descriptions, rather than measure or causally explain them. Interview questions related to abnormal fringe phenomena were not established a priori, but always generated within the interview context and attuned with the interviewee’s personal experience and involvement. Examples of questions include the following: “Tell me please about your experience of time.” “Think about an experience, a period in your life when you were particularly aware of time and tell me about it.” “Did you experience some strangeness in the flowing of time? For instance, in time continuity?” “Or in the way present, past and future were articulated?” “Do you experience the speed of time as accelerated or decelerated?” “Do you feel that the meaning you attribute to time is somehow divergent from your previous or commonsense experience?” Duration of interview was approximately 90 min.

The study was retrospective on clinical records that were originally produced taking notes during the interview. From 2009, these were digitalized and subsequently reexamined for the purpose of present research. All data contained in the original interview notes including age, sex, handedness, I.Q., number of episodes, duration of illness, major medical information (e.g., brain trauma, serious physical and neurological illness, etc.), main symptoms (e.g., delusions, hallucinations, etc.), abnormal experiences of time, body, self and space were inserted into the digitalized database. The project, named in 2009 “Life-World Project” (LWP), was not carried out until 30 years after data collection. The principal reason for that is that no suitable qualitative methodology (Consensual Qualitative Research [CQR], see below) was established and manualized until recently. Since 2009, in the context of the LWP, new data were collected, but these data are not included in the present study. The LWP is a large-scale, detailed phenomenological descriptive research on the largest possible realm in which the patient’s existence occurs, including his world picture, i.e., the world as it is actually experienced and represented, the reality which seems self-evident to the subject of experience remaining within the natural attitude. The LWP has 2 main aims: clinical (to improve diagnostic validity and reliability, and phenomenological understanding of severe mental disorders), and

### Table 1. Sociodemographic Features of the Study Sample

<table>
<thead>
<tr>
<th></th>
<th>Participants</th>
<th>Schizophrenia</th>
<th>Major Depression</th>
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<tr>
<td></td>
<td>Schizophrenia</td>
<td>Acute</td>
<td>Chronic</td>
</tr>
<tr>
<td>N</td>
<td>301</td>
<td>198</td>
<td>103</td>
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<tr>
<td>Gender</td>
<td>Male/female ratio</td>
<td>210/91</td>
<td>137/61</td>
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<tr>
<td></td>
<td>%Male</td>
<td>69.76%</td>
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<td>≤19</td>
<td>3%</td>
<td>3%</td>
<td>2.9%</td>
<td>6%</td>
<td>6.9%</td>
<td>1%</td>
<td>7.1%</td>
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<tr>
<td>20–30</td>
<td>73%</td>
<td>83%</td>
<td>80%</td>
<td>152</td>
<td>33.3%</td>
<td>7%</td>
<td>50.7%</td>
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<td>31–41</td>
<td>15%</td>
<td>10%</td>
<td>9%</td>
<td>13</td>
<td>15%</td>
<td>1%</td>
<td>14%</td>
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<tr>
<td>42–52</td>
<td>5%</td>
<td>3%</td>
<td>4.1%</td>
<td>11</td>
<td>22%</td>
<td>1%</td>
<td>7.1%</td>
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<tr>
<td>53–63</td>
<td>3%</td>
<td>3%</td>
<td>3%</td>
<td>5</td>
<td>17%</td>
<td>2%</td>
<td>14%</td>
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<tr>
<td>64–74</td>
<td>1%</td>
<td>1%</td>
<td>1%</td>
<td>2</td>
<td>4.7%</td>
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<td>7.1%</td>
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<td>75–85</td>
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<td>1</td>
<td>1.1%</td>
<td>2%</td>
<td>14%</td>
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<tr>
<td>Means</td>
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<td>39.45</td>
<td>41.78</td>
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<tr>
<td>SD</td>
<td>7.78</td>
<td>8.14</td>
<td>15.69</td>
<td>22.17</td>
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...in the flow of time? For instance, in time continuity?”, “Or in the way present, past and future were articulated?” “Do you experience the speed of time as accelerated or decelerated?” “Do you feel that the meaning you attribute to time is somehow divergent from your previous or commonsense experience?” Duration of interview was approximately 90 min.

