



Language disturbance and functioning in first episode psychosis



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ABSTRACT

Language disturbance has a central role in the presentation of psychotic disorders however its relationship with functioning requires further clarification, particularly in first episode psychosis (FEP). Both language disturbance and functioning can be evaluated with clinician-rated and performance-based measures. We aimed to investigate the concurrent association between clinician-rated and performance-based measures of language disturbance and functioning in FEP. We assessed 108 individuals presenting to an Early Intervention in Psychosis Service in Ireland. Formal thought disorder (FTD) dimensions and bizarre idiosyncratic thinking (BIT) were rated with structured assessment tools. Functioning was evaluated with a performance-based instrument, a clinician-rated measure and indicators of real-world functioning. The disorganisation dimension of FTD was significantly associated with clinician-rated measures of occupational and social functioning (Beta = -0.19, $P < 0.05$ and Beta = -0.31, $P < 0.01$, respectively). BIT was significantly associated with the performance-based measure of functioning (Beta = -0.22, $P < 0.05$). Language disturbance was of less value in predicting real-world measures of functioning. Clinician-rated and performance-based assessments of language disturbance are complementary and each has differential associations with functioning. Communication disorders should be considered as a potential target for intervention in FEP, although further evaluation of the longitudinal relationship between language disturbance and functioning should be undertaken.

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1. Introduction

Disturbance of language functioning occurs in most individuals with mental illness and it crosses diagnostic boundaries (Lott et al., 2002; Walsh et al., 2007). Particularly in psychotic illnesses, language disturbance is intrinsically linked to genetic risk and clinical presentation (Covington et al., 2005; Delisi, 2001). It has been proposed that schizophrenia is the price that mankind has paid for the evolution of language (Crow, 1997). Despite the centrality of language in psychiatric presentations, its influence on functioning remains unclear. This is at least in part a result of the challenges common to measurement of both language and functioning;

research in these areas has been predominated by hospitalised samples and beset by a lack of consensus regarding operationalised assessments. Investigation of language impairment in first episode psychosis (FEP) is almost entirely absent.

Language assessment may be clinician-rated or performance-based; the most frequently employed of the former type is formal thought disorder (FTD). FTD, or disorganised speech, is elicited through the course of a regular clinical interview. It is described as a relatively unitary construct in DSM-V (American Psychiatric Association, 2013) and may represent a global marker of illness severity and poor outcome (Roche et al., 2015a). As a unitary construct, there have been conflicting findings in relation to the influence of FTD on social functioning (Cramer et al., 1989; Smith et al., 1999). Dimensions of FTD may provide more nuanced clinical information than unitary FTD constructs; up to six different dimensions of FTD have been described (Peralta et al., 1992). Underproductive and disorganised dimensions of FTD have differential influence on particular domains of social functioning and quality of life (Bowie and Harvey, 2008; Tan et al., 2014). There is a relative absence of research about the association between dimensions of FTD and types of functioning other than the social domain.

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Table 1
Comparison of FTD and BIT: nosology, clinical characteristics and neuro-cognitive and neural basis.

Characteristic	FTD	BIT
Diagnostic criterion	Yes (DSM, ICD)	No
Conceptualisation	Language ± neurocognitive disturbance	Thought disturbance
Clinical evaluation	Regular clinical interview ≥ 45 min	Cognitive challenge or stimulus e.g. ~10 min for proverbs
Language abnormality	Linguistic structure, excluding content	Linguistic structure, including content
Dimensionality	Multi-dimensional	One-dimensional
Scoring	Composite of items Items scored 0–4 or 0–5	Composite of items Items scored 0, 0.5, 1 or 3
Diagnostic specificity	Variable findings	More prevalent and severe in SSD [*]
Temporal stability	disFTD usually transient povFTD more stable	Often a trait characteristic
Neurocognitive correlates	Extensively investigated Executive and semantic deficits	Limited investigation Inconsistent findings
Neural basis	Extensively investigated Variable findings	Limited investigation Inconsistent findings

^{*} SSD, Schizophrenia Spectrum Disorders.

Performance-based language assessments evaluate an individual's speech in response to a defined and cognitively challenging task. Bizarre idiosyncratic thinking (BIT) is the most widely studied example. BIT is typically elicited through proverb interpretation and is characterised by socially idiosyncratic verbalisations (Marengo et al., 1986). BIT is distinct from abstraction or concrete thinking and is related to, but also distinct from FTD (Mercado et al., 2011; Sponheim et al., 2003). The association between BIT and functioning was evaluated in the Chicago Follow-up Study and it showed that BIT in hospitalised patients had a dose–response relationship with poor work functioning and clinical course of illness (Harrow et al., 1986; Pogue-Geile and Harrow, 1984).

