The use of narrative sampling in the assessment of social cognition: The Narrative of Emotions Task (NET)

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A B S T R A C T

Social cognitive deficits in schizophrenia are well documented and related to functional outcome. Current social cognition measures are often not psychometrically validated, too heterogeneous for standardization, and focus principally on one domain of social cognition rather than the simultaneous activation of multiple domains. Also, few if any allow for personalization of stimuli and interpretation of personally evocative events. An alternative methodology that addresses these limitations is the analysis of samples of personal narratives. The present study evaluates the psychometric properties of a measure called the Narrative of Emotions Task (NET). The NET was used to assess the performance of participants with a diagnosis of schizophrenia or schizoaffective disorder and nonclinical controls. Use of the NET revealed significant impairments in the emotional narratives of participants with schizophrenia. Various NET indices were significantly related to current measures of theory of mind and emotion perception, as well as a social skills role-play, but were not related to measures of attributional style or clinician-rated functioning scales. Overall, the NET's psychometric properties justify further use of the narrative sampling method of social cognition assessment in this population.

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1. Introduction

Individuals with schizophrenia show pronounced deficits in social cognition, a construct broadly understood as the ability of persons to think about themselves and others in the social world (Penn et al., 2008). These deficits are not redundant with neuro-cognitive impairments among individuals with schizophrenia (Sergi et al., 2007). Relative to non-clinical controls, individuals with schizophrenia are impaired in its subdomains, including theory of mind (Bora et al., 2009; Brune, 2005), emotion perception (Kohler et al., 2009), emotion processing (Cohen and Minor, 2008), and attributional style (Aakre et al., 2009). Social cognition is associated with functional outcomes (Couture et al., 2006; Fett et al., 2011; Kee et al., 2003) and responsive to psychosocial intervention (Kurtz and Richardson, 2011).

Although the literature on social cognition in schizophrenia has grown considerably in recent years, many measures in the field have not been examined for their psychometric properties (Green et al., 2008). Because of this, meta-analyses of this literature face methodological challenges as tasks representing a given construct

(e.g., Theory of Mind) are sometimes too heterogeneous (Hoekert et al., 2007) or have poor or unknown psychometric properties Yager and Ehrmann, 2006. These issues have prompted the ongoing Social Cognition Psychometric Evaluation (SCOPE) Study (Pinkham et al., 2013) in which a combination of expert consultation and empirical study is currently seeking to validate consensus sub-domains and measures of the construct.

In addition to concerns about psychometrics, social cognition tends to engage cognitive operations that are closely related if not largely overlapping (e.g., the simultaneous co-operation of interpreting another's emotion while representing his or her mental state), while most current measures attempt to focus specifically on only one domain of social cognition. In addition, many social cognition tasks involve non-personal stimuli (photos of unknown individuals' faces expressing a group of emotions), or otherwise contrived hypothetical scenarios that may be particularly detached from an individual's experience of the world and social interaction (McDonald et al., 2003). This is a critical limitation in that it detracts from the measures' ecological validity, as social interactions and their related processes are often fraught with personal significance.

Analysis of narratives is a potential candidate for a personalized analysis of social cognition, as narratives provide a glimpse of how people idiosyncratically respond to their environment. Compared to use of standard social cognition measures, they provide insight

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into the way in which an individual makes sense of events, important others, and emotions across a range of situations. Evaluating the richness and clarity of these modes of thinking could provide insight into individuals' quality of social cognition in a personalized and ecologically valid manner. In addition, narrative speech samples could allow for simultaneous evaluation of the overlapping processes associated with social cognition.

Narrative measures have been used with individuals with emotional and social deficits. Losh and Capps (2006) conducted interviews with children with High-Functioning Autism (HFA) eliciting emotional narratives (e.g., "Tell me a time when you felt…") covering a range of emotions including simple (happy, sad), complex (curious, disappointed), self-conscious (proud, embarrassed), and non-emotions (tired and sick). Compared to typically developing children, the most pronounced deficits for the HFA children were for narratives pertaining to self-conscious emotions, particularly the ability to organize narratives according to causal-explanatory frameworks. Similar methodology was used by Gruber and Kring (2008) with a schizophrenia sample, finding that individuals with schizophrenia told emotional narratives that were less appropriate to context and less linear, as well as narratives (emotional or not) that were less tellable and more detached compared to controls.

For the present study, we adapted methods used by Losh and Capps (2006) and Gruber and Kring (2008) into a measure of social cognition based on personal narrative samples of people with schizophrenia, called the Narrative of Emotions Task (NET). Thus, the primary aim was to examine the psychometric properties of the NET as a new measure of social cognition using narrative sampling.

