RIGIDITY: A COGNITIVE STYLE CONCEPTUALIZATION OF DEPRESSION

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CRAIG WESTLEY McDONALD

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ABSTRACT

The traditional ideas of depression as an affective illness are examined and evidence is presented that contrary to the view presented in many texts, depression is also associated with thought disorders as severe as those experienced in other psychopathological illnesses.

A model of depression as a single entity is proposed that suggests that the various manifestations of the disorder are due to a single underlying mechanism. This mechanism is conceived of in terms of cognitive style and cognitive control theory and evidence is presented that this is an adaptive mechanism for the individual and consists of selective blocking of incoming stimuli or in more general terms, 'rigidity'.

Twelve depressed patients were examined using a battery of tests which yielded 22 measures including level of depression, rigidity, anxiety, field-dependence and various scales of personality. These measures were then correlated using Pearsons Product-Moment correlation coefficients and were then subjected to cluster analysis using Tryons modification of Holzinger and Harmon's B-coefficient technique. This gave four meaningful clusters of which three matched the components of Becks primary triad, with the important addition that this analysis reveals the importance of rigidity as a factor in Beck's second component-negative self-concept.

Towards the end of my first year of graduate study I was faced with the problem that faces all graduate students at this stage of their academic career - the choice of a thesis topic. In my mind I had a number of aims that I wished to fulfill but no specific topic. Firstly I wanted a topic that would enable me to fulfill the requirements for a Master of Arts degree. Secondly it has always appeared to me that my fellow students choose such limited topics or areas that I felt the choice of a similar narrow topic would be like paddling up a back water. Thus the topic had to be fairly broad and yet still manageable within the time limits imposed by the degree regulations. Thirdly, I wanted to work on a theoretical topic that would raise more questions in mind than I could possible answer and would perhaps lead me into a much wider programme of study at some future time. Fourthly, the topic chosen had to present problems of both a theoretical and practical nature that would enable me to gain understanding, new techniques and abilities in working in a particular area of psychology.

For over eighteen months I had been working in the Admission Ward of Lake Alice Hospital trying to cope with the day to day problem that faces every clinical psychologist in a hospital setting. One of the problems that both puzzled and intrigued me was the behaviour patterns of the newly admitted depressed patients. Because of the problems I had in dealing with these patients and my feeling that depression is probably one of the most widespread and major health problems facing many people today and the number of people attending general practitioners, psychiatrists and health workers appears to be growing, the topic of depression became the focus of my studies.

Reading all the literature available on depression, I soon focused on the specific area of the cognitive processes

in depression and quickly realized the need to draw together the research from both experimental and clinical psychology if a much needed theory of cognitive processes in depression is to be formulated.

I have no illusions that this thesis gives a complete theory of cognitive functioning in depression as there are many theories about what a theory is. In my view, in its most complete form a theory provides a system which allows precise deductions and empirical predictions to be made. In writing this thesis, it seems to me that in this area we still lack a large amount of detailed research that would allow this to be possible. Thus the propositions that I hope to put forward in this thesis might better be regarded as an attempt at a theoretical frame of reference for this area or as others have put it "towards a theory".

Thus the primary orientation of this thesis is not methodological but conceptual. Therefore I have not made a point of providing elaborate criticism of the design or methodology of the studies cited, although I have sometimes mentioned what has appeared to me to be fundamental methodological difficulties which have limited the conclusions that may be drawn. Readers who have predominantly methodological leanings will find this unfortunate but I wish to make it clear to those readers that it has not been my aim to evaluate the research in this area with a fine-tooth comb of methodological precision but to state the most important substantive issues and to offer an analysis within which to productively view these issues.

I have had a considerable amount of difficulty in deciding what literature I wanted to include. The major problem was that even the literature directly connected with my topic is both extensive and widely scattered, that it is virtually impossible to cite it all. Another problem is

that, because my topic lies across so many other psychological areas, tangential literature which was of relevance is also extensive. Although I want to give the flavour of research in the area of depression, I have made no attempt to cover everything. This is not a complete review of the literature on depression and in fact, I have deliberately ignored research on the biochemical and physiological nature of this disorder. Even within the area under study the studies cited are representative, not exhaustive. They were selected because they must be regarded as classic works in this young area and to have ignored them would have been foolish. Other studies have been included because they come to grips with what I consider to be fundamental issues within the area. Although I have tried to include all relevant studies, the perspective I have attempted to provide has determined which works have been included and which are not. Because this has been an attempt to define substantive issues many competent studies have been ignored because they do not contribute significantly to this perspective or because they contribute details rather than fundamental ideas. For example, the large number of studies that correlate some particular scale with other such scales or with other kinds of behaviour have generally been ignored.

I also had great difficulty in closing this work. Each time I read it, I found things that I wanted to elaborate upon or re-state. Regularly I found some new article, or one I had not known about or had overlooked, that deserved inclusion. It has been an act of will to decide that although my thesis was not as complete as I would have wished, it was best to present it as it was. My apologies to those readers who are familiar with this area and have found that I have not included some aspect or studies that they consider significant.

In order to deal with the problems of cognitive

functioning in depressives the reader has to have a knowledge of the concepts necessary for an understanding of this area. I apologise to those readers who already have a background in cognitive studies if they find the first chapter simplistic and unnecessary but I thought it a useful inclusion for those unfamiliar with this area and as a logical point in which to define the concept of cognitive style as I see it.

Once these terms have been defined the reader will go on to Chapter Two to a review of the literature on rigidity which is a central concept in this discussion, showing the lack of agreement over the nature of rigidity and postulating that a cognitive style conceptualization of rigidity may account for some of the discrepancies and disagreements in this area.

Chapter Three attempts to define depression and presents a number of representative studies on the classification of depression showing the nature of the disagreements over the subtypes of depression and I make some suggestions for further research in this area.

Chapter Four is a review of current knowledge regarding cognitive, psychomotor and perceptual deficit in depression.

Chapter Five reviews the literature on the family backgrounds, personalities and self-concepts of depressives with the idea that common elements in their socialization process may relate to the type of deficits they exhibit or provide some knowledge of how they arose.

Chapter Six provides an attempt to tie together the common strands that run through the previous chapters and to support these strands with further evidence that supports a cognitive style conceptualization of depression as a defense against the disruption of rigid thought or behaviour patterns.

Chapter Seven is a pilot study for a larger more systematic investigation of the theory presented here.

My thinking about the problems tackled in this thesis has covered a period of almost three years and during this time I have been helped and influenced by a number of people. I should particularly like to mention Professor George Shouksmith, my Supervisor, who gave me the freedom and encouragement to explore my own ideas and intuitions.

Having been appointed Junior Lecturer in the Psychology Department this has granted me the opportunity to gain a wider perspective from the preoccupations of my colleagues. These discussions were invaluable to me, and I wish to express my appreciation especially to Professor George Seth, Dr Elizabeth Wells and Mr Kerry Chamberlain. Professor George Seth's comments were particularly important for helping me to clarify my own ideas about thought processes through long and pleasant discussions while he was Visiting Professor to the . Department.

I also wish to express my thanks to the Psychiatrists and nursing staff of Lake Alice Hospital, particularly to Dr S.L. Pugmire, the Medical Superintendent, for the help, encouragement and opportunities they all gave me to work with depressed patients which led to many of the ideas expressed in this thesis.

A very special mention must also be awarded to my wife Glenys, who spent countless hours, reading, checking, correcting and typing this work.

CONTENTS

CHAPTER ONE COGNITIVE FUNCTIONING, PERSONALITY AND PSYCHOPATHOLOGY

Psychologists in the nineteenth century were interested in thoughts and images, sensations and perceptions, instincts and mental energies as well as other internal phenomena. But the advance of positivist philosophy and behaviourist methodology in the twentieth century led to a shift in emphasis. For nearly half a century the psychologists' explorations of both human and animal behaviour were largely a search for new methodologies and was also to a large extent a struggle for experimental rigour and statistical refinement.

With this struggle for scientific rigour has come the development of many new tools such as analysis of variance, latin-square designs, scaling techniques and laboratory procedures. With these new tools and methods Psychologists have once again turned to the previous areas of "introspectionism". In a sense it can be said that Psychologists have rediscovered "the mind" and are now as intent on understanding it as were the Psychologists of earlier days.

The study of "the mind" is now a much more sophisticated affair than were those earlier studies of mental processes and the new tools and methods are being employed to examine what has now come to be called cognition and cognitive activities and over the last twenty five years it has led to a variety of new approaches to thinking.

These new approaches to what was "introspection" are still only one type of theory among many types of theory. The distinction between modern cognitive theories and other types of theories has been described as essentially a difference in approach; it is not a matter of content, not a distinction between domains of psychology. Van de Geer and Jaspers (1966) point out that cognitive theories are often not actually theories of cognition much of the time but are "characterized by a particular flavour in their approach to problems of psychology at large".

The psychology of cognitive functions - their nature and their role in human behaviour - raises many problems of definition.

Definitions have been proposed that have assumed that useful definitions are those that enable us to classify phenomena on the basis of empirical evidence of functional similarities while other definitions have assumed that it were possible to identify cognitive processes as such - to discern their characteristics as conscious elements. The older view of cognitive functioning was that almost all mental processes are conscious and may be observed introspectively. This view was expressed by G.F. Stout in his Manual of Psychology (1889 p.56) who wrote "... there are three ultimate modes of being conscious of an object: knowing feeling and striving; the cognitive attitude, the feeling attitude, and the conative attitude ... the word cognition ... covers all modes and degrees of being aware of or cognizant of an object."

In summarising the definitions between the era of introspection and the end of the nineteen-forties Leeper (1951) stated that at this time cognitive processes included "all the means whereby the individual represents anything to himself or uses those representations as a means of guiding his behaviour." But modern theorists have recognized that the problem is broader than the problem of defining the one term "cognition" and have tended to define the area as it is distinct from other areas. In one sense cognition is the field of thought processes such as perception and learning. This then leads to two distinct positions. One is that cognitive processes have characteristics of their own and therefore cannot be explained on the basis of other more simple phenomena The other position is that cognitive behaviour can be reduced and does not need a special area. Thus modern cognitive theories and definitions may be anywhere on a scale from neobehaviouristic mediation to phenomenological interpretation.

Among these new approaches to which we have grown accustomed are dissonance between cognitive elements (e.g. Festinger 1957, 1964) congruity (Osgood and Tannenbaum 1955) and balance (Heider 1964). Work in the field of cognition has dealt with such things as efforts towards consistency, communications theory definitions (e.g. Attneave 1959; Garner 1962), the role of language in our commerce with the environment (e.g. Osgood and Sebek 1965; Neisser 1967), the nature of reasoning strategies and tendencies (e.g. Watson and Johnston-Laird 1968), aspects of mental imagery (e.g. Holt 1964), creativity (e.g. Shouksmith (1973) or even studies of particular aspects of the environment such as other people, social situations and logical problems.

These approaches have also "coloured" our theories in the more traditional areas of psychology. In social psychology and personality in particular, the phenomenological overtones of cognitive theory are unmistakable. As Shouksmith (1973) states "... recent years have seen a broadening of the traditional boundaries for the study of personality, so that now the study of cognitive elements is included" p. 86. These overtones are perhaps seen most clearly in three aspects: the emphasis on perception (how S 'views the world'); the easy shift from one area to another, from perception to motivation, from motivation to personality; and the emphasis on coherence.

In the work of Heider (1964), for instance, the main interest is how a subject perceives a significant environment and how he achieves structure. Festinger's (1957, 1964) approach may also be looked upon as an interpretation of how man achieves a unified system of beliefs, or cognitions by adopting particular stratagems which tend to look very much like defense mechanisms. Also Witkin's (1962) 'cognitive styles' are characteristic fashions of experience of the world and the self; they express themselves in a broad array of psychological functions, perceptual and intellectual, and tie in with personality dynamics.

Thus a great deal of recent research in cognition has been conducted into demonstrating that people show self-consistent characteristic ways of functioning in their perceptual and intellectual activities. These ways of functioning, then appear to be manifestations in the cognitive sphere, of still broader dimensions of personal functioning which cuts across diverse psychological areas. Witkin (1962, 1965) considered that such broader dimensions have the methodological advantage in that they provide "an experimental objective approach to personality study and assessment."

From this approach then comes the idea that each individual, through his perceptual-cognitive activity, constructs his own individual phenomenal world. The world to which the individual is adpting and the mode he uses to adapt to that world are not in this view two separate entities but rather part and parcel of the same set of processes. As the individual develops a perceptual cognitive strategy, this strategy leads to his encountering a new set of demands which had to some extent been created by the new view of the world and ways of ordering it that this new strategy has given him. In this view the conuous flux that exists between these two elements has come to be called personality.

From this point of view the current stable features of personality may be considered as a residue of a long process between the individual and his environment. Most individuals eventually manage to achieve, through a combination of altering themselves, altering the world and choosing their situations to achieve a relatively stable equilibrium in their commerce with the world. Once this stable state has been achieved it is then possible to describe an individual in terms of consistent styles of thinking, seeing, behaving etc.

From this general viewpoint a particular question arises as to the differences between people in their ways of handling the information at their disposal which has been

gained from the interaction of their perceptual-cognitive style with their environment. These major characteristics of thinking form part of the larger system of personality. A distinction should be drawn at this point between the content of a thought, belief or attitude and its non-content characteristics. Much work in the areas of personality, thought attitude has dealt with what a person thinks or wants (that is, with content variables), but it is also possible to enquire about the way in which he thinks or wants (that is, about variables of style). An excellent example of this distinction is provided by the difference between authoritarianism and dogmatism (Warr, 1970). Authoritarianism is measured in terms of what a person thinks and wants, whereas dogmation is more a question of how he thinks and wants (Rokeach 1954).

These habitual ways or modes of dealing with information about oneself and ones environment, which are to a large degree independent of the content of the information being handled, have come to be called "cognitive styles". These styles are assumed to be transsituational, in that they are operative in a variety of tasks and domains. The limits of this generality have often yet to be identified, but the trans-situational assumption is an important one for it enables us to distinguish a cognitive style from a response style. A response style is often also called a response bias and is usually viewed as a characteristic way of responding to a particular kind of situation and is in a sense, a very particularized cognitive style. Shouksmith (1973 p.93) clarifies the distinction by defining cognitive styles as "long-term strategies which are dependent on the personality and motivation of the individual", while he defines response biases as "strategies which are in the main determined by the situation, though...different personalities will react in different ways to any given situation."

Another associated concept is that of cognitive ability. Again the line of distinction is an ambiguous and dubious one but in general terms it can be said that a

measure of cognitive ability is an index of how well a person can think whereas a measure of cognitive style is an indication of how he habitually does think.

Another fundamental concept is the notion of "cognitive structure." The notions of style and structure are closely interwoven and in one sense a "structure" may be regarded as a hypothetical construct to account for the stylistic consistencies in thinking which have been discussed above. A statement about cognitive structure is a statement about some kind of enduring entity, whereas a statement about cognitive style is more a statement about regularly observed, consistencies in thinking. Thus 'cognitive Style' and 'cognitive structure' are overlapping terms; the difference lies in the fact that 'cognitive style' refers to certain aspects of thought processes and 'cognitive structure' refers to the system which mediates these processes (Harvey, Hunt and Schroder 1961).

This framework has led to several major questions which have guided much of the work in this area. The overwhelming amount of the research has been devoted to the question of whether it is in fact possible to classify or characterize people by such features as whether they scan their environment broadly or confine themselves to limited segments of the incoming stimulus information (Tajfel et al 1964; Gardner and Schoen 1962), whether they respond to a stimulus array globally or articulate discrete elements independently of the context in which they are embedded (Witkin et al 1962; Karp 1963), whether they are alert to subtle changes in successive stimulus configurations or readily assimilate new information to old schemes (Neisser 1967), etc.

Another improtant question broached by this approach, but to which workers in the area of cognitive style have addressed themselves less frequently, involves consideration of the adaptive significance of the individuals mode of cognitive functioning. The theory underlying the investigations of cognitive style points to consideration of how individuals experience the world in terms of differing

modes or strategies for organizing the vast influx of both internal and external stimuli. The cognitive style approach then, views perception as an active process whose final product is determined by the characteristics, both of a momentary and an enduring nature, of the perceiver as well as by external stimulus conditions. The implicit assumption, in much of the above, is that all men are in touch with only a limited glimpse of reality and that a wide variety of possible ways of seeing things are included within the normal.

The outcome of much of the work that has been performed so far is consistent with Mischels interpretation of personality functioning which de-emphasizes organizing structures and instead stresses stimulus determinants (Mischel 1963). Wachtel (1972) considers that much of this has been due to the strategy in which cognitive functioning is studied in situations where cognition is an end in itself rather than "part of a continuing sequence of adjusting to old situations by creating new ones."

Such a change of emphasis as suggested by Wachtel would provide a framework for understanding personality structure and stimulus conditions as being complementary and interactive. From this new standpoint it also provides a new perspective for viewing psychopathology and in particular thought disorders as continuing sequences of adjusting to old situations.

Thought disorder has always been regarded as one of the main criteria of mental illness and as such has been widely studied. Because many pathological states often involve these changes in thought processes it can be readily seen that research into cognitive style and structure would have an important place in clinical psychology.

Historically 'thought disorder' originated as a psychiatric concept. In fact, the ancient Greeks probably regarded all types of abnormal behaviour as

stemming from a disordered intellect. For example Plato (Zilboorg and Henry 1941) thought that individuals who were too happy or too sad were devoid of reason. Although this view made affective disorders secondary to intellectual disorders being essentially due to a failure to understand and interpret events correctly; there came nevertheless, early in classical times a clear distinction between disorders of the intellect and disorders of the affect. This laid the basis for the main subdivision of the psychoses in the Kraepelinian system. In many respects the three major psychiatric subdivisions of modern classification systems follow the three ancient subdivisions of psychology. Thus the schizophrenics are usually regarded as primarily cognitive disorders, manic depressives psychosis is regarded as primarily an affective disorder and neuroses could be regarded as disorders of conation (Zilboorg and Henry 1941).

For many years the disorders were regarded as 'water tight' independent disorders of the human mind, 'cognition' and 'affect' but now days in many areas these classical subdivisons have been abandoned because they have not been found useful. Payne (1973) suggests that this was because it was very difficult to define 'cognition' in operational terms and because of this, psychiatrists found it impossible to decide for any particular condition, whether the basic disorder was cognitive or affective. Such a distinction may be impossible to draw and the question may be a meaningless one.

The term 'thought disorder' has been used at a level of abstraction, which made no reference to areas, topics or subsystems of thought. Concepts like concretism, dissocation, derailment, irrelevance and poverty of of content occur frequently in psychiatric texts on thought disorder but in the great majority no suggestion is made that they apply differentially to different areas of thinking. (Bannister and Salmon 1966). There is also

an unstated implication in most psychiatric writing on thought disorder that it is a diffuse malaise which affects all areas and aspects of thinking. In this respect the concept to psychiatrists, seems somewhat analogous to the notion of general dementia due to a diffuse process such as arteriosclerosis or alcholism (Bannister and Salmon 1966).

Although cognition is not new to psycholigy and thought disorders have been known for even longer, the area of cognitive psychiatry is a recent development (Arieti 1965). The major considerations have been given to such problems as thinking disturbances in schizophrenia which have been emphasized in the past work of psychiatrists such as Meyer (1956) and Kraepelin (1921). This emphasis that had been placed on schizophrenic thought disorder is due to the persistence of the old idea that only schizophrenia is a cognitive disorder while other disorders are primarily either affective or corrative disorders.

The strength of this emphasis is seen in Payne's (1973) review of the literature on cognitive abnormalities. In his summary of research he notes that there appears to be three relatively distinct 'syndromes' in which thought disorder is an important feature. These three syndromes he labels "Process Schizophrenia", "Psychotic Anxiety Reaction", and "Over-inclusive Psychosis".

The first syndrom "Process Schizophrenia" according to Payne is characterized by a low level of general intelligence when tested during their illness, and a severe degree of general psychomotor retardation, including a slow and variable reaction time. They also tend to display perceptual 'underconstancy' and are concrete in their thought and in their use of language. They are also very distractible in a wide variety of situations. Payne also noted that psychotics who have these cognitive abnormalities are often patients whose abnormality may begin in childhood and the development of further symptoms takes place gradually so that by the time they reach late adolescence or early adulthood they typically require

hospitalization. He also notes that they are often unsociable and withdrawn, appear to lack drive and to have a flattened or incongous effect, and are frequently hallucinated. They are most usually diagnosed as 'process schizophrenics' or 'simple schizophrenics'.

The second syndrome 'Psychotic Anxiety Reaction', is characterized by relatively well-organized paranoid delusions. They show no perceptual disabilities, are better than average at concentrating and at focusing their attention, and are not distractible. They show no evidence of such features as concretness or psychomotor retardation. They tend to give unusual associations to words and to ambiguous stimuli and they also show perceptual overconstancy which may be the result of an unusual amount of scanning. Payne has also noted that in this group of patients the 'illness' appears to start dramatically in early adulthood or early middle age often in response to environmental trauma or stress. The prognosis for this condition is relatively good but those who become chronic patients may remain in a very high state of arousal, but may become withdrawn because their responses are often inappropriate and malodaptive.

The third syndrome Payne labelled "Overinclusive Psychosis" and patients with this syndrome according to Payne are characterized by their exhibiting excited, overactive, hostile, talkative behaviour andd with mood swings. He states that it is best recognised by a typical sort of thought disorder that has been labelled overinclusive thinking. This he defines as a conceptual disorder in which words and ideas come to be defined broadly and vaguely and the individuals thinking itself becomes vague, imprecise and often contradictory. He also notes that these patients are most frequently diagnosed as 'manic' but may be labelled 'acute schizophrenic' or 'schizo-affective'.

Although cognitive theory has made its major impact

in the clinical area on schizophrenic thought disorder some work has also been done in the areas of neurotic behaviour and depression. Payne (1973) concluded from his review of literature that thought disorder was not an important aspect of neurotic behaviour. He mentions that depressed patients expecially those regarded as 'psychotic' tend to be slower in most mental and motor tasks but dismisses this as being due to their distractibility and pre-occupations or to some physiological disfunction although he concludes that very little work has been done in the area.

CHAPTER TWO RIGIDITY: A COGNITIVE STYLE?

From the earliest days of experimental psychology there has been repeated interest in tendencies, variously described, for individuals to differ in their ability to adapt appropriately to changing demands of problem situations. The effort to define this behaviour was once an active phase of both experimental and clinical psychology. Behaviour described as perseveration in sensory and motor tasks, rigidity of set (Einstelling) in solving a series of closely related problems, "ethnocentrism" in responses to attitude scales, recentering in certain types of problem situations, concrete and abstract attitudes in concept formation tasks, and the creativity of artists and inventors. All seemed to have some factor in common.

It has been proposed that this factor is a variable with rigidity at one extreme and flexibility at the other. Thus we find many investigators hypothesizing that many diverse kinds of behaviour reveal this factor and concluding that "rigidity - flexibility" is in fact "a general factor in personality organization and functioning" (Cowen and Tompson, 1951).

Further analysis of the concept of rigidity as it is understood by other investigators reveals that there exists little agreement as to the specificity or generality of rigidity of an individual. (Cattel and Tiner, 1949; Rokeach, 1948; Fisher, 1950; Applezweig, 1954, etc). This lack of agreement as to the nature of the concept has throughout given rise to heated controversy between eminent psychologists. For example the Kourin - Werner controversy (Kourin 1948; Werner 1946) and, the Luchins - Rokeach controversy (Luchins, 1949; Rokeach, 1949). Leach (1967) suggests that one of the reasons for these disagreements is because the definitions of rigidity have remained general and various for such a long time while the

actual research that has been conducted has varied with the swings in psychological thinking over the years.

These trends in psychological thinking over the years has given psychology increasingly sophisticated statistical techniques such as factorial analysis which in turn have led to the breaking up of concepts such as rigidity into their component parts. It could now be suggested that the trend is now tending towards putting concepts together again, so that rigidity can now be reshaped into a totality. Thus the recent advances in cognitive theory can now be used as a structure on which to hang the components and in this way rigidity may be viewed as a cognitive style. In this sense it may be a strategy or group of strategies that a particular individual adopts in his approach to a wide variety of problem situations, according to Shouksmiths (1973) definition. This conception of rigidity as a cognitive style seems to offer the best possible starting point from which to reconcile the many divergent views, theoretical positions and research findings on rigidity.

The label "rigidity" was first attached by R.B. Cattell (1935), to a kind of perception that was first observed in the laboratory by Spearman (1927) and consisting of perseveration from one simple repetitive motor task to another. Since then the term rigidity has come to mean many things to different authors and so there exists almost as many definitions of rigidity as there are investigators in the field. Thus Werner (1946) in his critical evaluation of the concept of rigidity states that "rigidity", taken in its functional sense "refers to sluggishness in the variation of a response". Goldstein (1943) defined rigidity as the "adherence to present performance in an inadequate way" and he identified two kinds of rigidity, primary rigidity which is independent of an impairment of abstract thinking and secondary rigidity which is the result of an impairment of abstract thinking. He explains this distinction by explaining that primary rigidity or "perseveration of set, is a basic lack of ability

to change from one 'set' to another." Secondary rigidity, according to Goldstein, "appears only if the task is too difficult," thus providing an escape from a frustrating situation.

One of the more comprehensive definitions of rigidity has been provided by Cattell and Tiner (1949) who elaborated upon the earlier definitions by Cattell (1935, 1946). They stated that rigidity could be conceived of in terms of either processes or of structure and they identified and defined three types of rigidity: disposition rigidity, process rigidity and structural rigidity. Disposition rigidity they defined as "a difficulty (slowness)in turning from old to new responses to a situation, when the new responses are clear to the individual's intellect and he wills to make them". Process rigidity was defined as "the tendency of a percept, or an emotion or a motor activity, to persist, when once activated, totally or partially, despite substitution of new stimuli for the original one that produced the process," while structural rigidity was defined by them as the "resistance of a habit or personality trait to forces which might be expected to change it, i.e., to cause learning." "Here the mode of response to a stimulus which is less rewarding continues to be made to that stimulus, totally or partially, on each subsequent repetition of the stimulus situation, despite a more rewarding response being possible."

Other definitions of rigidity also emphasize that it is a failure to change. Examples of other definitions are those by Rokeach (1948): "the inability to change one's set when the objective conditions demand it;" Buss (1952): "resistance to shifting from old to new discriminations"; Cowen (1952): "the tendency to adhere to an induced method of problem-solving behaviour when the induced solution no longer represents the most direct and economical path to the goal"; and Goldstein (1943) definition mentioned earlier.

Chown (1959) in a review of the literature on rigidity summarizes some of the weaknesses of these definitions of

rigidity. She says that "there is no agreement over the meaning of 'a demand to change', 'an inadequate performance', 'resistance to shifting a set', and 'inability to change'. For example, the change of method demanded in some tests has been one which is not essential to success in the task, it may even cause the time spent on the task to increase."

