



Temporal experience as a core quality in mental disorders

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Abstract

The goal of this paper is to introduce *Phenomenology and the Cognitive Sciences'* thematic issue on disordered temporalities. The authors begin by discussing the main reason for the neglect of temporal experience in present-day psychiatric nosologies, mainly, its reduction to clock time. Methodological challenges facing research on temporal experience include addressing the felt sense of time, its structure, and its pre-reflective aspects in the life-world setting. In the second part, the paper covers the contributions to the thematic issue concerning temporal experience in anxiety, depression, mania, addiction, post-traumatic stress disorder, autism, and in recovery from psychosis. The authors argue in favor of integrative and cross-disciplinary approaches. In conclusion, they present time as a significant aspect of human suffering.

Keywords Temporal experience · Clock time · Lived time · Psychopathology · Anxiety · Addiction · Mania · Depression · PTSD · Autism · Recovery

1 Introduction

Why do modern psychiatric nosologies underemphasize temporal experience? Put briefly, present-day over-reliance on natural-scientific methodology is to blame. Conceptualizing our perception of time with the objectified methods of modern science brings remarkable results, but, simultaneously, such objectification trivializes temporal experience. It is self-evident for anyone familiar with the phenomenological tradition that any measurement of time perception conducted in the manner of clock time quantification suffers from insurmountable epistemological obstacles when it comes

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to grasping lived temporal experience. The symptoms of mental illness usually have a particular duration and frequency – a temporal dimension whose diagnostic value is undeniable. Thus, both the Diagnostic and Statistical Manual of Mental Disorders and the International Statistical Classification of Diseases and Related Health Problems address time in terms of external clock time, in which the symptoms of an illness appear. However, when it comes to the patients' experience itself - the beginning and the end of any psychiatric intervention - these classifications neglect time as we all experience it. At best, they consider temporal experience along the experiential axis of acceleration and deceleration, which is also quantitative. There is no exaggeration in saying that present-day mainstream psychiatry disregards lived time, even though it is often a critical aspect of understanding and treating patients.

Although the question of the diagnostic and therapeutic value of temporal experience never made it fully into the fore of debates on mental illness, the representatives of the so-called phenomenological tradition of psychopathology considered time a cardinal dimension of understanding subjectivity. At least since Ludwig Binswanger's early work on phobia (despite its still predominantly psychoanalytic bent) (Binswanger 1911), four generations of phenomenologically oriented psychiatrists have explored this key dimension in psychopathology. This issue of Phenomenology and the Cognitive Sciences, whose focus is temporal experience in psychopathology, continues this tradition. Contributions cover temporal experience in addiction, anxiety, autism, depression, mania, post-traumatic stress disorder, and in recovery from psychosis. All papers depart from natural-scientific methodology in approaching time and share a common epistemological concern. The concern is that the methods we employ to study temporal experience presuppose and subsequently posit specific ontologies. They determine what it is that we call temporal experience. It does not follow that time quantifying tasks cannot tell us anything worthy about how time is subjectively apprehended. It is just that their explanatory and diagnostic value is limited. We shall now underscore and briefly comment on several such limitations addressed in this thematic issue.

2 Methodological challenges

1) Any scientific method or paradigm employed to objectify the internal sense of time in terms of external clock time can only measure the adequacy of our cognitive and reflective efforts involved in measuring. It is irrelevant whether the estimations are conducted in the paradigm of time production (when a given stimulus is produced according to a clock time concept, such as a minute), reproduction (when the temporal length of a given stimulus is reproduced), duration discrimination (when two or more stimuli are compared) or verbal estimation (when a given stimulus is assessed according to a clock time concept). It is also irrelevant whether study participants are aware of the fact that they are being timed (prospective judgment) or initially unaware (retrospective judgment). All of these efforts ultimately result in objectified, numbered series which can only measure our conscious and reflective experience of time that has either elapsed or is still elapsing. Naturally, these methods are scientifically reliable in terms of their consistency, but to assume that temporal experience has only one quantifiable dimension that could be variously affected in different mental disorders would be

highly reductive as well as simply inaccurate. A secondary complication, one not stemming from this epistemological perspective per se, is that time intervals used in these kinds of studies vary in duration across experiments from ultra-short (milliseconds) to several seconds and minutes, rendering comparisons of results problematic (Cavaletti and Heimann 2019 - present issue).