2. Methods

2.1. Participants

Participants meeting DSM-IV criteria for either schizophrenia or schizoaffective disorder were recruited from the UNC Hospitals Schizophrenia Treatment and Evaluation Program (STEP), the Outreach and Support Intervention Services (OASIS)

program, and community mental health facilities in the Raleigh-Durham region. Interviewers reviewed participants' medical charts, confirming diagnosis by administering the Structured Clinical Interview for DSM-IV Patient Edition (SCID-P; First et al., 1996). In order to participate, individuals had to report difficulties interacting with others per the Social Functioning Scale (Birchwood et al., 1990), as they were participating in a study evaluating the efficacy of Social Cognition and Interaction Training (SCIT), a 20–24 week psychosocial intervention targeting deficits in social cognition (Roberts et al., in press). Of 137 referred participants, 66 met screening criteria and were randomized to the SCIT study. All data examined in the current study were collected at the baseline visit of the study. Because the NET was added to the study protocol as the SCIT study was in progress, the present study includes the subset of participants that completed the NET interview ($n=45$). Individuals were excluded if they currently met DSM-IV criteria for substance dependence on the SCID-P, or scored an IQ of 80 or lower on the Wechsler Abbreviated Scales of Intelligence (WASI; Whitmyre and Pishkin, 1958).

A control group consisting of fifty English-speaking non-psychiatric controls from the Raleigh-Durham area was recruited with flyers and Internet postings. All non-psychiatric controls were between the ages of 20 and 65 years old and reported no first-degree relatives with a psychotic disorder, bipolar disorder, or autism. As summarized in Table 1, the groups significantly differed in marital status, education level, and on WASI total, as well as on the vocabulary subscale. The groups approached a significant difference in WASI matrix reasoning.

2.2. Development of the NET

2.2.1. The NET interview

The Narrative of Emotions Task consists of an interview prompting participants to define a range of simple (happy, sad, angry, and afraid), complex (suspicious and surprised), and self-conscious (guilty and ashamed) emotions (Losh and Capps, 2006; Stipek et al., 1992). They were asked to define the emotion ("What does happy mean?"), provide a narrative account involving the emotion ("Tell me about a time when you felt happy."), and explain why the described event elicited the target emotion ("Why did that make you feel happy?"). This interview structure is similar to the method adapted by Losh and Capps (2006) from earlier work in the developmental literature (Seidner et al., 1988) with a few changes. For example, in addition to prompting individuals to share narratives of experiences during which they felt the target emotion, the third interview question of the NET specifically asks individuals to offer causal circumstances for the event. The NET differs from other narrative methods in that it focuses on brief samples of narrated speech rather than spontaneously generated longer narratives, like, for example, the Indiana Psychiatric Illness Interview (Lysaker et al., 2005) which has been used to assess metacognition in schizophrenia. NET interviews generally require between 8 and 12 min to administer.

Table 1
Demographics of study participants.

	Group		Test for differences	
	Controls ($n=50$)	SCZ ($n=45$)		
Age	39.86 (9.85)	38.54 (12.14)	$t=0.58$	$p=0.56$
Education (years)	13.40 (1.18)	12.22 (1.30)	$t=4.64$**	$p=<0.001$
Gender			$X^2=0.01$	$p=0.95$
Male	33 (66.0%)	30 (66.7%)		
Female	17 (34.0%)	15 (33.3%)		
Race			$X^2=0.13$	$p=0.71$
White	34 (68.0%)	29 (64.4%)		
Black	16 (32.0%)	16 (35.6%)		
Marital status			$X^2=24.66$**	$p=<0.001$
Married	23 (46.0%)	1 (2.2%)		
Single/never married	20 (40.0%)	31 (68.9%)		
Divorced	7 (14.0%)	12 (26.7%)		
Widowed	0 (0.0%)	1 (2.2%)		
Age of first hospitalization	–	23.09 (9.16)	–	–
Number of previous hospitalizations	–	6.43 (7.13)	–	–
Symptom severity ratings				
PANSS positive	–	16.13 (4.80)		
PANSS negative	–	14.96 (4.38)		
PANSS general	–	33.44 (7.42)		
PANSS total	–	64.53 (13.00)		
WASI total[a]	**110.80 (15.00)**	**100.33 (15.12)**	$t=3.38$**	$p<0.01$
WASI vocabulary	56.26 (9.71)	48.18 (11.21)	$t=3.77$**	$p<0.01$
WASI matrix reasoning	55.50 (10.14)	51.36 (10.17)	$t=1.99$	$p=0.05$

$^$ $P<0.10$.
*$P<0.05$.
** $P<0.01$.
[a] FSIQ totaled from Vocabulary and Matrix Reasoning subscales.