Goins (1962) sees the primary reason for the confusion and 'lack of clarity' that surround the concept of rigidity and the interpretation of data that has been derived from that concept as steeming from the fact that "there is no comprehensive concept for dealing with the subject matter." He also notes that "rigidity has been unsystematically related to, and often used synonymously for: set, Einstelling, mechanization, stereotypy, functional fixedness, inability or sluggishness of shift, variability, habit interference, retroactive and proactive inhibition, inflexibility, persistence and mental inertia, as well as perseveration." This was also noted by Luchins and Luchins (1959) when they wrote: "Rigidity has been used to refer to a characteristic of behaviour; to a characteristic of a person or of personality; to a factor in the person, either a specific or a general factor. It has been used in an all-or-none sense, as an attribute of behaviour which a person either possesses or lacks, as well as in a quantitative sense."

Viewing these seemingly diverse and disparate definitions of rigidity it can be seen that it may be possible to divide the different notions in two broad categories which perhaps can then be related under the rubic of a cognitive style. These two categories are: (a) those referring to particular types of behaviour and are essentially derived from studies on perceptual phenomenon, such as perseveration and co-satiation (b) those referring to personality characteristics or structure. Several authors have indicated a clear aware ness of this distinction (Goldner, 1957; Kounin, 1948; Luchins, 1951; Rehfisch, 1958). Goins (1962) also discusses this distinction and labels the two categories, behavioural rigidity-flexibility and personality rigidity-flexibility. Although most authors do not make this distinction between 'behavioural rigidity'

and 'personality-rigidity', an awareness that such a distinction exists can be seen in the work of Luchins and Luchins (1959), Chown (1959), Levine (1955), Cowen (1952), Cowen and Thompson (1951), Fisher (1949, 1950), Cattell and Tiner (1949), Werner (1946) and Goldstein (1943). Kounin (1948) makes a similar distinction when in reply to Werners criticism in 1946 says "the author (Kounin) is not defining rigidity as a behavioural trait, but as a construct. The construct of rigidity refers to a postulated property of personality structure that has its place in a series of inter-related statements and constructs in topological and vector psychology."

Earlier terms used in the study of rigidity implied that it arose out of some hypothetical, inherent characteristic of the individuals mental make-up. Thus Spearman originally ascribed perseveration to a "mental inertia", and Cattell had talked of a "rigidity disposition." This idea was taken further by Lewin (1935) who saw personality as being made up of many different 'physical systems' differing from each other in their degree of energy or tension, their differentiation and their rigidity, in the sense of fixity. He believed that rigidity arose through a lack of differentiation between psychical systems in the individual. Lewin demonstrated, by using a structured task involving drawing stereotyped 'moonfaces', that feeble minded children took longer than normals to reach satiation and that having reached that point they were unwilling to start a new task whereas the normal children were not co-satiated and willingly went on to the second task. His explanation was that the greater flexibility of the normal children enabled them to differentiate completely between the two tasks, so that satiation with the first did not affect the second (Chown, 1959).

This work started one of the major controversies in rigidity research. Kounin in 1941 repeated much of Lewins work and achieved almost opposite results. Kounins explanation for these results (Kounin, 1948) was that

subparts of the personalities of the feeble minded children were so completely segregated that the subparts dealing with the first task had no communication with the second. Werner (1946) in a critical article disagreed with Kounins explanations, pointing out that by employing the structural conception of Kounins instead of a functional conception "one would be led to the absurd conclusion that brain-injured children are less rigid than normal children and non-brain-injured feeble minded subjects". In explanation of the divergence in experimental results Werner suggested that since Lewin's second task had been a free drawing one, quite different from his first task, while Kounin's second task had been a structured one, very similar to the first, it was likely that co-satiation was irrelevant. He points out that any monotonous task, such as drawing moon-faces or cats for a considerable time, is usually disagreeable to the normal child because it interferes with his desire for free and spontaneous activity. He welcomes the opportunity to shift to spontaneous drawing. As a rule feeble minded children are not opposed to monotonous work; they rather like it. Thus, it seemed that feeble minded subjects were less easily satiated than normals on a repetitive and structured task, but less willing to embark on a free, imaginative one.

L.L. Thurstone in his monumental study on perceptual rigidity (Thurstone, 1944) presented one of the first factor analysis of the data. This study was designed with the intention of demonstrating the personality variables affecting perception. Although he failed to relate his findings to individual personality by means of the Rorschach test, the three factors he produced have remained central to much of the study of rigidity. These factors were firstly, speed of various perceptual functions was shown to be related to such variables as tolerance of ambiguity. Secondly, flexibility in the manipulation of several 'Gestalten' at once was related to abstract thinking and symbolic performance. Thurstone's third factor was that

of primary mental abilities.

Goldstein was the next investigator to study these personality variables. In earlier investigations (Goldstein and Scheerer, 1941) he had found that the degree and site of damage to the brain in his neurological patients was an insufficient explanation of their perceptual differences and so he turned to their personalities for an explanation. Many of the tests in his test battery have been adapted to measure rigidity in normal individuals. Goldstein (1943) pointed out that far from being a perceptual peculiarity of certain individuals, as much of the former work had implied, some degree of rigidity or 'slowness of response adaptation' is a natural phenomena. From this basis Goldstein distinguished his two types of rigidity. This then enabled a distinction to be made between the kind of perseverative behaviour originally observed by Spearman and his followers, and the defensive reaction which had so confused Lewin in his feeble minded subjects.

This assumption that variation in degree of rigidity arose from personality variables, received support from many leading theorists who were increasingly concerned with the intimate entanglement between personality and perception, although his approach did not go unchallenged. As Leach (1967) points out from that time, until the present day "there has been a comparatively clear division of interest between workers who like Goldstein, felt that personality effects were the most interesting and important part of perceptual research, and those who, while accepting the existence of these effects, were anxious to exclude them in order to study perceptual responses in isolation."

The latter approach to rigidity contains the essential notion of response to change in a situation and has been termed by Goins (1962) "behavioural rigidity flexibility" and he provides a comprehensive definition which he has derived from the various definition and in an attempt to overcome the criticisms of them. He defines behavioural rigidity-flexibility as "(a) the degree or amount (in time, trials etc) of change in response (behaviour), (b) with

respect to the average or normal change for a given situation, (c) where more effective behaviour is demanded." He concluded his definition by saying that "rigid behaviour is that behaviour marked by a below average response in such change-demanding situations where a more effective response is possible."

Although this group include R.B. Cattell (Cattell and Tiner, 1949) who wanted to isolate his "rigidity disposition" which he believed to arise from "resistance to change of neutral pathways" and he believed that it could only be isolated if tests are devised which excluded all "spurious causes of rigid behaviour". Cattell's spurious causes included all personality variables and in order to dismiss them Cattell provided a list of the ways in which personality variables might produce rigid behaviour. This list served subsequent research workers as the clearest statement of these effects which had yet been made.

Another author who took an even stronger stand against the inclusion of personality variables was taken by Luchins. Luchins (1942) administered his own waterjar test of the Einstelling effect to some 10,000 subjects and he then listed the reasons he had observed for subjects failing to change set at the appropriate point in the test. This then led to the Luchin-Rokeach controversy when Rokeach (1948) and others noted that these reasons could be explained in terms of an underlying rigidity in the individual subjects. Luchin's first and major objection to this and to the fact that the waterjars test was included in test batteries of rigidity was based on the grounds that the test had been designed to measure readiness to change set, while this use of it assumed that it measured ability to do so. A later study by Levitt and Zelen (1953) suggests that this objection was a valid one when they showed that if the efficiency with which the waterjars problems were solved was measured in terms of speed, it was often more efficient to maintain the

established set throughout. But despite Luchins objections and the subsequent supporting experimental work the Luchins list of reasons for failure to change set became a vital statement of the distorting effects of rigidity or problem-solving behaviour and so some Einstelling have been included in almost every subsequent rigidity test battery.

The work on personality variables in rigidity received a boost when the Californian researchers investigating prejudice which was eventually to be reported in "The Authoritarian Personality" concluded that their "most crucial result ... (was) the demonstration of close correspondence in the type of approach and outlook a subject is likely to have in a great variety of areas, ranging from the most intimate features of family and sex adjustment through relationships to other people in general, to religion and to social and political philosophy" (Adorno et al, 1950, p. 971). This conclusion suggested to many the existence of a general rigidity syndrome although one of the authors, Frenkel-Brunswik had already entered the field of rigidity study. Unlike most workers in the field who had their primary interest in perception and had come, gradually, to realise the improtance of personality variables, Else Frenkel-Brunswik had started research in psychoanalysis. Her interest in rigidity, or as she terms it, intolerance of ambiguity, started from finding concerned with individual variations in tolerance of emotional ambivalence in the self. This start led her to demonstrate that variables such as perseveration, premature closure, reluctance to change set or inability to learn from changing stimuli in social relationships and social attitudes (Frenkel-Brunswik, 1948). In this study she concluded that not only was rigid perceptual behaviour correlated with certain personality traits, but that it was in itself a manifestation of total personality structure when she found that extremely ethnically prejudiced children tended to display marked perceptual rigidity.

From these beginnings a number of people began to study the way rigidity was related to various personality traits, usually with very little agreement between studies. Walpert (1955) summarized this relationship, which arose through studies arising from Frenkel-Brunswiks work, by saying that individuals with such a rigidity syndrom "would be expected to think concretely, to show little variability in behaviour, to evidence prejudice against minorities, to have few methods available for solving problems, to conceive of interpersonal relationships in terms of power hierarchies, and in general to exhibit impoverishment in all areas of functioning."

From this study the term "personality rigidity" came to be used, according to Goins (1962), to refer to both (a) personality traits and characteristics, and to (b) personality structure of functional organisation, although he considers that as the references to traits predominate the term is better used to refer to traits. In his survey of the literature Goins (1962) states that he found no less than 118 traits and descriptive terms related directly or indirectly to rigidity. These arose from (a) clinical observations, impressions and ratings, (b) tests and observations of specific behaviour, (c) interviews and projective techniques and (d) questionnaires and self ratings.

Rehfisch (1954) surveyed a number of personality studies and provided a comprehensive basis for grouping this voluminous list of personality traits and characteristics. He summarizes the traits most commonly found associated with rigidity as (a) constriction and inhibition, (b) conservation, (c) intolerance of ambiguity and disorder, (d) obsessive and perseverative tendencies (e) social introversion and (f) anxiety and guilt, and concluded that "this summary may be considered as a comprehensive connotative definition of the term personality rigidity, established empirically according to the criterion of common psychological useage."

He later applied an item analysis technique to 957

personality items (Rehfisch, 1958a) and derived a 39 item scale to measure personality rigidity. His criterion for scale construction was the rigidity ratings by staff assessors from the Institute of Personality assessment and Research of 330 subjects. The definition of rigidity used by these assessors was "inflexibility of thought and manner, stubborness, firmness, and pedantry." Rehfisch found that subjects rates high on rigidity differed from the low rated subjects on the self-report items of the personality scale in being "socially and emotionally constricted; anxious; intolerant of disorder, irregularity and unpredictability; perseverative; slow in making decision; conservative; conventional; lacking in self-confidence; misanthropic; and obsessionally involved in work." Thus it was found that the self-descriptions tended to be consistent with the ratings of the assessors who themselves showed significant interrater reliability, causing Rehfisch to conclude that "rigidity apparantly exists as a sufficiently perceptible personality trait, so as to be rateable with significant interrater reliability." Goins (1962) suggests that this definition of personality is justified at this time, not only because it is one that was suggested by the existing literature, but also because most of the trait groups appear to have high face validity for such situations where change is demanded. This is also indicated by Rehfisch's cross validation study of his personality rigidity scale, where he found significant correlations with traits and statements of likely measures of such behaviour. Thus Rehfisch (1958b) found high scores on his scale to be (a) socially introverted and lacking in social prescence (defined as poise, spontaneity, and self-confidence), (b) submissive and low in leadership qualities; (c) anxious and self-disparaging; and (d) unoriginal and relatively deficient in cognitive and motivational factors associated with intellectual competence and achievement.

Although Rehfisch's conclusions of a general personality rigidity syndrome has been given support by many investigators, there are just as many investigators who have obtained

conflicting results in their search for a general syndrome. In this search two experimental approaches have been taken by investigators attempting to demonstrate or to deny the existence of a general rigidity syndrome. The first approach seeks to determine whether personality tests differentiate rigid from non-rigid groups established by other test criteria. The second approach seeks to determine whether individuals tend to get similar scores or different rigidity tests.

Cowen and Thompson (1951) and Pitcher and Stacey (1954) differentiated rigid and non-rigid on the basis of performance or rigidity criterion tests. In both studies, pencil and paper personali y tests failed to differentiate the groups established by the criterion tests. This led Pitcher and Stacey to conclude that the existence of a generalized rigidity factor was not demonstrated. In the Cowen and Thompson study, however, judges' ratings based on Rorschach protocols indicated that the rigid group had a significantly poorer adjustment than the non-rigid group. In addition, individual comparison on certain Rorschach factors postulated as measures of rigidity did successfully differentiate the rigid and non-rigid groups. Consequently these authors, on the basis of their more extensive experimental design, concluded that they had confirmed the existence of a generalized rigidity response tendency. While the findings of these two studies are not contradictory, the conclusions drawn by their authors are.

Contradictory findings are reported by those investigators who have attempted to demonstrate the existence of a generalized rigidity syndrome by determining whether individuals tend to achieve similar scores on different rigidity tests. Rokeach (1948) found that subjects scoring high on the California E Scalescored rigid on various Einstelling tests and concluded that rigidity in the solution of social problems is related to rigidity in the solution of non-social problems. Cowen, Weiner and Hess (1953) found a low but significant correlation between rigid behaviour on two structurally similar but contentually dissimilar problem solving tasks and concluded that a

generalization of problem solving rigidity had been demonstrated. On the other hand, Luchins (1951) found no clear-cut positive relationship between the sub-tests of his clinical battery. Neither Applezweig (1954) nor Goodstein (1953) was able to find a correlation between scores on different rigidity tests and both concluded that it was impossible to demonstrate a general factor of rigidity. Goodstein was unable to repeat Rokeach's correlations using three rigidity tests and four of Thurstone's attitude scales. Negative correlations between different rigidity tests or between social and non-social problem solving tasks related to rigidity have also been reported by Bringmann (1967); Drakeford (1969); Foster Vinake and Digman (1955); French (1955); Fink (1958); Kenny and Ginsberg (1958); and Wolpert (1955) although these studies are all open to criticism.

As Levitt and Zelen (1953) and Frick and Guilford (1957) have pointed out with respect to the water jars test, the tests used in these studies have not always related very well to the definition of rigidity they are based upon and also that they were not always good psychometric instruments. Goin (1962) also dismisses the studies which did not find a significant correlation between their different measures of rigidity, by pointing out that few of them claim to have conclusively disproved the existence of such a characteristic and indeed practically all of them found a relationship between some, though not all, of the measures. In addition it should be pointed out, many of these studies were more properly measuring a temporary condition (set, Einstelling) rather than a true (relatively stable) variable, and were based on the questionable water jars test.

Despite these negative findings, the notion that a unifying and underlying structure or functional organisation exists is strengthened by the fact that many

investigators (Adorno et al (1950); Cowen and Thompson (1951); Cowen, Wiener and Hess (1953); Frenkel-Brunswik (1949); Johnson and Stern (1955); Lewin (1935); Moldawsky (1951); Pullen and Stagner (1953); Rokeach (1948, 1949); Schmidt, Fonda and Wesley (1954); Kidd and Kidd (1972); Rehfisch (1958); Goins (1967)), did find a significant correlation between their different measures of rigidity and/or suggested that rigidity is a generalized characteristic or has functional unity.

Although these studies strongly suggest the existence of a generalized characteristic, we know frommany studies (Bieir 1951; Cowen 1952; Fisher 1950; Luchins 1942; Applezweig 1954; Brown 1953; French 1955; Kogan and Wallach 1964) that rigidity can be minimized or maximized by adroit manipulation of test conditions. For example, although it was shown by Rokeach (1948) that there was a correlation between rigid behaviour on social problems and rigid behaviour on non-social problems, Levitt and Zelen (1953) showed that Rokeach's correlation itself can only be obtained under certain specifiable conditions. Thus it seems then that Rokeach's results depend upon the test conditions rather than upon a generalized rigidity syndrome operating at all times to the same degree.

The general picture of experimental results, then, is that while in most cases the existence of a general rigidity syndrome becomes more doubtful as the indicators testing rigidity become more distant in subject matter, form and operations involved, nevertheless exceptions to this rule suggests such a syndrome may still exist.

While many approaches are possible towards the eventual clarification of rigidity, future conceptualization seems most likely to be along cognitive style conceptualizations. In this section I have tried to show how the concept of rigidity arose, the different theoretical and experimental developments which have all led to the present confusion. At the present time the concept of a

general syndrome of personality rigidity is most in favour but studies have shown that this does not appear to be a relatively stable characteristic but rather appears to depend on test conditions. Thus rather than being a 'personality' characteristic of a particular individual rigidity now appears to be a strategy or group of strategies that the individual may use in his approach to a wide variety of problem situations depending on the particular conditions of each particular problem situation. In this sense rigidity can be referred to as a cognitive style. Thus it is suggested the search for a generalized rigidity syndrome ought to be abandoned and in its place substituted a search for conditions under which rigidity as a cognitive style might be manifested.

CHAPTER THREE DEPRESSION - PROBLEMS OF DEFINITION AND CLASSIFICATION

Attempts to classify and define affective disorders in subtypes has had a long history. Depression (or melancholia) has been recognised as a clinical syndrome for over 2000 years, although as yet no completely satisfactory explanation of its puzzling features has been found. For at least this length of time however, the primary explanations of depression have been in terms of some specified physical basis, usually constitutional and sometimes hereditary in nature.

The first clinical descriptions, of what was then called 'melancholia' were made by Plato and later by Hippocrates in the fourth century B.C. Plato (Zilboorg and Henry 1941) thought that individuals who were too happy or too sad were devoid of reason while Hippocrates referred to swings similar to mania and depression, although he did not make any connection between the elation of the manic and the melancholia of the depressed patient. Hippocrates and Plato according to Wittenborn (1965), both referred to depressions as due to a disturbance of body juices, and the term 'melancholia' may have originated with Hippocrates' emphasis on the preponderance of black bile in those persons afflicted with depressions.

It was not until several centuries later that any additional contributions were made to this subject. These contributions were made by Aretaeus, a physician living in the second century A.D. Aretaeus' views included the principles that mania and depression may be different manifestations of the same underlying disorder, that depressive disorders occur later in life than schizophrenia, that such disorders are not malignant and may be intermittent in their appearance, He observed that, although the two states are related, mania is not always an outcome of depression. He also observed that

the intellectual functions are less affected than the emotions and noted that some persons were prone to develop a depressive manifestation as merely an extension or an exaggeration of their normal personality. He seems thus to have anticipated for at least seventeen centuries the contribution that was later made by Kraepelin and in certain ways he went even further, for he felt that spontaneous remissions were not reliable.

The findings of Aretaeus were soon forgotten and it was not until 1854 when the French physician Falret reported observations of alternating attacks of depression and excitement in the same individual which he described as "la foile circulaire" (circular insanity), that any one again described the condition. Influenced by the work of these French Physicians, Kraepelin studied many patients and conceived the concept of manic-depressive psychosis as one syndrome, which, in its many varieties included simple mania, most cases of melancholia, and the periodic and circular insanities. Kraepelin worked in the field of manic-depressive psychosis for many years, but it was not until the sixth edition of his book published in 1899, that he used the term "manic-depressive insanity" and only in the eighth edition (1913) that he fully expanded his nosologic concept. (Arieti 1959).

Kraepelins reasons for including all these syndromes in a large nosologic entity was based on the fact that these syndromes, in spite of many external differences (1) have common fundamental features, (2) not only cannot be easily differentiated but may replace each other in the same patient, and (3) have a uniform prognosis. Although neither his concept nor his reasons were at first universally accepted, they gradually gained acceptance and now form the basis of modern classification systems of depression although attempts continue to be made to separate the single or recurring depressions from the complete manic-depressive circular syndrome.

Thus at the beginning of the twentieth century, the study of mental disorders was primarily classificatory in its emphasis, with a Continental enthusiasm for diagnostic labelling epitomized in the classical writing of Kraepelin and with an English search for hereditary traits which could be used to identify the disorder and predict its course.

Philippe Pinel, the outstanding figure in the early movement for humanitarian treatment of the mentally ill, described in 1801 the symptoms of melancholia as follows:

> "...taciturnity, a thoughtful pensive air, gloomy suspicions, and a love of solitude. Those traits, indeed appear to distinguish the characters of some men otherwise in good health, and frequently in prosperous circumstances. Nothing however, can be more hideous than the figure of a melancholic brooding over his imaginary misfortunes. If moreover possessed of power, and endowed with a perverse disposition and a sanguinary heart, the image is rendered still more repulsive". (Zilboorg and Henry 1941).

Perhaps the most noteworthy features of these historical descriptions of depression are that they include almost all the typical characteristics of this condition and also that the descriptions have remained constant over such a long period of time. These historical descriptions indicated that its manifestations are observable in all aspects of behaviour, including the traditional psychological divisions of affection, cognition and conation.

Because the most striking features of depression are the disturbed moods, it has become customary over the last one hundred years to regard this condition as a 'primary mood disorder' or as an 'affective disorder'. Beck (1967) states that the importance that has been ascribed to this feeling of effective component is shown by the practice of utilizing affective check lists to define and measure depression. It is also shown by the emphasis in many textbooks of psychiatry and clinical psychology on the affective symptoms in depression almost to the exclusion

of any discussion or the other symptoms of depression. Although there has been fairly wide agreement as to the attributes of depression, there has not been the same unanimous agreement when it came to conceptualizing depression. The difficulty this has presented has generally been a semantic one viz whether the term 'depression' is used to apply to or designate: a particular type of feeling or symptom; a symptom complex or syndrome; or a well-defined disease entity or illness.

When normal people say they are depressed they are usually using the term in the sense of a particular type of feeling and mean that they have observed a lowering of their mood below a baseline level. Thus a person experiencing a transient sadness or loneliness may say that they are depressed. It is not known whether this 'normal' mood is in any way synonymous with, or even related to, the type of feelings that are experienced in the abnormal condition of depression although these episodes of low mood or of feeling blue are similar in a number of ways to the clinical states of depression. First, there is a similarity between the descriptions of the subjective experience of normal low mood and of depression. The words used by depressives to describe their feelings tend to be the same as those used to describe a normal low mood - blue, sad, unhappy, empty, low. This similarity may also be due to the fact that the depressed patient may draw on a familiar vocabulary to describe a pathological state for which they have no available words and many patients state that they are unable to describe adequately their feelings in words and that it is unlike any feeling they have ever had before. The other similarities between clinical depression and a normal low mood include: the fact that the behaviour of depressed patients may resemble that of a person who is sad or unhappy, particularly the mournful facial expressions and the lowering of the voice; the vegetative and physical

manifestations characteristic of depression can occasionally be seen in people who are sad but would not be considered clinically depressed i.e. a person who has lost a job may experience anorexia, insomnia and fatigability; the consistent or rhythmic fashion in which many clinical depressions occur can also be seen in the way many people experience a lowering of their normal mood.

The second application of the term 'depression's is its usage to designate a complex pattern of deviations in feelings,cognition and behaviour that is not represented as a discreet psychiatric disorder. In these cases it is regarded as a syndrome or syndrome-complex. This cluster of signs and symptoms is often conceptualized as a psychopathological continuum ranging in the degree of abnormality from mild to severe (Krupp and Chalton 1973). Thus the syndrome of depression can be a concomitant of a definite psychiatric disorder such as schizophrenic reaction. In this case the diagnosis could be "schizophrenia with depression". At other times the syndrome may be a manifestation of or secondary to, organic diseases of the brain such as general paresis or cerebral artereosclerosis.

Finally, the term depression has been used within the medical model of psychiatric disorders to designate a discreet nosological entity. Used in this sense it is generally qualified by some adjective to indicate a particular type or form, as for example: reactive depression, psychotic-depressive, reaction or agitated depression. When the term depression is conceptualized as a distinct clinical entity it is assumed to have certain constant attributes which include a specifiable type of onset, course, duration and outcome.

Usually, whether the term depression is used to designate a mood, a syndrome or an illness depends on whom treats the patient. As long as family or friends can cope with a

patients change it is usually called a 'mood' but when he develops some symptoms that require the attention of a general practitioner - for example anorexia or insomnia - it is regarded as a syndrome and ultimately when a psychiatrist is seen to be needed it is regarded as an illness because the patient requires specialist assistance. Depressive syndromes are seldom labelled 'illnesses' by the general practitioner who if called upon to 'diagnose' the patient does so in terms of a single symptom - for example an "anorexic" or an "insomniac".

Despite the general acceptance of descriptions of depression and the distinction between mood, syndrome and illness as well as the promise of exciting new approaches to depression, the essential nature of the depressive disease is yet to be defined, and indeed it cannot yet be stated with confidence whether there are several depressive diseases or no disease at all. Because of this uncertainty about the essential nature of the depressive disorder or disorders it is probably still premature to discard classificatory interests and standard descriptions.

Currently there are three approaches to the classification or description of mental disorders. Of most interest in practice are those distinctions which the clinical practitioner uses (Wittenborn 1965). In addition however, there are those diagnostic classification systems that are traditionally used for official records and the maintenance of continued mental-health statistics and there are also the symptom-cluster scores based on factor-analytic studies which measure patients descriptively instead of classifying them. Although these three approaches may appear to be the same and in fact they often use the same terms and descriptions it must be remembered that each is based on different assumptions and are used for widely different assumptions and are used for widely different purposes. The clinicians 'diagnostic'

label is usually a shorthand method of telling him what the presenting symptoms were, what the ongoing treatment should be and the possible prognosis. The traditional diagnostic categories are often very similar if not the same as those employed by the clinician but there purpose is more likely to be a statistical one from which trends and patterns over time hopefully emerge. The factor-analytic approach to diagnosis is more likely to be used as a research tool than as an aid to treatment and alleviation of the depressive disorder.

From the clinical and statistical approaches to the classification and description of mental disorders have arisen a number of different systems of classification. The present systems of classification represent a composite of many of the ideas of several schools of thought; particularly those of Emil Kraepelin, Adolph Meyer and Sigmund Freud. The division of the various nosological categories, particularly of the psychoses, reflects the original boundaries between the disorders that were distinguished by Kraepelin. The most significant major modification to Kraepelin's original classification has been in the terminology that is now used which reflects the Meyerian influence. Meyer rejected Kraepelin's concept of disease entities and substituted instead the idea of "reaction types". These reaction types were conceived of by Meyer to be the result of the interaction between the specific hereditary makeup of the individual and the matrix of psychological and social forces that impinged on the individual. In 1908 Meyer wrote:

> "The etiology ... involves (1) constitutional make-up and (2) a precipitating factor; and in our eagerness we cut out the latter and only speak of the heredity or constitutional make-up. It is my contention that we must use both facts and that of the two, for prevention and for the special characterization of the make-up, the precipitating

> factor is of the greater importance because it alone gives us an idea of the actual defect and a suggestion as to how to strengthen the person that he may become resistive." (Wittenborn, 1965, p.1036).