2) Duration estimation most often, if not always, concerns simple visual or auditory stimuli presented to subjects in a laboratory setting. The purpose, of course, is to grasp cognitive temporal processing regardless of any contextual meaning of the stimuli presented. While other aspects of time perception, such as, for example, attention or the type of task involved, are often manipulated in order to assess their impact on a judgment, real life-world experiences are de-contextualized for the sake of purity of results. The studies consequently overlook the life-world based content of experiences that affect the cognitive judgment of duration. By implication, they also exclude the shared dimension of experience. Even relatively simple experiences of acceleration and deceleration that we encounter in manic-depressive illness go beyond any cognitive underestimation and overestimation of clock time. They are embodied, enacted, and, most importantly, socially embedded (Fuchs 2013; Gallagher 2017; Levine 1997).

3) Duration estimation tasks cannot target the felt sense of the time passage addressed by qualitative reports. Furthermore, quantifiable acceleration or deceleration differs from and is often independent of the felt sense of time flying or dragging. Assuming their identity may lead to apparent paradoxes. We know all too well from our daily life that events whose temporal length we correctly estimate may drag or pass quickly. Thus Cavaletti and Heimann appropriately claim, in the present issue, that these different procedures of assessment, duration estimation and time passage perception, mirror a substantial distinction between two different kinds of temporalities (Cavaletti and Heimann 2019). Manic-depressive patients reporting severe disturbances of their sense of time, such as the feeling that tomorrow seems a million years away or that the passage of time has entirely stopped, can nevertheless come on time for a meeting with their doctor, assess their age correctly, and have no trouble adequately applying clock time categories and estimate duration (Moskalewicz 2018; Moskalewicz and Schwartz 2018 - present issue).

4) Duration estimation tasks fail to address the structural aspects of temporal experience. The distinction between flow and structure, as introduced by Vogel et al., proves useful here (Vogel et al. 2018 - present issue). “The flow” is what duration estimation tasks measure, which is the “amount” of time that has passed. The concept, somewhat counterintuitively, does not indicate peak experienced characterized by the absorption in the present moment. The flow is merely the aspect of the passing of time in the human mind. It operates according to the logic of McTaggart B-series, it is ordered by the relation of earlier than, an ordering which gives us a series. On the other hand, “the structure” operates according to the logic of McTaggart A-series, a second ordering which designates some moment as the present. Associated with this present moment are dimensions of past and future in the form of personal recollections, plans, and expectations. We experience the flow as irreversible and moving towards the future – the fact that time is passing – and the structure as stable – the fact that we are always in the present. Crucially, the structure can’t be measured in terms of the amount of time.

5) Finally, there are temporal processes that are not consciously controlled, yet condition any phenomenal temporal experience. These form an underlying current of

whatever appears within the field of intentional consciousness, but – many would argue – cannot be fully apprehended reflectively. Not only duration estimation, but also subjective reports fall short of capturing this level. In the model that Vogel et al. propose, these processes constitute the micro-level of temporal processing, a level that is automatic and, in their model, unconscious. Analogically to the upper, fully phenomenally accessible layer, the micro-level consists of two components, flow and structure, the difference being that these are hidden from direct experience, even if ontologically representing the same temporality. Disturbances of this hidden level are mostly apparent in schizophrenia (Giersch and Mishara 2017).

How exactly these different layers integrate with personal experience is a significant question in the psychology of time. There is no doubt that the relationship between flow and structure is reciprocal. On the one hand, the structure is grounded in flow, so the actual experiences of past, present, and future can “move on.” On the other hand, the structure can determine the flow through affective and attentive experiences, such as grandiose manic projects of the future. The flow and structure are thus intertwined and lived temporality encompasses all of the layers and aspects mentioned above, from the unconscious to the reflective.

