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Delusions beyond beliefs
A critical overview of diagnostic, etiological and therapeutic schizophrenia research
from a clinical-phenomenological perspective

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Summary

Delusions are commonly conceived as false beliefs that are held with certainty and which cannot be corrected. This conception of delusion has been influential throughout the history of psychiatry and continues to inform how delusions are approached in clinical practice and in contemporary schizophrenia research: it is reflected in the full psychosis continuum model, guides psychological and neurocognitive accounts of the formation and maintenance of delusions, and it significantly determines how delusions are approached in cognitive-behavioural treatment. In this critical overview, we draw on a clinical-phenomenological framework to offer an alternative account of delusion that incorporates the experiential dimension of delusion, emphasizing how specific alterations to self-consciousness and reality-experience underlie delusions that are considered characteristic of schizophrenia. Against that backdrop, we critically reconsider the above-mentioned research areas, highlighting empirical and conceptual issues in contemporary delusion research, which appear to largely derive from an insufficient consideration of the experiential dimension of delusions. Finally, we suggest how the alternative phenomenological approach of delusion could offer new ways to advance current research and clinical practice.

Introduction

Although delusions occur in a number of psychiatric disorders, they have been most paradigmatically associated with schizophrenia. In contemporary definitions of schizophrenia in DSM-5 and ICD-10, delusions, alongside, e.g., hallucinations and negative symptoms, constitute key diagnostic criteria. During the last few decades, however, the diagnosis of schizophrenia has become increasingly disputed. Some have advocated a rejection of the category, emphasizing its questionable validity, unclear boundaries and the heterogeneity of its clinical manifestation.^{1,2} The concept of delusion, by contrast, is typically more readily taken for granted - this is apparent, e.g., in the recent promotion of delusion as a trans-diagnostic unit of analysis.^{3,4}

The appeal delusion currently enjoys might in part be due to the apparent straightforwardness of its mainstream definition as a false belief that is held with certainty and which cannot be corrected. While present discussions primarily focus on how delusions are formed or maintained^{5,6} or on whether and how they can be distinguished from non-clinical phenomena^{7,8}, the more basic assumption that delusions are, in essence, ‘false beliefs’ with certain additional properties has gone largely unchallenged. This assumption has remained remarkably stable throughout the history of psychiatry⁹ and continues to inform contemporary research and therapeutic practice. Most notably, the assumption has been central, though often implicit, within the full psychosis continuum model^{1,2,10}; it has guided psychological and neurocognitive research on delusion formation, which generally starts from models of ordinary belief fixation^{11,12}; and it has motivated cognitive-behavioral interventions targeting delusions.^{4,13,14}

Yet, despite its ubiquitous status in these domains of research, this conception of delusion as a form of false belief (also known as the doxastic view of delusion) is not entirely uncontroversial and calls for careful consideration. Especially in the tradition of phenomenological psychopathology, less emphasis has been put on the supposedly erroneous nature of delusional beliefs with respect to everyday reality, than on how delusions are experienced and what sort of “reality” patients may ascribe to it.¹⁵⁻¹⁷ The phenomenological approach also maintains that understanding delusions may constitute a particularly challenging endeavor – one that requires a

fundamental questioning of assumptions that are deeply ingrained in how we ordinarily conceive of ourselves, others and reality.¹⁸

In this paper, we draw on this clinical-phenomenological framework to offer a comprehensive and critical examination of the doxastic conception of delusion in contemporary schizophrenia research. First, we begin by providing a brief historical context of the evolution of the psychiatric concept of delusion, detailing how its current conception as ‘false belief’ differs from several clinical and phenomenological conceptions. Next, we proceed to clarify how the doxastic conception of delusion informs a selection of contemporary research areas and provide a state-of-the-art overview and discussion of empirical results and developments within each of these domains of research. Finally, we identify key challenges evident within these fields and suggest phenomenologically informed alternatives and solutions as a way to advance future research and clinical practice.

A brief history of delusion conceptualization

Delusions have always presented a particular challenge for psychiatry. Especially in schizophrenia, the phenomenon confronts us with generally rational people who are nonetheless disposed towards what seem to be the most wildly implausible claims. For example, patients experiencing first-rank symptoms (FRS) may claim that their thoughts, will or actions are steered by some alien force (i.e., delusions of control, also called passivity phenomena) or that someone is inserting thoughts into their mind (i.e., thought insertion).¹⁹ Such testimonies constitute a puzzle not only at a theoretical or scientific level, but also in clinical encounters where delusions may arouse a distinct experience of incomprehensibility in others.²⁰

To define delusion, most approaches follow Karl Jaspers’ influential three criteria: a belief is delusional when (a) its content is false and/or impossible, (b) it is held with unshakable conviction and (c) is incorrigible by rational argument or counter evidence.²¹ Jaspers himself, however, considered these criteria to be merely ‘external indicators’ that do not define what delusion essentially is: “to say simply that a delusion is a mistaken idea which is firmly held and which cannot be corrected gives only a superficial and incorrect answer to the problem”.²¹ However, save for some minor variations, the major diagnostic manuals and psychiatric textbooks have largely restated this definition (panel 1, overview of definitions).

Apart from Jaspers, later authors^{27,28} have similarly noted the definition’s shortcomings. For instance, the content of delusion is not necessarily false (e.g., partners of patients with delusional jealousy may actually be unfaithful)²¹ or it may be unfalsifiable by virtue of being more a value judgement than a truth claim (“I am a worthless devil”).²⁹ With regard to delusions being firmly held, patients’ conviction will often fluctuate over time.³⁰ Moreover, certitude is not an exclusive privilege of delusions, but can also be found in more ordinary phenomena, e.g., in religious beliefs or political convictions. Similarly, while delusions are often (sub)culturally atypical, this criterion risks classifying all novel or idiosyncratic ideas delusional. This critique can be extended to all other criteria and is the reason why, as summarized by David, “there is no acceptable (rather than accepted) definition of delusion”.²⁸

The persistent nature of this critique reveals that these issues are not new to the psychiatric literature. In more recent years, however, an important change nevertheless occurred in how the deficiencies of the standard definition have been received.