For these reasons Meyers view was introduced into the nomenclature by the use of term "reaction". Freud's influence is seen in the various descriptions of the nosological categories in the American Psychological Associations Diagnostic and Statistical Manual which was first published in 1952 (DSMI). Here the specific syndromes or disease entities are outlined according to Freudian psychoanalytic theories; the various affective disorders are presented in terms of the concepts of guilt, retroflected hostility, and defence against anxiety.

To find depression in most modern classification systems it is necessary to hunt through many sections. For example the AMA's Diagnostic and Statistical Manual (1952) and the World Health Organisations Classification of Depressive Disorders (see Appendix one). This scattering of the affective disorders within the classification systems is a reflection of several historical trends including those that have already been mentioned. These trends have also included the dissolution of Kraepelin's grand union of all affective disorders into the manic-depressive category, the formulation of new entities such as neurotic depressive reaction, and also the attempt to distinguish between the various affective disorders on the basis of presumed etiological differences. Another reason for the wide array of nosological categories in which depressive symptoms or syndromes are found, is that different authors have ascribed different psychopathologies to depression. But Mendelson (1959) in reviewing the literature concerned with the classification of depression pointed out that different clinical groups of depressed patients were studied by these authors. Despite his objection to the

way new depressive entities have been formed Mendelson says:

> "... they are still the daily currency with which psychiatrists, in common with their medical colleagues, conduct their affairs. And even if this currency does not represent the pure gold of another era, neither can it be said to be entirely debased. The diagnostic categories must represent some approximate to clinical reality or else they would have gone the way of devils and humours in psychiatric thinking" (Mendelson, 1959, p.183).

So far there has been failure in psychiatry to establish any really adequate and universally accepted classificatory system despite what authors such as Mendelson alledge. This failure has proved a stumbling block to effective research, according to Kessell (1968), and has often frustrated communication and held back the development of scientifically based treatment methods. Even now there is still a great deal of controversy over the appropriateness of the use of any classification in psychiatry at all.

The kinds of problems involved in the use of the traditional classification systems are clearly seen when one looks at the depressive states, for despite the plethora of classifications, none has been generally accepted, and there has also been much semantic confusion with the use of such terms as 'reactive', 'neurotic', 'endogenous', and so on, when applied to depressive categories. Reviewing the literature we find that there are three major areas of concern: the distinction between the classification of categories in the border area between the depressive states and the schizophrenics; the classification of categories in the border area between depressive states and the psychoneuroses; and the classification of depressive subcategories within the generally accepted area of depression.

The distinction between schizophrenia and affective

disorders has always been a major feature of most classification systems since Kraepelin introduced the concepts of dementia praecox and manic-depressive psychosis at the turn of the century. Since that time it has generally been recognized that there are some patients who have both affective and schizophrenic symptoms and that the distinction is not as simple and as 'clear-cut' as was originally formulated. Various interpretations have been placed on these mixed states. Kendal and Gourlay (1970b) point out that some continental psychiatrists consider that these states constitute a third group of psychoses distinct from both schizophrenia and manic-depressive psychosis. They give as an example the degeneration psychoses of Kleist and the cycloid psychoses of Leonhard. But by others, these mixed states are regarded as genuine mixed states, with the implication that elements of both the schizophrenic and the depressive disorder are contributing, perhaps because of the genetic or constitutional endowment being mixed, perhaps because two alternative types of defence mechanisms are being used at the same time.

Often the mixed symptomology is simply ignored, either by discounting the schizophrenic symptoms and focusing attention on the mood change, or as in many cases, glossing over the affective symptoms and regarding the illness as a form of schizophrenia differing in no significant respect from other schizophrenias. Lewis and Piotrowski (1954) suggested that many cases are diagnosed incorrectly as manic-depressives because of insufficient recognition of the schizophrenic symptoms. They concluded that "nearly all errors of diagnoses were made not because of insufficient observation of symptoms but because of failure to interpret the diagnostic significance of the symptoms", and they emphasised "even a trace of schizophrenia is schizophrenia and has a very important prognostic as well as diagnostic significance."

Because of the confusion that exists in this borderland

state between schizophrenic and depressive disorders there are some cases that initially evince the clinical picture of depression which later develop symptoms of schizophrenia, but it is rare for a patient who has symptoms of schizophrenia to later develop manic-depressive symptoms. These facts have led some authors to propose that a continuum may exist between depression and schizophrenia as an alternative hypothesis to dismissing the facts as due to a failure to interpret the diagnostic significance of the symptoms. Fenichel (1945) felt that what was most important was what the two disorders had in common rather than differences. These similarities, he believed, were namely a tendency towards narcissistic regression, loss of objects and of reality testing. He also believed that "the pathogenic fixations of schizophrenia may tentatively be considered as related to a still earlier stage than those found in depressions."

This view has also been expressed by a number of other people although no experimental evidence is cited. Cohen et al (1954) for example felt that manic-depressive psychosis can be thought of as serving a defensive function against the still greater personality disintegration which is represented by the schizophrenic states. The implication is that in persons whose conflicts and anxiety are too severe to be handled by depressive or manic defenses, a schizophrenic breakdown may be the end result.

In order to experimentally test these hypotheses Clark and Mallett (1963) conducted a follow-up study of cases of depression and schizophrenia in young adults. Seventy-four cases were diagnosed as manic-depressive psychosis or reactive depression and 76 patients who were initially diagnosed as schizophrenic were followed for 3 years. During the follow-up period 70% of the schizophrenics were re-admitted, as were 20% of the depressives. Thirteen (17%) of the schizophrenics became chronic, as compared with

only one (1.3%) of the depressives. Of the 15 depressed patients requiring re-admission to hospital, four were considered to have schizophrenia at that time (5.2%). Of the 76 patients initially diagnosed as schizophrenic, none was considered to have a depressive disorder on re-admission.

Despite the proposed hypotheses that manic-depressive psychoses are lesser defensive mechanisms of a greater schizophrenic personality disintegration the literature tends to support instead a model which regards mental illness as a spectrum with manic-depressive illness at one end, schizophrenic illnesses at the other, and mixed states in the middle sharing symptoms of both states. This division is also upheld by the differential effectiveness of certain treatments where it has been found that patients diagnosed as schizophrenic tend to respond favourably to such medication as phenothiazines, whereas patients who are primarily depressed tend to improve with either electroconvulsive treatment (ECT) or the so-called antidepressant drugs. The distinction is also seen in the rate of recovery and chronicity of the two disorders. Depressive disorders have a relatively high rate of complete recovery, a low rate of relapse and a low rate of chronicity, whereas schizophrenia has a high rate of relapse and a high rate of chronicity. Between the two, the mixed states according to Kendall and Gourlay (1970b), are intermediate in both symptomatology and prognosis.

Less clear is any distinction between depressive states and the psychoneurosis. Depression is often considered in some cases to be a psychosis and in others to be a neurosis and the distinction is still one of the great controversies about the subcategories within the group of affective disorders. In the English speaking countries, much of the argument over the classification of the depressive states has involved the questions of a dichotomous classification; reactive (exogenous, neurotic)

and endogenous (manic-depressive, psychotic) depression. Their independence has been affirmed by a number of workers but has been denied by others who considered that these entities were essentially a single clinical disorder that can express itself in a variety of forms.

From the various conflicting and complimentary opinions Beck (1969) has drawn a composite picture of both endogenous and reactive depression which distinguishes them. He states that in general there are two major defining characteristics of the category endogenous depression. First he said, it is generally equated with psychotic depression and secondly it is regarded as arising primarily from internal or physiological factors. The etiology of endogenous depression has been ascribed to a wide variety of causes which have included toxic chemical agents of various sorts, hormonal factors, and even metabolic disturbances, while the symptomatology has been characterized as a diffuse colouring of the whole outlook, diurnal variation, detachment from reality, loss of affection and loss of power to grieve. Reactive depressions are distinguished (Beck, 1969) from endogenous depressions because they fluctuate according to ascertainable psychological factors which are primarily external stresses (bereavement, financial reverses, loss of employment.)

Thus the controversies that have arisen about the subcategories within the depressive disorder are essentially arguments over the unitary or binary nature of depression i.e. psychotic vis neurotic or endogenous vs reactive. Proof that there are two distinct clinical entities which would settle the controversies depends on a demonstration that patients with feature of both syndromes are less common than those with features only of one or the other. In other words, a bimodal distribution of scores must be demonstrated on some chosen dimension.

Mapother (1926) touched off the first of these debates

when he made a strong case on clincial grounds for the unitary nature of depression. He held (Beck, 1969) that he could find no other basis for the distinction than the practical difficulties connected with commitment procedures. He also viewed depression, whether they seemed to be "psychogenic" or endogenous, as being mediated by essentially the same means.

Since the original debate that was generated by this article by Mapother interest waned in the classification of depressive illnesses and it has not been until recent years that interest has revived, probably due to the introduction of the use of multivariate statistical techniques as tools for classifying, most notably that of factor analysis. These recent studies have tried to determine whether depressive illnesses are simply drawn from different points along a single continuum i.e. are in fact unitary, or whether a number of qualitatively distinct and separate entities exist.

Despite the use of these sophisticated techniques to find a more objective and empirical solution the disagreements still exist as shown by the recent debates between workers such as those of the Newcastle group and the London (Maudsley) group (Eysenck, 1970). Most of these studies have been concerned with simple classification of patients into two groups and few studies have explored the possibility of more than one dimension existing.

Hamilton and White (1959) performed one of the first factor-analytic studies to be concerned with the problem of the classification of depressive illnesses. They gave the Hamilton rating scale to 64 severely depressed patients, and the data that was generated was subject to factor analysis. This resulted in six orthogonal factors, with which they rotated the first three and then interpreted the first four. These four factors included such clinical features as depressed mood, guilt, suicidal attempts, loss

of insight and loss of interst. The first factor was identified as a factor of "retarded depression" and the second was identified as a factor of "agitated depression". The third factor which they called "anxiety reaction" was related to the outcome of treatment, while the last factor was identified as "psychopathic depression". As Hamilton and White pointed out, these dimensions obtained by factor analysis did not correspond to the conventional nosological classification of depression.

This study was quickly followed by a number of other studies most of which produced contradictory results and were often lacking in methodological rigour. Perhaps the most rigorous of these studies were those reported by Kiloh and Garside (1963) and Carney, Roth and Garside (1965) of the Newcastle group, Kiloh and Garside studied the records of 143 depressed outpatients and factor-analysed a check list of 35 clinical features. From the factor-analysis two factors were obtained. The first factor was a general factor of depression while the bipolar second factor was considered to differentiate between endogenous and neurotic depression. Kiloh and Garside then found significant correlations between certain clinical features and each of the diagnostic categories. A later study by Carney, Roth and Garside (1965) extended Kiloh and Garside's approach to include inpatients. They studied 129 inpatient depressives who had been treated with E.C.T. and followed up all patients for three months and 108 for six months. Initially all patients were rated for the presence or absence of 35 features which they considered to differentiate between neurotic and endogenous depression. A factor analysis of the clinical features produced three significant factors: a bipolar factor similar to that extracted by Kiloh and Garside which is not surprising considering the similarity in sample and method; a general factor with high loadings for many

features common to all the depressive cases studied; and a "paranoid psychotic factor." Apart from distinguishing the two groups on the basis of loadings on their symptoms, Carney, Roth and Garside also found that the bipolar factor distinguished two groups on the basis of their response to E.C.T.

But as Eysenck (1970) pointed out, there is not one but two problems to be resolved, relating firstly to the unitary or binary nature of depression and secondly to the categorical or dimensional nature of these illnesses. Factor analysis is only relevant to the first of these problems and factor analytic studies have tended to support the binary view although there has been the occasional negative findings, such as those of McGonaghy, Joffe and Murphy (1967). Related to the second problem is the distribution of scores which cannot throw any light on the binary-unitary problem.

In support of a dimensional system Eysenck pointed out that "the arbitrary nature of the system is use, and the unreliability of the diagnoses made, even by experts of high standing, speak eloquently against the underlying hypothesis of categorical allocation."

The problem then, assuming that factor analytic studies have proved categorically that there is a two dimensional space generated by the two dimensions, concerns the expected distribution of cases. Using a dimensional model the distribution would be expected to be a normal bivariate distribution while if a categorical model is used one would expect that the majority of cases would be clustered around the two major axes i.e. to be either endogenous or reactive. Consequently, a normal districution such as that found by Kendell and Gourlay (1970a) is as they suggest, suggestive of a dimensional model for both endogenous and reactive depression.

Eysenck (1970) in his article points out that previously Kendell has argued in favour of a continuum model and that this model is both inadequate statistically and irrelevant

psychologically. Using evidence from studies previously published on the dimensionality of psychotism and neurotism Eysenck (1970) argues for a dimensional model. From the evidence of dimensionality in these other fields Eysenck shows that although the factors found in studies on depression can be plotted along a continuum this is psychologically meaningless because the collapse of information or factors necessary to fit the single continuum makes it meaningless. Instead Eysenck proposes a two dimension model of depression with endogenous depression along one dimension and reactive depression along the other.

The arguments that Eysenck uses against the adoption of a continuum model of depression can also be used against his own two dimensional model although his acceptance of the need for a dimensional model can be accepted. Like the continuum model, the two dimensional model also involves a condensation of information, in this case on two dimensions rather than a single continuum. This suggests that the adoption of an n-dimensional model of depression which would not involve the same condensation of the various factors of depression that was the major fault in previously proposed models.

The number of dimensions that such a model would possess is still an unanswered question although there are a number of studies, which will be mentioned later, have suggested some answers to this question. Such an n-dimensional model as we have proposed would enable a move to be made away from the traditional neurotic-reactive versus psychotic-endogenous debates on the classification of depression. Such a model would thus allow for the incorporation of such dimension of depression as agitated vrs retarded, neurotic vrs psychotic, depressive vs manic psychoses, depressive equivalents, and depressions that are secondary to somatic disorders. Such a model we hope, would also enable the classificatory differences between the European and British school of thought to be conceptualized on a single model.

Such a model of depression would explain the large number of dimensions about by many factor-analytic studies and also help to explain why so many studies obtain factors that do not correspond to the usual psychiatric classifications. Although this need for an n-dimensional model may seem painfully obvious, few studies have systematically explored this possibility. This is probably due to the extensive use of factor-analysis as the main statistical tool to explore the classification of individuals. This technique isolates dimensions among rating variables although these do not necessarily coincide with groups of patients. Moreover, these dimensions are usually orthogonal so that variation along each is independent which means that a description of position on one such dimension will tell us nothing about position on any of the others. As Paykel (1971) points out "making such interpretations becomes particularly apparant when multiple factors are used to argue for multiple groups."

Recently, multivariate cluster analysis techniques have been reintroduced. These methods result directly in several mutually exclusive subgroups within which individuals are relatively similar and between which individuals are relatively different. A study by Paykel (1971) using cluster-analytic techniques on a population of depressives gives findings that suggest a model that goes beyond the simple division of depressives into two polar types which was suggested by previous factor-analytic studies. In his study Paykel rated 165 depressed patients from a variety of treatment settings, on clinical symptoms, previous history, life stress, and premorbid neuroticism. These ratings were then subjected to Friedman and Rubin's method of cluster analysis. The results of this suggested a hierarchical structure. At the first level patients were found to divide into two groups: one group of older patients more severely ill, and one group younger and more

mildly ill. At a second level he found that each of these groups then splits into two. He states that these four groups cover a wide range of heterogeneity, having at one extreme psychotic depressives, oldest, distinguished by marked severity of illness and showing a variety of features such as a distinct and different quality to the depression, guilt, anorexia, and delayed insomnia; and at the other extreme, the youngest group whose illnesses were mild and whose symptoms fluctuated moderately in response to environmental events.

Between these extremes were two other groups. The third group consisted of moderately depressed patients with a strong component of anxiety, a high incidence of previous illnesses and high neuroticism scores; while the other group comprised depressives with a strong admixture of hostility and self-pity.

The aim of this section has been to try and trace the development of the various categories and classificatory subtypes into which depressed patients have been subdivided over the years. The suggestion was then made that although the methods used have tended to subdivide depressed patients into distinct diagnostic categories which are later found to have only approximate boundaries, the bipolar nature of so many of these attempts could be better viewed as points within a multi-dimensional hyperspace and a method for exploring this possibility was presented and a study that has used this method in the classification of depressed patients.

CHAPTER FOUR COGNITIVE, PSYCHOMOTOR AND PERCEPTUAL DEFICITS IN DEPRESSIVE DISORDERS

INTRODUCTION:

The term 'psychological deficit' was introduced into the literature by Hunt and Cofer in 1944. Because the words that were currently in use at that time to describe some loss of perceptual, cognitive or psychomotor capacity (e.g. "dementia", "deterioration" and "regression") had become associated with various theories about the nature of this loss, they decided to use what they considered was a more neutral term, "psychological deficit". Hunt and Cofer defined "deficit" as "a persons performance in some situation at a level of efficiency below that expected from comparison with typical individuals or from some indicator in his own present or past behaviour" (Hunt and Cofer, 1944, p. 971).

Since their work was published a vast amount of research has been done on psychological deficit but unfortunately most of this attention has been devoted to research on schizophrenic deficit (Yates, 1966; Reitan, 1962; Buss and Lang, 1965), while the study of depressive deficit has been relatively neglected and not until recently has any comprehensive review of depressive deficit appeared (Miller, 1975).

In the area of deficit studies the researcher is interested in showing that a certain kind of perceptual, cognitive or psychomotor deficit is intrinsically associated with a particular psychopathological condition. In order to accomplish this task rigorously the researcher in this area must satisfy the following criteria:

(a) Adequate subject selection,
(b) demonstrate significant group differences, and
(c) be able to explain the specific meaning of group differences.

Price (1968) points out that researchers in the psychological

deficit area frequently employ complex experimental tasks but simplistically assume that a deficit on these tasks involves a single underlying deficiency.

The large number of ways that investigators have attempted to meet these criteria has led to one of the biggest difficulties in structuring the material on psychological deficit into a review. Another major difficulty stems from the fact that each of the studies reported in the literature has been composed by its author to stand as an individual unit. Even studies in a relatively restricted area, considered as a group, differ in as many ways as there are for them to differ, even though a considerable degree of uniformity in method may exist.

Thus in reviewing the area of psychological deficit a wide variety of functions are frequently reviewed. Hunt and Cofer (1944), for example, reviewed findings related to deficit in various diagnostic groups under the headings of general intelligence measures, receptor thresholds, aspects of perceiving, reaction time, latency and strength of the patellar-tendon reflex, ocular movements, finger-tapping speed, continuous work, free association, emotional behaviour, conditioning retention, and impression in memory, language and thought. Payne (1961), in his most comprehensive review of cognitive abnormalities, on the other hand, has considered the evidence for impairment of general intelligence, aspects of perception, fluency, inductive reasoning, originality, speed, persistence, error, distractibility, memory span, learning, retention, drive, rigidity and concept formation.

This chapter reviews the experimental studies of psychological deficit in depressives particularly as they relate to three specific areas of deficit: cognitive deficit, psychomotor deficit and perceptual deficit.

COGNITIVE DEFICIT IN DEPRESSION:

The affective disorders have always been considered to be free from intellectual impairment despite a number of studies that may have raised some doubts (Hunt and Cofer, 1944; Payne, 1961, 1973). However these studies, although

provocative, have been inconclusive mainly on methodological grounds. As Miller (1975) pointed out, studies done in this area have generally utilized only indirect measures of deterioration and have not made direct comparisons of the depressives' premorbid IQ's with IQs during the depressive episode.

General Impairment: As already mentioned there are summaries of research in this area by Hunt and Cofer (1944) and more recently by Payne (1961, 1973) that have suggested that there is deterioration in depressives intellectual ability and that this could be as great as that found in schizophrenics. Payne (1961, 1973) concluded from his review of the literature that in general, affective disorders appeared to have the same general level of intelligence when ill as schizophrenics. From his review he suggests that it seems possible that manics and depressives suffer more deterioration than the average schizophrenic group, since there is some evidence that their mean pre-illness IQ's are average or above. The evidence he uses to support this supposition comes from a study by Mason (1956). Mason used the records of a V.A. Hospital and obtained from the armies files the A.G.C.T. scores for 510 cases who had taken this test prior to the onset of acute illness. He then compared these scores for various diagnostic categories with the score obtained on the A.G.C.T. of 290,163 army inductees. From this he found that there was a relationship between intelligence as measured on the A.G.C.T. and the diagnostic classification, with schizophrenics other than paranoid and catatonic types, tending to have lower A.G.C.T. scores and the manic-depressive psychotics tended to have higher A.G.C.T. scores. Such conclusions as Payne makes from this data is tenuous to say the least, for a number of reasons. Mason's study has no control over whether the subjects A.G.C.T. score is a true reflection of their pre-morbid intellectual ability or merely a reflection of their intellectual ability in a non-acute phase of their illness. Miller (1975) has also pointed out that we know nothing about the similarity of the samples of depressives that were tested in many of the studies reviewed by Payne and the sample collected by Mason on a

large number of variables such as their age distribution, socio-economic status etc.

Additional evidence for an intellectual impairment in manic-depressives has also been provided from studies which have utilized the Babcock -Levy test (Babcock 1941; Rapaport et al, 1945; Shapiro and Nelson, 1955). These studies found that using this test there was a significant intellectual deterioration in manic-depressives although these studies did not find any consistent differences between manic-depressives and schizophrenics. Payne (1961) points out that the Babcock test is largely a test of speed and as such is clearly related to age and that the differences in the efficiency index may be due to these relatively specific functions.

Several studies have indicated that the deterioration in intellectual ability found in manic-depressives and endogenous depressives is reversed with improvement in clinical status, which suggests that unlike the deterioration that occurs in schizophrenia, the deterioration in depressives is not permanent or at least not as progressive as that in schizophrenia Davidson (1939) found that those manic-depressives who were clinically assessed as having improved after treatment increased their scores on the Stanford-Binet Intelligence Scale while those who were considered clinically worse were found at retesting to have a decreased Stanford-Binet Intelligence score. This was supported by Fisher (1949) who also reported an increase in depressives IQ's following clinical improvement. Because the patients in these studies had been successfully treated with electroconvulsive shock therapy, Miller (1975) suggested that the patients in these studies were endogenous depressives.

Thus it appears that manic-depression and endogenous depression may be associated with some general intellectual impairment during the illness, although evidence for this is not at all clear yet although the evidence for intellectual impairment in other types of depression is even more unclear.

Payne (1961, 1973) reported that neurotic depressives seem to have above average IQ's during the depression. Granick (1963) compared the performances of 50 psychotic depressives with 50 normal controls, which were matched for age, sex, race, education, religion and nativity, on the WAIS Information and Similarities subtests and on the Thorndike-Gallup Vocabulary test. He failed to find any significant differences in performance between the psychotically depressed group and the normal group although he did find a significant difference between scores on the Information subtest with scores on the Similarities subtest for both groups which was found to be related to increasing age within the two groups.

Unfortunately, studies involving the comparison of premorbid IQ's with their illness IQs have not yet been carried out on these diagnostic groups and pre-morbid IQ's haven't been reported in those studies involving neurotic or psychotic depressives so that no definite conclusions can yet be reached about whether these types of depression show any intellectual deterioration during their illnesses.

Intellectual Speed: One of the clinical characteristics or symptoms of depressives is their slowness to respond. Thus it is not surprising that there have been a number of experimental studies of intellectual speed which have tended to confirm this view for endogenous depression although the relationship between other forms of depression and intellectual speed has yet to be established or disconfirmed.

Rapaport (1945) was one of the first investigators to study this problem. In comparing a depressed group with a schizophrenic group he found that there was a significant lowering of the Digit-Symbol scores when they were compared with the Vocabulary scores for the depressed group. This finding suggested to Rapaport that a subjects performance on this test was sensitive to the motor retardation manifested by depressed patients and he concluded that "depression again appears to be the most potent common factor making

for impairment of visuo-motor speed".

Four years later Jastak (1949) re-analysed Rapaport's data and he noted that the schizophrenic group had a mean age of 31 years while the depressive group had a mean age of 49 years. He found that when age was held constant by means of test quotients, there was no significantly greater impairment on the performance subtests by the depressive group than that shown by the schizophrenic group.

In order to clarify this relationship, Payne and Hewlett (1960) tested 20 normals, 20 neurotics, 20 endogenous depressives and 20 schizophrenics who were matched for age, pre-illness intellectual level, socio-economic status and educational attainment, on a large number of tests, including the Nufferno Speed Tests. These tests consisted of Thurstone-type letter series items, the subject being required to write down the next letter of the series. These tests were presented in three forms. The first test consisted of relatively easy items of a homogenous difficulty level which was given individually under 'unstressed' conditions in which the subjects were told to work at their own rate although they were timed unobtrusively; the second test which followed the first was similar but consisted of a homogeneous set of more difficult items which were also given individually under 'unstressed' conditions in which the subjects were told to work at their own rate; and the third test consisted of items of the same level of difficulty as the first test but were given individually under 'stressed' conditions in which the subjects were told to work as quickly as possible and that they were being timed.

Payne and Hewlett found that the five groups were significantly differentiated on all three tests, with the depressives being the slowest although they also found that the schizophrenics were slower than the neurotics and normals. Payne and Hewlett then hypothesised that the schizophrenics are slow as a result of overinclusive thinking, while depressives are slow because they are distracted by their

depressive worries. They then suggested that because of the overinclusive nature of their thoughts the schizophrenics would compensate for this slowness in problem solving by becoming more persistent whereas the depressives' worries would distract them from the task altogether. To test this hypothesis they derived a persistence score from the Nufferno Level Test, which was the sume of the two longest times spent during the Level Test on items which were subsequently abandoned or solved incorrectly. This persistence score was then compared for the two groups. This failed to show a significant difference between the two groups although the results were in the predicted direction.

Beck et al (1962) returned to the Digit-Symbol test in order to explore the relationship between depression and performance. They conducted a study with statistical controls for age and intelligence. The Digit-Symbol test and a vocabulary test were administered to a sample of 178 psychiatric patients. The scores that the subjects obtained on the Digit-Symbol test were then compared with their Vocabulary scores, age group, scores on a Depression Inventory and clinical judgments of the depth of depression, intensity of anxiety, and severity of illness by experienced psychiatrists. The results they obtained indicated that the Digit-Symbol scores decrease in a stepwise fashion with increasing age, and that they also increased in the same way with increasing vocabulary scores. When the age and vocabulary variables were held constant they found that Digit-Symbol scores were not associated with depression although they supported previous research in finding that psychotics did significantly worse on this test than neurotics.

Fisher (1949), however, reported that depressed patients who were rated as improved following electric shock therapy obtained significantly higher digit symbol scores, while the means of the unimproved and slightly improved groups were slightly lower after electric shock therapy.

Blackburn (1975) has pointed out that the inconsistency of these results might be due to the heterogenous nature of the groups studied, to a failure in some instances to control for age, and perhaps the inadequacy of the measures used.