Last but not least, lived time is always lived by someone within the context of her life story. Beyond flow and structure, acceleration and deceleration, conscious and unconscious, felt sense and cognitive sense, lived time is a cornerstone of what classical phenomenological psychiatrists have called **temporal becoming** – growth or decline of personal time.

Given these theoretical complications, if we intend to reveal anything substantial about the lived experience of time in mental illness, we should utilize an integrative approach combining and crossing different methodologies. The levels unconsciously processed are explored by transcendental phenomenology and neuroscience; the levels directly experienced by qualitative phenomenology, time perception experiments, and psychological tests; the overall, personal configuration by existential philosophy, among others. Papers assembled in this issue assume such an integrative and cross-disciplinary approach, bridging classical and contemporary phenomenology, qualitative studies, and cognitive science models as well as philosophical and neuroscientific insights. Such a combination, we firmly believe, can benefit our understanding of temporal experience in mental illness.

3 The contents of the issue

In some mental disorders, such as anxiety, addictions, and manic-depressive illness, the role of temporality is visible. It is the key opening the box. Both patients and families get it right away. Everyone immediately agrees in an almost a-ha moment that it is the core of the illness. This knowledge unites all the parties, and it has incredible value and dramatic consequences.

An essential feature of anxiety is the pressure of time. The flow of time goes too fast. One cannot keep up with the world. There is not enough time to do everything. While normal anxiety is adaptive, morbid anxiety disrupts one’s temporal becoming. Rather than focusing on particular DSM or ICD categories of anxiety disorders, Kevin Aho’s paper “Temporal experience in anxiety: embodiment, selfhood, and the collapse of

meaning” takes a more in-depth look at their temporal core (Aho 2018 - present issue). Anxiety desynchronizes one with the environment, disrupts one’s public rhythms, cognitive rhythms (thoughts racing), and bodily rhythms (hands shaking, temperature rising, etc). It makes the subject restless and agitated. A simple, one-dimensional account focused merely on the flow aspect of the anxious disfiguration of phenomenal time, however, would be incomplete without a consideration of its structure. Taking advantage of Heidegger’s account of moods, Aho thus focuses on the future-directedness of Dasein, on its “normal” being ahead of oneself. This substantiates his thesis that temporal collapse in anxiety consists of the future experientially transforming from a horizon of worthwhile possibilities into a threatening impossibility. This primary mood disturbance undermines the capacity for narrative self-creation, ultimately jeopardizing the integrity of the self. The past also suffers a profound transformation appearing now in the guise of failure, guilt, and unfulfilled promise. The analogy with mild depression is obvious, and Aho postulates that given such experiential overlap, the nosological separation of these two into distinct disorders is highly problematic.

When it comes to temporality, manic-depressive illness is even more unique since pointing to temporality can be liberating for patients. It makes apparent the fact that the core of the illness is not insanity. What is more, stabilizing one’s temporal experience is remarkably therapeutic. It is almost like fixing an arrhythmia. Following classic accounts of Eugène Minkowski and Erwin Straus as well as contemporary theories of Thomas Fuchs and Matthew Ratcliffe, Federica Cavaletti and Katrin Heimann in a paper titled “Longing for tomorrow: phenomenology, cognitive psychology, and the methodological bases of exploring time experience in depression” (Cavaletti and Heimann 2019 - present issue) explore the concept of depressive temporality beyond the common-sense idea of slowing down. They describe a profound modification of lived future as well as a physiological and intersubjective desynchronization that is deeper than any cognitive orientation. The cornerstone of depressive temporality is the uncoupling of individual and social time. Furthermore, an experientially crucial aspect is future orientation, which in depression suffers from a profound loss – the loss of meaning. Any projects, plans, and commitments gradually lose significance. Ultimately, all meaningful possibilities are gone. There is nothing to look forward to except decay, failure, and loss. It all makes suicide rational. This is an example of how structure affects flow. Time passage becomes irrelevant, and flow might even entirely stop in one’s subjective experience.