Jaspers and Schneider: delusions beyond beliefs

In the first half of the 20th century, recognition of the definition's limitations went together with the effort to provide phenomenologically more detailed accounts. Early phenomenological psychiatrists such as Jaspers and Schneider (for an historical overview, see³¹) distinguished delusions typical for schizophrenia from those found in other psychotic disorders (e.g., affective psychosis) by moving beyond the standard definition of delusion as false belief.

For example, a typical distinction Jaspers draws is that between so-called 'primary delusions', considered characteristic of schizophrenia, and 'secondary delusions' or 'delusion-like ideas', which also occur in other (psychotic) disorders.²¹

In motivating this distinction, Jaspers emphasizes the specific way in which primary delusions arise. Instead of resulting from incorrect inference, primary delusion emerges as a sudden, unexpected and intrusive experience of delusional meaning that is instantly revealed and imposed on patients (similar to the experience of mystical epiphany³² or Aha-erlebnis³³). A classic example is that of a patient who by looking at three marble tables suddenly knew that the world was coming to its end³⁴ (panel 2: examples primary delusion). Often, such revelations are experienced as highly significant and meaningful, yet also as puzzling and strange even to patients themselves.³⁵ Both these aspects of primary delusion – i.e., the fact that they are not mediated by judgments, inferences or reasons, and the perplexity and bewilderment they may engender in patients – seem to render them different from straightforward instances of false belief.

Jaspers also points towards the experiential context within which primary delusions originate. Whereas delusion-like ideas arise in intelligible ways from everyday experience, primary delusions develop upon what Jaspers describes as a "*transformation in our total awareness of reality*".²¹ One illustrative example of this transformation is provided by the so-called "delusional atmosphere" or "delusional mood", an elusive state of insistent yet indefinable significance often preceding the emergence of primary delusions (panel 2: description Jaspers). Delusional atmosphere involves a kind of global experiential change that is not restricted to particular contents within everyday reality, but which extends to a more pervasive ('ontological') transformation of reality experience itself, affecting the very sense of encountering something as real or unreal – e.g., everything becomes increasingly self-referential to the patient and reality may take on a staged or ready-made quality, or can even be experienced as being both unreal and hyperreal at the same time.³⁷⁻³⁹

Recognizing this altered ontological framework of experience not only helps to grasp how primary delusions may develop^{36,40}, but also in what sense they differ from ordinary false beliefs. While normal beliefs are essentially entertained against a shared background of consensual reality, primary delusions, due to the transformation in awareness of reality, typically pertain to a private, quasi-solipsistic domain of experience which is felt to be different from everyday reality.¹⁵ This helps to clarify, e.g., why patients with primary delusions are usually not inclined to seek social validation for their delusions, are often indifferent to empirical refutation and rarely consider their delusions as motives for everyday action.¹⁶ A telling clinical illustration of this altered reality-status of primary delusions is provided by the famous patient Daniel Paul Schreber (panel 2: clinical illustration by Schreber).⁴¹

Another example is the FRSs of schizophrenia. Schneider introduced the distinction between first-rank symptoms (e.g., delusional perception, delusion of control, thought insertion, withdrawal or broadcasting) and second-rank symptoms (e.g., perplexity, delusional ideas, lowered or elated mood), arguing that the presence of a single FRS, in the absence of organic pathology, can be sufficient to diagnose schizophrenia.¹⁹ Many of the symptoms of schizophrenia Schneider classified as ‘first-rank’ were already described in classic textbooks of psychiatry (e.g., by Kraepelin⁴³, de Clérambault⁴⁴) and were later adopted in DSM-III and ICD-10. However, this involved one crucial omission as FRSs were defined mainly in terms of their bizarre content, overlooking Schneider’s core claim that most FRSs presuppose a “radical qualitative change” of consciousness that fundamentally involves a disorder of the self (cf. *Ichstörung*).^{19,45} On Schneider’s conception of FRSs, the fact that a patient merely holds a particular belief with a certain content was considered insufficient. Rather, the delusion must appear on a transitive-experiential background (i.e., a permeable and unstable boundary between self and other/world), reflecting an underlying alteration of the form of (self-)conscious experience (cf. *Störungen des Icherlebnisses*¹⁹), also called ‘self-disorders’ (for recent formulations, see, e.g.⁴⁶⁻⁴⁷).

Subsequent phenomenological research offered similar resources to differentiate delusions typical of schizophrenia from delusions occurring in other disorders, e.g., epistemological vs. ontic delusions⁴⁸ and autistic-solipsistic vs. empirical delusions¹⁶. Expanding the line of Jaspers and Schneider, such research similarly emphasizes how delusions in schizophrenia involve mutations in the basic structures of experience that can alter the overall sense of existence and being in the world, including changes in felt reality-status, time, space, and self-experience.^{15,16,35} A narrow focus on the superficial similarities these delusions share with ordinary irrational beliefs (e.g., in lacking rational justification) would therefore overlook the more fundamental experiential alterations (e.g., in minimal self-experience and global sense of reality) that condition these delusions.

Delusion in DSM-III and beyond

However, the majority of psychiatric research on delusion has adopted a markedly different approach. Especially during the last few decades, delusion has come to be seen as a descriptively primitive and homogenous phenomenon readily fit for trans-diagnostic study.³ Questions regarding its proper definition, the heterogeneity of delusions, and their potential diagnostic specificity have shifted towards the margins of current research. At the same time, research has predominantly focused on the (irrational) content of delusions, while alterations to the structures of experience (i.e., in self-consciousness and reality experience) that possibly underlie them have been generally neglected. A telling example of this change of focus is the disappearance of ‘bizarre delusion’ and ‘FRS’ as special diagnostic criteria for schizophrenia in DSM-5⁴⁹ (for a critical appraisal of this decision, see⁵⁰).

It is hardly a coincidence that this shift occurred alongside the introduction of operational definition of mental disorders starting with DSM-III and ICD-10. From the outset, the operational project was primarily driven by a concern for increasing diagnostic reliability instead of validity (yet see⁵¹). While this enhanced standardization, it also led to a possibly premature simplification of psychopathological description in which subjectivity and consciousness have been downplayed in favor of a focus on more easily observable behavior.^{52,53} As a result, subtle, yet potentially significant qualitative differences in psychopathology were gradually overlooked (e.g., in anomalous self-experience), and symptoms and signs eventually became homogenized and rendered non-specific for any given disorder.⁵⁴

In the case of delusion, this contributed to the adoption of its lay definition (as ‘false belief’) as the general starting point of research, whereas the validity of this definition previously was an object of inquiry in itself. While the limited discriminating validity of the conventional criteria of delusion is generally acknowledged⁵⁵ (cf. supra), today this is seen as a positive fact about delusion, supposedly reflective of its indistinct and continuous nature.⁵⁶ Indeed, the idea that delusions can be approached “very much like many ordinary beliefs and attitudes”⁵⁷ has become a common assumption in current research, as we will show and discuss below.

Delusion in the full psychosis continuum model

Support for the idea that delusions are a form of ordinary belief comes in part from the so-called full psychosis continuum model.^{2,10,58} While not entirely undisputed^{8,59}, this model has become popular amongst researchers today. The continuum model suggests that delusions are not qualitatively different from normal beliefs, but constitute the more extreme, irrational end of a belief-continuum, ranging from ordinary beliefs, over psychotic-like ideas to genuine delusions found in psychotic disorders.⁶⁰ Delusion arises here as a multi-dimensional construct, differing from ordinary beliefs only by quantitative variations along dimensions of conviction, distress, preoccupation and possibly bizarreness of content. In general, this view of delusion is suggested to undermine and replace traditional diagnostic categories¹, and Jaspers’ categorical conception of delusion in particular.⁶¹

Overview and discussion of current evidence

Empirical evidence for this continuum model derives primarily from large-scale epidemiological research into the presence and correlates of psychotic and psychotic-like symptoms in the general population.

First, various studies indicate that people experiencing psychotic-like symptoms are more prevalent than individuals who receive a diagnosis of a psychotic disorder. Clinical psychosis remains comparatively rare with an estimated lifetime prevalence of 3%.⁶² By contrast, in an influential meta-analysis, van Os and colleagues⁶³ reported a median annual prevalence of subclinical psychotic experience in the general population of 5%. For delusions and subclinical delusions specifically, prevalence rates of respectively 4.9% and 8.7% are reported⁷, although this number varies substantially as a function of assessment method, study quality and population.⁶⁴ Second, in general population samples, delusions are correlated with hallucinations, as they are in psychotic disorders.⁶⁵ The same holds for the correlation with anxiety and depression.⁶⁵ Third, psychotic-like experiences demonstrate a similar pattern of symptom-dimension structure to psychiatric symptoms.^{10,66} Finally, nearly all of the risk factors for psychotic disorders (including, e.g., demographic, personality, environmental, genetic and neurocognitive factors) predict greater risk of subclinical psychotic symptoms in otherwise healthy individuals.⁶³

These and similar results are often cited as evidence for a strong claim regarding phenomenological continuity between clinical delusions and ordinary experience.^{7,10,56} However, a number of factors complicate such a straightforward interpretation.

While the claim rests heavily on the presence of ‘psychotic-like experience’ (PLE) in the general population, this concept is itself ill-defined and its meaning varies substantially across studies (panel 3).⁶⁷⁻⁶⁸ Such conceptual heterogeneity significantly undermines the validity of meta-analytic prevalence estimates and contributes to the remarkable variability in findings. For example, for delusions in the general population, rates

vary between 3% for ‘delusion-like experiences’⁷⁰ up to 91% reporting ‘delusion-like beliefs’.⁷¹ Moreover, the lack of consistent definition also makes it unclear what kind of continuum the epidemiological data actually support. For example, do psychotic-like experiences exist on a continuum within a spectrum of mental illness (i.e., a quasi-continuum), or do they form points on a continuum with the general population that precludes any qualitative distinction (i.e., a full continuum)?⁷²

Importantly, these sorts of questions are to a considerable extent phenomenological in nature (i.e. pertaining to descriptive and experiential characteristics of delusions and non-clinical beliefs). However, most of this research is exclusively based on self-rating scales or fully structured interviews by lay interviewers⁶⁴ which are methodologically unsuited to answer such questions⁷³ and of demonstrated limited validity.⁷⁴⁻⁷⁶ Revealingly, research extending beyond the usual fully-structured format points to substantial qualitative differences in the experience of both delusions and hallucinations across clinical and non-clinical samples.⁷⁷⁻⁷⁸ This suggests that the finding of phenotypic continuity between delusions and ordinary beliefs might actually reveal more about the vagueness and selectivity of measures and concepts used in assessing these phenomena, than it demonstrates the continuous nature of delusional experience itself.

It is also telling in this regard that the claim of phenomenological continuity is largely based on similarities in content and conviction.⁷⁹ For example, the fact that a substantial number of British adults entertain the possibility of thought transference and the existence of ghosts is cited in support of the continuum-view.⁶⁰ A similar claim is made on behalf of the delusion-like rigidity of political convictions.⁸⁰ Yet although peculiar and passionately held ideas are common in the general population, it is not obvious that these phenomena should be regarded as the attenuated or sub-clinical correlates of genuine delusions occurring in psychotic disorders.