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ethical (as only within the realm of one’s own life-world can one be understood by his fellow-men, and only in it can he work together with them, and a common, communicative, surrounding can be constituted).

Digitalized clinical files were subsequently reexamined by 2 senior psychiatrists (G.S. and M.B.). All available psychopathological data (eg, delusions, hallucinations, thought disorders, disorders of mood, etc.) were classified according to AMDP system. We used AMDP Section 4 to classify symptomatology. AMDP-4 is a comprehensive tool of psychopathological assessment derived from the body of knowledge of Continental descriptive psycho-pathology, based on the phenomenological method and including operational definitions of the principal (100 hundred plus additional items) mental symptoms.

ATE were reclassified following CQR, a consolidated method for qualitative research. Qualitative research is essential for improving the understanding of the patients’ morbid subjectivity, not constrained by fixed schemata such as specific rating scales. The qualitative approach to anomalous phenomena is concerned with bringing forth the typical feature(s) of subjective experiences in a given phenomenon. In particular, we have applied the procedure suggested by Hill et al for CQR. This method is based on the assumption that the consensus among the judges improves the decision-making quality. It’s essential for this method to obtain multiple perspectives from a team of researchers and to reach consensus through the meaning of the data. CQR is ideal to conduct in-depth studies of the inner experiences of individuals and for the purpose of data analysis; (3) CQR does not aim to select a single approach to understanding but to analyze the data in multiple perspectives. CQR allows an ethical (as only within the realm of one’s own life-world can one be understood by his fellow-men, and only in it can he work together with them, and a common, communicative, surrounding can be constituted).

In the phase of research called “cross-analysis” we identified common themes in ATE reflected in the experiences of the patients, in order to place the central experiences of the patients, in order to place the central experiences within the categories. According to CQR method a typical category must include more than half of the participants. Each category may include more subcategories (eg, “Disruption of time flowing”). The coding was done as follows: We divided the group of researchers into rotating teams of 2 to examine the data within each domain. Rotating teams of 2 judges independently synthesize, for each single case, the raw data of every domain in core ideas, which have been renamed, in a more proper way for our study, as core experiences, in order to catch with greater clearness the essence of what has been said. Then, we asked for feedback from the auditor in order to make sure that the cross-analysis was clear and made sense. The auditor gave his feedback individually to the primary team, who discussed it and made, when necessary, the appropriate changes. Finally, a colleague versed in phenomenological psychopathology (A.R.) acted as external methodological advisor, checking conceptual coherence, letting and clinical tangibility of the qualitative domains yielded through CQR cross-analysis.

Results

Schizophrenia

About 36% (109 out of 301) of patients with schizophrenia reported at least 1 ATE. ATE are more frequent in acute (N = 109 out of 198; 55%) than in chronic patients (N = 14 out of 103; 13%). ATE in persons with schizophrenia are distributed in 3 domains.

1. First domain: How do the patients live the articulation of the 3-fold intentional structure of time consciousness?

The analysis of this domain generates a category, namely disarticulation of time experience (table 2). This domain is characterized by a breakdown of the unified, prrelexive articulation/synthesis of primal impression-retention-protement underlying one’s experience of the external objects (external time consciousness) and of oneself (inner time consciousness).

According to the Hill et al criteria, this is a typical category, because it includes more than half of the patients: 71 participants (acute = 62, chronic = 10) out of 109 responding patients, report at least 1 experience of disarticulation of time experience. This category includes 4 subcategories:

1.1 Disruption of time flowing (total = 16, acute = 15, chronic = 1). Patients live time as fragmented. Primal impression, retention, and protention are experienced as disarticulated. The intentional unification of consciousness is disrupted. Primal impression has no reference to either past or

1.2  

Déjà vu/vecu (total = 20, acute = 19, chronic = 1). Patients experience places, people and situations as already seen and the news as already heard. This ATE entails a disarticulation of time structure as retention as no more distinguishable from primal impression. The already-happened prevails. Typical sentence: “When I heard news I felt I had heard it before.”