In mania, on the other hand, it is the future that gains significance beyond any rational measure. Wildest hopes and dreams are becoming actual. This also exceeds mere acceleration and desynchronization with the environment, both confirmed by cognitive experiments. Re-interpreting Minkowski’s idea of instantaneous manic temporality and Binswanger’s notion of the flight of ideas, Moskalewicz and Schwartz in “Temporal experience in mania” interpret the disorder as a radical rebellion against the facticity of existence (Moskalewicz and Schwartz 2018 - present issue). The crucial phenomenon is the leap towards the future, through which the self and the world disconnect. Such disconnection disintegrates the usually continuous structure of experience. Temporality helps to explain manic delusions, which often entail experiencing an impossible future self in the present. Such a leap into the future suffers from a temporal paradox. If the future already takes place, there is no future beyond the present

moment. At the same time, since the present makes sense only when there is a future distinct from it, manic temporality ultimately appears as atemporal. This explains why manic patients, immersed and stuck in the now, speak of the experience of “eternity.” Manic temporality also provides a link through which manic phenomenology and manic neurobiology intertwine. Notably, lithium, a foundational pharmacological treatment for mania, binds to and stabilizes the suprachiasmatic nucleus, a tiny region of the brain in the hypothalamus responsible for controlling circadian rhythms.

Temporarily constricted experience also characterizes severe addictions, such as addictions to heroin, cocaine, or alcohol. In such addictions, the future becomes distant or fully closed. Taking a drug starts a series one cannot control. One is stuck in the present and floats along. The moment expands and dominates everything. It takes one out of time. In “Addiction as temporal disruption: interoception, self, meaning”, Ryan Kemp approaches addiction as a complex, self-reproducing phenomenon that involves emotional disturbance, alienation, self-deception, and, last but not least, altered temporal experience (Kemp 2018 - present issue). Exploring the entanglement and mutual influence of past and future, Kemp emphasizes how alternations regarding the past bear marks on any future presentation and planning. In addictions, the past appears as predominantly negative, often fragmented, and discontinuous. In severe cases, it is as if the past has never existed. It becomes a void. The future, in turn, appears fatalistic and hopeless, since there is no temporal basis upon which it could be projected. An addicted person lives under the dominion of the now, discounting delayed rewards and seeking immediate pleasures. A temporal problem thus generates a temporal remedy that, in the long run, amplifies the original problem. A vicious circle begins. Neurobiologically, Kemp speculates, this could be explained by a disturbed interaction between the brain’s impulse system and its executive system. The far-reaching consequences involve troubles with creating narrative self-coherence, which frequently leads to adaptations of false identity. In this way, all significant syndromes of addictions, alienation, self-alienation, and self-deception, appear as originating in warped temporal experience.

A problem with time is also a core quality in post-traumatic stress disorder, in which one cannot get rid of the past. One is not just re-experiencing the past in the present, but it is as if it is happening now. The memories come back as real. The difference between past and present disappears. Kurt Stocker’s contribution to understanding temporal experience in PTSD lies in introducing the topic of mental perspectives and their PTSD correlates. In “Mental perspectives during temporal experience in post-traumatic stress disorder” he speculates how these could be therapeutically taken advantage of by counteracting distorted temporal balance (Stocker 2019 - present issue). In cognitive science, mental perspectives define how the mind spatially organizes specific thoughts about past, present, and future. When it comes to memories, PTSD patients spontaneously tend to take an observer or self-distant perspective. From such a perspective, they place themselves outside of their own body, which may prevent the modification of traumatic information. Also, their recalling past events through episodic memory is vague and indistinct and assumes an overgeneralized mental perspective. Stocker thus suggests encouraging PTSD patients to take a field or self-immersed perspective, in which the memories would be re-experienced from within the very center of painful experience – their own body. This could allow for a more direct confrontation with trauma. Analogically, he proposes to counter vague memory perspectives with

techniques such as drawing a timeline in order to build a more specific viewpoint on the past. An analogical technique concerns the position taken vis a vis time flow. PTSD patients tend to imagine time as moving against their stationary position (the so-called time-moving perspective). This perspective correlates with higher levels of self-perceived anxiety and depression, a lower degree of agency, and introvertism. It presents one's passive role in time and, by implication, a lack of control over one's future. To neutralize this therapeutically, patients can be encouraged to adapt, through imagination exercises, a moving-ego perspective. Then, on the contrary, one is moving into the future on a stationary timeline, thus regaining a stronger sense of self.

