Metacognition in Schizophrenia: A Concept Coming of Age

Commentary to the Special Issue of the Israel Journal of Psychiatry, edited by Paul H. Lysaker and Ilanit Hasson-Ohayon

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ABSTRACT

The concept of metacognition in the context of schizophrenia has recently received increasing attention in clinical psychology and psychiatry. Impaired metacognitive abilities in patients with schizophrenia have been associated with symptomatology, cognition, social functioning and quality of life.

In this series of articles published as a Special Issue of the Israel Journal of Psychiatry, edited by Paul H. Lysaker and Ilanit Hasson-Ohayon, several new possible ramifications of metacognition with regard to persistence of symptoms, treatment issues and early recognition of schizophrenia are presented, in addition to corroborations of previous findings relating to the aetiology of impaired metacognition and outcome measures.

The present invited commentary focuses on potential implications for a more individualized therapeutic approach to schizophrenia, early detection of at-risk states, and ways to link metacognition with neuroscientific approaches.

INTRODUCTION

The term “schizophrenia,” first mentioned by the Swiss psychiatrist Eugen Bleuler in a scientific meeting in 1908, refers to a clinically heterogeneous group of mental illnesses that are characterized by the presence of delusions, hallucinations, conceptual disorganization and catatonic features. Bleuler considered ambivalence, autism (not to be confused with childhood autism, which was conceptualized much later by Leo Kanner and Hans Asperger), affective flattening and the loosening of associations (the four “A”s) as central to these disorders (1). None of these symptoms is, however, mandatory or specific for a diagnosis of schizophrenia.

In spite of remarkable progress in the field of psychopharmacology that has enabled clinicians to effectively treat the so-called positive symptoms, namely delusional thinking and perceptual abnormalities, therapeutic challenges remain with regard to behavioral symptoms. In fact, negative symptoms such as avolition, apathy, social withdrawal, as well as cognitive symptoms are at least equally relevant to predict functional outcome and patients’ subjective quality of life than positive symptoms (2). After all, it seems that the efficacy of schizophrenia therapies in general is not only a matter of “classic” symptom reduction, but also closely linked to the amelioration of cognitive and social impairment (3). This is therapeutically even more important in light of evidence for a functional deterioration over the course of the illness (4). That is, chronicity associated with residual negative symptoms affects at least two thirds of patients diagnosed with schizophrenia, whereby negative symptoms respond poorly to antipsychotic medication (5). Moreover, impaired social functioning is already prominent in prodromal stages of schizophrenia, i.e., before the onset of manifest positive symptoms (6). All this calls for non-pharmacological approaches to ameliorate functional impairment among patients with schizophrenia, whereby metacognitive skills have proven a promising target for psychological intervention.

In this issue, six articles and an introductory contribution highlight the diagnostic and therapeutic potential of metacognitive approaches to schizophrenia. As becomes clear from the outset, the concept of metacognition has
so many different facets such that it seems warranted to spend a few lines on definitional aspects.

**DEFINING METACOGNITION**

Historically speaking, it was Bleuler’s frame of reference (1), later elaborated on by Parnas and Bovet (7) and Stanghellini and Ballerini (8), suggesting that autism in schizophrenia concerns a disturbance of intentionality, a disturbance in self-reflectivity, and impairment in intersubjectivity. This approach seems to strongly overlap with the idea of dysfunctional metacognitive capacities in schizophrenia.

A particular strength of viewing the symptomatology in light of metacognitive disturbances is that it supports a more individualized approach to the understanding of psychopathological features. Seeing it this way, Lysaker and Hasson-Ohayon (9) rightly emphasize that patients with schizophrenia are “not merely passive subjects of social and biological factors.” Instead, the way people with the condition interpret and try to make sense of their internal and external perceptions is, to a substantial degree, shaped by their individual biographical histories, which may include traumatizing experiences, rejection and stigma, and certainly by the unique quality of early relationships with their primary caregivers (10). All this impacts their thoughts and emotions about themselves and their social environment, as well as the way they think what others think, feel, desire, intend or pretend. Moreover, thinking about one’s own and others’ emotional states and attitudes greatly influences patients’ capacity to cope with symptoms (e.g., persistent suspiciousness) or deal with situations unrelated to the disorder (e.g., finding a street in a street directory). Thus, the core features of metacognition, as they are understood in the majority of papers of this Special Issue, comprise an array of mechanisms that enable an individual to make sense of own and others’ mental states in the context of human interaction, including matters of social rank or social exclusion (11).

For the sake of clarity, it needs to be pointed out, however, that divergent definitions of metacognition exist, ranging from the original use of the term in the context of learning, where it described the ability to choose the best learning strategy. From a developmental psychological perspective, metacognition was subsequently framed with regard to its representational nature, highlighting the emergence of the ability to think about thinking (12). In the clinical context, the term metacognition has also been used to describe the ability to cope with stressful thoughts and feelings (13). This aspect of metacognition is somewhat distinct from seeing metacognition as a cognitive skill to monitor one’s own thoughts and to reflect upon one’s personal history, as Parker et al. (14) point out, because metacognition (in the former sense) entails beliefs and attitudes about thinking, such as when one worries about his or her own worrying (14). Finally, metacognition has also been introduced in the attachment literature emphasizing its function to understand that others’ behavior is guided by intentional mental states, an idea that seems more compatible with the broader frame of reference than has been put forth elsewhere (15).