1.3 Premonitions about oneself (total = 22, acute = 15, chronic = 7). Patients feel that something is going to happen to them or that they are going to do something. This ATE entails a disarticulation of time structure as protention intrudes into the present moment. The about-to-happen prevails. Typical sentence: “I felt something good was going happen to me.”

2. Second domain: How do patients experience the speed of time?

The analysis of this domain generates 1 category, namely disturbed experience of the speed of time (table 3). Patients live the pace of time as anomalous. This is a variable category because it includes less than half and more than 2 patients: 26 participants (acute = 24, chronic = 2) out of 109 responding patients, report at least 1 experience of disturbed experience of time speed. This category includes 3 subcategories:

<table>
<thead>
<tr>
<th>Table 3. Category 2: Disturbed Experience of Time Speed (Patients’ Experiences of the Time Speed)</th>
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<tr>
<td>Disturbed Experience of Time Speed (N = 26)</td>
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</table>

2.1 Accelerated time experience (total = 14). Typical sentence: “Birds pecking much faster than realistically possible.”

2.2 Decelerated time experience (total = 7, acute = 6, chronic = 1). Typical sentence: “Time stood still.”

2.3 Time experience both accelerated and decelerated (total = 5, acute = 4, chronic = 1). Typical sentence: “It was as if time was moving very slowly or quickly.”
3. Third domain: How do patients capture the meaning of time as compared to their previous or commonsense experience?

The analysis of this domain generates 1 category, namely discrepancies about the meaning of time experience (Table 4). Patients experience the significance of time as discrepant from the way they were accustomed to or from what they hold is commonsense experience of time. This is a variable category because it includes less than half and more than 2 patients: 12 participants (acute = 11, chronic = 1) out of 109 responding patients, report at least 1 experience of discrepancies about time experience. This category includes 2 subcategories:

3.1 Time significance different from before (total = 5, acute = 4, chronic = 1). Typical sentence: “The moods of the time seemed different.”
3.2 Loss of commonsense time references (total = 7). Typical sentence: “I looked at a clock and it didn’t mean anything.”

**Major Depression**

Thirty-seven out of 100 patients with a diagnosis of major depression reported disorders of time experiences. ATE in people with major depression appeared not to be reducible to the same categories as persons affected by schizophrenia. Indeed, the majority of ATE in major depressives (N = 17) were related to feelings of absence of time. Patients report that time is “void,” “absent,” “nonexisting,” “black” or a “complete shadow.” These experiences are related to sentiments of hopelessness, despair and guilt. Typical sentences: “Everything in his experiences are related to sentiments of hopelessness, despair and guilt. Typical sentences: “I looked at a clock and it didn’t mean anything.”

**Table 4. Category 3: Discrepancies About Time Experience (Patients’ Experiences of the Live Time as Compared to Their Previous or Commonsense Experience)**

<table>
<thead>
<tr>
<th>Discrepancies About Time Experience (N = 12)</th>
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<tbody>
<tr>
<td>3.1 Subcategory:</td>
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<tr>
<td>Time significance different from before</td>
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<tr>
<td>(N = 5)</td>
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<tr>
<td>Core phenomenon</td>
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<tr>
<td>Patients live time significance as different from before.</td>
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<tr>
<td>“The moods of the time seemed different”</td>
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<tr>
<td>“World changed, place strange. I could not say where I am.”</td>
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<tr>
<td>“Time is somewhat changed. Time isn’t supposed to be the way it was. I don’t know in what way. Think it.”</td>
</tr>
<tr>
<td>3.2 Subcategory:</td>
</tr>
<tr>
<td>Loss of commonsense time references (N = 7)</td>
</tr>
<tr>
<td>Core phenomenon</td>
</tr>
<tr>
<td>Patients feel themselves lost regarding commonsense time references.</td>
</tr>
<tr>
<td>“I looked at a clock and it didn’t mean anything.”</td>
</tr>
<tr>
<td>“It was all like a story. Middle of day seemed like night.”</td>
</tr>
<tr>
<td>“I felt I didn’t know what the time was.”</td>
</tr>
</tbody>
</table>