Things are more complicated in autism spectrum disorder, where temporal disturbances are not phenomenal and, therefore, much less noticeable. In "Flow and structure of time experience – concept, empirical validation and implications for psychopathology", based on previous research in phenomenology and cognitive neuroscience, Vogel et al. utilize their structure-flow model of temporal experience to explain the first-person experience in ASD (Vogel et al. 2018 - present issue). Taking advantage of Bayesian probability, they speculate that the origin of phenomenal disturbances in ASD lies in changes to the microstructure of temporality. These slow down the micro-flow, and, in turn, account for the symptoms, such as troubles in identifying the processual character of reality, difficulties in imagining future states and changes, and difficulties in synchronizing with others and taking their perspective on the world.

The source of these phenomenal changes is disturbed unconscious predictions about the environment – the so-called "priors," somewhat analogical to phenomenological "protentions." The priors are weakened, thus increasing the amount of improbable information entering the mind. Too much information to process causes a deceleration of the temporal window mediating perceptual input. In consequence, others are considered as moving faster, and there is an impression of ongoing unpredictability. This and other abovementioned experiential symptoms create a need to compensate for the loss of temporal structure through over-planning and over-structuring time. More and more conscious efforts are directed at maintaining temporal stability and reducing the chances of interruption. In this sense, what from the outside is seen as autistic withdrawal finds its underlying temporal explanation.

Finally, time has a therapeutic value. In mania, the "zeitgebers"¹ help to organize one's daily routines. In addictions, one has to accept that rebuilding the future is a long process and thus learn to live one day at a time, as the AA slogan advises. In anxiety, one learns to take things in stride and resynchronize. In recovery from psychosis, activities must be performed more slowly.

It is often critical to address temporality during the recovery process. In "Temporal experience in recovery from psychosis", a paper involving participatory qualitative health research, co-written by a person who has lived with psychosis, Schlimme and Hase propose to distinguish three building blocks relevant for recovery from psychosis: laid-back situations that are quiet and spatially confined; switch-off skills referring to non-verbal and bodily skills focused on the present; and places to talk that enable safe sharing of the psychotic experience (Schlimme and Hase 2019 - present issue). All have

¹ A "zeitgeber" is a rhythmically occurring phenomenon which acts as a cue in the regulation of the body's circadian rhythms. For instance, the rising sun, the bell ringing at the onset of the school day, the dog's nudging us that it is time for the evening walk, are all example of "zeitgebers" – or "time givers."

the same purpose of slowing the person down in order to prevent relapse. Such slowing is performed not in terms of cognitive ability regarding clock time, but with respect to the velocity of significance – the far too rapid meanings encountered in the world by a person. Practically speaking, this means accepting doing nothing when the pace of the world overwhelms the patient. As a result, the level of pre-reflective expectations regarding the immediate future lowers as well, and the ability to cope with whatever enters the field of perception rises. Such deceleration should facilitate the process of therapeutic reflection on one's life and inner-world in order to sort things out and build a more reliable, taken-for-granted reality. To adequately address the needs of their clients, psychiatrists and therapists must slow down as well.

There is an essential philosophical-medical problem lurking behind all the described examples of mental disorders. Why should we speak of abnormal temporal experience at all? Are these experiences pathological because they accompany and are intrinsically related to a set of psychopathological symptoms whose abnormality is undisputed? Or are they somehow abnormal in themselves, regardless of any other symptoms? And, if it is the latter, what is the norm of temporal experience that would constitute our measuring stick of pathology?

Given the above methodological considerations, it cannot merely be clock time. Might phenomenology provide us, as many phenomenological psychiatrists have believed, with some essential, foundational norm of temporal experience, which could be used as an appropriate yardstick to measure any abnormalities? Furthermore, how many yardsticks would we need given the complexity of temporal experience, its different layers, intersubjective, social, and enactive dimensions, and the difference between flow and structure?