Blackburn, in a study of mental and motor speed, used six groups of patients in order to control the neterogenous nature of the sample. These groups were: bipolar (Manic-depressive), actively manic; bipolar (manic-depressive) recovered manic; bipolar (manic-depressive) actively depressed; bipolar (manic-depressive) recovered depressive; unipolar (recurrent depressive) actively depressed; and unipolar (recurrent depressive) recovered depressive. These six groups were assessed for mental speed or speed or problem solving by the use of the Nufferno Speed Tests, unstressed and stressed forms. Three scores were used in the subsequent analysis - the unstressed speed, the stressed speed and the stress gain. Using these measures Blackburn found that although the ill and recovered manics did not significantly differ on the three measures, nor did the ill and recovered unipolar depressives. On the other hand the ill bipolar depressives were significantly slower than the recovered patients on the unstressed speed test although they did not differ significantly on the other measures. He also found that although the manic patients solve problems significantly quicker than those of either depressed group, none of these groups differed significantly from the scores of a normal unselected population. He concluded that only bipolar depressives seem to show true retardation.

Memory: There are a number of reasons to believe that memory, particularly short-term memory, plays a significant role in determining ones score on many types of cognitive test. Wechsler (1944) found that tests of immediate memory span (the Digit Span subtest) correlate highly with other cognitive measures. Payne (1961) suggests that this is because in order to solve the type of problems presented in most cognitive tests, it is necessary to hold the test instructions in mind, so that a person with a limited short-term memory span will be at a severe disadvantage on such tests. Thus a poor memory could be a leading factor contributing to a reduction of their general

cognitive level in abnormal subjects, although the tests of memory that have been used with these types of subjects have had one great drawback: it is not possible to discover whether the subjects memory span is small, or whether he merely failed to perceive the material in the first place simply because the subject was distracted. Such considerations are central to any discussion of memory deficit in depressives.

Payne (1961) noted that there was considerable evidence for a reduced memory span in psychosis and noted that Van der Horst in 1924 found psychotics to be poorer than normal on tests of short-term memory. This was supported by Eysenck (1952) who found that psychotics were inferior to both normals and neurotics. This was partially supported by Brengelman (1958) who found that psychotics were inferior to neurotics when a thirty second exposure time was used to the material but found that there was no difference when he used a two second exposure time. Cohen (1950), using the Wechsler Memory Scale which contains items that test the immediate memory span, found that psychotics were inferior to neurotics.

The differences between neurotics and psychotics on short-term memory scales has been clearly demonstrated and these differences have, not unexpectedly, been demonstrated between neurotic and psychotic depressives.

Both neurotic and psychotic depressives have been found to show memory deficits on tasks such as word learning tests, relative to other organic psychiatric patients and normals.

Kendrick et al (1965) presented the results of a validation study of a new form of the Walton-Black test using brain-damaged patients, depressed patients and elderly normals. They found that there was a significant correlation between the scores on this test and psychiatric diagnosis (r_{bis}= 0.97). A factor analysis yielded four significant factors, one of which was a factor of short-term memory. This was also supported by Post (1966) and by Walton et al (1959) who b th reported similar findings. Unfortunately these studies have no controls over intelligence or vocabulary or age and the memory deficits reported in these studies may be an artifact of the differences in these

factors between the control groups and the depressives. In fact Kendrick et al's first factor on an unrotated factor loading was one of general intelligence.

Payne (1961) noted that although Kibler (1925) found that manic-depressives had a better memory span than schizophrenics, this result was unable to be replicated by Braat (1936), Mountford (1939), or by Eysenck (1952). Henry et al (1971, 1973) gave patients who were diagnosed as having either bipolar manic-depressive psychosis or unipolar manic-depressive psychosis, a serial learning task and a free recall task. They found that the patients performance on the first trial of the serial learning task did not change significantly with significant changes in the level of depression which suggests that depression is not associated with impairment in short-term memory. Despite this finding, they did find that during depression however, both bipolar and unipolar depressives exhibited a significant decrease in performance on later trials of the serial learning task, as compared to their performances on days when they were less depressed. They also found that the unipolar depressives showed significantly greater impairment than bipolar patients. On the free-recall task they found that depression was only associated with significant impairment in the unipolar patients. Henry et al (1973) concluded from these results that depression interferes with the transfer of information from the short-term to long-term storage, and also the fact that memory impairment was found to be greater for unipolar than for bipolar depressives may have been due to the fact that the bipolar depressives were less severely depressed than the unipolar depressives.

Unfortunately, these studies have not allowed us to discern whether the effects and results that have been obtained are affected by factors such as age, intelligence, distractibility or anxiety. Although Henry et al (1973) interpreted their results in terms of interference with the transfer of information, it could also be due to a deficit in sustaining motivation to perform well as Miller (1975) has pointed out. Henry's (Henry et al, 1971, 1973) findings that depressives were impaired only on later trials of a serial-learning task and not on the first trial could not have been predicted on any of the current theories of cognitive deficit such as

the cognitive interference hypothesis used by Henry et al or Seligmans learned helplessness model (Seligman 1972, 1973).

Learning: Also important in any problem-solving situation is an individuals learning capabilities. Many cognitive tests such as vocabulary and information involve both long term retention and an individuals past learning abilities. Payne (1961) also points out the important role present learning ability has onmany other cognitive tests, particularly performance tests of various types, which require the subject to acquire new methods of manipulating material during the course of the test. The ability to learn to discriminate between presented stimuli also plays an important role in many cognitive tasks.

There have been several studies which have looked at discrimination learning in depressives. Generally their findings have been consistent and have indicated that depression is significantly associated with poor discrimination learning.

Martin and Rees (1966) compared the reaction times and muscle action potentials for patients with "primary depressive illness" and a group of normal controls. Reaction times were obtained under a variety of different schedules which manipulated the probability that a preparatory signal (a light) would be followed by the tone reaction time signal and also the duration of the preparatory interval by using both regular and irregular series. They found that the depressives showed the same increase in their muscle action potential scores to the light which was never followed by a tone as to the light which was always followed by a tone. Whereas their normal controls there was a significant difference in muscle action potential changes for the different lights. Of their depressed group of patients, the endogenous depressive were the least able to learn to distinguish between the two lights.

Studies of classical conditioning in depression have a long history in the study of cognitive deficits and have yielded conflicting results. Pfaffmann and Schlosberg (1935) were two of the earliest workers in this field and they found that both manic-depressives and schizophrenic patients averaged more conditioned knee jerks than college

students. This was supported by Shipley (1934) who found that schizophrenic patients both acquired and extinguished conditioned galvanic skin responses much more slowly than did any of his other groups, which in descending order were: manic-depressives, psychoneurotics, and college students.

Ban (1964,1974), has reported on some interesting work being done by Russian investigators, who include Faddeyeva, Protopopov and others, on the classical conditioning of manic-depressives. He reports that they found that in depression the unconditioned responses were prolonged and weak while in the manic they were short and strong. He also reported that conditionability decreased in depression and increased in mania. In a personal communication to the author, Ban (1974) reported that he and his colleagues had also conducted a number of conditioning experiments with various types of depressed patients (Ban, Choi, Lehmann and Adams, 1966). They also found that depressives exhibited significantly lower amplitudes of the unconditional response and the conditioned response as well as significantly lower conditionability relative to normals.

Overinclusive Thought: Overinclusion has for many years been postulated as a major factor in the thoughts of schizophrenic patients. This idea seems to have been associated only with the thought processes of the schizophrenic and studies of 'overinclusion' in depression are both few and inconsistent although they do seem to suggest that endogenous depressives are not abnormally over inclusive.

Payne and Hirst (1957) administered the Epstein Test of inclusive thinking to 11 depressed patients and 14 normal controls matched for age, sex and vocabulary level. Their findings indicate that depressives are more 'overinclusive' than the normals. They also compared their depressives scores on this test with those reported by Epstein in 1953 for schizophrenics and found that their depressives overinclusion scores were more abnormal than those of the schizophrenics in Epsteins sample. They offered two explanations for these findings:

1. That 'overinclusion' may be related to the specific symptom of depression and thus the schizophrenics in Epsteins sample are probably more depressed than normals but not as depressed as depressive patients.
2. That 'overinclusion' may be related to psychoticism and that their depressives were more psychotic than the schizophrenics in Epsteins sample.

These results were not confirmed by Payne and Hewlett (1960) who conducted a much more extensive, better controlled investigation which utilized 13 measures of overinclusion including Epsteins Test. They found that endogenous depressives were significantly less overinclusive than were the schizophrenic patients, while the depressives did not differ from normals, dysthymic neurotics or hysterics.

Conclusions: None of the studies quoted has demonstrated that there are impairments in cognitive functioning which are unique to depression.

There is some indirect evidence which has suggested that there is some intellectual deterioration which in manic-depressive illnesses may be as severe as that found in schizophrenia. The evidence also suggests that this deterioration found in depressives is reversiable and depressives recover their former intellectual level with their improvement in clinical status.

On tests of intellectual speed endogenous depressives perform slower than normals and neurotics although these measures have not been able to distinguish between schizophrenics and endogenous depressives.

Both neurotic and psychotic depressives have been found to show memory deficits, particularly short-term memory deficits, on tasks such as work learning tests relative to other organic psychiatric patients and normals but unfortunately the studies that have been carried out have not enabled us to discern whether the results that have been obtained are affected by factors such as age, intelligence, distractibility, anxiety or lack of motivation to perform well.

These have been several studies that have looked at

learning in depressives. These have tended to show that psychotic depressives exhibit impaired performance on both serial-learning and free-recall tasks whereas reactive depressives exhibit poor discrimination learning relative to normals.

Generally the studies on learning have found that depressives appear to view reinforcement in skill tasks as more response independent than do non-depressed subjects, while depressed and non-depressed subjects have similar perceptions of the reinforcement contingency in chance tasks.

Studies of classical conditioning in depressives have shown that in depression the unconditioned responses were prolonged and weak while conditionability tends to decrease relative to normals.

PSYCHOMOTOR DEFICITS:

Because their slowness of responding has been regarded as one of the primary characteristics or symptoms of depression it is not surprising that depressives have been found to exhibit psychomotor retardation relative to normals and neurotics. However, it has been found that although they are retarded they are not more retarded than schizophrenics.

Psychomotor Retardation: Numerous studies have shown that manic-depressives and endogenous depressives exhibit slower and more variable reaction times than both normals and neurotics (Hall and Stride, 1954). Although they are significantly faster than chronic schizophrenics. Similarly manic-depressives were found to be slower than normals but faster than schizophrenics on a speed of tapping test (Shakow and Huston, 1936). Psychotic depressives were slower than normals on a reaction time task and on the Wechsler Digit Symbol Test (Friedman, 1964).

But experimental results have been inconsistent as to whether retardation in depression can be objectively demonstrated and also as to whether mental and psychomotor retardation are present to the same extent.

Several authors have failed to find any evidence of retardation in depression. Shapiro et al (1958) found that compared with a control group, depressed patients did not show any improvement after recovery in their performance on a battery of psychomotor tests. Beck et al (1962) controlled for age and intelligence in a group of 178 psychiatric patients and found no relationship between digit-symbol scores and depression, although the Digit-symbol performance was significantly slower for more severely ill patients. Comparing Digit Symbol scores of patients in different nosological categories Beck et al (1962) found that neurotic depressives showed no performance decrements relative to non-depressed patients. Psychotic depressives did exhibit such decrements, but the psychotic depressives' Digit Symbol scores were not significantly different from those of schizophrenics. Thus the differences between the groups could best be accounted for in terms of severity of illness.

Other negative results have been reported by Colbert and Harrow (1968) and Tucker and Spielberg (1958) who found no significant difference between depressives and psychiatric controls on Bender-Gestalt reaction time or total response time. Alvarez (1962) using the Trailing Making Test with reactive depressives and brain damaged patients also came to the conclusion that deficits in performance scores was not due to lowered motivation due to depressive mood.

Other authors have made comparisons of the reaction times of different types of depressives and normals and have provided inconsistent results. Martin and Rees (1966) reported that endogenous depressives had significantly slower reaction times than did 'mixed' depressives (mainly reactive depressives) and normals although their results were contradictory. They found that in one experiment that the reaction times of the mixed depressives did not differ from the reaction times of the normals and in a second experiment they found that mixed depressives had significantly slower reaction times than normals.

They also reported, as did Friedman (1964), that for

depressives the last reaction time in a series is slower than the first, with their performances fluctuating more markedly and also deteriorating more markedly over trials. In order to account for these results they postulated a number of explanations:

(a) Depressives may have an increased susceptibility to fatigue,
(b) may be lacking in sustained motivation,
(c) may be unable to maintain concentration, and
(d) may be lacking in physiological preparedness to react.

Shapiro and Nelson (1955) administered a battery of cognitive and psychomotor speed tests to a group of female patients and to a group of normals. They found that all of the psychiatric groups were slower than normals on the speed tests. The slower the speed the more severely ill was the patient. In general, the groups were ordered as follows: normals (fastest) - neurotics - acute schizophrenics - manic-depressives - chronic schizophrenics - brain damaged subjects (slowest).

However, Payne and Hewlett (1960) used six tests of motor speed and intellectual speed and compared groups of normals, dysthymic neurotics, hysterics, endogenous depressives and schizophrenics, matched for premorbid intelligence, age and education. They found that all five groups were significantly differentiated on all six tests and that the endogenous depressives were slowest on four of the tests, although the speed scores of the depressives and schizophrenics were highly similar. The neurotics were faster than the depressives and schizophrenics but somewhat slower than normals. Again, the degree of motor retardation is higher in the more severely disturbed groups.

Other authors found evidence of slowness, using only psychomotor tests. Fisher (1949) reported that those depressed patients who were rated as improved following electric shock treatment obtained significantly higher mean Digit Symbol scores than those who were rated as unimproved. These findings were also supported by Rapaport (1945), who in a comparison of depressive and

schizophrenic patients, reported a significant lowering of digit symbol scores within the depressed group and he concluded that performance in this test is sensitive to retardation of the sort observed clinically in depression. Jastak (1949) failed to find any evidence when he re-analysed Rapaports results and noted that whereas the schizophrenic group had a mean age of 31 years the depressed group had a mean age of 49 years. He found that when the effect of age was partialled out the depressed group did not differ in speed from schizophrenics.

More recently Blackbourn (1975) compared the mental and psychomotor speed scores of six groups: three affectively ill groups of bipolar depression, unipolar depression and bipolar mania, and three corresponding recovered groups. He found that the manic patients solved problems quicker than those of either depressed group although on a psychomotor speed test, the bipolar depressives were significantly slower than the manics and the unipolar depressives, who did not differ. As expected, all the recovered groups performed at the same level on all measures.

Effect of Distraction: There is some rather consistent evidence that external distraction leads to depressives' performance on motor speed tests. The classis study of this problem was conducted by Foulds (1952). He identified this effect while testing neurotics using a modified form of the Porteus Maze test. (Foulds, 1951) The subjects were first administered the Porteus maze under standard conditions. Immediately afterwards, the distraction form was administered the experimenter counted 1, 2, 3..., at 2 second intervals and the subject repeated the numbers after him while performing on the maze.

In his first experiment Foulds (1951) found that dysthymic neurotics (depressives, anxiety states, and obsessionals) were significantly slower thannon-dysthymic neurotics (hysterics and psychopaths) on the usual form of the mazes but not on the distraction form.

In a second paper Foulds (1952) found that retesting on the distraction form of the mazes significantly improved the maze performance of melancholics and reactive depressives. Finally, Foulds tested melancholics, manic-depressives, 'anxiety-depressives', and depressives with 'uncertain diagnosis' with the usual and distraction forms of the mazes both before and after electroconvulsive therapy. Distraction and electroconvulsive shock therapy both had similar beneficial effects on maze performance.

Shapiro, Campbell, Harris and Dewsbery (1958) found also, a similar distraction effect using groups of psychotic and neurotic depressives, but in contrast to Foulds result Shapiro et al found that electroconvulsive shock therapy leads to a relative reduction in motor speed on the mazes.

Blackbourn (1975) distinguished between internal distraction and external distraction. The task consisted of a spiral design, with a pathway and obstacles scattered along the pathway, along which the subjects were asked to trace a line from the middle to an exit, avoiding the boundary lines and obstacles. The internal distraction situation was devised by having the subjects cound 1, 2, 3 etc until they reached the exit, while the external distraction effect was set up by playing a pre-recorded news item from a tape recorder rather loudly and introduced so as to alert the subject. He hypothesised that distraction and stress would quicken the pace of work of depressed patients but slow down the manic patients.

He found that the effect of both internal and external distraction on manic patients was contrary to expectation, as it tended to make them faster instead of effectively distracting them and making them slower. The effect of 'internal distraction' on the depressvies causes a slight increase in speed in both unipolar and bipolar depressives, with no significant difference between them or with the manic patients, but 'external distraction' speeds up the bipolar groups and slows down the unipolar depressives, resulting in signifcant differences between the bipolars on the one hand and unipolars on the other.

Payne (1960) in his review noted that there were two studies that reported negative results: Kessell (1955) and Campbell (1957) found that they were unable to replicate Foulds (1952) results on groups of mainly psychotic patients (schizophrenics and depressives) and brain-damaged cases. They both found that all the groups improved on retest with the distraction, and that this improvement could be attributed to practice. Payne suggested that this discrepancy between these results and Foulds may have been partly due to the rather different patient groups used.

Foulds' (1952) hypothesis was that both distraction and electroconvulsive shock therapy exert a beneficial effect on the motor performance of depressives through the same mechanism although this was not supported by Shapiro et al's (1958) findings. Miller (1975) however suggests that Foulds hypothesis that the impaired motor performance of depressives results from over-attention to internal stimuli and that distraction draws the depressive's attention away from internal, affective disturbances, has not been thoroughly enough examined.

'Perceived' Retardation: There have been a number of studies conducted which have found that depressives believe that they perform even slower on speed tests than their actual performance on those tests indicate.

Colbert and Harrow (1968) obtained self-ratings of retardation using a questionnaire, from 52 depressives and 22 schizophrenics. They found that depressives reported considerable retardation in all the forms of somatic-motor retardation listed on the questionnaire before they were hospitalized, while schizophrenics did not report experiencing retardation before they were hospitalised. However they also found that depressives and schizophrenics did not differ significantly on Bender-Gestalt reaction times or total reaction times. Using clinical observation ratings of severity of depression they found that only $\frac{1}{5} - \frac{1}{4}$ of the depressives could be classified as severely retarded.

Friedman (1964) also found discrepancies between depressives ratings of their own speed or ability and their

actual performance although he found that the self-ratings of normal subjects were more reliable predictors of their test performance. Friedman reported that he obtained no significant relationships between the 'helpless' self-rating of the Clyde Mood Scale and his 17 test scores which included the Digit Symbol test, Tapping test, Seashore Rhythm test and Time Estimation. Whereas he obtained significant relationships for the normal sample on seven of the same tests. He concluded that depressed patients self-evaluations or perceptions of themselves as helpless, are no reliable guides to their actual performance on tests.

Loeb et al (1971) also showed a similar effect when he found that depressed and non-depressed patients did not differ in their performance on timed card-sorting tasks but tha the depressives tended to underestimate their performance (i.e. the depressives tended to perceive themselves as slower than they actually were).

Summary: As Miller (1975) has pointed out "despite the widespread use of psychomotor retardation as a diagnostic criterion for depression, experimental studies have consistently failed to demonstrate that depressives are any more retarded than schizophrenics." (p.249).

Generally it has been found that manic-depressives and endogenous depressives show greater individual reaction times, slower reation times and are also slower on a wide variety of other motor tests than are normals and neurotics although they have not been found to be slower than schizophrenics.

Psychotic depressives have been found to be slower on the Digit Symbol test than nondepressed, pathological groups, except for schizophrenics whereas neurotic depressives do not differ from non-depressed, pathological groups.

Studies that have made comparisons of the motor speed of reactive depressives and normals have yielded conflicting results.

Such evidence has suggested to a number of investigators that degree of retardation increases with the severity of the illness and is not specific to depression.

Distraction by external stimuli has been found to speed

up motor retardations in manic depressives, unipolar and bipolar depressives and psychotic and neurotic depressives.

Several studies have also consistently shown that depressives tend to under-estimate their performance on motor speed tests and to over-estimate their degree of retardation.

The inconsistency of results in this area might be due to a large number of factors which have largely been uncontrolled in these studies. These factors include the heterogenous nature of the groups studied, the failure in some instances to control for age, and perhaps also the inadequacy of the measures used.

PERCEPTUAL DEFICITS:

Time Perception: There have been several studies that have looked at the relationship between depression and time perception. These studies have generally shown that depressives conceptualise smaller intervals of future time than do normals, to orient themselves more toward the past than do normals, and to give inaccurate estimates of time intervals.

Dilling and Rabin (1967) defined three aspects of time perception: (1) time orientation, whether an individual tells Thematic Apperception Test (T.A.T.) stories in the past, present or future tense; (2) extension, the interval of future time that the story spans; and (3) coherence, the logical order which the individual imposes on events in the time span. Dilling and Rabin assessed these 3 aspects of time perception in three groups of subjects, 20 schizophrenics, 20 depressives and 20 normal subjects. They found that the schizophrenics and depressives differed from the normals in time perspective, extension and coherence. Both schizophrenics and depressives differed from the normals in time perspective, extension and coherence. Both schizophrenics and depressives were significantly different from normals on time orientation, with normals being more future oriented. Depressives had a more curtailed future time perspective than the schizophrenics but schizophrenics future time perspective was less coherent whereas normals had the greatest coherence and depressives were intermediate. Depressives also had the lowest and

normals the highest extension scores.

Mezey and Cohen (1961) studied the production, reproduction and verbal estimation of time intervals in depressives. They tested 21 psychiatric patients using time intervals ranging from 1 second to 30 minutes. Their test measures were supplemented by introspective statements about the subjects time experience. They found that the depressives initially tended to produce and reproduce intervals which were longer than the 30 second standard. Re-tested when their clinical condition had improved, production and reproduction of time intervals became slightly, although not significantly, more accurate. On admission 16 of the 21 patients reported their experience of time as slow, while after treatment 15 of 21 reported time as normal. Mezey and Cohen concluded that "depression is associated with a slowing down of the experience of time but that time judgment was not significantly impaired in depression" but unfortunately they did not use any control group.

Using a control group, Dilling and Rabin (1967) found that depressives and schizophrenics made poorer judgements than normals of a long but not a short time interval.

Proctor (1969) presented a time perception theory that states that feelings of basic self worth led to the setting of long-term, realistic, future goals and a positive basic mood; that long-term future goals are also directly related to a positive basic mood; and that a positive mood leads to generally shorter time estimations and the subjective feeling that time is passing quickly. Proctor states that in general, pleasant emotional states are related to future orientations, shorter time estimations and the subjective experience that time is passing quickly while unpleasant emotions are generally associated with restricted future orientations, longer time estimations and the feeling that time is passing slowly. In a

series of experiments to test these hypotheses Proctor found that the results upheld his time perception theory, confirming all predicted major relationships among the self-worth, future goals, mood and time perception elements of his theory.

Pain Perception: Studies of pain perception in depressives have shown that, in general, depressives require more intense heat and greater muscular exertion than neurotics before reporting pain or physically withdrawing from the stimulus.

Both Hemphill Hall and Crookes (1952) and Hall and Stride (1954) assessed the first point at which heat became painful and the point at which the subject physically withdrew from the stimulus.

Hemphill et al compared manic depressives and reactive and involutional depressives with anxiety neurotics and a mixed group of neurotics (hysterics, neurasthenics, and obsessionals). They found that manic-depressives had significantly higher verbal reports of pain than the neurotics while the reactive and involutional depressives had intermediate verbal reports of pain that were not significantly different from those of the manic-depressives or neurotics. The results for withdrawal from the stimulus were similar, but the differences between the groups was smaller than for verbal report of pain. Hemphill et al also reported that some of the manic-depressives never gave a verbal report of pain. Unfortunately Hemphill et al's study has been criticised by a number of authors (Beck 1967; Miller 1975) because the subjects they used in the two depressed groups were older than the neurotic subjects, and the manic-depressive group consisted of only four subjects.

Hall and Stride (1954b) compared the paid threshold in depressives, schizophrenics and neurotics. They reported that depressives and schizophrenics gave verbal reports of pain and withdrew from pain stimuli at

higher stimulus levels than anxiety neurotics. They also found that 80% of the subjects who never gave verbal reports of pain were depressives which was consistent with Hemphill et al's findings. Hall and Stride also found that depressives who were clinically improved following electroconvulsive therapy exhibited a significant decrease in verbal reports of pain, while those that were untreated or unimproved did not.

Miller (1975) noted some interesting findings with respect to fatigue and depression that were reported by Hoch (1901). His study reported that manic-depressives showed an increase in strength of performance on an ergograph prior to exhibiting the usual reduction in strength that occurs with fatigue. Hemphill et al (1952) also examined subjective fatigue thresholds and physical reactions to fatigue using an ergograph as part of their study. They found that both manic-depressives and reactive depressives showed higher fatigue thresholds than a mixed group of neurotics. Also, more depressives than neurotics failed to report any experience of fatigue before reaching a point at which they were apparantly unable to continue and the depressives did a greater amount of work than the neurotics.

Venables and Tizard (1956) extended Hochs study by using an objectively scorable task. Their study assessed the effects of two continuous, successive work periods of ten minutes and an interpolated rest period of 1 minute on theserial reaction time performance of 10 endogenous depressives and 30 non-paranoid schizophrenics. During the first period the schizophrenics tended to show little improvement in performance with practice whereas the endogeneous depressives showed a continuous increase in performance. After the rest period the schizophrenics showed a marked rise in performance while the depressives showed a much smaller increase. During the second period the schizophrenics' performance decreased while the depressives' speed continued to increase during the second continuous work period. The

performance of endogenous depressives differed significantly from that of the schizophrenic in all these respects. Within the group of schizophrenics, the long-stay schizophrenic (more than 2 years since last admission) were slower than short-stay schizophrenics (less than 1 year) throughout while the depressives were intermediate. Venables and Tizard suggested that these results support the theory that reactive inhibition develops more rapidly in schizophrenics than in depressives which was originally in schizophrenics than in depressives which was originally put forward by Pavlov in 1941. In Venables and Tizards terms, "the change in ${}_{S}E_{R}$ in the schizophrenic performance is conceived as a function of increasing ${}_{S}H_{R}$. The ${}_{S}E_{R}$ is however, depressed by a development of I_{R}, whereas in the depressives, having a weaker tendency to develop reactive inhibition, the ${}_{S}E_{R}$ was almost solely a function of increasing ${}_{S}H_{R}$. However Miller (1975) has pointed out that interpretation of these findings is difficult because Venables and Tizard found that length of hospitalization significantly affects the schizophrenics performance but they did not also separate the endogenous depressives into long and short stay groups.

Generally then these studies have shown that depressives have a raised threshold which reflects a reduction in experienced pain. In other words the authors of these studies interpreted group differences in criteria in terms of differences in sensitivity to pain or fatigue. However as signal detection theory has recently made clear (Green and Swets, 1966; Engen 1971), the traditional threshold is an extremely unreliable measure. Clark (1969) has pointed out that the pain threshold is not a pure indicator of sensory sensititivy. It is also influenced by the observers response bias, i.e. his readiness to report pain independently of his sensory awareness, as studies have shown that instructions which induce a change in the criterion for pain alter the threshold for experimental pain; even a description of the sensation to be experienced produces a lowered threshold. Pain tolerance can also be influenced by social factors such as the saliency of group membership and the social context.