**Discussion**

Our discussion is divided into 3 main sections: first, we will contrast our findings with existing phenomenological, then with neuro-cognitive literature on temporality in schizophrenia, and finally we will analyze the relationship between disorders of temporality and self-disorders in schizophrenia.

**Phenomenological Literature**

A preliminary remark about the limitation of our study is needed. Only 109 out of 301 patients reported ATE. This seems to suggest that a significant majority of people with a diagnosis of schizophrenia are not affected by ATE. Indeed, no statistical inference can be drawn from this kind of study because CQR is not meant to assess
the frequency of a given phenomenon (eg, to subdivide a given population in ATE-positive vs ATE-negative subgroups). Rather, it aims to describe a phenomenon in great detail when present (its quality rather than its quantity). Qualitative research may pave the way for quantitative studies that may answer questions about prevalence. Also the interview style was not meant to make a quantitative assessment. The interviews registered what patients reported when asked about how time feels to them. Persons not reporting ATE were not asked to further explain their time experience. We cannot exclude that among them there are “false negatives” as distortions of time are difficult to articulate and may not be the patients’ chief complaint.

With all that in place, our results mainly confirm on a large scale the preexisting anecdotal findings and theoretical hypotheses on the phenomenological core features of ATE in persons with schizophrenia. Binswanger’s concept of the interruption of the continuity of natural experience is confirmed by our findings: the principal domain of ATE is the fragmentation of time experience, that is, the breakdown of the prereflective synthesis of primal impression-retention-protention against which we develop a coherent sense of being a self and a unified experience of the world. What in contrast characterizes major depression, rather than a fragmentation of temporal experience, is its loosening. This paves the way to abnormal association of retention with protention, whose outcome are guilt delusions (the patient accuses himself of some wrong he has done in the past and cannot be redeemed in the present or future). Minkowski and his commentators underline that in schizophrenia time experience comes to a stop. The loss of the vital contact with reality, that is, lack of attunement, loss of the world’s natural self-evidence, inability of immersion in the world, and solipsism are the main consequences of this. In major depression vital contact with reality is partially preserved but affected in terms of desynchronization: self-time and world-time do not flow at the same speed and existence is totally dominated by the past.

Another relevant phenomenological construct confirmed by our findings is the about-to-happen structure of time experience in schizophrenia—mainly in acute schizophrenia. This parallels Kimura’s concept of ante festum, that is, a kind of temporality dominated by the experience of anticipation of what is about to happen. Persons with schizophrenia typically report premonitions about themselves and about the external world, leading to full-blown psychotic symptoms such as delusional perceptions. This may be another consequence of the disruption of time articulation demonstrated in our analysis.

**Neuro-cognitive Research**

Cognitive neuroscience has investigated time perception—the personal ability to process time intervals. The integrity of time perception is essential to build up higher-order time experiences as the fluidity and continuity of subjective sense of temporality, the temporal coding of events and the synchronization with environment. Patients as compared with nonpsychiatric controls display a variety of ATE There is evidence in schizophrenia patients for a fragmentation of time continuity/fluidity and the temporal coding of events, loss of experiential continuity, consisting of the subjective fragmentation of the experienced world, including its temporal dimension, and a distorted perception of subjective time. Schizophrenia patients also reveal a tendency towards larger segmentation of elementary time units, resulting in a sort of prolonged “now,” and determining aberrations in the temporal integration/discrimination of simultaneous/asynchronous events. The disarticulation of time experience and the emergence of “now moments” (eg, the world as a series of fragmented snapshots) as the principal temporal dimension is also the main feature of schizophrenic temporality according to our investigation.

