

Copyright is owned by the Author of the thesis. Permission is given for a copy to be downloaded by an individual for the purpose of research and private study only. The thesis may not be reproduced elsewhere without the permission of the Author.

TWO KINDS OF ABSTRACTION IN SCHIZOPHRENIA

A thesis presented in partial fulfilment
of the requirements for the degree of
Master of Arts in Psychology at
Massey University

Philip Nigel Cade
1981

ACKNOWLEDGEMENTS

I am deeply indebted to Shannon Roache, my supervisor, whose understanding, criticism and guidance has been instrumental in bringing this research to fruition.

My appreciation to Dr S.L. Pugmire, Medical Superintendent, also Staff and Patients of Lake Alice Hospital, whose co-operation has made it possible for me to carry out this research.

Similarly, my thanks to Dr Nigel Long, my mentor and Dr Ken McFarland, for his assistance with the statistical analysis.

TABLE OF CONTENTS

	<u>Page</u>
ACKNOWLEDGEMENTS	ii.
ABSTRACT	vi.
INTRODUCTION	1.
LITERATURE REVIEW	4.
The Traditional Concept of Abstraction.	5.
Research on Schizophrenia Based on the Traditional Concept.	7.
New Perspectives on Research from an Information Processing Perspective.	11.
Cognitive Approach to Information Processing.	15.
Integrative Memory Strategies in Schizophrenia: The Bransford and Franks Paradigm.	16.
Inference as a Measure of Integration and Organization.	21.
A Schema for Investigating Abstraction in Schizophrenia.	24.
THE PRESENT STUDY	26.
METHOD	31.
RESULTS	37.
DISCUSSION	44.
REFERENCES	53.
APPENDICES	67.

LIST OF TABLES

Page

TABLE 1:

Means and Standard Deviations for Age, Illness Duration and WAIS Vocabulary Scores (Scaled) for Paranoid Schizophrenic, Non-Paranoid Schizophrenic and Control Groups. 32.

TABLE 2:

Percentage of Correct Responses, Means and Standard Deviations on Similarities For Three Groups of Subjects. 37.

TABLE 3:

Comparison of Differences Between Schizophrenic and Control Subjects on Similarities. 38.

TABLE 4:

Percentage of Recognition Responses in Each Sentence Category for All Groups. 39.

TABLE 5:

Proportional Analysis of Conditional Probabilities for Confidence Judgements. 41.

TABLE 6:

Cumulated Proportions of Confidence Judgements Cut-Off at Five Confidence Levels. 43.

APPENDICES

Page

APPENDIX A

67.

Materials.

APPENDIX B

75.

ANOVA Summary Tables for Similarities (Experiment 1).

ANOVA Summary Tables for Relational Abstraction (Experiment 2).

APPENDIX C

77.

Frequency of Recognition Responses in Each Sentence Category.

APPENDIX D

78.

Recognition Frequencies in Each Sentence Category for Individual Subjects.

APPENDIX E

80.

Frequencies of Confidence Judgements at Six Confidence Levels for Each Recognition Item Type for Group.

Cumulated Frequencies of Confidence Judgements Cut-Off at Five Confidence Levels for Each Group.

ABSTRACT

An impairment in abstracting ability has frequently been proposed as a reason for schizophrenic thought disorder. The performance of hospitalized chronic paranoid schizophrenics and non-paranoid schizophrenics were compared to a normal control group on two types of abstraction; a traditional conceptual abstraction task (similarities, Trunnell, 1964) and an inferential abstraction task (relational abstraction, Bransford, Barclay & Franks, 1972). These two measures allowed a differential interpretation of the nature of the abstraction impairment in schizophrenia. The two clinical groups did not significantly differ on the traditional hierarchical measure of abstraction. Performance of both schizophrenic groups, however, differed significantly from that of controls in that schizophrenic subjects employed less abstract concepts to classify items in this task. On the second measure of abstraction no significant differences were found between schizophrenic subjects and the control group. Differences between paranoid and non-paranoid subjects did not reach significance on this task but there was some indication that each of these schizophrenic sub-groups used different cognitive strategies on this measure. Paranoid schizophrenics appeared not to elaborate information beyond its original form. The non-paranoids, on the other hand, appeared to elaborate stimulus material but were confused between inferential and original information. The present results indicate that chronic paranoid schizophrenics have a different type of abstraction impairment to chronic non-paranoid schizophrenics on the inferential conceptual abstraction task. These findings indicate the utility of using two indices of abstraction and the importance of not treating schizophrenics as a homogeneous group.