Taking these findings Clark (1969) has hypothesized that many of the dramatic elevations in pain threshold reported in the literature reflect a response bias to restrict the proportion of pain responses rather than an amelioration of the pain experience itself. The findings on depressives that a substantial proportion of patients fail to report any pain or fatigue prior to physically withdrawing from the pain stimulus or showing obvious signs of exhaustion supports a signal detection theory explanation and suggests that differences in response criteria between depressed and non-depressed subjects were operating. This points to a need for a more thorough examination of the threshold differences between depressed and non-depressed patients using signal detection methods.

Visual and Spatial Perception: The traditional textbooks of psychiatry and clinical psychology contain clinical descrip ions of depressed patients that contain no suggestion that depressives may exhibit disturbances on a number of tasks especially those involving visual and spatial perception. Studies of these types of disturbances have examined depressives reported rates of reversal of ambiguous figures, visual threshold for emotional words, visual thresholds for recognition of pictures of common objects, and localisation of the apparent horizon.

Two early studies by Cameron (1936) and Hunt and Guifford (1933) indicated that manic-depressive patients report fewer reversals of ambiguous figures than schizophrenics or normals. More recently Friedman (1964) utilized the Necker cube than did a matched group of controls. However, Velten (1968) using normal subjects in an experimentally induced depression group and a normal control group, found no significant difference in their rates of Necker cube reversals. In order to explain his results Friedman (1964) suggested that the depressives lower reversal rate was due to an impairment in their ability to shift a mental set rather than perserveration or rigidity although such results may simply reflect a difference in criteria for

reporting reversals between depressives and controls. Dixon and Lear (1962) examined how the perceptual input of neutral and of emotionally loaded words was regulated differently by normals, paranoid schizophrenics, endogenous and reactive depressives by measuring the visual difference threshold. They did this by getting the subject to judge the point at which a test patch of varying brightness was equal in brightness to the constantly illuminated background of the left eye, while subliminally presenting neutral or emotional words. The emotional words for the patients, were those determined in an interview to be critical of the particular patients pathology. For the normals, the word cancer or the abbreviations VD or TB were used as emotional words. They found that the five depressive patients showed a consistent raising of threshold ("perceptual defense") as compared to the six schizophrenics who showed a lowering of threshold ("perceptual vigilance") while the normals did not exhibit a tendency for one type of threshold change over the other. Caution is needed in drawing conclusions from these findings because of the small samples used, the fact that all the patients were on drug therapy, and that there was no comparisons made between the groups in visual thresholds while viewing the neutral words. In addition, it has also been pointed out (Miller (1975), there was no independent demonstration that the word cancer or the abbreviations VD or TB were emotional words for the normal subjects.

A part of two larger studies (Friedman (1964; Payne and Hewlett 1960) have reported that depressed patients require longer exposure time than control subjects do before they recognise pictures that are presented tachistoscopically; Friedman (1964) presented psychotic-depressives with a picture of chair trachistoscopically at the end of a series of objects also presented trachistoscopically and reported that they had significantly longer recognition times than normals for the chair although there

were no differences in recognition time for objects presented on earlier trials. Payne and Hewlett (1960) as part of their larger study, assessed recognition times in their groups of normals, dysthymics, hysterics, schizophrenics and endogenous depressives. They found that the five groups were significantly differentiated on recognition time, with depressives being the slowest, followed by schizophrenics.

A study by Smith, Fried et al (1969) examined the effect of depression and therapy on two serial after-effect tests. These tests concerned the size, intensity and colour of projected afterimages and the duration of the spiral after-effects. Testing 39 moderately depressed subjects both before and after therapy, they found that both the size, intensity and colour of the projected after images and the duration of the spiral aftereffects were highly correlated with the patients psychiatric ratings of depressive retardation, anxiety and compulsion. Unfortunately, the authors did not use any control groups in this study.

Several studies have related depression to changes in spatial perception, to the assignment of different qualities to the right and left aspects of space, to the fading of the third-dimensional aspect of objects and to the distortion in locating the nearness or distance of objects (Fisher 1964). Rosenblatt in 1956 (Beck, 1967) found that in contrast to manic patients and normal controls, depressed patients have a tendency to focus on the downwards rather than the upward aspect of a spatial situation while manics located the apparent horizon significantly higher with normals falling between the two extremes. Wapner, Werner and Krus (1957), in a similar study of college students, used a luminous rod and frame apparatus before and after one of three experiences; a success experience, a failure experience or a rest period. On re-testing, the subjects who had undergond the failure experience showed a tendency to shift the apparent horizon lower while those subjects that had undergone the success experience shifted it higher. Those subjects

that had only a rest period between test and re-test showed no consistent tendency to shift the apparent horizon in either direction. Fisher (1964) used 52 subjects to test the hypothesis "that the degree of downward bias of perception is positively related to the level of sadness or depression." The subjects with "sad affect" were identified by assessing the number of sad terms used in describing a series of faces. A comparison was then made of sad and non-sad subjects adjustments of the apparent horizon on a rod and frame apparatus and also of their perception along the up-down dimension. The results supported the hypothesis that subjects with a sad affect showed a downward bias in perception, whereas subjects with a neutral affect showed an upwards bias, while the up-down dimension did not differentiate the two groups.

Summary: It is clear, that contrary to the clinical descriptions of depression, depressives do exhibit marked deficits relative to normals and pathological groups on a number of perceptual tasks.

Psychotic depressives have clearly been shown to have a disturbed time perspective with lower than normal extension of future time, greater than normal orientation toward part time and inaccurate estimates of time intervals although they do not differ greatly from schizophrenics.

Neurotic depressives also exhibit time disturbances similar to those exhibited by psychotic depressives and it has also been shown that experimentally induced depressed affect may be associated with lowered future time perspective.

Manic-depressives have been shown to require more intense heat stimulus and greater muscular fatigue before they will report pain or fatigue or withdraw from the stimulus. They also fail more often to give a verbal report of pain or fatigue before withdrawing from the stimulus than any other group. They have also been found to report fewer reversals of an ambiguous figure than do schizophrenics or normals. In a depressed state the manic-

depressive patient tends to localise the apparent horizon lower than normals but during the mania phase the reverse occurs.

Endogenous depressives show similar responses to the manic-depressives to pain and fatigue. They have also been shown to respond to emotional words by raising their thresholds whereas paranoid schizophrenics show a decrease in threshold. There is also some evid nce that suggests they have longer visual recognition times than normals expecially near the end of a series of trials.

Reactive depressives were also found to have higher fatigue threshold and to fail to report fatigue before withdrawing from the stimulus although their pain thresholds were intermediate between those of the manic-depressives and those of the neurotics and not significantly different from either. It has also been shown that reactive depressives show visual threshold changes in response to emotional words similar to those shown by endogenous depressives.

These findings that have been reported from a number of studies of perceptual deficit in depression, especially the findings of elevated visual, pain and fatigue threshold and elevated visual recognition times in depressives, have been used to suggest that depression may entail either a limiting or a lack of concern for external stimulation. It has also been suggested as an alternative explanation that depressives may exhibit these types of deficits simply because they are slower in making verbal and motor reports or because they have different response criteria than other subjects (Miller 1975).

CHAPTER FIVE FAMILY BACKGROUND, PERSONALITY, SELF CONCEPT AND DEPRESSION

Introduction:

All individuals have habitual ways or modes of dealing with the large amounts of stimuli that are constantly impinging on the organism. These methods for handling stimuli have come to be called 'cognitive styles' and their usefulness has been related to their adaptive significance for the individual. Because individuals, as we have previously pointed out, experience the world in terms of differing strategies for organizing the vast array of stimuli that impinge upon them, they will perhaps use different strategies to deal with differing events, of both an internal and external nature.

The implicit assumption in this discussion is that similar events will lead to the use of the same cognitive style. It then follows that if a group of individuals utilize a similar cognitive style in similar circumstances then it is possible that the external events that gave rise to that style, will be similar. These characteristic ways of handling information or styles are gained from the interaction of the individual perceptual-cognitive style with their environment and are part of the individuals larger personality system.

From this we can now assume that if depressives form a single unitary group that utilizes a similar cognitive style during their disorder then they will perhaps share similar external events and aspects of their personality which would lead them to use this style as an adaptive mechanisms in their disorder.

Having made the hypothesis that there is a cognitive style that is common to all those who are diagnosed as depressives it can now be postulated that because of this common style they will possibly share background factors personality, or self concepts that lead to the adoption of the particular cognitive style. By examining the

external events in depression in a search for common elements some idea of the development of the cognitive style utilized by depressives may be gained.

Parental Deprivation:

It has often been suggested that one of the causal, or at least concomitant factors in the aetiology of virtually all functional psychiatric disorders is parental deprivation. This has been postulated as a predisposing element in many if not almost all, the functional disorders. Because parental loss or deprivation has been found to excess in such disparate conditions as psychoneurosis (Madow and Hardy 1947; Ingham, 1949; Barry and Lindemann, 1960); suicide and attempted suicide (Palmer, 1941; Reitman, 1942; Simon, 1950; Batchelor and Napier 1953; Robins et al, 1957;) schizophrenia (Wahl, 1956; Lidz and Lidz, 1949; Oltman et al 1951; Hilgard and Newman 1963;) and depressive illness (Stenstedt, 1952 and 1959; Brown, 1961; Bect et al, 1963; Birchnell 1970b) it is difficult to accept that it may be a specific predisposing factor.

The literature on parental deprivation thus suggests that it may be an important modifying factor in the aetiology of many psychiatric conditions but not perhaps in the rather indiscriminate way that the evidence seems to suggest. For example, Munro (1966) points out that, it may on the one hand accentuate the severity of depressive illness (Beck et al 1963) but on the other, accelerate the first onset of schizophrenia (Oltman et al, 1951). In psychoneurosis, parental disharmony rather than actual parental loss may be of importance (Ingham 1949) but in suicide and attempted suicide both parental deprivation and disharmony appear to be prominent (Simon, 1950; Batchelor and Napier, 1953). Reviewing the literature on parental deprivation Munro (1966a) suggests that there is a rather subtle interplay of influence, with parental deprivation possibly aggravating a predisposition that is already present to

illness.

Perhaps most of the research into the effect of early parental deprivation on the emergence of latter life psychiatric disorders has been conducted into the aetiology of depressive disorders. This was started by Freuds "Mourning and Melancholia" (1917) which stimulated such psychoanalytic speculation regarding the relationship between loss of a loved object and subsequent depression and is still being discussed in the psychoanalytic literature. Abraham (1924) following Freuds lead, considered that "a severe injury to infantile narcissism brought about by successive disappointments in love" to be an important factor in melancholia and used the term "primal parathymia" to describe the disagreeable experiences of childood which give rise to adult depression. Klein (1940) related all states of depression and mourning in adults to a re-awakening of the infants struggle to make reparation to the mother he fears he has destroyed. She believed that adults who are prone to depression have never successfully worked through their earlier "depressive position". Bowlby (1960) has likened adult grief and mourning to the reaction of children to separation from their mothers. He later proposed (Bowlby 1961) that children are less capable of coping with death of a parent than adults and adopt the defense mechanism of ego-splitting by which part of the ego still considers the parent to be alive. This imperfect resolution of the loss situation leads to a fixation on the lost parent and a tendency to react badly to further separations.

One of the first experimental studies of the hypotheses that early parental deprivation may lead to a greater risk of depressive illnesses in later life was conducted by Stenstedt (1952) who found that the dissolution of the home before the age of 15 years or serious parental conflict increases the risk that the siblings of manic-depressive patients will themselves develop the disorder. In a later study (Stenstedt 1959) he found that 33% of a group

of involutional melancholics came from an unfavourable childhood environment.

Brown (1961) published a much better controlled study on the occurence of childhood bereavements in depressed patients. He investigated 216 out-patients suffering from depression and compared them with a control group which consisted of General Practitioner patients and general hospital inpatients. He found that 41% of his depressed patients had suffered a generally increased parental loss when aged 0 to 14 years, compared with 19.6% of his control group. He also used the 1921 census results with which to compare his depressed group because it gave some indication of the amount of childhood parent loss among individuals who were approximately the same age as his depressed patients. The findings included a significantly higher loss of fathers in the depressed group between the agesof 10 to 14 years and a significantly higher loss of mothers between the ages 0 to 14 years. The loss of a father between the age of 0 and 4 years was found to be no greater than in the control group. Brown also reports that 12% of the depressive subjects were unable to say if one or other parent is dead, which he regards as a possible reflection of excessive family disruption in depressives. These results were rather surprising in view of the paramount importance that is commonly attributed to the maternal role and the first five years of life. In order to account for these results Brown extended Bowlby's (1961) theory and maintained that rejections in adult life are likely to release the repressed urges to recover the lost object and to precipitate a depressive illness.

In a second paper with Epps and McGlashan (1961) the percentage of depressives who had suffered parental death before the age of 15 was reduced to 30.2% of a sample of 331 patients but remained significant. Browns reports

have been criticised because he does not make absolutely clear what type of depression is being studied and as out-patient depressives often include in their ranks a considerable number of depressions secondary to other psychiatric conditions notably personality disorders and psychoneurosis, this might tend to contaminate the results.

More recently, Brown (1966) has reported an extension of his work, again showing the marked excess of deaths of both mothers and fathers in depressed patients before the age of 15 years. Similar findings were also reported by Forrest et al (1965) and a report by Dennehy (1966) has further confirmed the excess of bereavement in depressed patients as compared with census and other population data, and the loss of parents is most marked in the case of the father and in the age period 10 to 14 years.

The importance of early father death was also reported by Hill and Price (1967) who found that early father death was significantly higher in 1,483 depressed patients than in 1,059 non-depressed patients. The difference was most marked among the female patients and for bereavement at ages 10 to 14 years.

In subsequent work the severity of the depression has received particular attention. Beck et al (1963) reported on a carefully performed study in which 297 depressive subjects were classified into a 'high-depressed' and a 'low-depressed' group. They found that the high-depressed group (the most severely ill) showed a significantly higher prevalence (27%) of orphanhood before the age of 16 than the low-depressed group (12%). They also found parental loss was predominantly due to father deaths. Finally they found that there was no obvious relationship between the age of the parents, the occurrence of parental deprivation and the onset of depression and they concluded that the death of a parent in childhood may be a factor influencing chiefly the degree of severity of a depressive illness.

Munro (1966b) also found that severe depressives are more liable, and moderately severe depressives less liable to have lost a parent by death before their sixteenth birthday as compared with normal controls. Munro has also found "indications that depressives as a whole are more likely than normals to have lost a father by death during the age period 11 to 15 years and that severe depressives are more likely to have lost a mother by death during their childhood", although he points out that neither of these last two findings quite reaches statistical significance. He also found that "severe depressives report a highly significant excess of disturbed relationship with both mother and father during childhood, whereas moderately severe depressives show no excess over the controls in this respect" and the severe depressives had a significantly greater tendency to lose their mother by death before their twenty-sixth birthday than do the controls. According to Munro this is related to "a highly significant excess of depressive patients who report that their mother died of cancer."

Sethi (1964) with a small sample, also failed to demonstrate a relationship between severity of the depression and early parental death.

Birtchnell (1970a) took a sample of 500 admissions to a Scottish psychiatric hospital and from this sample extracted groups of depressed, non-depressed patients which were precisely matched for age. He then compared the incidence of parent death occurring during the first 20 years of life and over a period of 20 years before admission and was found to be similar in the two groups. From the depressed patient group, groups of severely depressed and moderately depressed, precisely matched for age, were extracted and compared. He found that the incidence of early parent death was signficantly higher in the severely depressed group due to a significant excess of mothers death although this relationship only held in the younger age group.

The method, used in the studies quoted, of differentiating between severe and moderate depression was not the same. Beck et al and Sethi, used an inventory administered to the patients by a trained interviewer as well as clinical evaluation. Munro used the four criteria of (i) presence of retardation, (ii) delusions or guilt feelings, (iii) no definite relationship to precipitating factors and (iv) recurrence or history of previous manic illness. He also used a rating scale which was applied retrospectively to the case record. It has been pointed out by Birtchnell (1970a) that with all these methods a higher proportion of psychotic patients were included in the severely depressed group. As Beck et al (1963) rightly pointed out, these studies may merely reflect a high incidence of early parental death in psychiatric disorders in general. Table 1 summarizes the findings of some of the major studies relating to early parent death.

Hopkinson and Reed (1966) compared 200 patients diagnosed as manic-depressives with the undifferentiated depressive out-patients of Brown's (1961) study. They found that 39 of those patients (19.5%) had lost one or both parents before they were aged 15, an incidence which is significantly less than the figures of 27.8% for loss of mother and 20.5% for loss of father quoted by Brown, and does not differ significantly from the control figures in that study. However, Browns figures are much higher than most other quoted figures and a diagnosis of manic-depressive psychosis is not necessarily an indication of a particularly severe illness. Wilson, Alltop and Buffaloe (1967) compared the MMPI profiles of parentially bereaved and non-bereaved patients and found the bereaved to have "psychotic" profiles and the non-bereaved to have "neurotic" profiles. However, both Archibald et al (1962) and Gregory (1966) also used the MMPI and found no characteristics peculiar to early bereaved subjects.

These findings suggest that losing a parent during childhood could increase the severity of the condition

TABLE 1

A summary of the findings of studies relating early parent death to depressive illness

Authors	Date	Location	Age in childhd sidered	No. of depres.	Parent	Incidence of early parent death: All depress	Severe depresn	Mod. depresn	Non-depress.	Gen. Pop.
Brown et al	1961	England	0–14	331	Mother	15.7%*				8.5%*
					Father	22.9%*				12.0%*
Beck et al	1963	Philadelphia U.S.A.	0–15	297	Mother	7.7%	10.0%	6.0%	5.0%	
					Father	14.1%	21.0%	12.0%	9.0%	
Sethi	1964	Philadelphia U.S.A.	0–15	116	Either	16.4%	15.6%	17.9%	16.3%	
Forrest et al	1965	Scotland	0–14	158	Mother	21.5%*				6.9%*
					Father	13.9%				10.3%
Munro	1966	Scotland	0–15	153	Mother	11.1%	13.7%	5.9%		7.4%
					Father	13.1%	14.7%	9.8%		13.5%
Dennehy	1966	England	0–14	361	Mother	10.8%				5.8%*
					Father	15.2%				11.9%*
Hill & Price	1967	England	0–14	1,483	Mother	6.5%			6.9%	
					Father	13.6%*			8.9%*	
Birtchnell	1970	Scotland	0–14	231	Mother	9.3%	18.1%*	5.7%*	9.4%	8.6%
					Father	12.0%	10.6%	13.9%	13.8%	9.4%

* Denotes significant difference between the percentages in the same row

From Birtchnell (1970).

especially if the early death of one parent is combined with the recent death of the other. Birtchnell (1970a) postulated from these results that patients who lose a parent when young cling excessively to the remaining parent and react badly to the eventual death of this parent.

This was also supported by a later study by Munro (Munro and Griffiths, 1969) who earlier had findings of no significant excess of parental loss in a series of depressed patients although the findings did suggest that losing a parent during childhood could increase the severity of the condition (Munro, 1966). In this study a series of 279 psychia ric patients from the Leeds area was examined. This series consisted of 162 depressive patients (103 in-patients and 59 out-patients) 69 schizophrenics, and 48 individuals suffering from anxiety states and a control group which consisted of a group of 100 psychiatrically normal general hospital out-patients. They were also compared with the control material originally employed by Brown (1961). They found that maternal loss was significantly increased (although only at the p 0.05 level) in the in-patient depressive group but not in the out-patient depressive group especially before the fifteenth birthday whereas the schizophrenics or anxiety states showed no excess of childhood parental mortality. Nor did they find that there was an excess of parental bereavement occurring at a particular stage in childhood in any of the diagnostic categories.

Despite these positive findings a number of workers have failed to find a significant association between parental bereavement and depressive illness. The earlier findings of Munro (Munro 1966) and the negative findings of Sethi (1964) and Hopkinson and Reed (1966) having already been mentioned. Earlier Oltman et al (1951) found little difference in the degree of parental deprivation between manic-depressive individuals and normals. Other more recent investigations have also failed to demonstrate an association between parental bereavement and depressive illness; for example those of Brill and Liston (1966), Pitts et al (1965) and Gregory (1966).

Abrahams and Whitlock (1969) also failed to demonstrate

a relationship when they investigated 152 depressed patients which they compared with 152 controls matched for age, sex civil and social status; although the relationship was in the expected direction. Despite the lack of a significant relationship between childhood bereavement and adult affective illness they did find that significantly more of the depressed patients had experienced unhappy childhoods than had the control. They found that patients with diagnoses of mixed and neurotic depressions had a significantly higher incidence of such misfortunes compared with the controls and other diagnostic categories of affective illness.

From this survey of the literature it could be concluded that the physical loss of a parent does not necessarily contribute to the later development of affective disorder but that unsatisfactory child-parent relationships including parental loss or deprivation may be important determinants of personality and neurotic symptom formation; and that this factor is of significance in determing the ultimate form of the affective illness.

Family History:

The links between experience in early childhood and how an individual behaves later as an adult are well established. These links that lead to later life psychiatric disturbances have been of most interest to psychoanalysts and it is in the psycho-analytic literature that the majority of these links have been reported.

Psychoanalysts have focused their attention on the mother-infant relationship and have discovered that depression may have its roots in the very earliest interactions between the mother and her newly born baby. They have established that the early childhood (at least the first year of life) of the future manic-depressive though has not been as traumatic as those of people who tend to become schizophrenics or even seriously neurotic.

Arieti (1959) states that the "future manic-depressive is generally born into a home that is willing to accept him and care for him." This willingness on the part of the mother is in turn, accepted by the child, who is willing to accept everything he is offered, and this receptivity to the mother enhances a receptivity for both parents and all the important surrounding adults and promotes a willingness to accept them with their symbols and values.

In his second year the attitude of the mother changes and this is likely to drastically change the environment of the future manic-depressive patients. Although the mother continues to take care of the child though considerably less than before, she now makes many demands on him. There is set up a situation in which the child will receive care and affection provided he accepts the expectations that the parents have for him and tries to live up to them. This psychodynamic view of the family of manic-depressives was supported by Wilson (1951) who investigated the role of family pressures in the socialization of manic-depressives. He reviewed the case histories and made an intensive study of 12 patients. From this he concluded that during childhood the manic-depressives felt excessive pressure to conform to the attitudes of their parents and had less freedom than did the control group.

Arieti (1959) also points out in his psychoanalytic conceptualization of the family dynamics that at a very early age many of these children assume responsibilities such as the support of their families. Often their choice of a career is made in order to bring honour and prestige to their family. In a relatively large number of cases, the family belongs to a "marginal" group of society because of religions or ethnic minority status or to a lower socio-economic status, and the child feels that it is his duty to rescue the family with his own achievement.

This idea was supported by the classical study

conducted by Cohen et al in 1954 in which they reported the results of an intensive psycho-analytic investigation of 12 cases of manic-depressive psychosis. They consistently found in all 12 cases that during the patients childhood his family felt apart by some factor that they felt labelled them as 'different'. Cohen et al listed these factors that they felt singled them out as membership in a minority group, serious economic reversals or mental illness in the family. In each case, the patients family was very aware of the social distinction and generally reacted by trying to improve its acceptibility in the community. The family placed great emphasis on social conformity and they made a great effort to improve its social position by raising its economic level or by achieving other symbols of success and prestige. In order to reach this goal, the children were expected to conform to a high standard of behaviour which was based primarily on the parents concepts of what the neighbours expected. Thus the patients role was experienced by him as being in the service of the family's social striving.

More specifically they found that often the responsibility for winning this prestige was generally delegated by the mother to the child that was later to develop a manic-depressive psychosis. They found that the reason a particular child was selected was either because he was exceptional in terms of intelligence or other abilities or because he was the oldest, the youngest, or the only child.

Gibson (1957) used much more refined techniques to test the findings of Cohen et al's study. He studied a group of 27 manic-depressive patients and compared them with 17 schizophrenic patients in order to determine whether Cohen and other psychoanalytic writers descriptions of the early life history and family background could differentiate manic-depressive from schizophrenic patients. His data was gained from the hospital records of the patients and from interviews with the families by specially trained social workers. This data was then evaluated according to a questionnaire which was specifically designed to measure the degree to which a patients history conformed to the concepts formulated by Cohen and

her group. The questionnaire was also used to evaluate the 12 patients of Cohen's original study. Gibson found that he was able to differentiate the two manic-depressive groups from the schizophrenic group on three of the five scales of the questionnaire. It was found that the manic-depressives were statistically different from the schizophrenics on the following characteristics: (1) the manic-depressive comes from a family in which there is marked striving for prestige and the patient is the instrument of his parents prestige needs; (2) the manic-depressive patient has a background in which there has been intense envy and competitiveness; and (3) the parents of the manic-depressive patient show a high degree of concern about social approval.

The parents of manic-depressive patients, according to Arieti (1959), generally give a picture of cohesiveness and stability. "There is no serious talk of divorce; the family seems on stable ground, reinforced by the conventions of society. Those family conflicts or schisms described in schizophrenia are not seen as frequently in the family of manic-depressive patients."

Personality:

Becker and his associates, in a series of systematic studies based on hypotheses derived from Cohen's study and from Gibson's investigation, explored the relationship between family background and personality. Their reformulation of Cohens results stated that persons who develop manic-depressive reaction in adulthood have experienced excessive parental expectations for conformity and achievement as children. They react to these demands by adopting the prevailing values of their parents and other authority figures in order to placate them and win approval. In their studies Becker et al attempted to investigate the extent to which chronic dependence on others for guidance and approval is manifested in the opinions and attitudes of manic-depressive patients.

Becker (1960) conducted an initial study in which he compared 24 remitted manic-depressives with 30 non-psychiatric controls. The two groups were matched for age, education and literacy level. He found that the manic-depressives scored higher than the controls on his measures of value achievement, authoritarian trends, and convential attitudes while they did not differ from the non-psychiatric controls in direct self-rating of achievement motivation or on performance output.

Based on this first study, Spielberger, Parker and Becker (1963) conducted amuch broader investigation of the formulations derived from the studies of Cohen, Gibson and Wilson. Four objective psychological tests were administered consisting of the California Fascism Scale, and the need achievement scale, to 30 remitted manic-depressives and 30 non-psychiatric controls. They found that the manic-depressives obtained significantly higher scores than the controls on all these experimental measures except need achievement. These findings were interpreted by the authors as indicating that the adult personality structure of manic-depressives is characterised by conventional authoritarian attitudes, traditional opinions and stereotyped achievement values, but not by internalized achievement motives.

A second study by the same authors (Becker, Spielberger and parker, 1963) cast many doubts on the specificity of the previous findings. In this study, the scords of the manic-depressives on the various attitude measures were compared with the scores of neurotic depressives, schizophrenics and normal controls. They found that there was no significant difference in value achievement or authoritarian attitudes between the psychiatric groups, although they differed significantly from the normal controls. Becker et al found however, that age and social class significantly affected the scores and they stressed the need for empirical or statistical control of these variables in personality studies

of this kind. Eisenberg (1969) taking note of these findings found that when groups were matched on these variables there was no significant difference between depressed patients and a normal control sample in either level of authoritarianism or level of ethnocentrism.