Such a definitional plurality of a concept is associated with potential risks and benefits. One possible problem of the conceptual heterogeneity of metacognition could be that the cross-talk between different research groups is hampered by focusing too much on definitional sophistry. Indeed, metacognition seems to broadly overlap with terms such as “social cognition,” “mentalization,” “theory of mind,” especially, if “social cognition” is seen as a multidimensional construct that includes a broader set of mental operations such as emotion recognition, social perception and knowledge, and attributional style (16).

With regard to metacognition, Saxe and Offen (17) put forth a useful distinction between “attributive” and “strategic” metacognition, according to which attributive metacognition concerns the ability to attribute beliefs and desires to oneself and others, whereas strategic metacognition concerns the ability to monitor and control ongoing mental operations. Along similar lines, Lysaker and Hasson-Ohayon (9) suggest in this Special Issue that one could distinguish more discrete from more synthetic activities within the spectrum of metacognitive capacities, whereby discrete processes concern, for example, “immediate awareness or accuracy of judgments about one’s own experiences,” whereas synthetic metacognitive operations “involve the organization of and reflect upon increasingly complex and coherent representations of self and others.”

Provocatively speaking, this could reflect the fact that metacognition is a chameleon term in psychotherapeutic jargon for mental operations that more or less involve conscious reflection about one’s own and others’ mental operations as well as one’s integrity as a person, whereas social cognition is the umbrella term for similar processes utilized by a more neuroscientifically oriented camp of researchers. Indeed, it seems that metacognition as a
concept is more strongly promoted by psychotherapeutically oriented clinicians.

And here’s a particular strength of conceptual plurality of metacognition. The syndromes we refer to as “schizophrenia,” it seems, are all too often one-sidedly viewed from a deficit perspective, implying structural brain abnormalities, genetic peculiarities, etc. A deficit perspective, however, leaves little room for symptom reduction by means of psychological intervention. It also disregards the potential of many patients with schizophrenia for coping with adversity, and change of perspective. In contrast to a deficit-oriented view, metacognitive approaches to schizophrenia may help identify psychologically treatable problems and offer patients means to address these in ways that take into account patients’ individual life histories.

DIAGNOSTIC AND THERAPEUTIC ASPECTS OF METACOGNITION

The articles published in this Special Issue nicely illustrate how metacognitive approaches to the understanding and individualized treatment of schizophrenia can be put into practice across a variety of sub-syndromes.

Parker and colleagues (14), for instance, focus on changes in metacognitive worry as a predictor of outcome in cognitive therapy. It was hypothesized that change of metacognitive worry was associated with a more positive outcome in patients receiving cognitive therapy. In partial support of this assumption, changes in metacognitive worry were linked with a reduction in hallucinatory experiences, but not with delusional ideation.

Brent et al. (10) present ideas about how poor mentalization skills (constituting an important facet of metacognition) could emerge in relation to aberrant attachment in individuals who later develop psychotic disorders. Although partly speculative, this approach offers a possible explanation for a link between childhood adversity (such as abuse or neglect) occurring in the context of early relationships to caregivers, and the functional under-development of metacognitive skills that eventually may lead to “hypermentalizing” in the form of delusional beliefs about intentions and attitudes of significant others towards the self. Interestingly, this theoretical contribution combines a developmental perspective with considerations of neurobiological aspects of schizophrenia, suggesting that parental neglect may lead to an overactivation of the HPA stress system, which in turn may induce a dysregulation of mesolimbic dopaminergic pathways in vulnerable individuals.

Berna and co-workers (18) describe how delusional beliefs can be understood as patients’ attempts to make sense of their experiences, and how closely delusions are linked to anxiety. They used a unique approach using patients’ diary entries, thereby showing that memories of persecutory events were linked with higher levels of negative emotions than memories of non-persecutory events. Memories of persecutory events were also less detailed, but more stereotyped. Importantly, these findings can contribute to the understanding of how delusional beliefs are maintained and integrated into patients’ autobiographical memories.

A particularly novel area of research is presented by Scheyer et al. (19) as well as Rabin et al. (20) who examine metacognitive abilities in at-risk states of psychosis, as well as in clinically healthy individuals who differ in regard of the level of schizotypal symptoms. Scheyer et al. (19) define metacognition as a global “meta-level” which helps to monitor and control the correctness of performance in cognitive tasks, that is, the subjective evaluation of one’s cognitive capacity. While this kind of metacognitive skill had moderating properties between cognition and psychosocial functioning in the prodromal stage of psychosis, prodromal subjects displayed superior monitoring skills (i.e., awareness of when one is correct and when one is incorrect) and control sensitivity than non-prodromal subjects.