In this respect, given how the results of continuum-research are often presented as critically refuting Jaspers’ concept of delusion^{56,61}, it is important to note that these continua (i.e., content and conviction) largely correspond to Jaspers’ traditional triad of so-called ‘external indicators’ for assessing delusions - i.e. falsity, conviction, and incorrigibility (cf. supra).²¹ Yet, as noted above, Jaspers considered the latter to be merely incidental or inessential properties of delusions. At the same time, Jaspers’ ‘internal’ or ‘true’ criteria for delusions (e.g., altered reality-status) - which specify how delusions are experienced (i.e., also described as their ‘form’) over and beyond their more salient propositional content^{21,50} - are hardly offered any consideration.

Experiential features that are essential for fleshing out formal characteristics of delusions involve, amongst others, their relation to altered self-consciousness^{45-46,81}, sense of reality³⁷⁻³⁹ and inter-subjectivity⁸². Although these features are more difficult to assess in large-scale research, phenomenological research suggests that they are also most likely to provide the relevant distinction between delusions typical of schizophrenia and, e.g., delusion-like phenomena in other forms of psychopathology.⁸³⁻⁸⁴ Given that they touch more closely on what characterizes schizophrenic delusion as a distinctive and at times destabilizing mode of experience, they might also hold the key for explaining what often renders clinical delusions, in contrast delusion-like beliefs in the general population, so distressing and disabling.

Overall, this opens up the possibility that the current claim of continuity might actually be an outcome and artefact of a one-sided research focus. Most studies are exclusively guided by minimal criteria of schizophrenic delusions (e.g., conviction), while qualitative differences can only become apparent on more extensive and detailed analysis and description.⁵⁴ To enable more substantial conclusions, future research on delusion will benefit from enhanced conceptual clarity (e.g., regarding the meaning of ‘psychotic-like’ experience and ‘psychosis’), more

fine-grained methods to assess psychopathology (e.g., the use of semi-structured clinical interviews by skilled and knowledgeable clinicians instead of lay interviewers), and considering other aspects of delusions beyond those present in the doxastic conception.

Psychological and neurocognitive models of delusion formation

The presumed continuity between schizophrenic delusions and ordinary beliefs has also been a central assumption guiding psychological and neurocognitive models of delusion formation.^{11,12} Most of these accounts converge on the view that delusions can be explained as cognitive beliefs that are formed in response to anomalous experience by applying the same normative-psychological framework used for non-delusional beliefs.⁸⁵⁻⁸⁷ Within this general doxastic approach, theoretical accounts differ according to whether delusional responses are considered rational or irrational. In one-factor theories, a delusion is viewed as a reasonable hypothesis in light of an anomalous perceptual experience.⁸⁸ In two-factor theories, in addition to the occurrence of an anomalous experience, the adoption and/or maintenance of delusion is also considered to be affected by reasoning deficits or biases.^{12,86,89} More recent predictive-coding accounts of delusion formation alternatively propose a single deficit in hierarchical Bayesian information processing as responsible for both aberrant experience and belief.⁹⁰⁻⁹¹ All these approaches, however, are confronted with various issues.

Overview and discussion of current evidence

In the field of cognitive neuropsychiatry, several one-factor accounts appealing to different neuropsychological deficits have been offered for a number of monothematic delusions, e.g., Capgras delusion (i.e. the belief that a familiar person has been replaced by an imposter) in terms of a disruption of automatic face processing⁹², Cotard delusion (i.e. the belief that one is dead) as a loss of autonomic responsiveness⁹³, and passivity phenomena in schizophrenia (e.g., the experience that one's actions are not controlled by oneself) as a disruption in self-monitoring of movement⁹⁴. While potentially successful in accounting for the particular content of delusions, one-factor accounts have a difficult time explaining why not all patients with similar unusual experiences go on to develop delusional explanations. Nor is it clear on a one-factor account why patients prefer and maintain delusional (e.g., my movements are steered by an alien force) rather than plausible (e.g., I have a neuropsychological deficit) explanations for their experiences.

These considerations have led to the idea that an additional 'second factor' is required for generating delusions in the form of reasoning impairments, cognitive biases or other general deficits in belief evaluation.^{11,12,89} Yet, while the precise nature of this reasoning abnormality remains underspecified, the empirical outcomes for candidates that have been researched are inconclusive.

First, despite initial enthusiasm, differences in formal syllogistic-deductive reasoning have proved non-significant in their association with delusions when other variables (e.g. IQ and neuropsychological performance) are controlled for.⁹⁵⁻⁹⁷ Moreover, on measures of 'pure' theoretical reasoning abstracted from pragmatic significance and practical rationality, patients have sometimes even been found to outperform controls⁹⁸ (yet see⁹⁹). More problematic still for this line of approach is that delusions tend to be highly circumscribed, revolving around

specific themes¹⁰⁰, something that is difficult to align with the essentially more global nature of reasoning impairments.¹⁰¹

Second, for probabilistic reasoning within the popular jumping-to-conclusions format (i.e., the tendency to reach conclusions early and based on inadequate evidence)¹⁰², outcomes remain similarly inconsistent. Although some differences between patients and controls have been demonstrated, most studies have found no significant relationship with delusions⁴ (for a recent large-scale study to this effect, see¹⁰³). Yet, even when specific associations with delusions are found¹⁰⁴, effect-sizes are consistently small, especially when compared to the striking normative deviations from reality that delusions constitute. Related cognitive biases in probabilistic reasoning, including bias against (dis)confirmatory evidence and liberal acceptance bias¹⁰⁵, show a similar pattern, with recent meta-analyses indicating only small to moderate effect sizes.¹⁰⁶ Additionally, there are also more fundamental doubts regarding the actual relevance of the jumping-to-conclusions-bias for understanding delusions. Some have denounced it as a mere re-description of the phenomenon rather than an explanation¹⁰⁷⁻¹⁰⁸, others further contest it qua re-description - i.e., delusion as a 'hasty conclusion' - as impoverished and misplaced (e.g., a patient is not merely 'precipitate' when fearing the world's imminent demise after noticing three marble tables – cf. supra).¹⁰⁹