It has often been pointed out that many depressives have the type of personality Riesman et al (1950) have called "inner-directed". "He is a self-conscious individual always motivated by duty. He is not a creative person because he is too much of an imitator, but what he tries to do, he does well. He has deep convictions, and his life is motivated by principles. He must be a dedicated person. He is generally efficient and people who do know him too well have the impression that he is a well-adjusted, untroubled individual". (Arieti, 1957).

Reisman et al (1950) have pointed out that in the inner-directed society the parent is duty-bound and much concerned with the care of the newborn child. It is this duty-bound care and the ensuring burdening of the child with responsibilities and a sense of duty and guilt which may permit the child to develop the strong introjective tendencies that play such a predominant role in the development of manic-depressive psychoses. This pattern of child socialization in inner-directed societies is very similar to the stages of socialization which are experienced by the child who subsequently develops a manic-depressive psychoses. For example the stages that are experienced by the manic-depressive are:

1. Early in the life of the child, the parent is duty-bound and gives such tremendous care to the child as to determine in the latter strong introjective tendencies.
2. A drastic change will occur later when the child is burdened with responsibility. This change produces the trauma of the paradise lost.

3. The individual feels responsible for any possible loss. He reacts by becoming compliant, working hard, and harbouring strong feelings of guilt. Life becomes a purgatory.

4 This tremendously burdened life leads to depression, or to inactivity which leads to guilt feelings, or as a reaction, to activity which appears futile. These negative states and feelings are misinterpreted as proof of ones unworthiness and reactivate the expectancy of losing the paradise again, this time forever. A vicious circle is thus formed which repeats itself.

Arieti noted this similarity between the psycho-analytic descriptions of the manic-depressives socialization process and the process described by Reisman as being typical of that which occurs in an inner-directed society and he proposed that the inner-directed culture tends in certain cases, to elicit family configurations and interpersonal conflicts that give rise to the types of personality that are generally those which lead to manic-depressive psychoses.

Julian, Metcalfe and Coppen (1969) used the Maudsley personality Inventory to try and differentiate between women who had recovered from a depressive illness, a normal non-psychiatric group of women and other groups of patients. Eight questions of the N scale of the M.P.I. were found to differentiate the groups. The content of these eight questions suggested tha there are certain personality traits which may be associated with proneness to a depressive illness. They interpreted these questions as suggesting that remitted depressives have a tendency to repetitive worrying which they regarded as neuroticism of a rigid nature. Secondly the content of the questions pointed to a less versatile type of neuroticism. They concluded that patients who had recovered from a depressive illness appeared to have a rigid rather than the versatile aspects of neuroticism. Another aspect of this study found

that this 'emphasis' on rigidity was an enduring feature of the personality of patients who had recovered from a depressive illness and they suggested that this lack of versatility in depressives may be associated with vulnerability to depressive illness.

Hoffman (1970) noted that very few efforts had been made to investigate the extent to which depressive states might be associated with deviant responses in personality scales which are not primarily designed to measure depression or pathology in general. This study utilized the Personality Research Form (P.R.F.) which was administered to 35 hospitalized patients with the diagnosis of severe depression and to a control group of non-hospitalized individuals. In comparison with the control group, the patients were significantly higher in Abasement, Harmavoidance and Succorance but significantly lower in Achievement, Dominance, Endurance, Exhibition, Sentience, Understanding and Desirability. The two groups were also compared by using scores on the true-keyed subscales and this showed that there were five dimensions which showed significant differences which did not occur on the false-keyed subscales of the same dimensions. There were also significant differences for eight other personality dimensions on the false-keyed subscales which were not found on the true-keyed subscales. From these results Hoffmann hypothesized that depressed patients exhibit an acquiescence response set which is specifically related to and dependent upon the content of the personality dimension tested.

Further evidence regarding the personality of depressives can be gained from studies of the personality of suicides and attempted suicides. Although suicides and attempted suicide samples are not pure samples of affective disorders and the high proportion of diagnosed depressives in such samples are likely to a special subset of depressive disorders, such studies have tended to show

similar results to those studies using only depressives discussed above.

Vinoda (1966) provides a good summary of the early findings on the personalities of attempted suicides (Table 2). In his own investigation Vinoda used a battery of five tests, consisting of the Mill Hill Vocabulary, the Hysteroid-Obsessoid Questionnaire, the Hostility Scale, a level of aspiration tapping test, and the Symptom Sign Inventory, which was administered to a group of 50 female attempted suicides, 50 psychiatric controls and 50 normal controls, matched individually on variables such as age, education, occupation and marital status. Forty-two percent of the attempted suicides were diagnosed as either neurotic or psychotic depressives. The results indicated that the attempted suicides had more general hostility and were more rigid than were the psychiatric controls but apart from these differences, they were more like the psychiatric controls than the normal controls.

Murthy (1969) also investigated the personality of those who had made various degrees of suicidal attempts. He divided his sample of seventy women attempted suicides into a serious or high risk group and a non-serious or low risk group on the basis of a modified Tuckman-Youngman scale. A battery of tests was administered which provide eight separate measures. The major results of this study were:

1. That the serious or high risk group tended to be above average in their vocabulary level, to be intropunitive in the direction of their considerable hostility and to be obsessoid rather than hysteroid in personality.
2. That the non-serious or low risk group tended to be below average in vocabulary, extrapunitive in the direction of their considerable hostility and equally likely to be obsessoid or hysteroid in personality, although hysteroid personalities were twice as likely to be found in the non-serious or low risk suicidal attempt group.

TABLE 2

A summary of the finding of studies of the personality characteristics of attempted suicides.

Authors	Date	Personality Characteristics
Fairbanks	1932	Rigid personalities
Stoneman	1935	Marked irritability, ambivalence, sexual frustration.
Williams	1936	Inability to adapt to changed situation because of narcissistic. component integrated into personality and a marked introversion.
Hopkins	1937	Solitary, introverted, asocial.
Raphael et al.	1937	
Siewers and Davidoff	1942	Poorly integrated personalities.
Andics	1947	Weakness of character, sexual maladjustment, difficulty in forming friendships.
Wall	1944	Rigid, extreme of cycloid or schizoid temperament, feelings of rejection and of being unwanted by others.
Faris	1948	Quitter type, dependent, egocentric, personality disorganization prone to take place in social disorganisation.
Teicher	1947	Insecurity, inadequacy, exhibitionism.
Hendin	1950	Immature and asocial type of personality.
Batchelor	1954	Vulnerable personalities, morbid sensitivity, shy, seclusive, undue dependency, passive homosexual, timid, obsessive with tendencies to hypochondriasis.
Schneider	1954	
Sainsbury	1955	Abnormal personality traits.

From Vinoda (1966)

Self-Concept:

It is often observed clinically that depressed patients tend to downgrade themselves in regard to certain attributes that are of special importance to them. It has also been observed that other types of attributes, such as the conventional virtues (kindness, goodness, generosity), were often selected by the depressed patients as characteristics in which they were superior to others.

In order to explore this aspect of the depressives personality Beck and Stein (1960) developed a self-concept test to index the negative self-concept that they considered to be characteristic of "masochistic" and depressed patients. The test consisted of 25 personal attributes or ;traits such as personal appearance, intelligence, sex appeal, conversational ability, sense of humour, selfishness and success. Each patient rated himself on each of these traits using a 5 point scale raning from "worse than anybody that I know" (1) to "better than anybody I know" (5). They also made ratings of how they felt about having each of these traits (the self-acceptance score). They administered the inventory to a sample of 49 psychiatric inpatients and outpatients and found that the product-moment correlation between scores on this self-concept test and the scores on the Depression Inventory was significant (-0.66, $p < .01$). They also found a similar negative correlation (-0.42) between self-acceptance scores on the self-concept test and scores on the Depression Inventory. These results supported the hypothesis that depressed patients tended to give themselves low ratings on socially desirable traits and high ratings on undesirable traits. Beck and Stein concluded that the self-concept is low in depressed as compared with non-depressed patients.

Laxer (1964) used the semantic differential to investigate the changes in real and ideal self-concepts of neurotic and other psychiatric patients. He tested 37

neurotic depressives, 37 paranoids and 67 other patients in hospital treatment, on admission and again prior to their being discharged. He found that of the 5 diagnostic groupings utilized, only the depressives moved from very low to relatively high real self ratings and exhibited a positive correlation between real self and improvement. The paranoids on the other hand, began with a relatively high self-rating and did not change appreciably at the time of discharge. On the ideal self none of the groups showed any significant rating changes during their hospital stay.

More recently Seitz (1970) also examined the self-concept ratings of neurotic depressives. He found that they were characterized by convictions and attitudes of being hopeless, helpless and worthless. They had an exaggerated self-balming attitude, pessimistic expectations and believed that others over-value them.

He concluded that such negative self-concepts and convictions were bound up with self-defeating and self-perpetuating depressive cycle.

Summary:

Generally the studies of personality and of the family backgrounds of depressives have not fulfilled the early expectations. Early psychoanalytic investigations, particularly the clinical studies of Cohen and her group generated a large number of hypotheses. At first the efforts to test these hypotheses provided some initial support and suggested that depressives tend to come from homes where they are initially accepted by the parents but early on many demands are made of the child and he is soon expected to assume responsibility. Later investigations using a lighter design however, suggest that the obtained differences between depressed and non-depressed patients may be due to uncontrolled extraneous factors such as age, social class and educational level.

Much more attention has been turned to a specific aspect of the family background, that of early parental deprivation in the subsequent development of depression. One of the earliest studies by Brown (1961) reported most impressive figures showing a significant relationship between parental loss in childhood and adult depression. Unfortunately, subsequent studies have not been able to demonstrate such a significant relationship and may have failed altogether to demonstrate any relationship at all. Most of these studies of orphanhood or parental bereavement have a number of methodological defects that pose difficulties in evaluating the obtained relationships. Firstly the selection of the criterion group in these studies often depends on the conventional system of diagnosis which introduces all the complex problems that are related to the variability of psychiatric diagnoses and this tends to restrict the generalization of the findings. Secondly, there is a difficulty in comparing a specific nosological group with a normal control group. A third difficulty is presented by the fact that there is a considerable discrepancy in the base rates of parental death for the various demographic classes in the general population from which samples of patients are drawn and these variations need to be taken into account in any epidemiological study.

More recent studies of childhood bereavement have suggested that it is not necessarily the physical loss of a parent that contributes to the later development of affective disorder but that unsatisfactory child-parent relationships may be the important determinant.

From these studies of parental deprivation and family background it was postulated that children from such socialization process would tend to have a certain type of personality that predisposes them to develop an affective disorder in later life. A number of studies based on the early work

on family background found that depressives tended to be characterized by traditional opinions, authoritarian attitudes and stereotyped achievement values. Later studies suggested that these findings were a result of extraneous variables such as age and social class.

Other studies of personality using clinical and normal personality tests have suggested that depressives have a rigid personality of a neurotic type, that they lack versatility, that they are lower on factors such as dominance, endurance, understanding and desirability, and are higher on factors such as abasement, harmavoidance and succorance. Similar personality factors have also been demonstrated in studies of the personality characteristics of suicides and attempted suicides.

Studies of the self-concept indicate that depressed patients rate themselves much lower than non-depressed patients, but return to average ratings upon recovery from depression. Depressed patients tend to see themselves as rating poorly on socially desirable traits and tend to give themselves high ratings on undesirable traits. They describe themselves as being hopeless, helpless and worthless.

CHAPTER SIX COGNITIVE STYLE RIGIDITY AND DEPRESSION

Introduction:

There has been a great deal of disagreement over the years as to whether affective illnesses are also associated with thought disorder. It has been suggested by some authors that severe depression is not associated at all with severe cognitive, motor or perceptual deficit (Friedman, 1964; Granick, 1963) and in the last edition of a standard textbook (Henderson and Gillespie, 1962 p.222) it is stated quite bluntly that "there is no clouding of consciousness, there is no distortion, no defect of memory or intellect" in depression.

This was not the view of Kraepelin (Arieti, 1959), who observed that "in states of depression we encounter more or less deep clouding of consciousness ... (patients) are often incapable of recollecting and are sometimes not able to call to mind the simplest thing ... they are occasionally unable to name the year of their birth or the names of their children" (Kraepelin, 1913, p.7).

But contemporary psychiatry has preserved the time-honoured notion that by definition, conditions such as mania and depression are primary affective disorders in which cognitive factors play a minimal or secondary role. This peripheral position that has been assigned to cognitive processes in affective disorders is supported by the Diagnostic and Statistical Manual of the American Psychiatric Association (1968) in which the single reference to cognitive distortions asserts that delusions in these conditions are not attributable to the primary mood disorder. This is the official view which is maintained in psychiatric textbooks such as Henderson and Gillespies, and also represented in textbooks by Gregory (1968) and Kolb (1968).

From our previous chapters this is obviously not the

case but the continuation of this misconception regarding deficits in depressives has been due to two main sources. Firstly, the non-emphasis in traditional descriptions of depressive illness of the cognitive, psycho-motor, perceptual and personality deficit symptoms which has been supported by the new classification schemes put forward both by the American Psychiatric Association and the World Health Organisation. Secondly, the negative findings of only two studies, Friedman's (1964) and Granick's (1963), have been used to support this emphasis and unfortunately, subsequent reviews of psychological deficit (Yates, 1966) have emphasised these two studies and have excluded the large number of positive studies that we have cited in previous chapters.

Granick assessed the performance of a depressed and a normal group on untimed verbal intelligence tests and concluded, "the data are consistent with the noted impression above ... that psychotic depressives are not significantly impaired in cognitive functions of the type that the Information, Similarities, and Vocabulary tests represent" (1963, p.441). However, the psychotic depressives did score lower than the normals on all three tests and in fact the difference between the depressives and normals on the Information test was statistically significant.

Friedman assessed psychotic depressives and normals on 33 cognitive, perceptual and motor tests and obtained 82 test scores for each subject. He reported significant differences between the groups at the 0.01 level for only three scores and at the 0.05 level for an additional six scores. It is very difficult to assess the significance of Friedmans study, not only because of the large number of variables that he employed, but also because he failed to present the procedural details of administration of the tests in his report. Clearly however, it can be seen that the results of these two studies do not warrant the conclusion to be drawn that severe depression is not associated with severe impairments in cognitive, perceptual and motor functioning especially when they are compared with the

large number of studies reporting positive results.

It is the intention of this chapter to return psychological deficit to its rightful place as an important factor in the etiology of depressive illness and to propose some hypotheses as to their underlying dynamics.

PRESENT THEORIES OF IMPAIRMENT:

One of the most striking things that emerged from our review of the literature on the impairments of cognitive, perceptual and motor functioning in depressives as well as in their personalities and backgrounds was that there were so few differences in the deficits and symptoms manifested by the different types of depressives. In general the differences that have been found, have been differences in the degree of impairment exhibited rather than in the type of impairment.

One major exception to this conclusion may be the finding of lower than normal IQ's during depression for manic-depressives and higher than normal during depression for neurotic depressives. However, the studies in this area do not enable us to yet determine if there is differential deterioration in IQ's for manic-depressives and neurotic depressives or whether they start with different pre-morbid levels of intelligence.

In the motor area, manic-depressives and endogenous and psychotic depressives have all been found to be slower than normals or neurotics, while neurotic depressives are not slower than non-depressed neurotics. In addition, although neurotic depressives are generally found to be slower than normals on motor tasks, the differences between neurotic depressives and normals have not always been statistically significant.

In the perceptual area, two differences between depressive subtypes have emerged: (a) Manic-depressives and endogenous depressives require more intense heat stimulation than neurotics before reporting pain and withdrawing from the stimulus whereas reactive depressives require heat stimulation of an intensity intermediate between the intensities needed by manic-depressives and neurotics and

not significantly from either; and (b) Manic-depressives report fewer reversals of ambiguous figures than schizophrenics and normals, whereas studies have shown that when a depressed mood is experimentally induced in a normal population, it was not associated with lower than normal reports of ambiguous figure reversals.

Thus in spite of the presumed differences in etiology and the presumed differences in symptoms (c.f. American Psychiatric Association, 1968; Mendels, 1970) and in therapeutic response to electroconvulsive shock therapy (Carney et al, 1965) between the various subtypes of depression, there is a great deal of similarity in the psychological deficits associated with the different depressive subtypes. Where differences in depressive deficit between the subtypes have been found, it has generally been the case that the more severe forms of depression (manic-depressive illness, endogenous depression and psychotic depression) exhibit the particular deficit relative to normals and/or neurotics, while the less severe depressions (neurotic depression, reactive depression and depression in normal populations) do not. This evidence suggests that in the study of psychological deficit in depression the important variable is the depth of depression rather than the subtype of depression.

As well as failing to find any major differences in psychological deficit between the subtypes of depression, the studies have also generally failed to demonstrate an impairment in functioning that is unique to depression. Depressives do exhibit deficits relative to normals and neurotics, but the performance of depressives on cognitive, motor and perceptual tasks is either better than or similar to the impaired performance of schizophrenics on such tasks. The one exception is that manic-depressives report fewer reversals of ambiguous figures than both schizophrenics and normals.

Miller (1975) suggests that there are three explana-

tions for this lack of specificity in the results for depression. First, Miller suggests that psychological deficit may be a function of severity of psychopathology. This explanation is supported by Lang and Buss (1965) who, in their review of schizophrenic deficit, noted: "There is ample evidence that severity of psychopathology and psychological deficit are positively related. Some theorists hold that this is the only meaningful relationship between deficit and diagnosis, and they argue that specific consideration of schizophrenia is superfluous." (p.100). This view point has received support from studies of motor retardation in depression. Beck et al (1962) and Shapiro and Nelson (1955) found that motor retardation increased with severity of illness and was not associated specifically with depression.

A second explanation for the absence of psychological deficit that is specific to depression, is that deficits are due to common features shared by different forms of the psychopathology. For example, some theorists attribute the deficits in schizophrenia to insufficient motivation (c.f. Cameron, 1938, 1939). Insufficient motivation is considered to be a central feature of depression (c.f. Beck, 1967) and the impaired performance of depressives on cognitive, motor and perceptual tasks can also be attributed o a motivational deficit. This explanation is often considered to be related to the severity of psychopathology explanation. It is often suggested and argued that increasing severity of psychopathology correlates with decreasing motivation to perform well on experimental tasks, perhaps due to the severely disturbed patients over concern with internal events, problems and worries to the relative neglect of the external environment.

The third explanation that is offered to explain the lack of specificity of the results of deficit studies in depression is that the different types of patients may

exhibit similar impairments in task performance but for different reasons.

Unfortunately at present not enough research has been done on psychological deficits particularly in the area of depression that would give us a basis for deciding between these three alternative explanations. In fact the study of psychological deficits in depression has not really progressed much beyond the state of affairs noted by Hunt and Cofer (1944) when they wrote "Unfortunately ... the studies in this field are not held together with any single purpose or theory. The methods vary tremendously. Rarely has any investigator carried out a consistent programme, or even used a single technique, on the whole gamut of clinical conditions." (p.971).

Since Hunt and Cofer wrote this, few investigators have taken their suggestion and proposed mechanisms to account for the depressive deficits that they have identified. Generally, most investigators in this area have relied on using one of the three basic hypotheses that have been advanced to explain psychological deficit. These three hypotheses are: (a) Cognitive interference, which suggests that the intrusion of distracting thoughts and worries disrupts the depressives task performance; (b) Reduced motivation, which states that depressives exhibit impaired performance because they are not motivated to do well or because they are unable to sustain motivation; and more recently (c) Learned helplessness, which explains deficit in terms of both cognitive and motivational factors - the perception of reinforcement as response dependent, the expectation that responding is useless, and reduced motivation are thought to produce depressive deficit.

The cognitive interference hypothesis received support from the studies of Foulds (1952) and Shapiro et al (1958), while the findings of Miller and Seligman (1973) and Miller (1974) that depressives tend to perceive reinforcement as response independent is consistent with the learned help-

lessness view of depressive deficit.

Beck (1967) has also criticised the attempts to explain the symptoms of depression in psychological terms. His first criticism was that in these attempts the authors have a tendency to ascribe some purpose to the sumptoms rather than looking upon the symptoms simply as a manifestation of a psychological or physiological disorder. For example, the sadness of the depressed person has been explained by some writers (i.e. Rado and Adler) as an attempt to manipulate other people. Secondly, he states that many of these explanations have presented formulations that are so elaborate or abstract that they cannot be correlated with clinical material. For an example, Beck states that Freud's conceptualization of depression in terms of the attack of the sadistic part of the ego on the incorporated loved-object within the ego is so remote from what is observed in clinical descriptions that it is difficult to verify. Thirdly, he points out that most writers have not come to grips with the problem of the specificity of their formulations. Thus many of the popular psychodynamic formulations of depression, such as the concepts of increased orality have also been attributed to a large number of other psychiatric and psychosomatic disorders and hence even if they are valid, they might be characteristic of all psychiatric disorders in general and not exclusively applicable to depression. His final criticism was that these various theories of depressive deficit have offered at best, explanations for only a limited aspect of the diversified clinical picture of depression. Thus explanations that seem to fit certain specific groups of phenomena often seem irrelevant or incongrous when applied to other phenomena.

While all the explanations that have been offered so far provide plausible explanations for many of the results of studies of cognitive, perceptual and motor deficits in depression they have not been accepted universally as the

only explanations or even the best explanation. It has often been recognised since Hunt and Cofer first pointed it out, that what is most needed now in this area are theories of depressive deficit that are comprehensive enough to enable studies to be designed to test these theories and hypotheses.

A COGNITIVE STYLE THEORY:

Fortunately for workers in this area there has been an increasing amount of work done since 1968 on thinking in normal subjects. Thinking has again re-emerged as a respectable topic for psychological study but many workers in the clinical area have not become familiar with the new concepts that are being developed in this area and consequently they have been slow to utilize these new concepts as explanations in psychopathology for psychological deficits.

Perhaps one of the most exciting concepts to come out of recent research in thinking has been the concept of cognitive style and its relationship to personality and individual differences. The nature of this concept and its development and relationship to personality and psychopathology have been discussed briefly in an earlier chapter. As mentioned earlier, cognitive style refers to individual characteristic modes of responding to the environment which are manifested in a wide variety of different situations. This should be an attractive concept for psychologists working in the area of psychological deficits because it caters for two features which have traditionally preoccupied them - control and direction. Cognitive style, by definition, possesses these selective, controlling and directional functions. The concept of cognitive style also appeals in another sense, in that there are all subtle types of individual preferences which may well reflect some fairly basic underlying differences

in cognitive style, this concept provides the answer to the problem of how to identify and measure them experimentally so as to give these preferences more than just anecdotal significance and also usefulness. These concepts of cognitive style cognitive control have also a leading role in linking psycho-analytic ideas to laboratory research. Thus there has been a concern with the adaptive significance of cognitive controls in most of the research that has been done, but as Wachtel (1972) points out, "the explicit discussion of the role of cognitive controls in the persons adaptation to his life situation has been relatively uncommon."

It is generally accepted that each individual, through his perceptual-cognitive activity, is constructing and creating his own phenomenal world, so that the world to which he is adapting and the mode he uses to adapt to that world are part of the same set of processes. In response to these adaptive demands the persons develops a perceptual-cognitive strategy, which in turn, leads him to encounter new demands, created in part by the new view of the world which his strategy has afforded him. This is not a continuous process as most individuals eventually manage by a combination of altering themselves, altering their world, and choosing their situations to achieve a relatively stable equilibrium in their interactions with the world. Once this equilibrium is achieved it is possible to describe the individual in terms of consistent styles of thinking, seeing, behaving etc.

The research on cognitive styles is one aspect of the attempts to explore this consistency - that in the realm of the formal properties of thinking and perceiving. This research has been concerned with two main areas of investigation. Firstly, workers in this area have been interested in the question of whether it is possible to characterise individuals by such features as whether they scan their environment broadly or confine themselves to rather limited

segments of stimulus information, whether they respond to a stimulus array globally or as articulate discrete elements independently of the context in which they are embedded, etc. Included in this approach are the efforts to specify precisely the dimentions of cognitive functioning which most efficiently describe the ways in which people differ. The best known approach to these questions has probably been that of Witkin and his colleagues (Witkin et al, 1962), who proposed the notion of field dependence - field independence or as they have later called it, a "global-articulated style".

A second question to which workers in this field have addressed themselves which is of particular relevance in postulating a cognitive style hypothesis for psychological deficits, involves the consideration of the adaptive significance of an individuals mode of cognitive functioning. As we mentioned previously, this has been an integral part of the intent of most studies in this area although frequently unstated. Unfortunately, many of these studies have been unclear and even misleading with regard to the adaptive significance of the individual differences assessed.

The superiority of an adaptive cognitive style approach to those approaches that have only considered distortion or defence lies in the idea that within any strategy of adaption, success or failure is possible and while defences are grounded in and consistent with varying cognitive styles, the degree of defensiveness or of pathology is relatively independent of the particular direction of development one takes.

The main reason why cognitive styles have not been widely studied as mechanisms of adaption has been due, according to Wachtel (1968, 1972) to an "emphasis on measures which have clear better-or-worse implications and are more accurately characterized as tests of ability than of style". When viewed in this way, many of the so-called cognitive

style measures may be seen to tap styles or preferences only indirectly; what they most directly provide is a picture of the degree to which individuals possess the basic tools and attributes upon which particular styles and strategies must rest.

Most cognitive studies have ascribed particular characteristics to an individual and then attempt to investigate the "generality" of the particular characteristic across situation. Such a search for generality ignores the subjects adaptive intention, although such intentions were a prime interest leading to the cognitive control conception. As Wachtel (1972) has so clearly pointed out "vitality of work in this area is seriously diminished by a research strategy of seeking the persons average approach in an average expectable environment."

Recognition of the importance of the situational specificity of cognitive styles should lead to more sophisticated descriptions of consistency. The consistency evidence in the lives of most human beings, including those with psychopathologies, is due not to an overriding static structure which operates in a vacuum, without regard to changes in the situation; it is due rather to our considerable ability to recreate the same situation over and over again. Thus in many cases, although we are very largely responding to the current stimulus situation, and perhaps even though we could act differently if the situation were different, we do not allow it to be different.

Thus the lack of emphasis in cognitive style research on their role in adaptation has been due in large part to an empirical strategy in which cognitive functioning is studied in situations where cognition is an end in itself rather than part of a continuing sequence of adjusting to old situations by creating new ones.

Such a theoretical perspective, with its stress on viewing motivation cognition and behaviour as part of an

integrated pattern, provides a framework for understanding personality structure and stimulus conditions as complementary and interactive. Such an approach to the study of psychological deficits would lead to a much more integrated hypothesis as to the significance of such deficits in depression for those individuals.

COGNITIVE STYLE IN DEPRESSION:

Because of their overwhelming interest in developing cognitive style measures there is a relative paucity of research into the adaptive significance of cognitive styles in psychopathology.