INTRODUCTION

Descriptions of schizophrenia place strong emphasis on thought disorder as a central characteristic of the syndrome. Initially, however, the speech of the schizophrenic is regarded as the primary diagnostic tool for inference of the disorder (Herron, 1977; Ho, 1974; Maher, McKean & McLaughlin, 1966). Consequently, a massive research effort has been directed to finding the distinctive properties or structural defects in schizophrenic language, an effort that has produced consistently disappointing results (Maher, 1966, p 433; Pavy, 1968; Vetter, 1968 p 25). For example results from a number of studies (Maher, 1972; Salzinger, 1973; Schwartz, 1978) indicate that schizophrenics rarely exhibit grammatically incorrect speech. Some studies do report schizophrenic speech to be more difficult to follow and more unpredictable than that of normal subjects (Hart & Payne, 1973; Rosenberg & Tucker, 1976), but this finding seems to be indicative of deviant conceptualisation or impaired cognitive processing rather than of a primary linguistic disturbance (Critchley, 1964; Lecours & Vanier-Clement, 1976).

This conclusion is in accordance with many traditional descriptions of thought disorder. For example, in 1911 Bleuler classically described the impairment in schizophrenic thinking and speech as when "fragments of ideas are connected in an illogical way to constitute a new idea" (1950, p 9). Schilder (1951) speaks of the schizophrenic as being "unable to pursue the determinative idea." Arieti (1955) refers to "... a lack of inhibition of peripheral ideas necessary for effective abstraction." McKellar (1957) explains the loss of abstract thinking in schizophrenia as due to "... the inability to inhibit associated but irrelevant ideas." Goldstein (1939), Vygotsky (1934) and more recently, Wright (1975) have considered the central feature of schizophrenia to be an impairment in the ability to abstract.

McGhie and Chapman (1961) quote a statement by a schizophrenic which illustrates the subjective difficulties these patients experience. "My thoughts get all jumbled up. I start thinking and talking about something but I never get there. Instead I wander off in the wrong direction ... People listening to me get more lost than I do" (p. 108).

Because "a true understanding of the nature of the thought disorder might illuminate the nature of schizophrenia itself" (Chapman & Chapman, 1973, p. ix), the study of thought disorder has been the most heavily researched area in schizophrenia (Herron, 1977). Many theoretical explanations have been offered, but so far no explanation has achieved general acceptance. For example, explanations of the process responsible for schizophrenic disordered thought have included an impairment in abstracting ability (Goldstein, 1944; Wright, 1975), a faulty decentering ability (Suchotliff, 1970), an attentional deficit (Payne & Caird, 1967), an accentuated response bias (Chapman & Chapman, 1973), a collapse in response hierarchies (Broen, 1968), and over inclusion of concepts into categories (Cameron, 1947).

It seems likely that little progress can be made in discrediting alternative explanations until theoretical constructs and research strategies are further refined. One reason that may account for why research explanations are often ambiguous and inconsistent is that schizophrenics are frequently treated as a single homogenous group. Schizophrenic subgroups have been found to have different cognitive abilities (Gillis & Blevens, 1978; Otteson & Holzman, 1976). But the main reason why progress has been slow in understanding the nature of schizophrenic thought disorder is that most research paradigms have been unrepresentative of ordinary comprehension and natural language processing. For example, the sorting tasks (Goldstein, 1939; Vygotsky, 1934), memory for lists of words (Koh, 1978; Traupman, 1975) and

the study of word meaning (Chapman, Chapman & Daunt, 1976) have been valuable for looking at various aspects of information processing, such as selective attention, discrimination, recognition process and association. But these studies do not sample the higher levels of ordinary information processing, such as the representation of information in memory (Craik, 1973; Craik & Lockhart, 1972).

In order to quantify the true nature of thought disorder in schizophrenia, cognitive paradigms which are more closely related to ordinary information processing may be more appropriate. As McGhie (1970) has observed from the subjective reports of schizophrenics, patients' difficulties in understanding speech arise "not from an inability to perceive the individual words comprising a connected discourse, but from an inability to perceive the words in meaningful relationship to each other as part of an organized pattern" (p. 12). The present study will quantify the theoretical construct of abstraction, in such a way that it samples more closely those abilities which are necessary for comprehending connected discourse than traditional measure of this ability.