Third, the contribution of a biased attributional style, particularly the external attributional bias – i.e., the tendency to attribute negative events to external causes – also lacks consistent empirical support. While some studies point to an association with one particular kind of delusion (i.e. persecutory delusion)¹¹⁰⁻¹¹³, others studies could not replicate this finding.¹¹⁴ Uncertainty regarding this hypothesis is further emphasized by the finding of a correlation with a lower severity of symptoms¹¹⁵, and even evidence for an internalizing attribution style amongst some schizophrenia patients.¹¹⁶

Responding to these inconclusive results, one strategy has been to develop more sophisticated models which draw on both approaches and allow for the co-existence of delusions with an intact capacity of belief evaluation – e.g., by differentiating rational competence from irrational performance, or through distinguishing delusional beliefs which endorse vs explain experience (for a helpful overview, see¹²). Another promising strategy – pursued in recent predictive processing accounts - is to replace the two-factor solution with a single deficit framework based on a general disturbance in the error-dependent updating of inferences and beliefs about reality.⁹⁰⁻⁹¹ While this removes the need to empirically substantiate two separate deficits, some of the previous challenges remain: e.g., how a single factor can possibly account for the asymmetry between delusional and non-delusional individuals with the same experience¹¹⁷ or how general hierarchical models can relevantly explain the specific contents of delusions¹¹⁸ (for an overview of delusion-specific and more general challenges for prediction-error theories, see¹¹⁹).

From a clinical-phenomenological perspective, however, a more general question is whether theorizing delusions as rational or irrational responses to anomalous perceptual contents exhausts all options. Modeling delusions as reasoned reactions renders them 'secondary' in Jaspers' terms, which implies that Jaspers' category of 'primary delusion' or Schneider's 'first-rank symptoms' – concepts which may hold important pathogenetic and diagnostic implications for schizophrenia^{50,120-121} – are eclipsed from current accounts. However, reconsidering these traditional concepts could help clarifying some of the difficulties encountered by theories discussed above as allow to inform and enhance explanatory models (figure 1: current explanatory models and a phenomenological update).

For instance, given the immediate and revelatory character of primary delusions, such a reconsideration might offer an alternative explanation for the lack of etiologically convincing differences in reasoning between delusional patients and controls. As phenomenological research and first-person accounts indicate, primary delusions do not possess the ‘feel’ of reasoned conclusions arrived at on the basis of certain experiential premises, but of sudden and spontaneous revelations and insights which passively affect and surprise patients and which they can neither readily integrate within their everyday beliefs nor simply leave behind.^{32,122} In this sense, primary delusions seem to bypass both rational and irrational inferential processes involved in ordinary belief fixation.

In a similar way, the specific nature of these revelatory experiences might further explain why they are difficult to capture in terms of the logic of perceptions inducing beliefs dominating current research. Schizophrenic delusions – in contrast to the more mundane delusions in, e.g., certain neurological conditions – generally express radical transformations to the most basic structures of experiential life – including time, space, causality, necessity/contingency, and forms of basic self-experience. Such delusions challenge foundational dimensions of experience which do not depend on reasoning capacities or on rational inference (e.g., in the ordinary case, I do not have to empirically ascertain whether my thoughts are indeed ‘my’ thoughts), but instead normally form the implicit background to my everyday acting, reasoning and perceiving. Insofar as such delusions involve disturbances to this non-propositional background, they both elude and exceed explanations in terms of cognitive biases and perceptual inference.¹¹⁰

Next to these negative indications, reconceiving and adding more phenomenological specificity to the two factors - i.e., (i) anomalous experience and (ii) cognitive reaction – might also allow to update and enhance explanatory models:

(i) There is a common tendency (possibly excepting predictive processing accounts, see⁹¹) to conceive anomalous experience in terms of particular perceptual contents (e.g., hearing voices). In schizophrenia, however, a content-focused approach risks to neglect the experiential atmosphere (cf. *supra*) in which primary delusions develop. As earlier discussed, rather than being a matter of specific misperceptions within everyday reality, delusional atmosphere involves a qualitative shift in the overall way reality is experienced.³⁷ This includes feelings of derealization and subjectivization – i.e., the sense that reality has lost its autonomous and self-evident character and that experience reaches only subjective images or inauthentic representations -, combined with the anticipation of insight in a distinct sort of transcendent reality.¹⁵

Accommodating these global ontological transformations offers a number of advantages over current content-focused conceptions. For example, since this shift affects reality experience in its entirety, it offers a parsimonious explanation for the polythematic nature of delusions in schizophrenia that avoids the need to posit several distinct ‘first factors’ and associated neurocognitive deficits. Secondly, by offering more phenomenological detail to the relevant anomalous experience in schizophrenia, it might be possible to revisit and challenge the assumption that not all people with similar experiences develop delusions. Finally, it also helps to account for the content of bizarre delusions which challenge current explanatory accounts. For example, delusional claims expressing eschatological themes (e.g., “I must keep awake or else the world will come to its end”) or grandiose-ontological preoccupations (e.g., “everything from the largest to the smallest is contained within me”), while difficult to understand in terms of biases widespread in the general population, can be grasped as expressing experiential transformations in the

mind-(in)dependent status of reality or in the general relationship between experiencing subject and experienced object.⁴⁸

(ii.) In line with the overall doxastic approach to delusion formation, current models assume that the cognitive reaction elicited by anomalous experience is always a matter of belief explaining or endorsing experience.^{6,89} However, this presupposes that the cognitive nature of delusion is homogenous regardless of the specific nature of the anomalous experience in relation to which it is formed – an idea that seems questionable.