Many workers, including Witkin, have produced a proliferation of reports (mostly unpublished doctoral dissentations) claiming a meaningful relationship between forms of psychopathology and perceptual field-dependence measured by the Rod-and-frave Test (R.F.T.) and the Embedded-figures Test (E.F.T.) These studies have generally concentrated on schizophrenia, of which the paranoid variety is generally found to be associated with a highly articulated style. Alcoholics also, have been shown to be markedly field dependent (Karp et al, 1965).

In summarizing these studies, Witkin (1965) suggested that perceptual field-dependence cuts across in a meaningful way the conventional psychopathological categories, discriminating between psychologically differentiated patients including: obsessive compulsives, schizoids, paranoid schizophrenics on the differentiated side and hysterics, anxiety neurotic, addictions and simple schizophrenia on the undifferentiated side.

This thesis of Witkins, that the perceptual tasks involved in the R.F.T. and E.F.T., supposedly measuring field-dependence, discriminate between patients in the above mentioned psychopathological categories was investigated by Vardy and Greenstein (1972). They tested 60 randomly selected patients and 30 of their therapists on both tests

and found that there were wide differences between correlations of scores on the two tests in the patient population and in that of the therapists. They concluded that Witkins claim that there is a cognitive style (be it field-dependence or differentiation or field articulation as measured by the R.F.T. and E.F.T.) independent of general intelligence and/or education could not be upheld in their patient population which contained a large number of schizophrenics.

This is not to suggest that there is not a cognitive style operating in psychopathology rather it reinforces our previously expressed ideas that the operation of cognitive styles is more specific than the way used in these studies and that tests such as the R.F.T. and the E.F.T. may only measure indirectly particular styles and strategies.

Two of the major conceptual difficulties in postulating an alternative cognitive style that operates in depression are: (1) the nature of cognitive dysfunction associated with depressions, and (2) gaps in our knowledge of developmental antecedents for depressions in which the specific emergence of cognitive deviancies could be appraised. In fact, the behavioural and phenomenological aspects of depression are often ignored. Malmquist (1971) has suggested that this avoidance has been a reaction against 19th-century descriptions of 'melancholic temperaments' or 'depressive constitutions', which were offered for what ever was called depressive. This reaction against personality and cognitive-personality factor in depression is seen in the present nosology which does not contain categories to describe depressive-proneness, such as a 'depressive personality'. Instead, references are made to other personality diagnoses such as obsessive-compulsive personality, schizoid personality or cyclothymic personality.

If depressives do utilize a cognitive style adaptation

to their outer-world as it appears from the nature of their cognitive dysfunctions then the nature of such adaptation will be reflected in their premorbid personality development. Unfortunately, the development of cognitive and personality deficits in premorbid depressives is at present almost totally lacking experimental evidence although the psychoanalysts have done some work in exploring the psychodynamics of this disorder.

They have postulated that a threat of loss mobilizes emergency emotions, such as fear and rage, in the depressive prone. Parallel to this, depressive thinking emerges which expresses self-evaluations of worthlessness, guilt and self-contempt. This impaired capacity to tolerate depressive affect leads to changes in the depressives view of the world and self. In contrast to the withdrawal and abandonment of awareness and reality testing in schizophrenia, the depressive begins a rather desperate attempt to maintain contact with his world. Instead of withdrawal and construction of a grandoise world as often occurs in schizophrenics, there is a constant over-reaction to the existing world. It is as though the objective world can not be fended off from its constant impingement. Instead of denying or repressing the objective world, there is an overdose of reality. To the psychodynamic theorists depressive thinking serves the function of painfully maintaining contact with a world that is construed as unrewarding or even punishing rather than reconstructing a world in fantasy. The depressive sees the maintenance of ties to objects asnecessary for his survival.

These psychoanalytic descriptions of the development of depressives thought patterns are very similar to the earlier description of the development and adaptive significance of cognitive styles.

Thus the cognitive style that seems from psychodynamic descriptions to be utilized by depressives arises from the

predominance of severe dejection, self depreciation, self blame and a tendency to maintain ties to objects, all of which involve the way the depressive thinks about himself. Malmquist (1971) points out that there then comes a transition point in the development of depression at which the capacity to revise concepts becomes relatively unassailable although it may fluctuate with intermittent psychotic depressive episodes over a life time.

These descriptions of the psychodynamic growth of the depressive disorder as well as the types of cognitive deficits exhibited strongly suggest that the depressive is adapting to his perceived life situation by attempting to hold to previously acquired relationships and objects in an attempt to prevent further loss or withdrawal from themselves. This reliance on previously acquired 'habits' influences both the personality and cognitive-perceptual functioning of the depressive. Their incapacity to revise old concepts or create new concepts resembles Cattell and Winders description of rigidity as "a failure to 'adapt', by the use of a shorter behavioural route than the usual one to a given goal, when circumstances make the shorter route possible." Thus the theoretical evidence on thinking in depressives all seems to point to the operation of an adaptive cognitive style that is similar to our concept of rigidity as a cognitive style.

I now wish to examine the experimental evidence that suggests that rigidity or an inability to change is the underlying mechanism in depression.

RIGIDITY IN DEPRESSION:

There have been a number of investigations which have produced clinical 'hypotheses' using the word 'rigidity' but many of these have been slovenly in conception, very unstable in application and retarded in the development of appropriate tests.

In all areas of abnormal psychology rigidity has often

been used to describe behavioural aspects of patients. Mandl (1954) for example, found paranoid schizophrenics to be more rigid than normals. Fey (1951) found normals to be significantly superior to schizophrenics on the Wisconsin Card Sorting Task. Pullen and Stagner (1953) found that those schizophrenics rated as improved after ECT showed a significant decrease in rigidity when compared to those who did not improve.

Some authors have suggested that rather than being related to schizophrenia, rigidity is more closely related to neuroses, although contradictory findings are reported by investigators using different tasks. In a quantitative analysis of her data, Angyal (1948) found that rigidity on a perceptual task corresponded to certain neurotic manifestations. Fisher (1950) found neurotics to be significantly less rigid than normals on only a few of the tests given, but most of the results were in the predicted direction. Fisher concluded that no single measure on any task was able to measure general personality trends or predict efficiently.

Phillipson (1955) found normals to be significantly more rigid than neurotics. Pervin (1960) investigated rigidity in various areas of behaviour in neurotics and normals and found neurotics to be more rigid than the normals on each of his five tests, four of them resulting in differences between the two groups which were significant at the 0.05 level.

The fact that depressed suicidal individuals have a disposition to think in a somewhat rigid and inflexible manner has become part of the general folklore of depression (Binswanger, 1958; Cavon, 1928; Meninger, 1938; Shreidman, 1961).

It has been postulated that the depressed individual because of his rigid modes of thinking, finds it difficult to develop new or alternative solutions to debilitating emotional difficulties. Thus the depressed individual

feels helpless in a situation of 'no exit' from an intolerably anxiety laden situation and often finds that the only escape is through death by suicide.

This paradigm is strongly supported by the evidence that some individuals have difficulty overcoming set habits of responding (Cowen, Weiner and Hess, 1953; Rees and Isreal, 1935; Rokeach, 1948) and that rigidity becomes enhanced under stress and anxiety conditions (Applezweig, 1954; Brown, 1953; Cowen 1952, 1952b; Ross Rupel and Grant, 1952).

In order to verify this model Neuringer (1964), administered the California F Scale and the Rokeach Map Test to a suicidal attempt group, a group of psychosomatic patients and to hospitalized normal subjects. He found that the suicidal group earned significantly higher California F Scale scores and that they also shifted significantly fewer times on the Rokeach Map Test. This led him to cautiously conclude that the rigidity hypothesis has some value at least in suicidal attempters.

Other evidence for a rigidity cognitive style in depression come indirectly from comparing the characteristics of depressives with those exhibited in those who are classified as rigid. As noted earlier, the family background and parental care received by the depressive is distinctive in that they tend to be burdened early with responsibilities and a sense of duty and guilt. Examining the developmental history of those who choose rigidity as their chosen mode of defence Frenkel-Brunswik (1949) found that she was able to describe the kind of parent who seemed to produce rigid children. "The requested submission and obedience to parental authority is only one of the many external, rigid and superficial rules which a child learns ... dominance-submission, cleanliness - dirtiness, badness - goodness, virtue - vice, masculinity - femininity are some of the dichotomies customarily upheld in the homes of such

children." She also suggested that these parents make demands ontheir children for behaviour which could neither be understood nor achieved and faced with these unreachable and incomprehensible standards the child found himself able to retain his parents approval only by learning, by rote and piecemeal, the specific kinds of behaviour they required. And he learned to subdue his impulses without comprehension: in obedience to external demands rather than to internalized standards. Frenkel-Brunswik states "This perilous structure of social learning, with no foundation in internalized values, could only be supported by a rigid system of defences within the self, with black and white as recognizable and manageable dichotomies and grey the colour of threat."

Thus the similarities, in the developmental histories of depressives and those who exhibit rigidity, are marked. Also the reliance that Frenkel-Brunswik noted on external demands has also been noted in depressives. It was originally postulated by the studies of Becker et al, especially the study by Spielberger, Parker and Becker (1963) in which they found that the adult personality structure of manic-depressives was characterized by conventional authoritarian attitudes, traditional opinions and stereotyped achievement values but not by internalized achievement motives. These results were supported by Katkin, Sasmor and Tan (1966) who studied the conformity and achievement related characteristics of 10 hospitalized depressed patients and 11 matched acute schizophrenics in an asch-type conformity situation and through the use of self-report inventories. They found that in the conformity depressed patients showed a greater tendency to conform to social pressures than did the controls.

Unfortunately these results were not supported by Taylor and Vaughan (1967) who found that subjects who were diagnosed as depressives on both clinical and psychometric grounds, were less conforming in a group pressure situation than were normal subjects. They interpreted their findings

as an outcome of the general social apathy and unresponsiveness that is characteristic among depressives.

One solution to the impasse brought about by these contradictory results is offered by Marsella (1969) who found that both manic-depressives and normals conformed significantly more than paranoid schizophrenics on both the conformity tasks used in his study (perceptual judgment and attitude change with live social pressures), but did not differ from each other. He also found that all groups were responsibe to social influence, but the manic-depr ssive males showed the least responsiveness over a period of time in comparison to the remaining groups and that the groups responded differently in the amounts of their conforming behaviours with manic-depressives showing the most and paranoid schizophrenics the least.

OBSESSIONS AND RIGIDITY IN DEPRESSION:

Rigid individuals or those showing a marked dependence on a rigid cognitive style and depressives also show a number of other similar characteristics. Perhaps one of the most commonly noted is the prevalence of obsessions in both groups.

The occurence of obsessions and obsessional traits in the course of depression has long been noted although it has generally been ignored as an important component in the etiology of depression. It was first noted by Prichard (1835), Esquirol (1838) and Marc (1840). The first series of 22 cases was described by Heilbronner (1912) who agreed with the earlier work of Scheule in 1888 that in some cases at least, the depression was the primary illness and not merely a secondary result of the obsessions. Further small series were reported by Vurpas and Corman (1933) - 27 cases, Lion (1942) - 16 cases and Ingram (1961) - 10 cases, which all supported the earlier findings of Heilbronner.

Although obsessions are linked with schizophrenia in most textbooks, Rosen (1957) found obsessions present in only 3.5 per cent of 848 schizophrenics he examined.

In other studies the reported incidence of obsessions in depression varies from 23% of 61 cases (Lewis, 1934) to 5.4% of 130 cases (Jarvier, 1950). These figures support the latter views of Riimke (1952) and Skoog (1959), that obsessions are more likely to occur in depression than in schizophrenia.

More recently the role of obsessions in depression was explored in a series of papers by Gittleson (Gittleson, 1966a, 1966b, 1966c, 1966d). Gittleson studied the detailed case notes of all in-patients suffering from depressive psychosis who were admitted to the Professorial Unit of the Maudsley Hospital between January 1st 1956 to December 31st 1959 inclusive. He found that of the 398 cases, 31% had obsessions, 64% did not and 5% showed a transition of obsessions to delusions. He also found that depressives with obsessions attempted suicide six and a half times less frequently than either the depressives without obsessions or the obsessional-delusional transition group and they were also found to have twice as many obsessional personalities, ten times as many frank premorbid obsessions and more obsessional personalities in their parents and siglings. From his results Gittleson concluded that obsessions are common in the course of depressive psychosis and that they are based on the activation of premorbid trait.

These results were also supported by Kendell and Discipio (1970) who gave the Leyton Obsessional Inventory to patients with severe depressive illness, during their illness and after their recovery. Their results showed that obsessional symptoms were typical manifestations in depression and that there was a common tendency for the symptoms to worsen during the depressive period. They also found a striking difference between the scores of normal adults and depressives with the scores of the depressives on the inventory even after recovery being almost twice as high as the scores of the normals.

Comparing the various subtypes of depression, they

found that obsessional symptoms were equally common in psychosis and neurosis. However, they also found that the obsessional symptoms were more pronounced in severe depression than in mild depression while the symptoms were generally non-existent in mania.

Thus these results on obsessions in depression strongly suggests that these are a much more pervasive element in depression than has previously been assumed. These studies also suggest that the distribution and strength of obsessional symptoms are similar to those previously seen in studies of psychological deficit in depressives.

Recently Rogers and Wright (1975) conducted a study which suggests that there is a 'relationship' between obsessions and rigidity. They examined the relationships among the three submeasures of Schaiers Test of Behavioural Rigidity to authoritarianism and obsessive-compulsiveness. They tested 20 male and 18 female undergraduates on the Test of Behavioural Rigidity (Schaie, 1955), the California F test and Scale 7 (Pt) of the M.M.P.I. They found strong correlations between Schaie's scale and the M.M.P.I. Pt scale andwith the California F scale. The perceptual-personality subscale scores correlated as did the psychomotor subscores with M.M.P.I. Pt scale scores. The M.M.P.I. Pt scale also correlated with the California F scale and the psychomotor subscale also correlated with the California F. Scale. These findings suggested to Rogers and Wright that behaviourally rigid subjects also evidence obsessive-sompulsive tendencies, with the obsessive-compulsive aspects appearing to be more related to the perceptual-personality and psychomotor aspects of behavioural rigidity. Their results also suggested that psychomotor rigidity is substantially related to authoritarianism.

Although the results of this study can only be considered to be preliminary and suggestive, they are of sufficient consistency and magnitude to warrant further work and to suggest the strong possibility of a common relationship between behavioural rigidity, psychological deficits, compulsiveness, authoritarianism and depression.

ROLE OF RIGIDITY IN DEPRESSION: TOWARDS A COGNITIVE THEORY OF DEPRESSION:

We can now ask, how might the role of rigidity in depression as a cognitive style be conceptualized? Like all human beings, the depressive strives for control of his environment. Unlike the schizophrenic who withdraws the depressive is desparately trying to maintain his contact with reality. However, he has less control over his environment than the normal person, and experiences it accordingly. Therefore situations which call into question his ability to master the environment are a particular problem for the depressive. Such a problem is created for depressives by novel and ambiguous situations. While normals people are usually able to handle and confront such situations and attempt to develop new patterns of behaviour appropriate to them, the depressive withdraws from situations in which his ability to control and master are challenged. He tends to interpret the new in terms of the old and therefore feels that old patterns of behaviour are still appropriate and adequate. He expects the future to be the same as the past, and by so doing he feels justified and adequate in continuing to use his old patterns of adaptive behaviour. Rigidity is useful to the depressive in that it assists him in coping with new and ambiguous situations which would otherwise challenge his doubtful ability to cope with the environment.

As we demonstrated earlier, the correlations between different tasks measuring rigidity are generally low and vary from group to group. These results suggest that a person may be rigid in one area of personality functioning or general psychological functioning but not in another. This hypothesis would then indicate that a depressive may be more rigid than a normal in one or more areas of functioning but not necessarily all. This then suggests that within the depressive population, the different kinds

of depressives display manifestations of a rigid cognitive style in a particular area or areas. Work on neurotics by Pervin (1960) has noted that anxiety neurotics were particularly rigid on motor tasks, while the obsessive-compulsives were comparatively more rigid on the more cognitive tasks. Although no comparable experimental evidence can be cited for depressives it seems reasonable that such a relationship would also be found.

In more theoretical terms, it then appears that cognitive styles relate to particular symptoms and symptom pictures and not to major conventional nosological categories, such as neuroses and schizophrenia. Witkin points out that there is no real contradiction in the finding that cognitive styles relate to symptoms but not conventional nosological categories because nosological categories are, in varying degrees, based on symptoms, dynamics and etiology while on the other hand, to the extent that a given symptom is the end-product of particular dynamic processes, it may serve to identify these processes. Thus classification in terms of particular symptom pictures is therefore likely to bring together persons with common underlying dynamic processes. Although symptoms are the main basis of classification in some diagnostic categories, in many instances classification on the basis of symptoms may transcend diagnostic categories. For example, depression may be a major symtpom regardless of whether the overall diagnosis is neurosis, schizophrenia, reactive depression, etc.

The model I have presented postulates that when depression is the major presenting symptom regardless of the nosological category the underlying dynamic process is one of a rigid cognitive style. This cognitive style varies in its intensity and influence with the severity of the depressive disorder. For example, in neurotic depression the action of the cognitive style is less pronounced than in psychotic depression and this consequently influences the nature, action and severity of the depressive

psychological functioning.

Summary:

In this chapter I have attempted to propound a model based on the concepts of cognitive style to explain the underlying dynamics of depression.

Traditionally, depression has been viewed as an affective disorder but reviewing the literature on psychological deficits in depression, suggests that dysfunction in the thought and personality of depressives can be as severe as those experiences in schizophrenics. It was also noted that there are very few differences in the types of impairments manifested by the various subtypes of depression and that the impairments tend to be a function of the severity of the disorder.

It was also pointed out that as yet no adequate theory of psychological deficit in depression has yet been proposed and authors in this area tend to rely on three common explanations: (i) cognitive interference, (ii) reduced motivation, and (iii) learned helplessness. While these explanations do provide plausible explanations they have a large number of shortcomings as has been pointed out.

A cognitive style hypothesis is then proposed which provides selective, controlling and directional function. It is also considered that such explanations would also be able to explain the adaptive significance of psychological deficits.

An examination of the use of cognitive styles in psychopathology with particular reference to depression is then made and it is noted that most of these studies have looked at cognitive styles in schizophrenia and as yet there is a paucity of research into cognitive styles in depression.

It is then proposed that the cognitive style that operates in or underlying depression is one of rigidity. The use of the concept in studies of psychopathology is

noted but direct experimental evidence of this hypothesis is lacking. Evidence is quoted which shows that both depressives and those exhibiting rigidity have strikingly similar backgrounds and developmental histories. It is then pointed out that both groups also share a large number of other features in common and the example that both groups are noted to have close relationships with authoritarianism and obsessive-compulsiveness is explored further.

From this evidence it is then suggested that a rigid cognitive style enables the depressive to cope with new and ambiguous situations without him losing his tenuous grasp on reality. It is also hypothesised that this underlying dynamic mechanism is a function of the symptom cluster "depression" and not a single nosological category such as neurosis, schizophrenia and reactive depression. This mechanism was also seen to vary with the severity of the symptom cluster and this determines the nature of the psychological dysfunction in the depressive.

CHAPTER SEVEN COGNITIVE RIGIDITY IN DEPRESSION: A PILOT STUDY

There have been a number of clinical and theoretical papers that have dealt with the psychological correlates of depression. Generally these have utilized a motivational-affective model to interpreting and explaining the psychological deficits that have been discovered in depressives. The cognitive processes in depression as such have received little attention in so far as they are related to variables such as hostility, guilt, anxiety or rigidity. (Mendelson, 1960)

This lack of research on such thought processes in depression may be a reflection of two different factors. Firstly, there is the widely held opinion that depression is an affective disorder and that any deficit is a result of the affective disturbance. This viewpoint has been supported by the failure to demonstrate any consistent evidence of abnormalities in the formal thought processes in the responses to the standard battery of psychological tests. Secondly, there has been difficulties in understanding the various aspects of the variables such as hostility and rigidity. These difficulties have been compounded by the inconsistency of the results obtained by various investigators attempting to eludicate the nature of these concepts.

The phenomenon of rigidity has been of interest to psychologists for a great many years and while a vast amount of research on rigidity has been done our understanding of the construct remains at a minimum. Because of the large number of contradictory results and lack of comparability (Applezweig, 1953; Eriksen and Eisenstein, 1953; Schaie, 1955), the generality of rigidity remains an unresolved problem. These contradictory results have suggested that rigidity may not be a general personality functioning but may be limited to a particular aspect of

functioning. While it is possible that rigid people are rigid in all aspects of their functioning, it is equally possible that their rigidity is specifically related to certain areas of functioning. Thus, there has been a tendency in rigidity research to look for broad characteristics with few attempts to look into the more complex aspects of this phenomenon.

One aim of this study was an attempt to examine rigidity in different areas of personality functioning as an aspect of the depressive's cognitive style.

This hypothesis that rigidity is an important component in psychopathology has been employed in a number of clinical investigations but unfortunately many of these have been badly designed and unstable in application. Much of this work has involved rigidity tests as the method of judging rigidity and this is open to all the criticisms directed at the tests themselves as well as the usual problem of varying definitions of rigidity itself.

Most of the efforts in the clinical area have been directed towards psychotic and mentally retarded individuals with some positive findings suggesting that these groups are more rigid than 'normals' (e.g. Fisher, 1950; Luchins and Luchins, 1959). Less work has been done with neurotics, who have also long been considered to be rigid as a group, but the mixed findings such as those obtained by Phillipson (1955) do not strongly support the idea of neurotics as rigid individuals. Many other "groups" have also been called rigid, but the experimental results permit conflicting opinions. For example, suicidal individuals have been pictured by Neuringer (1961) as being unable to see alternative solutions to problems, death being the only way out for them, a lethal form of rigidity. Old age has been said to be characterised by rigidity (Schaie, 1958) and the deaf, blind and stutterer are perhaps more rigid than the

unimpaired. (McAndrew, 1948).

Payne (1960), has suggested that this form of rigidity which has been studied in psychiatric subjects is a kind of 'adaptive' rigidity which he defines as "the inability to change a set in order to meet the requirements imposed by changing problems." He points out that investigators of "adaptive rigidity" in schizophrenia have used different techniques and have investigated chronic rather than acute schizophrenics. (Payne, 1973).

Weis and Nordtvedt (1964) using a perceptual task found that schizophrenics were more rigid than normals in the sense that they developed a set in conditions in which normals did not. Kristofferson (1967) used a reaction time task in which attention had to be switched from an auditory to a visual stimulus. She found that the reaction times of schizophrenics were more affected by the switch than the reaction times of normal subjects, suggesting an abnormal degree of rigidity in this situation.

Wolpert (1955) suggested that this "adaptive" rigidity can easily be explained by dynamic personality theory. According to this theory, an ego threatened with engulfment by unmanageable instinctual impulses wards off the threat by limiting the scope of the stimuli it will accept and by distorting those stimuli it cannot totally ignore. The price paid for the violence done to the incoming stimuli is a restriction of the range of the resulting behaviour. Just how general the restriction becomes is a function of the degree to which the ego must distort stimuli. Although a restricted range of behaviour occurring as a result of the defensive needs of the ego may seriously limit an individuals living ability, it is also an effort towards ordering experience and as such may serve as an instrument of adaptation.

The concepts of cognitive style and cognitive control have been utilized to link these ideas of

adaptivity form ego and psychoanalytic psychology to laboratory research. The adaptive significance of cognitive control has been an implicit concern in most of the research on cognitive style and was first noted by Gardner et al (1959) who stated that, "the essential question we have posed concerns the individuals style of adaptation - his mode of coming to terms with the world ...".

This approach to adaptation was taken up by Wachtel (1972) who considered that such a cognitive-adaptive approach would enable both success and failure to be possible.

The second aim of this study was to show that rigidity does operate in depression and is an integral part of the cognitive and personality functions of the individual in his attempts to "adapt" or cope with the impinging stimuli.

METHOD:

Subjects: The sample for this study was drawn from the inpatient population of Lake Alice Hospital, Marton. The sample consisted of 14 patients, 11 women and 3 men, admitted for short-term psychiatric treatment. The patients in the sample were diagnosed as depressives, both psychotic and neurotic, and as schizo-affective with a strong depressive element.

Subjects were selected from the general admission ward of the Hospital as they were admitted. Selection was based on the attending psychiatrists ratings and diagnoses, from my own observations of the patients behaviour in the ward setting and from the ward nurses perception of the patient when selected. The patients were also asked what their feelings were, as it has been shown that the perceptions of the doctors with those of the nurses differ, while the perceptions of the patients differ from both. (Raskin, and McKeon, 1971; Schwab et al, 1967). The liklihood of organic involvement in their illness was ruled out by the psychiatrist concerned. Thus patients showing evidence of organic brain damage or of a

schizophrenic process, and also those in whom anxiety or some other psychopathological state was more prominent than depression, were excluded from this group. The diagnosis of depression was generally based on the same criterion or diagnostic indicators that were employed by Beck (1967); i.e. objective signs in the faces, speech, posture and motor activity; and a major complaint of feeling depressed or sad, and at least a majority of the following symptoms: loss of appetite, weight loss, sleep disturbance, loss of libido, fatigability, crying, pessimism, suicidal wishes, indecisiveness, loss of sense of humour, sense of boredom or apathy, overconcern about health, excessive self-criticism and loss of initiative.

The age range of the patients in the sample was from 24 to 67, with a mean of 42 years. All subjects were native born, Caucasians and their socioeconomic status was judged to be middle or upper-middle class. Intellectually, the subjects were not subnormal. This was checked from the results of their intelligence tests where available, and by reports on their records about their educational level and work experience, etc, where intelligence tests were not available. This was further checked by the inclusion of measures of intelligence in the test battery.

Procedure: This study was conducted within the first two weeks of the patients admission into hospital before drug-therapy, electroconvulsive therapy, institutional care or other therapeutic measures could exert significant influences on them, although many patients initially selected for this study were consequently rejected because the treatment received made a marked difference to the patients behaviour during the period of study or because the study of the patients was unable to be completed during

this initial two week period. No significant differences were found between the patients subsequently rejected and those included in this sample on such variables as diagnosis, age, intelligence, number of previous admissions, treatment received, or level of depression.

Each subject was studied individually, and measures described in detail later, were applied in the order in which they are described, with intervals between them as the time and condition required.

Materials:

1. Intelligence: The cognitive tests of intellectual ability used in this study were selected from the Wechsler Adult Intelligence Scale (1955). The two sub-scales, Similarities and Picture Completion, one each from the Verbal and Performance Scales, were employed in this investigation. Wechsler (1958) presents evidence for a high 'g' factor loading on the test of Similarities for all ages. He contends that "allowing for the concomitant contribution of the verbal factor, the test would seem to be primarily a measure of generalizing or abstracting ability." Thus inductive reasoning ability and concept formation capacity are tapped by means of this test.