Rabin et al. (20), in contrast, examined metacognition along the definitional lines outlined above. They utilized a now well-established scale for the assessment of metacognitive skills, the Metacognitive Assessment Scale (MAS) following a semi-structured interview that was designed to study metacognition, the Indiana Psychiatric Illness Interview (IPII; details of application of the IPII and the MAS are provided by Lysaker et al. [21], this Special Issue). In particular, Rabin and co-workers (20) addressed the relationship between metacognition and social quality of life. Consistent with previous work, they found that this relationship was mediated by negative, but not positive psychotic symptoms in a sample of patients with manifest schizophrenia. Even more interestingly, a weaker effect in a similar direction was found among non-clinical subjects with schizotypal traits. Specifically, the non-psychotic equivalent trait to negative symptoms, “introverted anhedonia,” correlated with both metacognitive skills and social quality of life, although the statistical mediation model was non-significant in this group. Despite partially inconclusive results, these latter two studies are of great clinical interest, because
they transfer an established assessment method of meta-
cognitive abilities into the study of at-risk mental states. 
Given the importance of early detection of at-risk states 
of schizophrenia and the endeavors of research groups 
around the world to find (non-pharmacological) ways to 
reduce transition rates into full-blown psychosis or at least 
to delay transition and ease the severity of psychosis, I 
personally believe that the significance of a metacognitive 
approach to tackle this highly relevant clinical problem 
can hardly be overestimated.

The Special Issue concludes with an overview of the 
association of metacognition in schizophrenia (spectrum 
disorders) with symptomatology, cognition and func-
tion. Here, Lysaker and colleagues elegantly summarize 
the evidence for a relationship between self-reflectivity 
and a variety of neurocognitive measures, symptoms, 
awareness of illness (insight) and functioning. Of note, 
metacognitive skills have the potential to predict the 
development of negative symptoms, which is an invaluable 
resource for early intervention. If confirmed in different 
clinical samples and laboratories, one could envisage that 
metacognitive therapy could help prevent or reduce the 
development of negative symptoms, which would constitu-
tute a leap forward in dealing with the most treatment-
resistant symptoms among patients with schizophrenia.

CONCLUDING REMARKS

This Special Issue of the Israel Journal of Psychiatry, edited 
by Paul H. Lysaker and Ilanit Hasson-Ohayon (9), demon-
strates the usefulness of studying metacognition in severe 
mental disorders such as schizophrenia. Examining meta-
cognition in schizophrenia may help diagnosing specific 
features of this group of disorders that easily escape clinicians’ 
attention, if not explicitly assessed. For example, failure to 
detect patients’ difficulties in utilizing their metacognitive 
skills – be they discrete or synthetic, attributive or strategic – 
may leave clinicians with an incomplete picture of how 
to account for lack of awareness of illness, poor adherence 
to treatment, impaired social functioning, etc. This can be 
detrimental in light of evidence that these problems do 
not respond well to antipsychotic medication. In addition, 
studying metacognition in schizophrenia may assist in 
tailoring therapy at an individual basis, certainly to the 
advantage of patients who present with highly diverse 
life histories, beyond a possibly shared neurobiological back-
ground. As already expressed above, this approach seems 
to be desirable to be implemented in the early recognition 
of at-risk states of psychosis.

What I personally would like to see considered in 
future research is a stronger foundation of the concept 
of metacognition in neuroscience. For example, Brent 
et al. (10) have pointed out the possibility that impaired 
metacognitive skills in schizophrenia could, in part, be 
related to an overactivation of the HPA stress system 
due to aberrant attachment patterns that some patients 
develop during early infancy and childhood. Along 
similar lines, one could study the role of neuropeptides 
in the context of metacognition, given the interaction 
of oxytocin with the HPA axis, its intimate functional 
association with the attachment system, and its pos-
sible effects on anxiety (22). The link of metacognitive 
abilities with the default mode network of the brain 
could be equally interesting, in light of suggestions that 
mental activity during “resting states” is metacognitive 
in nature. Since patients with schizophrenia seem to 
show abnormal resting state patterns (23), it could be 
interesting to examine whether or not metacognitive 
training or therapy has the potential to normalize rest-
ing state activation patterns in this and other clinical 
groups. A further question for future research could 
be to disentangle the schizophrenia spectrum and look 
more specifically at sub-syndromes, as well as studying 
metacognition in bipolar disorder, and in special samples 
such as patients with a forensic background.

All this could contribute to establish metacognition as 
a useful concept in clinical research and to emancipate 
it, to some degree, from approaches that strongly overlap 
in content (like social cognition), but do not focus that 
strongly on those aspects that distinguish metacognition, 
namely the ability to “reflect upon increasingly complex 
and coherent representations of self and others” and to 
utilize this knowledge for problem solving and coping 
with symptoms (9).

In any event, to me it seems that metacognition is an 
emerging concept that has received increasing acceptance 
in the clinical literature. Metacognition is coming of age.

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