In schizophrenia in particular, delusional atmosphere often elicits a distinctive hyperreflexive attitude in which patients become preoccupied, fascinated and intensely absorbed with the felt qualities of subjective experience^{15,84,123}, yet without necessarily believing that such experience accurately represents external reality. Indeed, rather than mistaking their delusions for reality, patients regularly point how their delusions (and the same holds for auditory hallucinations in schizophrenia¹²⁴) pertain to a different kind of ‘subjectivized’ or ‘quasi-solipsistic’ realm lacking the full actuality, practical consequences and availability to others that goes together with real-world experience (a phenomenon Bleuler described as ‘double bookkeeping’¹²⁵ – panel 4: examples). Yet, this doesn’t render such delusions ‘merely’ subjective – for some patients, delusional experience may contain a significance that vastly surpasses the banality and factuality of everyday life.¹²⁸

These observations have a number of important implications. For example, if delusions in schizophrenia are experienced in a subjective domain insulated from intersubjective standards of proof and justification, this would help explain why delusions are maintained despite obvious counterevidence without having to appeal to empirically uncertain deficits in belief evaluation. Most importantly, by distinguishing the delusional attitude to experience from that of empirical belief, such an account dissociates delusions from traditional explanations in terms of deficient reality-testing (underlying most models emphasizing reasoning impairments), while inviting explanations of delusion as a *sui generis* psychological state characterized by withdrawal from everyday reality and a distinctive hyperreflexive focus on subjective experience (for a consideration of how aberrant predictive processing and the default-mode network abnormalities might be consistent with this conception of delusion, see^{121,129}).

Cognitive-behavioral therapy of delusion in schizophrenia

Approaching delusions in terms of beliefs also significantly determines how the process of recovery from delusions and hence their possible treatment is conceived. That is, in parallel with the models of their formation, abandoning delusional beliefs is generally assumed to result from their rejection on broadly rational grounds.¹³⁰ Consequently, ordinary practices of belief-evaluation and reality-testing (e.g., cognitive probing and challenging of beliefs, gathering disconfirming counterevidence, developing and testing alternative and more realistic options, etc.) are assumed to equally apply in the case of delusions.¹³²⁻¹³³

These rationalistic assumptions have been most prominent in the so-called ‘second-wave’ of cognitive-behavioral therapy (CBT).^{4,133} A key therapeutic ingredient of these interventions consists in the rational evaluation and cognitive reframing of beliefs and appraisals.¹³⁴ While more recent ‘third-wave’ currents (including acceptance and commitment and mindfulness-based therapies)¹³⁵ offer a less belief-focused orientation, the former remain the most widely used and researched CBT-approach for schizophrenia.¹³⁶⁻¹³⁷

Overview and discussion of evidence

Systematic empirical validation of the effectiveness of CBT for schizophrenia started from the 1990s onwards. Early meta-analytic studies found CBT to be modestly effective (effect sizes ranging between $d = 0.35-0.65$) in ameliorating positive symptoms¹³⁸⁻¹⁴⁰, hence leading to its recommendation as a treatment-of-choice alongside antipsychotic medication in both UK and US government-guidelines. However, subsequent methodologically more rigorous meta-analyses have indicated only small and non-significant results of CBT for delusions and hallucinations (odds ratio 0.15 – 95% CI 0.03-0.27).¹⁴¹ A recent network meta-analysis similarly found pooled effect sizes for CBT in the small range, although this time slightly higher (vs TAU: odds ratio 0.30 – 95% CI 0.14 to 0.45, 18 trials; vs inactive control interventions: odds ratio 0.29 – 95% CI -0.55 to 0.03).¹⁴² In sum, while not entirely without therapeutic benefits, convergent meta-analytic evidence at present jointly indicates a limited efficacy of CBT for delusions in schizophrenia.¹⁴³⁻¹⁴⁵

One popular proposal to improve on these results is to opt for further progressive specialization of research efforts.¹⁴⁶⁻¹⁴⁷ This entails adopting a single-symptom approach (i.e. focusing on delusions, or even subtypes of delusions), identifying causal factors directly or indirectly implicated in the occurrence of delusions (e.g. cognitive biases, self-esteem, worry, etc.) and therapeutically addressing each factor within a general interventionist-causal approach¹⁴⁸. Potentially promising examples of this type of research are interventions (e.g., metacognitive¹⁴⁹ and reasoning training¹⁵⁰) specifically tailored to address various cognitive biases - although effects at present remain similar to traditional CBT.¹⁵¹⁻¹⁵²

From a phenomenological perspective, however, focusing on single symptoms will only alter therapeutic success when accompanied by a more thorough reconsideration of the therapeutic fit of CBT-interventions with the actual phenomenological nature of delusional experience in schizophrenia.

As noted earlier, delusions are best understood when grasped within the larger psychopathological context in which they take root and are actually experienced. Placed within this context, delusions are not mere mistaken beliefs which can be recognized as such when set against the standard of everyday reality. They are elaborated expressions of a more global reorganization and shift in several basic dimensions of reality experience, including a person's core or minimal sense of selfhood^{46-47,81}, bodily awareness⁴⁶, lived time and space⁴⁰, interpersonal experience⁸², and global sense of reality.³⁷⁻³⁹

Recognizing this altered experiential framework is crucial for considering which psychotherapeutic interventions are most appropriate to respond to delusions, given their actual phenomenology.¹⁵³ It seems unlikely that therapeutic strategies that presuppose an ordinary framework of reality-experience, while emphasizing rational evaluation of delusional beliefs, will be most effective.; and this may be an important reason behind the limited success of current CBT-interventions.¹⁰⁷

On a more positive note, a proper grasp of how experiential life in schizophrenia can be altered would allow for therapeutic approaches more adequately suited to the phenomenon at hand.