Picture Completion is the other test used in this study from the WAIS, which is taken from the Performance Scale. This generally correlates higher with Performance than with Verbal tests, and has the highest 'g' loading of any Performance Test. Cohen (1965), in his factional study of the WAIS, found it had specificity of its own as a distinct factor yet to be identified. However, the abilities involved appear to be of a perceptual and conceptual nature as far as visual recognition and identification of familiar objects and forms are concerned. Wechsler (1958) states that the "test measures the ability of the individual to differentiate essential from non-essential detail."

2. Depression: In order to establish a reliable and

valid measure of depression Beck's Depression Inventory was utilized. This is an inventory of 21 symptom-attitude items each of which contains a number of statements. The nature of the inventory is based on two observations: "(i) That with increasing severity of depression, the number of symptoms increases and there is a steplike progression in the frequency of depression symptoms from non-depressed, to mildly depressed, to moderately depressed to severely depressed patients: and (ii) The more depressed a patient is, the more intense a particular symptom is likely to be." (Beck 1969). The inventory was designed to include all symptoms integral to the depressive constellation and at the same time to provide for grading the intensity of each. It does this by including within each symptom category a series of statements reflecting varying degrees of severity. Each symptom reported by the patient is assigned a numerical score and the intensity of each is registered by the assignment of graduated numerical values to each statement within a category. Each statement in a category was read aloud to each subject and they were asked to select the statement that seemed to fit them best at that time. The subject was also given a copy of the inventory so that they could read each statement to themselves as they were read to them. On the basis of the subjects response, th number adjacent to the appropriate statement was circled.

A total score was then obtained by summing the scores of the individual symptom categories and thus represented a combination of the number of symptom categories that the subject endorsed and the severity of the particular symptoms.

3. Rigidity: Traditional measures of rigidity such as Luchins Water Jars Test were initially examined and consequently rejected because of the large number of doubts raised in the literature as to the nature of the variables that such tests measure or assess. A second

reason for rejection was the lack of convincing reliability and validation data for most of these measures.

Rehfisch's Ri Scale which claims to assess personality rigidity was chosen because it fulfilled the all objections made about the use of traditional rigidity measures. This is a 39-item true-false self-report scale which was derived by means of an item-analysis technique applied to 957 personality inventory items. The scale was constructed by selecting items which differentiated between designated samples of rigid and flexible subjects which were based on ratings of rigidity by staff assessors from the University of California's Institute of Personality Assessment and Research and was designed so as to measure essential attributes of the conceptualized rigidity dimension which Rehfisch (1958) states, includes at the rigid pole: (a) constriction and inhibition, (b) conservatism, (c) intolerance of disorder and ambiguity, (d) obsessional and perseverative tendencies, (e) social introversion, and (f) anxiety and guilt. Thus higher scores on this scale, as compared to lows, are generally described as constricted inhibited, anxious, guilt prone, conservative, socially introverted and inflexible in their social roles. Low scores by contrast, tend to be seen as adaptable, spontaneous, original, fluent in thought and speech, curious, clear thinking, assertive and self-indulgent.

4. Anxiety: A measure of anxiety was incorporated in the test battery in order to assess its influence on both depression and rigidity. The measure utilized was Cattells IPAT Anxiety Scale Questionnaire. This consists of 40 questions as a measure of total anxiety level. Cattell (1963) states that it gives "an accurate appraisal of free anxiety level, supplementing clinical diagnosis and facilitating all kinds of research or mass screening operations."

5. Embedded Figures: The Embedded Figures Test was put into the test battery to provide an independent measure of cognitive functioning and cognitive styles that may be operating in depression or related to rigidity. The Embedded Figures Test (EFT) is a test of field-dependence-independence in perception (that is, of ability to overcome an embedding context or of analytical ability). It consists of 12 Complex Figures from which a Simple Form which is embedded in that Comples Figure has to be identified. The subject score for the test was the sum of he solution times for all 12 items.

6. Personality: The measure of personality employed in the test battery was the California Psychological Inventory. This is a 480 item self-administered inventory which yielded the following 18 standard scores:

1. Do Dominance
2. Cs Capacity for Status
3. Sy Sociability
4. Sp Social presence
5. Sa Self acceptance
6. Wb Sense of wellbeing
7. Re Responsibility
8. So Socialization
9. Sc Self-control
10. To Tolerance
11. Gi Good Impression
12. Cm Communality
13. Ac Achievement via Conformance
14. Ai Achievement via Independence
15. Ie Intellectual Efficienty
16. Py Pyshological-mindedness
17. Fx Flexibility
18. Fe Femininity

Like all other tests in the battery the CPI was administered individually to each subject.

RESULTS:

The results obtained from the test battery were first evaluated by comparing each measure with every other measure excluding the Similarities and Picture Completion tests. A summary of the results obtained on the various measures is summarized in Table III below.

Table III

Summary of the Results obtained on the Various Measures in the Test Battery.

Measure	N.	Mean	S.D.
Becks Depression Inventory	14	24.35	10.67
Rehfischs Ri Scale	14	24.57	5.78
IPAT Anxiety Scale	14	40.79	8.85
Embedded Figures Test	12	77.16	36.49
California Personality Invent.			
Dominance	12	35.42	6.89
Capacity for Status	12	32.58	10.65
Sociability	12	35.42	5.66
Social presence	12	32.50	8.27
Self-acceptance	12	35.42	5.66
Sense of Well Being	12	37.83	12.90
Responsibility	12	41.0	11.32
Socialization	12	35.83	15.84
Self-control	12	46.83	9.96
Tolerance	12	36.67	9.63
Good Impression	12	43.0	11.20
Communality	12	45.42	10.68
Achievement via conformity	12	33.67	12.09
Achievement via independence	12	44.17	10.66
Intellectual efficiency	12	29 92	11.04
Psychological minded	12	37.58	6.80
Flexibility	12	49.58	16.92
Femininity	12	54.33	8.13

Intercorrelations of Tasks: Following the above analysis the intercorrelations of the various measures were studied using the Pearson product-moment correlation coefficients. The pattern of significant correlations with both the Depression Inventory, Rehfisch's Rigidity Scale Anxiety Scale and the CPI Flexibility Scale are very different as

shown in the following tables.

Table IV

Product-Moment Correlations with Beck Depression Inventory.

	Measure	Correlation
Sign at the 0.01 level	IPAT Anxiety scale	0.65
Sign at the 0.05 level	CPI Dominance	-0.63
	CPI Socialization	-0.61

Table V

Product-Moment Correlations with Rehfisch's Rigidity Scale.

	Measure	Correlation
Sign at the 0.01 level	IPAT Anxiety Scale	0.70
	CPI Self-acceptance	-0.79
	CPI Communality	0.80
	CPI Flexibility	-0.67
Sign at the 0.05 level	CPI Social Presence	-0.64
	CPI Socialization	0.61

Table VI

Product-Moment Correlations with IPAT Anxiety Scale

	Measure	Correlation
Sign at the 0.01 level	Rehfisch's Rigidity scale	0.70
	CPI Sense of well being	-0.75
	CPI Intellectual Efficiency	-0.73
Sign at the 0.05 level	Becks Depression Inventory	0.64
	CPI Tolerance	-0.59
	CPI Good Impression	-0.59

Table VII

Product-Moment Correlation with the CPI Flexibility Scale.

	Measure	Correlation
Sign at the 0.01 level	CPI Social Presence	0.68
	Achievement via Independence	0.67
Sign at the 0.05 level	CPI Self Acceptance	0.66
	CPI Socialization	-0.63
	CPI Tolerance	0.58
	CPI Communality	-0.56
	CPI Psychological minded	0.58

Cluster Analysis: The full product-moment correlation matrix was then subjected to a cluster-analysis. The method used was Tryon's modification of Holzinger and Harmon's B-coefficient or coefficient of belonging (Fruchter) (1954). This was chosen because of our small number of subjects and the preliminary nature of our investigation. The B-coefficient gives the ratio of the average intercorrelation of the variables in the cluster to their average correlation with variables not in the cluster. For this analysis the B-coefficient for all clusters was kept as close to 2.0 as possible. This technique revealed four separate clusters within our variables. These are presented in the following table.

Table VIII

Solution for B-coefficients in Cluster Analysis

Cluster	Mean intercorr. in Cluster	Mean of Remain Intercorr-elations	B-coefficient
Depression and Dominance	0.630	0.304	2.07
Sociability and good Impression	0.890	0.3711	2.39
Sociability, Good impression and capacity for status	0.800	0.345	2.31
Sociability, Good impression, capacity for status and sense of well being	0.750	0.344	2.18
Sociability, good impression, capacity for status, sense of well being and anxiety	0.682	0.336	2.03
Sociability, Good Impression, capacity for status, sense of well being, anxiety, and Intellectual Efficiency	0.648	0.322	2.01
Sociability, Good Impression, capacity for status, sense of well being, anxiety, Intellectual Efficiency and Tolerance	0.620	0.310	2.00
Social Presence and self-acceptance	0.950	0.390	2.44
Social Presence, self-acceptance and rigidity	0.797	0.370	2.15
Social presence, self-acceptance, rigidity and communality	0.697	0.342	2.04
Social Presence, self-acceptance, rigidity, communality and flexibility	0.675	0.323	2.09
Social Presence, self-acceptance, Rigidity, Communality, flexibility & psychological minded	0.611	0.311	1.97
Social Presence, self-acceptance, rigidity, communality, flexibility, psychological minded & Achievement via Independence	0.532	0.296	1.82

Table VIII contd

Cluster	Mean intercorr. in Cluster	Mean of Remain Intercorr-elations	B-coeff icient
Responsibility and self-control	0.760	0.399	1.91
Responsibility, self-control and achievement via Conformity	0.770	0.364	2.11
Responsibility, self-control, achievement via Conformity and socialization	0.752	0.328	2.29
Responsibility, self-control, Achievement via Conformity, socialization and Femininity	0.620	0.309	2.01

Intelligence: Both scales confirmed the initial selection assessment that all subjects were within the average range of intelligence.

Table IX

Results of the Similarities and Picture Completion Tests.

	Range	Mean
Similarities	8 - 22	13.33
Picture Completion	10 - 19	14.75

As no significant correlations were obtained for these scales with any other measure they were ignored in further analysis of the data.

DISCUSSION:

Comparison of the product-moment correlations with Depression Inventory with those of the Rehfisch Rigidity Scale reveals two different pictures. Those that score highly on Becks Depression Inventory (i.e. those whose

range or severity of symptoms give them a high total score) also score either highly or significantly low on the measures of anxiety, dominance and socialization. The picture that emerges of the higher scorer on the Depression Inventory is of an individual who has a high level of overall anxiety, lacks leadership ability, is submissive, retiring, inhibited, silent and unassuming, avoids making decisions, lacks self-confidence, persistence and social initiative. He also tends to lack social maturity, to be defensive, demanding, resentful and undependable. Thus the person who sees himself in these terms is also likely to agree to a greater number of symptom or symptoms of greater severity on the Beck Depression Inventory.

In contrast those that score highly on Rehfischs Rigidity Scale are also likely to score significantly high or significantly low on those measures that tap anxiety, social presence, self-acceptance, socialization, communality and flexibility. The higher scorer on Rehfischs Rigidity Scale has an even higher level of anxiety than the high scorer on the Depression Inventory and lacks poise, spontaneity and self-confidence in personal and social interactions. They are vacillating and uncertain in making decisions; literal and unoriginal in thinking and judging; self-abasing and given to feelings of guilt and self blame; passive in action, narrow in interests; self-denying; conforming; cautious; rigid; methodical; formal and pedantic in thought and overly deferential to authority, custom and tradition. They also see themselves as dependable, moderate, tactful, reliable, sincere, realistic and as being honest and conscientious.

The picture that emerges from these significant correlations with the Beck Depression Inventory and the Rehfisch Rigidity Scale seems to suggest that they are

measuring two different processes. The picture that emerges of the high scorer on the Rigidity Scale seems to be much closer to the traditional descriptions of the depressed patient than that which emerges from the Depression Inventory.

The correlations with the Depression Inventory suggest the major characteristic tapped by this measure is one of submission. This then leads to the hypothesis that perhaps those that are submissive, overly deferential to authority and lacking in self-confidence are more influenced by the demand characteristic inherent both in the nature of administrating this test, and in its constriction. Thus the Beck Depression Inventory may be a measure of response bias inherent in the test situation i.e. higher scorers on the Depression Inventory are those that are submissive to the test situation, the demand characteristics, the setting in which the test is given and to the authority they see administering the test.

Different pictures emerge when the significant correlations with the IPAT Anxiety Scale and the CPI Flexibility Scale are examined. The anxiety scale correlates significantly with measures of sense of well being, tolerance, good-impression and intellectual efficiency. The picture of the higher scorer on the anxiety scale is of a depressed, rigid person who is dominated by worries and complaints, who is disillusioned, self-doubting, suspicious, overly judgmental in attitude, inhibited, resentful, self-centred, little concerned with the needs and wants of others, conventional and stereo-yped in thinking, lacking in self-direction and distrust-ful and disbelieving in personal and social outlook.

The CPI Flexibility Scale correlates significantly highly with social presence, self-acceptance, socialization tolerance, communality, achievement via independence, and psychological-mindedness. This suggests that the higher scorer on the CPI Flexibility has the opposite characteris-

tics of those that score highly on the IPAT Anxiety Scale and Rehfischs Rigidity Scale. As well he also tends to be more mature, forceful, dominant, foresighted, demanding, self-reliant, resourceful, spontaneous, verbally fluent, socially ascendant and alert and well informed. In other words the higher scorer on the CPI Flexibility Scale is not likely to be seen in the terms that are traditionally used to describe the depressive.

Cluster analysis of the complete Product-Moment Correlation matrix revealed four distinct clusters. The first cluster included depression and dominance (-). Although I have labelled this the first cluster, it was actually the last cluster to emerge from the analysis. Both variables had a certain commonality with each of the other clusters but not enough to enable them to fit into a particular cluster. Each had a greater intercorrelation with each other than they did to any of the clusters. Because of the large amount of commonality these two variables shared with all clusters it seems reasonable to see this as a first level cluster from which the other clusters are at a second heirarchial level. This higher level cluster appears to be a general factor of depression and submissiveness.

The next factor which was the first to come out includes the variables of rigidity, social presence, (-) [i] self-acceptance, (-), communality, psychological mindedness (-), flexibility, (-) and achievement via independence (-). This cluster seems to be a factor of negative self-esteem, of low impression of oneself, of a desire to fit in with what one sees as normal, a desire to conform, or a view of oneself as being different and unaccepted by others because of what one is. It is a factor that seems to relate to negative self concept.

The third factor includes the variables of anxiety, capacity for status (-), Sociability (-), sense of well being (-), tolerance (-), good impression (-) and intellectual efficiency(-). Thus this cluster appears to

i (-) indicates the direction of the variables to the first mentioned variable.

be a factor of social ability. The depressive who is highly anxious tends to be withdrawn, apathetic, unsociable to lack poise and self confidence in personal and social interaction. Thus this seems to be a factor that taps lack of social skills and impact.

The last factor or cluster includes the variables of responsibility (-), self-control (-), achievement via conformity (-), socialization (-) and femininity. This cluster seems to measure a type of immaturity, a lack of conscientiousness, dogmatism, authoritarian type personality, or a lack of interest and motivation. In other words, it appears to be a lack of desire to help oneself or an attitude that is characterized by inhibition, cautiousness compliancy, dissatisfaction, and as being changeable and defensive. In general this appears to be a factor of helplessness.

Thus we appear to have a 2 level structure of depression consisting of four components.

Depression and Submissiveness

Lack of Social Skills and Impact	Negative self-concept and Rigidity	Helplessness

This idea of three component model depression is supported by Beck (1967) who proposed a set of three major cognitive patterns which are activated in depression and cause the individual to view himself, his world and his future in an idiosyncratic way.

Becks first component of his triad is the pattern of construing experiences in a negative way. This corresponds to our component of Lack of Social Skills and impact. Beck describes this component as where the patient "consistently interprets his interactions with his environment as representing defeat, deprivation or disparagement."

Becks second component is the pattern of viewing himself in a negative way. This component corresponds

to our factor of negative self concept. Beck states that in this component the patient "regards himself as deficient, inadequate or unworthy and tends to attribute his unpleasant experiences to a physical, mental or moral deficit in himself." Beck's description of this component of depression does not include the idea of rigidity which we found to be a 'core' element relating to the variables in this factor and sharing a large common variance with the other two factors.

The third component of Becks triad consists of viewing the future in a negative way. This relates to our third factor of helplessness. Beck describes the patients thoughts as anticipating "that his current difficulties or suffering will continue indefinitely. As he looks ahead, he sees a life of unremitting hardship, frustration and deprivation."

Despite the large number of methodological problems in this study, including the lack of an adequate number of subjects, the lack of control groups and normative data and the inadequacy of the measuring instrument to precisely evaluate the concepts we would wish them to measure the results of this brief investigation suggest that our theoretical formulation may warrant further, more adequate, longer term study. We can perhaps conclude, with many reservations and qualifications, that the concept of rigidity may play a major and significant role in the cognitive processes of depressives although until an adequate, well planned study of these hypotheses can be performed it must remain highly suggestive.

SUMMARY:

Twelve depressed patients were selected from the admission ward of a psychiatric hospital on the basis of attending psychiatrists diagnoses and ratings, my own observations, observations and ratings by the nursing

staff and the patients own descriptions of their state. During their first two weeks in hospitals, they were administered a battery of six tests from which twenty four measures were obtained. The results were correlated with each other using Pearson Product-Moment Correlation Coefficient and the resulting matrix was subjected to a cluster analysis using Tryon's modification of Holzinger and Harmon's B-coefficient (coefficient of belonging) technique. This yielded four clusters, one of which appeared to be a general factor of depression and submissiveness. The other three clusters were much more specific and appear to be a second level. These clusters appeared to be those of lack of social skills and impact, negative self-concept and rigidity, and helplessness. The three clusters were then compared with Beck's primary triad which they appear to resemble very closely. It was concluded that rigidity does appear to be a central 'core' in one of these components and that more detailed and carefully done research in this area is warranted.

APPENDIX ONE - DIAGNOSTIC ENTITIES OF DEPRESSION

I The following exerpted definitions of depressive syndromes is from the Diagnostic and Statistical Manual, Mental Disorders of the American Psychiatric Association (1952) D.S.M.I.

Psychotic Disorders

000-796 INVOLUTIONAL PSYCHOTIC REACTION: This category includes psychotic reactions most commonly characterised by depression occurring in the involutional period, without previous history of manic-depressive reaction. May be manifested by worry, intractable insomnia, guilt, anxiety, agitation, delusional ideas and somatic concerns.

000-X10 AFFECTIVE REACTIONS: These psychotic reactions are characterised by a primary, severe disorder of mood, and with resultant disturbance of thought and behaviour, in consonance with the affect.

000-X11 - 000-X13: These groups comprise the psychotic reactions which fundamentally are marked by severe mood swings and a tendency to remission and recurrence.

000-X11 MANIC DEPRESSIVE REACTION, MANIC TYPE: This group is characterised by elation or irritability, with overtalkativeness, flight of ideas and increased motor activity.

000-X12 MANIC DEPRESSIVE REACTION, DEPRESSED TYPE: Here is classified those cases with outstanding depression of mood and with mental and motor retardation and inhibition, in some cases there is much uneasiness and apprehension.

000-X13 MANIC DEPRESSIVE REACTION, OTHER: Those cases with marked mixtures of the cardinal manifesta-

tions of the above two phases (mixed type) of those cases where continuous alternation of the two phases occurs (circular type). Other specified varities of manic-depressive reaction (manic stupor or unproductive mania) will also be included here.

000-X14 PSYCHOTIC DEPRESSIVE REACTION: These patients are severely depressed and manifest evidence of gross misinterpretation of reality, including at times, delusions and hallucinations. This diagnostic category is used when a "reactive depression" is of such quality as to place it in the group of psychoses.

000-X27 SCHIZOPHRENIC REACTION, SCHIZO-AFFECTIVE TYPE: This category is intended for all those cases showing significant admixtures of schizophrenic and affective reactions. The mental content may be predominantly schizophrenic, with pronounced elation or depression. Cases may show predominantly affective changes with schizophrenic-like thinking or bizarre behaviour.

Psychoneurotic Disorders

The chief characteristic of these disorders is "anxiety" which may be directly felt and expressed or which may be unconsciously and automatically controlled by the utilisation of various psychological defence mechanisms (depression, conversion, displacement etc). In contrast to those with psychoses, patients with psychoneurotic disorders do not exhibit gross distortion or falsofication of external reality (delusions, hallucinations, illusions) and they do not present gross distortion of the personality. The various ways in which the patient attempts to handle this anxiety results in the various types of reactions listed below.

000-X04 PHOBIC REACTION: The anxiety of these patients becomes detached from a specific idea, object or

situation in the daily life and is displaced to some symbolic idea or situation in the form of a specific neurotic fear.

000-X06 DEPRESSIVE REACTION: The anxiety in this reaction is allayed, and hence partially relieved by depression and self-depreciation. The reaction is precipitated by a current situation, frequently by some loss sustained by the patient and is often associated with a feeling of guilt for past failures or deeds. The term is synonymous with "reactive depression."

Personality Disorders

These disorders are characterised by developmental defects or pathological trends in the personality structure, with minimal subjective anxiety and little or no sense of distress. In most instances, the disorder is manifested by a life long pattern of action or behaviour, rather than by mental or emotional symptoms.

000-X43 CYCLOTHYMIC PERSONALITY: Such individuals are characterised by an extratensive and outgoing adjustment to life, situations, an apparant personal warmth, friendliness and superficial generosity, an emotional reaching out to the environment, and a ready enthusiasm for competition. Characteristics are frequently alternating moods of elation and sadness, stimulated apparantly by internal factors rather than by external events. The individual may occasionally be either persistently euphoric or depressed, without falsification or distortion of reality.

II More recently, both the World Health Organisation (1967) and the American Psychiatric Association (1968) have put out revised systems of classification, which largely parallel each other and are both widely used. The following are the

World Health Organisation's classification of disorders in which depressive symptoms may occur:

295 SCHIZOPHRENIA

295.7 Schizo-affective type
- Mixed schizophrenic and affective psychosis
- Schizo-affective psychosis

296 AFFECTIVE PSYCHOSIS

296.0 Involutional Melancholia
- Agitated depression
- Agitated melancholia
- Climacteric insanity
- Climacteric melancholia
- Involutional depression
- Menopausal melancholia

296.1 Manic-depressive psychosis, manic type
- Hypomania NOS
- Hypomanic psychosis
- Mania NOS
- Manic psychosis
- Manic-depressive reaction
- Hypomanic
- Manic

296.2 Manic-depressive psychosis, depressed type
- Endogenous depression
- Psychotic depression
- Melancholia (senile)
- Manic-depressive reaction, depressive

296.3 Manic-depressive psychosis, circular type
- Alternating insanity
- Circular insanity
- Cyclothymia
- Manic-depressive reaction, circular

296.8 Other
- Manic stupor
- Unproductive mania

296.9 Unspecified
- Affective psychosis NOS
- Manic-depressive reaction NOS

298 OTHER PSYCHOSES

298.0 Reactive depressive psychosis
- Psychogenic depressive psychosis
- Reactive melancholia

298.9 Reactive Psychosis unspecified
- Psychogenic psychosis NOS
- Reactive psychosis NOS

300 NEUROSES

300.0 Anxiety Neurosis

Anxiety:
Depression
Hysteria

Anxiety:
Reactive state (neurotic)
Panic state

300.2 Phobic neurosis

Fear reaction
Phobia NOS

Phobic reaction

300.4 Depressive Neurosis

Neurotic depression

Neurotic depressive state

301 PERSONALITY DISORDERS

301.1 Affective

Cyclothymic personality
Hyperthymic personality

Hypothymic personality

301.5 Hysterical

Histrionic personality

Labil personality

301.6 Asthenic

Inadequate personality
Passive-dependent personality

Passive personality

301.8 Other

Immature personality NOS

Personality disorder of other specified type

301.9 Unspecified

Personality disorder NOS

Pathologic personality NOS

APPENDIX TWO: The Correlation Matrix of the Variables.

Variables	1	2	3	4	5	6	7	8	9
1									
2	.37								
3	.65	.70							
4	-.16	.15	.04						
5	-.63	-.22	.45	.26					
6	.02	-.02	-.47	-.25	.16				
7	-.32	-.30	-.51	.23	.48	.72			
8	-.06	-.65	-.37	-.03	.25	.25	.50		
9	.02	-,79	-.41	-.03	.31	.29	.53	.95	
10	-.38	-.38	-.75	.05	.64	.67	.70	.59	.61
11	-.26	.34	-.50	.04	.21	.67	.43	-.22	.06
12	-.61	.61	-.10	.25	.19	.11	.05	-.45	-.56
13	-.45	.52	-.27	.32	.40	.37	.40	-.21	-.31
14	.16	-.39	-.59	-.13	.43	.58	.53	.56	.54
15	-.22	-.18	-.59	.13	.36	.79	.89	.33	.40
16	.11	.80	.15	.14	.07	.24	-.12	-.46	-.53
17	-.37	.43	-.33	-.02	.38	.76	.55	-.16	-.17
18	.41	-.12	-.20	-.27	-.08	.22	.16	.49	.29
19	-.20	-.16	-.73	.11	.53	.54	.43	.27	.24
20	-.31	-.37	-.32	-.19	.45	.23	.46	.72	.58
21	.47	-.67	-.16	-.42	.04	.11	.22	.68	.66
22	.39	.39	.10	.30	-.32	.40	.31	-.24	-.24

	10	11	12	13	14	15	16	17	18	19
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11	.40									
12	.09	.62								
13	.41	.76	.84							
14	.37	.37	-.01	.25						
15	.73	.55	.06	.46	.53					
16	.14	.52	.67	.69	.10	-.08				
17	.51	.81	.56	.74	.13	.07	.62			
18	.25	.21	-.18	-.03	.58	.28	-.05	-.01		
19	.71	.72	.28	.47	.69	.49	.28	.49	.35	
20	.61	-.02	.03	.12	.66	.19	-.16	.10	.50	.28
21	.26	-.30	-.63	-.46	.58	.04	-.56	-.36	.67	.04
22	-.04	.55	.38	.42	.11	.40	.46	.34	.10	.15

	20	21	22
1			
2			
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16			
17			
18			
19			
20			
21	.58		
22	-.30	-.08	

VARIABLE LIST

1. Becks Depression Inventory.
2. Rehfischs Rigidity Scale
3. IPAT Anxiety Scale.
4. Embedded Figures Test.
5. CPI Dominance Scale
6. CPI Capacity for Status Scale.
7. CPI Sociability Scale.
8. CPI Social Presence Scale.
9. CPI Self-acceptance Scale.
10. CPI Sense of Well-being Scale.
11. CPI Responsibility Scale.
12. CPI Socialization Scale.
13. CPI Self-control Scale.
14. CPI Tolerance Scale.
15. CPI Good Impression Scale.
16. CPI Communality Scale.
17. CPI Achievement via Conformance Scale.
18. CPI Achievement via Independence Scale.
19. CPI Intellectual Efficiency Scale.
20. CPI Psychological-mindedness Scale.
21. CPI Flexibility Scale.
22. CPI Femininity Scale.

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