Correlations were found between time perception impairment and overall symptomatology and with the development of psychotic symptoms and disturbances of sense of agency. Yet, disorders of time perception, as modeled in neurocognitive paradigms, seem to lack disease-specificity. Indeed, they are currently described in many neuropsychiatric disorders, eg, ADHD (Attention-Deficit/Hyperactivity Disorder), bipolar disorder, Parkinson’s disease, Huntington’s disease, etc. A more detailed phenomenological characterization of ATE may lead to the identification of diagnostically specific ATE as contrasted to the transnosologic value of neurocognitive disorders of time perceptions. Of particular interest is the rapport between time perception and selfhood, given the relevance of the latter in the conceptualization of schizophrenia. ATE is correlated to distorted sense of continuity of self across time and to difficulties in effectively performing scheduled activities. The intrinsic, ie, not external stimuli-derived synchronized activity of an “inner clock,” has been invoked to account for the sense of the self and the time experience.8

**Relationship Between Disorders of Temporality and Self-disorders**

Fuchs proposed a model of the relationship between ATE and self-disorders in schizophrenia. Our data partly support his hypothesis that a core feature of temporality in schizophrenia is the fragmentation of passive synthesis, that is, of the prereflective synthesis of impression-retention-protention. It is argued that this may lead to typical schizophrenic phenomena as loss of spontaneity and hyper-reflexivity, and to full-blown psychotic symptoms as so-called bizarre delusions and verbal-acoustic hallucinations. The connection between ATE and psychotic symptoms (eg, thought insertion, auditory hallucinations or passivity experiences) cannot be demonstrated in this
Conclusions

In this article we focused on the exploration of experienced time as a dimension of the schizophrenic phenotype. Our current research on ATE confirms on an empirical and systematic basis the results of previous theoretical and ideographical reports about the relevance and the phenomenal characteristics of ATE in schizophrenia, especially acute schizophrenia, although the methodology we adopted does not allow to draw conclusions about the frequency of these phenomena. The main domain of ATE is disarticulation—a breakdown of the prereflexive synthesis of primal impression-retention-protention. This includes 4 subcategories: disruption of time flowing, *déjà vu/vecu*, premonitions about oneself and the external world. The integrity of time consciousness is the condition of possibility of the identity through time of an object of perception as well as of the person who perceives it. ATE may be related to the manifold of other schizophrenic subjective abnormal experiences and symptoms, including anomalies of phenomenal consciousness (eg, disintegration of the appearance of external objects and itemization of external world experience), selfhood (eg, disruption of the implicit sense of being a unified, bounded, and incarnated entity), and sociality (eg, breakdown of one’s sense of being naturally immersed in a meaningful flow of social interactions with others).

The precise characterization of ATE is an important step in the reconstruction of the schizophrenic life-world. This approach connects up strongly with recovery-oriented practices because both move from understanding patients in their own terms rather than in the clinician's term, that is, in terms of their subjective experiences. The purpose of this is the elucidation of the largest possible realm in which the patient’s existence occurs, including his “world picture” and the implicit patterns of mental existence by means of which the world is experienced. The former is the world because it is actually experienced and represented, the latter is the subsoil of prelogical and prereflexive validities that act as the implicit ground for conscious experiences and explicit cognitions. The purpose of this process of clarification is to foster possibilities for personal awareness and to present means of personal reorientation, as well as to reduce misunderstanding with other persons and support relatedness with family members and others. To develop all this in the context of recovery involves creating flexible and coherent accounts of the meaning of events which can be understood by oneself and shared with others and to regain a larger experience of meaningfulness of one’s thoughts, feelings and actions within one's own life-world.

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References

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