A first advantage of a more phenomenologically sensitive approach is that it may instill a greater sense of intersubjective understanding and recognition in patients. Though essential for any effective therapeutic approach, this is especially important in the case of patients with delusional experience. Delusions are attempts to frame and voice a dizzying complexity of experiential transformations. The viewpoints involved can be

experienced as unshareable or even as essentially incomprehensible. With its sensitivity to the more tacit and usually taken-for-granted aspects of experience (and their possible alterations), a phenomenologically informed approach may enable a unique kind of empathy impossible to reach when delusions are approached from the perspective of everyday reality.¹⁸ As such, it can provide the intersubjective basis necessary in order to properly acknowledge, contain and possibly defuse the perplexing and isolating qualities which characterize delusion as a mode of experience.

A phenomenologically informed approach starts from the observation that delusions are embedded within an orientation marked by withdrawal from practical and shared forms of experience in favor of a more introverted and eccentric focus on subjectivity and consciousness.^{15,153-154} This observation shifts the focus of treatment away from narrowly targeting delusions themselves (via attempts, e.g., to refute or challenge them), towards altering the experiential conditions that inspire and sustain them. Effective treatments will help to reduce the feelings of self-alienation and uncertain embeddedness in everyday reality that are conducive to delusional experience. Examples of such strategies might therefore include various forms of body-oriented therapies (e.g., physical activities, dance, music therapies)¹⁵⁵⁻¹⁵⁶ and of immersive activity (e.g., simulation, “flow” states)¹⁵⁷ – both of which cultivate a reduction in hyperreflexive and anxious awareness, and a stronger sense of embodiment. Since third-wave CBT-approaches put less emphasis on the contents of cognition and more on the patient’s overall experiential orientation (as, e.g., in mindfulness techniques), and on an active and goal-oriented stance (as in acceptance and commitment therapy), they may provide helpful additions.¹³⁵

Moreover, recognizing the role of detachment in the development and maintenance of delusions suggests the importance of social relations in counteracting the excessive hyperreflexive self-focus that often sustains delusional experience.^{82,158} Indeed, the phenomenology of psychotic conditions is often marked by social disconnection, isolation, and/or loneliness¹⁵⁹, which are therefore essential targets for treatment. Importantly, this also provides a phenomenological justification for the relevance of a robust and positive therapeutic alliance, not merely to allow for more specialized interventions, but as a crucial therapeutic end in itself – a point long emphasized by psychodynamic theorists.¹⁶⁰ Here, what defines a helpful therapeutic relation is less a matter of the more overt issues of one-on-one personal interaction and the explicit discussion of mental states and symptoms, than the possibility of implicit intersubjective sharing and the adoption a consensual we-perspective.¹⁵³⁻¹⁵⁴

Finally, a phenomenological appraisal of the personal significance delusions can have for some patients might also lead to a reconsideration of what successful ‘treatment’ of delusions actually means and entails. Though delusions are a conventional target of psychiatric and psychological interventions, many patients often consider other areas (such as, e.g., feeling happier or increasing self-confidence) to be of more importance.¹⁶¹ Research similarly demonstrates that not all patients univocally suffer from positive psychotic symptoms, some embrace their presence or at least feel ambivalent toward them.¹⁶² Further, the absence of normal intersubjective grounding that provides the basis for delusions is not always experienced as a simple affliction or deficit. Indeed, to some delusional patients, the commonsense perspective may look flat, uninspiring and utterly constrained by conventionality, closed off from what they experience as the true sources of originality and truth.¹⁶³ As such, the meaning delusions may have for some patients complicates using symptom reduction as the only or most important criterion for defining successful treatment, while it also draws attention to the potential relevance of a different non-medical appreciation of delusional experience.

Conclusion

Recent trends in psychiatric research have started to move away from conventional diagnostic categories to focus on individual symptoms instead. Delusions, given their seemingly straightforward operationalization, have been particularly emphasized as a promising domain for such trans-diagnostic enquiry.⁴ In this context, our paper may help to remind that what holds for diagnostic categories like schizophrenia, equally applies to delusion itself: without a careful assessment of their proper nature, ‘complaint-orientated’¹⁶⁴ or ‘symptom-focused’⁴ proposals building on delusions to reorient psychosis research are unlikely to yield clear-cut results.

Aiming to contribute to this assessment, we detailed how the idea that delusions are a form of ordinary belief has become a common assumption in contemporary research. It is reflected in the full psychosis-continuum model, informs current explanations of delusions, and significantly determines how delusions are approached in cognitive-behavioral treatment. At the same time, our overview suggests that this research faces a number of challenges, which are both empirical and conceptual in nature, and require a more thorough reconsideration of how delusions are currently conceived. However, by demonstrating and detailing the importance of qualitative changes in self –and world-experience for diagnosing, explaining and treating delusions, we tried to make clear how a phenomenological approach can aid to address these challenges. At least in some cases, bringing out what makes a phenomenon qualitatively distinct may also be the best way towards its proper understanding and hence the provision of appropriate and adequate treatment.