BIT and FTD can be considered complementary measures of language dysfunction (Mercado et al., 2011). Outlined in Table 1 are the similarities and distinctions between the two, much of which is covered in our previous review on the subject (Roche et al., 2015a). A key difference is that BIT is elicited on a standard challenge or stimulus e.g. proverb interpretations, whilst FTD is elicited during the course of a regular clinical interview. Clinical interviews frequent address heavily affect-laden topics; a factor known to influence the type and severity of FTD observed (de Sousa et al., 2015; Docherty et al., 1994) whereas this may not be as likely to influence BIT evaluation. The neurocognitive correlates of BIT have been scarcely investigated in comparison to FTD, which may result from neurocognitive deficits as much as from language disturbance (Kerns and Berenbaum, 2002). Indeed, while FTD typically loads on the disorganised dimension of psychotic symptoms it actually has a similar neurocognitive profile to negative symptoms (McKenna and Oh, 2005a). To our knowledge the relative associations of BIT and FTD with functioning have not yet been studied in a single sample.

Functional recovery has increasingly become a therapeutic goal in psychotic disorders and our understanding of the determinants of functioning continues to evolve (Burns, 2007). Analogous to language assessments, functioning may be evaluated by clinician-rated and performance-based measures. Additionally, indicators of real-world functioning, such as employment, may be considered markers of functioning. The MIRECC version of the Global Assessment of Functioning scale (MIRECC GAF) is a clinician-rated

measure of global symptom severity and social and occupational functioning. It is a reliable and valid scale which disaggregates social and occupational functioning from psychological distress in three separate measures, unlike the GAF which uses a single scale (Moos et al., 2000; Niv et al., 2007). Performance-based measures of functioning can provide a different quality of information. The University of California San Diego Performance-based Skills Assessment (UPSA) assesses functional capacity, which influences residential independence, community activities and employment in certain samples (Cardenas et al., 2013; Mausbach et al., 2010; Mausbach et al., 2011; Patterson et al., 2001). It is a recommended measure of functioning in psychosis and has been employed as an outcome measure in several randomized controlled trials to date, however its association with language has not yet been investigated (Mausbach et al., 2011; Ostergaard et al., 2014; Patterson et al., 2005, 2006).

We sought to investigate the concurrent association between language disturbance and functioning in FEP. Limitations of the literature in this area to date have included: an over-reliance on inpatient samples with established psychotic illness, the use of global, rather than dimensional, language assessments and a focus on social, rather than other types of functioning. We aimed to address some of these limitations by exploring the differential associations of clinician-rated and performance-based language assessments with equivalent measures of functioning and real-world functioning. The importance of investigating language in an FEP sample is two-fold. Firstly, FEP samples are relatively free of the effects of long-term neuroleptics which may influence language function (Goldberg et al., 2000; Spohn et al., 1986). Secondly, communication disorders have been identified as a potential therapeutic target for those with established psychotic illness (Bowie and Harvey, 2008); further investigation is warranted before making similar recommendations for FEP samples.

Given the existing literature we hypothesised that dimensions of FTD would have differential associations with social functioning and that their association with other types of functioning was to be explored. Based on the results from the Chicago Follow-Up study we hypothesised that BIT would be associated with financial independence and, considering its association with global cognitive function, functional capacity; we evaluated its association with other types of functioning. In light of the fact that FTD and BIT may be distinguished conceptually and clinically in many respects (as per Table 1, below) we expected these two aspects of language disturbance to have distinct functional correlates. The exploratory aspect to this study was based on the acknowledgement in the literature that further investigation of the correlates of dimensional language disturbance is warranted, for its nosology to be revised (Roche et al., 2015a; Tan and Rossell, 2015).

2. Methods

2.1. Participant selection

We included participants in this study who were aged 18–65 years old and assessed by an Early Intervention in Psychosis (EIP) service between November 2012 and December 2014 in Dublin, Ireland. This EIP service accepts referrals from three different community mental health catchment areas, including both rural and urban centres, as well as a private psychiatric hospital. Exclusion criteria included a diagnosis of learning disability, Psychotic Disorder due to General Medical Condition (GMC) or treatment with antipsychotic medication for greater than 30 days prior to referral (Lyne et al., 2013; Renwick et al., 2012).

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