In “Two ways of combining philosophy and psychopathology of time experiences” Alice Holzhey-Kunz contends that Husserl's analysis of time-consciousness performed at the level of transcendental inner-time consciousness provides us with such a yardstick (Holzhey-Kunz 2018 - present issue). If we use it, however, Holzhey-Kunz argues, we shall conform to medical-psychiatric discourse and thus deepen the gap between the normal and the abnormal. The medical discourse measures alterations and negative deviations from the norm, and it can play this usual role in the case of temporal experience. Even though operating at the most fundamental level, when applied, transcendental insights cease to be purely descriptive. They become norms of experience. The same thing happens, she argues, if we refer to existential time understood as growth. This idea was utilized by Erwin W. Straus and Viktor von Gebattel as a yardstick for measuring vital temporal inhibition in depression, a concept presently encompassed by Thomas Fuch's idea of the loss of conation. However, applying this idea inadvertently pathologizes regular temporal becoming, which cannot be in constant growth. What happens is that an idealized norm becomes a measure of “healthy” temporality — personal time subjects to the dogma of growth, not unlike the GDP.

In this way, phenomenological psychiatry follows the dominant metaphysics of the medical discourse in general. It focuses on getting rid of an illness (pathology) and restoring health (norm). The medical approach involves a fundamental change of the originally descriptive phenomenology. If it wants to follow the conceptual logic of health and disease, it must submit to normative medical metaphysics. It does not orient

towards exploring the phenomena regardless of their medical labeling as “symptoms” and their hidden meaning. Otherness transforms into deviation and abnormality.

However, there is another possible approach, which Holzhey-Kunz calls hermeneutic. Here temporal “deviations” are not symptoms – they disclose something about a subject and temporality. This shift towards revealing hidden meaning changes everything. What we find out is that humans suffer from temporality. As she puts it, following Freud, “all psychic suffering is also suffering from living under the dominion of time” (Holzhey-Kunz 2018, p. 13). We live under the weight of an irreversible past and an unpredictable future, whose only certainty is death. But suffering from temporality, Holzhey-Kunz argues, is also living closer to the truth.

4 Conclusions

We conclude with this indisputable truth – time is a significant source of suffering. It is uncertain at its core. Nobody can deal with it appropriately and live it perfectly. Is living in truth and suffering from temporality pathological because it is too heavy to bear? Is this why this truth is typically hidden, obscured and avoided? And when it does pop up, why it needs to be covered up again? Are wishes of a timeless existence, wishes that find an unusual fulfillment in manic temporal psychosis, a means to escape from our temporal predicament? These are all metaphysical questions that exceed the aspirations of a medically oriented psychiatry.

We may notice, however, that there are three major sources of the devaluation of time: religion, physics, and philosophy. Religions attempt to deal with temporality by either promising eternity or a timeless existence in this very life. Structurally speaking, both promises aim at the same thing, either abstractly or very concretely, as in meditation and prayer techniques that are supposed to enable one to dwell in the *nunc stans*. The common goal is therapeutic. On the other hand, physical theories, such as block universe, which posit time as an illusion, do not help in any way in dealing with it at present. The same is true of philosophical theories, such as the famous McTaggart’s argument on the unreality of time. The perspective of psychiatry is different.

The human experience of time is embedded in finitude. If it had been otherwise, no one could experience the passage of time as flying or dragging. If the temporal horizon was infinite, the importance of passing would be minimal, if any. It is the inevitable end of time that makes time meaningful. The fact that we are temporal, that we both live in a time and live time, and that this may stop at any moment, is central to our being. This is why temporal experience has an undeniable diagnostic and therapeutic value that is most apparent in the case of anxiety, addiction, and manic-depressive illness, but no less important in other disorders. From the psychiatric perspective, what we need is some form of a healthy balance between insights into the truth of time and covering these truths in order to move on. Even if we could do away with time, we should not. Instead, we should build more bridges between the domains of ontological truths and psychopathology. Practically speaking, this involves crossing natural-scientific and philosophical methodologies as well as theoretical and qualitative phenomenologies. A small bridge towards reaching this goal is the current thematic issue of *Phenomenology and the Cognitive Sciences*.

Compliance with ethical standards

Conflict of interest The authors declare no conflicts of interest.

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