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Panel 1: Definitions of delusion

DSM-IV-TR

Delusion. A false belief based on incorrect inference about external reality that is firmly sustained despite what almost everyone believes and despite what constitutes incontrovertible and obvious proof or evidence to the contrary.²²

DSM-5

Delusions are fixed beliefs that are not amenable to change in light of conflicting evidence.²³

Oxford Textbook of Psychiatry

A delusion is a belief that is firmly held on inadequate grounds, that is not affected by rational argument or evidence to the contrary, and that is not a conventional belief that the person might be expected to hold given their educational, cultural, and religious background.²⁴

New Oxford Textbook of Psychiatry

A delusion is an *uncorrectable* false assessment of reality that occurs independently of experience and which the patients holds onto with *subjective certainty*. The conviction is therefore contrary to reality and to the conviction of others.²⁵

Comprehensive Textbook of Psychiatry

False belief that is firmly held, despite objective and obvious contradictory proof or evidence and despite the fact that other members of the culture do not share the belief.²⁶

Panel 2

Clinical illustrations of primary delusions

“A patient walking up the staircase to his psychiatrist’s office, noticed through a window, a canvas with intense blue color, among some furniture stabled in the yard. Seeing the painting with its blue color, the patient became aware of being insane”³⁸

“at the steps of a catholic convent, a dog was waiting for me in upright position, watching me seriously. As I approached, it lifted its paw. By chance, another man was walking a meter from me. I quickly caught up with him and asked if the dog had also introduced itself to him. An astonished ‘no’ made me certain that I was here dealing with a plain revelation”³⁹

“it suddenly occurred to me one night, quite naturally, self-evidently but insistently, that Miss L. was probably the cause of all the terrible things through which I have had to go these last few years (telepathic influences, etc.) (...) Rather everything thrust itself on me, suddenly, and totally unexpectedly, though quite naturally. I felt as if scales had fallen from my eyes and I saw why life had been precisely as it was through these last years”²¹

Jaspers on delusional atmosphere

“Patients feel uncanny and that there is something suspicious afoot. Everything gets a *new meaning*. The environment is somehow different – not to a gross degree – perception is unaltered in itself but there is some change which develops everything with a subtle, pervasive and strangely uncertain light. A living-room which formerly was felt as neutral or friendly now becomes dominated by some indefinable atmosphere. Something seems in the air which the patient cannot account for, a distrustful, uncomfortable, uncanny tension invades him.”²¹

Daniel Paul Schreber on his ‘so-called delusions’

“I have to confirm the first part (a) of this [Dr. Weber’s] statement, namely that my so-called delusional system is unshakable certainty, with the same decisive “yes” as I have to counter the second part (b), namely that my delusions are adequate motive for action, with the strongest possible “no”. I could even say with Jesus Christ: “My Kingdom is not of this world”; my so-called delusions are concerned solely with God and the beyond; they can therefore never in any way influence my behavior in any worldly matter ...”⁴⁵

Panel 3: what is ‘psychotic-like experience’?

The lack of clear and consistent definition of PLE is reflected at the level of (1) terminology, (2) operationalization and (3) assessment instruments:

- (1) Various terms for PLE are used interchangeably throughout the literature: e.g., psychotic/psychotic-like experience, subclinical psychotic symptoms, prodromal psychotic symptoms, schizotypy traits, attenuated psychotic symptoms, etc. Yet, these terms often carry different meanings, diagnostic criteria and psychopathological implications. For example, the term ‘attenuated psychotic symptoms’ is sometimes used in its original meaning as referring to a set of ultra-high risk criteria for developing first-episode psychosis to be validated through extensive clinical interview. In other studies, it refers to non-pathological phenomena in the general population measured by self-rating questionnaires.
- (2) Moreover, many studies either fail to provide an explicit operational definition for what counts as a PLE in their research, or when (minimal) definitions are offered, they *vary* between studies. This was evidenced in two recent reviews on extant definitions for ‘psychotic experiences’ employed in the literature: definitions sometimes consist in a combination of preset

qualitative criteria (e.g., no previous psychiatric history), yet the majority of definitions are exclusively quantitative in terms of number of items scored on questionnaires. Even in the latter case, however, there is no consensus on the required threshold.⁶⁸⁻⁶⁹

- (3) Similarly, there is a large variation in assessment tools used to measure PLE, each again entailing different conceptualizations of PLE and stressing different aspects of experience (e.g., Community Assessment of Psychic Experiences (CAPE), Magical Ideation Scale (MIS), Peters et al.'s Delusion Inventory (PDI), Schizotypal Personality Scale (SPQ)). Furthermore, most studies do not provide an explicit justification of why one particular measurement instrument is selected over another.

Panel 4: clinical illustrations double bookkeeping

"I often feel that many of my aberrant pseudo-perceptions feel the way they do because I am actually perceiving them taking place in a parallel reality that only partially overlaps with this one"¹²⁶

"There are two worlds. There is the unreal world, which is the world I am in and we are in. And then there is the real world. The only thing that is real in the unreal world is my own self. Everything else – buildings, trees, houses – is unreal. All other humans are extras. My body is part of the charade. There is a real world somewhere and from there someone or something is trying to control me by putting thoughts into my head or by creating (...) screaming voices inside my head"³²

"It was at this point, I think, that my life truly began to operate as though it were being lived on two trains, their tracks side by side. On one track, the train held the things of the 'real world' – my academic schedule and responsibilities, my books, my connection to my family (...) On the other track: the increasingly confusing and even frightening inner workings of my mind. The struggle was to keep the trains parallel on their tracks, and not have them suddenly and violently collide with each other"¹²⁷

Search strategy and selection criteria

We selected references for this overview from previous work and via a search of PubMed and Google Scholar for articles published between Jan 1, 1980 and Feb 29, 2020 with the terms "schizophrenia", "psychosis", "delusions", "delusional belief", "delusional experience", "primary delusions", "phenomenology", "psychosis continuum", "jumping-to-conclusions", "cognitive bias" and "cognitive-behavioral therapy for psychosis". Relevant articles published before 1980 were identified through searches in the authors' personal files, in Google Scholar, and Springer Online Archives Collection. Articles resulting from these searches and relevant references cited in those articles were considered on the basis of relevance to the general theme of the current article. Articles published in English, French, and German were included.