Metacognition and schizophrenia: The capacity for self-reflectivity as a predictor for prospective assessments of work performance over six months

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Abstract

Research has indicated that many with schizophrenia experience deficits in metacognitive capacity, defined as impairments in the ability to think about thinking. These difficulties are related to, but not reducible to symptoms and have been hypothesized to function as an independent impediment to psychosocial function. To explore the possibility that deficits in one domain of metacognition, self-reflectivity, are a barrier to effective work function, 56 participants with schizophrenia were categorized into three groups according to their capacity for self reflection based on an interview conducted prior to accepting a job placement. Blind ratings of work performance of these three groups over the next six months were then compared. Results of repeated measures ANOVA revealed that the group rated as having the highest level of metacognition, that is, able to see that their conclusions are subjective and fallible, had higher ratings of work performance over time than groups with medium and low levels of self reflectivity. These findings were found to persist even when impairment on a test of executive function was controlled for statistically. Results are interpreted as consistent with emerging models that deficits in metacognition may be key features of severe mental illness which affect function. Clinical and theoretic implications are discussed.

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Keywords: Schizophrenia, Metacognition, Work, Neurocognition, Recovery, Theory of mind, Executive function, Rehabilitation, Function

1. Introduction

Metacognition refers to the general capacity to think about thinking (Semerari et al., 2003). This capacity is thought to reflect a general aptitude that involves a wide range of semi-independent faculties which allow individuals to perform discrete tasks such as forming representations of their own mental states and the mental states of others, and to form, question and revise ideas of what is believed, felt, dreamt of, feared, feigned or pretended in any of a number of rapidly evolving contexts. While metacognition may be associated with neurocognition, it differs from that construct in that it refers both to implicit and explicit understanding of, or recognition of, knowledge about one’s own thought processes and internal states. It also allows for the formation, and then either acceptance or rejection, of ideas about oneself in the moment and about one’s identity and personal characteristics across time.

Over the last 15 years, research has suggested that impairments in the abilities to think about thinking, referred to here as metacognitive capacity, are a unique feature of schizophrenia (Frith, 1992; Brüne, 2005; Stanghellini, 2004). Persons with schizophrenia, for instance, have been found to have difficulties forming ideas about the things other people are thinking, decoding irony in speech, grasping the meaning of sentences from vague hints, evolving coherent account of their personal narrative as well as recognizing themselves as the source of one’s own thoughts and actions (Brüne, 2005; Blakemore et al., 2000; Franck et al., 2001; Langdon et al., 2006; Mellers et al., 2004; Semerari et al., 2003). Schizophrenia Research 122 (2010) 124–130

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of one's own mental states might result in difficulties discriminating goals, plans and emotionally laden intentions, making it difficult to see why one should put forth effort especially when work has become difficult, confusing or emotionally upsetting. It might thus lead to a slower learning curve, largely independent of learning ability. Additionally, with a limited capacity to scrutinize one’s thoughts and feelings, it might be difficult to learn about one’s behavior in the abstract and to cope in an evolving and flexible manner in the face of continuous feedback at work.

As an illustration, consider Mr. Orange who has taken a new job in the cafeteria. Deficits in neurocognition might make it difficult for him to learn a specific skill (e.g., running the cash register) or inhibit a certain response (e.g., giving incorrect portions) once he has realized that he has been making errors (Lysaker et al., 2005b). Beyond that though, deficits in metacognition might be a barrier to Mr. Orange recognizing and managing feelings of embarrassment after ringing up the wrong food prices for a customer or to identifying internal or external factors that might be linked to having made that error. Without intact metacognition, Mr. Orange might not be able to discriminate paranoid ideation from innocuous body language of a customer or auditory hallucinations from the constructive verbal feedback offered by a supervisor. On the other hand, with intact metacognition, Mr. Orange might be more able to accurately interpret feedback from his supervisor and realize that making a mistake does not mean he is a worthless person. He might come to realize that he made the mistake because he was so anxious to please his supervisor and resultantly he did not pay attention to detail. Perhaps he could recognize that he tends to work too fast when the day is nearly over or that he made that error because he was distracted by an earlier conflict with a romantic partner. Consequently, he might be able to think about correcting that mistake in the future by focusing more intently on what he’s doing or by managing his anxiety more effectively. He might be more likely to challenge the thought that he is worthless simply because he made an error.

To operationalize this issue, we divided a sample of adults with schizophrenia who had completed vocational rehabilitation into three groups: those who had been assessed as having high, medium and low levels of self-reflectivity on a measure of metacognition taken prior to entering work. The high self-reflectivity group contained participants who, prior to rehabilitation, were aware of their own thoughts and feelings and recognized that their ideas about the world were subjective and fallible. The medium self-reflectivity group has suggested that the measures of social cognition, constructs similar to those of metacognition, may mediate the impact of neurocognition on work function (Bell et al., in press-a, 2009). Self-reflectivity refers to the ability to be aware of and to connect one's own thoughts and feelings with one another and their antecedents. It also involves the ability to question our own thoughts and to distinguish fantasy from reality, for example, distinguishing a dream from a memory or an anticipated future (Semerari et al., 2003). We chose this domain of metacognition reasoning that perhaps more than other domains, it is essential, regardless of neurocognitive capacity, for regulating behavior and internal states. It could be hypothesized, for instance, that impairments in the ability to be reflective about one’s own mental states might lead to difficulties discriminating goals, plans and emotionally laden intentions, making it difficult to see why one should put forth effort especially when work has become difficult, confusing or emotionally upsetting. It might thus lead to a slower learning curve, largely independent of learning ability. Additionally, with a limited capacity to scrutinize one’s thoughts and feelings, it might be difficult to learn about one’s behavior in the abstract and to cope in an evolving and flexible manner in the face of continuous feedback at work.
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