

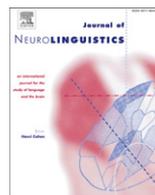


ELSEVIER

Contents lists available at ScienceDirect

Journal of Neurolinguistics

journal homepage: www.elsevier.com/locate/jneuroling



The genetic basis of thought disorder and language and communication disturbances in schizophrenia

Deborah L. Levy^{a,*}, Michael J. Coleman^a, Heejong Sung^b, Fei Ji^c, Steven Matthyse^a, Nancy R. Mendell^d, Debra Titone^e

^a Psychology Research Laboratory, McLean Hospital, Belmont, MA, USA

^b Genometric Section, Inherited Disease Research Branch, National Human Genome Research Institute, National Institutes of Health, Bethesda, MD, USA

^c Statistics Collaborative, Inc, Washington, D.C., USA

^d Department of Applied Mathematics and Statistics, Stony Brook University, Stony Brook, NY, USA

^e Department of Psychology, McGill University, Montreal, Quebec, Canada

ARTICLE INFO

Article history:

Received 4 February 2009

Received in revised form 4 August 2009

Accepted 6 August 2009

Keywords:

Schizophrenia

Thought disorder

Language disorders

Communication disorders

Semantic anomalies

Genetics

Family studies

Linkage analyses

Endophenotypes

ABSTRACT

Thought disorder as well as language and communication disturbances are associated with schizophrenia and are over-represented in clinically unaffected relatives of schizophrenics. All three kinds of dysfunction involve some element of deviant verbalizations, most notably, semantic anomalies. Of particular importance, thought disorder characterized primarily by deviant verbalizations has a higher recurrence in relatives of schizophrenic patients than schizophrenia itself. These findings suggest that deviant verbalizations may be more penetrant expressions of schizophrenia susceptibility genes than schizophrenia. This paper reviews the evidence documenting the presence of thought, language and communication disorders in schizophrenic patients and in their first-degree relatives. This familial aggregation potentially implicates genetic factors in the etiology of thought disorder, language anomalies, and communication disturbances in schizophrenia families. We also present two examples of ways in which thought, language and communication disorders can enrich genetic studies, including those involving schizophrenia.

© 2009 Elsevier Ltd. All rights reserved.

* Corresponding author. Psychology Research Laboratory, McLean Hospital, 115 Mill Street, Belmont, MA 02478, USA. Tel.: +1 617 855 2854; fax: +1 617 855 2778.

E-mail address: dlevy@mclean.harvard.edu (D.L. Levy).

1. Thought disorder and schizophrenia

Due largely to the influence of Eugen Bleuler (Bleuler, 1911/1950), thought disorder was considered virtually pathognomonic of the diagnosis of schizophrenia for many years. Kraepelin (Kraepelin, 1896/1919) is not credited with having had as much influence as Bleuler in this respect, but he too was impressed with the centrality of disturbed thinking in dementia praecox. Kraepelin considered “derailments in the train of thought,” which he named “akataphasia,” to be a fundamental characteristic of the dementia of dementia praecox (Kraepelin, 1896/1919) (p. 72). Manifestations of derailment included loosening of associations (“the most different ideas follow one another with most bewildering want of connection...” p. 56) and incoherence (“bewilderingly nonsensical utterances ... apparently represent a senseless jiggling of words” p. 71).¹ Bleuler (Bleuler, 1911/1950) considered “disorders of association” to be one of the four fundamental characteristics of the schizophrenias. He relegated the more conspicuous psychotic indicators, delusions and hallucinations, to secondary status as “accessory” symptoms, or derivatives of the primary ones. Bleuler described the disrupted associative process as follows: “... associations lose their continuity ... thinking becomes illogical and often bizarre ... two or more ideas are condensed into a single one.” (p. 14). Further, “... associations do not become entirely senseless, but they still appear odd, bizarre, distorted ...” (p. 19), and “in some cases, all the threads between thoughts are torn.” (p. 20) Such disorders of association could, according to both Bleuler and Kraepelin, present in a variety of ways – as incoherence, bizarre associations, clangs, condensations, stereotypy, illogicality, etc. The persisting primacy of thought disorder in the diagnostic schema is also evident in Meehl’s much later answer to the question, “What kind of behavioral fact about the patient leads us to diagnose schizophrenia?” Despite the presence of a variety of other symptoms of schizophrenia, the statement, “Naturally, I am growing my father’s hair,” was, for Meehl, the “diagnostic bell-ringer.” (Meehl, 1977) (p. 138)

Many efforts have been made to capture the essence of schizophrenic thought disorder since the pioneering descriptions of Kraepelin and Bleuler. Some formulations focused on specific attributes of thinking like overinclusive (Cameron, 1938) or bizarre-idiosyncratic qualities (Harrow & Quinlan, 1985). Others emphasized dichotomies like concrete vs abstract thinking (Goldstein, 1944) and primary vs secondary process thought (Fenichel, 1945). Chapman and Chapman (Chapman & Chapman, 1973) identified a number of key domains of disordered thought in schizophrenia (e.g., reasoning, concept formation, reality testing). A variety of scales were developed to assess the varied manifestations of thought disorder, usually in the context of an interview or standardized tests (Andreasen, 1979a, 1979b; Andreasen & Grove, 1986; Cancro, 1968; Caplan, 1994; Harrow, Harkavy, Bromet, & Tucker, 1973; Harrow & Quinlan, 1977; Harrow, Tucker, Himmelhoch, & Putnam, 1972; Johnston & Holzman, 1979; Liddle et al., 2002; Perry, Geyer, & Braff, 1999; Perry, Minassian, Cadenhead, Sprock, & Braff, 2003; Solovay et al., 1986). Many of the categories for classifying thought disorder overlap across scales; moreover, what appears to be the same quality of disturbed thinking is named differently in the various scales.

There is now general agreement that thought disorder is multidimensional, that it occurs both in schizophrenic and nonschizophrenic psychotic conditions, and that its manifestations cover a spectrum of severity (Andreasen, 1979b; Andreasen & Grove, 1986; Harrow, Grossman, & Silverstein, 1986; Harrow et al., 1973; Harrow & Quinlan, 1977; Harvey, Earle-Boyer, & Wielgus, 1984; Holzman, Shenton, & Solovay, 1986; Johnston & Holzman, 1979; Kufferle, Lenz, & Schanda, 1985; Oltmanns, Murphy, Berenbaum, & Dunlop, 1985; Shenton, Solovay, & Holzman, 1987; Solovay, Shenton, & Holzman, 1987; Spohn et al., 1986; Taylor, Reed, & Berenbaum, 1994). Andreasen and colleagues (Andreasen, 1979b; Andreasen & Grove, 1986), for example, noted that both manic and schizophrenic patients had elevated scores on the Scale for the Assessment of Thought, Language and Communication (TLC). Similarly, Holzman and colleagues showed that psychotic patients, whether schizophrenic, schizo-affective or manic, had elevated total

¹ “... we hear from our patients a great many quite incomprehensible and disconnected utterances, in which it can scarcely be only a question of disorders of linguistic expression, even though it is impossible in the individual case to discover the inner mechanism by which the utterances arose...” (p. 72) “Here it is no longer the transference to expression in speech that is morbidly influenced, but the ideas aroused by the circumstances are themselves already in their origin pushed aside or suppressed by ideas related but lying remote or opposed to the original ones.” (p. 73).

متن کامل مقاله

دریافت فوری ←

ISIArticles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات