DEPRESSION: COGNITIVE, SOCIAL, ENVIRONMENTAL AND EMOTIONAL FACTORS

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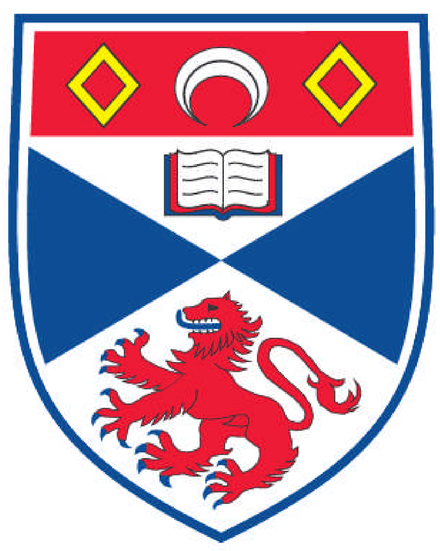

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by Susan Holttum

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Abstract

This work examined four issues, in relation to both the experience of depression, and vulnerability to depression. There were four empirical studies, each with two parts. The first study examined the role of cognitions, such as overgeneralizations (Beck, 1963; Beck et al, 1979), and causal attributions (Abramson et al, 1978; Alloy et al, 1988). Their role as symptoms of depression, and as possible vulnerability factors, independent of current mood, was examined. In the first part of the study, clinically depressed patients, recovered subjects, and community control subjects were interviewed and given questionnaires. In the second part of the study, a larger sample of students, some of whom became mildly depressed on beginning university, filled in questionnaires at the start of term and again five weeks later. The same subject groups were the basis for the study on social factors, and the study on life events. The fourth study was also in two parts. A different sample of students were the subjects for the first part, and the same clinical and control groups participated in the second part.

Factors found to be associated with the state of depression were: Internal, stable and global attributions for the causes of bad events, negative view of future outcomes, and negative view of self; social skill deficits and lack of social support; recent difficult life events. One factor failed to show any strong association with the depressed state - unrealistic goals. Factors associated with vulnerability to depression: Negative evaluations of future outcomes, and of self, unrealistic goals, and, surprisingly, lower—than—normal goals; deficits in social skill (especially low self-confidence in social settings) and lack of social support; history of difficult life events. Factors which failed to show association with vulnerability to depression: Causal attributions for events; adverse reaction to depression itself. Deficits in social skill were associated with lack of social support. Depression proneness itself appeared to be a risk factor for negative life events.

CONTENTS

CHAPTER ONE

THEORETICAL REVIEW

In this chapter, sketches of cognitive and social models of depression will first be presented. Then the known, important role of life events will be discussed, in the light of these models. The models provide plausible explanations for the individual differences seen in reactions to negative events. They all propose a basic hypothesis that there are stable, person-related vulnerability factors which cause the differential reactivity in certain individuals. Finally, the perception of negative emotion will be considered. The phenomenon of depression itself has importance as a socially shared concept. Particular conceptions of the state of depression by the wider social group may affect the sufferer's coping responses when depression strikes. Furthermore, the state of depression may produce after-effects, such that ordinary changes in mood can no longer be coped with easily by former depression sufferers, and further events are construed more negatively.

1.1 COGNITIVE THEORIES OF DEPRESSION

(i) Beck's Developmental-Cognitive Model of Depression

The work of Beck and co-workers has been widely cited in papers and treatises on the cognitive aspects of depressive disorder. It is with this line of work that the now popular idea of

"cognitive vulnerability" originated (Beck, 1967; Kovacs and Beck, 1978). This concept of vulnerability refers to something which is set up during childhood, but becomes latent or dormant until reactivated in adulthood by unpleasant events of a specific kind. Someone who does not have this "vulnerability factor" would react with distress but in a milder or more transient form. In describing how this vulnerability is set up, Beck (1967) wrote:

> "In the course of his development, the depression-prone person may become sensitized by certain unfavourable types of life situations such as the loss of a parent or chronic rejection by his peers. Other unfavourable conditions of a more insidious nature may similarly produce vulnerability to depression. These traumatic experiences predispose the individual to overreact to analogous conditions later in life."

An example of this would be overreaction to disruption of a marital situation through activation of a concept of irreversible loss associated with death of a parent in childhood. Such a conceptualization is said to channel the depressed person's thinking in negative ways. It involves such processes as overgeneralization, that is, drawing a general conclusion on the basis of a single incident and applying the idea to many other situations whether it fits or not; personalization, that is, the tendency to relate external events to oneself when there is no basis for such a connection; and arbitrary inference, that is, drawing a particular, specific conclusion, when there is no factual evidence for it, or even though the evidence goes against it. (Beck, 1963; Beck. et al, 1979).

These processes are "automatic", and thus, when events resembling the early traumatic conditions occur in the life of the depression-prone person, there is a "constriction of his cognitive field" (Beck, 1967), and the person is "bombarded by

negative self-judgements and negative ideas about the future." (op. cit.). Thus, when re-evoked, these frameworks, (through which any further events are then viewed), constrict and distort the view to an overly pessimistic one, and the emotional reactions are correspondingly negative, intense and prolonged.

The person sees themself, the world and the future in a predominantly pessimistic way. These three aspects i.e. self, world and future, were termed by Beck the "negative cognitive triad" (Beck, 1970). Beck (1974) has described the differences between thinking in the normal and the depressed state as follows:

	Normal state	Depressed state
About self	Realistic	Self-devaluating
About future	Hopeful	Hopeless
About environment	Realistic	Overwhelming

The negative view of the future arises out of the negative view of self and the perceived enormity of difficulties posed by the environment (Beck, 1967, p. 278; Beck, 1963). This triadic characterisation arose out of observations of statememts made by depressed patients in therapy (Beck, 1963).

It must be noted that cognitive distortions, as such, are not viewed as being specific to depression. Beck (1963) pointed out that such processes as arbitrary inference, dichotomous thinking and the other cognitive errors may be determinants of anxiety, elation or hostility, and not just of depression. The negative schema comprises the depressive form of cognitive distortions.

As a result of his (1963) observations of typical statements made by subjects exhibiting different forms of psychopathology, Beck characterised their thinking in the

following ways. Depressed subjects showed themes of low self esteem and self blame (negative view of self), overwhelming responsibilities (negative view of world), and desires to escape (negative view of future). Those with anxiety states showed themes of personal danger. Hypomanic patients showed themes of self enhancement. Hostile paranoid patients exhibited themes of accusation against others.

The theme which appears most central in the depressed patient according to Beck (1963) is that of personal inadequacy. Beck refers to the relative absence of anger in depressed patients. He attributes this to "their tendency to conceptualize situations in terms of their own supposed inadequacies", and to believe themselves blameworthy and therefore justifiably the target of insults, deprivation and abuse. Beck (1963) did not describe in detail the themes of the patients with psychopathology other than depression. He reported the following, however. Although the content of the statements differed in their main themes, the form of cognitive errors made was similar. Cognitive errors are neither unusual in themselves, nor specific to depression, but Beck's work has shown that depressive forms can be identified, and their role in the causation of depression can, therefore, be tested.

In considering the question of what Beck may have been referring to by "other unfavourable conditions of a more insidious nature", in the quote on page 1, it is assumed he was referring to the way in which the child gradually builds up the self-schema and its evaluative tones, through experiences of learning or failing to master different tasks, and through interaction with adults and age-peers. Beck (1967, chapter 18) refers to the way that others might label the child as clumsy or

whatever, and how this might become generalized through repeated failure at some sorts of task.

Negative cognitions about oneself can become part of a relatively stable self-concept or "schema". Beck (1964) described these "schemata" as being "relatively stable cognitive structures which channel thought processes". He also wrote: "When a particular set of stimuli impinge on the individual, a schema relevant to these stimuli is activated." In a similar way, Kelly (1955) saw the ways in which a person habitually construed events, as crucial to psychological well-being.

This description of cognitive schemata is analogous to the behavioural concept of "traits", as defined by Eysenck (1947), as "observed constellations of indivdaul action-tendencies" (p. 25). Action tendencies are "habitual responses", that is, "specific responses which tend to recur under similar circumstances"; for example "if the life situation recurs, the individual reacts in a similar fashion." As such, a negative self-concept (or schema or trait), is distinct from a transient experience of negativity towards the self, which would constitute a negative "state".

In terms of Beck's (1967) description of the formation of negative schemata in the early years, the same negative state, evoked in a series of related circumstances, where, perhaps, the child is repeatedly labelled in a negative way, can become consolidated into a relatively enduring internal schema. At some point, the same negative cognitions regarding the self, and the same negative affective state, as originally experienced, can be triggered without all the elements of the original situation being present.

Kovacs and Beck (1978) describe these traits or schemata as "latent". They are latent inasmuch as the person may only actually experience those negative thoughts when circumstances occur which resemble those in which the concepts were originally formed. If the circumstances are relatively rare in adult life, then the depressive thoughts will only be triggered in exceptional circumstances.

With reference to the evaluative quality of these self-descriptions, negative value depends on the social context and function of the label. Beck cites the example of the delinquent who calls himself bad, but feels pride rather than a lowering of self-esteem in so doing. Social psychologists have studied this phenomenon of alternative sub-cultures (e.g. Downes, 1966). The delinquent operating within such a sub-culture is clearly different from the lone child accused of badness by punishing elders, or ostracized by the peer group, as sometimes happens when children use some characteristic to justify making one child the object of ridicule.

Another crucial determinant of later depressogenic processes is described by Beck (1967), and that is the early setting up of high standards of achievement, which later leads to repeated disappointments due to the impossibility of ever fully satisfying them. This idea is discussed by Weiner (1974) in connection with achievement motivation, and attribution for success and failure. Childhood reinforcement for results, rather than effort, leads to an adult whose social confidence depends on high standards of achievement, but also who has not learned how to go about achieving tasks, or how to cope with set-backs and difficulties on the way. Depressed patients not only evaluate themselves as deficient, but also view these deficiencies as

reprehensible (Beck, 1967). They "should" have been able to avoid them. Back in 1951, Horney characterised depression in terms of the inappropriate and excessive guilt often experienced as a result of these "shoulds" (Horney, 1951, p. 65).

A set of typical impossible standards have been incorporated into a cognitive test called the Dysfunctional Attitude Scale (Weissman and Beck, 1978). The items of this scale are statements of standards of behaviour and conditions of the world that must be achieved, in order for a positive view of oneself and the world to be maintained. For example "If I fail at my work, then I am a failure as a person" or "If a person I love does not love me, it means I am unlovable". These statements incorporate negative cognitive distortions. If the desired conditions are not maintained, the negative cognitions acquire great significance. If a person has "impossible standards", these constitute a relatively stable (trait) factor which causes vulnerability to depression when failure is perceived.

The final point in this summary of Beck's cognitive model is his proposal of an interactive process between cognition and emotion, whereby the negative emotion induced by the negative cognitions in turn activates the negative cognitions further, and so on, producing a "negative spiral" of despair from which the person has great difficulty in escaping (Beck, 1967). The term 'negative' refers to the negative tone of the emotions involved. However, in engineering terminology, what is described is a positive feedback loop, in which the depression process, once begun, is augmented. Cognitive therapy (Beck et al, 1979) attempts to change this into a negative feedback, by teaching depressed clients to become adept at challenging their own

depressive thoughts, and focusing realistically on the pleasant and good aspects of themselves and any situation. Depressive thoughts, in time, can become the automatic trigger for such cognitive work, so that a negative feedback is set up, whereby the unpleasant emotions are attenuated rather than augmented.

In summary, Beck's model incorporates two basic cognitive components, cognitive distortions and impossible standards. The actual manifestation of the negative distortions (i.e. the person is thinking many negative thoughts) is associated with the depressed state. The cognitive distortions constitute a negative triad about self, world and future. This is expressed in negative and oversimplified perceptions such as overgeneralization, arbitrary inference and selective abstraction.

The "impossible standards" component is incorporated in a set of "dysfunctional attitudes", which should be relatively unaffected by the presence or absence of actual depression. In other words, they constitute a trait form of cognitive vulnerability to depression. When one or more of the conditions enshrined in these attitudes are not met, negative thoughts begin to assail the person, and the negative spiral ensures that depression is deepened and maintained.

(ii) Rehm's Self-Control Model of Depression

The self-control model devised by Rehm (1977) is based on the work of Kanfer (1971). Kanfer described processes involved in

self-control, specifically self-monitoring, self-evaluation and self-reinforcement. Self-monitoring is the observation of one's own behaviour and its immediate antecedents and consequences. Self-evaluation is judgement of one's performance against a self-set or externally derived standard. Self-reinforcement refers to self-applied reward or punishment. It includes self-praise or criticism and, in behavioural terms, self-care. According to Rehm's model, depression can be maintained by deficits in these cognitive processes.

In the self-monitoring process, depressed people are said to selectively attend to negative events. Rehm (1977) likens this to Beck's (1972) concepts of "selective abstraction" and "arbitrary inference". They are also said to attend to immediate rather than delayed outcomes. They are unable to foresee future positive reinforcement in the form of pleasant outcomes. In self-evaluation, depressed people either make inaccurate attributions of causality, or set excessively stringent standards. The cause of an event can be inappropriately attributed to an internal factor such as character, or to uncontrollable external factors, in similar ways as will be seen in the next section, for the attributional model. Stringent standards can mean that goals aimed for are extremely high, so that they are difficult to reach. Secondly, they can be extremely broad, so that failure in one particular situation is generalized and taken to imply failure as a person. Rehm likens this to Beck's (1972) concept of "overgeneralization". The self-reinforcement process, in depression, becomes altered such that the depressed punish themselves more and reward themselves less. This results in lower frequency and slowed rates of observed behaviour.

When a person becomes depressed in reaction to loss of external reinforcement, adaptive self-control skills may function to restore or find alternative sources of reinforcement, over a period of time. Alternatively, Rehm states: "Unless she or he encountered a particularly beneficent environment, a person with severe self-control deficits would be chronically depressed". Individual differences in self-control skills produce greater or lesser tendency to become depressed. In Rehm's model, the trait component is the lack of self-control skills, which are cognitive. As in Beck's model, stringent standards are set, and attention is focused on the negative aspects of self and world. These deficits are normally compensated for by external sources of positive evaluation and reinforcement. In other words, the depressive processes are all traits, although they also produce or maintain a heightened state of depression when external sources of reinforcement are lost.

(iii) The Attributional, or Helplessness Model of Depression

Seligman's (1975) Learned Helplessness Model of depression, originally based on experiments with animals subjected to uncontrollable stress, was reformulated in 1978 (Abramson et al. 1978) to take into account cognitions normally expressed by clinical patients. At the time of this reformulation, animal learning had had a long tradition of providing insights into human learning and human behavioural pathology, particularly in connection with anxiety neurosis and phobic disorders, but not so much for cases of depression (Williams, 1984b). The animal model

of depression, therefore, excited renewed interest when Abramson, Seligman and Teasdale reformulated and improved it in 1978.

In their reformulation of the Learned Helplessness theory, Abramson et al stated that the degree and type of helplessness would depend not only on having experienced uncontrollable events, but also on the way that persons attributed the causes of the uncontrollability. If they attributed failure on some task to an internal, stable and global factor (for example, lack of intelligence in themselves), then they would feel helpless when faced with other tasks of that general nature, and would not expect ever to be able to perform them well. This corresponded to a depressive reaction, since it involved persons viewing themselves in a negative way and being helpless, in not just one, but many, situations and over a prolonged period of time. Some people would attribute the cause in this way, while others would attribute it to an external, unstable and specific factor, such as distraction during the task. This would correspond not to depression, but, in the terms of Abramson et al, would be seen as "specific" helplessness. Persons would not feel negative about themselves, but rather, about the present situation only, and would expect to cope in other, similar settings, and on future occasions.

The explanation that Abramson et al proposed, as to why some people would attribute the cause of a negative event to something internal, stable and global, was that some people have an "attributional style" in which they habitually tend to make such attributions for failure. Alloy, Abramson, Metalsky and Hartlage (1988) restated the attributional model once again. Although retaining the essential character of the model, its name was changed from the "helplessness" to the "hopelessness" theory:

"According to the hopelessness theory, given equivalent situational cues, individuals who exhibit the hypothesized depressogenic attributional style should be more likely than those who do not to attribute any particular negative event they confront to internal, stable, global factors and view the event as very important, thereby incrementing the likelihood of becoming hopeless and, in turn, developing (hopelessness) depressive symptoms".

This is basically unchanged from a core statement made by Abramson et al (1978) in their cognitive reformulation of Seligman's (1975) learned helplessness model.

Abramson et al (1978) stated that: "Our model predicts that attributional style will produce depression proneness, perhaps the depressive personality." (p.68, op. cit.), and also that: "Beck (1967) argued similarly that the premorbid depressive is an individual who makes logical errors in interpreting reality." They related their concept of causal attributions to Beck's concept of overgeneralization, in that an internal, stable and global attribution resembles an overgeneralization.

The Hopelessness Model as described by Alloy et al (1988) allowed the possibility of specific vulnerability, implying a special case in which there could be "a depressogenic attributional style in a particular content domain (e.g. for interpersonal events)". For this specific vulnerability they follow Beck's (e.g. 1967) stipulation that this kind of cognitive vulnerability requires a match between the areas of depressogenic cognitive style and the type of negative life event encountered.

Alloy et al (1988) modified the stipulation about the attributional style expected to be most associated with depression. Although the original Abramson et al (1978)

formulation of the model did allow for this, it was emphasized by the later theorists. The point being made is that "hopelessness depression" can result from a stable and global attribution of the cause of a bad event. The attribution may be internal or external, and still produce hopelessness. If the attribution is internal, the hopelessness is accompanied by guilt and self-blame, with feelings of personal incapacity to improve things. If the attribution is external, the feeling is that the external agencies are too powerful to be overcome.

Like the other two models, the attributional model involves trait-like characteristics in certain people, making them unusually vulnerable to depression. Such a trait could be expressed in two possible ways. The first is that the vulnerable persons have an unchanging belief in some stable and global negative property of themselves or of the world, such that unpleasant events often happen as a result. For these pessimistic persons, the most obvious explanations for bad events are in terms of their pre-existing, stable negative belief system.

The second possibility is that, as in Beck's model, the vulnerable persons are uncertain about fundamentals in themselves or the world. They can have positive and optimistic perceptions, but these can easily be overturned when things go wrong. Their belief systems are unstable and are vulnerable to changes in their circumstances. This change from positive to negative is the phenomenon which is perhaps central to Beck's investigations, and certainly presents us with a most intriguing puzzle; namely, why a person's whole view of self, world and future should become radically negative, often despite clear evidence of fine personal qualities and/or favourable external circumstances, or when the

actual triggering event does not seem to warrant such a drastic reaction.

To summarise, the attributional model, like that of Beck (Beck et al, 1979) involves a state and a trait component. However, as with Rehm's model, the two components are less obviously differentiated. The trait component is the readiness to attribute bad events to stable and global causes. The state component is actually making this attribution when one or more bad events have happened. It is unclear whether the readiness to attribute in a depressive way stems from an on-going negative world-view, or whether, like the cognitive distortions incorporated in Beck's "dysfunctional attitudes", the depressive attributional style is only triggered by certain events and is then applied as a form of blame. The Attributional Style Questionnaire (Peterson, Semmel, Von Baeyer, Abramson, Metalsky and Seligman, 1982) was designed to assess the tendency to make internal, stable and global attributions for unpleasant events, and external, unstable and specific attributions for pleasant events. The empirical evidence for the attributional, and the other, models discussed here, will be presented later in introducing the empirical projects of the present work.

It can be seen that cognitive models tend to have a fair degree of conceptual overlap. It is possible to identify three main forms of cognition from the foregoing discussions. The first process is causal attribution. These are beliefs about how things came to be the way they are. The second process is best characterized by Beck's composite of negative distortions about self, world and future. Although it is a composite, all the components concern beliefs about how things presently are.

Beliefs about the future are included in this second group, insofar as they represent stable expectations arising directly out of the depressive worldview. The third process can be characterized by Beck's "impossible standards". These are ideas about what the person desires to be the case. They will be denoted "aspirations". The three cognitive processes are summarised in Table 1. In the empirical work of this project, they will be the basic cognitive processes whose role in relation to depressive states, and cognitive vulnerability to depression, will be tested.

Table 1: Three cognitive processes derived from theory

ATTRIBUTIONS
Internal, stable and global causes attributed for unpleasant events. Also (occasionally) external, unstable and specific causes attributed for pleasant events.
Main test: Attributional Style Questionnaire (ASQ)
EVALUATIONS
Negative view of self, world and future. Negative cognitive distortions such as overgeneralization, arbitrary inference, magnification and minimization.
Main test: Automatic Thoughts Questionnaire (ATQ)
ASPIRATIONS
Impossible standards or goals for oneself. Unrealistic expectations for the world or for others. Sometimes called "irrational beliefs". The standards and expectations are associated with beliefs about extreme negative consequences if they are not fulfilled.
Main test: Dysfunctional Attitude Scale (DAS)

1.2 SOCIAL FACTORS AND DEPRESSION

(i) Lewinsohn's Model

Behaviourists have pointed to the possible role of social factors in depression. According to the behavioural approach, psychopathology can result from the interruption of sequences of behaviour which are normally reinforced by the environment. Ferster (1965) suggested that sudden changes in social reinforcement would result in consequent reduction in behavioural responses, which is a major feature of the depressed state.

According to Lewinsohn's cognitive behavioural model (Lewinsohn and Hoberman, 1982), depression results from a low rate of response contingent positive reinforcement (RCPR). In other words, the person is not able to interact with the social environment in ways that produce pleasant feelings. The lack of RCPR results in dysphoria as well as reduced initiation of behaviour by the depressed person. The lack of RCPR could be in the form of insufficient reinforcement per se, and also of too many unpleasant, and too few pleasant, interactions.

Lewinsohn (1974, p. 72) gives three possible causes of a low rate of RCPR. These are the number of potentially reinforcing events happening to the individual, the number of these available in their environment, and the social skill of the individual for eliciting the available reinforcers. Thus, one can speak of internal and external factors determining social interaction and social support. The internal factors can be relatively stable, as in social skill, or unstable, perhaps as a result of depressed mood. The external factors are the actual

support and opportunities available for interaction, and can be thought of in terms of both quantity and quality.

(ii) Brown and Harris's Model

In their social-epidemiological model of the development of depression, Brown and Harris (1978) described a number of "vulnerabilty factors" for depression, examples of these being loss of mother before the age of 11, currently having 3 or more children under the age of 14 at home, and absence of a confidant. When further losses or difficulties occurred, depression ensued. Brown and Harris theorised that depression occurred when the losses or difficulties disrupted the person's "sources of value", and when alternative sources could not be found. These sources of value were the person's social roles, such as being a good mother, or having a role in employment outside the home. This central role of social reinforcement is consistent with the role given to it in Lewinsohn's model.

Brown et al (1986) reported that social support, particularly at a time of crisis, had a protective function, reducing risk of clinical depression. They also found self-esteem to be correlated quite highly with some measures of social support. For example, high self-esteem was inversely related to negative interactions with husband, and in single women fewer of those with negative evaluation of themselves confided in someone close to them. It is not known what exactly the relationship is between low self-esteem and lack of good social support.

It seems that Brown and Harris (1978) identified two functions of social interaction, one being that of support, for example in a crisis, and the other being the contribution that the person is able to make within social contexts (the role they play, whereby they perform duties or are relied on by others). Fisher (1984) has pointed to a number of possible functions that social support may have. The tendency to self-blame, which (as has been seen earlier) is associated with depression, would be reduced by the presence of social support. Supporters provide information that others feel the same way about a difficult situation. Time spent with others also provides distraction and so reduces time for preoccupation with negative ruminations.

In terms of contribution and social roles, success at leisure activities, for example, would prevent generalization from difficulties which were being encountered at work, thus counteracting the assumption that one is a total failure in life (Fisher, 1984). This view is consistent with Brown and Harris's (1978) descriptions of the role of alternative sources of value. They theorised that those who were not able to avoid depression were those who could not find alternative value and whose sense of loss became generalized.

In terms of Lewinsohn's model, loss of sources of value results in disruption of usual social reinforcements, causing dysphoria. Additionally, those who had relatively stable deficits in social skill would find it harder to locate alternative sources of value. It will be recalled from the section on cognitive models that Rehm (1977) described the concept of self-control skills. These cognitive skills maintain inner sense of value when outer sources of reinforcement are lost. Maintaining self-esteem may be closely tied to being able

to move towards alternative social roles.

(iii) Oatley's Model

Oatley and Bolton (1985) have made the concept of a "sense of self" central, in their social-cognitive theory of depression. The integrity of the self has long been regarded as crucial to psychological wellbeing by such theoreticians and therapists as Rogers (e.g. Rogers, 1951) and Jung (e.g. Jung, 1932). The model described by Oatley and Bolton is a development of Brown and Harris's (1978) notion of "sources of value". According to Oatley and Bolton, the "sense of self" is maintained by the continued fulfillment of a person's role expectations by others. Depression occurs as the result of provoking events which disrupt these roles and threaten the sense of self.

These authors seem to place most emphasis on external events in the causation of dysphoria. For example, sudden redundancy may result in the loss of a role in which one has experienced a "sense of worthwhileness, or purposefulness" (Bolton and Oatley, 1987). Oatley suggests, in line with Brown and Harris (1978), that the basis of vulnerability is "having no alternative means of experiencing oneself as being worthwhile".

As hinted above, influential theorist-therapists have focused on the development of personal autonomy (e.g. Jung, 1932; Rogers, 1951). For these theorists, the human organism has a natural tendency towards developing greater autonomy and self-determination. Jung (1932; English translation 1954) wrote of the "achievement of personality" as "the most successful adaptation to the universal conditions of existence coupled with

the greatest possible freedom for self-determination." Rogers (1951, p. 488) described the natural tendency for the organism to develop thus: "It's movement ... is in the direction of an increasing self-government, self-regulation, and autonomy, and away from heteronymous control, or control by external forces."

This development can be put in terms of Rehm's (1977) self-control skills, and Lewinsohn's (1974) discussion of the role of social skill. If relatively unhindered by adverse social and psychological conditions early in life, it can be hypothesized that normal development would result in adults with high autonomy, that is, well developed self-control and social functioning. This would enable them to weather life crises by maintaining their self-esteem, and being able to re-establish social ties when these were disrupted.

There are both theoretical and empirical indications that social factors are important in relation to depression. In the present work, their relationship to both the depressed state and proneness to depression will be investigated. Two main social factors will be examined, social skill and external support.

1.3 LIFE EVENTS AND DEPRESSION

The evidence is strong that life events play a role in the precipitation of, probably, the majority depressions. All the models discussed here concede a role for life events. Here follows a selection of the basic ground of evidence that life events are crucially important in the aetiology of depression. The question is why people react differentially to life events. The evidence on the role of life events will be discussed in the light of the cognitive and social models which were described above.

(i) Early Events

As seen in the earlier review of Beck's model (section 1(i)), early events are said to have a special role, in that they may "sensitise" an individual, producing a tendency "to overreact to analogous conditions later in life." (Beck, 1967). Here follows some evidence concerning the impact of early events on later adjustment.

Brown and Harris's (1978) social-environmental study provides evidence that an early loss event is one factor associated with later depression. A review by Lloyd (1980) on life events as predisposing factors for depression, concluded that death of a parent during childhood increased the risk of later depression by a factor of about 2 to 3. Secondly, the presence of suicidal acts was positively related to early loss by death or separation. However, it was not possible, because of the relative lack of studies including other psychiatric

controls, to determine how specific these factors were to depressive versus other mental illness. Lloyd called for further research "aimed at elucidating how such early loss events exert their detrimental impact" (op. cit.).

There has been some empirical investigation of parental characteristics as remembered by currently depressed persons and non-depressed persons. Jacobson, Fasman and Dimascio (1975) reported the surprisng finding that the more obvious traumatic events of loss or death of a parent, or permanent separation from natural parents, was <u>not</u> conducive to adult depression. However: "Significant differences emerged ... in terms of more separation <u>of parents</u>, more freqent psychiatric illness of parents, and a more deprived child-rearing milieu" (present author's italics). Normal subjects recalled their parents as having fewer separations, less illness, being less rejecting and overprotecting, and more affectionate in their childhood, compared to the recollections of the patient group.

It should be noted that adverse parental behaviour may be the result of overly stressful circumstances, and their own experience of parenting. Additionally, problems may arise where a child has a temperament different from either parent, or is constitutionally vulnerable to depression.

Raskin, Booth, Reating, Schulterbrandt and Olde (1971) reported similar findings for parental rejection and overprotection. In another retrospective study, Parker (1979) concluded that bipolar manic-depressives, whose affective disorder is known to be largely chemically determined, showed no difference from normal controls on type of parental care; but neurotic depressives were characterized by overprotection by their mothers, and less overall care. This suggests that

environmental factors are a sufficient cause of 'non-chemical' depression, and that they are not necessary for the production of 'chemical' depression. In a third group of individuals studied by Parker, the tendency to mild depressive experience was not associated with lack of parental care, but there was a weak association with parental overprotection.

In a study of students' recollections of the parenting they had experienced, Buri, Louiselle, Misukanis and Mueller (1988) found self-esteem in the students to be inversely related to "authoritarian" parenting (i.e. controlling, dictatorial and punitive). Conversely, "authoritative" parenting, where children were allowed to participate in planning and decisions of the family, was directly related to the later self-esteem of the students.

In studies with currently depressed subjects, there is the possibility of their recalling their parents in a more negative light than would be the case when they had recovered from their depressive episode. However, a study by Gotlib, Mount, Cordy, and Whiffen (1988), on women who had just given birth, found perceptions of mother to be stable over a 2-4 year period in groups of women who were depressed, non-depressed, or depressed at the initial assessment and who later improved. Their study implicated both low level of maternal caring and overprotection as being associated with adult depression. Thus at least three studies implicate overprotection as a possible factor. By overprotection is meant such practices as restricting the child's efforts to show independent behaviour, invading privacy, and displaying concern for safety when it was not under threat.

The study by Buri et al (1988) implicates overcontrolling and punitive parenting in the development of low self-esteem. It has been seen earlier that negative evaluation of self, or the related concept of low self-esteem, is important for several of the models of depression which were discussed, notably that of Beck (Beck et al, 1979), that of Brown and Harris (1978), and that of Rehm (1977).

These studies on parenting indicate that restriction of autonomy in the younger years may lead to a belief in the uncontrollability of events. In this vein, Seligman (1975) suggested that even "noncontingent positive events, can produce helplessness and depression." (p. 98). Rewards that have not become available as a result of one's own efforts, do not lead to a feeling of mastery. Overprotection during childhood, even if it involves affection and generosity, restricts learning about contingency of rewarding experiences on effort.

Overprotection could restrict social learning outside as well as inside the family, leading to such social deficits as described by Lewinsohn (1974). Such deficits could be self-perpetuating; because the unrewarding experiences produce withdrawal from the social scene. Rutter (1987) has pointed to the necessity for successful engagement with manageable levels of risk, to facilitate learning and resilience later on.

There may be other early influences about which there is as yet little data, namely, how siblings, children at school, or teachers may have characteristically behaved towards a person as a youngster. These are factors that Beck (1967) has suggested may also be involved in the setting up of cognitive vulnerability to depression.

To conclude this brief examination of early influences in the lives of currently depressed people, there are some indications that early traumatic events and unfavourable long-term conditions, notably over-controlling and uncaring parental behaviour, are associated with later depression. However, little is known about the precise mechanism by which these conditions produce their effects, and there is no direct evidence that such events produce latent depressogenic schemata. There are many possibilites for further research, particularly of a prospective and long-term nature.

(ii) Events as Immediate Precipitants of Depression

There is a large literature on the subject of life events and subsequent psychiatric or psychosomatic illness (e.g. Paykel, 1974; Dohrenwend and Dohrenwend, 1974; Totman, 1979; Brown and Harris, 1978). Lloyd (1980), in reviewing research on precipitating events, reported that depressed patients had experienced more stressful events during the 3 - 12 months preceding onset, as compared with either normal controls or schizophrenics. When events are categorized, those on which negative value would normally be placed ("undesirable" - e.g see Paykel, Myers, Dienelt, Klerman, Lindenthal and Pepper, 1969; Paykel, 1974), loss events and severely threatening events are found to be particularly common as antecedents to depression. Brown, Bifulco and Harris (1987), using an objective and thorough analysis of life events, have demonstrated prospectively that secondary events exacerbating prior difficulties, or which disturbed commitment to a role, are associated with greater onset

of clinical depression in women.

Oatley (Oatley, 1984, Bolton and Oatley, 1987) has reported on a prospective study of men who became unemployed or who remained in work. On interview eight months later, it was found that those who became depressed tended to be those "who had lost their job, who had not found a new one ... and who had smaller amounts of social interaction outside working hours at the time of their first interview".

As was discussed earlier, Brown and Harris (1978) characterized some life events as "vulnerabilty factors", examples of these being loss of mother before the age of 11, currently having 3 or more children under the age of 14 at home, and absence of a confidant. Brown and Harris suggest that such circumstances reduce self-esteem, by disrupting the women's ability to perform important social roles effectively, such as wife, mother, or in employment outside the home. They refer to this low self-esteem as a "cognitive set". Secondary events termed "provoking agents" are found to occur before a clinical depression ensues. The provoking agent could be, for example, loss of a loved one or prolonged housing difficulty. Those women whose self-esteem had already been lowered, due to the prior "vulnerability" circumstances, tended to recall past loss or consider the new event as connected with existing difficulties; i.e. their feeling of helplessness was generalized.

Brown and Harris (1978) theorized that those women with <u>high</u> prior self-esteem, were able to "work through" the crisis, and to "locate alternative sources of value". Thus an important factor in Brown and Harris's scheme was the initial lowering of self-esteem, a factor which, where it stemmed from childhood loss, could be a long-term condition. Brown, Andrews, Harris,

Adler and Bridge (1986) have reported that negative evaluation of self (NES) at initial interview was associated with a higher proportion of depression onset cases in the following 12 months, among women who experienced a provoking event (in those without a provoking event, NES was unrelated to onset of depression). This leaves open the possibility of depressions which are largely chemically determined, in that they require neither low self-esteem nor provoking events in order to come about. This possibility was discussed by Akiskal, Hirschfield and Yeravanian (1983), in their analysis of the various possible paths to depression.

Brown and Harris's (1978) diathesis-stress model is consistent with both Rehm's (1977) self-control model, and Lewinsohn's (1974) social-behavioural model. After a loss, those who have cognitive self-control skills, retaining their self-esteem, and appropriate social skills to enable them to continue functioning in an altered social field, will locate alternative sources of reinforcenent and value quickly, whereas other will become depressed and take longer to adjust.

Brown and Harris's (1978) model is even more similar to Beck's model in that both models view early events as important. Also, Beck's model allows for a series of events which can begin impinging on a person's specific vulnerability, with later events then being interpreted more negatively. In both these cases, self-esteem is lowered before serious depression occurs. However, Brown and Harris's construction suggests that women's self-esteem might be lowered due to early events such as loss of mother before the age of 11 and remain low. In Beck's model, depression-prone people are seen as functioning well for a time, despite early stresses (and perhaps having high self-esteem

associated with perfectionist goals and high expectations). Later on, events impinging on their specific (but hitherto inactive) cognitive vulnerability, cause their self-esteem to fall. A possible way of reconciling the two models is to recall that Brown and Harris have focused on a particularly high-risk population for depression. Perhaps the women in their samples tended to have relatively few opportunities, and relatively more stress, in life, and so less chance to build up optimistic goals or a favourable self-image.

To summarise this section, difficult life events, both early on and as immediate precipitants, have been shown to be related to depression. In the theories of Beck (e.g. Beck et al, 1979), of Brown and Harris (1978), and also Oatley (Oatley and Bolton, 1985), difficult events are of key importance, even though these models may emphasize other factors, namely cognitive and social. The various cognitive and social models are complementary to one another. There are no major inter-model inconsistencies, and they fit in with evidence on the effects of life events. They provide plausible explanations of why people react differentially to difficult life events. Questions still exist about how life events exert negative influence, and precisely how such influence is modified or channelled by the other factors.

The major, shared hypothesis proposed by the models is the existence of relatively stable cognitive and social deficits attaching to the person, and resulting from adverse conditions in the early environment. These deficits are proposed as vulnerability factors for depression in adulthood. Figures 1 and 2 summarise schematically the picture of depression which emerges from a synthesis of the models discussed here. The arrows signify that the conditions in a preceding box contribute

Figure 1 : Summary of cognitive models of depression

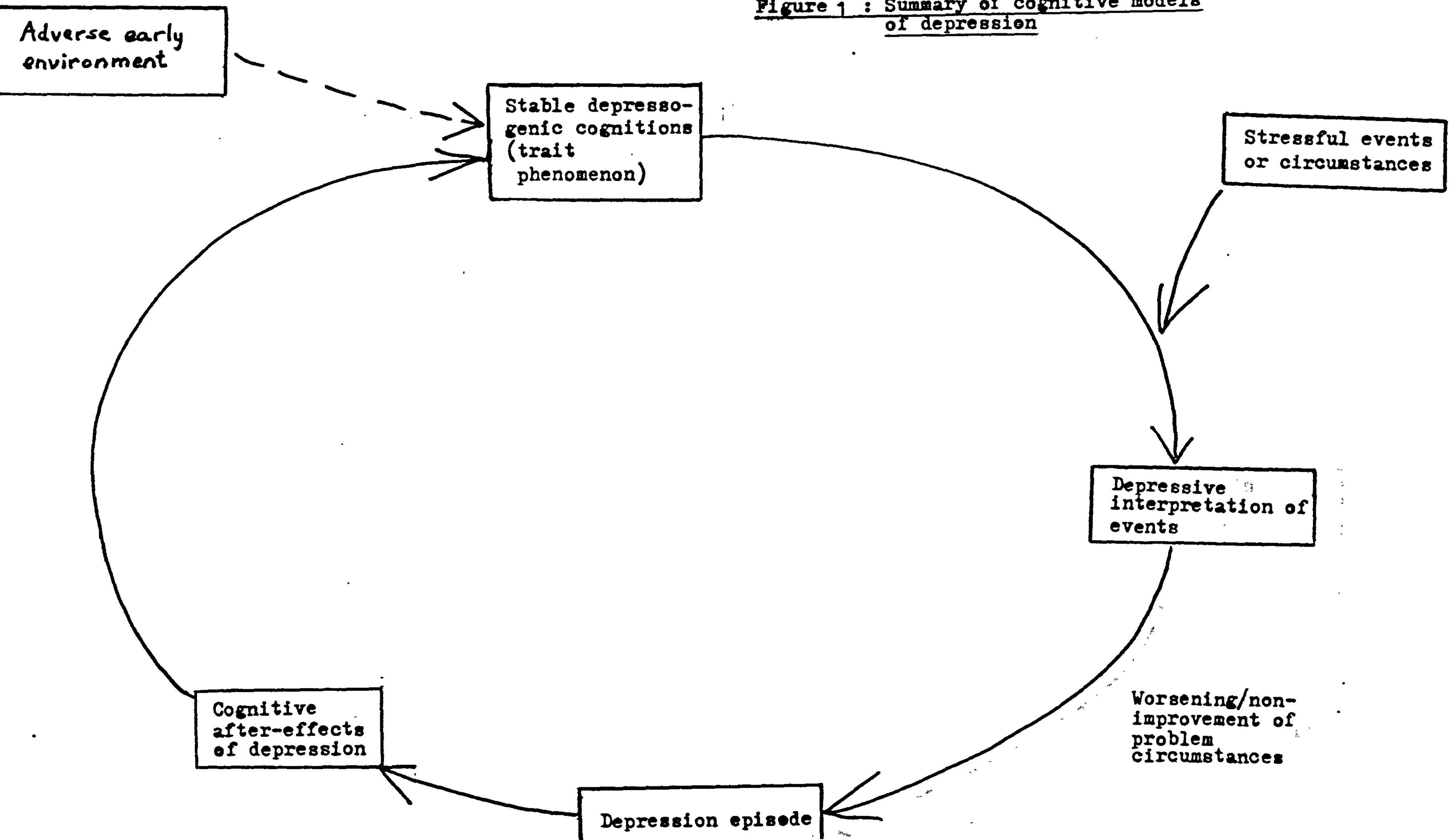
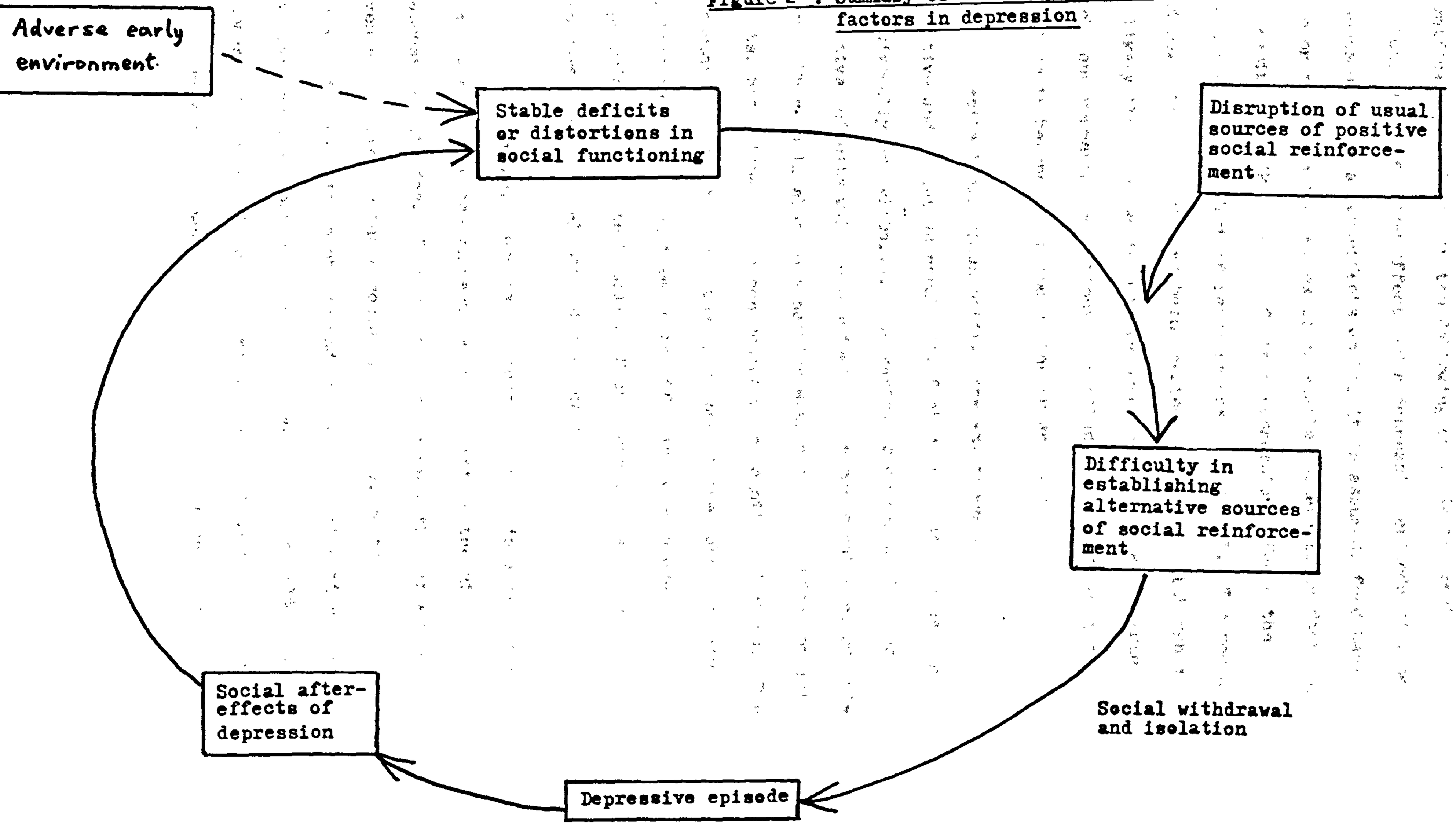


Figure 2 : Summary of effects of social factors in depression



significantly to those in the following one. In the next section, possible after-effects of a depression episode will be discussed. Such after-effects would, it is assumed, feed back into or reinforce the pre-existing stable vulnerability factors, increasing the likelihood of further depression. Hence the "revolving door" effect of readmissions to hospital. The social and cognitive factors have been treated separately, although it is likely that they would both be produced by similar adverse early environmental conditions. Detailed examination of this question is beyond the scope of the present work.

Despite their plausibility, the existence of these cognitive and social vulnerability factors has not been proven unequivocally and globally. The various proposed social and cognitive deficits will be examined in the empirical part of this work. There will also be a section evaluating the effect of life events, both alone and in conjuction with cognitive factors. The importance of establishing the existence of the vulnerability factors is in enabling them to be effectively countered by appropriate therapy techniques. Such techniques will be discussed in the final part of the thesis.

Furthermore, there is the possibility of interventions at times when people are vulnerable to, but not in the midst of, depression episodes. This could alter the way they interpret events, and improve their social functioning, so that they are enabled to deal with problems and changes more effectively and exercise greater control over their lives. Fisher (1986) has emphasized the importance of control, in tackling problems and hence avoiding the mental and physical consequences of undue stress.

1.4 PERCEPTIONS OF NEGATIVE MOOD

(i) How the Non-Depressed View Depression

This section concerns the way that people, in general, view depression. Farina, Fisher, Getter and Fischer (1978) gave two differing mental health messages to groups of students, and examined the effects on the students' attitudes to mental illness and to solving minor emotional problems. They concluded that the people receiving a "disease message", often thought to be beneficial in its tendency to relieve the subject and their relatives of personal blame, felt they could do less to help themselves than did subjects receiving a social learning message. On the other hand, the two groups "did not differ in their views of the amount of shame attached to the affliction". Farina et al (1978) questioned the ability of the "disease message" to relieve sufferers of personal blame when suffering emotional reactions to problems.

This has special relevance to depressive disorder, since sufferers are particularly prone to self-blame, and may even blame themselves for the operation and effects of factors not normally viewed as being under personal control, for example "in-born" personality aspects or an illness process. On the other hand, Williams (1984a) has pointed to the posssibility that use of an "illness model" by a sympathetic clinician could be therapeutic, precisely in as far as the patient is able to throw off some of the element of self-blame. Williams describes this as a form of "re-attribution". He notes that there may be an important difference in the cluster of concepts incorporated in the average clinician's view of mental illness, compared to those

of the average layman, such that the implications of the term are more benign in the clinician's than in most patients' views. If this is so, the extent of transfer of the clinician's view to the patient may determine the degree of therapeutic effect of such a re-attribution.

A study by Weiner, Perry and Magnusson (1988), on reactions to social stigmata, is relevant to this issue. They found that a selection of conditions of a mental-behavioural origin received more blame, and less willingness to help, than a selection of conditions of a physical nature. The study involved students who responded to a long series of statements involving ten different stigmatised conditions. Weiner et al (1988) point out the relevance of such findings to education about the causes of mental-behavioural conditions, such as alcoholism or child abuse. If these are regarded as having been caused by uncontrollable factors, there is less blame and more willingness to help. However, the authors point out that this conflicts with the need for people with mental-behavioural conditions to become empowered to take positive action to help themselves. With respect to depression this can be put in terms of overcoming helplessness.

The solution to this conflict may lie in the finding, reported in the same paper, that the cause of a particular condition is perceived to be separate from the 'cure'. Thus depression may come about through environmental, and other, circumstances beyond a person's cotrol. Nonetheless, the person can be helped to understand these circumstances and how he/she has been affected by them. With further help and support, the individual can then begin to gain more control over such factors in the future.

According to Weiner (1985), the "desire for mastery and functional search, two of the generators of causal exploration" ... "do not seem to specifically characterise one geographical area or one period of human history". Beck's method of cognitive therapy (Beck et al, 1979) incorporates these processes, namely, a search for the antecedents to occurrences of depression in the client's life, and the teaching of problem solving skills to avoid or lessen the impact of future depression.

One obvious reason to examine the issue of general interpretations of the depressed state, is the high relapse rate seen in depression. If negative labelling of patients has a positive interaction with the depressive tendency to self-denigration, this will hinder recovery. A second possibility is that the overprotection of some people, either by the caring services or by well-meaning friends and relatives, could interact with the tendency to see the self as weak and in need of protection. Lewinsohn (1974) has alluded to this phenomenon by discussion of depressed people taking on a "patient role". Mechanic (1986) has also discussed this issue. In light of the research showing that overprotection early in life may have a role in the later production of depression (e.g. Raskin et al, 1971; Gotlib et al, 1988), it seems that enabling depressed persons to gain a sense of autonomy may be a crucial factor, not only in their recovery, but in their capacity to stay well.

It is likely that the beliefs that helpers have, about the depression and its causes and cures, affect the ways in which they relate to the depressed person. If they see the condition as a physical illness, whose cure depends on medication and the intervention of the medical services, they may treat the person

as an invalid. If however, they understand the environmental and interpersonal causes, and the individual's need to gain personal control, they are likely to interact in a different manner. It may be that informed involvement of spouses, or other significant people, in therapy programmes, is essential in most cases for a full recovery.

One could posit the counter-argument that relinquishing control to an expert under certain circumstances is a powerful strategy for overcoming certain problems, for example going to a dentist for toothache (Fisher. 1986, p. 15). However, even in physical medicine, it is beginning to be realised that treating patients as more than mere passive bodies is conducive to faster recovery. It is possible that some of this effect is due to an illusion of control which may result from the patient's knowing what is being done, and why it is being done. There is also a degree of real control, because patients who have such knowledge have a basis on which to question a doctor's decisions, should they so wish. In a few cases they will be involved in the decision between alternative treatments.

The importance of open discussion and communication, in the treatment of neurotic disorders, was recognized by Main, one of the founders of the "therapeutic community" movement, earlier this century (Main, 1946). However, therapeutic communities remain outside the mainstream of mental health services. Today the Cassel Hospital, which began under Main's directorship, is under threat of closure. This, despite the current movement towards community care, in which it could be argued that therapeutic communities like the Cassel could lead the way; they provide residential care in the context of a community, in which lines of communication are constantly open.

(ii) After-Effects of Depression

In Beck's model, a phenomenon termed the negative cycle or spiral is described (e.g. Beck, 1964; 1967). Depressed mood is first triggered by circumstances that are reminiscent of early unpleasant events in the individual's past, or which signal failure to meet impossible standards. The negative cognitive schemata connected with the early circumstances, or with the impossible standards, then come into play. They consist of negative ideas about the self, the world and the future, and so induce further negative mood. This in turn makes further negative cognitions active by re-energizing the negative schemata, and so on, in a negative spiral resulting in the maintenance and deepening of the depression.

Teasdale (1983) has discussed this question, and suggests it is possible to conceptualize the process in terms of Bower's (1981) associative network theory. In this theory, negative thoughts can have associative links with negative mood, and vice versa. Teasdale (1983) focused on the fact that depressed mood may become worse depending on previous experiences that have become associated with that mood state. He emphasized the importance of enabling depression sufferers to deal with the depressed mood itself (Teasdale, 1984), in order to prevent relapse. A minor set-back or a slight lowering of mood may bring forth reminiscences of worse states. This results in the downward spiral of negative sensations and associations, until a new episode of serious depression is in progress. One of the most valuable aspects of new cognitive-behavioural therapies for depression is that they inculcate skills which allow people to interrupt this negative spiral.

Teasdale (1983) and Teasdale and Spencer (1984) have a particular interpretation of the lowering, by negative mood, of accessibility to positively toned cognition and the reduced recall of past successes. In their view it shows that the predominance of negative cognitions in depression is not due to the interaction, with life events, of pre-existing stable trait-like phenomena, but simply to the enhanced accessiblity of negative cognitions which happen to have become associated with depressed mood. Thus, depressed mood may affect people differentially, according to the kind of cognitions that become available, through spreading activation along associateve pathways in memory, the mechanism put forward by Bower (1981). The cognitions that have previously become associated with depressed mood, determine whether the current mood is mild and transient, or severe and prolonged.

This differs slightly from Beck's theory, in that the nature of the events triggering the current mood is not important, but instead, the experience of depressed mood, and the nature of its particular associations, are the key factors. It also differs from the attributional model of Abramson et al (1978), in that it is not necessary to postulate any pre-existing depressive cognitive style. However, it still amounts to a form of cognitive vulnerability in the sense that, during childhood, thoughts of failure, uselessness and so on can become associated with sad or depressed mood.

An alternative way in which negative emotion may specifically induce negative ideas, is through the way that such emotions may have been socialized. Consistent intolerance and punitive reactions to a child's expressions of distress, could result in the child growing up to become an adult who finds

distress difficult to tolerate, or experiences a contingent reaction of shame (Tomkins, 1963). Such responses may be expressed cognitively, in terms of depressive self-statements or self-injunctions, in connection with the expression of negative emotions. The labelling of the mood or affect itself, would lead to negative cognitions.

Izard (1977) has a view of the aetiology of affective disorder. which shares some of the characteristics of Beck's view. In the view of both theorists, it is not the emotions which are "the system at fault". Izard asserts: "What may be equally or more seriously at fault are the cognitions and actions that are interacting with the emotion system" (Izard, 1977, p 106). According to Izard's "differential emotions theory", "[cognitive] schemata develop from emotion-cognition interactions, with fundamental emotions or patterns of emotions serving as the primary determinants" (op. cit.). Izard, however, differs slightly from Beck. For Izard, it is the emotion that "has an organizing effect on thought and behaviour", rather than the cognition. "Emotion may narrow the field of perception (reduce the number of things the person attends to) and hence momentarily reduce cognitive and behavioural alternatives" (op. cit.). Beck (1967) made a similar statement about the action of depressogenic cognitive schemata. The person undergoes "constriction of his cognitive field" when the negative schemata are activated.

Izard's differential emotions theory regards the emotions as fundamental, and characterizes depression as a combination of a few basic emotions; namely inner- and outer-directed anger, disgust and contempt; fear; guilt; and shyness (or shame). This has been verified empirically in a number of studies (Izard,

1972; 1977), using both normal subjects in depressed mood, and clinically depressed subjects.

The implications of the differential emotions theory perspective, for psychotherapy, are that imagery-induced positive emotion can be used to increase the sense of self-control, and help alleviate the burden of debilitating negative emotions (Izard, 1971). It can be surmised, however, that imagery-induced positive emotion owes something to the activation of cognitive schemata alternative to the negative ones. Cognition and emotion, in the arena of affective disorder, are closely bound together. Zajonc (1980) has made a distinction between "hot" cognitions and "cold" cognitions. The former are those which express evaluations and preferences, and communicate emotion interpersonally. The latter deal with more impersonal and factual information. The cognitive models of depression deal mainly with "hot" cognitions.

In this section, theoretical ideas about cognition and emotion have been examined, with respect to their interaction on a number of levels. Negative emotions are, in themselves, unpleasant. However, they may be subject to additional complications. They may be differentiated, cognitively, less well than positive emotions. Negative emotions may be subject, universally, to negative interpretations, such as being viewed as more personally determined than positive emotions. Depression episodes may be viewed more negatively than episodes of physical illness, thus complicating the reactions to them, by the sufferer or by others. A depressed person may be regarded as in need of an inappropriate level of care, which may make it harder for them to discover

areas of self-efficacy. This may, in some cases, slow recovery, and increase the possibility of further depression episodes, by increasing dependency.

Finally, some people, either as a result of a depression episode, or because of the way their emotions were socialised in childhood, may react more negatively to negative moods in themselves, so that they cope less well with ordinary depression. Figures 3 and 4 show the cognitive and social models of depression, as they appeared earlier, but with the addition of possible after-effects of a depression episode. Such after-effects provide a further way in which future depression can be made more likely, unless therapeutic factors intervene.

As hinted at earlier, the final part of the thesis will discuss points at which therapeutic intervention might take place, to break the depression cycle.

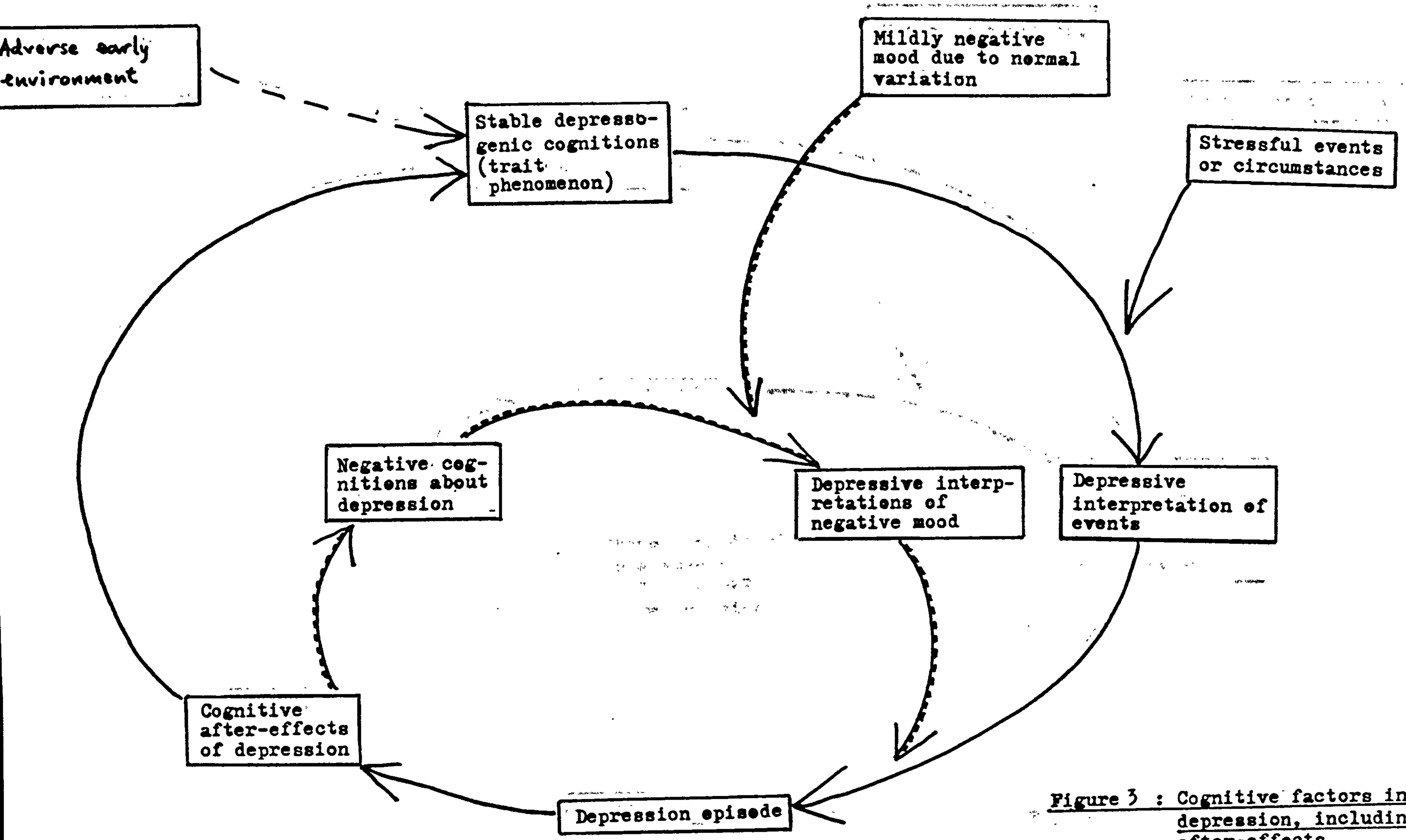


Figure 3 : Cognitive factors in depression, including after-effects

Adverse early environment

Stable deficits or distortions in social functioning

Social disruption, e.g. discharge from hospital ?

Disruption of usual sources of positive social reinforcement

"Patient role" ?

Difficulty in establishing alternative sources of social reinforcement

"Revolving door" phenomenon i.e. discharge & readmission

Social after-effects of depression

Depression episode

Figure 4 : Social factors in depression including after-effects

CHAPTER TWO

COGNITION AND DEPRESSION

2.1 COGNITION PART I: COGNITION AND DEPRESSION IN CLINICAL AND CONTROL SUBJECTS

(1) Introduction

In the theoretical review of cognitive models of depression, three distinct cognitive processes were identified (see table 1, shown earlier and reproduced here). Only in Beck's model (Beck et al, 1979) is there a clear differentiation between those cognitive factors thought to constitute a trait causing vulnerability to depression, and those cognitions expected to be expressed when depressed mood is present. The former are the dysfunctional attitudes, incorporating impossible standards. The latter are the negative triad, expressed as negative cognitive distortions. However, the greatest amount of investigation to date has been done in relation to the attributional model (Abramson, Seligman and Teasdale, 1978), looking at causal attributions.

In this first study, the three cognitive factors will be studied, to ascertain the role each plays in terms of state or trait. That is, one wishes to determine, firstly, to what extent each cognitive factor is related to the presence or level of current depression, and secondly, to what extent each cognitive factor exists as a relatively stable trait phenomenon related to the tendency to become depressed (i.e. depression proneness). Of particular interest is the possibility that such stable cognitive factors may actually cause the tendency to become depressed, because of the ways in which they affect

Table 1: Three cognitive processes derived from theory

ATTRIBUTIONS
Internal, stable and global causes attributed for unpleasant events. Also (occasionally) external, unstable and specific causes attributed for pleasant events.
Main test: Attributional Style Questionnaire (ASQ)
EVALUATIONS
Negative view of self, world and future. Negative cognitive distortions such as overgeneralization, arbitrary inference, magnification and minimization.
Main test: Automatic Thoughts Questionnaire (ATQ)
ASPIRATIONS
Impossible standards or goals for oneself. Unrealistic expectations for the world or for others. Sometimes called "irrational beliefs". The standards and expectations are associated with beliefs about extreme negative consequences if they are not fulfilled.
Main test: Dysfunctional Attitude Scale (DAS)

the person's view of events. If this is the case, then the cognitions would constitute a "vulnerability" factor for depression.

At this point it is necessary to clarify some terms. Firstly, 'proneness' to depression is to be distinguished from 'vulnerability' to depression. For the purposes of the present work, proneness will refer only to the fact that a person has actually had depression episodes. On the other hand, 'vulnerability' refers to a person being exposed to internal or external risk factors for depression. Such factors might be internal cognitive ones, such as perfectionist standards, or external environmental ones, such as poor housing and lack of employment. Such vulnerability factors may result in some people being depression-prone, i.e. actually falling depressed on more than one occasion. Others, however, may be threatened by one or more vulnerability factors, yet retain their emotional balance.

Brewin (1988) has set out the various points at which cognitive factors may act. With reference to causal attributions, he lists five different models. These models, however, could be applied equally well to the other cognitive factors. In the "symptom" model, depressive attributions are seen as a result of depressed mood. In the sections that follow, this will be referred to as the <u>state</u> hypothesis. In the "recovery" model, depressive attributions or style of attributions, which have arisen as a result of depression, then play a role in maintaining the depression.

In the "coping" model, depressive attributional style can be the cause of depression onset. In the following sections, this will be referred to as the <u>trait</u> hypothesis. It will be assumed that, where the cognitive factors exist as traits, it would be reasonable to expect at least some of the vulnerable people to be prone to depression, rather than having a one-off episode. Extraneous factors may protect some cognitively vulnerable people. However, others will have less protection, and will be more likely to suffer repeated depressions.

For the purposes of the present work, "depression-proneness" is assumed to imply distinct episodes of depression, separated by periods of relative stability, rather than chronic depression. This is important in order to test for the association of the cognitive factors with the tendency to become depressed, without confounding due to the presence of on-going depression. This approach has not been used very often.

According to Brewin (1988) there is evidence for all three of the models just described, in terms of causal attributions. Brewin describes two further models, for which it is harder to obtain conclusive evidence because of their greater complexity. What he terms the "vulnerability" model, requires two specified causal factors to operate together to produce depression. One is the attributional style and the other is a precipitating event. Together these lead to expression of the depressive attributions, which produce the depressed state.

In the present work, the trait hypothesis will be examined in the Cognitions Study, along with the state hypothesis. The Life Events Study (chapter 4) will examine the role of life events, and will attempt to determine whether life events together with cognitive style have a stronger relationship to depression proneness than either alone.

The second of the more complex models described by Brewin is referred to as the "onset" model. This requires that a bad event occurs which elicits a depressive attribution. Depression then follows. It may be that certain kinds of events have a tendency to produce depressive attributions because of culturally shared meanings. Alternatively it may be that an event has special significance for a particular person because it disrupts an important source of value for them (Brown and Harris, 1978). This has been discussed earlier. Testing of the "onset" model is beyond the scope of the present work.

To summarise, in the Cognitions Study, two hypotheses about the role of different cognitive factors will be examined. The first is the state hypothesis, and the second is the trait hypothesis, both of which have been described above. There are two possible manifestations of the state hypothesis. One is that the "depressive" cognitive processes are associated with the depressed state. The second is that they vary with depression level. Both of these assumptions will be tested.

The trait hypothesis can be examined in different ways also. Firstly, one can look at individuals who have had at least one depression episode (Wilkinson and Blackburn, 1981; Fennell and Campbell, 1984). They are likely to, but may not, be cognitively vulnerable (other factors may have led to their

particular depression episode at that particular time). Secondly, one can identify people who are depression-prone, that is, who have had multiple episodes of depression; and see if greater mumbers of them have the cognitive style compared to non-depression-prone subjects.

The third way of investigating the trait hypothesis is to do predictive studies. One first identifies subjects in whom the "depressive" cognitive style is present or absent, and then one predicts differential increase in depressive mood in the former compared to the latter, given similar levels of external stress (e.g. Lewinsohn et al, 1981; Metalsky et al, 1982).

This first part of the Cognitions Study will use the method of looking at recovered formerly depressed subjects, and also looking at depression proneness as defined here. The second part of the Cognitions Study, taking a student sample, will use depression proneness and also a predictive component. The evidence already in existence for the function of each of the main classes of cognition is briefly described below.

Attributions:

There is good evidence that depressive attributional style is associated with depressed mood (e.g. see Seligman et al, 1979; Eaves and Rush, 1984). Some researchers have found a tendency for depressed subjects to attribute negative events more to internal factors such as their own behaviour or character, compared to non-depressed subjects (Rizley, 1978; Janoff-Bulman, 1979; Peterson, Schwartz and Seligman, 1981).

As regards the power of attributional styles to function as a trait and predict depression at a later time, the results have been equivocal. Firstly, it can happen that only one or two of the attributional dimensions is found to be predictive (e.g. Lewinsohn et al, 1981; Golin et al, 1981; Metalsky et al, 1982). Secondly, there is confusion over whether any of them at all can predict later depression (e.g. Peterson et al, 1981; Cochran and Hammen, 1985; Williams, 1985).

Evaluations

In recent years there has been some investigation of people's use of the negative cognitive distortions as originally delineated and empirically verified by Beck (1964). There is evidence of an association between these thought forms and depression (e.g. Blackburn and Bishop, 1983; Wilkinson and Blackburn, 1981; Krantz and Hammen, 1979) Lewinsohn et al (1981) found evidence of a maintenance role for depressive cognitions, in the form of expectancy of negative outcomes and Beck's (1967) negative triad.

Fennell and Campbell (1984) reported that recovered, formerly depressed people differed from never depressed people on amount of generalization of unpleasant events to other situations. Eaves and Rush (1984) found that negative automatic thoughts (Automatic thoughts questionnaire; Hollon and Kendell, 1980) reduced with recovery from depression. Fennell and Campbell (1984) have found overgeneralization, and not internal attributions, to be associated with depression.

Aspirations

Eaves and Rush (1984) found that Dysfunctionsl Attitudes remained after recovery from depression, suggesting that they constituted a trait vulnerability factor. Lewinsohn et al (1981) provided evidence against the role of dysfunctoinal attitudes (also called irrational beliefs) as a trait vulnerability factor. In a large community sample they did not predict who would be depressed a year later. Kendall, Hollon and Lumry (1986) have shown that whereas the Automatic Thoughts Questionnaire (ATQ) (Hollon and Kendall, 1980), consisting of negative self-referent statements, distinguished depressed states from other psychiatric states, the DAS was not confined to one type of psychopathology.

The relationship between having high standards and reaction to not achieving them has been discussed by Carver and Ganellen (1983) and their findings suggest that it is not high standards per se which are associated with depression, but the tendency to overgeneralize from one failure to other areas of life. This is consistent with there being a cognitive trait of holding high standards which can exist in the absence of depression, while failure of those standards to be met results in the depression-associated overgeneralizations and other cognitive distortions.

(ii) Methods in Brief

a) Subjects

Three groups of subjects were formed; a sample of non-depressed people from the local community, a sample of currently depressed subjects, and a sample of previously depressed but now recovered subjects. Some details of the groups are shown in table 2. The mean ages of each sample were: community 38 (range 18-65); current patients 46 (range 22-68); recovered patients 41 (range 25-64). Analysis of variance with the three groups (N = 60) confirmed that the age distributions were not significantly different (F=1.74 p=0.184). Further details of the samples and how they were obtained are given in section (iii).

b) Design and Measures

The three samples were selected to represent currently depressed patients, recovered subjects who had formerly been depressed patients attending a hospital or clinic, and a sample of people from the local community who had no current or previous depression needing treatment. All subjects from all three samples were taken through the same set of procedures within the context of two or more semi-structured interviews. Sufficient time was spent with each subject to complete procedures which formed this part of the study, as well as those which form part I in each of the next two studies and

Table 2: Details of the Three Subject Samples

	Community	Currently Depressed	Recovered Depressed
No. of subjects	30	16	15
Source of sample	Respondents to advert in local paper	Attenders at Psychiatric Day Unit	Former Day Unit Attenders n=5; Psychology Clinic n=10.

part II of the final study. The procedures relevant to this first study are marked with asterisks in table 3. The hypotheses tested in this first study were as follows.

a) State hypothesis

The first hypothesis states that the three thought forms identified earlier are associated with the depressed state. This can be tested in two ways. The first is to compare currently depressed and non-depressed subjects, where the state hypothesis would predict higher scores on the relevant cognitions for the depressed than the non-depressed group. A further and more stringent test is between the currently depressed and a recovered group, who are not currently depressed although they have been. If, despite past depression, they score lower on the relevant cognitions than the currently depressed group, then what is being observed must be a state effect. That is, the cognitive phenomena are tied to the state of depression, and recede when it does. One must assume that the depressed and non-depressed groups did not have differing levels of trait cognitions initially. This problem will be referred to again in the discussion section. The second test is that within each subject group, the relevant cognitions should show a correlation with depression level.

b) Trait hypothesis

The second hypothesis is that certain thought forms confer vulnerability to depression. This requires comparison between a recovered group and a group of subjects who have not had depression episodes. Since neither group contains substantial current depression, a greater level of the relevant cognitions among the formerly depressed subjects is likely to be a trait

Table 3: Total package of Measures in Order of Presentation, with asterisks marking the procedures relevant to the current study

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Preparatory information

Consent Form

*i) Delusions-Symptoms-States Inventory (DSSI: Bedford & Foulds, 1978)

ii) Inventory of Recent Life Events (combined sources - see text)

iii) Tape-recorded discussion of selected recent life events

iv) Personality Deviance Scale (Bedford & Foulds, 1978)

v) Social Support Measure (see text)

*vi) Seven Day Diary (see text)

vii) Inventory of Past Life Events (combined sources - see text)

viii) Tape-recorded discussion of selected past life events

*ix) Miskimins Self-Goal-Other Descrepancy Scale (Miskimins, 1967)

*x) Tape-recorded discussion of Miskimins self-ratings

*xi) Cognitions Questionnaire (Fennell and Campbell, 1984)

Informal discussion of the foregoing

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effect (see Wilkinson and Blackburn, 1981; Fennell and Campbell, 1984). One cannot rule out the possibility that having had a depression episode leaves a cognitive aftermath, however. For this reason, prospective studies are a better method of investigating cognitive vulnerability. Part II of this study incorporates a prospective component. A second test of the trait hypothesis, in the current study, is that within subject groups, the relevant cognitions would be correlated with number of past depression episodes, if they represent a vulnerability factor producing depression proneness.

Selection of Measures

(1) Delusions-Symptoms-States Inventory (DSSI: Bedford and Foulds, 1978a - Appendix 1)

A standardized method was needed to confirm the required profile of the three subject samples with respect to depression status and other psychopathology. It takes account of the fact that psychiatric patients rarely exhibit pure unitary conditions, but most often have a range of symptomatology (Bedford and Foulds, 1975). It is necessary to test for other psychopathology, because of the associations which have been found between them and some of the depression—related cognitions. The DSSI is thus a suitable instrument for the purposes of the study.

In the absence of any possibility of a full clinical assessment being carried out (due to constraints of time and resources) this test was a comprehensive form of self-report measure wich allowed depressed subjects to report symptoms

additional to their depression. A validation study, comparing it with psychiatrists' ratings for a set of 96 in-patients, showed significant relationships between DSSI scores and psychiatrist ratings on all but 3 of the sub-scales (compulsions, ruminations and phobias) (Bedford and Foulds, 1978). Diagnoses made by more senior psychiatrists corresponded best with the DSSI.

(ii) Miskimins Self-Goal-Other Discrepancy Scale (Appendix 1)

This questionnaire was chosen to investigate impossible standards and associated overgeneralizations. Table 4 shows the methods used in the Cognitions Study and which cognitive processes each of them investigated. The Miskimins Self-Goal discrepancy scales indicate how near a person considers themself to their ideal state. In addition, to examine the cognitions involved in these goals, after completion of the Miskimins form, each subject was asked for their own particular ideas about the dimensions. Their comments were transcribed in order to ascertain whether they had interpreted the Miskimins dimensions in terms of impossible standards for themselves, and whether or not they made generalizations from their not meeting particular goals.

The Miskimins Scale was selected in preference to the very relevant and now well used Dysfunctional Attitude Scale (DAS: Weissman and Beck, 1978), for the following reasons. Firstly, the researcher wished to ascertain whether, given a stimulus set of goals, and freedom to produce their own verbal interpretations, subjects would naturalistically produce impossible standards. The Miskimins items do not specifically

Table 4: Cognitive processes investigated by each method

	Attributions	Evaluations	Aspirations
Miskimins scale		*	*
Cognitions Questionnaire	*	*	
Diary		*	

suggest impossible standards, as the DAS items do. Secondly, it was not easy to obtain a copy of the DAS initially. This was overcome later on, and a version of the DAS was used in a second study (Part II of the Cognitions Study).

(iii) Cognitions Questionnaire (CQ) (Fennell and Campbell, 1984; see Appendix 1)

There are a number of available questionnaires for the assessment of depressive cognitive style or habitual tendencies in response to various hypothetical events. Two tests that immediately offered themselves as obvious candidates were the attributional style questionnaire (ASQ: Peterson et al, 1982) and the Cognitive Style Test (CST: Wilkinson and Blackburn, 1981). The former assesses the use of causal attributions, and the latter assesses cognitive distortions. These tests have had greater use than the CQ, and in that sense they might have been favoured. On the other hand, the CQ covers a wide range of cognitive phenomena. In one test it provides evidence about the use of causal attributions, and also two kinds of overgeneralization. It was felt desirable to keep the amount of testing to the minimum necessary to achieve the aims of the project. Although the CQ is a more recent test than the other two, and therefore has not already been used to such a great extent, it is to be hoped that previous results with its use will be replicated here.

(iv) Seven Day Diary (See Appendix 1)

At the end of the first of either two or three interviews (as necessary for the completion of the interview items) each subject was given a 7-day diary booklet. This was a simple format for recording mood on six bipolar scales, and each mood scale had underneath a small space to record any immediate thought concerning the mood level recorded. There was a scale intended to measure degree of self-acceptance. The statements that subjects made on the Diary were subjected to a content analysis. The aim was to identify positively and negatively toned self-descriptive statements, i.e. "evaluations", particularly self-evaluation. The diary was designed to be easy to do, with only the minimum amount of writing required of the subject.

(v) Measure of depression proneness

As has been discussed earlier, depression proneness can be operationally defined by the frequency of depression episodes a person experiences. Medical records were available for the recovered and depressed subjects. The method of obtaining a frequency figure is explained fully in the detailed methods following this section.

(iii) Details of Subjects, Procedures, Measures, Analysis

Practice Interviewing: Before any interviewing of actual subjects, the researcher obtained the co-operation of a few of her colleagues, in order to practise the interview schedule and questionnaire administration. Also, it was hoped that any flaws in questionnaire design (in those which had been designd or modified for the study) would be highlighted and corrected.

Recruitment of subjects: Recruitment of people from the local community was by an advertisement in the local newspaper. It had to be begun before the main source of currently depressed subjects was confirmed and acceptance given by the ethical committee. Hence, the first cohort of community subjects was recruited from a semi-rural area, while the patient sample entirely comprised people from an industrial town. However, later community subjects were also recruited from the same town. The recovered sample consisted of a combination of people from the two areas.

When prospective subjects for the community sample answered the advertisement, they were given details of what participation would entail. If they were interested, they were sent a standard form to obtain demographic details and for them to indicate possible times for interview which would be convenient to them. They were given a choice of being seen either at the University department or in their home: The location usually depended on whether they had independent transport and whether they lived locally. Most were relatively local and were seen at the University. If they came to the University they were re-imbursed for any travel costs. All

subjects were paid at the standard rate for their participation in the study.

The patients were all attenders of the psychiatric day unit attached to a large general hospital, in a small industrial town. They were approached in person at the unit, and given details of the study. It was made clear that the study was not part of their treatment, but that they might benefit from taking part, mainly through their being able to talk through some of their concerns. They were all interviewed at the day unit. Diagnoses had to be checked by examination of case-notes, to ensure that they matched the specified criteria.

The recovered sample was obtained using two different lines of approach. The first was through the records department which covered the day unit. The researcher was not permitted access to these, and so had to await the results of work kindly undertaken by people there, in order to collect a suitable sample of prospective subjects. This involved sifting through a large number of casenotes of potential subjects to see that they satisfied the criteria. The criteria given to the records departments were that the people had to have had a diagnosis of primary depression, and that their last hospital or clinic attendance had been at least two years prior to the present time. The subjects were people who had previously attended the same day unit, and so were well matched to the current patients. Unfortunately, the process was very slow, and rather few subjects responded when sent letters asking for their participation. A copy of the standard letter sent to prospective subjects for the recovered group is shown in Appendix 1. To give an example of the slowness of the process, out of the first ten possible participants two were deemed

unsuitable by their GP, 2 had moved out of the area, and of the six who were sent the recruiting letter 3 did not reply to the first or a subsequent letter. This left three who responded and participated.

The low response rate of subjects may have led to a biasing of the sample content. In order to investigate possible differences between responders and non-responders, tests were carried out on the data that was available on 16 non-responders, compared to the 15 recovered subjects who participated in the study. The results are shown in table 5. The table shows that two of the variables tested, age and frequency of past depressions bore no relation to whether the subject responded. However, date of last treatment differed significantly between the two groups, indicating that those subjects who had been in contact with the psychological or psychiatric services more recently, were more willing to participate.

On the strength of this, one might speculate that non-responders were people who felt themselves to be well adjusted, and did not want further association with hospital services. The letters requesting participation carried the hospital letter head. Perhaps the University letter head would have been more appropriate. The stigma attached to contact with psychiatric services is well known, and might be a strong discouraging factor for those who have put such contact behind them. In terms of the subject sample, this factor could possibly have weeded out some subjects who would have provided interesting examples of good adjustment after depression episodes. If this is the case, any findings of on-going cognitive or other deficits in the recovered group should

Table 5: Responder and Non-Responder Recovered Subjects - Mann-Whitney Tests

Medians	Responders	Non-Responders	p
Date of birth	1953	1942	ns
Last treatment	Jan '86	Nov '84	*
Freq past dep'ns	5.3	3.1	ns

Note: * Significant at .01 level
For explanation of the depression frequency measure, see page 71

perhaps be regarded as less typical of formerly depressed subjects than might at first be assumed.

As part of the process of obtaining the formerly depressed subjects, it was necessary to check with the former patient's general practitioner and with the psychiatrist who had been involved with their case, that there were no counter-indications to the former patients' participation in the study. One such indication that occurred more than once was that the person had relapsed, and another example was when the time of the interviews would coincide with the anniversary of a traumatic bereavement, and it was felt that it would not be in their interests for them to be reminded of past pain. A few subjects had changed their address, and GP's were in some cases able to supply the new one. In other cases the person had moved to another area altogether. In general terms, psychiatrists and GP's were very willing for people to participate. However, the net result of the factors mentioned was that the whole process was slow and yielded very few suitable and willing subjects. Another way had to be found to increase the numbers. Hence, the second line of approach was instituted.

The second approach worked in a very similar way to the first, except that the subjects were obtained through the records of the local psychology clinic. The subjects obtained in this way were from the more rural community. Again, the researcher was not permitted access to the records, but the response rate to letters sent to the prospective subjects was higher, so that a suitable number of subjects was built up a little more speedily (a copy of the standard letter sent to this group of prospective recovered subjects is shown in

Appendix 1). The selection criteria given to the records department were the same as those given to the records department for the day unit earlier. Again, the case-notes had to be examined to eliminate any subjects which had slipped through without meeting the specifications.

In the event, the recovered subjects as a complete sample had had, when seen by the interviewer, an average period of 2 years and 1 month since the end of their last time as clinic or hospital patients for depression. The range was from a minimum of 9 months to a maximum of 3 years and 10 months. Most of this group were not local and were interviewed at their homes.

Characteristics of subject samples: On the standardized self-report symptom inventory (the Delusions-Symptoms-States Inventory; Foulds and Bedford, 1978) there was the expected clear differentiation on the "State of Depression" (sD) scale between the currently depressed and the other two samples (see table 6). The pooled standard deviation was 4.09, and, using 95% confidence intervals based on this, the patients were statistically well separated from either of the other two groups, which were in turn statistically indistinct from each other. The score range is 0-21, and the cut-off point for definite state of depression is 4 (see below for more details of the instrument).

Owing to the involvement of the local psychology clinic in obtaining some of the recovered subjects, it was inevitable that some had had psychotherapy in addition to medication. This potentially could affect cognitive factors to some degree. Hence the subjects were classified according to those who had

Table 6: Mean Scores on State of Depression (sD) in the Three Subject Samples

	Community	Recovered	Depressed
Mean	1.57	2.53	12.25
St. Dev.	2.83	4.10	5.80

One way ANOVA: F = 38.08 p = .0001

Table 7: Past Treatment of Recovered Subjects

Treatment	Respondent Numbers	Total
Medication only	45,46,48,56,58,62	6
Cognitive Therapy	55,61,66	3
Behaviour Therapy	52,60,63	3
Cognitive and Behaviour Therapy	59,64,65	3

had psychotherapy and those who had had medication only. All except two subjects had had some form of antidepressant medication, the most usual being tricyclic anti-depressants. One of those without antidepressant medication had had no medication, and the other had had a benzodiazepine at night for sleep difficulty. Table 7 summarizes the past treatment of the recovered subjects. Full details are given in Appendix 1.

At various points in the chapters presenting the results of the study, this subdivision of recovered patients according to therapy type will be referred to. Checks will be carried out where necessary for cognitive effects due to therapy type. However, the following points must be borne in mind with respect to any such effects: The inclusion of subjects who had undergone psychotherapy was not an intentional plan in order to look for differential cognitive effects of therapy type. That would be beyond the scope of the current study. Therefore the psychotherapy received by the subjects in question was not of standardized form or duration, and in some cases was quite brief. For a number of the patients the main emphasis was on relaxation training rather than depression- management.

It is also likely that the patients referred to the psychology clinic were those in whom cognitive manifestations of depression were particularly prominent, and they may therefore have begun with a greater degree of cognitive distortion and so forth than did the patients who had medication alone. This is an uncontrolled variable that could easily tone down any relative effects of cognitive therapy when cognitive comparisons are made between both sets of recovered patients. Additionally, cognitive and behavioural manuals are becoming more widely available and accessible, and at least one

of the Medication-only subjects talked about making use of just such a self-help manual. I do not know of any research that has investigated whether cognitive changes occur as a result of the use of such manuals, but I see no reason to doubt a possible effect. For these various reasons, it is not expected that there will be any noticeable cognitive effects of different therapy type among the recovered subjects. However, as a precaution, checks will be made at appropriate points in order to rule out any doubts on the matter.

Further characteristics of the subject samples are as follows. It can be seen from Table 8 that the samples are quite comparable in terms of sex ratio and marital status. It was also attempted to ensure that the socio-economic status of the samples did not differ greatly, since cognitive styles might vary according to the back-ground of the subjects. However, this was not an easy task. The main difference between the samples is in their educational back-ground. None of the depressed subjects had formal qualifications beyond secondary school level, whereas over half of the recovered subjects had either technical, university or higher diploma qualifications and over two thirds of the community subjects had such further education. Therefore, the results of the study will have to be looked at with this difference in mind. Below, the subject groups are described further, and full details are shown in Appendix 1. At appropriate points in the Results chapters, additional analyses will be carried out to check for differential effects of demographic factors, which could confound the results attributed to depression-related phenomena.

Table 8: Demographic Details of Subjects

		Community	Depressed	Recovered
Male/female ratio	n (male)	7 (23%)	3 (19%)	5 (33%)
	n (female)	23 (77%)	13 (81%)	10 (67%)
Marital status	Single	4 (13%)	3 (19%)	3 (20%)
	Married	17 (57%)	9 (56%)	8 (53%)
	Separated	5 (17%)	2 (13%)	1 (7%)
	Divorced	4 (13%)	2 (13%)	1 (7%)
	Widowed	0	0	2 (13%)

It was felt desirable to disguise the occupations of individual subjects in the interests of confidentiality. However, care has been taken to preserve the socioeconomic character of the groups as a whole when substituting for the real occupations. To characterise the occupations of the samples, it is convenient to divide them into those who were 'independent' (single, separated, divorced or widowed) and those who were married. Most of the 13 'independents' of the community sample fell into two groups: full time students (some mature) and full time mothers who had formerly been social workers or secretaries. The 7 recovered 'independents' were in occupations varying from railway porter to senior health service employee. The 7 'independent' patients were mostly unemployed or on benefit at the time of interview, and had formerly been in occupations varying from factory work to manager of a shop (not owner).

The 17 married people in the community sample were engaged in various activities, for example full time mother, part-time secretary or clerk, full time accountant. Their spouses were in varied employment, e.g. junior executive, self-employed plumber, full time mother. Half of the 8 married people in the recovered sample were full time mothers, and the other four were in varied situations (e.g. bank manager, small shop manager). Their spouses were again in varied occupations. The 9 married patients were mainly unemployed or on benefit, and their former occupations varied from factory worker to railway porter. Their spouses' situations ranged from bricklayer to shop assistant.

<u>The Interviews and Measures in Detail</u>:

All subjects were seen at least twice and some more than three

times, to allow all the measures to be completed. The total length of time spent with each subject varied between about 3 and 10 hours, depending on their needs in completing the various items and the development of rapport. The longest periods of time were spent with currently depressed patients. The items were presented in a fixed order which had been arranged in such a way as to vary the type of task performed by subject, and so reduce any fatigue to the mimimum. Hence, items involving working through a questionnaire on their own were interleaved with those involving interaction with the interviewer. Details of the questionnaires mentioned below are included in Appendix 1.

Consent: At the beginning of the first interview with any participant, it was explained to them that since they would be asked for personal information, there was a routine requirement that they gave signed consent for this to happen. It was made clear that signing did not commit them to remaining in the study or to giving any information where they preferred not to do so. The consent form was brief, and made clear the restrictions on access to the information they would give (see Appendix 1). By this time they would also have been told that tape-recording was involved for some parts of the interviews. They were reminded that all responses would be treated as confidential, and that this applied to tape-recorded material as well as questionnaire responses.

i) DSSI (Bedford and Foulds, 1978): This is a comprehensive self-report questionnaire covering a range of psychopathology. It adopts a hierarchical model of symptomatology. Thus, at the lowest level are Dysthymic States; these are measured by three

sub-scales of the questionnaire - state of Anxiety (sA), state of Depression (sD) and state of Elation (sE). The state of Elation is only cautiously regarded, in the absence of other states, as psychopathology. At the next level of severity are the Neurotic States; measured by Conversion symptoms (CVs), Dissociative symptoms (Ds), Phobic symptoms (Ps), Compulsive symptoms (CPs), and Ruminative symptoms (Rs). This level is followed by Integrated Delusions, measured by delusions of Persecution (dP), delusions of Grandeur (dG) and delusions of Contrition (dC). Delusions of Contrition would be a signal of possible Psychotic Depression. The most severe level is Delusions of Disintegration, measured by the delusions of Disintegration (dD) scale, and would be considered to signal Schizophrenia.

There are 84 statements in the questionnaire, seven for each of the sub-scales listed above. The intention is to capture changes from normal functioning, hence each statement begins with the word "Recently", for example "Recently, for no good reason, I have had feelings of panic." (sA). The respondent can circle "False", or can circle "True" and go on to circle one of three levels of distress: "If true, this has upset me:- Unbearably, A lot, A bit". For certain items, if they reply true, they are asked how sure they are of the state, for example "Recently I have considered myself superior to EVERYONE." (dG) is followed by: "If true, how sure are you ? Not very, Fairly, Certain."

It was felt that immediate presentation of the symptom inventory would be most acceptable as it was clear that the study was concerned with mental well-being. The questionnaire was presented as a standard form which all subjects would fill

in, as a check on any symptoms they might have experienced recently. With the community and recovered subjects however; it was necessary to prepare them for the fact that they would probably answer many questions in the negative i.e. that they may have few or no symptoms to report. If this had not been said, they may have felt some pressure to show themselves as interesting specimens, as it were, by affirming more symptoms than they actually were aware of. The interviewer therefore tried to minimise the effects of the demand characteristics of the situation (see Sudman and Bradburn, 1982 for full discussion of influences on interview and questionnaire responses). Even so, some non-depressed subjects felt obliged to apologise for the fact that they had circled so many "Falses"!

A slightly different approach was necessary with the currently depressed patients. Since they were bound to circle more "Trues", they would not be expected to be under the same demand pressure as the non-depressed subjects. The interviewer prepared them only for the fact that "some of the questions will seem not to apply to you: Just answer false to those and don't worry about them".

(ii) Miskimins Scales: The Miskimins Scale measures perceived discrepancy between current status and desired status, in three main areas, each assessed by five 9-point scales. The scales are labelled at either end as follows:

Global:	Intelligent	Ignorant
	Creative and original	Not creative and original
	Physically Attractive	Physically unattractive
	Successful in Life	Unsuccessful in life
	Competent for many jobs	Not fit for any job

Social:	Friendly and warm	Unfriendly and cold
	Prefer being with people	Prefer being alone
	Good relations with the opposite sex,	Poor relations with the opposite sex
	Socially Skillful	Awkward socially
	Concerned for others	Not concerned for others
Emotional:	Happy	Sad
	Relaxed	Tense
	High Self-confidence	Lack self-confidence
	Handle personal problems	Can't handle ...
	Alert and active	Dull and lifeless

In addition there is an opportunity for the subject to produce up to five further dimensions important to them personally. For each bipolar dimension, the subject marked first their current position, as they regarded it, and then their desired position. Discrepancies could range from -8 to +8, though minus scores are relatively unusual since few people desire a reduction in the positive poles of the qualities as listed.

The Miskimins Form was introduced along similar lines to the recommendations given in the Manual (Miskimins, 1979; p 60). The main difference was that the subjects were only asked to complete the lines for Self and Goal, and not for How Others See Me: Therefore instructions concerning the third line were not given. After completion of the Miskimins form, the interviewer said:

> "Everyone has slightly different ideas about what these words mean; could you tell me what they each mean for YOU, in your own view."

If necessary, prompts similar to the following were also used:

> "What sort of things do you think of when you see the words 'Intelligent, Ignorant' ?"
>
> "Is there a person you see as being especially successful in life ?"

These prompts elicited talk about how the subject viewed a dimension. Further promptings ensured they related the dimension to themselves and indicated feelings about their own

position. For example:

"You have placed yourself at number 3 and your goal is at number 1"

The subjects' verbal responses were tape-recorded, and later transcribed. According to the state hypothesis, subjects' interpretations of the Miskimins dimensions were expected to vary with depression level. To test the trait hypothesis, a comparison was required between the formerly depressed subjects and those who had not experienced depression, in their interpretations of the Miskimins dimensions. Due to the large size of the community sample compared to the recovered sample, it was possible to select two sub-sets of subjects, matched individually on age and socio-economic status. Data were available from ten of the recovered subjects. Nine community subjects were selected as a parallel group, according to closeness of match on age, socio-economic status and comparable length of responses to each Miskimins dimension. As some responses (within subjects or groups) were considerably longer than others, a cut-off of five comments per Miskimins dimension was delimited. This was to ensure a degree of uniformity of data.

The transcripts from the two subject groups were interleaved in random order. The first part of the analysis involved partitioning the transcribed responses into separate statements. Examples of this process are shown in Table 9. The procedure followed was to process comments on the first Miskimins dimension, for all the subjects in their randomized order; then to process all the comments on the second Miskimins dimension, and so on to the 15th dimension. In this way it was ensured that any error or biases that may have crept in, or any

Table 9: Sample Responses to Miskimins Dimensions showing Partitioning

Miskimins Dimension	Responses
Job competence	I - have found that - I could do anything I put my mind to do - within reason /1/ I don't think I would fancy climbing Ben Nevis or - things like that you know /2/ but - anything I've tackled - I've - done it - you know I've - I've made it /3/
Success	No - I don't think I'm successful /1/ I'd like to be /2/ - I don't want to be totally - flowing in it /3/ - but I'd like to be at least make - you know - reach a happy medium /4/

effects of rater fatigue, would not affect one subject group differentially from another. Once the responses had been partitioned into separate comments, the ratings described below were performed. The rating process was carried out twice, with a time interval of over a year between them. The results of both will be shown. This was to act as a reliability check. On the second occasion transcripts from the two subject groups were alternated rather than in random order, to avoid there being large clusters of one group done consecutively.

a) Overgeneralizations: This first rating concerned self-characterizations by the subject, for example if they described themself as "intelligent", "fairly friendly", "a bit lacking in confidence", or whatever. When a self-characterization was identified, it was then coded as either an 'ordinary' description or an 'overgeneralization'. Beck's (1979) examples of 'primitive' versus 'mature' thinking were used as the basis of this distinction. In order to cope with the variety of instances that occurred in the natural flow of subjects' speech, the distinction between the two forms had to be worked out in more detail, and then adhered to closely throughout the coding. Table 10 shows the criteria adopted. Peterson and Seligman's (1984[a]) definition of Global versus Specific Attributions was also used as a guide in drawing up the criteria. Abramson et al (1978) have pointed out its kinship with Beck's Overgeneralization concept. This has been discussed earlier. Further examples of each type of statement are given in the results section for the Cognitions Study (I).

b) Impossible Standards: This rating distinguishes 'attainable' standards or goals from 'impossible' ones. The

Table 10: Criteria for Rating Self-Characterizations as 'Ordinary' or 'Overgeneralizations'.

S++ Positive Overgeneralization e.g. "I am brilliant"	S-- Negative Overgeneralization e.g. "I'm a disaster"
Description of self as a certain "type of person"; personality traits; attributes seen as affecting many areas of life, as typical of person's life, as part of general ability, success, failure, incapacity; or any extreme or superlatively good or bad attribute.	
S+ Ordinary Positive Attribute e.g. "I'm not bad" "I'm fair at that"	S- Ordinary Negative Attribute "Not so good" "A bit lacking"
Ability or deficit in specific area; un-typical failure/success; non-extreme, intermediate ability; non-dramatic lack of ability.	

form of an 'impossible' standard is based on the form of Beck's 'dysfunctional attitudes' (Weissman and Beck, 1978). Again, specific and detailed criteria had to be defined in order to carry out the analysis, and these are shown in Table 11. Further examples of each form of goal are shown in the Results section for this study. In both of the above ratings, both positive and negative forms of statement were acknowledged and rated, since people naturally use both forms. That is, they may either praise or criticize themselves, and may pursue positive goals or express a wish not to pursue particular goals.

Negative impossible goals, such as "I don't want to be a millionnaire" (see table 11), are defined as "impossible" only insofar as they are expressed in terms of "impossible language", such as "millionnaire" instead of "slightly better off". In fact, someone who espouses many of these "negative impossible goals" is showing a healthy recognition of the impossibility of these goals. This is accounted for in the way that positive and negative goals are scored. Positive impossible goals score positive, and negative ones score negative. The score for impossible goals is the size of score for the positive ones minus the size of score for the negative ones. If a subject espouses many positive impossible goals and few negative ones, they will have a high score for impossible goals, which is expected to correlate positively with depression or depression proneness. For attainable goals, the inverse correlation with the depression variables is expected. Someone with many positive possible goals, and few negative possible goals, will have a high score for possible goals, but this is expected to correlate inversely with depression and depression proneness.

Table 11: Criteria for Distinction Between Attainable and Impossible Goals

A) Is the goal positive or negative ?	
POSITIVE	NEGATIVE
Positive value placed on positive attribute e.g. good to be friendly.	Negative value placed on positive attribute e.g. don't want to be friendly.
Negative value on negative attribute e.g. shouldn't be sad.	Positive value placed on negative attribute, e.g. try to be unfriendly.
Others' achievement.	Other person's failure.
Own potential.	Own potential non-achievement e.g. I couldn't ..
Other person's attainment of goal.	
Own potential achievement e.g. I could ...	

B) Is the goal attainable/possible or unattainable/impossible	
IMPOSSIBLE	
Imperatives, e.g. should, must, got to, mustn't, very important. Reference to non-specific and broad goals, or extreme examples of attainment.	
G++ Positive Impossible Goal e.g. "I want to be brilliant" "I don't want to be stupid"	G-- Negative Impossible Goal "I could never be brilliant" "I don't want to be a millionnaire"
POSSIBLE	
Phrases such as: quite like to; prefer not to. Reference to specific or non-extreme examples of attainment.	
G+ Positive Attainable Goal e.g. "I'd like to learn French"	Negative Attainable Goal "I don,t think I need to improve on that"

To put it another way, having positive impossible goals, and negative possible goals, such as "I want to be brilliant at everything" but "I don't think I could learn French", is expected to be associated with depression and depression proneness. Conversely, having negative impossible goals, and positive possible goals, such as "I could never be brilliant" but "I want to learn French", is expected to have an inverse relationship with depression and depression proneness.

Beck (1964) proposed that appropriate 'cognitive distortions' could be associated with different kinds of affect, from depression or anxiety to anger or elation. The analysis performed here did not distinguish precisely between affects, and this might seem a limitation. However, depression is known to involve a cluster of negative emotions rather than to be a unitary phenomenon (Izard, 1972). For this reason and because the aim is to investigate the differential use of distorted versus undistorted forms, the only distinctions required by the analysis are between distorted and undestorted forms and the broad division between positive and negative distortions.

iii) Cognitions Questionnaire (CQ): By presenting five sets of response options to hypothetical events, the CQ assesses 5 areas of cognitive style:

Emotional impact
Attribution of causality
Generalization across time (to the future),
Generalization across situations
Perceived uncontrollability.

The options followed each of eight brief scenarios, covering work, family, social relationships, finance and the experience

of depression itself (see Fennell and Campbell, 1984; or sample page in Appendix 1). For each cognitive dimension there were four response options. Two represented depressed responses and 2 non-depressed options. The latter options scored zero, and the former scored either 1 or 2, depending on amount of depressive distortion. For example, in Generalization Across Situations, for a scenario of being passed over for promotion, the 4 options were as follows:

When you think about your life in general you think:

0 (i) This is an unusual event; in other situations I always get what I want
0 (ii) Although I am occasionally disappointed, I usually get what I want
2 (iii) It's the same with everything, nothing works out the way I hope
1 (iv) I've had a few other disappointments like this recently

(iv) Seven Day Diary: The Diary consisted of 7 pages, one per day for a week. On each diary page were 6 bipolar mood scales. On each scale the subject decided how they felt and circled the appropiate scale point, in the positive range, the negative range or on the zero point at the centre. Beneath each mood scale was a small amount of space for the subject to write not more than a sentence about why they felt as they did. The interviewer guided the subject through a sample page before they took the diary home, to show what was required. They were asked not to give the matter lengthy deliberation, and to put down the first thought that came to them rather than weigh things up. Also they were directed to leave blanks if they could not think of anything. It was felt that otherwise the task might become too demanding and might be neglected. A few sentences per subject would in any case be sufficient for the analyses to be carried out.

The six bi-polar mood scales on the Diary were derived from a number of empirical studies of the use of emotion words (e.g. Nowlis and Green, 1964; Izard, 1977; Plutchik and Kellerman, 1980).

Tired	Energetic
Sad	Happy
Irritated	Tolerant
Rejecting Self	Accepting Self
Not in Control	In control
Anxious	Relaxed

It must be noted here that the precise format of the diary was changed during the study, from a slightly more complex to a simpler form. This was done when it was found that currently depressed patients had great difficulty filling in more than one page. In retrospect, it is more likely that cognitive set rather than complexity was responsible for their difficulty, since they made comments to the effect that they had felt the same as on the first day, all through the period. It seems they were unable to notice subtle changes in their depression level, or else were in fact continuously depressed to such a degree that the diary scales were too crude an instrument to capture small changes around the negative ends of the scales.

This was unfortunate and perhaps highlights a need for scales that are tailored to current depression level, in order for very depressed subjects to be able to perceive small variations and, therapeutically, to notice small improvements and the things that govern these. However, once the diary format was changed, the new form was retained, since it was felt to be simpler and was easier to produce in multiple copies, than the previous format. Copies of both forms are shown in Appendix1 .

The written comments on the Diary were analysed for self-directed statements of positive or negative tone. First, all the statements were transcribed from their handwritten form onto lists for each scale and each subject group. For example, all statements made by recovered subjects under the 'energy' scale were grouped together. Each comment was then rated as one of three categories of self-praise, self-criticism or neutral/irrelevant. The criteria for these ratings are shown in table 12.

In addition, the following rules were applied. Whenever the subject had circled the neutral point of a scale (zero), any statement there was left out of the analysis. If a statement appeared to be opposite in tone to the side of the scale marked by the subject (e.g. a negative statement where the subject had marked themselves as 'happy') then again the statement was regarded as ambiguous and not categorized. The total number of such occurrences was very small. All the other statements were categorised as either self-praise, self-criticism, or neutral. The neutral category included those which were not self-referent and also those which were self-referent but were not positively or negatively toned.

Two between group statistical analyses were performed. The first aimed to test the state hypothesis. Total numbers of self-praising and self-critical statements only were counted up for each subject group, and a chi-square analysis performed. Since the depressed subjects scored more negatively on the mood scales, the relative numbers of positive and negative statements was expected to reflect this. The second analysis tested the trait hypothesis. The numbers of all three categories of statement were counted and noted for each

Table 12: Criteria for identifying self-referent praise or criticism on the Diary

A) Is the statement self-referent ?	
Not self-referent	Self-referent
It is likely that people or agencies other than the subjet produced the result described e.g. 'It was a good/bad day' 'Others are reacting well to me'	It is likely that the subject produced the result him/herself 'I did well/badly today' 'I am making a good impression on others'
B) Is the statement a self-description (praise or criticism) or is it neutral ?	
Neutral	Descriptive
No evidence of positive or negative tone e.g. 'I am entertaining guests this week'	Positively or negatively toned words used 'I am doing well at entertaining my guests'
Plain statements of fact e.g. 'I did the garden today'	Emphasis has been placed on the statement, such that a remark of something exceptional is being made - use of exclamation mark, underlining or inserting a word for emphasis. 'I even managed to do the garden today !'
The statement is a self-questioning about a future outcome, or is something the subject wishes to achieve or avoid e.g. 'I wonder if I'll manage everything' 'I hope I'll manage'	The statement is a definite positive or negative prediction about a future outcome 'I'll never manage everything'
The experience described is an emotion felt in a particular setting e.g. 'I'm always tense after visiting my parents' 'I get nervous just before I meet a group of people'	The experience is a positive or negative emotion generalized to all settings 'I'm always tense' 'I'm a nervous person'

subject. Then, taking self-praise first, each subject's score was expressed as a ratio with number of praising statements as numerator and number of neutral statements as denomenator. The same was done for self-critical statements. Mann-Whitney tests were carried out between the subjects with depression experience and those without, for self-criticism and self-praise separately. The praise and criticism measures were kept separate in order to remove the bias due to the tendency for depressed subjects to score more often on the negative pole of the emotion scales, which of itself should produce a greater incidence of negative statements.

The last aspect of the interviewing was always the offer of an opportunity to discuss anything that had gone before, followed by thanking the subject for their contribution and payment for their time.

(v) Measure of depression proneness: For the recovered and depressed subjects, medical records were used to ascertain the number of previous depression episodes. Then the following formula produced the depression proneness figure:

$$\frac{100\,N}{(A-5)}$$

Where N = Number of past episodes
and A = Age of subject

The factor of 100 simply makes the numbers easier to compare visually, since otherwise they all have values less than one. This equation gives an indication of the number of depressions per year of life after the age of 5. According to the Diagnostic and Statistical Manual of Mental Disorders (1980),

the essential features of depressive disorder are similar in infants, children, adolescents and adults. However, Mayer-Gross, Slater and Roth (1969) have discussed the relative difficulty of diagnosis when children are younger than six.

For the community sample, medical records were not available, and data on past depressions could not be so reliably ascertained. During the life events inventory, subjects were asked about illnesses, and any episodes of depression were recorded. However, the data for the community sample on past depressions cannot be taken as seriously as that from the other two groups.

(iv) Results and Discussion - Cognition and State of Depression

HYPOTHESIS:

The three identified forms of cognition are associated with the depressed state and vary along with its severity. The null hypothesis is that there is no relation between the proposed thought forms and depression presence or level.

Predictions:

i) If the identified thought forms are associated with the presence of depression then the two non-depressed groups should score less depressive on the relevant cognitive measures than will the currently depressed group.

ii) If the thought forms are associated with the level of

depression then scores on the relevant cognitive measures should be correlated with depression scores within subject groups.

Note: Except where otherwise stated, in the data shown, all the between group statistics represent Mann-Whitney tests, and the median scores are shown. All the correlations are Spearman rank coefficients. Tests are one tailed except where otherwise stated.

ATTRIBUTIONS

Table 13 shows the between group differences, and within group correlations with depression level, for the CQ attribution scores. The cognitive scores did not differ between the depressed and non-depressed groups. There was a significant correlation between attribution score and depression level only within the community group.

On the Attribution measure of the CQ, Fennell and Campbell (1984) found their currently depressed subjects to score significantly higher than their recovered or never-depressed subjects. However, in the present study, attributions for events were not associated with the presence of depression. This could be due to the small size of the depressed group (only 10). Their scores were slightly larger than those of the non-depressed groups. Perhaps given a sample of thirty or so, there might have been a significant difference.

Table 13: CQ Attribution Scores

n Community 28	Recovered 14	Depressed 10

Between group differences in cognitive score

Community	Depressed	p	Recovered	Depressed	p
5.0	7.0	ns+	5.0	7.0	ns+

Within group correlations with depression

Community	p	Recovered	p	Depressed	p
.383	*+	.182	ns+	-.499	ns-

Notes: * Significant at .05. ns+ Not significant, but in the expected direction. ns- In the non-expected direction. NB Smaller values of 'r' reach significance in the community group, because of the larger sample size.

This "small n" effect may possibly have operated in the within-group correlations, where the depressed and recovered groups showed no relation between attributions and depression level. The relatively large community group (n=28) showed a small but significant correlation between attributions and depression level, which fits in with findings in the literature (e.g. Seligman et al, 1979). On the whole, however, the role of attributions is not supported here.

EVALUATIONS - (a) Negative view of future

There were two CQ scales concerned with view of the future, "Future" and "Control". Table 14 shows the results. There was one significant between group difference and some trends in the same direction. The recovered group showed correlation with depression level on both scales, and the community group on one of them.

In the comparison between the community group and the currently depressed group, there may be an adverse effect due to the small size of the depressed group. Secondly, the depressed group tended to come from a small industrial town while the other two groups came predominantly from a more rural area. There may have been differences in background and outlook which would affect the way the subjects explained and predicted events. For example, the community and recovered subjects, tending to be of higher educational and socio-economic status, might have had a more positive outlook to begin with than the depressed group. If this were the case, negative cognitions in the depressed group, compared to the other groups, may have been due to this initial difference in

Table 14: CQ "Future" and "Control" scales

Between group differences in cognitive score

	Community	Depressed	p	Recovered	Depressed	p
n	28	10		14	10	
Future	3.0	4.0	*+	2.5	4.0	ns+
Control	2.0	4.0	ns+	3.0	4.0	ns+

Correlations with depression level within groups

	Community	p	Recovered	p	Depressed	p
n	28		14		10	
Future	-.046	ns-	.484	*+	.511	ns+
Control	.379	*+	.550	*+	.405	ns+

Notes: * Significant at .05 ns Not significant
+ Result is in expected direction - Non-expected direction

outlook, rather than to the difference in depression level of the groups.

An investigation was done into this possibility, using two sub-groups of the (relatively large) community sample. Table 15 shows the median scores for life events per year of life, in the two sub-groups which were selected for greatest difference on this factor. A minus sign indicates that the median fell in the range of unpleasant events, and a plus sign that it fell in the range of pleasant events. The score system is explained fully in the Life Events Study (see chapter 4). Table 15 also shows how a second pair of sub-groups differed in terms of employment and education. These second sub-groups were selected for greatest difference on the latter two factors combined. The statistical test, however, was most easily done on education and then on employment separately. The sub-groups did not differ significantly on depression level.

As shown in table 15, the differences between the sub-groups were all significant, so the selection process was successful. Table 16 shows how the community and depressed subject groups differ on life event history, employment and education. There were significant differences on all three variables, indicating that these factors should be considered as added sources of variation on the cognitive factors showing significant differences. One cognitive score showed a significant difference between the depressed and recovered groups, CQ "future". Table 17 shows that the community sub-groups did not differ on this scale, thus suggesting that the community/depressed between group difference was not related to the population variables.

Table 15: Subgroups of the Community Sample, selected to differ on life events and employment/education level

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LIFE EVENTS SUB-GROUPS: Median life events score per year

Low group (n = 11)	-5.70	Mann-Whitney
High group (n = 11)	-2.10	p ***+

EDUCATION/EMPLOYMENT SUB-GROUPS: Fisher's Exact Tests

No. of subjects educated to:	School only	Higher level	
Low group (n = 8)	4	4	
High group (n = 8)	0	8	p *+

Whether subject, and/or partner if any, are in managerial/professional occupations. Applies to:

	One or both parties	Neither	
Low group	1	7	
High group	8	0	p **+

Notes: * .05 ** .001 *** .0005

Table 16: Differences between community and depressed subjects on life events, employment and education

LIFE EVENTS: Median life events score per year		
Depressed	-6.45	Mann-Whitney
Community	-0.95	p ***

EDUCATION/EMPLOYMENT: Chisquare Tests

No. of subjects educated to:	School only	Higher level	
Depressed	16	0	
Community	7	23	p ***

Whether subject, and/or partner if any, are in managerial/professional occupation: Applies to:

	One or both parties	Neither	
Depressed	0	16	
Community	12	18	p ***

Notes: *** p = .0005

Table 17: Cognitive differences between community sub-groups differing on population variables

CQ "FUTURE" median scores		
Negative events group	2.50	Mann-Whitney
Positive events group	2.00	p ns+
Low socio-economic/educ	3.00	
High ditto	2.00	p ns+
CQ "GENERALIZATION"		
Negative events group	3.50	
Positive events group	3.00	p ns+
Low socio/education	2.50	
High socio/education	3.00	p ns-
MISKIMINS DISCREPANCIES		
Negative events group	16.00	
Positive events group	21.00	p ns+
Low socio/education	21.00	
High socio/education	20.50	p ns-

Another factor is that in the recovered group there may be some association between cognition and proneness, rather than presence, of depression. This will be examined in the second half of this discussion. It should be noted here that if the recovered subjects tended to use more depressive cognitive styles due to a trait vulnerability, then this would weaken any state-related differences in cognition between them and the currently depressed subjects.

Despite the unavoidable shortcomings, the depressed subjects showed significantly more tendency than the community group to project from one negative event to future negative possibilities, as shown by the CQ "future" scale. The correlational results were more impressive, with significant correlations with depression level within both the community and the recovered groups (refer back to table 14). Both projections to future negative events and tendency to see future outcomes as uncontrollable were related to depression level. This fits in with findings using the Hopelessness Scale discussed by Beck, Epstein and Harrison (1983), and also the recognition by Alloy et al (1988) of a class of depression labelled as "hopelessness depression".

EVALUATIONS - (b) Negative view of self

Table 18 shows the between group results for the evaluative scales measuring negative view of self. The CQ "Generalization" scale and the Miskimins self-goal discrepancies yielded highly significant differences between the community and depressed subjects. The difference between the recovered and depressed groups was in the right direction

but not significant. There was no content analysis data from the Miskimins dimensions for the depressed group. On the Diary self-acceptance scale there were no group differences. However, the chi square test showed a very significant difference in tendency to self-praise or self-criticism on the Diary, between the community and currently depressed subjects.

Looking at the correlational data, cognitive scores tended not to correlate with depression level within groups (see table 19). Exceptions to this were Miskimins self-goal discrepancies in the currently depressed group, and two of the correlations in the recovered group. Within the recovered group, more depressed subjects tended to describe themselves less positively in the Miskimins content analysis, and scored lower on self-acceptance on the Diary.

The Miskimins self-description and overgeneralization scores are from the content analysis of statements made by subjects. Self-descriptions refer to ordinary descriptions the subjects made, about specific attributes of themselves. Overgeneralizations were extreme characterizations. The measures have been described in the Methods section. The data were the averages of two ratings of the same statements, separated by several months. The reliability of the ratings were as follows. For ordinary self-descriptions, Spearman rank $r = .73$ ($p = .025$). For overgeneralizations, $r = .90$ ($p = .0005$). The between group differences in Diary self-evaluative scores were quite convincing when the community and depressed subjects were compared (table 18).

Table 18: Evaluative scores - negative view of self
Between group differences in cognitive scores

	Com	Dep	p	Rec	Dep	p
CQ Generalization	3.0	7.0	**+	2.0	7.0	ns+
Miskimins Discrep	21.0	50.0	**+	28.0	50.0	ns+
Misk self-descrip	No data for depressed group					
Misk overgen	No data for depressed group					
n	(28)	(10)		(14)	(10)	
Diary self-accept	17.9	12.5	ns+	14.3	12.5	ns+
Diary self-praise	96	4	Chi sq 21.05	11	4	Chi sq 2.13
Diary self-crit	28	13	p **+	13	13	p ns+
n	(26)	(10)		(11)	(10)	

Notes: i) All but the first two Diary tests measure negative cognitions, so that depressed groups should score higher than non-depressed groups. ii) ** Significant at .005

Table 19: Evaluative scores - negative view of self
Within group correlations

	Community	p	Recovered	p	Depressed	p
Generalizations	.266	ns+	.402	ns+	.230	ns+
Miskim discrep	.061	ns+	.095	ns+	.563	*+
n	(28)		(14)		(10)	
Misk self-descr	.330	ns-	-.633	*+	No data	
Misk overgen	.503	ns-	-.476	ns+	No data	
n	(9)		(10)			
Diary self-accep	-.052	ns+	-.521	*+	.365	ns-
Diary self-prais minus self-crit	-.111	ns+	-.401	ns+	.158	ns-
n	(26)		(11)		(10)	

Note: All but the first two tests measure positive cognitions. Therefore the correlations with depression level are expected to be negative.

Remaining on table 18, in three out of the four tests, the differences were significant at a value .005 or less. The depressed subjects generalized on the CQ from its hypothetical negative events to the rest of their life, they had high self-goal discrepancies on the Miskimins scale, i.e. they saw themselves as far from reaching their life goals, and they also praised themselves less and criticized themselves more on the Diary. Table 20 shows examples of Diary comments. The results for the recovered versus depressed subjects were much less impressive, although on the first two tests the score medians differed in the right direction. Fennell and Campbell (1984) did find that their past-depressed group scored significantly higher on CQ generalization, compared to their currently depressed group.

A possible interpretation of large self-goal discrepanies is that higher discrepancies relate to a greater amount of actual stress and difficulty in the subjects' lives. However, a test for this effect within the community subjects, subdivided into those with pleasant or unpleasant life-histories, showed that there was no such effect on Miskimins discrepancies (see table 17), shown earlier). This suggests that the discrepancy scores are connected with self-esteem and standards held, rather than with actual past circumstances. The effects of life events will be discussed more fully in the Life Events Study.

It could be that a high CQ generalization score also represents a tendency for subjects to fit the hypothetical negative events of the CQ into a life background in which there have actually been a great many setbacks and mishaps. As for the Miskimins, this possibility was investigated. The CQ

Table 20: Examples of self-critical, self-praising and 'other' statements coded on the Diary

Self-praise
I have accomplished a lot today
I managed the move in one day
Will not lose sight of my own worth
I am nearly always tolerant
Self-criticism
Tried to stop smoking, did not succeed again !
At [my] inability to enter into sense of occasion
Sick of myself
I had the chance to meet someone tonight, but called off with a feeble excuse
'Other' (neither self critical nor self praising)
I am in company I enjoy
Today has been a pleasant day
Things are turning out OK
Probably do ironing tomorrow

"generalization" scores were tested within the community sample, and there were no effects for either socio-economic status/education or for life event history (table 17). Hence, it can be assumed with some confidence that the generalization from unpleasant events is indeed a cognitive effect and not a result of the depressed group realistically reflecting more negative experience than the community group.

A possible reason why the Diary self-acceptance scores did not differ between the community and depressed subjects is the following. Table 21 shows the results for all of the Diary mood scales. On inspection of table 21 the "self-acceptance" scores vary comparatively little across the three groups. "Self- acceptance" shows the smallest difference from zero in the community group and the depressed group. The "self-acceptance" scale is the one with the least familiar wording. Its wording attempted to express a group of things related to feelings about the self. However, "self-acceptance -- self-rejection" may suggest such globality of emphasis that it led subjects to score near the neutral point. Alternatively, the very unfamiliarity of the terms may have caused uncertainty and caution in their use by the subjects.

As is clear from the use of various measures in the present study, and as has been discussed earler, self-esteem and self-evaluation can be defined and assessed in a variety of ways. The content analysis of self-evaluative statements made on the Diary is somewhat similar to the NES (Negative Evaluation of Self) measure used by Brown et al (1986), which, in their study, was found to be positively related to later onset of depression.

Table 21: Medians of weekly averages on Diary mood scales

	Community	Recovered	Depressed
-100 -- +100	n=25	n=11	n=9
Mean data/subject	42	42	20
Tired--Energetic	-28.6	-33.3	-63.4
Sad--Happy	+26.8	+ 9.5	-33.4
Irritated--Tolerant	+25.0	+ 4.8	-31.5
Rej. self--Acc. self	+17.9	+14.3	+ 2.5
Not in cn--In control	+35.7	+42.9	-12.9
Tense--Relaxed	+32.1	+28.6	-33.0

With respect to the relative importance of negative self-evaluation and the earlier section on causal attributions, one may reflect on the different ways in which such cognitive processes may occur. According to the Hopelessness model (Abramson et al, 1978; Alloy et al, 1988), when unpleasant events occur, people ask themselves the question "Why ?", and the kind of causal attributions that form the reply determines mood. As was discussed in Chapter 1, Abramson et al (1978) likened attributions to internal, stable and global causes to Beck's "overgeneralization" concept. Indeed, there is close similarity between the two concepts. However, an important difference is as follows.

Overgeneralization involves such factors as prior expectations held, and the mood at the time. At different times a person will have more positive or more negative expectations. According to notions of cognitive schemata from earlier theorizing, one is constantly assimilating information to existing schemata, and editing new information in such a way that it fits in with these structures (Piaget 1932, Neisser, 1976; Oatley, 1978). Teasdale (1983) has discussed the effect of depressed mood in biasing memory of events towards the negative.

With this background in mind, it can be suggested that attributing the causes of unpleasant events is only one process that may occur. There is, as yet, little knowledge of the circumstances which promote the "Why ?" question. Indeed, cognitive-behaviour therapists suppose their patients to be under the influence of automatic negative thoughts, many of which are in the form of self- denigrations and blamings (Beck, 1963). In this context, they may not even have asked

themselves why something happened. They fear and expect negative events and have ready self-critical explanations lying around in their negative schemata. Indeed, if people do ask themselves the question "Why ?", it suggests that they are surprised at an event, and cannot immediately assimilate it into their existing scheme of things. It is possible to view the "causal search", referred to by Weiner (1985), as representing normal problem-solving behaviour, which, in depressed individuals, is precluded by their cognitive biases. Fisher (1986) has discussed how the perception of possible strategies for control may be affected by such factors.

For these kinds of theoretical reasons, self-evaluation rather than causal attribution may be a more likely cognitive reaction to unpleasant events when a person has become depressed. Causal attributions are influenced by contextual factors (Alloy et al, 1988) and by culturally shared explanatory concepts. These have been discussed with respect to health and illness by Herzlich (1972), and by Fitzpatrick, Hinton, Newman, Scambler and Thompson (1984). Brewin (1988) has pointed out that "causal" attributions can incorporate "moral" attributions. This "blaming" aspect of attributions may be the important factor when a person is in a depressed state. Brewin (1988) has also pointed out that the consequences of negative life events may be more important than the causes, in determining affective reactions.

The content analysis of the Miskimins scale comments involved only the community and recovered subjects, there being insufficient data from the patient sample. The particular subset of subjects drawn upon represented well-matched groups.

In order to keep in mind the distinction between overgeneralizing and ordinary self-description, Beck's own distinction between "mature" and "primitive" thinking was used (Beck et al, 1979), and examples of both types were collated. It was felt that not only was it necessary to collate the examples of overgeneralization, but that the amount of overall self-description should be taken into account. Although Beck made an important distinction between "mature" and "primitive" thinking, Lewinsohn (e.g. Lewinsohn and Hoberman, 1982) has viewed negative self-evaluations as possibly reflecting real deficits in social adjustment. The role of social skill and support will be examined in the Social Factors Study (chapter 3). It is likely that cognitive processes are one factor in a complex of depression-causing agents. Cognitive therapy for depression (Beck et al, 1979) comprises a multimodal approach to treatment, with behavioural as well as cognitive components.

Turning to the within group results for association of negative self-evaluation with level of depression (see table 19 shown earlier), the recovered subjects produced two significant results and the depressed subjects produced one. Twelve of the 16 tests produced correlations in the expected direction if the cognitions are associated with depression. One of these was in the way that they described themselves when talking about their goals in the context of the Miskimins scale. Content analysis of their statements showed that the more depressed subjects described themselves more negatively.

The results of the content analyses are interesting. However, they should perhaps be treated with caution. Content analysis is a lengthy process with much scope for error. It involves transcription of a large number of statements,

fragmenting them out of continuous speech or writing, drawing up distinct and appropriate categories, and coding and collating the statements appropriately. The reliability of the coding must be checked. This was partially achieved in the present study by the author's rating of the transcripts on a second occasion some months after the first. The decisions involved in categorizing are often less than straightforward, making it a slow and tedious process. The potential gains in ecological validity from sampling verbal or script data "on the hoof" possibly outweigh these problems. However, it is necessary to be aware of them when examining the data.

ASPIRATIONS - impossible standards for oneself

Table 22 shows the results for the cognitive scores representing impossible goals. The between group measure showed no relationship with presence of depression, and neither did the correlational measures within groups. The data for impossible goals again derived from the content analysis of statements made by subjects, about their aspirations. Again the averages were taken over two ratings separated by several months. The reliability over the two rating occasions was r(Spearman) = .85 (p = .0005).

Goals and "impossible goals" are the least likely of the three cognitive processes to be associated with state of depression, and the most likely to be associated with depression-proneness. Therefore the results for the "aspiration" measures were unsurprising in their lack of conclusive relationship to presence or level of depression.

Table 22: "Aspirations"

Between group measures

	Com	Dep	p	Rec	Dep	p
Miskimins "Goal"	40.0	42.0	ns-	39.0	42.0	ns-
Misk imposs goals	No data for depressed group					
n	(27)	(8)		(15)	(8)	

Correlations with depression level

	Community	p	Recovered	p	Depressed	p
Miskim "Goal"	.197	ns-	.183	ns-	.204	ns-
n	(27)		(15)		(8)	
Misk imposs goals	.141	ns+	-.329	ns-	No data	
n	(9)		(10)			

Note: "Goal" is the position ticked for "Goal" on the 9 point Miskimins scale. Impossible goals derive from the content analysis of descriptions of goals.
Low scores on "Goal" and high scores on impossible goals both mean high goals, which are expected in the more depressed subjects if related to state of depression.

To summarise the position with respect to the state hypothesis, there was most convincing evidence for the "evaluative" cognitions, both for negative view of the future, and for negative view of self. Neither "attributions" nor "aspirations" showed strong relationsips with depression presence or level. Table 23 summarises the results of binomial tests on the combined data. For each group of tests concerning the same cognition, the table shows the confidence with which the number of significant results obtained can be accepted as genuine rather than due to chance. The procedure used the binomial test, usually called the sign test and used where the chance occurrence is 0.5. However, any appropriate value can be substituted in the equation for the number of a particular outcome expected due to chance. For the purposes of this study, the .05 significance level is the most usual figure. However, it will be seen in later sections that in some instances lower values (.005, .0005) are used, in accordance with the p values of some of the results obtained.

(v) Results and Discussion - Vulnerability to Depression

HYPOTHESIS

The three identified thought forms, in addition to their possible association with depression, exist as a constant trait, causing vulnerability to further depression. The null hypothesis is that there is no relationship between the thought

Table 23: Results of binomial tests on the numbers of significant results obtained for cognitions and state of depression

Cognition	No. of tests	No. of results in expected direction	No. tests signif. at .05
BETWEEN GROUP COMPARISONS - PRESENCE VS ABSENCE OF DEPRESSION			
Attributions	2	2 ns	0 NA
Evaluations - future	4	4 ns	1 ns
Evaluations - self	8	8 **	3 ***
Aspirations	2	0 NA	0 NA
WITHIN GROUP CORRELATIONS WITH LEVEL OF DEPRESSION			
Attributions	3	2 ns	0 NA
Evaluations - future	6	5 ns	3 **
Evaluations - self	16	12 *	3 *
Aspirations	5	1 ns	0 NA

Notes: Probabilities of obtaining these results in expected direction, and at significance level .05 or less, are shown, from the binomial theorem. ns = Not significant; NA = not applicable; * = probability .05 or less; ** = .005 or less; *** = .0005

forms and tendency to become depressed.

Predictions:

i) If the identified thought forms confer prone-ness to depression, then they will be more prevalent among those who have suffered clinical depression than among those who have not.

ii) If the thought forms confer prone-ness to depression, they will be correlated with the strength of the tendency to become depressed. This tendency is measured by the formula 100N/(Age-5) where N = number of past depression episodes (see Methods).

ATTRIBUTIONS

Table 24 shows the results for the CQ Attributions scale. There was no difference between the recovered and community subject sample, and attributions did not correlate with depression proneness in any of the groups. The attribution measure did not show any relationship with past depression or depression proneness. This is consistent with the uncertain picture presented by existing research findings, on the role of causal attributions as a vulnerability factor.

Brewin (1988) has pointed out a conceptual unclarity about attributions. He has drawn a distinction between causal attribution in the strictest sense, that is, deciding on the cause of an event, and moral attribution, that is, blaming an event on some agency. Although the two may seem the same, in the latter case emotion always plays a part. If the person holds rigid standards and expectations, then an event which

Table 24: CQ Attribution scores and past depression

n Community 28	Recovered 14	Depressed 10
Between group:	Recovered	Community p
Median	5.0	5.0 ns-

Within group correlations with depression-proneness

Community	p	Recovered	p	Depressed	p
.093	ns+	.239	ns+	-.118	ns-

violated these would result in "blame", i.e. condemnation, on the self or the world.

Abramson et al (1978) provided a rationale for much research on causal attributions. Experiments and tests have been done with college students, either who were mildly depressed or who were put under mild uncontrollable stress for experimental purposes; on depressed or remitted patients, and groups of people at some risk of becoming depressed due to forthcoming stresses such as exams or pregnancy. It had been hoped that the predepressive student, or remitted or pre-clinical patient, would be easily detected as vulnerable by completing tests designed to pick up on the relevant style of attributing causes of unpleasant events. The most frequently used test has been the Attributional Style Questionnaire (Peterson et al, 1982). However, the equivocal results have been discussed earlier. Brewin (1988) has suggested that experiments in which impossible laboratory tasks are set to students probably does not resemble the way that attributions and expectations are modified outside the laboratory. He points to Brown and Harris's (1978) work in which the events found to precipitate depression tended to be major one-off events with long-term consequences, such as redundancy or bereavement.

EVALUATION - (a) Negative view of future

There were no group differences between recovered and community subjects (see table 25, next page). However, correlations with depression proneness within groups showed very significant results in the recovered group. The more depression-prone

Table 25: Evaluative scores - negative view of future
CQ "future" and "control" scales

n Community 28	Recovered 14	Depressed 10	
Between group:	Recovered	Community	p
Medians "Future"	2.5	3.0	ns-
"Control"	3.0	2.0	ns+

Within group correlations with depression-proneness

	Community	p	Recovered	p	Depressed	p
"Future"	.036	ns+	.560	*+	-.472	ns-
"Control"	-.112	ns-	.813	***+	-.110	ns-

Note: *** Significant at .0005 level

subjects had the more negative view of the future and felt least in control of it.

Evaluations about the future have not been extensively examined in the literature for their association with depression proneness, or rather, they have tended to be included in other measures incorporating Beck's "negative triad". However, Fennell and Campbell (1984) did not find any relationship between scores on their "future" and "control" measures and having had depression in the past. In the study by Lewinsohn et al (1981), expectations about future negative events was one of a number of factors which did not predict later depression.

In the present study, the within group correlations for the recovered group were very significant, showing strong associations between evaluations about future and degree of depression proneness. For the CQ "control" measure the correlation was exceptionally high (.813) and the significance value was .0005. In other words, when considering the hypothetical negative events on the CQ, the more depression prone among the recovered subjects felt there would be nothing they could do to modify the bad consequences. It will be recalled that within this same subject group there was a state effect for evaluations about the future.

The question arises whether the subjects who were more depressed, and therefore negative about the future, happened also to be those who were more depression prone. If this were the case, the correlation of the cognitive measure with depression proneness may not be valid in its own right. When Kendall partial rank correlation coefficients were calculated, keeping depression level constant, this turned out to be the

case for the CQ "future" scale (see table 26). However, it was not the case for the "control" scale. Despite the correlation between current depression level and depression proneness, the CQ 'control' scale still correlated highly with depression proneness, even with depression level kept constant. The scatter plot of CQ 'Control' versus depression proneness shows clearly the relationship between the two variables for the recovered group (Figures 5 and 6).

This factor of predicting negative consequences seems to be an important one to investigate further. It may relate to feelings of inadequacy in problem-solving, or perhaps lack of self-control skills as described by Rehm (1977). Also it might be a factor which tends to become relevant only after a number of life crises or depression episodes. It may be the result of actual behavioural deficits, or it may be pathological in the sense of an exaggeratedly negative view of self and depressive minimization of one's ability to function. Those suffering from constitutional vulnerability to depression would also be likely to assess their control over depressing events as low.

When it came to the community and the depressed subjects, in neither was there any within group correlation of cognitions about future with depression proneness. However, with respect to the community subjects, there was not much incidence of past depression to as severe a degree as in the other groups, and neither was its incidence systematically investigated. This would have required careful diagnostic questioning and was beyond the scope of the work or the interviewer's expertise. Such data as was obtained on past depressions was not systematic and is not in any way reliable.

Table 26: Kendall correlations between depression, depression proneness and CQ scales within recovered subjects (n=14)

by	D-freq	p	Depn	p	D-freq (partial)	
CQ Future	.41	*+	.41	*+	.25	ns+
CQ Control	.64	**+	.43	*+	.54	**+
Depression	.54	*+				

Notes: D-freq = freq of past depressions (corrected for age); Depn = depression level; * = .05; ** .005

Figure 5: CQ "Control" vs Depression Proneness
Raw Scores

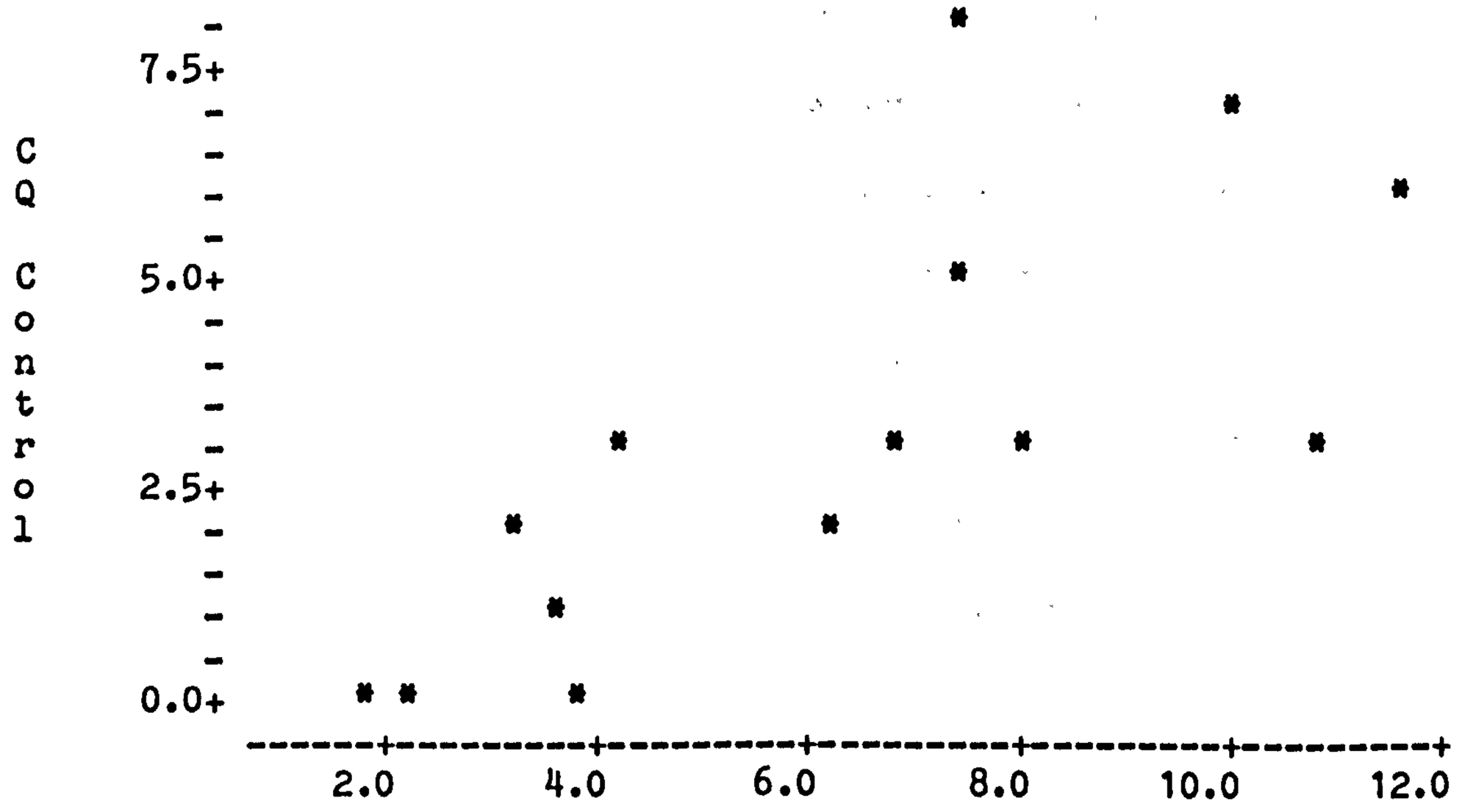
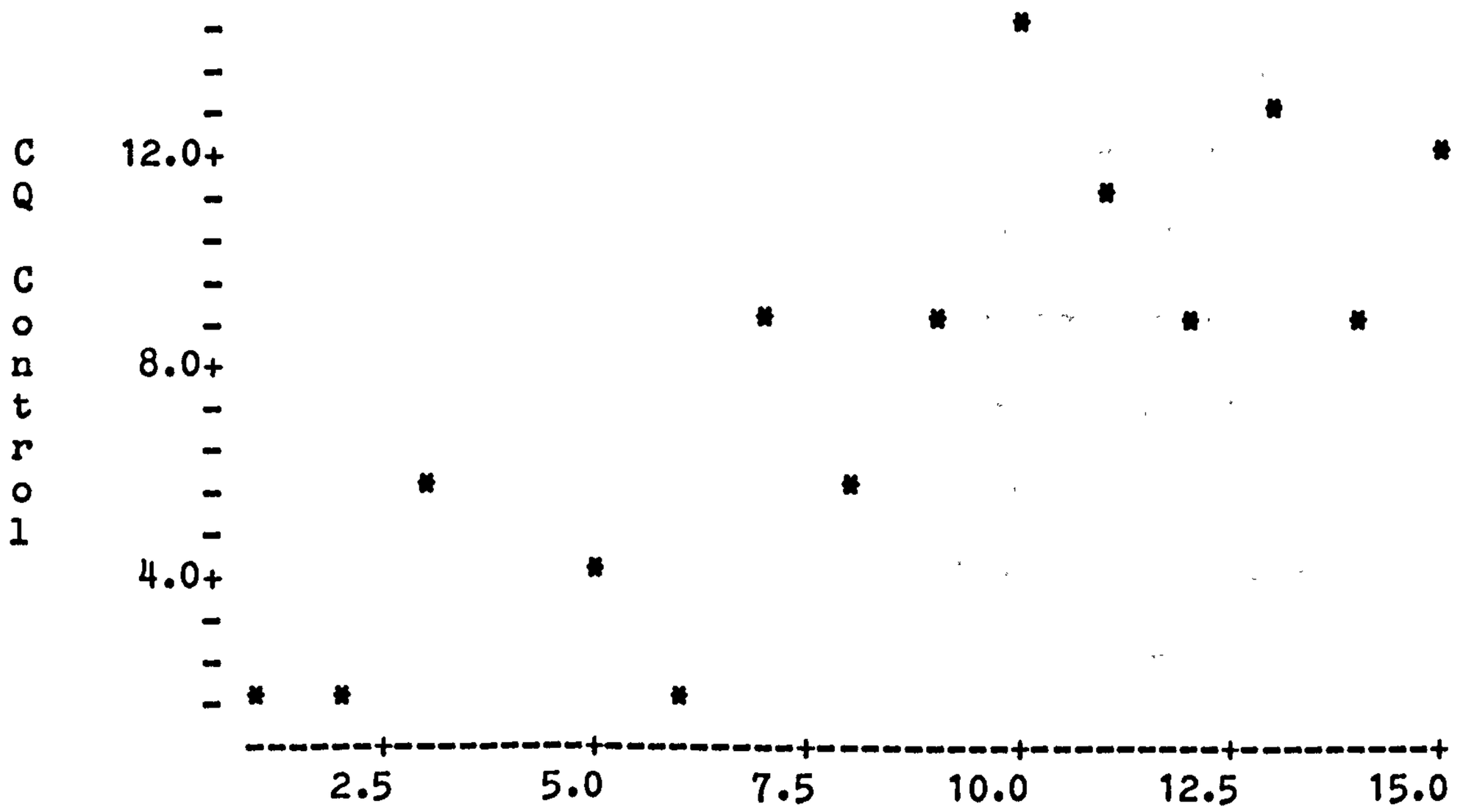


Figure 6: CQ "Control" vs Depression Proneness
Ranked Scores



Note: Higher scores on CQ "Control" mean feelings of LOWER control.

For the recovered and currently depressed groups there were medical records from which past hospital admissions for depression could relatively easily be assessed. However, a factor to consider in the currently depressed group is their overall high level of depression and the fact that they were nearly all on medication. This is on top of the "small n" problem discussed above. In general it is probable that the results from the recovered subjects are the most reliable in considering the relationship of depression-proneness to the three cognitive processes.

EVALUATIONS - (b) Negative view of self

Tables 27 and 28 show the results for the evaluative cognitions representing negative view of self. The first table shows that there was almost no association between having had clinical depression at some time and any of the self-evaluative scores. The one exception was in amount of self-praise on the Diary under positive mood scores. The community subjects praised themselves more than the recovered subjects when they were feeling good. On the Miskimins self-goal discrepancies the difference between the groups was near to the 5 %level of significance, suggesting a trend for recovered subjects to view themselves as further from important goals than the community subjects.

The second table shows some tendency for correlations between the cognitive scores and depression-proneness. Among the depressed subjects, the more depression prone individuals tended to have larger Miskimins self-goal discrepancies. Among the recovered subjects, depression-proneness was significantly

Table 27: Evaluative scores - negative view of self - Between group comparison

	Recovered	Community	p
CQ Generalizations	2.0	3.0	ns-
Miskimins discreps	28.0	21.0	ns+
n	(14)	(27)	
Misk self descrip	8.0	15.0	ns+
Misk overgen	4.6	2.4	ns-
n	(9)	(10)	
Diary self-accept	14.3	17.9	ns+
Diary self-praise	.017	.208	*+
Diary self-crit	.000	.000	ns-
n	(11)	(26)	

Notes: (i) Misk self-descrip scores represent differences of positive minus negative descriptions. Higher number represents more positive description (ii) Diary self-praise scores are % of all statements for under positive mood score. Self-criticism scores are % of all statements under negative mood score.

Table 28: Evaluative scores - negative view of self - Within group correlations with depression-proneness

	Community	p	Recovered	p	Depressed	p
CQ Generaliz	.035	ns+	.212	ns+	-.265	ns-
Misk discreps	-.089	ns-	-.016	ns-	.589	*+
n	(28)		(14)		(10)	
Misk self-descr	-.651	*+	-.379	ns+	No data	
Misk overgen	-.296	ns+	-.654	*+	No data	
n	(9)		(10)			
Diary self-accep	-.095	ns+	-.569	*+	.184	ns-
Diary self-prais	.416	*-	.048	ns-	-.187	ns+
Diary self-crit	.032	ns+	.436	ns+	-.341	ns-
n	(26)		(11)		(10)	

Notes: Misk self-descrips and overgens - correlations used average from the ratings of same data at two separate times

associated with more negative overgeneralizing about self when discussing life goals, and with lower self-acceptance scores on the Diary.

From the between group comparisons, it appears that the mere occurrence of depression at some time in the past did not affect self-evaluations. Five of the seven measures pointed to this conclusion. The two exceptions were as follows. Firstly, the recovered subjects had higher self-goal discrepancies than community subjects, with a near-significant p value (.074). Secondly, when recovered subjects marked themselves as feeling good on the Diary, they were significantly less likely to write self-praising comments underneath than were the community subjects. Fennell and Campbell (1984) found that "generalization" from the hypothetical negative events on the CQ to other areas of life was associated with having had past depression. The correlations with depression proneness that did occur here are consistent with their finding.

The correlational data suggest some correlation between tendency to become depressed and self-evaluative cognitions. One of the five tests for which there were data for the patient group, Miskimins self-goal discrepancies, correlated positively with depression proneness. The correlation (.589) and significance level (.05) are similar to its correlation with depression level. In the depressed group depression level and depression proneness did not correlate at all (-.095). Therefore, Miskimins discrepancies correlated with level and with proneness to depression independently in this small group of currently depressed subjects. This provides further evidence that a cognitive factor can have separate relationships with these two depression variables (current

level and proneness).

Among the recovered subjects, two out of the seven cognitive tests correlated with depression proneness. The more depression prone scored lower on the Diary self-acceptance scale. This corresponds with the earlier correlation in the same group between low self-acceptance and depression level. Depression proneness and depression level correlated to some degree (.498, p = .05) in the recovered group. In the content analysis of the Miskimins scales, positive overgeneralization correlated negatively with depression proneness in the recovered group. Earlier a nonsignificant trend was seen for this measure to correlate with state of depression.

In the community subject group, the more depression prone described themselves less positively when responding freely to the Miskimins dimensions. Earlier it was seen that the community subjects showed no correlation between this measure and current level of depression. Although four significant results out of 19 tests appears small, one would expect only one result to be significant by chance, if one adopts the .05 significance level. Therefore, one can assume that the significant results represent real relationships between proneness to depression and negative self-evaluations.

ASPIRATIONS

Table 29 shows the results for the cognitive scores representing goals and standards. On the Miskimins "Goal" scale, there was no difference between the recovered and community groups. However, in the content analysis where subjects described their goals, there was a group difference. Significant on the first rating occasion, it remained a strong trend on the second. The result shown is derived from average ratings over the two occations. The recovered subjects had more impossible goals. With regard to the correlations with depression-proneness, the content analysis showed no association. On the "goal" scale, however, the recovered and depressed groups showed opposite results. Among the 8 depressed subjects, the more depression prone individuals set themselves higher goals. Among the 15 recovered subjects, the more depression prone individuals set themselves lower goals.

The between group tests were equivocal, since one of them produced a significant result (impossible goals) and the other (goal level on the Miskimins) did not. Within groups, the community subjects showed no relationship between the aspirational measures and depression-proneness. However, the unreliability of the community data on depression-proneness has already been discussed.

With regard to "goal" levels, the behaviour of depression prone subjects in the recovered and depressed groups, in their placing of their goals on the Miskimins scale, is rather curious. It will be recalled that the subjects had to rate their current position on several 9-point scales, and also set their goal position. When one is subtracted from the

Table 29: "Aspiration" scores - standards and goals on the Miskimins scale

Between groups:	Recovered	Community	p
"Goal" score	40.00	39.00	ns-
Imposs goals	10.70	-2.15	*+

Within group correlations with depression-proneness

	Com	p	Rec	p	Dep	p
"Goal"	.245	ns-	.698	**-	-.652	*+
Imposs	-.117	ns-	-.021	ns-	No data	

n subjects:				
For "Goal"	C 27	R 15	D 8
For Imposs goals	C 9	R 10	D -

Note that higher scores on "Goal" denote lower goals.

other this gives self-goal discrepancy. Within the recovered group, subjects who were more depression prone set their goals significantly lower (compared to less depression prone subjects), whereas within the depressed group, the more depression prone subjects set their goals significantly higher. The binomial test shows that the result for the recovered subjects, though unexpected, can be relied upon, since the possibility of it having occurred by chance is less than 5 % (see table 30).

It must be asked why the recovered group behaved in a different way from the currently depressed group with regard to goal setting among the more depression prone or less depression prone. A possibility is that recovery from depression involves changes in the way that problems are approached and goals are set. Earlier it was noted that self-goal discrepancies correlated with depression proneness in the depressed group but not in the recovered group. This might be accounted for by differential goal setting strategies. The recoverd subjects, knowing their degree of depression proneness, took account of their actual rate of achieving and set their goals only slightly higher. In the depressed subjects, those who were more depression prone set their goals at the highest levels regardless of their depression proneness or their actual rates of achieving. This produced higher discrepancies among the more depression prone of them.

It will be recalled that some of the recovered subjects had undergone cognitive or cognitive and behaviour therapy. Perhaps they altered their goals as a result. A study was made of the possible relationships between having had cognitive therapy and scores on the various cognitive tests used in this

Table 30: Results of binomial tests on the numbers of results in right direction and significant, obtained for cognitions and past depression

Cognition	No. of tests	No. of results in expected direction	No. of results signif. at .05
BETWEEN GROUP COMPARISONS - PRESENCE VS ABSENCE OF PAST DEPR'N			
Attributions	1	0 NA	0 NA
Evaluations - future	2	1 ns	0 NA
Evaluations - self	7	4 ns	1 ns
Aspirations	2	1 ns	1 ns
WITHIN GROUP CORRELATIONS WITH DEPRESSION PRONENESS			
Attributions	3	2 ns	0 NA
Evaluations - future	6	3 ns	2 *
Evaluations - self	19	10 ns	4 *
Aspirations	5	3 ns	1 (predicted) ns 1 (not pred.) * -+

Notes: ns = p greater than .05 NA = not applicable
* = significant at .05 (*) close to .05 (actual value .067)
-+ Result was against predicted direction but very signif (.005)

study. Table 31 shows the results. Mann-Whitney tests were performed on two groups from the total sample of 15 recovered subjects. The 6 subjects in each of the two sub-groups represented, firstly, those who had had only medication, and secondly, those who had had either cognitive therapy or cognitive therapy with behaviour therapy. The remaining three subjects had had behaviour therapy only, and were not included in the comparison.

Table 31 shows only one significant result, and it was significant at the .005 level, suggesting it is unlikely to be a chance finding. It was in the "Goal" score for the Miskimins scale. The scores for those who had had cognitive therapy were higher. In this scale, higher scores mean that the goals set were lower. Thus, subjects who had had cognitive therepy were setting themselves significantly lower goals, possibly through having learned to set realistic and achievable tasks for themselves. This could account partially for the finding discussed earlier. However, it would not account for the relationship with depression proneness in this group unless those who were depression prone were those who tended to have cognitive therapy. The last result in table 31 shows this was not significantly the case, although the result is in that direction. In a small group of subjects it is possible that chance played a part also. Nevertheless, it seems worth investigating further the relationship between proneness to depression and goal setting.

The cognitive factor that came out as most strongly associated with proneness to depression was negativity about the future. This was additional to a state effect, and may be particularly

Table 31: Median scores and results of Mann-Whitney tests between recovered sub-groups with different treatment experience (n = 6 in each group)

	Medication	Cognitive Therapy	p
CQ Attributions	5.00	4.50	ns+
CQ Future	1.00	3.00	ns-
Control	1.00	3.00	ns-
CQ Generalizations	1.00	1.50	ns-
Miskimins discrep.	29.00	20.00	ns+
self-descriptions	10.10	7.65	ns-
overgeneralizations	10.25	0.65	ns-
Diary self-accept	66.70	-4.70	ns-
self-praise	0.00	0.00	ns-
self-criticism	0.00	0.12	ns-
Miskimins "Goal"	24.00	40.00	**+
Impossible goals	11.35	12.30	ns-
Depression proneness	2.87	6.07	ns

Notes: +/- denotes whether result is in expected direction or opposite. The two groups are not expected to differ on depression proneness.
ns Not significant at .05 level ** sig at .005

a function of difficulty in coping effectively with negative events. Negative evaluations of self also showed correlational associations with depression proneness. Attributions showed no relation. Prior depression per se tended not be associated with any of the three cognitive factors.

There was an indication that in people prone to depression, recovery involved adjusting goals to compensate for the effects of depression proneness on achievement. This needs further investigation. The subject groups used in this study were small, and the results may reflect their particular characteristics. In part II a large student sample will be used, in an attempt to provide further corroboration of these results. Table 30 (shown earlier) summarises the results of the binomial tests, showing the probabilities of occurrence of the obtained results for each group of related cognitive tests.

2.2 COGNITION PART II: COGNITION AND DEPRESSION IN A SAMPLE OF STUDENTS

(i) Introduction

In Part I, clinical and non-clinical subject samples were selected to try to demonstrate associations between three cognitive processes and depression in the context of high ecological validity. However, there were a number of difficulties involved. It is not easy to get access to currently depressed hospital attenders or to recovered formerly depressed subjects. Hence the clinical samples were small. The work with patients was time-consuming because, suffering as they did from the effects of depression and/or heavy medication, they tended to need a lot of supervision in filling in questionnaires, and a lot of prompting and encouragement generally. In part two of the study, it was hoped that some of these problems would be overcome by the use of a large student sample, some of whom would be mildly depressed, but probably none of whom would be on significant medication, and who would all be very used to using the written medium.

Use of a student sample does have its own problems. Chief of these was to do with choosing a measure to assess degree of depression-proneness, given that a student sample would not be expected to contain many people with experience of hospital attendance for significant depression. One reason for this is that one is not selecting a vulnerable group such as the recovered sample in part one. The other reason is that nearly all the students were 17 or 18 years of age, so they had not had much time for depression proneness to make itself obvious in terms of distinct episodes or hospital attendances.

Nevertheless, a key question arising from part one of the study was whether the relationship of cognitions-about-future to depression proneness was particular to the subject sample used there, or whether it would be replicated in a second study with a different subject sample. Therefore, as will be seen, a depression proneness questionnaire was devised which would, it was hoped, help to answer this question.

In the student sample, it was possible to build in a predictive element. Students first encountering university are under a certain amount of stress, both from the newness of their surroundings and from the loss of their old surroundings (Fisher and Hood, 1985; Richman and Flaherty, 1985). It would be expected that students having cognitive vulnerability to depression will be most likely to experience depression as a result of the transition to university. It will be possible to test for a relationship between the cognitive factors and increase in depression.

In this second part of the Cognitions Study the aim was to reinvestigate the role of the three cognitive processes, "attributions", "evaluations" and "aspirations". The same two basic hypotheses of state and trait apply, with similar predictions. There is an additional prospective component, such that if the cognitive factors confer vulnerability to depression, they are expected to be associated with increase in depression in students during the period of transition to university.

(ii) Methods

a) Subjects

The subjects were 99 members of the first year psychology class at St.Andrews University. The mean age was 18 years and 4 months, and 96 of the 99 were over 17 and under 21. There were 65 females and 34 males.

b) Design and measures

The study of cognitive factors related to depression was carried out within an overall design including measures for the first three studies involving students. The complete design is shown in table 32. Table 33 shows the cognitive processes which were investigated with each questionnaire. The association of the cognitive processes with depression as a state will be assessed by correlating the scores on the depression scale with the scores on the CQ and DAS which were completed at the same time (the first mailing).

The association of the cognitive scores with depression proneness will be tested in two ways. First, the cognitive scores will be correlated with the depression proneness questionnaire completed at the same time. Second, the cognitive scores completed on the first occasion will be correlated with the change in depression scores from the first to the second occasion, to see if more depressive cognitive scores predict increase in depression.

Table 32: Complete design for first three student studies

First mailing of questionnaires

* Anxiety and depression questionnaire (Bedford and Foulds, 1978c)
* Depression proneness questionnaire (present author)
* Cognitions Questionnaire (CQ) (Fennell and Campbell, 1984)
* Dysfunctional Attitude Scale (DAS) (Burns, 1981)
  Personality Deviance Scale (Bedford and Foulds, 1978)

Second mailing to respondents of first set, 1 month later

* Anxiety and depression questionnaire
* Depression proneness questionnaire
  Brief life events inventory (present author)
  Social support questionnaire (present author)

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* Questionnaires relevant to the Cognitions Study

Table 33: Cognitive processes investigated by each questionnaire

	Attributions	Evaluations	Aspirations
CQ	*	*	
DAS			*

Questionnaires

(i) Anxiety and depression measure (Bedford and Foulds, 1978c)

This is a brief (14 item) measure comprising just the anxiety and depression scales from the longer DSSI used in part I of this study. For non-clinical subjects, the shorter scale assessing mild states of psychopathology is much more appropriate. Additionally, as the student subjects were to be mailed the questionnaires, the total number of questions had to be kept to a minimum in order to ensure a reasonable return rate.

(ii) Depression proneness questionnaire

In drawing up an appropriate questionnaire to measure depression proneness, the following considerations had to be taken into account. First, the questionnaire had to be brief so as not to make the whole exercise long and tedious. Second, it had to be non-intrusive, otherwise co-operation would have been affected. Third, it had to be clear from the questionnaire that the level of depression of interest was more than "everyday blues". This required stipulation of criteria which had to be met by any past depressions, clearly and in such a way as to leave little doubt in the respondent's mind about whether their experience met those criteria or not.

A search in the literature for an existing questionnaire only produced tests which measured "depressive personality". The kind of questions in them appeared to assess pessimistic attitudes rather than the distinct periods of depression which

are of interest here. Past depression episodes are probably most often assessed in the course of clinical interviews. This was out of the question for the student study, given that it involved a large sample and there was a limited time in which to complete the work.

However, in deciding on the criteria for the student to decide whether or not they had suffered depressions in the past, it was possible to make use of the research diagnostic criteria set out by Spitzer et al (1978). These were used in two ways. The first established in the respondent's mind the general kind of experiences being referred to ("depressed, sad, gloomy etc"). The second established the severity of the mood in terms of how long it had lasted, whether they had needed to see a doctor or counsellor, whether they had taken medication and whether the mood had noticeably affected their fuontioning (i.e. its impact on their life at the time).

A copy of the questionnaire can be found in Appendix 1. Although Spitzer et al also listed 8 different types of symptom (e.g. loss of energy, sleep difficulty, change in appetite, inappropriate guilt, etc) it was felt that to list these on the questionnaire would give it an overly "clinical" feel. This was not felt to be appropriate for a mailed questionnaire and might decrease co-operation. The consideration of keeping the whole thing short also influenced this decision. The depression proneness questionnaire was sent to the students on two occasions, in order to provide a test-retest reliability check. The Spearman correlation between scores on the two occasions was .67 ($p < .00005$), with N = 81 subjects.

(iii) Cognitions Questionnaire (Fennell and Campbell, 1984)

This questionnaire was selected for its measurement of attributional and evaluative cognitions, and also in order to provide continuity with the previous study using clinical samples. It has been described fully in part I.

(iv) Dysfunctional Attitude Scale (DAS) (Burns, 1981)

In part I of this study, the Miskimins self-goal scale was used to examine Beck's concept of "impossible standards" in the context of common life goals such as success, competence at work, social skill and emotional adjustment. Clearly it would be valid to do the same test in the student sample, if one is seeking to replicate the earlier results. However, the Miskimins is not recommended to be completed without proper supervision. The obvious alternative choice is therefore the DAS. The original 140 item scale produced by Weissman and Beck (1978) was not published and therefore is difficult to access. However, Burns published a modified and shortened version in (1981) which is used here.

This version of the DAS consists of 35 statements covering seven "value systems". After reading each statement, the respondent ticks one of five boxes representing a range from strong disagreement, through neutral, to strong agreement. The five value systems and examples of statements included are as shown below:

Approval e.g. "My value as a person depends greatly on what others think of me."

Love e.g. "If a person I love does not love me, it means

	"I am unlovable."
Achievement	"If I fail at my work, then I am a failure as a person."
Perfectionism	"If I don't set the highest standards for myself, I am likely to end up a second-rate person."
Entitlememt	"If I am a good husband (or wife), then my spouse is bound to love me."
Omnipotence	"I should be able to please everybody."
Autonomy	"My happiness is largely dependent on what happens to me."

c) Procedure

As seen earlier from table 32, there were two mailing occasions. On the first occasion, questionnaire packs were sent out to a total of 199 students, all members of the first year psychology class. 99 completed questionnaire packs were returned. There were five questionnaires in the first pack and four in the second (see table 32). The questionnaires were ordered in such a way as to represent all possible permutations of the five (or of the four in the second case) as equally as possible. Therefore, none of the questionnaires was more salient than any other by always being first or last, or always following the same other one.

Each questionnaire set was accompanied by a covering letter explaining that a study was being carried out into emotions and experiences (copy of letters included in Appendix 1), and requesting co-operation. It was explained that co-operation was entirely voluntary and that responses would be kept strictly confidential. The letters also contained

instructions for the easy return of the completed questionnaires and it was asked that they were returned as quickly as possible. The researcher delivered the questionnaires to hall of residence mail boxes in the space of two days for the 199, and one day for the second set of questionnaires (99 subjects), so that all were received at approximately the same time.

Both sets of questionnaires were delivered in the first term. The first set was delivered in the second week and the second set in the seventh week. The second set of questionnaires was delivered to the 99 who returned their packs from the first delivery. Of these 99, 81 returned their packs.

(iii) Results and Discussion - State of Depression

STATE HYPOTHESIS

"Attributions", "evaluations" and "aspirations" are associated with the depressed state and vary along with level of depression.

Prediction: In the student subject sample as a whole, the cognitive scores are expected to be correlated with level of depression.

Note: In the tables of data, all the correlations are Spearman rank coefficients.

Table 34 shows the correlations of each of the cognitive scores with level of depression. The cognitive scores and level of depression were all measured at the first questionnaire mailing. It can be seen that all except one test correlated with depression in the expected directions.

The student results, being correlational, can best be compared with the within group correlations in the previous subject samples, rather than with the between group comparisons. In this student sample nearly all the cognitive tests correlated with depression level. These results differ from those with the previous subject samples, where the correlations were most convincing for the "evaluative" cognitions, concerning both future and self.

It could be that the student sample, being larger than the previous samples, more reliably represents the relationships between cognitions and depression. The student results do fit in with previous findings in the literature, that these kinds of congnitive measures correlate with depression level (e.g. Krantz and Hammen, 1979; Wilkinson and Blackburn, 1981; Blackburn and Bishop, 1983; Fennell and Campbell, 1984). The DAS, which is intended to measure underlying stable beliefs causing vulnerability to depression, has also been found to correlate with depression (Weissman and Beck, 1978). Table 35 shows the results of binomial tests on the likelihood of obtaining the results seen in the student sample.

Arguably, a further test of the relationships within the student sample could be carried out. The sample could be divided by a cut-off score into depressed and non-depressed. Then several between group comparisons could be carried out.

Table 34: Correlations between cognitive scores and depression level in student sample (n = 99)

	r	p
ATTRIBUTIONS		
CQ "Attributions"	.274	**+
EVALUATIONS - Future		
CQ "Projections to future"	.330	**+
CQ "Control"	.099	ns+
EVALUATIONS - Self		
CQ "Generalizations"	.222	*+
ASPIRATIONS		
DAS	-.170	*+

Notes: CQ = Cognitions Questionnaire; DAS = Dysfunctional Attitude Scale; On CQ, higher scores are more depressive cognitions; On DAS, more negative scores are more depressive cognitions; * = reached .05; ** = reached .005; ns = not significant

Table 35: Results of binomial tests on the numbers of significant results obtained for cognitions and level of depression in student sample (n = 99)

	No. of tests	No. in expected direction	No. sig at .05 *	No. sig. at .005 **
Attributions	1	1 ns	1 *	1 **
Evaluations future	2	2 ns	1 ns	1 *
Evaluations self	1	1 ns	1 *	0 NA
Aspirations	1	1 ns	1 *	0 NA

This would be especially useful if, say, the most-depressed and least-depressed quartiles could be compared. However, the DSSI "state of depression" scores did not give a distribution which lends itself to this kind of treatment (see histogram of score distributions in figure 7). Nearly half of the students scored zero, and only 9 scored 4 or above. It will be recalled that 4 is the score which corresponds to definite state of depression (Bedford and Foulds, 1978).

The Beck Depression Inventory (Beck et al, 1961) may have been a better scale to use, both for its wider score range and because of its specialism as a depression scale. The Foulds and Bedford scale was designed to form part of a general scale for mental pathology. However, with the latter scale, there is an opportunity to test the hypothesis that some of the cognitive factors found to be related to depression are also related to anxiety. This will be reported on later.

(iv) Results and Discussion - Vulnerability to Depression

TRAIT HYPOTHESIS

The three thought forms, in addition to any association with depression level, exist as a constant trait, causing vulnerability to depression.

Predictions:

1) If the thought forms confer vulnerability to depression, then they will be correlated with the depression proneness

Figure 7

Histogram of State of Depression Scores in Student sample

N = 99

Midpoint	Count	
0.00	42	**********
1.00	32	********
2.00	12	***
3.00	4	*
4.00	3	*
5.00	1	*
6.00	0	
7.00	0	
8.00	2	*
9.00	1	*
10.00	0	
11.00	1	*
12.00	0	
13.00	0	
14.00	0	
15.00	0	
16.00	1	*

questionnaire.

ii) If the thought forms confer vulnerability to depression, then, under the external stress of beginning university, students with higher cognitive scores at the start of the study will be expected to show greater increase in depression from the first to the second measurement occasion.

Table 36 shows the correlations of the cognitive scores with the depression proneness questionnaire, all measured at the first questionnaire delivery. Table 37 shows correlations with increase in depression from the first to the second measurement occasion.

For the relationship between cognition and vulnerability to depression, there were two different approaches to this in the student sample. First, a depression proneness questionnaire was used. For the within group correlations in the earlier subject samples, it will be recalled that past depression episodes were collated. As in Part I of this study, "attribution" failed to show a relationship to depression proneness. This fits in with previous findings which have tended to disconfirm attributions as constituting a trait cognitive vulnerability factor (e.g. Cochran and Hammen, 1985; Williams, 1985).

Whereas in the former subject samples, negative evaluations about the future were an important correlate of depression proneness, in the student sample the relationship was not established. However, one of the two student tests was significant, and it may not be possible to draw valid conclusions without performing further tests. Negative

Table 36: Correlations of cognitive scores with scores on depression proneness questionnaire (n = 99 students)

	r	p
ATTRIBUTIONS		
CQ "Attributions"	.075	ns+
EVALUATIONS - Future		
CQ "Future"	.239	*+
CQ "Control"	.060	ns+
EVALUATIONS - Self		
CQ "Generalizations"	.254	*+
ASPIRATIONS		
DAS	-.172	*+

Table 37: Correlations of cognitive scores at start of study with increase in depression over five weeks (n = 81 students)

	r	p
ATTRIBUTIONS		
CQ "Attributions"	.006	ns+
EVALUATIONS - Future		
CQ "Future"	.077	ns+
CQ "Control"	.085	ns+
EVALUATIONS - Self		
CQ "Generalizations"	.162	ns+
ASPIRATIONS		
DAS	-.190	*+

evaluations of self were found to correlate with depression proneness for the students just as they did in the earlier groups.

"Aspirations", as measured in the students by the DAS, correlated in the expected direction with depression proneness. Students who scored as having more dysfunctional attitudes (tending to hold rigid standards for themselves), were more depression prone. It will be recalled that, of the earlier results, the recovered group showed an unexpected relationship between goal setting and depression proneness, such that the more depression prone among them set lower, rather than unrealistically high goals. Table 38 summarises the student results for depression proneness, and their probability values as assessed by the binomial tests.

The recovered subjects may have been attempting to compensate for their perceived difficulty in coping or their repeated experience of depression. It is possible that younger subjects such as students exhibit rigid standards which, later, after repeated depressions, would become commuted into negative expectancies. Long term prospective work would be required to test this out. As mentioned earlier, a possible factor with the recovered subjects is the encounter that some of them had had with cognitive therapy. Consequently, some of them may have modified their goals according to limitations in their external situation, for example.

Fisher (1985) has shown that depressed subjects may have a tendency to ignore the restrictive effects of adverse conditions, when predicting performance level on a task. Such a "cognitive flaw" would be consistent either with unrealistic positive expectations or with blanket negative assumptions. In

Table 38: Results of binomial tests on the numbers of significant results obtained for cognitions and depression-proneness in student sample (n = 81)

	No. of tests	No. of results in expected direction	No. sig at .05 level
Attributions	1	1 ns	0 NA
Evaluations future	2	2 ns	1 ns
Evaluations self	1	1 ns	1 *
Aspirations	1	1 ns	1 *

either case, judgements are made according to some internal criterion while external conditions are ignored. In focusing on reality and setting achievable goals, cognitive therapy would be expected to modify this tendency. The various components of cognitive therapy will be discussed in the final chapter of this thesis.

Since the recovered subjects were not given the DAS it is not possible to know whether they would have scored as having particularly "non-dysfunctional" attitudes within the definition of the term. More work could be done using the DAS, to find out how well it fits the trait hypothesis. Wise and Barnes (1986) have pointed out that in previous studies, the possible important interaction with life events has often been ignored. In the Life Events Study (chapter 4), dysfunctional attitudes and the other cognitive processes will be examined along with life events.

As in Part I of the present study, correlations between cognitions and depression proneness have to be considered in the light of a possible relationship between depression proneness and depression level. It must be noted that there was a very significant correlation between depression level and the DPQ (.330, p = .0005 on the first testing and .398, p = .0005 on the second testing - depression level and depression proneness were tested on both occasions). Hence, in the student sample, relationships between cognition, depression proneness and depression level are closely bound together.

This could, however, be an artifact of the way that depression proneness was measured in the student sample, using a retrospective questionnaire. Subjects' responses could have been influenced by their current depression level. This seems

all the more likely when one considers that the questionnaire was necessarily very brief, and could not compare with a clinical style interview which would look carefully and accurately into the subject's depression history.

The student study has a predictive component not present in the previous study. The cognitive measures were tested for their ability to predict changes in depression level over a five week period. The only cognitive factor which showed a relationship with change in depression was "aspiration", as measured by the DAS (see table 37, and summary table 39). The overall change in depression level through the study was a negative one, that is, the students on average became less depressed between the first and second testing occasions. This is probably because the first occasion was near the start of the new academic year, when the students would have been most under stress from being in a strange place. The second testing was done towards the end of term but before exam stress would become acute, so most of the students would have settled in by that time. The depression scores changed from a mean of 1.38 (s.d. 2.44) to a mean of 1.19 (s.d. 2.37). The change was not statistically significant.

This suggests that dysfunctional attitudes had a maintenance role for depression here, rather than a role of precipitating it. Those with higher initial DAS scores tended to have less reduction in depression over the ensuing five weeks. Lewinsohn et al (1981) demonstrated a maintenance role for "irrational beliefs" but did not find them as predictors of who would later become depressed among initially non-depressed subjects. Other findings suggest that "dysfunctional attitudes" are associated with prior depression (e.g. Eaves

Table 39: Results of binomial tests for cognitions and change in depression over five weeks in student sample (n = 81)

	No. of tests	No. of results in expected direction	No. sig at .05 level
Attributions	1	1 ns	0 NA
Evaluations future	2	2 ns	0 NA
Evaluations self	1	1 ns	0 NA
Aspirations	1	1 ns	1 *

and Rush, 1984).

The original plan for the student study was to test them before the start of term and then again shortly after the start. This would have caught the students on the upswing of the depression curve relating to starting university, rather than on the downswing of settling in. It would have been a better test of cognitive vulnerability to depression. What has actually been tested is the maintenance role for cognitions.

(v) Cognition and Anxiety - a Brief Investigation

Studies of cognitions associated with depression have sometimes also found them to be related to other psychopathology. For example Zimmerman, Coryell, Corenthal and Wilson (1986) found attributions and dysfunctional attitudes to be associated with schizophrenia. Schrader, Gibbs and Harcourt (1986) found correlations between dysfunctional attitudes and both neuroticism and introversion. The question arises as to whether the kinds of cognitive factors investigated here are specific to depression, or whether they could be related to, or causal of, psychopathology in general.

In the Cognitions Study, the Bedford and Foulds (1978a) DSSI inventory allowed assessment of anxiety and other psychopathology besides depression. In retrospect, to assess all possible psychopathology may have been too ambitious. In any case, an investigation of other conditions with respect to

cognitive factors could best be carried out with the use of further subject samples, selected to represent other psychopathology. Time did not allow this to be done in the present work.

Nevertheless, both depression and anxiety were assessed in the student subjects as well as the first three subject groups. The problem with finding the cognitive factors to be associated with anxiety, is that anxiety and depression are so closely associated themselves that it is hardly a surprising finding. Table 40 shows a summarised comparison between correlations for depression and for anxiety with the cognitive scores within the various subject groups. The bottom row shows the summary of correlations between anxiety and depression themselves. The two affects co-occurred extremely consistently.

The results for the two affects and cognitive scores suggest that 'depressive' attributions are indeed associated with depression rather than anxiety, and that impossible goals are associated with anxiety rather than depression. The latter result fits in with findings that dysfunctional attitudes are associated with neuroticism (Schrader et al, 1986) of which anxiety is a large component. If one speculates on the implications of cognitive vulnerability models for the person who is cognitively vulnerable, it becomes clear that anxiety is, theoretically, an inevitable companion of cognitive vulnerability.

If one has rigid standards to meet, and views failure very negatively, that is, one has dysfunctional attitudes in the sense of Beck's model (Beck et al, 1979), then one must often be conscious of the possibility of failure and its

Table 40: Summary of correlational results within subject groups for depression and anxiety by cognitive scores

Cognitions	Number of tests	No. of '+' results		No. sig. at .05		No. sig. at .005	
		Dep	Anx	Dep	Anx	Dep	Anx
Attributions	4	3 ns	3 ns	1 ns	1 ns	1 *	0 NA
Evaluations							
future	8	7 *	7 *	4 ***	3 **	1 *	3 ***
self	17	13 *	12 ns	4 *	3 ns	0 NA	2 ***
Aspirations	6	2 ns	3 ns	1 ns	1 ns	0 NA	1 **
Anx by Dep	5	5 *		5 ***		4 ***	

Note: * Probability .05 ** .005 *** .0005 or less
ns Probability > .05 '+' result means there is the expected correlation between the affect and cognitive score

negative consequences. This must give rise to anxiety. Again, if one tends to attribute the causes of bad events and outcomes to internal, stable and global factors and to view negative events as very important (Abramson et al, 1978), there is also considerable scope for anxiety. According to Rehm's self control model (Rehm, 1977), the person with lack of self-control skills relies excessively on external sources of reinforcement. These are sources over which one has little direct control, and therefore anxiety must be engendered by this precarious situation.

Although this has only been a superficial investigation of the role of anxiety in relation to cognitive models of depression, the indications from the results are consistent with such models.

(vi) Conclusions for Cognitive Study

For an overall summary of the results of the Cognitions Study, see tables 41 and 42. Table 41 shows the conglomerated results for the groups in part I and the student sample, for the relationship between cognition and state of depression. It is noteworthy that "aspirations" were the only kind of cognition which did not have an association with depressed state. Table 42 shows the conglomerated results for the relationship between cognition and the various indicators of vulnerability to depression. In this table, "aspirations", along with evaluations of self, come out as the strongest factor

Table 41: Overall summary of results of the Cogntions Study - relation of cognition to state of depression

	No. of tests	No. of results in expected direction	No. of results sig. .05	.005
Attributions	6	5 ns	2 *	1 **
Evaluations future	12	11 **	5 ***	0 NA
Evaluations self	25	21 ***	7 ***	0 NA
Aspirations	8	2 ns	1 ns	0 NA

Notes: * reached .05 level of sig. ** .005 *** .0005

Table 42: Overall summary of results of the Cognitions Study, for relation of cognition to indicators of vulnerability to depression

	No. of tests	No. of results in direction expected	No. of results signif. at .05
Attributions	6	4 ns	0 NA
Evaluations future	12	8 ns	3 *
Evaluations self	28	16 ns	6 **
Aspirations	9	6 ns	4 **
			1 (.005) ** -+

Notes: -+ One result in opposite to predicted direc'n but at .005, with a probability of occurrence < .005

associated with vulnerability to depression. "Evaluations" about future also show association with vulnerability, while "attributions" show none at all.

The pattern for "aspirations" is exactly what would be expected if there were a stable trait of setting oneself unrealistic and rigid goals and standards, which caused overreaction to disappointments and set-backs. Being a stable trait, this goal setting habit would not be expected to vary with level of depression. In fact, it is not a negative trait as such. The potentiality for depression lies in negative views of failure, as exemplified by the conditional clauses found in the DAS items. These results are highly supportive of Beck's (Beck et al, 1979) cognitive vulnerability theory of depression. The Attribution theory (Abramson et al, 1978) is not supported.

In the Life Events Study, "aspirations will be examined along with life events, to see if they are more predictive oof change in depression when there are more negative life events.

CHAPTER THREE: SOCIAL FACTORS

3.1 SOCIAL FACTORS PART I: CLINICAL AND CONTROL SUBJECTS

(i) Introduction

In the theoretical review, the possible role of social factors in depression was discussed. Three models were examined, and it was seen that there could be internal and external facilitators of social interaction. Among the internal ones were the skill of the individual and mood-related variation in level of inclination to participate. In Lewinsohn's (1974) behavioural model, reduction of social reinforcement led to reduction in initiated behaviour and dysphoric mood. This in turn leads to reduced reinforcement from the environment.

Brown and Harris (1978), Brown et al (1986) and Bolton and Oatley (1987) have shown that social support can be protective in a crisis, i.e. when difficult events occur. Paykel et al (1969) showed social "exits" (e.g. bereavement or leaving a job) to be more frequent recent events in depressed subjects than in non-depressed controls. Parry and Shapiro (1986) found greater incidence of clinical depression among subjects with low social support than in those with good support. This was true for subjects who were not experiencing threatening life events, as well as in those who were, suggesting that social support is important in its own right, and not just at critical times. Costello (1982) found that a lack of intimacy with spouse, cohabitant or boyfriend increased

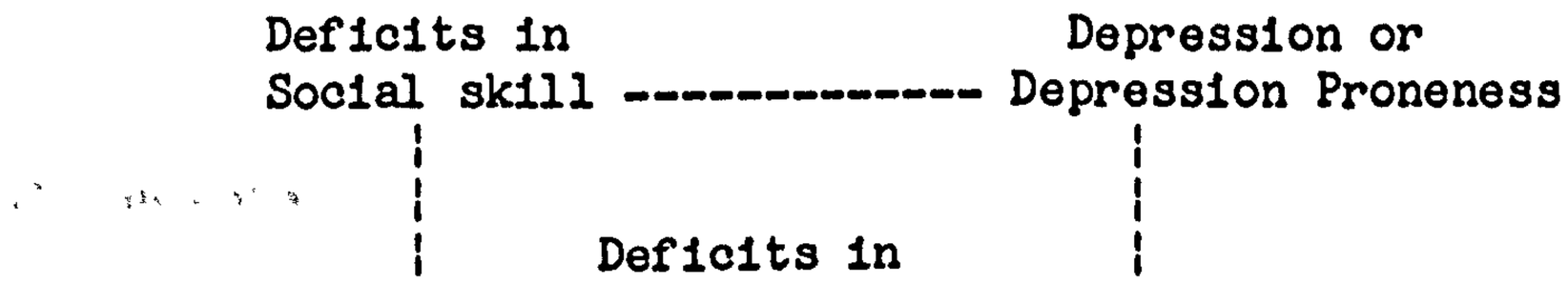
women's risk of depression.

Jackson, Moss and Solinski (1985) have shown social skills training to be as effective a treatment for unipolar depression as is pharmacotherapy. What is not known is whether some individuals are vulnerable to depression because of a stable deficit in social skill. However, one would suppose that such a group would be at risk, particularly if unable to draw on support during a crisis. Therefore, this study will attempt to look at social skill and test whether it is related to depression proneness. Its association with depression as a state will be tested as well, as one would expect a strong relationship.

There are three hypotheses to be tested. The first two resemble those tested with regard to the cognitive variables in the Cognitions Study. The first proposes the relationship between social factors and the state of depression. Social skill and external support will both be assessed. The second hypothesis proposes that the social factors can be a vulnerability factor causing proneness to depression. The hypotheses will be stated in full in the next section, describing the results.

The third one proposes that the social factors themselves are related. For example, the first part of the work might show that social support, but not social skill, was related to proneness to depression. This would then suggest that it was the actual support that was the most important factor. However, social skill may be related in a less direct way, in that it might determine the social support which can be drawn upon. The possible relationships between the variables are shown in figure 8.

Figure 8



Each of the associations represented by a dotted line will be tested in this part of the Social Factors Study, but the direction of the relationships will not be tested. In part II the directionality of two of the relationships will be tested. It requires prospective work. This can be difficult to do with regard to clinical depression, but is easier with regard to subjects under threat of mild depression as in part II (students beginning university).

(ii) Methods

a) Subjects

For the Social Factors Study (I) the subject samples are the same as for the Cognitions Study (I). Tables 43 and 44 will be a reminder of the characteristics of the samples.

b) Design and Measures

As for the Cognitions Study (I) there were three subject samples, currently depressed, formerly depressed and never depressed. As for the earlier study, the questionnaires relevant to the current hypotheses were given within the context of semi-structured interviews, following the same format for all subjects. Table 45 shows the complete programme, with asterisks marking the procedures relevant in this section.

Hypotheses and how they will be tested

a) State Hypothesis

According to the state hypothesis, deficits in social support and social skill are associated with the condition of depression. This will be tested in two ways. First, between group tests will be carried out on the two non-depressed groups compared to the currently depressed subjects, to see if there

Table 43: Details of the Three Subject Samples

	Community	Currently Depressed	Recovered Depressed
No. of subjects	30	16	15
Source of sample	Respondents to advert in local paper	Attenders at Psychiatric Day Unit	Former Day Unit Attenders n=5; Psychology Clinic n=10.

Table 44: Demographic Details of Subjects

		Community	Depressed	Recovered
Male/female ratio	n (male)	7 (23%)	3 (19%)	5 (33%
	n (female)	23 (77%)	13 (81%)	10 (67%
Marital status	Single	4 (13%)	3 (19%)	3 (20%
	Married	17 (57%)	9 (56%)	8 (53%
	Separated	5 (17%)	2 (13%)	1 (7%
	Divorced	4 (13%)	2 (13%)	1 (7%
	Widowed	0	0	2 (13%

Table 45: Package of Measures in Order of Presentation to Subjects
Those relevant to the current study are asterisked

Preparatory information

Consent Form

*i) Delusions-Symptoms-States Inventory (DSSI: Bedford and Foulds, 1978a)

ii) Inventory of Recent Life Events (combined sources - see text)

iii) Tape-recorded discussion of selected recent life events

*iv) Personality Deviance Scale (Bedford and Foulds, 1978b)

*v) Social Support Questionnaire (see text)

*vi) Seven-Day Diary (see text) - completed at home

vii) Inventory of Past Life Events (combined sources - see text)

viii) Tape-recorded discussion of selected past life events

*ix) Miskimins Self-Goal-Other Descrepancy Scale (Miskimins, 1967)

x) Tape-recorded discussion of Miskimins self-ratings

xi) Cognitions Questionnaire (Fennell and Campbell, 1984)

Informal discussion of the foregoing

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are differences in level of social functioning. Second, within group correlations will show if there is association between deficits in social functioning and level of depression.

b) Trait Hypothesis

The trait hypothesis suggests that deficits in social functioning are associated with proneness to depression, independently of current depressed mood. That is, deficits in social skill may produce repeated depressions, rather than the alternative case that on-going depressed mood causes lowered social functioning. This will be tested in the following ways. First, a between group comparison will show whether formerly depressed (but now recovered) subjects show more social deficits than subjects who have not been seriously depressed. Second, within group correlations will show if there is association between deficits in social functioning and having had repeated depression episodes. Any variation due to depression level will be partialled out.

c) Hypothesis Three

The previous hypotheses concern the possible associations between the social factors and depression. However, it is probable that the social factors themselves are related. This will be tested correlationally within samples.

Measures

(i) Delusions Symptoms States Inventory (Bedford and Foulds, 1978a): This inventory has been described fully in the Cognitions Study (Methods).

(ii) Miskimins Discrepancy Scales (Miskimins, 1979): This has also been described in full in the Cognitions Study. However, for the current work, only five of the fifteen scales are of importance. The scale covers three broad areas, termed global, social and emotional. It is the five social scales which are of interest here. As a reminder, they are shown below.

Friendly and warm	Unfriendly and cold
Prefer being with people	Prefer being alone
Good relations with opposite sex	Poor relations with opposite sex
Socially skillful	Awkward socially
Concerned for others	Not concerned for others

The subject first rated their current position on each the bipolar scale, followed by their ideal position. The discrepancy is the distance between the two ratings. Low discrepancies would indicate that the subject perceived themself as socially skillful and confident. High discrepancies would indicate a perceived deficit.

Obviously, it would be better to measure social performance objectively. However, this was beyond the scope of the present work. It must be borne in mind that in view of the negative view of self which was seen to be a correlate of depression in the Cognitions Study, it is possible that the Miskimins discrepancies are simply measuring this rather than actual social skill level. Because of this, a second measure was also used (see iii below), which asked the subjects to indicate the degree of applicability, to themselves, of statements describing particular styles of social interaction.

(iii) Personality Deviance Scale (PDS) (Bedford and Foulds, 1978; see Appendix 2): In the absence (for practical reasons) of a prospective element in the study, this questionnaire was

included to provide valuable insights into the pre-existing interpersonal style of each subject group. It is worded in such a way as to elicit relatively stable patterns of interaction with others. PDS scores have been validated against psychiatrist ratings of in-patients on the three dimensions covered, i.e. intropunitiveness, extrapunitiveness and dominance (Bedford and Foulds, 1978). The PDS was particularly selected for its concentration on the social context. It was a development from the former Hostility and Direction of Hostility Questionnaire (HDHQ: Caine, Foulds and Hope, 1967).

The PDS comprises three major scales, each subdivided into two sub-units. These are listed in table 46, with examples of representative statements in the questionnaire. In all there are 36 statements, each beginning with the words "Most of my life". This is intended to ensure that the respondent's thinking is directed to their most usual styles of interaction, rather than to exceptional examples or recent changes.

There are four levels of response to each statement: Never, Seldom, Often, Nearly always. They score 1, 2, 3 or 4. The possible range for each scale is 12-48 since there are 12 items for each scale. There are two defined abnormal score ranges (both high and low) for Extrapunitiveness, and one each for the other two dimensions, high for Intropunitiveness and low for Dominance. These were defined using normative data (Bedford and Foulds, 1978b). These score ranges are shown in table 47.

Table 46: The PDS Scales, with Sample Statements from the Questionnaire

Extrapunitiveness:	
Hostile Thoughts HT	e.g. 'I would have liked to get my own back on someone'
Denigration of Others DO	e.g. 'I have felt that people would tell lies to get ahead'
Intropunitiveness:	
Low Self-Confidence LSC	e.g. 'I have been very unsure of myself'
Dependency DEP	e.g. 'I have preferred to take a lot of advice before doing anything'
Dominance:	
Domineering Social Attitude MIN	e.g. 'I have been content to act in a very humble way' (reverse scored)
Hostile Acts HA	e.g. 'When I have wanted to have a row with someone, I have done so'

Table 47: Abnormal Score Ranges of the PDS

	Very Low	Low	Normal	High	Very High
EXTRAPUNITIVENESS	18(2)	18,19(1)	20-33	34,35(1)	35(2)
INTROPUNITIVENESS			0-32	33,34(2)	34(3)
DOMINANCE	20(2)	20-22(1)	22		

Note: The numbers in brackets are the final "deviance scores" that can be applied. They are weighted according to harmfulness (Bedford and Foulds, 1978b)

(iv) Social Support Measure (SSM) (See Appendix 2): Since no brief questionnaires on social support were available at the time the study was begun, a form was drawn up with the aim of assessing current social support and participation. In some cases the questionnaire was briefly discussed afterwards as a check on its ability to capture relevant information. Social support has often been implicated as a moderating factor in the development of depression (e.g. see Brown and Harris, 1978) but, until recently, it has not frequently been assessed in studies on depression (in contrast to this see Brown, Andrews, Harris, Adler and Bridge, 1986).

The social support questionnaire was a one-page item and was presented after the PDS. It was logical as a follow-up to answering the PDS which had concerned more general attitudes towards others. It asked about current social support and activity. The factors covered were as follows: number of confidants, type of main confidant (e.g. spouse, close female friend etc), frequency of contact, mode of contact (cohabitation, telephone etc), regular activity with others outside working hours, contact with people inside working hours, a space to indicate any other people or groups that were important and had not been mentioned already, any changes expected in the next three months, and finally, an index of satisfaction or otherwise with their "social life in general".

(v) Seven Day Diary: This measure has been described fully in the Cognitions Study. In the current study it provided further evidence of level of social functioning. Whereas the data from the SSM is in terms of categories, counts from the Diary produce a more continuous distribution which can be used in correlations. The written comments on the Diary were analysed

for statements concerning contact with others. The material had already been transcribed as part of the Cognitions Study. Each statement was rated in two ways. The first way determined whether or not it referred to a contact or interaction with another or others. The second way determined whether the interaction was positively or negatively toned.

Table 48 shows the scheme used to code the statements. Once all the statements had been coded as to whether or not they were social contact and their tone, two indices were formed. The first determined what proportion of comments concerned contact with others, relative to "non-social" comments. It was made up of the number of statements referring to contact divided by the total number of comments made. The second index determined whether the tone of the comments relating to contact was positive or negative. It was calculated from the number of positively toned contact statements divided by the sum of positively and negatively toned contact statements. The value of these indices was calculated for each subject using their total pool of statements. Since they are proportions, the actual number of statements made by each subject did not matter.

(vi) Depression Proneness Measure: This has already been described in the Cognitions Study, and involved collation of past hospital admissions for depression, from the subject's medical records where possible. The same figures were used here to discover the relationship between frequency of past depressions and the social factors.

Table 49 summarises the use of the various measures in terms of the qualities they assess for the purpose of the Social Factors

Table 48: Scheme used to code statements on Diary for their reference to social contact

1) Decide whether or not the statement refers to social contact

YES	NO
There is mention of another person or others.	No mention of others. Subject could be alone or commenting on themself.
e.g. "Meeting friend for lunch" "They like me"	e.g. "Going out for lunch" "I am likeable"
Activity has to involve others e.g. "Played football" "Meeting went well"	Activity could be done alone "Went swimming" "Work was good today"
An action is described which can only be another's e.g. "Got turned down for a job"	Other's role not mentioned or directly signalled "Did not get the job I wanted"

2) Decide whether the contact is positive or negative in tone

POSITIVE	NEGATIVE
Comment is written adjacent to a positive scale marking (e.g. +30) and appears positive or neutral in tone.	Comment is written adjacent to a negative scale marking (e.g. -20) and appears negative or neutral in tone.
e.g. "Jane is going to brownies tonight"	e.g. "Jane is upset tonight"

NB Any statement adjacent to a scale marking of zero is discounted.
A statement which appears to be in one tone which is adjacent to a scale marking in the opposite direction is also discounted. e.g. -20 Holiday tomorrow

Table 49: Questionnaire measures and their relevance to each hypothesis in the Social Factors Study (I)

	Social Skill	Social Support
Miskimins Social Discreps	*	
PDS	*	
Social Support Measure		*
Diary Social Contact		*

Study (I). The procedural details of the study are essentially what has been described for the Cognitions Study (I).

(iii) Results and Discussion - State of Depression

ONE - STATE HYPOTHESES

i) Social skill deficits are associated with the state of depression.

ii) Deficits in social support are associated with the state of depression.

Predictions: Scores on measures of social skill and social support are expected to vary between the depressed and non-depressed subject groups, and to correlate with depression level within subject groups.

i) Social skill

Tables 50 and 51 show the results for the social skill measures for their association with, respectively, presence and level of depression. Table 50 contains the results of between group Mann-Whitney tests for the depressed versus non-depressed groups. Table 51 presents the within group Spearman rank correlations with depression level.

Table 52 shows the results of the binomial tests to determine the likelihood of the obtained results occurring by chance. It indicates that the significant results obtained can be relied upon. There was a reliable tendency for the social skill measures to be associated with the state of depression. This overall result, however, hides some important considerations. Looking back at the individual indicators of social skill, it is clear that some were much more closely related to depression than others. Table 53 shows summaries of

Table 50: Social Skill and Presence/Absence of Depression
n(Community) = 30; n(Depressed) = 16; n(Recovered) = 15

Measures	Com	Dep	p	Rec	Dep	p
	Medians					
Misk Social	4.0	8.0	ns+	6.0	8.0	ns+
PDS HT	13.0	15.5	**+	12.0	15.5	**+
DO	13.0	14.5	ns+	12.0	14.5	ns+
LSC	13.0	15.0	*+	13.0	15.0	ns+
DEP	14.0	14.5	ns+	14.0	14.5	ns+
MIN	15.0	13.0	ns+	17.0	13.0	*+
HA	13.0	14.0	ns-	13.0	14.0	ns-

Notes: HT = Hostile thoughts; DO = Denigration of others
LSC = Low self-confidence; DEP = Dependency; MIN =
Domineering social attitude; HA = Hostile acts;
+ indicates result is in expected direction; - opposite
direction; * significant at .05; ** .005; ns not signif.

Table 51: Social Skill and Level of Depression Within Groups
n(Community) = 30; n(Recovered) = 15; n(Depressed) = 16

Measures	Com	p	Rec	p	Dep	p
Misk social	-.106	ns-	.046	ns+	.755	*+
PDS HT	.302	ns+	.489	*+	.207	ns+
DO	.405	*+	.636	*+	-.023	ns-
LSC	.221	ns+	.192	ns+	.200	ns+
DEP	.195	ns+	.460	*+	.106	ns+
MIN	.199	ns-	-.336	ns+	-.475	*+
HA	.106	ns-	-.024	ns+	-.089	ns+

Table 52: Summary of Results on Social Skill and State of Depression from Social Factors Study (I): Probabilities from the Binomial Test

No. of tests	No. of results in expected direction	No. of sig. results .05 .005
35	29**	10**** 2*

Notes: * .05 *** < .001 **** < .00005

Table 53: Summaries of Results for Individual Skill Dimensions - Each Out of Five Tests

Skill	No. results in right direction	No. sig. .05 .005
Misk Social	4 ns	1 ns
PDS HT	5 *	3 ** 2***
DO	4 ns	2 *
LSC	5 *	1 ns
DEP	5 *	1 ns
MIN	4 ns	2 *
HA	2 ns	0 NA

Notes: Probabilities from binomial test
* .05 ** .001 *** .0005

the results obtained for each of the separate skill factors. There were five tests for each (two between group, and three within group).

All except two of the skill dimensions produced a pattern of results suggesting an association with depression level. Only the Miskimins social discrepancies (assessing perceived discrepancy from ideal skill level) and the PDS "Hostile Acts" scale (assessing overt hostility) failed to show any association. The association for the PDS "Hostile Thoughts" scale (assessing covert hostility) was particularly strong. The two most marked results were from the two between group tests for this scale. Items from this scale indicate it to reflect frustration and anger towards others. For example:

Most of my life
I have wanted to give someone a piece of my mind.
I would have liked to get my own back on someone.

"Denigration of Others" was also positively associated depression. Both "Hostile Thoughts" and "Denigration" make up the Extrapunitiveness scale of the PDS. The positive associations with depression indicate that subjects who were depressed felt more hostile or critical of others in the way they thought about them.

The "Low Self Confidence" and "Dependency" scales were also positively associated with depression. These scales form the Intropunitiveness scale, a measure of self-doubt and preference to rely on others' judgements rather than one's own. Of the two Dominance items, "Domineering Social Attitude", but not "Hostile Acts" showed the expected negative association with depression. Depressed subjects preferred to stay in the background and let others do the leading, but did not report

any lesser tendency to show overt hostility than non-depressed subjects.

The overall picture, as summarised by tables 52 and 53, is that lack of social skill is associated with depression. Specifically, high Extrapunitiveness, high Intropunitiveness, and preference for staying in the (social) background (but not reduction in overt hostility) are associated with depression. In a review of personality factors associated with tendency to depression, Akiskal, Hirschfield and Yeravanian (1983) found introversion to be a pre-existing factor in people who became depressed.

Since the social skill questionnaire (the PDS) asked the subject about their social behaviour over most of their life, the results suggest that those who were highly extrapunitive, intropunitive, and/or preferred to be in the background, were more likely to suffer depression. However, it is possible that subjects who were depressed selectively recalled negative social incidents, and responded with a negative bias. If so, the association between the PDS scores and depression could be a reflection of negative cognitive bias rather than social factors. A counter argument would be that if the results reflect negative cognitive bias, they would be expected to affect all the PDS scales equally, which they did not do.

Another possibility is that depressed subjects experienced a reduction in social efficacy due to their depression, and that their recent performance was over-represented in their responses. To guard against this possibility, the interviewer emphasized to the subjects that they were being asked about the whole of their life and not about recent changes, and each item on the questionnaire was

begun by the words "Most of my life .. ". These factors may have provided adequate safeguards against the effects of recent changes in social behaviour influencing subjects' responses.

Finally, a factor which must be considered is that the depressed group differed from the non-depressed groups in terms of life event history and socio-economic/education level, as was seen in the Cognitions Study. The highly significant between group differences in extrapunitiveness could be due to this alternative factor. Table 54 shows the results of between group Mann-Whitney tests on sub-groups of the (relatively large) community sample, selected first for their life event history, and second for socio-economic status/education level.

The table shows that there is a difference in the PDS variable of greatest interest (HT) between the high and low socio-economic/education groups, but not between the positive and negative life event groups. Therefore, some of the marked difference in extrapunitiveness might be explained in terms of socio-economic and education differences, rather than in terms of the group difference in depression level. However, bearing in mind that all five of the tests of "Hostile Thoughts" came out in the same direction, and three were significant (one of these being a within group test), the findings on demographic variables should not be assumed to invalidate the association between the "HA" scale and depression level.

Nonetheless, stable demographic differences between the depressed and non-depressed subject groups might be expected to show correlations with stable measures of interpersonal tendencies, such as the PDS embodies. One may remark that it is perfectly understandable that people who lack education, perhaps through economic stricture, and who have little

Table 54: PDS scores and population variables among the community subjects (Medians shown)

Recent life events

	Negative score group	Positive score group	p
PDS HT	13.0	13.0	ns-
DO	14.0	13.0	ns+
MIN	16.0	15.0	ns-

Socio-economic status/education

	Low group	High group	
PDS HT	13.5	12.0	*+
DO	13.5	13.0	ns+
MIN	13.0	15.5	ns+

Notes: * Significant at .05 + In expected direction - In unexpected/non-directional

influence on how the world treats them, experience frustration and anger frequently.

The highlighting of the nature of the PDS, as measuring stable social skill and not current behaviour, brings out the question of whether it would have been useful to adapt it to assess recent changes in social behaviour. For the purposes of determining whether socially skilled behaviour varies with depression level, one would need to assess current behaviour and not long term trends. In this respect, the attempt to answer the question whether skilled behaviour varies with depression level has been flawed.

Even so, the relationships demonstrated do indicate that people with long term social deficits are more likely to be depressed at any particular moment. However, for this to be claimed, the comparisons between the recovered and currently depressed subjects must be omitted. If there is such an association between long-term social deficits and depression, there is no reason to suppose that subjects should be any more likely to be depressed currently than at some time in the past. Of the 28 remaining tests, 23 were in the right direction, and 8 were significant at the .05 level. Using the binomial test, neither this number of results in the right direction, nor this number significant, could have occurred by chance. The strong associations between depression and both intropunitiveness and extrapunitiveness remain.

The social section of the Miskimins scale, which did relate to current behaviour, showed some association with depression. Four out of the five tests came out in the right direction, with one significant result. Although each of these situations, taken on their own (i.e. 4 out of 5 right

direction, or 1 in 5 significant) could have occurred by chance, when taken together they suggest an association between the variables. This result is consistent with findings (e.g. Lewinsohn, 1974) that deficits in social performance are found in depressed subjects.

The present study has demonstrated a relationship between social skill and state of depression, despite the problem with using the PDS for this purpose. This measure of social skill was one which assessed long term trends in social behaviour, rather than current performance. Hence, one would not expect it to be sensitive to changes such as those associated with current mood.

Relationships were found between depression and Extrapunitiveness, Intropunitiveness, and "preference for others to lead". For one of the Extrapunitiveness scales (Hostile Thoughts), the part of the strong association with depression which came from the between group tests, could be accounted for by the relatively stable population characteristics of the currently depressed subject sample compared to the non-depressed samples. The currently depressed subjects had lower socio-economic power and were educated to a lesser degree than the other subjects. However, it is unlikely that this will have invalidated the overall strong association between depression and the "HT" scale. Taking an overall view of the data, a relationship between social skill and state of depression has been demonstrated.

11) Social support

Tables 55, 56 and 57 show the results for the social support measures. Table 55 shows the between group results for the Diary and table 56 for the social support measure (SSM). For the latter questionnaire, chi square tests were performed, because of the categorical nature of the answers. Wherever the chi square test was not suitable because of expected cell frequencies below 5, Fisher's exact test was carried out (Siegel, 1956). Table 57 presents the results of the within group Spearman rank correlations with depression level, for the Diary. The data from the SSM were not suitable for within group correlations.

Social support was measured using the seven day diary and the Social Support Measure (SSM). The Diary incorporated two factors, amount of contact, and tone (positive or negative), to indicate both quantity and quality. The SSM recorded categorical data about such variables as number of confidants, amount of daily contact with others, and overall satisfaction with social contact. Both between and within group tests were possible with the Diary measures, but the categorical data of the SSM was most appropriate for between group chi square tests.

The overall summary in table 58 shows that the significant results obtained were not the result of chance. However, inspection of the earlier tables, showing the results for the individual measures, indicates that the SSM yielded a greater crop of significant results than did the Diary. The most convincing results were for overall satisfaction with social contact, and amount of daily contact, both of which

Table 55: Social Support and Presence/Absence of Depression
Diary Measures
n(Community) = 27; n(Depressed) = 10; n(Recovered) = 11

Measures	Com	Dep	p	Rec	Dep	p
	Medians					
Amount contact	30.00	27.65	ns+	19.40	27.65	ns-
Tone (+/-)	71.40	0.00	*+	66.70	0.00	ns+

Table 56: Social Support and Presence/Absence of Depression
Social Support Measure
n(Community) = 30; n(Depressed) = 16; n(Recovered) = 15

Sub-Measures	Com	Dep	p	Rec	Dep	p
No. confidants						
None or one	11	11		6	11	
Two or more	19	5	*+	9	5	ns+
Who is confided in						
Close friend	14	5		6	5	
Close family	15	5	ns--+	6	6	ns--+
(Health prof'l	0	3		0	3)	
Freq. of contact with confidant						
Once/wk or more	23	12		10	12	
Less than once/wk	6	1	ns-	2	1	ns-
Type of contact with main confidant						
Meeting	15	9		5	9	
Live same house	14	4	ns+	7	4	ns+
Other contact						
At least one	26	7		11	7	
No other	4	8	*+	5	8	ns+
Familiarity in daily contact						
0,1, no opport.	8	8		5	8	
2 or more	14	5	ns+	9	5	ns+
Amount of daily contact						
0,1, no opport.	1	6		1	6	
2 or more	22	6	**+	10	6	*+
Satisfaction overall						
-2,-1,0	7	13		4	13	
1,2	23	3	***+	11	3	**+

Notes: Where column totals add up to less than total sample, this is due to missing data. * Significant at .05 ** .005 *** .0005 ns Not significant + Result is in expected direction - Opposite direction --+ No prediction made about direction of result

Table 57: Social Support and Level of Depression Within Groups
Diary Measures
n(Community) = 27; n(Recovered) = 11; n(Depressed) = 10

Measures	Com	p	Rec	p	Dep	p
Amount contact	.187	ns-	.471	ns-	-.162	ns+
Tone (+/-)	-.147	ns+	-.351	ns+	.595	ns-

Table 58: Summary of Results on Social Support and State of Depression from Social Factors Study (I)

No. of tests	No. results in expected direction	No. sig. results .05 .005
24	19**	7*** 2**

Notes: Probabilities under the binomial test ** .005 *** .0005

differed markedly between the depressed and non-depressed groups.

The Diary was designed mainly for the purpose of investigating the relationship between mood states and thoughts, which will be discussed fully in the Mood Study (chapter 5). The measures of social contact were taken as a secondary support for the SSM measure, when the latter was discovered to be flawed. However, using the Diary for a purpose for which it was not designed is not a good strategy, bearing in mind the haphazard way in which subjects might select material to report, and that they were not being asked specifically about social contact.

The main advantage of the Diary is that it provided the possibility of within group correlations, and not only between group tests. This was desirable because the latter tests are vulnerable to differences in group characteristics unrelated to depression status, as has been discussed above. However, the Diary's unsuitability for assessing social contact casts doubt on the validity of the results it produced. It is unsurprising that the SSM produced better results, but they should be treated with caution due to the problems with the subject sample differences.

Notwithstanding the foregoing, the positive results, for association of social support deficits with state of depression, are in keeping with findings in the literature (e.g. Paykel et al, 1969; Parry and Shapiro, 1986).

(iv) Results and Discussion - Vulnerability

i) Social skill deficits are an on-going vulnerability factor associated with depression proneness.

ii) Deficits in social support are an on-going vulnerability factor associated with depression proneness.

Predictions: Scores on measures of social skill and social support are expected to vary between formerly depressed and never depressed subjects, with formerly depressed subjects having deficits in skill and support. Within subject groups, deficits should show association with frequency of past depressions.

i) Social skill

Tables 59 and 60 show the results for social skill and depression proneness. Table 59 presents the between group tests for the recovered and community groups. Table 60 shows the within group correlations with past depression episodes.

Before continuing, it is perhaps necessary to provide a reminder about the use of the terms "vulnerability" and "proneness" to depression, in order to prevent possible confusion. "Proneness" refers only to the results of tests of frequency of past depressions. A person who is depression prone is, by definition, someone who has suffered many depressions. "Vulnerability" is a more inclusive term. It refers to the various ways in which a person can be indicated to be at risk of becoming depressed, as was discussed in the

Table 59: Between Group Mann-Whitney Tests on Recovered and Community Groups - Social Skill Measures
n(Community) = 30; n(Recovered) = 15

Measures	Community	Recovered	p
Misk Social	4.0	6.0	ns+
PDS HT	13.0	12.0	ns-
DO	13.0	12.0	ns-
LSC	13.0	13.0	ns-
DEP	14.0	14.0	ns-
MIN	15.0	17.0	ns-
HA	13.0	13.0	ns-

Notes: + Result is in expected direction; - In opposite direction or non-directional

Table 60: Within Group Spearman Correlations with Past Depressions (adjusted for age)
n(Community) = 30; n(Recovered) = 15; n(Depressed) = 16

Measures	Com	p	Rec	p	Dep	p
Misk Social	.015	ns+	.189	ns+	-.071	ns-
PDS HT	.155	ns+	.571	*+	-.300	ns-
DO	.167	ns+	.684	**+	-.164	ns-
LSC	.521	**+	.316	ns+	-.089	ns-
DEP	.173	ns+	.176	ns+	.177	ns+
MIN	.220	ns-	-.165	ns+	.388	ns-
HA	-.032	ns+	.244	ns-	.161	ns-

Notes: * Significant at .05 ** .005 ns Not signif.

introduction to the Cognitions Study. Such indications included having once been depressed in the past, having had frequent past depressions, showing tendency to become depressed under stress conditions, and simply scoring high on certain factors hypothesised to be risk factors for depression (such as negative cognitions, low social support, or recent difficult events). Thus, a person who is depression prone is vulnerable to depression. However, vulnerability does not, automatically, imply depression proneness, or even any episode of depression. It implies only that there is one or more indication that the person is at risk of becoming depressed.

Table 61 shows the overall summary for the results concerning the social skill measures and proneness to depression. In general they suggest that social skill deficits are associated neither with depression at some time in the past, nor with frequency of depression episodes. However, two of the results were significant at the .005 level. Such significant results are very unlikely to have occurred by chance. Table 61 shows that two significant results at .005, out of 28 tests, has a chance probability (from the binomial test) of less than .05. This indicates that they can be relied upon.

Referring back to the table of individual test results, it can be seen that these two results were from within group tests. Firstly, in the recovered subjects, the "Denigration of Others" scale is strongly associated with frequency of depressions. (The other component of Extrapunitiveness, "Hostile Thoughts", is also significantly related to depressions in this group). Secondly, a very strong relationship occurred in the community group, where "Low

Table 61: Summary of Results on Social Skill and Depression Proneness - Social Factors Study (I)

No. of tests	No. results in expected direction	No. sig. .05 .005
28	14 ns	3 ns 2 *

Notes: Probabilities under the binomial test * .05 ns Not significant

Self-Confidence" was associated with past depressions. In general the results for the community and recovered subjects, within group, were in the expected direction if there were an association between the skill measures and frequency of depression episodes. As was discussed in the Cognitions Study, the data on past depressions was unreliable for the community group. However, one would expect low self-confidence to be associated with proneness to depression, given the findings of the Cognitions Study that negative evaluations of self are associated with it.

It is difficult to draw conclusions about the association between social skill and proneness to depression. In general, these results suggest they are unrelated. However, two very significant results go against this conclusion for particular measures, "Denigration of Others" and "Low Self- Confidence". It remains to be seen whether the student study provides further corroboration of the specific positive results, or of the more general negative picture.

ii) Social support

Tables 62 to 64 present the results for social support. In tables 62 and 63 are the between group tests, first for social support collated from the diaries, and second for the SSM. Table 64 shows the within group correlations with depression episodes for the diary data. The SSM data were categoric, and could not be subjected to within group correlation.

Table 62: Between Group Results for Social Support on Diary. n(Community) = 27; n(Recovered) = 11

Measures	Community	Recovered	p
Amount contact	30.0	19.4	*+
Tone (+/-)	71.4	66.7	ns+

Table 63: Between Group Results for Social Support Measure n(Community) = 30; n(Recovered) = 15

Sub-Measures	Community	Recovered	p
No. of confidants			
0,1	11	6	
2 or more	19	9	ns+
Who is confided in			
Close friend	14	6	
Close family	15	6	ns
(Health professional	0	0)	
Freq. of contact with confidant			
once/wk or more	23	10	
less than once/wk	6	2	ns+
Type of contact with confidant			
Meeting	15	5	
Live same house	14	7	ns-
Other contact			
At least 1	26	11	
No other	4	5	ns+
Familiarity in daily contacts			
0,1, no opport.	8	5	
2 or more	14	9	ns-
Amount of daily contact			
0,1, no opport.	1	1	
2 or more	22	10	ns+
Satisfaction overall			
-2,-1,0	7	4	
1,2	23	11	ns+

Table 64: Within Group Correlations of Social Support with Past Depressions - Diary Support Measures
n(Community) = 27; n(Recovered) = 11; n(Depressed) = 10

Measures	Com	p	Rec	p	Dep	p
Amount contact	.196	ns-	.263	ns-	.463	ns-
Tone (+/-)	-.225	ns+	-.231	ns+	.460	ns-

Table 65: Summary of Results on Social Support and Depression Proneness - Social Factors Study (I)

No. of tests	No. results in expected direction	No. sig. .05
15	9 ns	1 ns

Table 65 shows the summary of results for association between current social support and vulnerability to depression. Neither depression at some time in the past, nor frequency of past depression episodes, had any association with current levels or quality of social support. There was one significant result, but it could easily have occurred by chance. This suggests that previous depression does not reduce the chances of present social support, which would be an encouraging conclusion if the data were reliable. The student study in part II will provide further insight into the question.

HYPOTHESIS THREE - ASSOCIATION OF SOCIAL FACTORS

The two social factors of social skill and social support are associated with one another, independently of any association which each of them has with depression.

Prediction: The measures of the two social factors should show intercorrelations, such that deficits in skill correlate positively with deficits in support.

Table 66 shows the correlations between amount of support apparent from the Diary and the skill measures represented by the Miskimins social discrepancies and the six PDS scales. Table 67 shows the correlations between the latter and the tone (positive or negative) of social contact reported in the Diary. The Miskimins discrepancies and the first four PDS scales are deficit measures and should correlate negatively with amount

Table 66: Correlations Between Amount of Support (Diary) and the Seven Skill Measures
n(Community) = 27; n(Recovered) = 11; n(Depressed) = 10

Skill Measures	Com	p	Rec	p	Dep	p
Misk Social	-.132	ns+	.251	ns-	.045	ns-
PDS HT	.291	ns-	.612	*-	-.541	ns+
DO	-.093	ns+	.369	ns-	-.273	ns+
LSC	-.085	ns-	.216	ns-	.537	ns-
DEP	-.103	ns+	.212	ns-	.083	ns+
MIN	.280	ns+	.071	ns+	-.147	ns-
HA	.264	ns+	.296	ns+	.073	ns+

Notes: ns = Not significant; + = Result in expected direction
- = Result in opposite direction

Table 67: Correlations Between Tone (+/-) of Support (Diary) and the Seven Skill Measures
n(Community) = 27; n(Recovered) = 9; n(Depressed) = 7

Skill Measures	Com	p	Rec	p	Dep	p
Misk Social	.114	ns-	-.086	ns+	.466	ns-
PDS HT	-.448	*+	-.046	ns+	-.420	ns+
DO	-.219	ns+	.050	ns-	.158	ns-
LSC	-.345	*+	-.245	ns+	-.636	ns+
DEP	.163	ns-	.035	ns-	-.193	ns+
MIN	-.314	ns-	-.350	ns-	.053	ns+
HA	-.050	ns-	-.314	ns-	-.408	ns-

and tone of support on the Diary. The last two PDS scales are measures indicating dominance in social situations, and should correlate positively with amount and tone of support.

The summary in table 68 indicates that there was no significant relationship between the social skill and social support measures in the subject samples studied here. That is, self-report scores for social behaviour over most of a subject's life did not correlate with quantity or quality of social support present for them at the time of the study. This would suggest that skill deficits do not render people vulnerable by reducing available support. However, the results may have been adversely affected by some of the problems which have already been discussed.

The small n problem, with the recovered and currently depressed groups, means that correlational tests have only slim hope of revealing something interesting. The Diary was used as the support measure in the correlations between social skill and social support (because the SSM was unsuitable for correlational tests); but the unsuitability of the Diary as a measure of social support has already been mentioned. In part II of this study, some of these problems will be overcome. Firstly, a larger sample will be used, and secondly, a better social support measure will be available.

Table 68: Summary of Relationship Between Social Skill and Social Support (from Diary) - Social Factors Study (I)

No. of tests	No. results in expected direction	No. sig. .05
Amount of support		
21	11 ns	0 NA
Tone of support		
21	10 ns	2 ns

Note: NA Not applicable ns Not significant

3.2 SOCIAL FACTORS - PART II: STUDENT SUBJECTS

(i) Introduction

The results of the Social Factors Study (I) showed strong relationships between the two social factors and state of depression, but no generalized association with past depression or proneness to depression. However, the small size of two of the subject samples will have reduced the chances of any relationships being demonstrated. The larger student sample might show them better if they exist.

Another question which arises from part I of the Social Factors Study is whether the Diary measures of social contact, and the author-designed Social Support Measure, really measured actual social interaction adequately. These issues have been referred to in the discussion of part I. The student study provided an opportunity to try to remedy this, by the use of an improved social support questionnaire.

The predictive element of the student study enabled a test of the hypothesis that lack of social skill leads to greater depression under the stress of a new environment, and the hypothesis that lower social skill leads to less social support and integration.

Four hypotheses will be tested. The first two are the same "state" and "trait" hypotheses as the first two for part I of the Social Factors Study, the questions being whether social deficits are associated with the depressed state, and whether they are associated with proneness to depression. The third hypothesis concerns the ability of social skill deficits to act

as a vulnerability factor for depression under conditions of social stress. The fourth hypothesis concerns the relationship between the two social factors, and the question is whether lack of social skill leads to reduced social integretion in a new situation. If it does, then it could be a mediating factor in the chain from social skill deficit to depression.

(ii) Methods

a) Subjects

The subjects were the same 99 members of the first year psychology class, at St.Andrews University, as those described in the Cognitive Study. The mean age was 18 years and 4 months, with 96 of the 99 aged over 17 and under 21. There were 65 females and 34 males.

b) Design and measures

Table 69 shows the overall design for the three studies carried out with the student sample. The questionnaires relating to the Social Factors Study are marked with asterisks. It will be seen from the table that there are two measures of depression, one for depressed state and one for proneness to depression. There are also two social measures, one for social skill (the PDS) and one for actual social support (the SSQS). The association of the social factors with depression as a state will be investigated by correlating the scores on the social questionnaires with the scores on the depression scale which was administered concurrently.

The association of the social factors with depression proneness will be assessed in two ways. First, the social scores will be correlated with the depression proneness questionnaire completed at the same time. Second, the PDS completed in the initial set of questionnaires will be correlated with the change in depression level from the initial

Table 69: Overall design for the first three student studies

First delivery of questionnaires

* Anxiety and depression questionnaire (Bedford and Foulds, 1978c)
* Depression proneness questionnaire (present author)
  Cognitions Questionnaire (CQ) Fennell and Campbell, 1984)
  Dysfunctional Attitude Scale (DAS) (Burns, 1981)
* Personality Deviance Scale (PDS) (Bedford and Foulds, 1978)

Second mailing to respondents of first set, 1 month later

* Anxiety and depression questionnaire (re-administered)
* Depression proneness questionnaire (re-administered)
  Brief life events inventory (present author)
* Social Support Questionnaire for Students (SSQS) (prsnt author)

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* Questionnaires relevant to the Social Factors Study

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to the final set. If those with social deficits are prone to depression, then the stress of starting university should lead to increased depression in them.

The association between the social factors themselves will also be tested. If deficits in social skill lead to poorer social support, for students encountering a new environment, then there should be a correlation between the PDS (skill) completed initially and the social support scores obtained at the final test battery.

<u>Questionnaires</u>

(i) Anxiety and depression measure (Bedford and Foulds, 1978c)

This brief 14 item test has been described in part II of the Cognitive Study.

(ii) Depression proneness questionnaire (DPQ).

This brief test of depression proneness has also been described in the Cognitive Study (II).

(iii) Personality Deviance Scale (PDS) (Bedford and Foulds, 1978)

This unfortunately titled questionnaire has already been described in the Social Factors Study (I). It was used again with the student sample for consistency with the previous

study.

(iv) Social Support Questionnaire for Students (SSQS)

The author had the choice of using the same social support measure with the students as was employed with the other three subjects samples. However, for two reasons, an alternative questionnaire (the SSQS) was designed. First, a number of problems became apparent with the former measure. These were discussed in part I of the Social Factors Study. Second, the author wished to gear the questions to students starting university. An examination of the literature did not produce any suitable short questionnaires, and it was felt appropriate to design one.

The SSQ measures three factors of social support. These are, first, the degree of need for support or contact that the respondent feels. Second, the perceived amount of opportunity to interact with others. Third, the satisfactoriness of the respondent's actual experience of interaction. These three factors are assessed with respect to four typical social activities or needs. These four are group activity, one-to-one meetings, practical support, and emotional support. Each of the four needs is assessed with respect to academic settings and concerns, and with respect to non-academic ones, making a total of 8 main areas. A copy of the questionnaire is shown in Appendix 2. Examples of the four activities/needs are shown below, the first two applied to the academic context, and the last two applied to non-academic concerns.

1) Taking part in group activities as part of academic classes (e.g. group discussions, sharing resources with more than

one other person, etc)

2) Meeting others on a one-to-one basis in academic classes

7) Obtaining practical help, information or advice from someone, for a problem outside your academic work

8) Obtaining emotional support or encouragement from someone, when you had a problem outside your academic work

For each of the 8 areas of social activity or need, three questions were asked, as shown below. The scores obtained by each answer are shown here, but do not appear on the questionnaire form.

a) How much need have you felt for this kind of opportunity, in the time since you did the first set of questionnaires ? (Please circle answer):-

Little or none	A little	So so/ unsure	A lot	A great deal
0	1	2	3	4

b) How happy have you felt with the amount of opportunity you have had for this activity ?

Very unhappy	Unhappy	So so/ unsure	Happy	Very happy
4	3	2	1	0

c) How happy have you felt about your actual experience of this activity ? - If you have not had an actual experience of this, circle "n/a" :-

Very unhappy	Unhappy	So so/ unsure	Happy	Very happy
4	3	2	1	0

n/a
4

The three scores produced by the SSQS, for need, perceived opportunity, and actual experience, are obtained by summing the scores on each of these dimensions across the 8 areas. A high overall score represents high need, low perceived opportunities, and dissatisfaction with (or lack of) actual experience of social contact and support.

Procedure

The procedure for part II of the Social Factors Study, described fully in the Methods for that study, incorporated the procedure for part II of this study. It will not be repeated here.

(iii) Results and Discussion - State of Depression

ONE - STATE HYPOTHESIS

1) Social skill deficits are associated with the state of depression.

ii) Deficits in social support are associated with the state of depression.

Prediction: Scores on measures of social skill and social support are expected to show a relationship with depression level within the large student sample, such that deficits correlate positively with depression.

Tables 70 and 71 show the Spearman rank correlations between depression level and, respectively, the social skill and social support measures. Social skill is represented by the scales of the PDS, and social support by the social support questionnaire for students (SSQS) created for the purpose.

Table 70: Correlations Between PDS Scales
and Depression Level in Students. n = 99

PDS Scale	r	p
HT	.188	*+
DO	.046	ns+
LSC	.240	*+
DEP	.080	ns+
MIN	.008	ns-
HA	.039	ns-

Notes: ns Not significant *.05
+ Result in expected direc. - Opposite dir.

Table 71: Correlations Between Social Support
and Depression Level in Students. n = 81

SSQS Sub-Scale	r	p
Need	.455	***+
Perceived Opportunity	.211	*+
Experience of Support	.014	ns+

Notes: * .05 *** < .0005 ns Not signif.

i) Social skill

The summarised results for the two social factors of skill and support, and level of depression, are shown in table 72. Both social factors were correlated with level of depression in the student sample.

For social skill, inspection of the individual results, in the earlier tables, reveals that it is the HT (Hostile thoughts) and the LSC (Low self confidence) scales of the PDS that gave the significant correlations with depression. The HT correlation ties in with the finding, in part I, that currently depressed subjects scored much higher on HT than either of the two non-depressed groups. It was thought that this could be due to differences in population variables between the depressed and non-depressed groups, rather than to the difference in depression.

The finding for the students casts doubt on this alternative explanation, which mainly hinged on the lower socio-economic power and educational exposure of the currently depressed group. Admittedly, there could be variation in these factors within the student sample. Unfortunately, no data were gathered which would resolve the question. A speculative explanation for the result is that both the population factors and social frustration, separately, are associated with depression. Alternatively, a vulnerability factor due to environmental variables is being indicated indirectly, through the social reaction it causes, of frustration with powerful others.

Table 72: Summary of Results for Social Factors and State of Depression in Students

No. of tests	No. results in expected direction	No. sig. .05	No. sig. <.0005
Social Skill			
6	4 ns	2 *	0 NA
Social Support			
3	3 ns	2 *	1 **

Notes: * .05 ** <.005

It is surprising that neither in this part of the study, nor in part I, did the HA (Hostile Acts) scale of the PDS show any appreciable relationship with depression. Beck (1964) and others, have noted the relative absence of expressed anger among the depressed. One would expect the HA scale to correlate negatively with state of depression. However, the absence of a result is in keeping with findings in the research literature, in which there is no consistent relationship, either between hostility, or overt hostility, and depression (e.g. Fernando, 1977).

The significant results for social skill and depression in the student sample are consistent with the findings from Part I of this study, in which both intropunitiveness and extrapunitiveness were associated with depression.

ii) Social support

Before looking at depression proneness, the relationship between social support and the state of depression is to be discussed. Table 72 (presented earlier) shows that there was a strong relationship between current social support and current depression level among the students. The idividual results (see table 71 shown earlier) indicate that, out of the three support factors of the SSQS, perceived need for support was most strongly related to depression level, and amount of perceived opportunity for support showed a significant but lesser relationship. That is, the more depressed students saw themselves as having greater need, and perceived fewer opportunities. Actual experience of support was not related,

indicating that it did not matter so much what kind of support or contact was available, as long as something was there. This could reflect the fact that the students were in a new situation, many away from home for the first time. The main concern would be with building up new networks. In this situation, quality may be a secondary consideration, which would emerge only after initial social systems have become established.

The results for social support and level of depression are consistent with the earlier findings, in part I, and in the literature, that lack of support is associated with depression. The "need" scale on the SSQS indicated that the depressed subjects did not have as much support as they needed. The "opportunities" scale indicated that depressed subjects either perceived, or objectively had, less support available to them than did non-depressed subjects.

(iv) Results and Discussion - Vulnerability

TWO - TRAIT HYPOTHESIS

i) Social skill deficits are an on-going factor associated with depression proneness.

ii) Deficits in social support are an on-going factor associated with depression proneness.

Predictions: Deficits in social skill and social support are expected to show a positive correlation with depression proneness.

Tables 73 and 74 show the Spearman rank correlations with the depression proneness questionnaire (DPQ) for, respectively, social skill and social support. Social skill is measured by the PDS scales, and social support by the SSQS. Table 75 summarises the results for the two social factors and the depression proneness measure (the DPQ) among the students.

i) Social skill

Looking first at social skill, the overall result (table 75) was due to just one sub-scale of the PDS (LSC or Low self confidence), which correlated particularly well (.324, p = .005) with scores on the DPQ. It is notable, however, that all except one scale (Hostile acts) correlated in the right direction. The particularly strong result for LSC is consistent with the very significant finding for LSC and depression proneness among the community subjects in part I of the Social Factors Study.

The LSC scale was also found, earlier, to correlate significantly with <u>state</u> of depression among the students. The LSC scale covers such items as the following:

Most of my life
I have felt as capable as other people (reverse scored)
I have been very unsure of myself

Strictly speaking, the scale items do not relate directly to interpersonal situations, and more closely resemble Beck's (1963) description of low self regard, whereby the depressed person diminishes their own abilities and personal qualities. The LSC scale assesses such self regard over the long term. The correlation with depression proneness is consistent with

Table 73: Correlations Between Social Skill and Depression Proneness in Students (n = 99)

PDS Scale	r	p
HT	.166	ns+
DO	.128	ns+
LSC	.324	**+
DEP	.124	ns+
MIN	-.006	ns+
HA	.014	ns-

Notes: ns Not significant ** Signific .005

Table 74: Correlations Between Social Support and Depression Pronenes in Students (n = 80)

Social Support Scale	r	p
Need	.205	*+
Perceived Opportunity	.375	***+
Experience of Support	.202	*+

Table 75: Summary of Results for Social Factors and Depression Proneness in Students

No. of tests	No. results in expected direction	No. sig. .05	.005	<.0005
Social Skill by D-Proneness Qu're				
6	5 *	1 ns	1 **	0 NA
Social Support by D-Proneness Qu're				
3	3 ns	3 ***	1 **	1 ***

Notes: ns Not significant; * .05 level; ** .005 level; *** .0005 or less

the findings of the Cognitive Study for negative evaluations of self and vulnerability to depression.

ii) Social support

Moving on to social support, table 75 also summarises the correlations between the three SSQS scales and the DPQ. All three scales correlated with proneness to depression, with the "opportunity" scale particularly significant (r = .375, p = .0005). This suggests that students who are depression prone are poor at perceiving, and therefore, at making use of, available opportunities. The resultant lack of support may in turn maintain depressive dysphoria, as suggested by Lewinsohn (Lewinsohn and Hoberman, 1982).

It is probable that the externally available social opportunities, at university, were objectively similar for every member of the first year psychology class. They were all starting university for the first time, and were tested at the same point in time. Therefore, the more depression prone students appeared to have a different perception of the same opportunities, compared to their less depression prone class mates.

There is an alternative explanation which cannot be ruled out. While many students beginning university are far from their home contacts, many others remain within travelling distance, even if only at weekends. In addition, one should not suppose that home contacts suddenly cease to have anything like their usual influence, when they are interrupted by a move. Thus, it is not strictly true to regard the students as

all having had the same (exclusively university based) social opportunities. It could be that some individuals are depression prone as the result of poor home support systems, which still operate when they begin university. The SSQS did not ask exclusively about university based support, and did not ask specifically about home support.

Nevertheless, the SSQS appears to have been successful in highlighting an important correlate of depression proneness, in terms of social opportunities. It performed better than the earlier social support measure (SSM) and Diary measures used in part I, and so has achieved that aim. A final point in favour of the SSQS is the differential behaviour of the three scales in relation to depression compared to depression proneness. Social support factors during actual depression were seen mainly in terms of internal need. For depression prone individuals, the main concern was with the availability of the various kinds of external support or contact.

HYPOTHESIS THREE - SOCIAL SKILL AND CHANGE IN DEPRESSION LEVEL

Lack of social skill is expected to result in increased depression in the presence of social stress.

Prediction: In the students just beginning university, some initial increase in depression is expected due to the stress in the situation. However, those who initially score higher on social skill deficits should show the greater increases in depression.

Table 76 shows the Spearman rank correlations between the social skill measures taken at the first questionnaire delivery (the PDS) and change in depression level from the first to the second delivery.

This third hypothesis for this study involved a prospective test of whether social skill, as measured initially, predicted changes in depression over a five week period, under the condition of social stress (being in a new setting). Table 77 summarises the null results obtained. There was absolutely no relationship between the variables in question (refer back to table 76 for individual scale results). The first possible conclusion is that social skill deficits do not render people vulnerable to depression. However, there are another two possibilities, both of which assume that social skill deficits do render people vulnerable. One is that they do so indirectly, through reduced social support, and it is the support deficit which would show the stronger relationship with depression under social stress.

The second, and perhaps more likely, conclusion to draw is that the null result is due to the lack of a significant change in depression. As was seen in the Cognitive Study, the overall change in depression was a reduction rather than an increase, and the difference from the first to the second testing occasion was not statistically significant. With a decrease in ovrerall depression, one would expect those lacking in social skill to have the smaller reductions. This did not occur, or could not have occurred due to the insignificance of the overall change in depression. If one examines the situation, it was not in fact one of increase in depression, but more one of slight reduction from the initial testing to a

Table 76: Correlations Between Initial PDS Scores and Change in Depression Level Over 5 Weeks, in Students (n = 81)

PDS Scales	r	p
HT	-.046	ns-
DO	.077	ns+
LSC	-.046	ns-
DEP	.103	ns+
MIN	-.053	ns+
HA	.179	ns-

Table 77: Initial Social Skill and Change in Depression over Five Weeks in Students

No. of tests	No. results in expected direction	No. sig. at .05
6	3 ns	0 NA

matter of only five weeks later. Although this is encouraging from the point of view of students beginning university, it is unfortunate for the study. Had it been possible to start the study **before** the beginning of term, the results might have been much more interesting.

In light of the positive results seen earlier for a relationship between social skill (notably the LSC scale) and depression proneness, it is perhaps worth exploring the data further. It may be possible to identify subjects in whom significant changes did occur. The prediction is that when their initial social skill scores are examined, those who showed increase in depression will be found to have had lower skill levels, and those showing a decrease in depression will be found to have had higher skill levels. Figure 9 shows the distribution of change in depression over the total sample. It can be seen that 28 students reported themselves less depressed, and 14 reported themselves more depressed, while the majority (39) were unchanged.

Table 78 shows the correlations between change in depression and initial social skill scores, separately for subjects whose depression increased and whose depression decreased. Subjects whose depression score did not change have been excluded. Caution must be exercised in interpreting the results for these selected groups of subjects. In this situation, it is probable that the positive or negative change scores for depression represent no more than regression to the mean.

Figure 9: Histogram of changes in depression among N = 81 students

```
Midpoint   Count
      -4       1  *
      -3       3  ***
      -2       4  ****
      -1      20  ********************
       0      39  ***************************************
       1       5  *****
       2       3  ***
       3       3  ***
       4       3  ***
```

Table 78: Correlations Between Depression Change and Initial Social Skill Scores in Subsets of Students with Increased or Decreased Depression

	Depression Change	
PDS Scale	Decrease (n = 28)	Increase (n = 14)
HT	-.253 ns-	-.144 ns-
DO	-.251 ns-	.277 ns+
LSC	-.316 *-	-.512 *-
DEP	-.059 ns-	-.748 **-
MIN	.254 ns-	.493 *-
HA	.339 *-	-.096 ns+

Notes: ns Not significant * .05 ** .005

What is immediately striking about the results in table 78 is that nearly all the results are in the opposite to the expected direction, including all the significnant results, of which there are several. Figures 10 to 14 show the significant results graphically. They show high consistency. For example, for "Low Self-Confidence", the graph of the depression increasers is very similar to that for the depression decreasers. Subjects with the smallest increase in depression, and those with the greatest decrease in depression, had the highest initial lack of self-confidence.

This very consistent picture, far from disconfirming the expected relationships between social skill and depression, actually supports them. The explanation is as follows. First, it must be noted that the skill levels were assessed at the beginning of the study, at the same time as the initial depression score. Subjects who scored high on depression initially, later scored less. Subjects who scored low on depression initially, later scored higher. Referring back, figure 9, the histogram of these changes in depression scores, shows something very like a normal distribution of scores about a point close to zero. This suggests that the change scores were simply due to normal variations in mood, and the overall pattern very probably reflects regression to the mean.

The skill scores, however, were only assessed at the one time. Had they been assessed on the two occasions, it is probable that there would have been some degree of variation which showed consistency within subjects. That is, subjects who scored non-depressed at the first testing, and then increased, would probably have also scored as self-confident at the first testing, and then decreased. To take this example

Fig. 10: Reduction in Depression
vs "Low Self-Confidence"

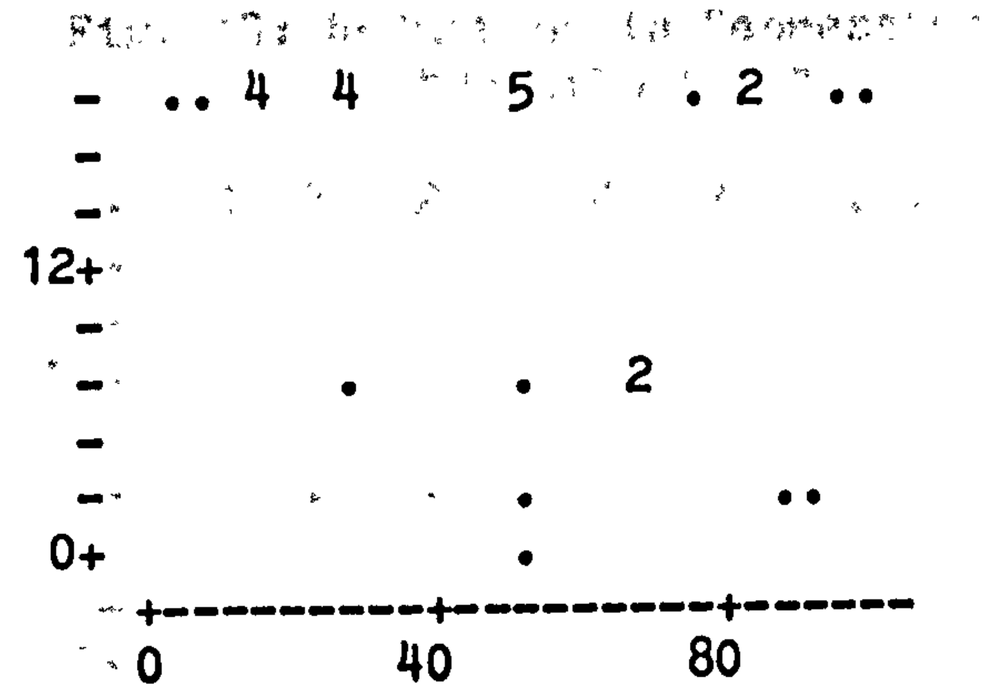


Fig. 11: Increase in Depression
vs "Low Self-Confidence"

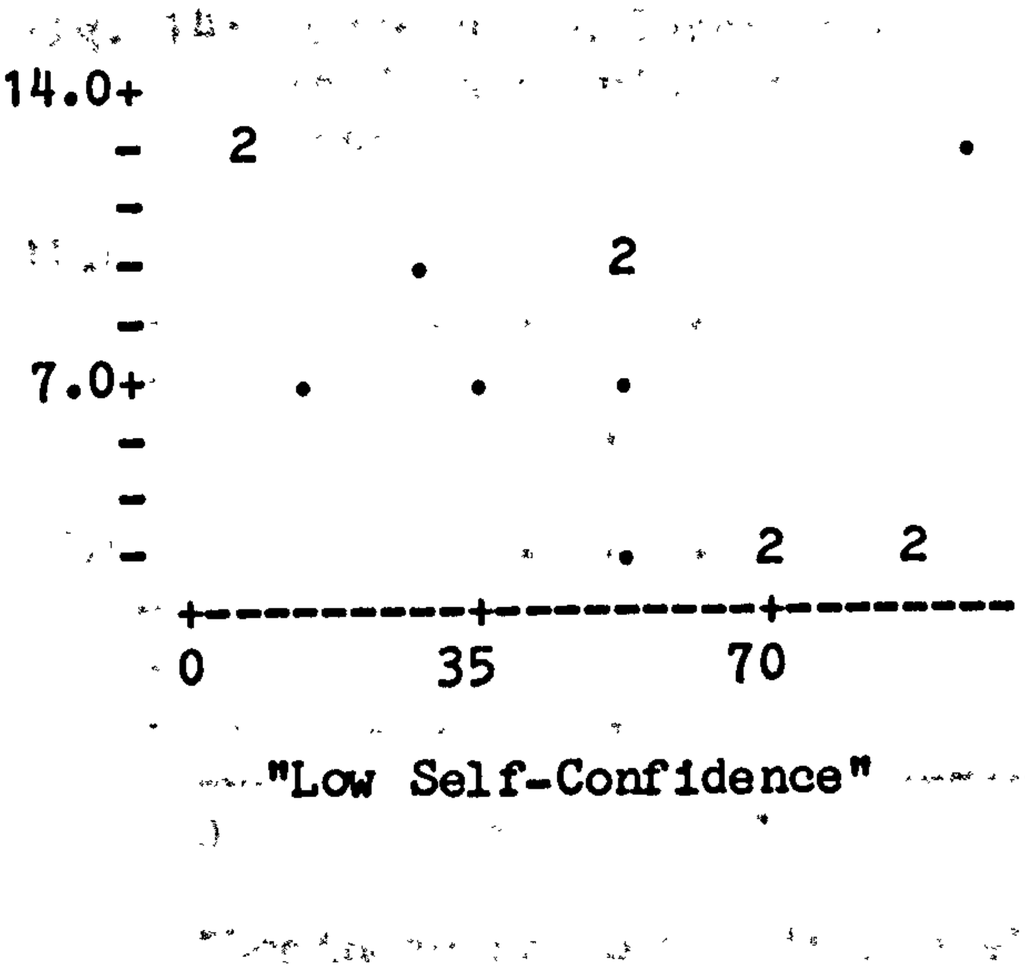
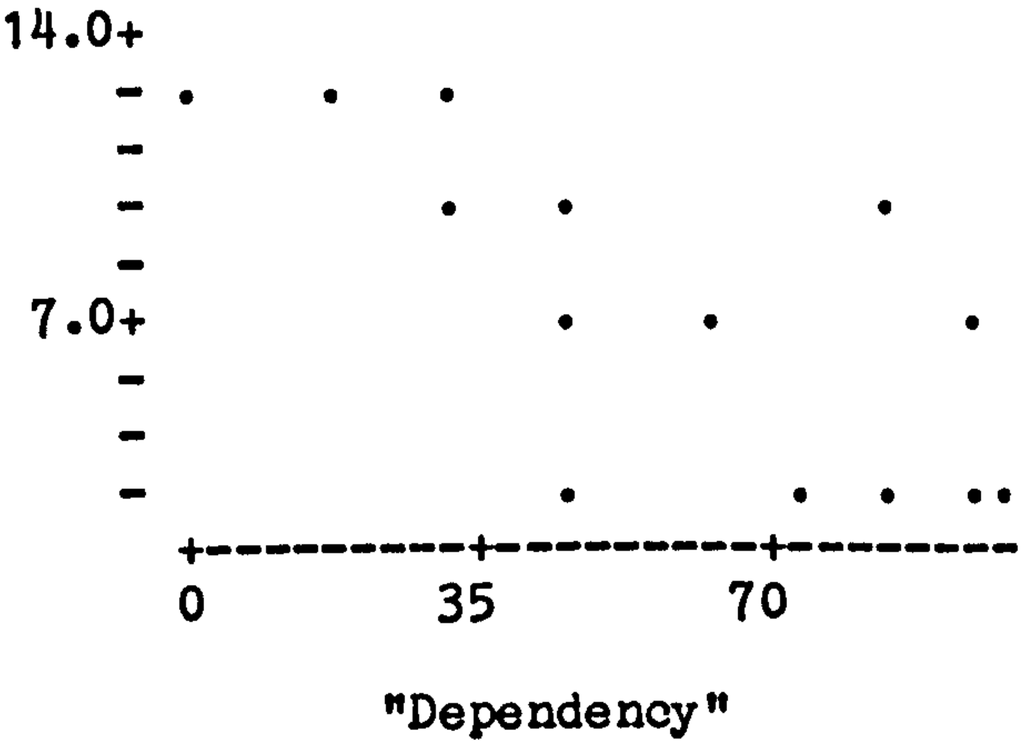


Fig. 12: Increase in Depression
vs "Dependency"



Note: Where a number is shown, this is the number of points coinciding at same point.

Fig. 13: Reduction in Depression vs "Hostile Acts"

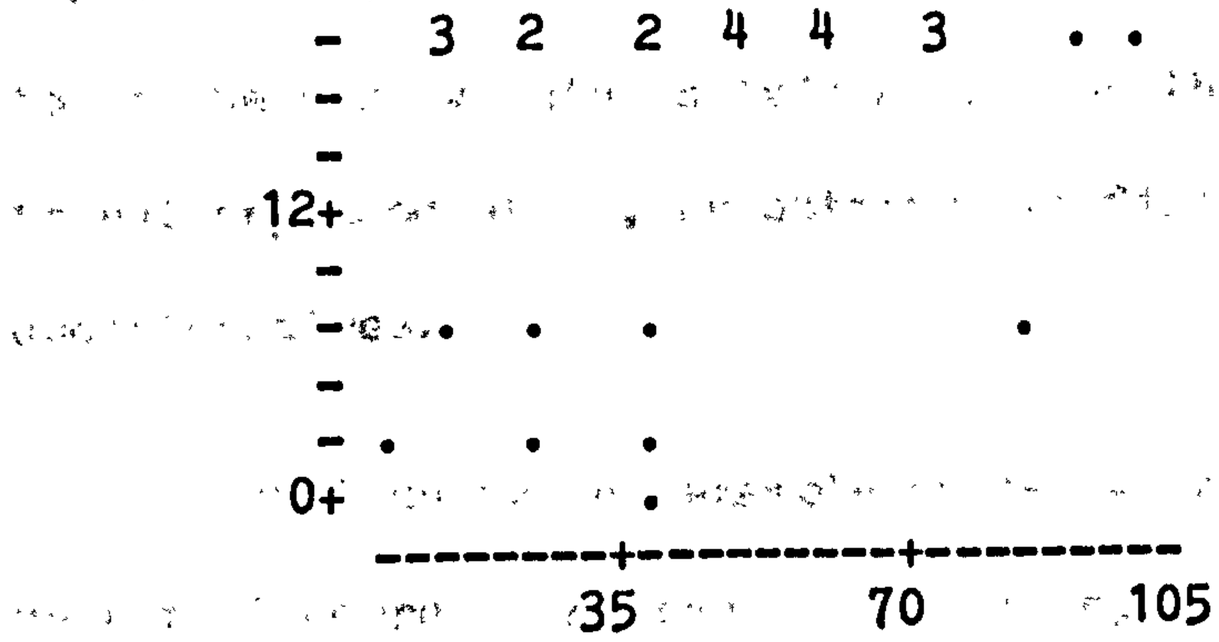
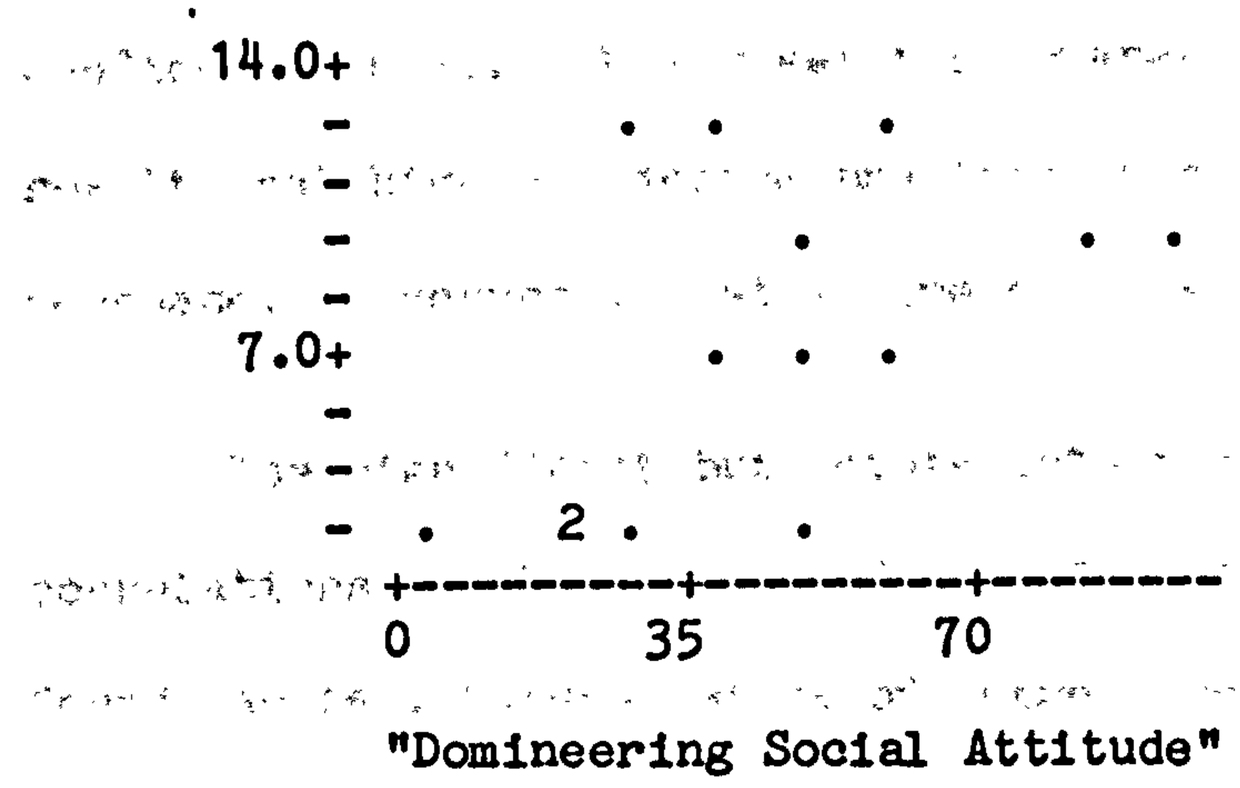


Fig. 14: Increase in Depression vs "Domineering Social Attitude"



further, the greater the variation of the initial depression score from the mean, the greater the variation in the self-confidence score would have been, assuming it is being affected by the same uncontrolled factors. This is very likely to be the case within individuals. Possible factors might be transitory mood state, or attitude to filling in a large set of questionnaires.

Still using the example of self-confidence, the net result of correlating the change in depression with just the initial confidence score is this: If there is any real association between depression and self-confidence, then the pattern of high confidence/low depression, from the initial testing, becomes changed to high confidence/increased depression, when depression change is correlated with initial confidence level. This gives the apparently counterintuitive result that high confidence predicts increase, rather than decrease, in depression at a time of life adjustment.

The significant but counterintuitive results of these correlations can be thought of as reflecting the relationships found earlier, between state of depression and social skill scores. Both the student sample and the earlier clinical and control subject samples from part I, can be taken into account. It will be recalled that, in part I, all of the PDS scales except "Hostile Acts" showed the expected associations with depressed state. It must be noted, however, that the data from these depression change groups do not support the hypothesis that social skill and <u>vulnerability</u> to depression are related. Only the association between depressed state and social skill has been (further) supported. There was no consistent or statistically significant increase or decrease in depression

over the five weeks of the study, and therefore, no relationship with initial social skill level can adequately be tested.

(v) Results and Discussion - Association of the Social Factors

HYPOTHESIS FOUR - ASSOCIATION OF THE SOCIAL FACTORS

The two social factors of skill and support are associated with one another, as well as any association of each with depression.

Prediction: The measures of the two social factors should intercorrelate such that deficits in skill correlate positively with deficits in support.

Table 79 shows the intercorrelations between the PDS scales and the SSQS scales. The PDS was filled in at the first questionnaire delivery, and SSQS at the second, five weeks later. Thus, the association being tested has a directional aspect. Those with greater skill initially are expected to have found more support five weeks later, other things being equal.

The summary of results is shown in table 80, and is most interesting. There was a prospective element built into this test, because social skill was tested at the beginning of the study, and social support five weeks later. Therefore, a substantial component of the social support would be derived from the new university setting (it was discussed earlier that home support may still play a role). Social skill, however, would have been based solely on the student's experience before coming to university.

Table 79: Correlations Between Scales of PDS and SSQS in Students (n = 80)

PDS / SSQS	Need	p	Opp	p	Exp	p
HT	.150	ns+	.135	ns+	.013	ns+
DO	-.048	ns-	.231	*+	.284	*+
LSC	.188	*+	.331	**+	.231	*+
DEP	.229	*+	.126	ns+	-.134	ns-
MIN	-.161	ns+	-.304	**+	-.215	*+
HA	.049	ns-	-.169	ns+	-.285	*+

Notes: SSQ Need = student's need for support
Opp = Perceived opportunities for support
Exp = Experience of available support
* Significant at .05 ** .005

Table 80: Relationship Between Initial Social Skill, and Social Support Five Weeks Later in Students

No. of tests	No. results in expected direction	No. sig. .05	.005
PDS by SSQS Perceived Need			
6	4 ns	2 *	0 NA
PDS by SSQS Perceived Opportunity			
6	6 *	3 **	2 ***
PDS by SSQS Experience of Support			
6	5 ns	4 ***	0 NA

Notes: * .05; ** .005; *** .0005; NA Not applicable; ns Not significant

The overall summary shows that all three aspects of social support, as assessed by the SSQS after five weeks, are strongly related to the social skill factors of the PDS, assessed initially. Especially, social skill deficits are associated with lower perceived opportunities for support, and they are also associated with more negative experiences of actual contact (or lack of it altogether). It will be recalled that the scoring of the experience of actual contact, on the SSQS, was such that the "not applicable" answer scored 4, the same as "Very unhappy" with actual experience.

In terms of individual results (going back to table 79) high score on "Low self confidence" (LSC), and low score on "Domineering social attitude" (MIN), both correlated particularly strongly with "low perception of opportunities" (.331, -.304 respectively, both at p = .005). In other words, those low in self confidence, and who preferred others to lead, tended to perceive fewer opportunities for social support. One could interpret this in terms of their not wishing to make the first move, either through not valuing themselves highly enough, or through preferring others to make the move.

Four of the PDS scales correlated with negative experience of actual contact (or lack of contact), including the two that make up the "Dominance" measure (MIN and HA). Low dominance, that is, preferring others to lead and preferring not to display aggressive responses, was associated with negative experiences/lack of contact.

The need scale of the social support measure did not show quite as convincing an association with skill factors, but the two that it did associate with made up the Intropunitiveness measure on the PDS (LSC and DEP). Those who

scored as low in self confidence, and as needing a lot of help and support from others, scored highly on the "need" scale of the SSQS five weeks later. This is not at all a surprising result, and suggests that perception of needing help and support, as a long term factor, was extended to the new university situation.

(vi) Conclusions for the Social Factors Study (I and II)

Tables 81 to 83 show the overall summarised results for parts I and II of the Social Factors Study. It is clear that, despite its having relied on fewer tests than nearly all the other hypotheses, the one linking social support and state of depression received the strongest overall confirmation from the data. This is entirely consistent with research findings in the literature. Subjects who scored as having social skill deficits also tended to be depressed, but the data concerning whether they had a longer term proneness to depression was less clear (table 82). If social skill deficits are linked to depression proneness, the conclusion, for these data, rests on three highly significant ($p = .005$) results out of the 40 tests (one would expect only 1 in 200 to reach this level of significance by chance).

Looking back over the data, the three results were all from within group tests, between PDS sub-scales and proneness to depression. The LSC (Low self confidence) sub-scale correlated highly with depression proneness in both the community group and the large student sample. The DO

Table 81: Summary of Results for Social Skill and Social Support by State of Depression - Social Factors Study (I and II)

No. of tests	No. results in expected direction	No. sig. at .05	.005
Social Skill			
41	33 ***	12 ****	2 *
Social Support			
27	22 **	9 ****	3 ***

Notes: * .05 *** .0005 **** <.00005

Table 82: Summary of Results for Social Factors and Vulnerability to Depression - Social Factors Study (I and II)

No. of tests	No. results in expected direction	No. sig. .05	.005	.0005
Social Skill (including prospective part)				
40	22 ns	4 ns	3 **	0 NA
Social Support				
18	12 ns	4 *	1 ns	1 *

Notes: * .05 ** .005 ns Not significant

Table 83: Summary of Results for Interrelation of the Two Social Factors - Social Factors Study (I+II)

No. of tests	No. results in expected direction	No. sig. .05	.005
60	36 ns	11 ***	2 *

Notes: * .05 *** .0005

(Denigration of others) sub-scale correlated highly with depression proneness in the recovered subjects. The LSC scale, as has been discussed earlier, is really about negative self evaluation, and therefore, is in keeping with the findings about this cognitive factor and proneness to depression. Given these considerations, the evidence on social skill factors and proneness to depression is equivocal.

On the other hand, the evidence on the effect of social skill deficits on social support was fairly convincing (table 83). The results from the student sample were especially convincing. It seems likely that social skill factors do affect social support. Furthermore, low social support is associated with proneness to depression (table 82). Again the data from the student sample, with an improved social support questionnaire, was especially useful. However, it is not possible to conclude anything about the direction of causality. Figures 15 and 16 summarise the relationships established by the Social Factors Study, between social skill, social support, depression, and depression proneness.

The Social Factors Study has produced interesting findings on the relationship between social factors and depression. However, it is still an open question whether deficits in social skill and/or social support actually cause depression or proneness to it. Therapies for depression will be discussed in the final chapter of this thesis. However, there have been claims that social skills training is an effective treatment (e.g. Jackson, Moss and Solinski, 1985). Less is known about whether it can prevent relapse in the longer term. What is clear, is that social factors are very much bound up with

depression.

Figure 15: Social factors and depression

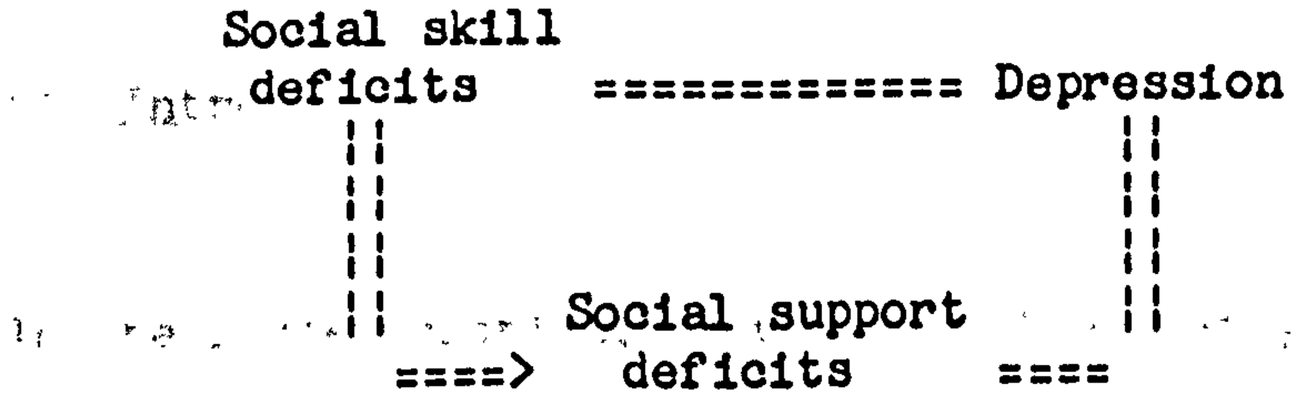
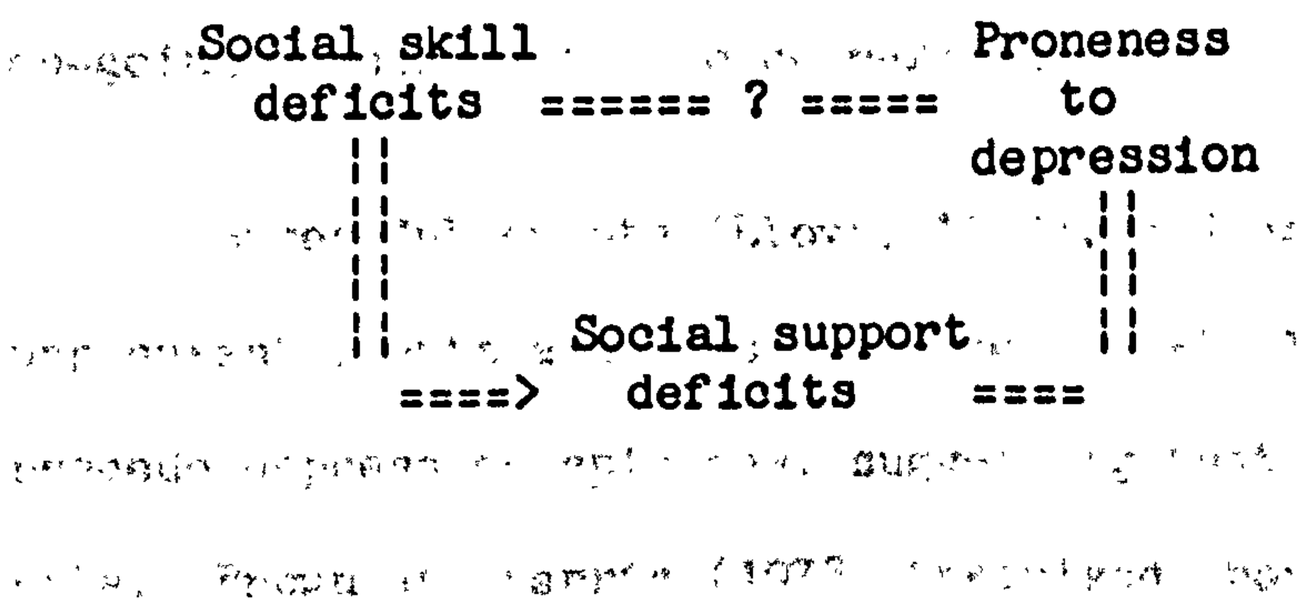


Figure 16: Social factors and proneness to depression



Notes: 1) Double dotted lines indicate firm association between the variables at either end
2) Arrow head indicates causal direction of association
3) ? indicates that the association is suggested by the data but is still open to doubt.

CHAPTER FOUR: LIFE EVENTS

4.1 LIFE EVENTS PART I: CLINICAL AND CONTROL SUBJECTS

(i) Introduction

In the review section, it was seen that early losses (Brown and Harris, 1978; Lloyd, 1980), and poor parenting during childhood (e.g. Jacobson et al, 1975; Gotlib et al, 1988) have been found to be related to depression in adulthood. This supports Beck's developmental model (Beck et al, 1979; Kovacs and Beck, 1978) in which early events and learning experiences cause on-going vulnerability to depression.

Stressful events (Lloyd, 1980), and especially unpleasant events and losses (Paykel et al, 1969), are found to precede depression episodes, suggesting that they play a key role. Brown and Harris (1978) theorised about the possible role of low self-esteem, in affecting coping with crises and difficulties. When self-esteem is high, crises are coped with more effectively. The Cognitive Study and the Social Factors Study in the present work, and other research reviewed earlier, suggest that people can have on-going cognitive and social vulnerability to depression.

Brewin (1988), in discussing the functions of depressive causal attributional style as a vulnerability factor, described its action in terms of a "coping" model and a "vulnerability" model. In studies One and Two, the "coping" model has been investigated, both in regard to a variety of cognitive factors,

and in regard to social factors. This model referred to the ability of such factors to cause depression onset on their own. In the Life Events Study the association of life events, on their own, with depression and with depression proneness, will be examined. In part II, cognitive factors will be studied along with life events. This will test the "vulnerability" model.

(ii) Methods

Subjects and Design

The subjects and design are as has been described in part I of the Cognitive Study, and partly repeated in part I of the Social Factors Study. The three groups of 16 currently depressed, 15 recovered, and 30 community (control) subjects were as before, and the data for this study was collected during the same interview schedule.

Hypotheses and predictions

a) State hypothesis

It is proposed that the depressed state results from difficult life events. Currently depressed subjects are expected to score higher on the measure of life difficulty in the 12 months just prior to interview, compared to non-depressed subjects. Within groups, there should be a correlation between depression level and life difficulty scores.

b) Trait hypothesis

The tendency to depression is proposed to be associated with a greater degree of external stress over the subject's life in general. The two subject groups who had experienced depression (recovered and currently depressed) are expected to have life histories with more external stress. Within groups, frequency of depressions should correlate with external stress levels over total life.

Measures

Table 84 shows the interview schedule with the total set of procedures, marking those relevant to the Life Events Study. The only new procedures, which have not been described before, concern the life events inventories.

Life Events Inventories (See Appendix 3)

There were originally three reasons for obtaining information about life events. Firstly, a few events common throughout all three samples were required, so that causal attributions could be compared across the samples from the tape-recorded descriptions of the events. This was in connection with the cognitive hypotheses investigated in the Cognitive Study. For this it was necessary that the events being explained were similar across the groups. Later, however, the attempt to do causal attribution analysis on several events was abandoned in favour of reliance on the cognition questionnaires using hypothetical events, the results of which have been described. The latter method yielded adequate information to test the hypotheses, and did so much more quickly.

Secondly, profiles of past life events were required for the current study, to test their association with depression. The final reason for collecting data on life events is for the Mood Study (chapter 5), in which causal attributions for depression episodes will be compared with those for physical illnesses. This is in connection with the hypothesis that depression is not commonly viewed as "an illness like any other", but tends to be more negatively viewed than other

Table 84: Package of Measures in Order of Presentation to Subjects, with asterisks marking those relevant to the Life Events Study

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Preparatory information

Consent Form

*i) Delusions-Symptoms-States Inventory (DSSI: Bedford and Foulds, 1978)

*ii) Inventory of Recent Life Events (combined sources - see text)

iii) Tape-recorded discussion of selected recent life events

iv) Personality Deviance Scale (Bedford and Foulds, 1978)

v) Social Support Questionnaire (see text)

vi) Seven-Day Diary (see text) - completed at home

*vii) Inventory of Past Life Events (combined sources - see text)

viii) Tape-recorded discussion of selected past life events

ix) Miskimins Self-Goal-Other Descrepancy Scale (Miskimins, 1967)

x) Tape-recorded discussion of Miskimins self-ratings

xi) Cognitions Questionnaire (Fennell and Campbell, 1984)

Informal discussion of the foregoing

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conditions.

Procedural details for the Life Events Inventories

These were comprehensive inventories based on that of Cochrane and Robertson (1973), Holmes and Rahe (1967) and Masuda and Holmes (1967). The events were scored mainly using the Life Change Units obtained from 3 subject groups by Cochrane and Robertson (Psychiatric patients, psychiatrists and students). However, a few events were taken from the Holmes and Rahe (1967) Social Readjustment Rating Scale, and a few from the Masuda and Holmes (1967) list. The LCU scores for events on these other lists were transferred to the Cochrane and Robertson list using the formula:

$$N = A + \frac{(n-a)(B-A)}{(b-a)}$$

See text below for the meanings of the letters

The letters A,B, and a,b are the known scores, on the new and old scales respectively, for two standard items (Holiday and Marriage were the items used). N is the unknown score of the item of interest, on the new scale, and n is its known score on the old scale. To obtain its score on the new scale, the amount it differs from the standard item 'a' on the old scale has to be multiplied by a conversion figure. As can be seen from the formula, this is based on the ratio of the distances apart of the two standard items, in the new versus the old scale.

It is assumed that events which have happened are more likely to be reported as having happened if they are presented in a list, i.e. as a forced choice recognition task, than if they are elicited by an open-ended question. This is especially important in the light of the possibility of biassed recall of past pleasant and unpleasant events due to current mood state. However, disclosure could still be limited by limitation of the list presented. Therefore the list was made as comprehensive as possible.

One core inventory was administered twice, the first time for recent events (past 12 months) and the second time for events at any time in life. The two presentations were separated in some cases by the interval of one to two weeks between interviews, and in other cases by a time in which the subject completed other items. It was necessary for there to be space between the two presentations because it is hard work for the repondent both to recall events and also to indicate the month they occurred (for recent events) or the year (for past events).

The Recent Events inventory comprised 53 events, and the Past Events inventory comprised 43 events. The 10 events excluded from the latter were all of the type which would be less easily recalled, or more frequent in occurrence, or were otherwise inappropriate for inclusion in the Past Events list (e.g. "Pregnancy" which would be covered by "Birth of a child" in the Past Events, or "Increased tension or arguments with those close to you" which may occur at various times with changing circumstances). The full list of events is given in Appendix 3. The interviewer prepared subjects for the fact that they would only have experienced relatively few of the

events presented, especially with the Recent Events (those in the past 12 months). It was made clear that there was no expectation otherwise; that the list was long because different people have experienced different events.

At the beginning of the study, the method of presentation of the life events inventory was by two two-page typed lists, one for recent events and one for past events. There were the words "Yes" and "No" for the respondent to circle as appropriate, and a space for them to write in the month for recent events or the year for past events. Respondents worked through the list on their own. However, this was a fairly tedious process, and the currently depressed patients found it particularly onerous. At times the year that an event occurred was not recalled until after they had started to describe the circumstances.

Hence, the method of presentation was later changed such that the inventory was presented on cards, one event per card. Each card was handed to the respondent to be considered in isolation from the rest of the list. The interviewer rather than the respondent had the task of writing down which events had occurred, so that the latter could concentrate on recalling when it happened. In addition the interviewer could prompt, for example by asking whether a particular event was before another, and was generally more involved in the process of recall. The method of presentation of cards also meant that there was greater variety in the kind of activity asked of the respondent, thus mitigating the effects of fatigue. The last item on each run through the list was to ask if anything important had been missed.

(iii) Results and Discussion - State of Depression

a) State hypothesis and its predictions

The depressed state results from difficult life events. Among the currently depressed subjects, it is expected that recent difficult life events will exceed those among the two non-depressed groups. Within groups, there should be a correlation between recent difficult events and depression.

Table 85 shows the median values and results of Mann-Whitney tests, on scores for life events for the currently depressed and non-depressed groups. Two indices of recent life events are shown; those within the most recent 12 months, and events within the most recent five years. The figures shown are LCU's or "life change unit" scores (see Methods), based on the work of Holmes and Rahe (1972). For each of the periods (12 months, and 5 years) two sets of results are shown. The first set is of the mean LCU totals for each subject sample during the period of interest. As was seen in the Methods section, the majority of events were scored using the values obtained by Cochrane and Robertson (1973). Other values were obtained by the process of interpolation, described earlier, using the scales of Holmes and Rahe (1972) and Masuda and Holmes (1967).

The second set of results is arrived at after the desirability dimension of different events is taken into account. Desirable events such as achievements or promotion are scored positive; undesirable events such as demotion or debt are scored negative, and ambiguous events are given no

Table 85: Recent life events in currently depressed and non-depressed subjects

	Community	p	Depressed	p	Recovered
Past 12 months					
Absolute score	182.5	ns-	157.0	ns+	114.0
Desirability	-1.7	ns+	-30.5	ns+	-27.0
Past 5 years					
Absolute score	223.6	ns-	212.7	ns+	183.8
Desirability	-46.3	***+	-182.0	*+	-51.0

Notes: p value shows significance of difference between the groups on either side *** p = .0005 * p < .01
ns Not significant + Result in expected direction
- Opposite direction

sign. The sign allocations of Myers, Lindenthal and Pepper (1974) were used to score most of the life events, and a few, not appearing in their scheme, were allocated by the present author. The full list of events, with their signs, is given in Appendix 3. The totals, taking desirability into account, are simply the arithmetic subtraction of the negative from the positive totals, after Myers et al (1974). In order to distinguish the set of scores where desirability is not taken into account and the set where it is, the former will be referred to as the "absolute" LCU score, and the latter will be called the "desirability" score.

Table 85 shows that there were no between group differences in life event scores for the most recent 12 months. However, the currently depressed subjects differed significantly from the two non-depressed groups, in desirability scores over the most recent five years. Within that period, the depressed subjects had had more undesirable events than the non-depressed groups. Table 86 shows the within group correlations between life event scores and depression, for the most recent 12 months. The only significant correlation was within the community group, for absolute life event scores. Those scoring more depressed tended to have had more life events and changes (either positive or negative) within the 12 month period.

Because of the difficulty of finding patients who were newly depressed and had not had a previous episode, many of them had in fact been first diagnosed as depressed in a period greater than 12 months before their participation in the study. Therefore, the failure of depressed patients to show the most frequent life-events in their most recent 12 months was

Table 86: Within group correlations between recent life event scores (past 12 months) and depression
Community (n = 30); Depressed (n = 16); Recovered (n = 15)

	Community	p	Depressed	p	Recovered	p
Absolute score	.375	*+	-.328	ns-	.157	ns+
Desirability	.135	ns-	.191	ns-	-.015	ns+

Notes: * .05 + In expected direction - Opposite dir'n

unsurprising.

When the pattern of events in the recent five years was examined, it conformed to what would have been expected from previous research on the aetiology of depression. Although there was no significant difference in terms of the absolute LCU scores, there were significant differences when desirability was taken into account. The currently depressed patients had had the most undesirable events. Common undesirable events were unemployment of themselves or their spouse, fall in income, and illness of themselves or family members. These results fit in with the state hypothesis, in that recent unpleasant events preceded the state of depression.

The within group results were not very convincing, although the community subjects did show a correlation between depression level and absolute LCU scores. The poor result may have been due to the relatively small size of the groups, especially with the recovered (n = 15) and currently depressed (n = 16). Nevertheless, the summary table 87 shows that the results obtained were more than would be expected purely by chance. In agreement with previous research, therefore, these results indicate that difficult events can be a factor in precipitating depression.

(iv) Results and Discussion - Vulnerability

Proneness to depression is related to a stressful life event history. The subject groups in whom depression has occurred should have evidence of this, compared to the never-depressed community subjects. Within groups, subjects with more frequent

Table 87: Probability associated with combined results for recent life events and depression

No. of tests	No. in expected direc.	No. of results at .05	.0005
14	9	3 *	1 **

Notes: * .05 ** .01

depressions in the past (corrected for age) should also have higher life event per year scores.

Table 88 shows the medians and results of Mann-Whitney tests between the community group, who had only minimal depressions past or present, and the currently and formerly depressed groups. There was only one significant difference, the currently depressed subjects having had many more unpleasant events throughout their lives, compared to the community group. The within group results (table 89) also produced only one significant result. Those community subjects with past depressions tended to have had more unpleasant life events over their lives. It should be noted, however, that the number of past depressions among the community subjects was minimal.

The two significant results are as would be predicted if a history of difficult life events caused depression proneness. However, table 90 shows that two results at the .05 significance level could have occurred by chance. On the other hand, the one result which was significant at .001 was unlikely to have occurred by chance. This was the result that the currently depressed subjects had many more unpleasant events, over their lives, than the community subjects. However, if this result is related to frequency of depression, there should have been a comparable difference between the recovered and community subjects.

All members of the recovered subjects had experienced one or more depressions, but, as a group, they did not differ from the (relatively depression free) community subjects on difficult events over their lives. This suggests that a series

Table 88: Life events per year and occurrence of depression - Between group Mann-Whitney tests

	Recovered	p	Community	p	Depressed
Absolute	17.20	ns-	16.35	ns-	14.70
Desirability	-2.50	ns+	-0.95	**+	-6.45

Note: ** Significance level .001

Table 89: Within group correlations between frequency of depressions and life events per year

	Recovered	p	Community	p	Depressed	p
Absolute	-.075	ns-	.255	ns+	-.048	ns-
Desirability	.056	ns-	-.319	*+	-.119	ns+

Note: * .05 level of significance

Table 90: Summary of results for life event history and vulnerability to depression

No. of tests	No. in expected direc.	No. of results at .05	.001
10	5	2 ns	1 *

Notes: * .01 level

of difficult life events, on its own, may be sufficient to produce the tendency to have depressions, but is not necessary. The fact that the currently depressed subjects did differ from the community subjects on difficult life history, while the recovered subjects did not, is open to a number of possible interpretations. The most obvious explanation is that the depressed subjects recalled more negative events, due to their depressed mood. Although this is not felt to be a major factor, it should be discussed. It will be set aside for the moment, and returned to a little later.

There are other interesting possibilities: First, one can assume that depression proneness and repeated traumas are completely unconnected. However, this is unlikely, in view of the findings (discussed earlier) that difficult events frequently occur just before depressions.

Second, one can surmise that depression proneness might be a risk factor for difficult life events, rather than the reverse. It might be seen in terms of a third variable, such as cognitive vulnerability. This third variable leads to depression, rather than coping, as a reaction to stress. For example, inability to deal with the early stages of a looming problem, allows it to develop into a major crisis. During interviews with recovered subjects, some reported feeling that they allowed problems to mount up, rather than dealing with them as they arose. This hypothesis would also be consistent with the earlier findings (Cognitions Study), that depression prone subjects evaluated future outcomes negatively, suggesting that they did not feel able to influence them.

This situation would not be true of unexpected events such as sudden bereavement. However, there are many kinds of stress to which there is a degree of advance warning. Furthermore, difficulty in coping with major events, such as bereavement, could result in additional complications. For example, a person who has relied on a spouse for certain practicalities of life, or has few independent interests, will experience further practical problems and more social isolation following the loss.

Brown and Harris (1978) hypothesized that certain vulnerability factors caused lowered self esteem. One of these vulnerability factors was early loss of mother. Lloyd (1980) reported that certain early events appeared to have long term effects, in being related to later depression. The findings of an association between adult depression and adverse parenting during childhood (e.g. Jacobson et al, 1975; Gotlib et al, 1988), lends further support to the idea of stable vulnerability factors operating within individuals.

The findings in earlier work, and in the earlier studies of the present work, suggest that stable cognitive and social factors can cause vulnerability to depression. What is being advanced here is that such vulnerability factors cause, in addition to depression, a worsening of any life difficulties which may have acted as the trigger to their operation.

In terms of Brewin's (1988) scheme of the various ways in which cognitions can act, the present work has not yet attempted to investigate whether some of these factors require difficult events to occur, in order to be expressed. Brewin referred to this as the "vulnerability model". The present work has concentrated on Brewin's "coping model". In part II

of the Life Events Study, the link between cognitive factors, social factors, and reactions to events will be examined.

However, in order to investigate the more stringent interpretation described here, it would be necessary to examine in more detail how particular life events have their effects, and the differences between different events in their capacity to be worsened by person-related vulnerability factors. In the view of the present author, such vulnerability factors are invariably the result of a particular learning history. This is Beck's view (e.g. Kovacs and Beck, 1978). Relatively stable cognitive structures are formed as the result of life experiences, and are continually modified. Indeed, it is the aim of cognitive therapy to facilitate the modification of maladaptive structures.

To recap, it is hypothesised that the causal relationship between depression and difficulties is such that difficulties are partly precipitated, or are augmented, by the initial maladaptive responses to them. If this is the case, then the occurrence of a bad life event history in only one of the two depression prone groups, can be explained as follows. Depression proneness led to repeated difficult events in one group, but not in the other, because one group had an additional stable risk factor for major crises (besides depression proneness). Two stable factors that are known to differentiate the depressed from the recovered group, are socio-economic status and education level.

Table 91 shows that the differences were highly significant. Many more of the depressed subjects were in lower status employment, and poorly educated. This supports the hypothesis that depression proneness may help precipitate

Table 91: Demographic differences between depressed and recovered subjects: Fisher's Exact Tests

No. of subjects educated to:	School level	Higher	
Recovered	7	8	
Depressed	16	0	p **
No. of subjects where subject and/or spouse was in employment which was:	Managerial/ Professional	Other	
Recovered	7	8	
Depressed	0	16	p **

Note: Although the numbers are the same in both tests, those in the recovered group who had had further education were not exclusively those where the subject or one of the couple were in high status employment. ** .001

crises. Where there are lower financial, social and knowledge-based resources for meeting crises head-on, depression proneness can only add to the likelihood that problems will become compounded. Myers et al (1974) found that people of lower socioeconomic status experienced more undesirable life events than others, and that they were also likely to suffer more psychological disorder.

There is a third possible interpretation of the finding that one depression prone group had experienced repeated crises and the other had not. This is to assume that continual disasters, from sources totally outside the person, cause repeated depressions. However, since one group was depression prone without having had continual disasters, one would have to assume two more things. First, continual disasters do not always lead to continual depressions. Second, other things besides continual disasters can cause a series of depressions. While these assumptions are plausible on their own, it is much more difficult to see why they should act differentially on the two depression prone groups. One would have to say that disasters led to depression proneness in the depressed group but not in the recovered group. Secondly, one would have to say that something other than disasters caused the recovered subjects to be depression prone, but this other factor did not act in the depressed group.

This is a much more complicated picture than the one described immediately before. Therefore, it seems appropriate to accept the earlier explanation, in which depression proneness adversely affects coping in the early stages of difficulties. This leads to further complications or non-resolve, and to crises. This is a more ecceptable

hypothesis than to assume that repeated depressions are exclusively caused by continual, totally externally derived crises. The former explanation is also more in line with findings in the research literature, as discussed earlier.

Finally, as hinted at earlier, there is a rather less interesting possible interpretation of the differential findings for the depressed and recovered groups, on their life event history. It involves the effect of depressed mood. The subjects who were currently depressed would have been more likely to recall negative events, from their past lives, than would the formerly depressed and now recovered subjects. This type of phenomenon has been demonstrated by a number of studies (e.g. Teasdale and Spencer, 1984; Lloyd and Lishman, 1975), in which depressed mood was found to enhance recall of negative events. However, since the items recalled in these studies did not resemble life events data, it may not be appropriate to assume that mood would affect recall of such information. The method of elicitation of life events would also have minimised any bias in recall, since it was a recognition, rather than a free recall, task.

To sum up Part I of the Life Events Study, the state hypothesis was upheld, but the trait hypothesis was less convincingly upheld. Recent difficult life events were associated with currently being depressed, suggesting that they have a causal role in depression. However, difficult life events, over the past in general, did not show association with proneness to depression in the way expected. The currently depressed subjects had experienced particularly great numbers of

unpleasant events over their lives, but the recovered group were depression prone despite a reletive absence of such traumas.

This suggested that repeated depressions, rather than being the result of repeated, independantly arising, difficult events, could represent a depression proneness which helped to bring about or compound some of the crises. This would occur more easily in the currently depressed group, because they had an additional factor which would be likely to lay them open to difficult situations, namely, their low socioeconomic status and lack of education. Such demographic factors have been reported to be associated with high rates of undesirable life events (e.g. Myers et al, 1974).

Part II of this study will investigate whether depression proneness can predict greater numbers of negative life events in a given period, in the sample of students beginning university. The prospective aspect of Part II will also enable testing of the cognitive vulnerability theory with respect to the role of negative life events.

4.2 LIFE EVENTS PART II: STUDENT SUBJECTS

(i) Introduction

Following on from the points made in the discussion of Part I, this second part of the Life Events Study will look at three questions. The first question concerns whether the state hypothesis, in which negative life events precipitate depression, can be supported in a prospective design. The student sample will be tested to see if increase in depression is associated with more negative life events, in their initial weeks after beginning university. The second question concerns the possibility that depression prone individuals are more likely to experience negative life events as a result.

The third question is about whether cognitive vulnerability acts more powerfully in the presence of negative life events than in their relative absence. Olinger, Kuiper and Shaw (1987) reported that students who scored high on dysfunctional attitudes, combined with high scores on measures of negative events, were more depressed than others.

In the Cognitions Study (Part II) the DAS (Dysfunctional Attitude Scale) was the only cognitive score which predicted relative increase in depression in the students. Hence, the DAS's association with depression change will be tested with respect to sub-samples of students with relatively positive or negative life changes over the five weeks of the study. The problems arising from the actual lack of a significant change in depression will be discussed.

(ii) Methods

a) Subjects

The subjects were 81 of the 99 members of the first year psychology class which were detailed in Studies One and Two. Due to the present study requiring the results of the second questionnaire battery in all parts, the number of respondents could not exceed those who responded on both occasions, which was 81.

b) Design and Measures

The overall design has been described fully in the Cognitions Study. However, table 92 shows which aspects of it are particularly relevant in the present study. The hypothesis that depression follows negative events will be tested by seeing whether increase in depression, from the first to the second testing occasion, is correlated with negative events reported to have happened during the interval (on the LEQ).

The hypothesis that depression proneness increases risk of negative events will be investigated by the correlation between depression proneness, as measured at the initial testing by the DPQ, and events during the time until the second testing.

For the final hypothesis, the student sample will be divided into two groups, according to whether their life events over the five weeks are positive or negative overall. The

Table 92: Overall design for the first three student studies, with measures relevant to present study marked with asterisks

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First delivery of questionnaires

* Anxiety and depression questionnaire (Bedford and Foulds, 1978c)
* Depression proneness questionnaire (DPQ; present author)
* Cognitions Questionnaire (CQ; Fennell & Campbell, 1984)
* Dysfunctional Attitudes Scale (DAS; Burns, 1981)
Personality Deviance Scale (Bedford and Foulds, 1978)

Second delivery of questionnaires

* Anxiety and Depression questionnaire
Depression Proneness Questionnaire (DPQ)
* Brief life events inventory (LEQ; present author)
* Social Support Questionnaire (SSQS; present author)

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correlation between the DAS score, measured at the beginning of the study, and change in depression over the five weeks, will be carried out separately in the differential life event groups. In the group with more negative life events, dysfunctional attitudes are expected to show a stronger relationship with subsequent change in depression.

Questionnaires

The only questionnaire which has not been described before is the brief life events inventory (LEQ). This consisted of one page, with seven questions. The first six questions concerned six different areas of life in which changes or important events may have occurred. The six areas, and the qualifying statements given to help the respondent, were as follows:

Physical health (e.g. change in frequency of asthma, allergies, colds, etc)

Living situation (e.g. better or worse relations with someone you live with)

Finance (e.g. problems with grant intensified or cleared up, other changes in income)

Family (e.g. major rift between you and a parent, parents' relationship changed for the worse or improved)

Academic (e.g. the work became much harder or easier, change of course, etc)

Opposite sex (e.g. start or end of a relationship, change in number of arguments with boy- or girlfriend, etc)

The seventh question asked the subject to note whether things had changed with respect to anything which had not already been covered in the first six areas. The response to every question was made by circling one of five optional completions to the

statement "My [physical health] is - ". The five options were "Much worse", "Worse", "About the same", "Better", and "Much better".

The scoring applied a zero to the middle of the five point scale (when there had not been any change in either direction), +1 and +2 to the two positive responses respectively, and -1 and -2 to the two negative responses. The extreme points gained the extreme positive or negative scores. With seven questions, a respondent could score a maximum of 14, in which things had become much better in every possible area, to a minimum of -14, where everything had got much worse.

The questionnaire assessed the main changes likely to occur in the life of the students, over the five week period, while remaining brief and non-intrusive so as not to discourage response. A copy of it is to be found in Appendix 3.

c) Procedure

The procedure of the overall student design was described in the Cognitions Study, and so will not be repeated here.

(iii) Results and Discussion - State of Depression

The state of depression is associated with recent difficult life events.

Prediction: In the student sample, change in depression, over the five week period of the study, will correlate with difficult life events in the interim.

Table 93 shows three correlations. The first is the correlation between change in depression from the initial to the final testing, and scores on the life events questionnaire (LEQ). The LEQ was given at the final testing, and asked about events and changes over the five weeks since the first testing. Even though, as has been seen earlier, the overall change in depression was nonsignificant, those subjects who became more depressed tended to report more negative changes happening in the interim, while those who became less depressed reported more positive changes.

It will be recalled that seven life areas were represented on the LEQ. Some subjects will have scored positive (for improvements and positive events), some negative, and some will have stayed the same (scored zero). The scores on the different areas were summed, giving an overall score which could range from -14 (all negative changes) to +14 (all positive changes).

The second and third correlations in table 93 relied on only the positive change scores, and only the negative change scores, respectively, from the LEQ. For example, for the

Table 93: Correlations between LEQ scores and change in depression over five weeks (n = 81)

Measure	r	p
Total LEQ score	-.204	*+
LEQ Positive changes only	-.091	ns+
LEQ Negative changes only	-.243	*+

Notes: ns Not significant * .05 level

positive change scores, any negative scores were ignored in arriving at the final score for each subject. There was no correlation between the positive and negative change scores themselves (Spearman r = .151, p = .09), indicating that subjects' reporting of positive and negative changes was not related in any way. It is likely, therefore, that they simply responded according to what had happened to them, without any response biases. Figures 17 and 18 show the graphs of these data. The scores used are the ranked scores a used in the Spearman correlations.

In part II of the Social Factors Study, the problem of covariation of some of the variables with depression level was discussed. Here, the analysis required change in depression to be correlated with a measure (LEQ) taken at the final testing, rather than the initial one. Any correlation of the LEQ with final depression level will contribute a degree of correlation with change in depression, in the experimentally expected direction. That is, the significant correlation between LEQ and change in depression, found here, could have been largely produced by the association with depression level.

In fact, the correlation between LEQ and final depression level was high (-.36, $p < .001$). This, however, is not inconsistent with the experimental hypothesis, and the findings in previous research (as discussed n part I) that recent unpleasant events are particularly associated with becoming depressed. For comparison, the correlation of the LEQ, completed at the final testing, with initial depression level, was much lower (.18, p = .05). This is what would be expected if the final depression level was strongly related to events in the interim. Table 94 shows the overall summary of

Figure 17: Change in Depression as a Function of Negative Life Changes on the LEQ (n = 81)

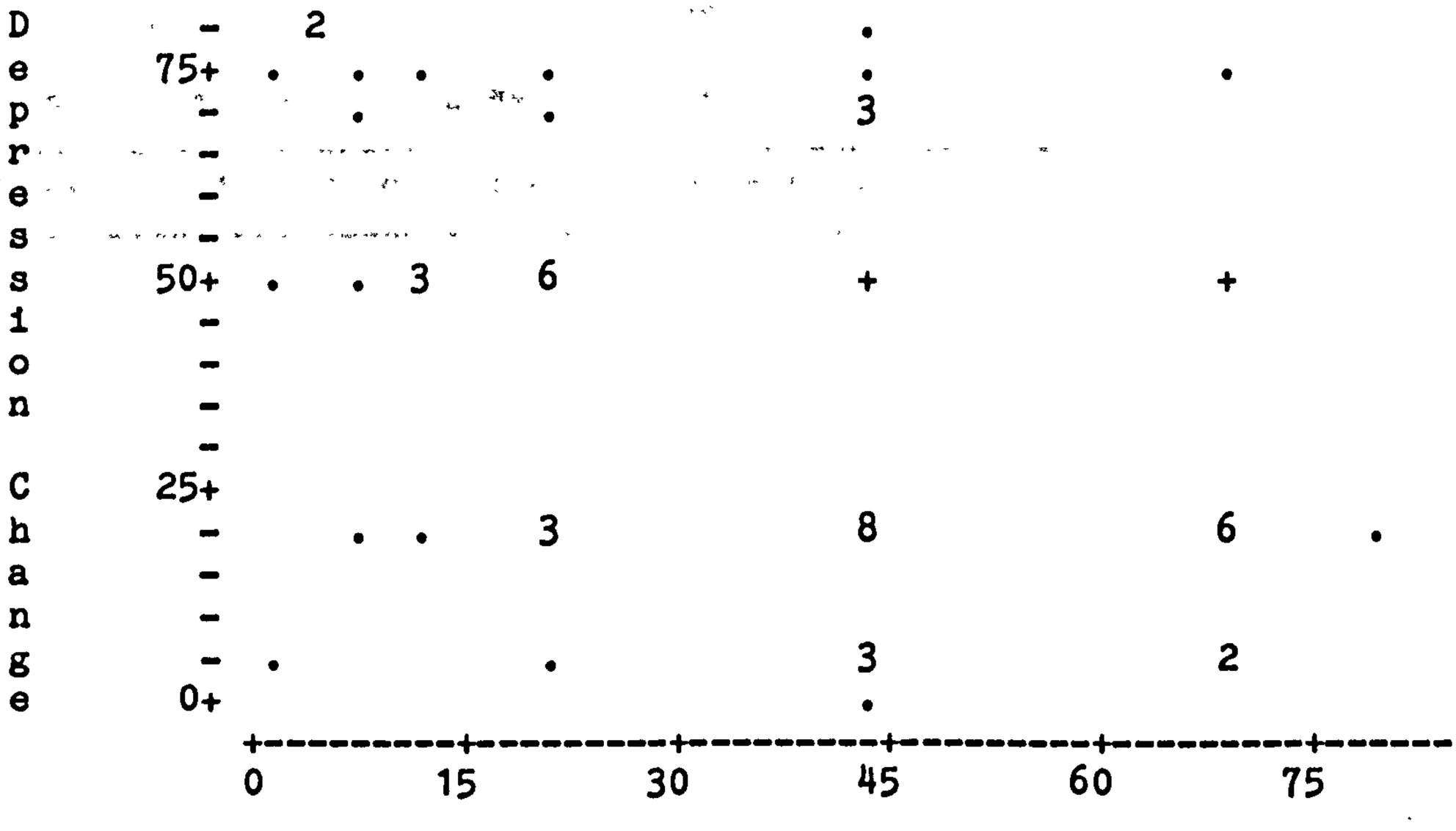


Figure 18: Change in Depression as a Function of Positive Life Changes on the LEQ (n = 81)

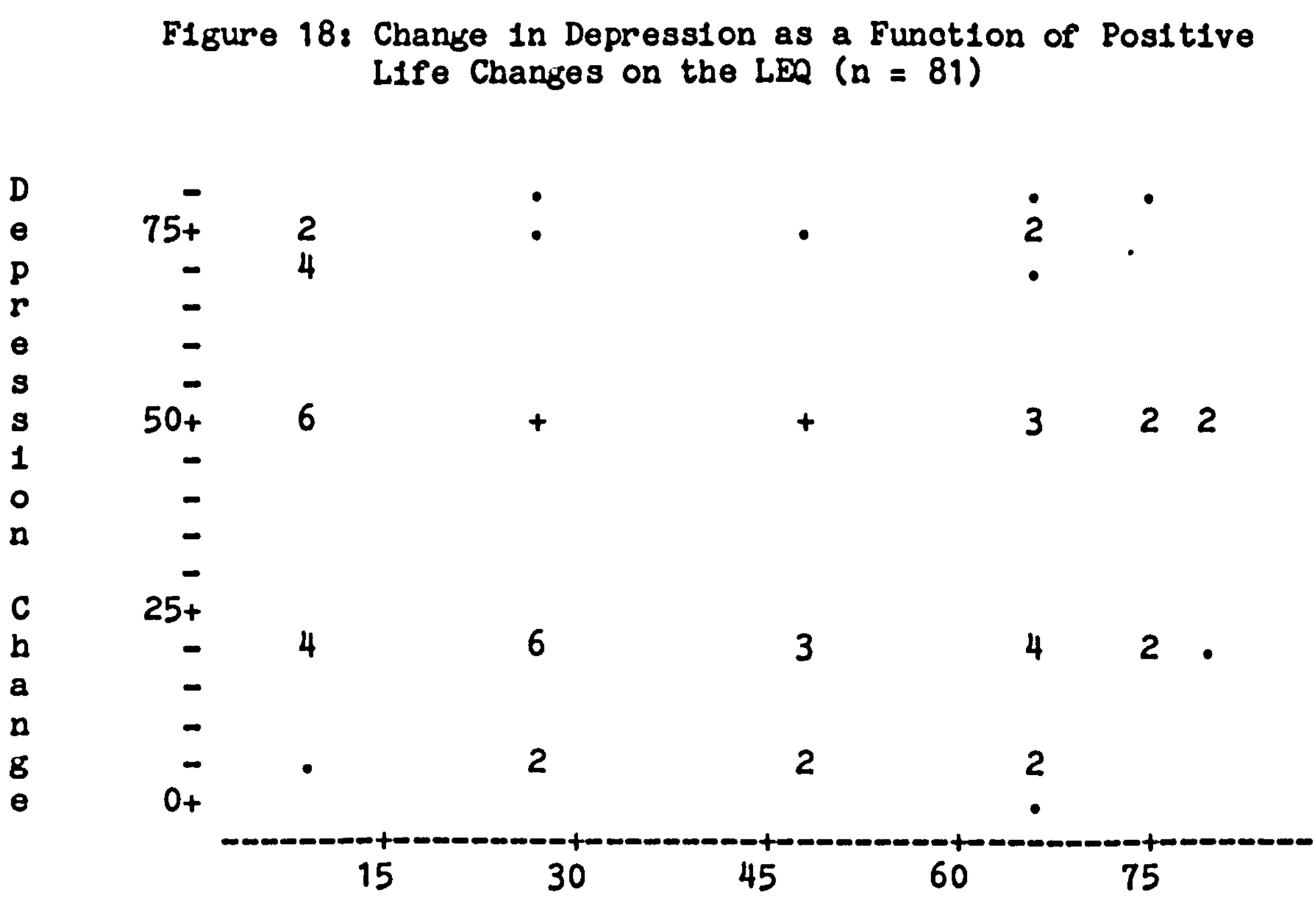


Table 94: Summary of results for recent life events and state of depression - (Parts I + II)

No. of tests	No. tests in right direction	No. tests signif. .05	.0005
15	10 ns	4 **	1 *

Notes: * .01 ** .005 level of significance

the results on life events, from parts I and II.

The alternative explanation could be advanced, that subjects who became more depressed either recollected or interpreted events, which occurred in the interval, more negatively. This possibility is made more likely by the fact that the LEQ was brief, and did not require the subject to recall particular detail of either positive or negative events. On the other hand, the period over which the subject had to recall events was only five weeks. Therefore, there would not be as much forgetting as there would with an inventory of events over, say, a twelve month period. Furthermore, Gotlib et al (1988) found that adult recollections of parental behaviour during childhood did not change over a one to two year period, even in women whose mood did improve from initial depression. This encourages the possibility that the mood effect is not important in the present context either.

The LEQ was necessarily brief, because anything longer or more probing would undoubtedly have reduced response rates. The questionnaire did provide trigger questions to elicit information on changes in six specific areas of life. In terms of the needs and limitations of the study, it was a necessary compromise.

There is another factor which works against the suggestion that the results were due to negative biases in recall. This is that the result was different when only the positive or only the negative event scores were correlated with depression change. As was seen earlier, there was no relationship between reporting of positive changes and negative changes, and subjects appeared to be responding according to the events which has occurred in each of the specific areas

identified on the LEQ.

(iv) Results and Discussion - Vulnerability

Depression proneness itself can lead to increased difficult events, because of associated inappropriate coping strategies.

Prediction: Those students who score as depression prone, at the initial testing, will be found to have had more negative events and changes during the period between initial and final testing.

Table 95 shows the correlations between initially assessed depression proneness scores and the same three LEQ scores as described above.

This section concerns the results of the correlations between depression proneness, as measured at the beginning of the study, and life event scores for the five week interval between the beginning and the end. Although the result for overall life event scores was not significant, the result for just the negative scores was highly significant ($p = .01$) (see table 95). This indicates that students who were depression prone were more likely to have negative events.

Unfortunately, there are other possible interpretations of these results. Firstly, it is known from Part II of the Cognitions Study that negative cognitions are associated with depression proneness in the students. Therefore, it is

Table 95: Correlations between Depression Proneness and subsequently measured LEQ scores in 81 students

Measure	r	p
Total LEQ score	-.157	ns+
LEQ Positive changes only	.070	ns-
LEQ Negative changes only	-.280	**

Note: ns Not significant at .05 level ** .01 level

possible that the more depression prone students interpreted events, as assessed on the LEQ, more negatively. That is, they may not have actually had more negative events than those subjects who were not depression prone. Secondly, there was a strong correlation between scores on depression proneness and scores on depression among the student sample (.330, p = .0005 at the first testing occasion). Hence, the more depression prone students were also more depressed than others, and, again, more likely to interpret or recall events more negatively.

A way round this problem, of confounding by the third variable of depression level, is to carry out partial correlations. It was done using only the negative scores from the LEQ, since these correlated significantly with depression proneness (Spearman r = -.28, p = .01). The results are shown in table 96. The correlation of the negative LEQ scores with depression proneness was reduced from Kendall rank tau = -.23 (p = .01) to -.18 when expressed as the Kendall partial rank correlation. However, consultation of the appropriate statistical table (Siegel and Castellan, 1988) reveals that this value is significant at the .05 level, for the sample size involved (81). Therefore, when depression level was kept constant, there was still a tendency for those students who scored as depression prone (at initial testing) to report, after five weeks, more negative events in the interval. This suggests that depression proneness, independant of depression level, increases the chances of unpleasant events.

Once again, as in the previous set of results, it is encouraging to note the differential outcome for the negative event scores compared with the positive scores. The same set

Table 96: Kendall's Tau for Depression Proneness, Negative Life Events and Depression Level, in 81 Students

Correlation	Tau	p
LEQ(-) by DPQ	-.23	**+
DPQ by Depression	.35	***+
LEQ(-) by Depression	-.20	*+
Partial correlation LEQ(-) by DPQ with Depression constant	-.18	*+

Notes: * .05 ** .01 *** <.001

of subjects was involved. If there had been a substantial effect of interpretation or recall, due to depressed mood, it would have been expected to affect recall of positive as well as negative events. The different results, for the two types of event, suggest it was an effect of the events themselves, and that depression prone individuals can expect to experience more negative events, but no fewer positive events, than individuals free from depression proneness.

If this is the case, the expectation of negative outcomes, and feeling of lack of control, found in the depression prone, is probably a reflection of something real in the lives of these people. However, realistic negative expectancies may coexist with negative cognitive bias. The two things need not be mutually exclusive. It will be recalled, from section 1 of the theoretical introduction, that "distorted" cognitions, associated with depression, emphasize the negatives in any given situation. Negative focus means that positive actualities or possibilities are ignored. Nevertheless, they may exist. Perhaps altering the focus towards positive possibilities, through cognitive therapy or other means, helps to bring about some of the more positive outcomes.

The phenomenon of helping a possibility to come about, by merely expecting it, is known to social psychologists as "self-fulfilling prophecy" (e.g. Wrightsman, 1972). Beck (Beck et al, 1979, p 259) stated: "Many, or perhaps most, depressogenic assumptions are self-fulfilling .. By predicting the consequences, he [the client] brings them about".

This lends theoretical support to the suggestion that cognitive vulnerability acts, in conjuction with life events, in more than an additive way to produce depression. It may act to produce depression by actually bringing on more negative events, by reducing the possibility of coping effectively with them, and by the peculiarly painful perceptions of lack of control combined with personal sense of inadequacy, which constitute major cognitive signs of depression.

(v) Results and Discussion - Cognition and Life Events

In those who have cognitive vulnerability to depression, negative life events are a necessary condition for the actual precipitation of depression.

Prediction: Cognitive factors should correlate particularly strongly with increase in depression over five weeks, when there have been negative life events during that period.

In view of the lack of significant overall change in depression in the student sample, as discussed in the previous student studies, the results presented here have to be treated with caution. Nevertheless, some students increased in depression, and some decreased. Even if this was normal mood variation, life events and cognitive factors could have been among the influencing variables.

For the purposes of this investigation, the students were divided into those who had an overall net negative life event score, and those with an overall net positive score, for the period between the initial and final questionnaire batteries. The total cognitive scores on the CQ and the DAS were each correlated with the increase in depression over the five weeks, separately for the positive and negative life event groups. Table 97 shows the results, together with the correlations for those cognitive questionnaires using the total subject sample.

It was seen earlier in the Cognitions Study, that the DAS correlates with state of depression, such that more dysfunctional attitudes are associated with higher depression level. It is necessary, therefore, to discuss the effect of possible covariation of DAS with depression, when correlating DAS scores at initial testing, with change in depression from initial to final testing. This covariation effect was discussed in the Social Factors Study, where it was seen that counterintuitive correlations were produced, between social factors measured at initial testing, and depression change. It is noteworthy that here, despite this pressure for the correlation to go in the counterintuitive direction, it went in the direction that would be expected if dysfunctional attitudes lead to increase in depression. Rather than a simple covariation, with high dysfunctional-high depression decreasing in tandem, and low-low increasing together, the result suggests that high dysfunctional subjects tended to stay depressed or icrease, while low dysfunctional subjects became less depressed.

Table 97: Cognitive vulnerability to depression in the presence of differential life events

Scores correlated with change in depression	Total sample n = 81		Net positive LEQ group n = 38		Net negative LEQ group n = 30	
CQ	.084	ns+	.142	ns+	.135	ns+
DAS	-.190	*+	-.114	ns+	-.202	ns+

It will be recalled that the positive and negative life event groups were divided according to their net life event scores. These net scores are made up of positive and negative scores. In the net positive group, positive scores exceed those of negative scores, and in the net negative group the reverse is true. The two groups had median life event scores of +2 and -1 respectively ($p < .0001$).

It was seen earlier, in the Cognitions Study, that the CQ (Cognitions Questionnaire) scales were not found to be predictive of change in depression over the five week period. However, the DAS (Dysfunctional Attitude Scale) was. In the present study, the CQ performed as expected (see table 97). That is, even the total CQ score did not predict change in depression, either irrespective of life events, or differentially in the positive and negative life event groups.

Earlier, the DAS was associated significantly with depression change regardless of life events. Here, it showed non-significant trends of association with depression change in both of the event-type sub-groups. However, the size of the association in the negative events group was slightly larger than in the positive events group. If the groups had been of comparable size to the parent group, the correlation would have been significant in the former and non-significant in the latter. This would have supported the "vulnerability" hypothesis as described by Brewin (1988), in which both cognitive factors and difficult life events are required in order for depression to result.

(vi) Conclusions for the Life Events Study

In part II of the Life Events Study, the state hypothesis, predicting higher depression change in those who had had recent unpleasant events, was upheld. This was in agreement with Part I, and with previous research. The second hypothesis, here, concerned whether depression prone individuals are more likely to experience negative events than others. The results indicated that they were, even after correction for possible biasing effects of depressed mood, on interpretation of events by the subjects. This corroborates the suggestion advanced in Part I, as a result of the finding of a strong relationship between a history of difficult life events and proneness to depression, but only in a group of subjects who had low socioeconomic and educational status. The arguments were complex, and so will not be repeated here.

The third hypothesis tested in Part II could not be tested in Part I, owing to the absence of a prospective element. It concerned whether cognitive vulnerability acted more powerfully in the presence of negative events than in their relative absence. The result was suggestive of this, but not statistically conclusive. If the change in depression had been more than minimal, the result might have been more convincing.

CHAPTER FIVE: MOOD

5.1 MOOD PART I: PERCEPTION OF NEGATIVE VS POSITIVE MOOD IN A STUDENT SUBJECT SAMPLE

(1) Introduction

There are many experiments showing that negative mood leads to enhanced recall of unpleasant or disappointing events, as compared with recall of pleasant or rewarding events e.g. Teasdale and Spencer (1984) using induced mood; Lloyd and Lishman (1975) with depressed patients. Negative mood has been found to bias self-perception towards the negative (Lewinsohn, Mischel, Chaplin and Barton, 1980; Roth and Rehm, 1980). Sutherland, Newman and Rachman (1982) have shown that intrusive, unwanted thoughts, in normal subjects, were harder to remove while the subject was in an induced negative mood, compared to removal of neutral thoughts, and compared to removal of negative thoughts while in an induced positive mood.

The question of reactions to negative moods will be investigated in two ways. It is necessary to see whether positive moods are interpreted, universally, in different ways from negative moods. People might find negative moods harder to differentiate into precise feelings than positive ones. If this is the case, then negative moods, besides being less desirable than positive ones in their own right, would have an additional component which makes them, universally, hard to deal with. Also, bearing in mind the findings discussed in chapter One about views of depression, people might interpret negative moods as more personally caused than positive moods.

In Part II of the Mood Study, interpretations of negative moods will be examined using the mood Diary. Additionally, in order to investigate the way that depression episodes are viewed in comparison to other kinds of event, descriptions of depression episodes, by non-depressed subjects, will be compared with descriptions of physical illnesses, to ascertain whether depression episodes are seen in the same light as other kinds of illness.

In Part I of the Mood Study, the cognitive differentiation of negative and positive moods, in normal subjects, will be investigated by a cluster analysis of emotion words, in a sample of students. Various studies in the existing literature show differing versions of the basic dimensions of emotion, as perceived by the average person (e.g. Nowlis and Green, 1957; Nowlis, 1965; Izard, 1977; Plutchik and Kellerman, 1980). These studies have used a number of methods, involving the rating of photographs of facial expressions produced by actors, on lists of emotion words, and rating of own current mood on adjective check lists. Factor analysis and cluster analysis have been executed on the resulting data to interpret it. Usually, word lists have been limited to below 100.

In the present study, one intention is to present a more exhaustive list of emotion words, in the hope of mitigating possible effects of the experimenter-selection of words, on the clusters that could be formed. A second intention is to use more naturalistic presentations to the sujects, by having them rate a wide variety of hypothetical events and situations, rather than the faces of actors, or the mood they happen to be in at the time of the rating. With these safeguards, any

difference in the cognitive organization of negative versus positive moods could be due to two factors. One would be something about the phenomenological difference between positive and negative moods. The second possibility is that they are perceived and organized differentially in cognition. In either case, such differences would be interesting, in terms of how negative moods can be most effectively handled.

(ii) Methods

a) Subjects

The subjects were the 70 attenders at a second year undergraduate laboratory class in Psychology.

b) Design and materials

The list of 396 emotion words was presented to all of the 70 subjects. It was printed on 6 pages, 66 words to a page, and the order of the pages was randomly varied to offset the effects of fatigue. There were 35 different hypothetical situations, and each respondent had the same situation printed at the top of the six pages of their booklet. Hence, each situation was responded to by two subjects. The respondents simply ticked each word that approximated to their probable feelings in the given situation, and crossed any word that did

not apply.

Hypothesis and prediction: Negative emotions are less well differentiated than are positive emotions in cognitive organization. If this hypothesis is correct, there will be fewer clusters of negative than positive emotions.

Procedure

The first stage of the work was to compile the list of emotion words. They were culled from a variety of sources, initially from the various lists used by previous researchers (e.g. Plutchik and Kellerman, 1980; Lubin, 1965). Subsequently a preparatory study was carried out to obtain words spontaneously used by people in response to hypothetical situations. Ten student volunteers between the ages of 20 and 30 were asked to produce words to describe their probable feelings given 10 hypothetical situations. These situations were later included in the list of 35 situations presented to the laboratory class. The full list is given in Appendix 4, but two examples are shown in table 98 below. Some of the situations were based on some which appear in the Cognitve Style Test (Wilkinson and Blackburn, 1981). Some were intended to be such as would be familiar to a student population, and others were attempts to represent less common events or experiences, in the hope of providing sufficient variety to involve the full range of the emotion words.

Table 98: Two Sample Hypothetical Situations Presented to Subjects

1) You have just managed to deal with a difficult problem in your work.
2) It has been raining heavily in the night. When you go to your kitchen, you see water running down the wall.

In the preparatory study, the respondents, who were seen individually, were encouraged to give as many words as they could think of to describe their probable feelings in the given situation. The results of this preliminary work showed that the hypothetical situations were appropriate stimuli for the application of emotion words, and there was every indication that in the large sample study, subjects would be able to respond naturalistically. The final list of 396 emotion words can be found in Appendix 4.

The laboratory class of 70 students was told that their co-operation in a study of emotion words was requested. Their normal laboratory work was done in staggered shifts as was common practice to allow the most efficient use of resources. Hence, the emotion word lists were completed by each group either before or after their course work, according to their turn in the rota. The booklets of emotion words had instructions attached, directing the student to:

> "Take a few seconds to imagine yourself in the following situation. Once you have this in mind, go through the long list of emotions, deciding which you would probably feel, and which you probably would not feel. Mark your decisions by ticks for YES and crosses for NO."

The completion time was 15 to 20 minutes.

ANALYSIS

Cluster analysis was performed on the data. The ticks and crosses from the lists were first transposed into a series of

numbers indicating, for each emotion word, which of the 70 numbered 6-page lists (i.e. which subjects) had shown a tick for that word. For the cluster analysis, each of the 396 emotion words was treated as a "case", and each of the 70 respondents was treated as a "binary attribute" (Yes/No). Words which were ticked by 7 respondents or less (i.e. 10% of respondents) were eliminated immediately on the grounds of insufficient frequency to contribute adequately to the analysis. This reduced the number of cases from 396 to 301.

In selecting a similarity criterion, it was born in mind that, in fact, most words had relatively low usage (less than 30 out of 70 subjects). This means that the number of times a word received "No" was high. The possible factors which can be taken into account, in a criterion of similarity, are as illustrated by the following example. Suppose one were looking at the similarity of use of the words "happy" and "relaxed". One could draw up a contingency diagramme, as shown below:

		HAPPY	
		Yes	No
RELAXED	Yes	15	2
	No	8	45

In this hypothetical example, the number of times that both "happy" and "relaxed" received a "No" was 45. For most of the words, the "No" "No" box would, similarly, receive a relatively high score. For words with relatively low usage, this box would be even more inflated. Therefore, to use it, in calculating the similarity of use of such words, could give inflated values of similarity. Hence the Jaccard coefficient was selected. This coefficient uses the formula:

$$\frac{A}{A + B + C}$$

Where A = Number of times the two words both received a "Yes"

B = Number of times word "i" received Yes, but word "j" received "No"

C = Number of times word "i" received No, but word "j" received "Yes"

With this coefficient, the occasions where both words received "No" are ommitted from the analysis. In the hypothetical example above, substituting the values into the formula gives: 15/(15 + 8 + 2) = 0.6. It can be seen that, if the two words had been used in exactly the same way, then, in the formula, the values for B and C would each have been zero, leaving A/A = 1. If the two words had been used totally dissimilarly, so that when one was used, the other never was, and vice versa, then A would have been zero, so the value of the coefficient would then have been zero.

After creating a correlation matrix using the Jaccard coefficient of similarity, monothetic division was carried out, by the method of Crawford and Wishart (1967). Owing to the nature of the division procedure it is not possible to ensure that every single object (word in this case) ends up in the cluster with which it has the highest overall similarity coefficient. Hence, a relocation procedure has to be carried out, starting from the clusters formed by the division procedure. The relocation is an iterative process which computes the similarity of each object in turn to each cluster, including its parent cluster. If its similarity to another cluster is higher it is removed to that cluster. This process is repeated until the condition is met that all the objects are scanned without any of them being relocated. The resulting clusters are the optimized solution.

The relocation procedure was carried out twice, producing two optimized solutions. In the first of these no threshold value was set for similarity of an object to a cluster. In the second one a threshold of 0.5 was set. All cases which did not exceed similarity of 0.5 to any cluster were deposited in a residue. If, during the continuance of the relocation procedure, they remained dissimilar to all clusters, they remained in the residue.

(iii) Results

Tables 99 and 100 show the results of the cluster analysis. Solution 1 includes all 301 words. Solution 2 is the result of relocation with a similarity threshold set at 0.5. When measuring the similarity of use of two words, using the Jaccard coefficient, 0.5 is the value at which the amount of similar use of the words is matched equally by the amount of dissimilar use. Solutions 2 is based on 194 words, 107 having remained in the residue of words not meeting the 0.5 criterion. As expected, Table 100 shows that, at the expense of inclusion of a third of the emotion words, which remained in the residue, the intracluster similarity coefficients are higher, which means the words in the clusters were used in more reliably similar ways across the subject sample and the situations.

Figure 19 shows Solution 2 in diagrammatic form. The degree of similarity or dissimilarity between one cluster and another is indicated. A table of intercluster similarity coefficients can be found in Appendix 4. In Figure 19 it can be seen that there are 5 clusters of positively valenced emotion words, 3 clusters of negatively valenced emotion words,

Table 99: Cluster Analysis Solution 1: No Similarity Threshold Set for Relocation Procedure

Cluster Number	Size (no. of words)	Average Coefficient	Typical Words for Cluster
1	87	0.5957	Relaxed, friendly, happy
9	69	5939	Proud, powerful, euphoric
10	39	4903	Frustrated, unhappy, deflated
2	35	4453	Insecure, awkward, anxious
14	26	5414	Sad, helpless, depressed
3	10	3775	Stunned, suspicious
8	9	4719	Angry
5	8	4115	Concerned for someone
6	7	3587	Tired, indifferent
13	6	4557	Mischievous
12	2	3846	Ambivalence ¦ Not real
4	1	1.0000	Virtuous ¦ clusters
7	1	1.0000	Noncommittal ¦ (only 1 or
11	1	1.0000	Sentimental ¦ 2 words)
Total	301 words - No residue		

Table 100: Cluster Analysis Solution 2: Threshold Set at 0.5 for Relcation Procedure

Cluster Number	Size	Average Coefficient	Typical Words for Cluster
1	63	0.6690	Relaxed, friendly, happy
9	43	7172	Proud, energetic, elated
10	27	5870	Frustrated, unhappy, deflated
2	14	5494	Insecure, awkward, anxious
14	13	5916	Alone, helpless, depressed
13	9	6196	Playful
5	8	6021	Closeness
4	6	6446	Powerful, euphoric
3	5	5864	Surprised
12	2	5455	Indifferent
6	1	1.0000	Dependent
7	1	1.0000	Adamant
8	1	1.0000	Going mad
11	1	1.0000	Defiant
Total	194 words ; Residue = 107		

ure 19

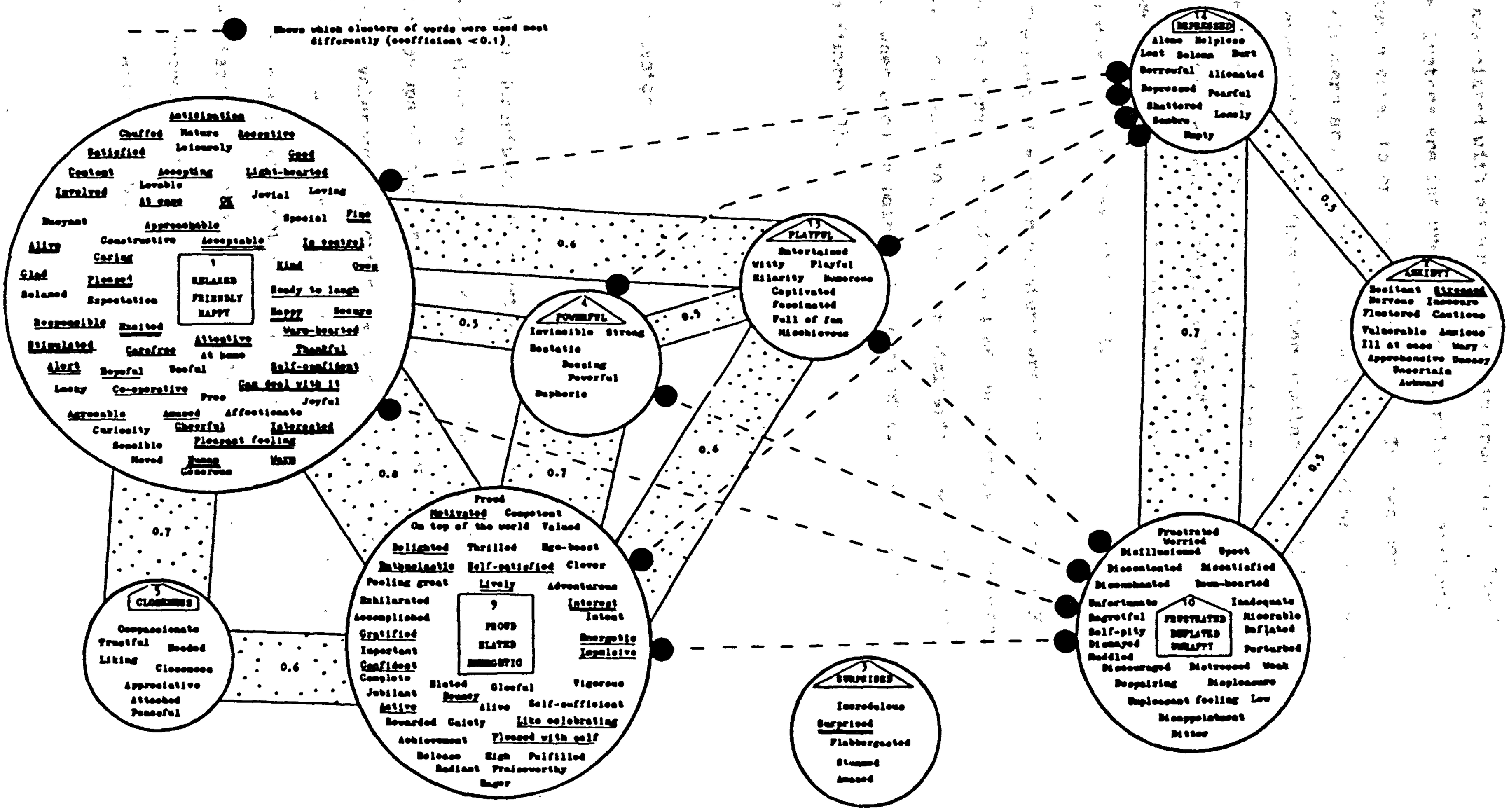
CLUSTERS PRODUCED BY SOLUTION 2 (Relocation with Threshold set at 0.5)

0.5 — Inter-cluster similarity (based on Jaccard's coefficient). Range is from 0.5 (low similarity) to over 0.8 (high similarity)

Above which clusters of words were used most differently (coefficient < 0.1)

Word - Word was used by 25 or more of the 70 respondents (i.e. 36%)

Word - Word was used by 50 or more respondents



and a cluster of words representing surprise, which is not closely associated with either of the main groupings. The 5 positive clusters are interrelated by intercluster similarity coefficients equal to or greater than 0.5. The two most similar clusters are 1 (relaxed, friendly, happy) and 9 (proud, elated, energetic), with intercluster similarity of 0.8528. The 3 negative clusters are interrelated in a similar way, with cluster 10 (frustrated, unhappy, deflated) and cluster 14 (depressed, helpless, alone) having the highest of the 3 intercluster similarities, at 0.7353.

The most dissimilar clusters are 2 of the negatively valenced clusters in relation to 4 of the positively valenced clusters. Clusters 10 and 14 bear similarity coefficients less than 0.1 when each is paired with each of clusters 1, 4, 9 and 13 (see Figure 19).

(iv) Discussion

As has been described, the cluster analysis produced a small number of clusters of emotion words, and there were two distinct groups of clusters, representing positively and negatively valenced emotions respectively. However, when the content of the clusters is examined, it cannot be said that all of them represent distinct emotional experiences. Solution 2 will be discussed, since the intra-cluster similarities, being higher, represent relatively well-defined use of emotion words within a particular cluster.

Cluster 1 (relaxed, friendly, happy) and cluster 9 (proud, elated, energetic) have a very high intercluster similarity, as has been mentioned. This must reflect the subjective similarity of the content words. For example, Glad and Gleeful are two subjectively similar words, but one appears in cluster 1 and the other in cluster 9. The same is true of Buoyant and Elated, and of Self-confident and Confident. On the other hand, it is possible to see words which appear characteristic of cluster 9 but not of cluster 1 (e.g. achievement, praiseworthy) and others which appear characteristic of 1 but not of 9 (e.g. affectionate, co-operative). These differences between the otherwise highly overlapping clusters 1 and 9 are reflected in their differential similarities to clusters 5 and 4: 1 is more similar to 5 (closeness) than to 4 (powerful), whereas 9 is more similar to 4 than to 5. On the other hand, 1 and 9 have about equal similarity to 13 (playful).

Similarly, with the clusters of negative emotions, clusters 10 and 14 contain subjectively similar words. Sorrowful in 14 mirrors Miserable in 10. Helpless, in 14, mirrors Weak in 10. Characteristic of 14 but not of 10 are words like Lonely and Lost. Characteristic of 10 but not 14 are words like Frustrated and Discontented. Both clusters 10 and 14 show similarity to 2 (anxious).

The above results reflect the fact that when emotion is experienced as a response to naturalistic situations, it is often a combination of emotions, rather than the more distinct forms that might be used, say, to label a particular facial expression. This relative indistinctness, in the use of the emotion words to describe feelings related to naturalistic

situations, is what would be expected. Conversely, the good separation between positive and negative emotion clusters, shows that the situations were clear-cut enough to evoke the differential use of positive and negative words.

The greater number of positive than negative clusters suggests that positive emotional states were better differentiated than negative ones, in the cognition of the respondents. On the other hand, however, much caution is needed, in the interpretation of a large cluster analysis such as this one. Possible sources of bias between the pattern of positive and negative clusters are the choice of positive and negative hypothetical situations to which the subjects responded, the decision about the cut-off criterion for similarity between a word and any cluster during the relocation procedure, and the cut-off point for words with low usage.

As far as possible, it was ensured that the 35 hypothetical situations represented a wide variety of mood states. However, it is possible that those which involved negative emotions, involved them in less clear-cut ways than did situations involving primarily positive emotions. The threshold of 0.5, chosen for the relocation procedure in Solution 2, does appear to have altered the final cluster structure significantly. Although the five largest clusters are essentially the same in both solutions, a negative cluster (no. 8 representing anger) was lost in transition from the first to the second solution, and a positive cluster (no. 4 representing a heightened state of euphoria) entered the scene. It is difficult to assess at which point a low number of ticks, for a word, means that its cluster representation is statistically unreliable.

To consider the differences between the two solutions further, if one were to rely on only those clusters which remained stable in both solutions (the five largest - 1,9,10,2,14; and nos. 3,13,5) one would conclude the following. With four positive clusters (1,5,9,13) three negative clusters (2,10,14) and one neutral cluster (3), the positive clusters still appear to be better differentiated than the negative.

Furthermore, more negative than positive words were discarded early on due to low usage, and more ended up in the residue in Solution 2, because of their lack of similarity to any of the clusters. One could argue that words describing negative emotions were less well used because they were less well understood. Secondly, if they tended not to be consistently identified with any clusters, this suggests there was low concensus about their meaning, and again, suggests that the negative emotion words were less well organized in cognition among the respondents.

The cluster analysis performed in the present work bears comparison to some of the schemes of previous researchers shown in table 101. One of the determinants of the outcome is the input, in terms of stimuli, and in terms of emotion words or states available to the respondents. The present study attempted to cover the greatest possible variety of states and stimuli. Its outcome differs from Izard's (1977) characterization of the basic emotions, in that Izard's scheme describes a preponderance of negative emotions, whereas, as has been seen, the present study produced a preponderance of positive emotions. However, the schemes of Nowlis and Green (1957) and of Davitz (1970) are each bipolar. It appears that

Table 101: Some Schemes of Basic Emotions by Different Researchers

Researchers	Basic Emotions	
Izard (1977)	I Interest/Excitement	II Enjoyment/Joy
	III Surprise	IV Distress/Anguish
	V Anger	VI Disgust
	VII Contempt	
	VIII Fear	IX Shame/Shyness
	X Guilt	
Nowlis and Green (1957)	1+ Activation	1- Deactivation
	2+ Pleasantness	2- Unpleasantness
	3+ Positive Social Orientation	3- Negative Social Orientation
	4+ Control	4- Lack of control
Davitz (1970)	1 Activation:	Activation, Hypoactive, Hyperactive
	2 Relatedness:	Moving towards, Moving away, Moving against
	3 Hedonic tone:	Comfort, Discomfort, Tension
	4 Competence:	Enhancement, Incompetence/ dissatisfaction, Inadequacy

this is an area which is fraught with difficulty, in that analyses by different researchers produce different results, rather than converging on a single solution.

A further possible influence on the result of the analysis is the subject group. It is possible that the student group tested were mainly optimistic in outlook. Therefore, they tended to use more positive than negative words, even to describe negative events. This would be, perhaps, because they could actually see positive aspects of negative events, and not because their negative words were ill defined. Such a factor could, in theory, be investigated by separating the subjects into those who tended to use more positive than negative words, and those who tended to use more negative than positive words. In the former group, one might expect to find an exaggerated version of the result already obtained, whereas in the latter group, one might expect to find better defined clusters of negative than positive words. Users of positive words would probably be those who were feeling more positive at the time of testing, while the others would score more depressed. Unfortunately, no independent measure of the students' mood was taken at the time of the study.

Some work by Derry and Kuiper (1981) is relevant here. Their experiment involved subjects' recall of positive and negative self-referent adjectives by depressed patients and non-depressed controls. Non-depressed subjects were better at recalling positive adjectives they had previously endorsed as self-descriptive, compared to the depressed group. Conversely, depressed subjects recalled more of the negatively toned adjectives they had previously endorsed as self-descriptive, compared to the non-depressed psychiatric controls and normal

controls. Derry and Kuiper interpret these results as supporting the idea that depressed subjects interpret and recall self-relevant information through the filter of negative schemata, while non-depressed subjects do so through non-depressive schemata.

As a general conclusion, the results of this study support the hypothesis that negative emotions are less well defined than positive ones, in cognition. However, this conclusion must be treated with great caution, due to the possible factors which can affect the outcome of a cluster analysis. It is, nonetheless, true that the definition and differentiation of negative emotions is a step towards dealing with them effectively. Therefore, to show them to be difficult of definition would be important in terms of possible prevention of psychopathology. Such preventive work could be based on identifying and describing, accurately, negative feelings likely to be evoked by various situations.

5.2 MOOD PART II: PERCEPTION OF DEPRESSION AND EVERYDAY MOODS BY FORMERLY DEPRESSED AND CONTROL SUBJECTS

(i) Introduction

Two hypotheses will be tested in this part of the Mood Study. The first is an extension of the hypothesis tested in Part I. It concerns whether depression episodes are perceived more negatively than other kinds of illness. Weiner *et al* (1988) found that, for problems of a mental-behavioural origin, people would be less willing to help and more likely to blame the sufferer, compared to problems of a physical origin. As a result of a study comparing the effects of different attitudes to solving minor problems, Farina *et al* (1978) questioned the ability of the "disease message" to relieve sufferers of personal blame when experiencing emotional reactions to such problems.

The second hypothesis concerns whether some poeple are prone to interpreting negative moods, and depression, more negatively than would other people. Fennell and Campbell (1984) found that formerly depressed patients had heightened sensitivity (reacted more negatively) to a scenario about depression on their Cognitions Questionnaire, compared to people who had never been depressed. There will be an attempt to replicate this finding using the CQ. Interpretations made by recovered and control subjects, of depression events in themselves and in others, and of their moods as reported on the Diary, will also be compared.

(ii) Methods

a) Subjects

The subjects were the community (n=30) and recovered (n=15) groups described in the Cognitions Study (Part I).

b) Design and Measures

During the course of the interviews described in the Cognitions Study, subects were asked to describe episodes of depression and of physical illness. The aim was to use the CAVE procedure of Peterson and Seligman (1984a) for Content Analysis of Verbatim Explanations, to look at the pattern of causal attributions for the two different types of event, among the subject groups. The hypotheses for the present study, and how they were tested, are explained below.

Hypothesis 1:

Hypothesis 1 states that depression episodes are perceived more negatively than are other kinds of illness episode. This will be tested by selecting a group of subjects who gave explanations for both depression episodes and physical illnesses, and comparing the pattern of causal attributions given by the subjects for each type of event. It is expected that more internal, stable and global causes will be given for depression than for physical illnesses.

Hypothesis 2:

According to hypothesis 2, certain individuals, as a result of experience of prior depressions and difficulties, have heightened sensitivity to depressed mood, reacting to it and interpreting it more negatively than would other individuals. This will be tested in three ways. First, the recovered subjects will be expected to react more negatively to the hypothetical scenario of depressed mood, on the CQ, than will the community subjects. This result was obtained by Fennell and Campbell (1984). Also, within the recovered group, those who are more depression prone should have the most negative reactions.

Second, recovered subjects would interpret depression in themselves, and in others, more negatively than would the community control subjects. Causal attributions given by the subjects, in their accounts of depression, will form the data for this test. Third, subjects who have had prior depressions will be expected to interpret everyday negative moods, as reported in a seven day diary, more depressively than will subjects who have not experienced prior depressions. The more depression prone are expected to react more negatively than the less depression prone, within the recovered subjects. The complete package of procedures is shown in table 102, with those relevant to the present study marked.

Table 102: Package of measures in order of presentation to subjects, with asterisks marking those relevant to Mood Study II

Preparatory information

Consent Form

*i) Delusions-Symptoms-States Inventory (Bedford and Foulds, 1978a)

ii) Inventory of Recent Life Events (combined sources - see text)

*iii) Tape-recorded discussion of selected recent life events

iv) Personality Deviance Scale (Bedford and Foulds, 1978b)

v) Social Support Questionnaire (see text)

*vi) Seven-Day Diary (see text) - completed at home

vii) Inventory of Past Life Events (combined sources - see text)

*viii) Tape-recorded discussion of selected past life events

ix) Miskimins Self-Goal-Other Descrepancy Scale (Miskimins, 1967)

x) Tape-recorded discussion of Miskimins self-ratings

*xi) Cognitions Questionnaire (Fennell and Campbell, 1984)

Informal discussion of the foregoing

Measures

(i) Cognitions Questionnaire (CQ)

The CQ (Fennell and Campbell, 1984) has been described fully in the Cognitions Study (I). However, the hypothetical scenario of depression, included in it, is of particular importance here. The event is described as below:

> You wake one morning before your usual time. Though feeling tired and heavy, you cannot get back to sleep again, no matter how you try. You turn over in your mind all the things that you have to do. The day ahead seems endless.

The response options which follow the event are divided into five sections. For each section, one of four options is chosen, to indicate the subject's reactions to the event. The first section assesses immediate emotional reaction (degree of upset). The second assesses perception of the cause of the event, and covers more, versus less, depressive attributions. The third set of options covers the sequelae, if any, expected by the subject, from negative to neutral. The fourth set concerns whether the subject generalizes the event in terms of it being typical of his/her experience. The final set concerns what action, if any, the subject feels able to take, to modify the negative situation. The full questionnaire is shown in the Appendix.

(ii) Causal attributions given in naturalistic explanation of events

Following completion of each life events inventory, the subject was engaged in describing selected events they had endorsed, and the discussion was tape-recorded.

The descriptions of the events were elicited from the respondents by a repertoire of open-ended questions and minimal responses aimed at encouraging further description. It was important to avoid directing or prompting the subject towards responses or affirmation of views held by the interviewer, especially in the less forthcoming respondents. The aim was to encourage the person to express their own views, and to draw them out if necessary by showing acceptance and willingness to hear their view. The form of the open- ended questions is illustrated by examples of them in Table 103. Such questions invariably led to the subject saying something fairly specific about an event or its antecedents, perhaps after a vague start. For a discussion of the effects of different styles of interview questioning, see Sudman and Bradburn (1982).

Attributional Analyses

Attributional Analysis: Each account of a significant event was transcribed verbatim from the tape-recording, and subjected to a number of content analyses. The technique used was the Attributional analysis following the "Content Analysis of Verbatim Explanations" or CAVE technique (Peterson and Seligman, 1984a). This involves isolating causal statements, and then rating them on each of three scales from 1 to 7:

Table 103: Examples of open ended questions asked about life events

1) Can you tell me a bit more about that ?
2) What was happening in you life at that time ?
3) How did that situation affect you, generally, at the time ?
4) Could you say something about the circumstances that led up to that.

internality (=7) versus externality (=1);
stability (=7) versus instability (=1);
globality (=7) versus specificity (=1).

Internality reflects more the characteristics of the speaker, such as personality or behaviour, whereas externality reflects situational factors; stability reflects causes which persist across time, such as personality, while instability refers to more transient causes, including "flukes and bloopers"; globality reflects a larger number of domains and outcomes affected, compared to specificity which reflects limited effects (Peterson and Seligman, 1984a).

In order to isolate the units of speech to be rated on the above dimensions, each transcribed account of a major life event from the tape-recorded interview was checked through and the causes of the event were taken out and made into a separate list. The guidelines given by Peterson and Seligman (1984a) were used to facilitate the process of identifying causes: "Once an event is located, one looks for an attributional factor that covaries with it from the perspective of the subject." The "putative cause precedes the event of interest and is perceived by the subject as covarying with it". Statements like "because ...", "as a result of ..." "this led to it ..." can be clues. With the employment of these criteria for identification of causal explanations, good agreement has been reported between independent judges (e.g. Peterson, Bettes and Seligman, 1984).

Once the list had been compiled, of causes given by each subject for a particular life event, each cause was then rated on the three dimensions of internality, stability and globality. Peterson and Seligman (1984) have given many examples of causal ratings as well as explicit guidelines on

the interpretation of each pole of each dimension. Three summary charts were derived from these instructions and examples, and are shown as Tables 104, 105 and 106. The list of causes was rated on each dimension separately, that is, going through all the causes rating them on internality, before proceeding to the stability dimension, and so on. Again, high reliability has been reported between independent judges, so long as they are using the criteria set down (Peterson and Seligman, 1984b).

(iii) Seven day Diary

It is appropriate to outline, again, the Diary. The Diary consisted of 7 pages, one per day for a week. On each diary page were 6 bipolar mood scales, for positive and negative mood states. On each scale the subject decided how they felt and circled the appropiate scale point, in the positive range, the negative range or on the zero point at the centre. Beneath each mood scale was a small amount of space for the subject to write not more than a sentence about why they felt as they did. The interviewer guided the subject through a sample page before they took the diary home, to show what was required. They were asked not to give the matter lengthy deliberation, and to put down the first thought that came to them rather than weigh things up. Also they were directed to leave blanks if they could not think of anything. It was felt that otherwise the task might become too demanding and might be neglected. A few sentences per subject would in any case be sufficient for the analyses to be carried out. The Diary is shown in Appendix 1.

Table 4: Guide for Rating of Causal Explanations* - Internality

EXTERNAL----------|----------INTERNAL
1 2 3 4 5 6 7

Characteristics of situation, that would lead to that event for most people in that situation (=1)

Reference to situational factors or other people, if not qualified by mention of speaker's characteristics (=1) e.g. "It was a waste of an hour"

Something characteristic about the speaker (=7) e.g. personality factors, mood, behaviours etc if not qualified by reference to situational demands (including other people) e.g. "I was immature" (=7)

EXAMPLES

	Event	Cause
1	Financial problems	My husband's in construction and everything's gone way down.
2	Can't talk to him	He scares me. He is just really nasty.
2	Game lost	You've got to give them credit tonight. They did a good job.
3	He said I never warned him (relationship ending)	I feel I did try and talk to him, but he never had the time to sit down and listen, or he didn't think I was serious.
4	We stopped conversing	We both knew that neither was going to agree with the other.
4	Bit sad/depressed	I attribute that to old age.
4	Game lost	They played well today, and we were missing our shots.
5	Game won	I had good control, and the boys gave me help at the bat.
6	Embarrassment at game loss	Maybe there is something wrong with us.
6	Not too shocked at cancer discovery	I've known all along that I had a high risk.
6	She won't marry me	I'm not a million times stronger
7	Concern about coming retirment with husband	I think it's me to blame because I'm expecting something of him that he can't do.

*Based on the "CAVE" method (Peterson & Seligman, 1984a)

Table 105: Guide for Rating of Causal Explanations - Stability

UNSTABLE----------|----------STABLE
1 2 3 4 5 6 7

Cause is transient (=1) e.g. "I'm not that mean today"
Inherently transient characteristics e.g. "immaturity" - is outgrown.
Often in past tense.
Brief and unlikely-to-be-repeated moods, encounters, flukes, boopers (=1).

Cause persists across time (=7)
Personality characteristics e.g. "lack of confidence" (=7).
Usually in present tense.
Social institutions, other people's personalities (=7).

EXAMPLES

	Events	Causes
1	Heavy gambling loss	Bad luck
1	Fell down stairs	It was raining, and the stairs were broken, and there wasn't any railing.
2	Game won	I had good control, and the boys gave me help at the bat.
2	Was a stressful time	We were having it bad financially.
3	Was abusing chemicals	I had a lot of crap going on in my life, just a lot of frustrations.
3	Not depressed yet (cancer)	My husband's been able to be here, and my sister.
4	At that point I was scared of radiation therapy	How do I judge how well qualified a radiologist would be ?
5	Can't talk to l'lord	He scares me. He is just really nasty.
5	It's embarrassing (game loss)	Maybe there is something wrong with us.
6	I think I'll do well (cancer p)	I think that age (p is older) makes a great deal of difference in the whole attitude.
6	Bit sad/depressed	I attribute that to old age.
7	Will never kill self	I have value.
7	Can't go on much further (baseball)	My aim is still good, but I know I haven't got the stuff I used to have.

Table 106: Guide for Rating Causal Explanations - Globality

SPECIFIC	GLOBAL
Cause is very limited in its effects (=1) Behavioural explanations, e.g. "I couldn't think of what to say". Often past tense.	Cause affects variety of domains and outcomes (=7) e.g. "Everything is black, bleak and hopeless" (=7). Personality characterisitics (=7). Often present tense.

EXAMPLES

	Event	Cause
1	Relationship never progressed	He just kind of backed off.
1	The usual diffics in adjustment (just moved in together)	We both have difficulty in expressing our anger with each other
2	Can't talk to him	He scares me. He is just really nasty.
2	I just keep my mouth shut	I can't do anything about it.
3	Assume people think less of me	I'm not married.
3	No-one for support	My husband isn't around. He's working.
4	Was stressful time	We were having it bad financially.
5	Embarrassed at game loss	Maybe there is something wrong with us.
5	Poor season	I was hesitant. I didn't have confidence in my shot.
5	Bit sad/depressed	I attribute that to old age.
5	No financial drain	I'm still working.
6	I'll do well (cancer)	I think that age (patient is older) makes a great deal of difference in the whole attitude.
6	Cancer	I was tearing myself apart. I was feeling miserable, and I feel as though that had a lot to do with having the illness.
7	Racial bigotry	Barriers of ignorance and stagnation of society
7	Won't kill self	I have value
7	Can't go on much more (base-ball)	My aim is still good, but I know I haven't got the stuff I used to have.

The CAVE technique (Peterson and Seligman, 1984a)was used to rate the causes given for negative moods. The same procedure was followed as for the inerview transcript, with causes of negative moods being removed from context, and listed consecutively. Again, ratings for internality were done on all of them, then for stability, and finally for globality. For each analysis, a mean rating for each subject, on each of the three dimensions, was calculated, because individual subjects could describe more than one event, and they also noted their mood on seven days. For each event, several causes were normally given.

The details of other procedures involved for the overall study, of which this is part, have been described in earlier sections.

(iii) Results and Discussion: Hypothesis 1

The causes of depression episodes are perceived as more internal, stable and global than are the causes of other kinds of illness episode.

Prediction:

In a content analysis of causes advanced for these events, non-depressed respondents will show the pattern described above, if the hypothesis is correct.

Table 107 shows the result of a sign test, performed on data from six non-depressed subjects from the community sample, who had each given accounts of both physical illnesses/injuries and psychological distress/suicidal preoccupations. The internality, stability and globality rating of the causes they gave for each type of event (physical versus psychological), were compared. There was a significant difference in globality rating, with the causes of psychological distress being seen as more global, that is, affecting a wider variety of contexts, compared to the causes of physical distress.

Hypothesis (1) asserted that depression episodes would be attributed to more internal, stable and global causes than would physical illnesses. With the small amount of data that was available to make the comparison, there was a significant tendency for depression and suicidal events to be attributed to more global causes than were physical illnesses and injuries. Table 108 shows examples of global versus specific causes which were actually given for each type of event. The data entered into the sign test were the mean causal attribution ratings for

Table 107: Medians and outcome of sign tests, causal attributions for physical versus psychological distress - in six community subjects

	Physical	Psychological	p
Internality	3.1	3.5	ns+
Stability	3.4	3.5	ns+
Globality	2.4	5.2	*+

Notes: Higher ratings mean more internal, stable or global. * Significant at .05 level

Table 108: Examples of global vs specific causes of distress

	Psychological	Physical
Global	Suicide attempt: "I just didn't see any future for any of us"	Heart attack: "I worked myself into the ground"
Specific	Depression early in marriage: "We felt we'd have a year .. and then start having a family - but that just didn't work out .. every month I thought oh here we go again and - nothing"	Injury to foot: "I was standing in the kitchen .. doing swing-nastics .. walloped my foot off a door"

each subject, as subjects gave a number of causes for the events they described.

The finding of greater globality in the causes given for psychological, versus physical, distress, is not the one which would have been most expected, from the research discussed earlier (Weiner et al, 1988; Farina et al, 1978). The expectation would have been for greater internality for psychological distress, implying more shame. If such attributions are made, the reaction of shame would further compound depressed mood, and serve to maintain it. However, causal attributions for events may be related more to contextual information than to cognitive bias. This has been discussed by Alloy et al (1988). It is helpful to recall the distinction, made by Brewin (1988), between causal and moral attribution. Even when the cause of a state of distress is attributed to the person, the moral attribution may be more significant if it is a mental-behavioural disorder, than if it is a physical one.

However, the globality of causal attributions for psychological distress is probably related to contextual characteristics of these events. For example, certain explanations tended to recur in accounts given by different subjects about similar events. A physical illness was explained by naming a disease, an injury was explained by an accident, a suicide attempt was explained by a need to alert others to personal distress ("cry for help"), and so on. Circumstances leading up to suicide attempts are likely to be ones which are global in their effect on a person's life. If they were not, such a drastic option would be less likely to be contemplated. A possible strategy to avoid this confounding by

contextual difficulties, would be to compare attributions only for events which were matched on grounds of similar contextual cues. For example, an illness like mononucleosis might be a better comparison with depression than, say a broken leg.

Alternatively, one might question the validity of assuming that causal attributions are an important determinant of reactions to events. As was discussed in the theoretical section on cognitions (chapter One), causal attributions have not been found to have a consistent relationship with depression. Referring again to Brewin (1988), the moral (rather than the causal) attribution may be the part of the attribution which causes depressed mood. Moral attributions are concerned with what a person thinks they should or should not do, or be able to achieve, and are addressed in Weissman and Beck's (1978) Dysfunctional Attitude Scale.

In a sense, this analysis has not helped answer important questions about how the understanding of different events might affect reactions to, and coping with, them generally. The questions represented by hypothesis 2 provide more hope of useful information. If there are differences in perception of these events, by those who have experienced more depression, this could suggest how people might be helped to cope more effectively.

(iv) Results and Discussion: Hypothesis 2

Certain individuals, as a result of previous depression, have heightened sensitivity to depressed mood, reacting to it and interpreting it more negatively than would other individuals.

Predictions:

a) When presented with a hypothetical scenario of depressed mood, subjects who have previously experienced depression, or who are depression prone, will react more negatively than others.

b) Subjects who are prone to depressions will interpret their own, and other people's depressions more negatively than will those who are less depression prone.

c) Subjects who have previously experienced depression, or who are depression prone, will interpret everyday negative moods, reported in a diary, more negatively than will other subjects.

Table 109 shows the results pertaining to the first prediction (a). Although both results are in the right direction, neither of them are significant. This first test was an attempt to replicate the finding of Fennell and Campbell (1984) that formerly depressed subjects had heightened sensitivity to a hypothetical depression event, presented on their Cognitions Questionnaire. The null result obtained here might have been due to the relatively small sample of recovered subjects (15). The difference between them and the community subjects was in the right direction, recovered subjects producing a higher median score for negative cognitions, than the community subjects.

It will be recalled from the Cognitions Study (described in chapter two), that the recovered subjects provided a particularly good sample for investigating correlations between cognitive factors and frequency (corrected for age) of past depressions. Hence, a within group correlation was performed, of scores on the hypothetical depression event and frequency of

Table 109: Reactions to hypothetical CQ depression scenario

	Community	Recovered	p
Mann-Whitney test Median CQ Dep'n event scores	2.0	3.0	ns+
Kendall correlation, CQ Dep'n event by Depression Proneness within recovered subjects (n=15)		.20	p ns+

past depressions. However, this also produced a null result. Another possible reason for the lack of connection between past depressions and reaction to the depression scenario, is that this particular scenario of depression was, perhaps, untypical of the experience of the group of recovered subjects interviewed. The scenario described early morning waking. Perhaps a further test could be devised, in which a variety of the most commonly experienced depression symptoms were presented, in order to provide more opportunity for recognition of the state among the subjects.

Tables 110, 111 and 112 show the results for prediction (b). Table 110 is a comparison between accounts of personal depressions, given by community subjects as compared to recovered subjects. The data entered into the Mann-Whitney test were the average internality, stability and globality ratings for each subject. The 15 recovered subjects were compared with the six community subjects who gave accounts of personal depressions. The recovered subjects, who had all experienced clinically diagnosed depression, would be expected to give more negative interpretations than the community subjects. The table shows that the reverse occurred, with the community subjects giving more stable and global causal attributions.

Table 111 compares accounts of depressions in others, given by the same comparison groups. The dimension of internality was modified and called "personality". Causes which were internal to the depression sufferer, rather than the account giver, were scored high on this factor. The number of subjects and accounts that could be drawn upon were fewer, and there were no significant differences.

Table 110: Causal attributions for depression in recovered versus community subjects

	Community	Recovered	p
Internality	3.8	4.0	ns+
Stability	3.5	2.5	*-
Globality	5.1	3.5	*-
n subjects	6	15	
n events described	9	25	
n causes given	52	98	

Notes: * Significant at .05 level
High scores = more internal, stable and global

Table 111: Causal attributions for others' depressions, as given by recovered versus community subjects

	Community	Recovered	p
Personality	4.7	4.5	ns-
Stability	2.2	3.0	ns+
Globality	4.3	3.4	ns-
n subjects	10	4	
n events described	15	8	
n causes given	66	34	

Table 112: Correlation of causal attributions for personal depressions by frequency of past episodes within recovered subjects (n = 15)

	Kendall correlations	p
Internality	.43	*+
Stability	.20	ns+
Globality	-.13	ns-

Kendall partial rank correlation, Internality vs past depressions, with current depression level constant:

.46 *+

Notes: * Significant at .01 level

Table 112 shows the correlation between number of past depressions (corrected for age in the way described earlier) and causal attributions for their own depressions, within the recovered group. It shows that subjects who had had more frequent depressions gave the causes as significantly more internal. This was not an effect of current depression level, as the result held when depression was kept constant.

This set of tests of hypothesis 2 involved comparison of cognitions elicited from recovered and community subjects, about actual depression episodes they had experienced, and also from their accounts of depression in others. This analysis, of-course, suffered from the lack of serious depression episodes experienced by the community subjects, so only a very small sample of these was obtained. The results, therefore, are not at all reliable. Nevertheless, it is curious that there were two significant results in the direction opposite to what would be expected (table 110). The community subjects attributed their own depressions to more stable and global causes than did the recovered subjects. This was not repeated when they were giving causal attributions for episodes of depression in others (table 111). However, the amount of data available for the latter test was even less.

The correlation between attributions for own depressions, and age-corrected frequency of past depressions, was significant for internality. This implies that recovered subjects who had experienced a lot of depression in the past, tended to see the cause of their depressions as more to do with themselves than did those who had had fewer depressions. This could reflect one of two possibilities. Frequent depression sufferers may have been diagnosed, or may regard themselves as,

endogenous depressives, or simply as having something within themselves which renders them depression prone. Alternatively, or additionally, the tendency to blame themselves, for becoming depressed, may be one of the factors which exacerbates ordinary depressed moods in them, promoting more severe depression. The latter explanation would be in line with Teasdale's (1984) description of how the negative spiral can augment and maintain a depressed mood, through negative cognitions associated with it.

Table 113 shows examples of internal versus external explanations given by subjects, for their depressions. Some internal explanations, such as basic "lack of confidence", suggest a stable trait, while others, such as "got myself into a state" suggest something more temporary. However, if depression prone subjects had tended to regard themselves as having a stable trait which made them so, there should have been a correlation between the stability variable and frequency of depressions, which there was not. This does not rule out the possibility of the depression prone reacting badly to depressions. This test only examined causal attributions. It may be of value to investigate the other kinds of cognitive factor, discussed earlier in the Cognitions Study, in relation to coping with depression itself.

Tables 114 and 115 relate to prediction (c). Table 114 shows the medians and results of Mann-Whitney tests comparing causal attributions for negative moods reported on the diary, by recovered and community subjects. There were no significant differences. Again the data used were mean attribution ratings for each subject, since they recorded mood data over seven days. Table 115 shows the Kendall correlations between

Table 113: Examples of internal and external explanations for depressions

Internal
1. "I couldn't get my concentration right .. I got myself into a real state where I couldn't handle it."
2. "My main problem is that I lack confidence in myself."
External
1. "It was beyond belief .. the sky had opened and everything was tumbling out and landing in our lap."
2. "It [new job] was a very very difficult set of circumstances to get used to."

Table 114: Causal attributions for negative moods in recovered (n=11) and community (n=21) subjects

	Recovered	Community	p
Internality	4.3	4.1	ns+
Stability	2.0	2.0	ns-
Globality	2.0	2.0	ns-

Table 115: Kendall correlations of causal attributions for negative moods, by frequency of past depressions within recovered subjects (n = 11)

	Kendall's Tau	p
Internality	.28	ns+
Stability	.19	ns+
Globality	.40	*+

Kendall partial rank correlation with depression level kept constant, for globality with past depressions:

	.33	ns+

Note: * Significant at .05 level

attributions for negative moods and frequency (corrected for age) of past depressions within the recovered sample. When depression level was allowed to vary, globality was significantly correlated with having had frequent past depressions. However, this result became non-significant when depression level was kept constant.

These last two tests of hypothesis 2 developed the theme of reactions to everyday depressed mood. However, there was no tendency for the formerly depressed to interpret the causes of their negative moods more depressively than did community subjects. There was a significant correlation between regarding the causes of negative moods as global, and frequency of past depressions in the recovered subjects. However, the partial correlation, with depression level held constant, was not significant. It will be recalled from the earlier studies that there was a strong correlation between current depression level and frequency of past depressions within the recovered subjects. The globality result may have been produced by a combination of current depression and frequency of past depressions. It is not a large enough subject group to test the relationship of each of these variables with the attributional ones, conclusively.

Table 116 summarises the results for hypothesis 2 of the Mood Study (II). Table 117 indicates that the two results which were significant in the expected direction, when taken in the context of the total of 17 tests, are no more than would be expected by chance when carrying out this number of tests. When it is further noted that one of these significant results became non-significant when depression level was partialled

Table 116: Summary of results of Mood Study II - Hypothesis 2

Type of data		Between group Recov/Commun	Within, corr Past depr'ns
CQ Depression scenario		ns+	ns+
Attrib for own depr'ns	Int	ns+	*+
	Stab	*-	ns+
	Glob	*-	ns-
Attrib for oth's dep'n	Int	ns-	Insufficient data
	Stab	ns+	
	Glob	ns-	
Attrib neg mood, diary	Int	ns+	ns+
	Stab	ns-	ns+
	Glob	ns-	*+

Table 117: Binomial test on probability of significant results obtained in Mood Study II - H 2

No of tests	No. results in expected direction	No. sig.(+) .05
17	10 ns	1 ns

Note: H 2 = Hypothesis 2

out, it must be concluded that there has been no confirmation of hypothesis 2. That is, it cannot be concluded, on the basis of these results, that people who have experienced prior depression react more negatively to depressions or everyday depressed mood, than do people who have not experienced prior depressions.

(iv) Conclusions for Mood Study

The mood study has been the least successful of the four, and part II has suffered most from lack of sufficient data. The collecting and rating of causal attributions from naturalistic data is a very time-consuming process. It would probably be easier and quicker to gather relevant data by the use of appropriate questionnaires, even if some had to be designed for the purpose. Although the work of the Mood Study has been presented last, it incorporates some of the earliest work done in the project. Later work, on other research questions, have avoided some of the pitfalls encountered here. However, given the higher priority of the other research questions, and the limitations on the number of questionnaires that can be presented to a particular set of subjects at one time, the particular questions of the Mood Study have not been investigated more effectively in the present work.

CHAPTER SIX: CONCLUSIONS

6.1 SUMMARY AND CONCLUSIONS FOR THE FOUR STUDIES

Four main areas were studied, the first three each addressing two questions, namely, about factors relating to the state of depression, and about factors associated with increased vulnerability to depression. The overall conclusions are summarised in table 118. Each research question was approached in a number of ways. The table shows the probabilities, according to the sign test, of the overall pattern of obtained results for each section occurring by chance. It can be seen, from the table, that all of the first three studies produced significant results with respect to both state of depression and vulnerability to it.

When people have become depressed, the following factors are likely to be in evidence. In the cognitive sphere, they may attribute the causes of any difficulties they are experiencing, to personal inadequacy, rather than placing more emphasis on external provoking factors. This is important, because it may prevent them being able to devote energy to modifying the external pressures. Indeed, the other findings show that they are also likely to have a generally negative view of themselves, and of future outcomes, believing that there is not very much they could do to help themselves.

Some of these attitudes, in depressed people, may have come from relatively stable habits of thinking in their approach to life. The findings on cognitive factors associated with tendency to depression, show that cognitively vulnerable

Table 118: Summary of Results of First Three Studies

	DEPRESSED STATE	VULNERABILITY
1) COGNITIONS		
Attributions	**	NA
Evaluations -		
Future	***	*
Self	***	*
Aspirations	ns	**
		**--1
2) SOCIAL FACTORS		
Social skill	****	**--2
Social support	****	*
Interrelation of social skill and social support	***	
3) LIFE EVENTS	**	*
Depression proneness precedes bad life events	*	
Dysfunctional attitudes + life events produces more depression		ns
4) DEPRESSION AFTER-EFFECTS		ns

Notes: --1 Finding in opposite to predicted direction - see text. --2 Based on few highly significant results - see text

* .05 ** .005 *** .0005 **** .00005 significance levels

(but not currently depressed) people also view themselves negatively, and see future outcomes negatively and/or as beyond their control. In addition to this, they view failure very negatively, expecting themselves to meet stringent standards, irrespective of the circumstances. That is, dysfunctional attitudes were found to be associated with the tendency to become depressed.

It will be recalled, however, that among the group of 16 recovered subjects, the more depression prone subjects set themselves lower goals, an unexpected result. This may have been a rational strategy, representing an attempt to meet lesser goals before going on to more ambitious ones. It is a strategy at odds with that of having stringent standards regardless of circumstances, since these subjects, by setting lower goals, did appear to be taking their circumstances into account. For this group, the phrase "sadder but wiser", used by Alloy and Abramson (1979), but questioned by Fisher (1985), seems appropriate. The result might have been due in part to some of the group having had cognitive therapy, which has been found to modify dysfunctional attitudes (Simons et al, 1986). However, it was difficult to confirm this, owing to the small numbers of subjects involved.

The results of the work on social factors suggested that depressed people lack both skill in the social sphere, and the support they need. These factors were very strongly associated with the depressed state. It is probable that depressed mood itself produces problems in relating to others. For some depressed people, again, however, lack of skill or support could be a continuation of long-standing difficulties they have had, which have made them vulnerable to depression. Both factors were indicators of vulnerability. Among the social

factors most strongly related to the state of depression were having an attitude of hostility and mistrust towards others (extrapunitiveness), and low self-confidence and dependency (intropunitiveness). Shapiro (1988) has reported that negative view of other people has some relation to specific facets of depression, in a study of college students.

Low self-confidence and extrapunitivenss were also found to indicate vulnerability to depression. However, the results for social skill showed a few specific skill factors, rather than low social skill in general, to signify vulnerability. Low self-confidence was a particularly strong factor. It strongly resembles the cognitive factor of negative view of self, and the finding is consistent with the previously established association between this cognitive factor and tendency to depression.

In terms of social support, depressed subjects, in the Social Factors Study, felt more need for support, and had less of it, than non-depressed subjects. In the student sample, subjects who were prone to depression scored particularly low on a measure of perception of social opportunities, compared to non-depression-prone subjects.

When the two social factors were examined for their interrelation, they were found to be closely bound together. In the student sample, low self-confidence and dependency were associated with more need for support. Low self-confidence and preference for others to lead were highly associated with perceiving fewer opportunities for support. Low dominance (i.e. reluctance to express anger and disapproval, and preference for others to lead) were associated with more negative experience of actual social contact (or lack of

contact altogether). Among the clinical and control groups, hostile attitudes were associated with low socio-economic status, and poor education.

The part of the work which examined life events, confirmed other research findings that recent difficult life events are highly associated with episodes of depression. The evidence about life events with regard to repeated depressions, however, was not as strong. One of the depression prone groups (currently depressed), compared to the community control group, contained subjects who had had significantly more difficulties over their lives as a whole, while the other (recovered, formerly depressed) had not. Because the result was so significant (.005), it is unlikely to have occurred purely by chance. The explanation which, at first, seems obvious, is that the depressed subjects, under the influence of depressed mood, simply recalled more unpleasant events rather than actually having experienced more.

However, the life events inventory was carefully constructed so as to present subjects with a 'cued recall' task in remembering events which had occurred in their lives. They were shown a long list of events, and initially only had to respond 'yes' or 'no'. This method of presentation would reduce to a minimum any effects of selective recall of positively or negatively toned events. This argument is strengthened by the work of Gotlib et al (1988), who found that change in level of depression over a two year period did not cause change in their subjects' recollection of early events.

A rather more interesting way of explaining the present finding, of greater life disruption in the currently depressed subjects but not the formerly depressed subjects, was put forward. Depression proneness, plus low socio-economic status/poor education (peculiar to the currently depressed subjects) had an additive effect, together producing more life crises than either would alone. Probably, this in turn produces more negative attitudes and more proneness to depression, in a vicious cycle. The student study confirmed that subjects who were more depression prone, at initial assessment, later reported more difficult life events in the intervening period.

The fourth section of the thesis was the least successful, and was based on some of the earliest and least well designed work. Depression about depression, a phrase coined by Teasdale (1984) was investigated, firstly as a universal factor, and secondly as a differential vulnerability factor for people with significant experience of past depressions. The results were equivocal in the case of the first question, and non-significant in the case of the second. The problems with this part of the work have been discussed earlier.

One part of the work attempted to determine whether a combination of two of the factors under investigation, compared to one, acted more strongly to produce depression. This was an investigation of cognitive vulnerability in the presence of net positive, compared to negative, life events, in the student subjects. It was a prospective design. It will be recalled that there was a significant correlation between dysfunctional attitudes and change in depression, but the correlation was not

significant when measured for separate groups of subjects who had either overall positive or negative life events in the interval.

However, the change in depression itself over the course of the study was not statistically significant. This rather devalued the exercise to try to obtain significant correlations between the apparent slight change in depression and dysfunctional attitudes, either in the total group, or in a smaller sub-group of subjects with negative life events. Although it was established that the correlation in the larger group was not a spurious result due to "regression to the mean" over the two measuring occasions, nonetheless, a correlation with a change in depression which was itself not significant, cannot be taken too seriously.

It would have been more satisfactory if the study could have been started right at the start of term, or even before, rather than after the start, because the students were caught in the settling-in period of reduction in depression, rather than the initial period of stress and increase in depression. Such problems could be remedied in a future study.

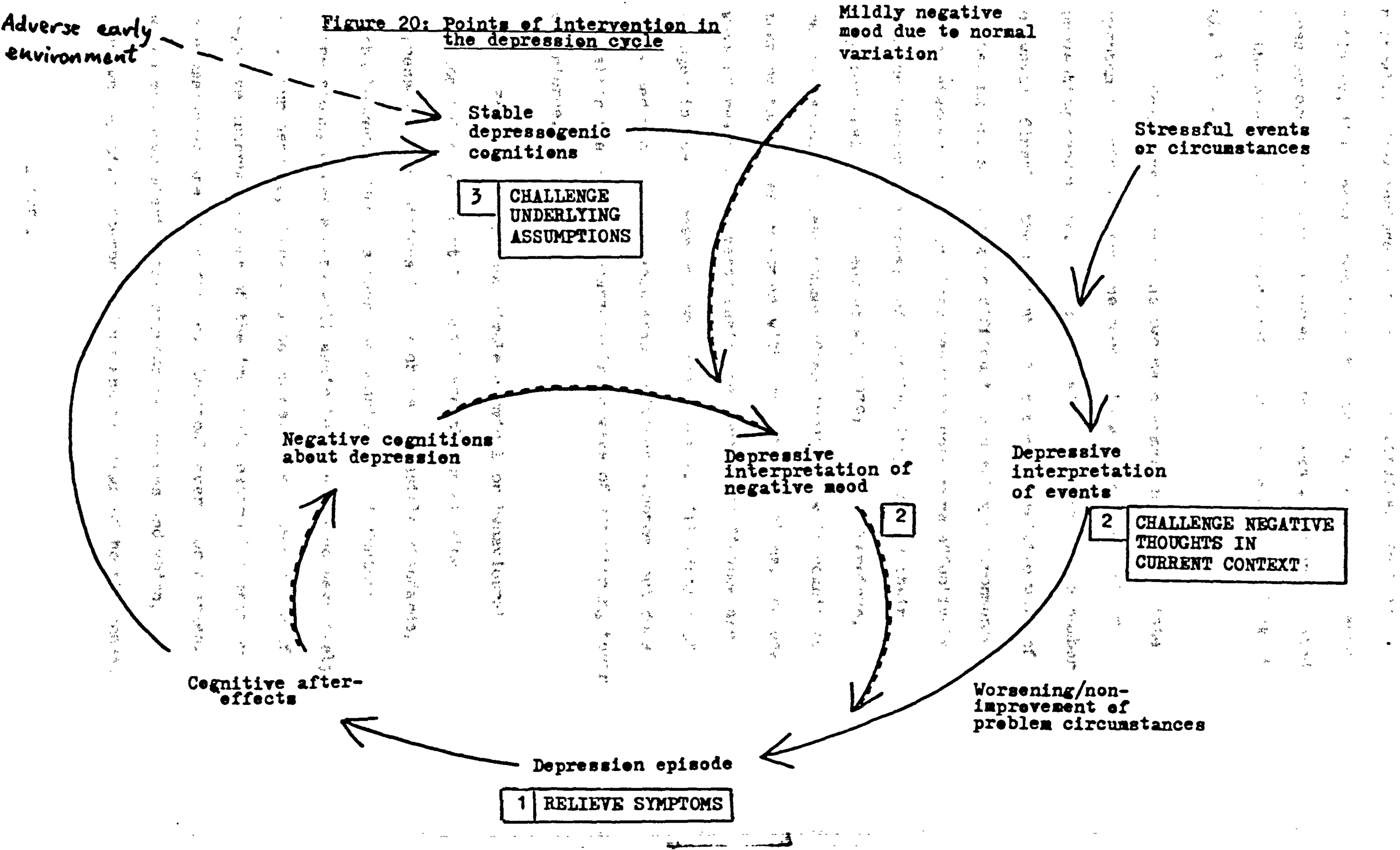
6.2 OUTLINE OF COGNITIVE THERAPY

Briefly, the cognitive therapy proposed and elaborated by Beck and his followers (Beck et al, 1979; Williams, 1984b) involves three main stages. These operate at different points in the cognition-depression cycle. Figure 20 shows these points, in terms of the earlier synthesis of the cognitive models, in Chapter One. The first stage (1 in Figure 20) entails mainly behavioural intervention, which is necessary at the initial stages of severe depression. It is important for the sufferer to gain symptom relief. There is also an acceptance of medication at this stage. Behavioural components such as activity scheduling and graded assignments are common.

The first stage grades into the second stage (2 in Figure 20), in which more cognitive work is introduced. For example, the client is taught how to interrupt sequences of automatic negative thoughts, and how to begin to counteract the often oversimplistic and inaccurate content of these with reality. This is aided by a daily record of dysfunctional thoughts (Beck et al, 1979) in which the person notes down situations where negative thoughts occurred, and writes down "rational responses". A good example of such a form, and of more versus less therapeutic ways of completing it, is given by Hollon and Kendall (1981).

The third stage (3) involves gradually discovering the patient's "silent assumptions" (Kovacs and Beck, 1978). These assumptions are the idiosyncratic ideas that have, hitherto, tended to restrict the person's reactions to certain situations such that they interpret them particularly negatively or

Figure 20: Points of intervention in the depression cycle



narrowly. They include dysfunctional attitudes. Another activity, that becomes possible when the depression has become less severe, is to work on external problems which are related to the precipitation or aggravation of the depression (Beck et al, 1979).

Cognitive Therapy has two main aims; one is immediate symptom alleviation, and the second is a long-term goal of preventing recurrence. The second aim is achieved in a number of ways: firstly, the patient learns more effecitive ways of mastering and adjusting to difficult or complex environmental circumstances; secondly, they learn to cope more effectively with unpleasant feelings; and thirdly, they improve their interpersonal skills (Beck et al, 1979; p 76). Therefore, relapse should be less common after treatment with cognitive therapy than after treatment with drug therapy alone, because ways of reacting to events having personal significance are changed in the process of cognitive therapy. Alleviation of depressed mood by pharmacotherapy relieves symptoms but does not alter the person's characteristic ways of structuring their experience.

Figure 20 shows how simple chemical or behavioural symptom relief at point 1 could leave the underlying depressogenic cognitions (3), such as impossible standards, unchallenged. There is then the possibility of further depressions, where events will again be interpreted negatively (2). Furthermore, there will be undesirable consequences if negative interpretations of the immediate external events or circumstances are not modified. Critical events or changes, which may have started the depressive process and which, through negative interpretations and feelings of helplessness,

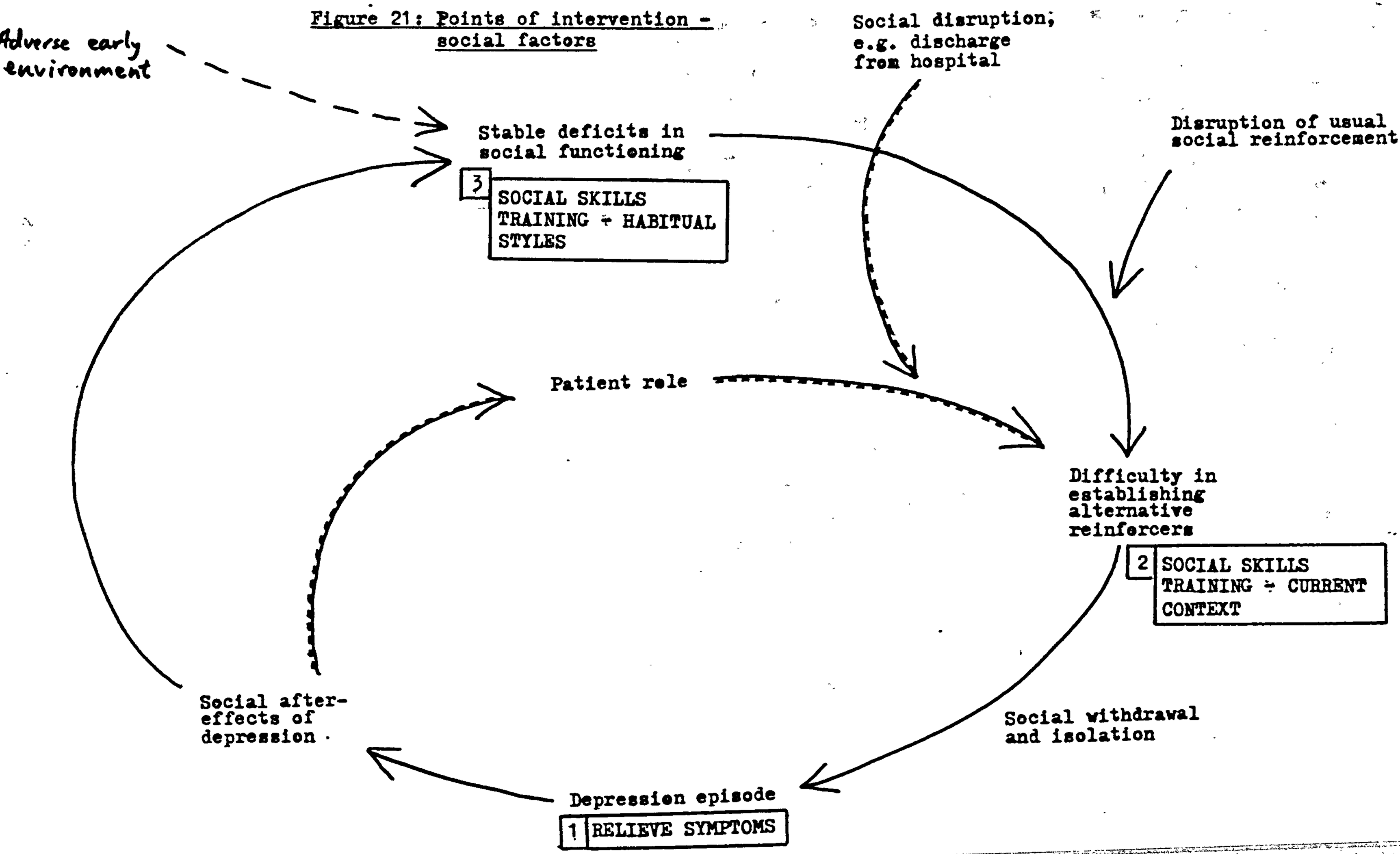
have then become compounded or aggravated, must be re-costrued if they are to be tackled at all.

Then again, the experience of depression may leave an after-effect, whereby mood changes which may actually be in the normal range, are interpretated as the start of a new depression. This leads again to feelings of helplessness and depressive behaviour, which then may turn into an early relapse. The figure also emphasizes the way that the different stages of intervention move away from the immediate point of emotional crisis, and deal more with the internal and external vulnerability factors which have contributed to the depression occurring.

Figure 21 shows how the stages of intervention might work with regard to the social factors. In the work by Beck (e.g. Beck et al, 1979; Kovacs and Beck, 1978), the social factors are not clearly differentiated from the cognitive ones, and are not dealt with in such detail as they are here. Beck's model is essentially cognitive. However, it is helpful to deal with them separately, in order to clarify their role and the way in which cognitive therapy acts on them.

At stage 1, as in the cognitive cycle, symptom relief is the aim. If it were possible to separate two types of depression, one mainly cognitive and one mainly social, the interventions at stage 1 would be identical. If the social cycle is modelled on the cognitive cycle, then intervention at stage 2 would work on the current situation of social loss, facilitating the re-establishment of social reinforcers. If this stage were not carried out, there would be the possibility, discussed in Chapter One, of a "patient role" being adopted (Lewinsohn, 1974; Mechanic, 1986). This, in

Figure 21: Points of intervention - social factors



turn, may contribute to the "revolving door" phenomenon of repeated discharge and readmission to hospital.

However, to afford real "inoculation" against further depression contingent on disruption in the social sphere, the client's characteristic ways of interacting must be challenged (3), for example, substituting an assertive for a submissive style. This would enable clients to establish relationships in which they feel more confident and are better able to adjust to changes.

Research supports the suggestion that cognitive therapy adds a crucial dimension to the treatment of depression, while showing pharmacotherapy to be effective for immediate symptom relief. The best form of treatment probably involves a combination of pharmacotherapy and cognitive therapy (e.g. see Blackburn, Bishop, Glen, Whalley and Christie, 1981; Blackburn and Bishop, 1983; Weissman, Prusoff, Dimascio, Neu, Goklaney and Klerman, 1979).

6.3 IMPLICATIONS OF THE PRESENT WORK, FOR THERAPY

The Cognitive Study found negative cognitions to be associated with both the depressed state, and vulnerability to depression. The use of records of negative thoughts, and practice in counteracting these, is an important part of cognitive therapy. Self-critical thoughts were identified early on (Beck, 1963) as part of the distressing cognitive syndrome within depression. The role of training patients to challenge self-critical thoughts, in terms of reducing on-going depression, and lessening the chances of relapse, is clear.

The precise interrelation of different cognitive factors is, as yet, less clear. For example, it is possible that causal attributions are secondary to other cognitive processes. If people evaluate themselves negatively, then they are likely, also, to evaluate the causes of their troubles as being due to personal inadequacy. Firth-Cozens and Brewin (1988) found that causal explanations of life events changed during cognitive therapy and exploratory therapy. However, the mean scores on the Internality dimension were close to the mid-point of the scale. Nor did they change significantly during therapy. Firth-Cozens and Brewin found large individual differences in attributions and in how patients responded to therapy. They called for case studies of reattribution processes to shed further light on the subject.

Dysfunctional attitudes were found to be particularly associated with vulnerability to depression. Dysfunctional attitudes have been found to remain after recovery from depression (Eaves and Rush, 1984) when not treated with

cognitive therapy. Simons et al (1986) found reduction in dysfunctional attitudes to be associated with lower relapse rate in a one year follow-up of patients who had received cognitive therapy and/or pharmacotherapy. Cognitive therapy itself was also associated with lower relapse rate. Hence, the findings on impossible standards are consistent with earlier work, and with the component of cognitive therapy aimed at modifying dysfunctional attitudes.

It was seen earlier that dysfunctional attitudes have been suggested to be associated with psychopathology in general, rather than only with depression (Kendall et al, 1986). Additionally, Weissman and Klerman (1977) found evidence of greater neuroticism in those patients who, after an acute episode of depression, became chronic sufferers. In the present work, state of anxiety was found to be strongly related to dysfunctional attitudes, as was vulnerability to, but not state of, depression. In view of the above considerations, the relationship between neurotic states and vulnerability to depression needs further clarification. If cognitive therapy has its preventive effects on relapse by modifying neuroticism, then primary preventive forms of cognitive therapy may prevent or reduce the impact of first episodes of acute depression by the same means. It could be targeted at those who register highly on relatively simple measures of neuroticism such as the Eysenck Personality Questionnaire (Eysenck and Eysenck, 1975).

A second tool for primary prevention is the short version of the Beck Depression Inventory, specifically designed as a screening instrument for use in community general practices (Beck and Beck, 1972). There is a need for the assessment of the usefulness of such instruments in this

setting, in their ability to catch people at an early or non-clinical level, and thereby to reduce the incidence of hospital attendance for depressive states. It will be clear, from the description of cognitive therapy, that it is an intervention which not only deals with the cognitive distortion (how to tease out of a distorted and painfully emotional perception of a real problem, its specific components - which is part of problem-solving), but also teaches skills necessary to overcome the problem in behavioural terms.

The second set of research questions concerned social support. As has been mentioned above, one of the goals of cognitive therapy is to improve interpersonal skills. However, it is as yet unclear how much of this deficit tends to exist before the initial depression, and how much it is a result of being depressed and of the disruptive effect of events which have contributed to the depression. However, there were indications of relatively stable social difficulties in people prone to depression, particularly low self-confidence. Cognitive therapy contains elements which enhance interpersonal skills and raise self-esteem. Jackson, Moss and Solinski (1985) reviewed outcome studies of social skills training for unipolar non-psychotic depression, and found it to be as effective as pharmacotherapy. This suggests that a social skills element in any therapy for this type of depression is important.

The Life Events Study, in the present work, found difficult life events to be associated with depression episodes. Other researchers have suggested that difficult events or circumstances which precipitate or contribute to depression often involve disruption of social support or social

roles (Brown and Harris, 1978; Oatley and Bolton, 1985).

People who have difficulties of the type outlined by Brown and Harris (1978), Brown et al (1986) and Oatley (1984), namely housing difficulties, poor environment, unemployment, lack of social support (particularly in a crisis) have been found to have a high risk of developing clinical depression. The present work produced evidence consistent with these findings. People who have few resources, through lack of socio-economic power and poor education, if depression prone, appear to be particularly prone to having serious difficult life events. Depression, difficulties, and negative attitudes arising out of such experiences, may become a vicious cycle of deprivation and despair.

Cognitive or cognitive-behavioural intervention, while appropriate, may not be sufficient to alleviate the effects of serious on-going material and social deprivation, where this is a contributing factor to depression. It is true that raising people's self-esteem and improving their interpersonal skills means they will, for example, have a better chance at job interviews, and will be more likely to confide in someone close (Brown et al, 1986). However, in cases where a whole neighbourhood is "depressed", and employment and housing are generally deficient, it is doubtful whether a purely individual approach will be most helpful. Conversely, it seems unlikely that simply improving living conditions would eradicate problems of low self-esteem, suspicion, and negative interpretation of events, where these have developed from bitter past experiences over a period of time. Preventive intervention seems likely to be most successful, in the long run, if it involves not only raising personal morale and training life skills, but also improving the material and

social environment generally.

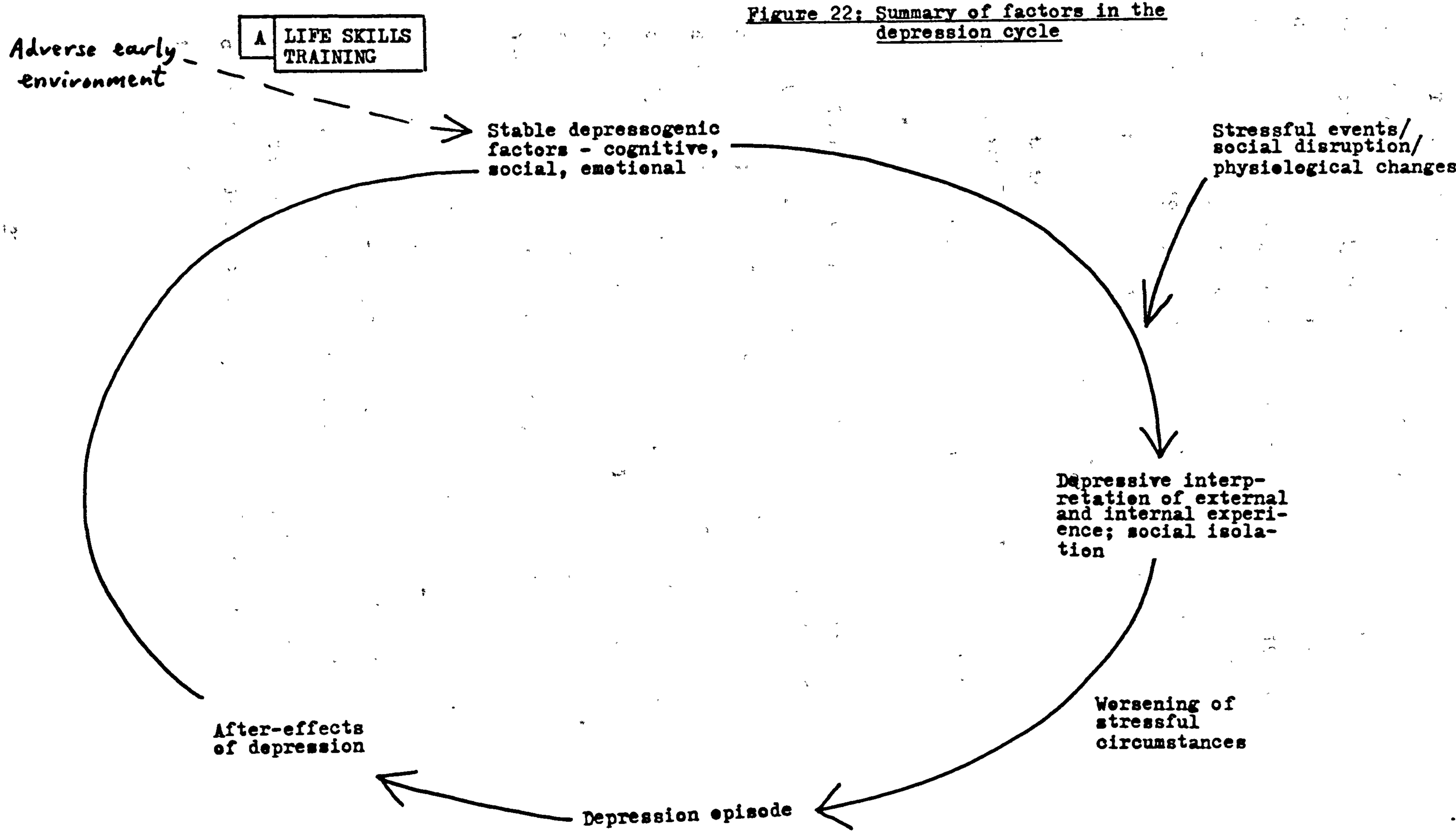
The final research question considered whether negative reactions to depression are universal, or whether they should be considered only in the context of past sufferers of depression at clinical level. Depression happens in social contexts. It affects, and is affected by, these contexts. This fact necessitates investigation of the reactions of others to a person who becomes depressed.

The results of the part of the present work which investigated people's reactions to depression, suggested that there may be universal negativity. These results were not reliable, however. As has been described earlier, cognitive therapy modifies the depressed person's reactions to depression in themselves, enables them to deal more contructively with their own emotions, and improves interpersonal skills. However, depression at lesser degrees is a common occurrence in the wider community. Concentration on late intervention for serious depression, while neglecting primary prevention, may be putting too much emphasis on the person who has become a hospital case. The situation is reminiscent of the experience of some bereaved people, who have the task not only of dealing with their own pain, but helping others to be able to deal with it before they can receive understanding and support. Primary prevention would be of help here, in that enabling people to deal with difficult emotions in themselves probably has a positive effect on the way they react to them in others. More research is needed into this question.

There are a number of reputable self-help manuals on depression (e.g. Lewinsohn, Munoz, Youngren and Zeiss, 1978; Blackburn, 1987) which offer multi-modal approaches to the problem. From the evidence in the research literature, and from the findings of the studies reported here, the multimodal approach must be the most effective one. The best hope of effective therapy must be to assess the importance and contribution of each of the factors found to be associated with depression, for each individual case, and to taylor the therapy programme to the individual's requirements. This need not necessarily involve individual therapy. If there were resources at a therapy centre, catering for diverse interventions, such as group social skills training, and cognitive techniques, then depressed patients (or non-depressed but identified vulnerable people) could be referred to appropriate groups or specialist counsellors as necessary. This approach would place special emphasis on initial psychological assessment. However, sufficient is now known, surely, about the aetiology of depression, for this to become a widely accepted practice.

An even more effective intervention would be to start training life skills in schools as a matter of routine. Such a programme would cover social skills, the interpretation and solving of problems of living, and dealing with difficult emotions. Figure 22 is a synthesis of all the factors of the depression cycle, as they may operate together. Point A is labelled as the time where early life skills training could avert the whole depression cycle.

Figure 22: Summary of factors in the depression cycle



The need for educational work, with the back-up of accurate research-generated information, on topics such as these, is indicated by the research findings that have been discussed in this thesis. People react more negatively to particular types of event (Paykel et al, 1969; Paykel, 1974); they hold authoritarian attitudes about mental patients (Cohen and Struening, 1962); they feel ashamed of mental-emotional problems (Farina et al, 1978); they view people with mental conditions uncharitably (Weiner et al, 1988); and they overreact to the experience of depression (Fennell and Campbell, 1984), endorsing statements such as "What's the matter with me - I should pull myself together and stop being pathetic".

To recap, the present work has supported the hypotheses that there are social and cognitive vulnerability factors for depression, provided further confirmation of the role of difficult life events in its precipitation, and has shown clearly that negative cognitions and poor social functioning accompany the depressed state itself. The studies of the after-effects of a depression episode were inconclusive, but in view of the high relapse rates, it may be a crucial factor.

Further work could be done, to assess general perceptions and understanding about depression. Perhaps more clinicians, today, take a largely social-learning view, but it is probable that this has not filtered through to the wider public. The problem of the tendency to lay blame needs to be dealt with. It is, in itself, depressogenic, and does not facilitate finding solutions.

Figure 23 is a speculative representation of healthy development, in terms of the cognitive, social, environmental and emotional factors which have been examined in this work. The early environment is free from undue stress on the family, and can provide supportive encouragement to grow. Stable schemata would be formed which would maintain inner strength and resilience. Such successful engagement is only possible in an environment where effort and exploration are encouraged, and the tasks set are challenging but achievable.

When stressful events, social disruption, or internal physiological changes occur, the schemata of health ensure that they are interpreted realistically and positively. However, where the stress is relatively major, such as redundancy or marital breakdown, there will probably be a period of adjustment. Functioning is altered by circumstances, but cognitive, social and emotional work is going on. This eventually leads to a consolidation, when the change has been fully integrated into the personal world, and a new way of life has come into being. In the ideal case, the new way of life is as rewarding and meaningful as the old one which was lost. The learning which will have occurred, through the negotiation of the difficult phase, will become part of the on-going schemata of well-being. Thus, a cycle of health, rather than of depression, is completed.

It is to be hoped that, in the future, "schemata for health" will be accorded the same degree of importance as are the "3 R's", in our education system. At present, it could be said that, in some of the industrialised societies of today, we are backward, because so many of us are, relatively speaking, psychologically illiterate.

Figure 23: Cycle of health

Favourable early environment

Inner strength - cognitive, social, emotional

Stressful events/ social disruption/ physiological changes

Realistic/positive interpretation of changes - social readjustment

Reorientation to changed situation/

Improvement in situation

Readjustment period

Integration of new experiences

It is surely wasteful of resources to wait until people have broken down as adults, and then, if they are lucky enough, provide them with cognitive therapy. By the time adult depression has occurred, all 3 stages of the depression cycle have been passed through, and some will be on their way to recurrent depressions. They will require 3 stages of therapy to undo all the damage which has occurred. People could be caught at a much earlier time, before they ever experience a serious depression, and even earlier, to prevent them developing the depressogenic cognitive and social styles.

A school-based projet could be carried out, in which children were given life-skills classes in small groups. It might also involve support and encouragement of parents, and would follow the participating children into adulthood. A control group of children, not receiving the intervention, could provide comparison data. This would be an interesting and tough test of the cognitive and social models of depression.

There is also a need for long-term studies of the outcome of different therapies. This would provide important data on the relative importance of the cognitive and social components of therapy, and those which address the experience of depression itself. The three stage model could be a basis for identification of the needs of different clients, in terms of level of intervention. It could also provide a framework for the gradual return of more severely depressed patients to independent and self-confident living, by providing the right level of support at the right time. This should relieve the acute services, as it would reduce some of the "revolving door" problem discussed earlier.

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APPENDIX 1

Additional information for the Cognitive Study

1.1 Further details of the Delusions-Symptoms-States Inventory (Bedford and Foulds, 1978)

First 4 questions:

1. Recently I have been breathless or had a pounding of my heart.

False	True	If true, this has upset me:-	
	A bit	A lot	Unbearably

2. Recently I have lost the use of one of my arms or legs for a time.

False	True	If true, this has upset me:-	
	Unbearably	A lot	A bit

3. Recently I have felt that an organization or group has been planning my downfall.

False	True	If true, how sure are you ?	
	Not very	Fairly	Certain

4. Recently I have been very excitedly happy for no particular reason.

False	True	If true, how often ?	
	Nearly always	Often	Seldom

1.2 Layout of items in Miskimins Self-Goal-Other Discrepancy Scale (Miskimins, 1967)

Sample item :

		1	2	3	4	5	6	8	9		
1. Intelligent	Self									Self	Ignorant
	Goal									Goal	
	Others									Others	

The subject places a cross at the point which describes him/herself at present, then another for the goal. The third placing was not required of subjects in the present study. It represents how the subject thinks others see him/her.

COGNITIONS QUESTIONNAIRE Respondent No. _____ Date _____

Below and on the following pages you will find a number of situations briefly described. Please try to imagine yourself in each situation as vividly as possible. Then choose one statement, from each group below, that you think would describe the way that you would respond if you were really in that situation. Try to choose one even if some do not fit exactly what you think you would do. To show which alternative you have chosen, put a ring round your choice, e.g.

(i) Extremely pleased
(ii) Moderately pleased
(iii) Slightly pleased
(iv) Not at all pleased

Choose one statement from each group of four. Do not think for too long before choosing.

A. YOU ARE HAPPY IN YOUR JOB AND GET ON WELL WITH THE OTHER PEOPLE THERE. YOU HEAR THAT THE BOSS IS LEAVING AND YOU WILL BE GETTING A NEW BOSS WHOM YOU KNOW NOTHING ABOUT.

1. On hearing this you feel:

(i) Anxious that he may not be as nice as your last boss.
(ii) Pleased; you like a change.
(iii) It doesn't affect you; you will wait and see what he is like.
(iv) Unhappy; having a new boss always disrupts routine.

2. When you think of what has happened you think:

(i) Trust me to be in the kind of job where the boss is always changing.
(ii) Everyone has to have a change of boss now and again.
(iii) Perhaps the old boss left because he did not like working with me.
(iv) Prospects here aren't so good; I'm not surprised people leave.

3. When you think of the future you think:

(i) It won't make any difference to me; I'll carry on the same as usual.
(ii) It will take some time to get used to a new boss, but we'll settle down after a while.
(iii) It will be difficult and take a long time to adjust to working with someone new.
(iv) I'll never get used to working with someone new.

4. When you think about your life in general you think:

(i) I never seem to have any control over what happens to me.
(ii) Things are bound to be changed over your head now and then.
(iii) It is rare for me to be faced with something uncontrollable like this.
(iv) I'm glad these unexpected changes don't happen too often - usually I have some say in what goes on.

5. When you consider what you can do you think:

(i) I could leave this job before he arrives.
(ii) I'll wait and see how I get on with him; we'll adjust given time.
(iii) I could try to find out what he's like and how best to get on with him.
(iv) No point in doing anything; either we get on or we don't.

B. YOU GO FOR AN INTERVIEW FOR A JOB THAT YOU VERY MUCH WANT. WHILE YOU WAIT TO GO IN FOR THE INTERVIEW YOU WAIT WITH SEVERAL OTHERS WHO HAVE APPLIED FOR THE SAME JOB. A WEEK LATER YOU HEAR THAT YOU HAVE GOT THE JOB.

1. On hearing this you feel:

(i) Extremely pleased
(ii) Moderately pleased
(iii) Slightly pleased
(iv) Not at all affected

2. When you think of what has happened you think:

(i) I was lucky to be picked instead of the others.
(ii) The other applicants can't have been much good.
(iii) I must have done best in the interview.
(iv) Obviously I was the person with the best qualifications and experience for the job.

First page of the Cognitions Questionnaire (Fennell & Campbell, 1984)

Appendix 1.4 - Diary

FIRST YOUR FEELINGS

On the scales below, circle the numbers which correspond to how you are feeling at this moment:-

TIRED	4 3 2 1 0 1 2 3 4	ENERGETIC
SAD OR DISCOURAGED	4 3 2 1 0 1 2 3 4	HAPPY OR HOPEFUL
DISLIKING OR IRRITATION	4 3 2 1 0 1 2 3 4	LIKING OR PLEASURE
ASHAMED, GUILTY OR DIS-SATISFIED WITH MYSELF	4 3 2 1 0 1 2 3 4	PROUD, PRAISEWORTHY OR PLEASED WITH MYSELF
NOT IN CONTROL	4 3 2 1 0 1 2 3 4	IN CONTROL
ANXIOUS	4 3 2 1 0 1 2 3 4	RELAXED

First version of the seven day diary. This page is a template, through which the scales for Day 1 are seen in the middle.

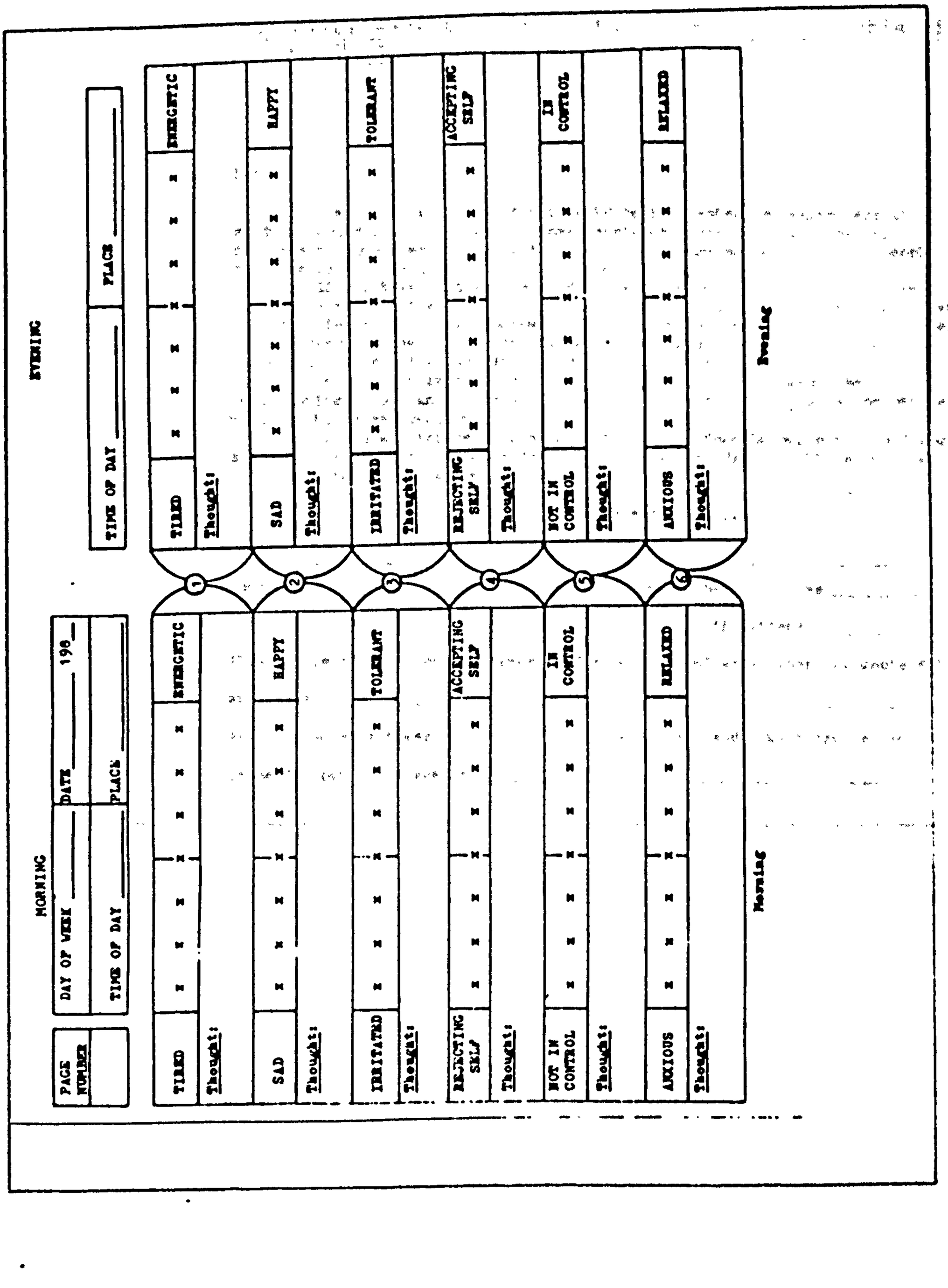
NOW YOUR SPECIFIC THOUGHTS

As you marked the scales, perhaps thoughts came into your mind. If they did, write the thought in the box beside the scale. If you marked the centre point of a scale (0) you need not write anything; or alternatively you may have had mixed thoughts. If so, write a thought on each side if you can. If there is no clear thought, say so.

I feel TIRED just now because:-	4 3 2 1 0 1 2 3 4	I feel ENERGETIC just now because:-
I feel SAD or DISCOURAGED just now, because:-	4 3 2 1 0 1 2 3 4	I feel HAPPY or HOPEFUL just now, because:-
I have a feeling of DISLIKING or IRRITATION just now, because:-	4 3 2 1 0 1 2 3 4	I have a feeling of LIKING or PLEASURE just now, because:-
I feel ASHAMED, GUILTY or DISSATISFIED WITH MYSELF just now, because:-	4 3 2 1 0 1 2 3 4	I feel PROUD, PRAISEWORTHY or PLEASED WITH MYSELF just now, because:-
I feel I am NOT IN CONTROL just now, because:-	4 3 2 1 0 1 2 3 4	I feel I am IN CONTROL just now, because:-
I feel ANXIOUS just now, because:-	4 3 2 1 0 1 2 3 4	I feel RELAXED just now, because:-

When template is removed, spaces for recording thoughts are revealed.

Appendix 1.4



One page of the Seven-Day Diary - second version

1.5

1) Letter sent to former attenders of the Psychiatric Day Unit

Dear

I am writing to ask if you would be interested in taking part in a study. I would like to interview some people who have had psychological problems at some time in the past. We are always trying to understand people's problems better, so that we can offer more possibilities for treatment.

If you take part in the study it will be confidential. I will give you some questionnaires, and ask you about some of the things that have happened in your life. We would meet somewhere convenient to you, perhaps at your home. I would probably need to see you two or three times altogether, as there is quite a lot to get through. At the end you will be paid £5.

People usually find the study interesting, and you would be contributing to our knowledge and helping us to improve treatments for people with psychological problems.

If you are interested, please fill in the form below, cut it off and send it to me in the stamped-addressed envelope provided. I will reply in a week or so to suggest a time for us to meet.

Yours sincerely,

Name_____ Telephone Number (Day-time)_____

(Evening, if different)_____

Please note here any dates, times of day, or days of week, when you would NOT be available:_____

Please also give times you would especially prefer, and I will try to use one of these for our first meeting_____

2) Letter and form sent to former attenders of the Psychology Clinic

Dear

My Department is involved in a research study which is aimed at understanding people's problems better so that we can improve our treatments. I am writing to ask if you would be interested in taking part in this study which will of-course be entirely confidential. If you agreed, a research psychologist would meet you somewhere convenient, perhaps at your home, and would ask you about some of the things that have happened in your life. You would also be asked to fill in some questionnaires. It would probably be necessary for her to see you on two or three occasions as there is quite a lot to get through.

At the end, to compensate you for your trouble, you will be paid £5. People usually find the study interesting and you would have the satisfaction of knowing that you were helping us to help others.

If you are interested, please fill in the enclosed form and return it in the stamped addressed envelope provided. The research psychologist will then contact you in a week or so to suggest a time to meet.

With best wishes,
Yours sincerely,

pp
Head of Adult Psychology Services

****

Name_____ Mr Mrs Miss Ms (please circle one)

Address_____

_____

_____ Post Code_____

Day-time telephone number_____

Evening telephone number if different_____

****

To help me to ensure that I have a good cross-section of people in the study, please also fill in the personal details below.

****

Date of birth_____

Marital status (tick one) Married ____ Single ____ Separated ____

Divorced ____ Widowed ____

Occupational situation (tick one): Full-time ____ Part-time ____

Not working at present ____

If working, present occupation _____

If not working, usual occupation _____

****

Times when you would be available for interview: Please give as many times as you can, either week-days or if this is not possible, evening or weekend times: I will then choose one of these for our first interview:-

_____

_____

Please indicate whether you would be able to travel to the University, or whether you would require me to call at your home (Tick one):

University ____ Home ____

Many thanks. You will hear from me soon.

****

Appendix 16: Type of treatment received in the past by recovered subjects

Past Treatment of Recovered Subjects

Subject	Previous Medication	ECT	Psychotherapy
45	Tricyclic antidepresssant	No	No
46	ditto	No	No
48	ditto	No	No
52	ditto	No	Behaviour Therapy
55	ditto	Yes	Cognitive Therapy
56	ditto	No	No
58	Benzodiazepine for sleep	No	No
59	Tricyclic antidepressant	No	Cognitive Therapy Relaxation Training Anxiety Management
60	No	No	Behaviour Therapy
61	Tricyclic antidepressant; Lithium	No	Cognitive Therapy
62	Tricyclic antidepressant	No	No
63	MAOI; Benzodiazepine; Prochlorperazine	No	Relaxation Training
64	Tricyclic antidepressant	No	Brief Cognitive Therapy & Relaxation
65	ditto	No	Behaviour Therapy Cognitive Therapy
66	ditto	No	Cognitive Therapy

Appendix 1.7 - Demographic Details

Demographic Details of Community Subjects

1

R	Sex	Age	Marital Status	Own Occup Current	Spouse's Occup	Own Last Occup	Education
5	F	18	Sing	F/T Student	XXX	XXX	Tech
6	F	19	Sing	F/T Student	XXX	XXX	Tech
7	F	31	M	Mother	S-Emp Plumber	XXX	Univ
8	F	49	M	Not working	Bank Manager	XXX	School
9	F	35	Sep	Mother/Student	XXX	Receptionist	Univ
10	F	63	M	Retired	Social Worker	Health Visitr	Dipl
11	F	60	M	P/T Secretary	Junior Exec.	XXX	Highrs
12	F	65	Div	Retired	XXX	Social Worker	Dipl
14	F	21	Sep	Shop Assistant	XXX	XXX	Tech
15	M	44	Div	F/T Student	XXX	Clerk	Univ
16	M	18	Sing	F/T Student	XXX	XXX	Univ
17	F	25	M	Mother	Junior Exec.	XXX	Tech
18	M	28	M	Junior Exec	Mother	XXX	Univ
19	M	33	M	Clerk	Small shop Man'r	XXX	School
20	F	38	Sep	Mother	XXX	Social Wrkr	Dipl
21	F	38	Sep	Mother	XXX	Secretary	Dipl
22	F	22	M	F/T Cleaner		XXX	Tech
23	F	57	M	P/T Waitress	On benefit	XXX	Univ
24	F	44	Sep	Not working	XXX	Social Wrkr	Dipl
25	F	26	M	School teacher		XXX	Dipl
26	F	38	Sep	Mother	XXX	Secretary	Dipl
27	F	34	Div	Receptionist	XXX	XXX	Typng
28	F	61	M	Retired	Rail porter	Shop Asst	School
47	F	51	M	Not working	Red'nt Manual	Clerk	School
49	F	62	M	P/T Clerk		XXX	School
50	F	26	M	Mother	Mid Managr	Cashier/Buyr	Tech
51	M	28	Div	Not working	XXX	Shop Asst	Tech
53	F	42	M	P/T Cashier	Bank Manager	XXX	School
54	M	40	M	Rail Porter	Mother	XXX	School
57	M	31	M	Accountant	Mother	XXX	Degree

Note: Occupations have been disguised to ensure confidentiality.
Details of the other two subject groups are shown overleaf.

Demographic Details of Currently Depressed Patients

R	Sex	Age	Marital Status	Current Occupation	Spouse's Occupation	Own Last Occupation	Education
29	F	35	Div	Mother	XXX	Vol. Worker	School
30	F	54	Sep	Not Working	XXX	Clerkess	School
31	F	31	M	Mother		Factory	School
32	M	54	M	Not Working	Shop Asst	Rail Porter	School
33	F	42	M	Not Working	Red't Manual	Factory	School
34	M	59	M	Not working		Bricklayer	School
35	F	46	M	Not working		Clerk	School
36	M	27	Sep	Not working	XXX	Factory	School
37	F	60	Sing	Not working	XXX	Receptionist	School
38	F	51	M	Not working	Clerk	Receptionist	School
39	F	59	Div	Not working	XXX	Shop Asst	School
40	F	68	M	Retired	Rail Porter	Small shop mr	School
41	F	22	Sing	Not working	XXX	Factory	School
42	F	30	Sing	Not working	XXX	Sm Shop Mgr	School
43	F	54	M	Not working	Red't manual		School
44	F	47	M	Not working	Shift work	Vol Worker	School

Demographic Details of Recovered Subjects

R	Sex	Age	Marital Status	Current Occupation	Spouse's Occupation	Own last Occupation	Education
45	F	33	M	Mother	S-Empl painter	Shop Asst	School
46	F	51	M	Small shop man'r	Bricklayer	XXX	School
48	F	25	Div	Receptionist	XXX	XXX	Highrs
52	M	53	M	Not working		Junior Managr	School
55	F	46	Wid	Nursing Officer	XXX	XXX	Univ
56	F	37	M	Mother	Rail Stn Master	Shop Asst	School
58	F	64	Wid	Retired	Mid. Manager	Receptionist	School
59	M	31	M	Architect	Mother	XXX	Univ
60	F	51	Sing	Shop Asst	XXX	Catering Asst	Univ
61	F	37	M	Mother	Mid. Manager	Small shop Mr	Univ
62	F	58	Sing	Recep/Controller	XXX	XXX	School
63	M	31	Sep	Rail Porter	XXX	XXX	School
64	M	34	M	Bank Manager	XXX	XXX	Univ
65	F	32	M	Mother	Insurance Agent	Shop Asst	Tech
66	M	30	Sing	Shop Assistant	XXX	XXX	Univ

CONSENT FORM

I agree to take part in the study on thoughts, emotions and experiences. I have been fully informed of its aims and purpose. I understand that any information I give about myself will be kept confidential, and access will be restricted to the investigators. It will not be revealed to any other person, neither will large blocks of my information, even without my name or address, be seen, unless I give specific consent for either of these things to happen.

Signature..... _____

Respondent Number.. _____

Date..... _____

1.9 Delusions-Symptoms-States Inventory: States of Anxiety and Depression (Bedford and Foulds, 1978c)

Anxiety item:

Recently I have worried about every little thing.

False | True | If true, this has upsbt me: A bit | A lot | Unbearably

Depression item:

Recently I have been so miserable that I have had difficulty with my sleep.

False | True | If true, this has upset me: Unbearably | A lot | A bit

Appendix 1.10 Depression Proneness Questionnaire given to student subjects.

D.P.Q.

The following questions are about how often in your life you may have been troubled by moods of depression. This varies greatly between people, although mild depression is quite common.

1. **Looking back over MOST OF YOUR LIFE, how often would you say you have had periods of feeling depressed, sad, gloomy, hopeless, low, down in the dumps, "don't care any more", or irritable ? (Please circle your answer):-**

Very rarely	Rarely	Now and again	Often	Very often

2. **In this second question, please try to judge how often you have had a period of depression which:-**

I) Lasted more than a week,

AND II) For which you would say at least ONE of the following:-

a) You had help from someone for your depression (doctor, therapist, counsellor),

OR b) You took medication for the depression,

OR c) The depression noticeably affected how you coped with everyday things, such as your work, at school, at home, or socially:-

i) During the past five years, how often have you had such a period ? (Please circle your answer):-

At some time in every one of those years	In four of the past five years	In 2 or 3 of the past five years	In one of those years	In none of those years

ii) In the period of your life BEFORE the past five years, how often have you had such a period ?

Not at all	Maybe in one year	In 2 or 3 of those years	In several of those years	In almost every year since about age 10

Appendix 1.11 Letters accompanying sets of questionnaires delivered to students.

Dear Student,

I am conducting a study on how much students are affected by events that may happen during their time at University. Stresses of various kinds affect academic work sometimes, by interfering with concentration or motivation. If you should encounter problems while studying at St.Andrews, please do not hesitate to contact one of the sources of help available. These are listed in the booklet "Help" published by the Students' Association. Many problems can be sorted out most easily at an early stage.

I am a Post-Graduate in the Psychology Department, and this study is part of other work, most of which has been carried out with residents of Fife as participants. In about 6 weeks' time you will receive a second questionnaire booklet of about the same length as this. Your co-operation is greatly appreciated, and your answers will be treated as strictly confidential. Each booklet has a special number, but you do not have to put your name on it, so you will be anonymous. You will see the same number on the second booklet when you receive it in 6 weeks' time. It is important that I match up the two sets of booklets by their number. However, once the matching has been done, I will destroy the list of names, and only keep note of the age and sex of each participant. Participation in the study is entirely voluntary, but the more participants there are, the stronger the conclusions I will eventually be able to draw from the results.

Please return the booklet by placing it in the addressed envelope provided, and then you can either:-

1. Bring it to next Wednesday's Psychology lecture, OR -
2. Post it through internal mail at your hall of residence, or at another post box (e.g. in the library). No stamp needed; OR -
3. When you come into the Psychology Department for a practical, place the envelope in the box with my name on it. This will be on the windowsill on your right as you come into the building.

You will find five questionnaires in the following pages. Please complete them as soon as you can and, if possible, return the booklet within one to two weeks. Thankyou for your help.

Susan Holttum.

Appendix 1.11, Letter accompanying second set of questionnaires to students.

Dear Student,

Thankyou very much for taking time to complete the first set of questionnaires sent to you in week 3 of term. Here is the second set. You will be pleased to know that it is shorter, and I hope that you will be able to devote a few minutes to it. You will recognize two of the questionnaires from last time. The one headed "D.S.S.I." is included in case your level of stress has changed. The one headed "D.P.Q." is included because it is a new questionnaire, and I have to check that it is reliable. Once again your answers will be treated as strictly confidential. When I receive the second questionnaire sets back, I will match them to the first set by their numbers, and then destroy the list of names, so there will be no record of who returned which set of results. As before, participation in the study is entirely voluntary, but I hope that you will also complete these questionnaires, as I will be able to draw most from the results if I have a complete set from each participant. There will not be any further requirements from you.

The arrangements for returning the questionnaires are similar to the previous methods. Place the questionnaire set in the envelope provided, and either post it to me through internal mail, or, when you have to visit the Psychology Department, place it in the box on the windowsill.

You will find four questionnaires in the following pages. Again, please complete and return them as soon as you can, or make sure you return them by the end of term. Thankyou very much for your help.

Susan Holttum

APPENDIX 2

Additional information for the Social Factors Study

Appendix 2.1 Personality Deviance Scale (Bedford and Foulds, 1978b)

First 3 items:

1. Most of my life I would have liked to get my own back on someone.

Very often Often Seldom Never

2. Most of my life I have been content to act in a very humble way.

Never Seldom Often Nearly always

3. Most of my life I have thought that people will tell the truth, even if it gets them into trouble.

Nearly always Often Seldom Never

Appendix 2.2

SOCIAL SUPPORT MEASURE (SSM)

R. Number _____ Date _____

1a) Do you have one or more people you usually confide in - who you are very open with, at present ? (Tick your answer please) NO - NOT REALLY ☐ YES - ONE ☐ YES - 2 OR MORE ☐

1b) If YES, to (a), which of the following is the person ? (If more than one confidant, please answer for the person you see most often and feel closest to):

(Please tick):

SPOUSE ☐ CLOSE MALE FRIEND ☐ CLOSE FEMALE FRIEND ☐ OTHER (Specify) _____

1c) If YES to (a), please indicate how often you usually have some kind of contact with the person (if more than one person, do this for the same one as in (b)):

(Please tick):

ONCE A WEEK OR MORE ☐ ABOUT ONCE EVERY 2 WEEKS ☐ ABOUT ONCE EVERY 3 MONTHS ☐ ONCE IN 6 MONTHS, OR LESS ☐

1d) If YES to (a), please indicate which of the following ways you usually keep in contact with the person: (Tick):

MEETING THEM ☐ LIVING IN SAME HOUSE ☐ LETTERS ☐ TELEPHONE ☐

2) Is there a group you go out with regularly, do things with, or regularly meet socially, outside your work hours ? (or outside place of regular daytime activity):

NO YES If YES, please specify: _____

3) What is your relationship to the people at work ? (or in your regular daytime activity) ..... : Please tick any of the following which applies:

a) I know 2 or more of them closely ☐ b) I know one of them closely ☐
c) I don't know any of them closely ☐ d) I usually speak to one of them ☐
e) I usually speak to 2 or more of them ☐ f) I usually don't speak to any of them ☐
g) My work etc doesn't bring me into contact with people regularly ☐

4) Are there any other people or groups important to you, that have not been mentioned ?

YES NO If YES, who ? _____

_____

5) Are you expecting any changes in social contact, in the next 3 months or so ?

NO YES If YES, please specify briefly: _____

_____

6) How satisfied are you with your social life in general ? (Please tick):

VERY UN-SATISFIED ☐	FAIRLY UNSATIS-FIED ☐	NEITHER ONE NOR OTHER ☐	FAIRLY SATISFIED ☐	VERY SATISFIED ☐

Appendix 2.3 Social Support Questionnaire for Students

S.S.Q.

The following questions are about the opportunities you have had for contact with others recently. This may have undergone changes with the start of the academic year. However, please concentrate on only the weeks since you filled in the first set of questionnaires. Remember, when you are answering the questions below, that no two people have the same experiences, and there are no right or wrong answers.

Please answer the three questions which follow each of the eight numbered activities shown in boxes:-

1) Taking part in group activities as part of academic classes (e.g. group discussions, sharing resources with more than one other person, etc)

a) How much need have you felt for this kind of opportunity, in the time since you did the first set of questionnaires ? (Please circle answer):-

Little or none	A little	So so/ unsure	A lot	A great deal

b) How happy have you felt with the amount of opportunity you have had for this activity ?

Very unhappy	Unhappy	So so/ unsure	Happy	Very happy

c) How happy have you felt about your actual experience of this activity ? - If you have not had an actual experience of this, circle "n/a" :-

Very unhappy	Unhappy	So so/ unsure	Happy	Very happy

n/a

2) Meeting others on a one-to-one basis in academic classes

a) How much need have you felt for this kind of opportunity, in the time since you did the first set of questionnaires ?

Little or none	A little	So so/ unsure	A lot	A great deal

b) How happy have you felt with the amount of opportunity you have had for this activity ?

Very unhappy	Unhappy	So so/ unsure	Happy	Very happy

c) How happy have you felt about your actual experience of this activity ? - If you have not had an actual experience of this, circle "n/a" :-

Very unhappy	Unhappy	So so/ unsure	Happy	Very happy

n/a

3) **Obtaining practical help, information or advice from someone, for a problem in your academic work**

a) How much need have you felt for this kind of opportunity, in the time since you did the first set of questionnaires ?

Little or none | A little | So so/ unsure | A lot | A great deal

b) How happy have you felt with the amount of opportunity you have had for this activity ?

Very unhappy | Unhappy | So so/ unsure | Happy | Very happy

c) How happy have you felt about your actual experience of this activity ?
- If you have not had an actual experience of this, circle "n/a" :-

Very unhappy | Unhappy | So so/ unsure | Happy | Very happy

n/a

4) **Obtaining emotional support or encouragement from someone, when you had a problem in your academic work**

a) How much need have you felt for this kind of opportunity, in the time since you did the first set of questionnaires ?

Little or none | A little | So so/ unsure | A lot | A great deal

b) How happy have you felt with the amount of opportunity you have had for this activity ?

Very unhappy | Unhappy | So so/ unsure | Happy | Very happy

c) How happy have you felt about your actual experience of this activity ?
- If you have not had an actual experience of this, circle "n/a" :-

Very unhappy | Unhappy | So so/ unsure | Happy | Very happy

n/a

5) **Taking part in group activities outside academic classes (e.g. club meetings, residence house meetings, team sports, evening classes, church meetings, etc)**

a) How much need have you felt for this kind of opportunity, in the time since you did the first set of questionnaires ?

Little or none | A little | So so/ unsure | A lot | A great deal

b) How happy have you felt with the amount of opportunity you have had for this activity ?

Very unhappy | Unhappy | So so/ unsure | Happy | Very happy

c) How happy have you felt about your actual experience of this activity ?
- If you have not had an actual experience of this, circle "n/a" :-

Very unhappy | Unhappy | So so/ unsure | Happy | Very happy

n/a

6) Meeting others on a one-to-one basis outside academic classes

a) How much need have you felt for this kind of opportunity, in the time since you did the first set of questionnaires ?

Little or none	A little	So so/ unsure	A lot	A great deal

b) How happy have you felt with the amount of opportunity you have had for this activity ?

Very unhappy	Unhappy	So so/ unsure	Happy	Very happy

c) How happy have you felt about your actual experience of this activity ?
- If you have not had an actual experience of this, circle "n/a" :-

Very unhappy	Unhappy	So so/ unsure	Happy	Very happy

n/a

7) Obtaining practical help, information or advice from someone for a problem outside your academic work

a) How much need have you felt for this kind of opportunity, in the time since you did the first set of questionnaires ?

Little or none	A little	So so/ unsure	A lot	A great deal

b) How happy have you felt with the amount of opportunity you have had for this activity ?

Very unhappy	Unhappy	So so/ unsure	Happy	Very happy

c) How happy have you felt about your actual experience of this activity ?
- If you have not had an actual experience of this, circle "n/a" :-

Very unhappy	Unhappy	So so/ unsure	Happy	Very happy

n/a

8) Obtaining emotional support or encouragement from someone, when you had a problem outside your academic work

a) How much need have you felt for this kind of opportunity, in the time since you did the first set of questionnaires ?

Little or none	A little	So so/ unsure	A lot	A great deal

b) How happy have you felt with the amount of opportunity you have had for this activity ?

Very unhappy	Unhappy	So so/ unsure	Happy	Very happy

c) How happy have you felt about your actual experience of this activity ?
- If you have not had an actual experience of this, circle "n/a" :-

Very unhappy	Unhappy	So so/ unsure	Happy	Very happy

n/a

APPENDIX 3

Additional information for the Life Events Study

Appendix 3.1.

Life Events Forming the Two Life Events Inventories

For meanings of symbols see notes overleaf

Events		LCUs
1) Started a course of higher education or training for the first time		34.8m
2) Significant achievement in higher education or training	[graduated]	34.8m
3) Significant difficulty in higher education or training	[failed]	44.0m
4) Start of a serious love relationship		***
5) Marriage		50.0
6) Time when your wife or husband was unfaithful		68.0
7) Marital separation		70.0
or break-up of love relationship		51.0
8) Divorce		75.0
9) Reconciliation in a marital		53.0
or love relationship		***
10) Serious problem related to sex		57.0
11) Started at first job		40.5m
12) Started your own business		***
13) Your own business ran into difficulties	[failed]	44.0m
	[major adjustment]	43.8h
14) Unemployment	[of head of household]	68.0
15) Significant change in your work situation	[same line of work]	31.0
	[new line]	46.0
	[conditions, same job]	31.0
	[promotion/change of responsibilities]	39.0
16) Retirement		54.0
17) (Married women) Time when your husband was not working		68.0
18) Move to a different town		42.0
	[+new neighbours]	18.0
19) Purchased your own house (took out a mortgage)		40.0
20) Significant change in your income (by 25% or more)	[increase]	35.0
	[decrease]	62.0
21) Debt beyond means of repayment		66.0
22) Homeless period	[hostel/sleeping rough]	51.0
23) Prison sentence		75.0
24) Physical illness or injury needing hospital treatment		
	[serious]	65.0
25) Sudden and serious impairment of vision or hearing		59.0
26) You sought help for psychological problems		***
27) Suicide attempt		***
28) Serious problems related to alcohol |		59.0
29) Serious problems related to drugs |		59.0
30) Loss of religious faith | [major change in church activities]		32.4h
31) Gain in religious faith |		
32) (Women) Miscarriage		65.0
33) Birth of son or daughter |	[birth]	42.0m
34) Adoption of a child | [gain of immediate family member]		43.0
35) Your children were in the care of others for a time		54.0
36) A son or daughter left home		44.0
37) Someone close to you started drinking heavily | [immediate		
38) Someone close to you had problems with drugs |	family]	65.0
39) Someone close to you attempted suicide	[immediate family]	66.0
40) Someone close to you was physically ill or injured needing hospital treatment	[immediate family, serious]	59.0
41) Someone close to you sought help for their psychological problems	[major change in health of family]	46.6h
42) Someone close to you was sent to prison	[immediate family]	61.0
43) Loss of someone close to you through death	[spouse]	86.0
	[immediate family]	69.0
	[close friend]	55.0
44) Any other important events in the past, that have not been mentioned ?		

Appendix 3.1

Additional Events Included in the RECENT events Inventory

45)	Trouble with your superiors at work	40.0
46)	Quarrel with your neighbours	26.0
47)	Holiday	29.0
48)	Involvement in a fight	38.0
49)	Conviction for a minor offence	34.0
50)	(Women) Pregnancy	49.0
51)	Trouble or behaviour problems in your children	49.0
52)	Addition to your household (e.g. a relative came to live with you) [new immediate family member]	43.0
53)	Increased tension or arguments with people close to you [spouse]	55.0
	[other immediate family e.g. children]	43.0
	[other relatives]	38.0
54)	Loss of a pet	***
55)	Any other events in the last 12 months, that have not been mentioned ?	

Notes: (1) LCU = Life Change Units. Majority of these are from Cochrane and Robertson (1973).
(2) "m" = LCU score is based on Masuda and Holmes (1967)
(3) "h" = LCU score is based on Holmes and Rahe (1967)
(4) For calculation of (2) and (3), see text.
(5) *** = no score available for these items - see text.

Appendix 3.1 ctd

Desirability/Undesirability of Life Events

DESIRABLE (+)

Starting a course of higher education/training
Significant achievement in course
Marriage
First job
Started own business
Change to better work conditions/promotion
Move to better residence
Significant increase in income
First birth of a son/daughter
Adoption of child
Holiday *

UNDESIRABLE (-)

Significant difficulty in course of higher education/training
Wife or husband was unfaithful *
Marital separation
Break-up of love relationship
Serious problem related to sex *
Own business in difficulties
Unemployment
Change in work to worse conditions/demotion
Move to worse residence
Significant decrease in income
Debt beyond means of repayment
Homeless period *
Prison sentence
Serious physical illness/injury
Sudden and serious impairment of vision/hearing *
Serious problems related to alcohol or drugs *
Miscarriage *
Children in care *
Someone close having problems with drink or drugs *
Someone close attemted suicide *
Someone close physically ill *
Someone close sought help for psychological problems *
Someone close sent to prison
Loss of someone close through death
Trouble with superiors at work
Conviction for minor offence
Trouble/behaviour problems in your children *

AMBIGUOUS (0)

Change in work to similar conditions/level of responsibility
Retirement
Move to similar living conditions
Purchased house/took out mortgage *
Lost or gained religious faith *
Birth of child other than first
Son or daughter left home
Quarrel with neighbours *
Involvement in a fight *
Pregnancy
Addition to household (e.g. relative came to live)
Increased tension with close ones *

Note: * refers to those events allocated a sign by present author.
The rest are based on Myers et al (1974)

Appendix 3.2 Life Events Questionnaire given to students

L.E.Q.

The questions below are about changes or events that may have occurred recently. When you answer them, please think of the weeks since you filled in the first set of questionnaires, and compare them with the four weeks immediately before that.

1) HEALTH: Has your physical health been different recently, compared with the earlier part of term ? (e.g. changes in frequency of asthma, allergies, colds etc):-

My physical health is - (Please circle your answer)

Much worse Worse About the same Better Much better

2) LIVING SITUATION: Has your living situation changed recently, compared with the first part of term ? (e.g. better or worse relations with someone you live with):-

My living situation is -

Much worse Worse About the same Better Much better

3) FINANCE: Has there been any change in your financial situation recently ? (e.g. problems with grant intensified or cleared up, other changes in income):-

My financial situation is -

Much worse Worse About the same Better Much better

4) FAMILY: Have there been any changes recently in family relationships ? (e.g. major rift between you and a parent, parents' relationship changed for the worse or improved):-

Relations in my family are -

Much worse Worse About the same Better Much better

5) ACADEMIC: Have there been any changes to do with your academic work recently ? (e.g. the work became much harder or easier, change of course, etc):-

My academic work situation is -

Much worse Worse About the same Better Much better

6) OPPOSITE SEX: Has there been any change in an important relationship with someone of the opposite sex recently (e.g. start or end of a relationship, change in number of arguments with boy- or girlfriend, etc) ? :-

My relations with the opposite sex are -.

Much worse Worse About the same Better Much better

7) Have there been any other important changes recently, which have not been covered by the categories above ? :-

In other respects, my situation is -

Much worse Worse About the same Better Much better

APPENDIX 4

Additional information for the Mood Study

Appendix 4.1

List of 35 hypothetical situations presented in the study of emotion-word use

N 1	You have just managed to deal with a difficult problem in your work.
N 2	You are unable to deal with a problem in your work, and have to ask for help.
N 3	You have caught flu, and it is taking a long time to go away.
N 4	A friend has been making remarks lately, about how forgetful you are. One day, you find yourself walking down the street, and no matter how hard you try, you can't remember where you are going. The thought crosses your mind, that perhaps you might be suffering from some mental disorder.
N 5	You and your family return home from a holiday, to discover that your house has been swept away by a freak flood.
N 6	There is a birth in your near family.
N 7	You have just been elected president of a local club you belong to.
N 8	A friend has just told you in private that he/she is having problems with an important relationship, and is starting to explain some of the details.
N 9	Recently, you thought you had lost some money, but your bank manager has just written to tell you there was a mistake, and you are much better off than you had expected.
N 10	You have just heard that your neighbour has won £1000.
N 11	You entered a lucky-draw competition some months ago and forgot about it. One morning a letter arrives telling you you've won £1000.
N 12	A close friend has just told you they will soon be moving to a different town.
N 13	One day, while you are with a person you admire, he/she tells you he/she likes you.
N 14	You are reading a book about your favourite subject.
N 15	By accident, you have just spilt coffee over your friend's carpet.
N 16	An idea has come into your mind, and the more you think about it, the more you are convinced that no-one has ever thought of it before. The thought that perhaps you might be a genius, occurs to you.
N 17	You have just been narrowly missed by a car, which swerved at speed round the corner just as you were crossing.
N 18	While having a general turn-out and tidy-up at your living-place, you discover some forgotten fruit in a cupboard corner, and it is covered with mould.

N 19	You've just heard that your neighbour's house has been burgled.
N 20	You don't have the right bus fare, and the driver doesn't let you on. Then you see a slight acquaintance who doesn't notice you. It's been raining, and you fall in a muddy puddle. Finally you have arrived late at an appointment.
N 21	A new acquaintance has just asked your advice on a small matter. You are about to give it.
N 22	A new acquaintance has just made a joke about your appearance.
N 23	In a private setting, one of your friends is performing a very accurate impersonation of a difficult workmate.
N 24	You are awaiting a dental appointment, and have been told that you need several fillings.
N 25	You are in the yard of friends who keep a goat. You take out your handkerchief to blow your nose, and the goat pulls it away and eats it.
N 26	You are waiting in a supermarket queue. At the last minute, when you are about to go through the checkout, someone pushes in front of you and is about to be served. You are staring at this person's back.
N 27	You have just done a parachute jump for the first time in your life.
N 28	You have helped some friends to their gardening. You have now visited them again. They are thanking you entnusiastically for your help.
N 29	Your suit-cases are packed. The tickets are booked. You are just setting off on your dream holiday.
N 30	You are starting to prepare a meal for some friends you have invited round for the evening.
N 31	You have got into a heated discussion with a friend, over a political issue.
N 32	At a local club meeting, some members accuse an absent friend of yours, unfairly, saying he/she never does his/her duties. They want to vote your friend off the committee - you start to defend him/her.
N 33	You are discussing your favourite subject with a small group of people at an informal party. As one of them starts to give a point of view, you notice he/she has a severe stutter.
N 34	It has been raining heavily in the night. When you go toyour kitchen, you see water running down the wall.
N 35	You are lying in a hot bath at the end of the day.

Appendix 4.2

Full list of emotion words presented in the study of their use

1	STARTLED	___	MOVED	___	GAIETY	___
2	SLEEPY	___	WONDERING	___	DESPAIRING	___
3	ALIVE	___	SULLEN	___	HILARITY	___
4	THRILLED	___	BITTER	___	DISCOURAGED	___
5	RESENTFUL OF SELF	___	DELIROUS	___	DOWN-HEARTED	___
6	LITTLE	___	ELATED	___	HOPEFUL	___
7	HIGH	___	PLAYFUL	___	CERTAIN	___
8	PLEASED	___	HOSTILE	___	UNCERTAIN	___
9	FEELING GREAT	___	PART OF A CLUB	___	ANXIOUS	___
10	ADAMANT	___	NORMALITY	___	VACANT	___
11	DEFLATED	___	GLEEFUL	___	CONFUSED	___
12	HUMBLE	___	CALCULATING	___	CO-OPERATIVE	___
13	DISMAYED	___	SHAKY-KNEED	___	PASSIVE	___
14	FULL OF FUN	___	LONELY	___	INDIFFERENT	___
15	SECURE	___	JOYFUL	___	LIVELY	___
16	DESPERATE	___	REGRETFUL	___	FLABBERGASTED	___
17	AFFECTIONATE	___	WARM	___	RESERVED	___
18	DISGUST IN SOMEONE	___	SHATTERED	___	AT HOME	___
19	BORED	___	INTERESTED	___	BUZZING	___
20	ACCOMPLISHMENT	___	FURIOUS	___	SOBRE	___
21	NO FEELING	___	INDECISION	___	GOING MAD	___
22	EUPHORIC	___	MISERABLE	___	ACTIVE	___

Appendix 4.2 ctd

1	DISTRESSED	___	RELEASE	___	CLOSENESS	___
2	GRATIFIED	___	DISSATISFIED	___	PLEASED WITH SELF	___
3	LOVABLE	___	ACCEPTABLE	___	LIKE CELEBRATING	___
4	UNHAPPY	___	WISTFUL	___	GUILTY	___
5	EXCITED	___	MATURE	___	RESENTFUL	___
6	WARY	___	FLUSTERED	___	MUDDLED	___
7	NOT AT MY BEST	___	GRIEF	___	AMUSED	___
8	SELF-DIRECTED	___	SENSIBLE	___	FAILURE	___
9	SELF-PITY	___	RADIANT	___	LUCKY	___
10	SOLEMN	___	REPENTANT	___	WITTY	___
11	ATTENTIVE	___	HUMAN	___	CARING FOR SELF	___
12	CHILDISH	___	PRAISEWORTHY	___	VIGOROUS	___
13	INADEQUATE	___	FASCINATED	___	ACTIVE	___
14	ILL	___	EAGER	___	PLASTERED	___
15	REWARDED	___	PARSIMONIOUS	___	WORRIED	___
16	FINE	___	MISCHIEVOUS	___	DETACHED	
17	DISENCHANTED	___	UPSET	___	FEARFUL	___
18	POWERFUL	___	FULFILLED	___	REVULSION	___
19	ANNOYED	___	ABNORMAL	___	NON-STRESSED	___
20	DISLIKING	___	UNFRIENDLY	___	STUBBORN	___
21	ALIENATED	___	FORGETFUL	___	STRANGE	___
22	FORCED GAIETY	___	CURIOSITY	___	SUSPICIOUS	___

Appendix 4.2 ctd

1	BOUNCY	___	WRETCHED	___	HOPELESS	___
2	DISILLUSIONED	___	DEVASTATED	___	MOROSE	___
3	IMPORTANT	___	BETRAYED	___	DEPRIVED	___
4	CAREFREE	___	ROOTED	___	FATALISTIC	___
5	CONCERNED	___	FRANTIC	___	UNEASY	___
6	THANKFUL	___	PEEVED	___	UNKIND	___
7	GLAD FOR SOMEONE	___	RELIEVED	___	NERVOUS	___
8	CALM	___	FORGOTTEN	___	UNFORTUNATE	___
9	CAPTIVATED	___	EXHILARATED	___	COMMITTED	___
10	SCEPTICAL	___	DISMISSIVE	___	FREE	___
11	NON-COMMITTAL	___	POWERLESS	___	INVINCIBLE	___
12	MORONIC	___	SAD	___	ALONE	___
13	UNLOVED	___	FRIGHTENED	___	GENEROUS	___
14	NOT IN CONTROL	___	BLAMEWORTHY	___	ANGRY WITH SELF	___
15	NOT BOTHERED	___	KEYED UP	___	UNVIABLE	___
16	MISERLY	___	CONCERNED FOR SOMEONE	___	TENDER	___
17	CAN DEAL WITH IT	___	DETERMINED	___	INFERIOR	___
18	USEFUL	___	NOT COMMITTED	___	LONGING	___
19	AGREEABLE	___	CONCEITED	___	PLEASANT FEELING	___
20	SMUG	___	BIG-HEADED	___	ACHIEVEMENT	___
21	HESITANT	___	BRAVE	___	CONFIDENT	___
22	HUNGRY	___	PAIN	___	STUNNED	___

1	SCORNFUL	___	ECONOMY-MINDED	___	DISPLEASED	___
2	DISSATISFIED WITH SELF	___	NEUTRAL	___	VINDICATED	___
3	ADVENTUROUS	___	INTENT	___	SICK	___
4	HORRIFIED	___	DISAPPOINTED	___	BUOYANT	___
5	SOUR	___	VIRTUOUS	___	PERTURBED	___
6	STIFLED	___	JEALOUS	___	SELF-CONSCIOUS	___
7	CONTEMPT	___	RESPECTFUL	___	AT EASE	___
8	OK	___	OUT OF CONTROL	___	DEFIANT	___
9	BULLISH	___	ACCEPTING	___	CONSTRUCTIVE	___
10	DEVILISH	___	EVIL	___	ATTRACTIVE	___
11	NAUGHTY	___	PREJUDICED	___	FORGIVING	___
12	LOVING	___	CONFINED	___	SHY	___
13	GOOD	___	NORMAL	___	INCOMPETENT	___
14	RECEPTIVE	___	LIGHT-HEARTED	___	CLEVER	___
15	DEPRESSED	___	CHRISTMASSY	___	DISGUSTED	___
16	ANGRY	___	HUMOROUS	___	EGO-BOOST	___
17	LAZY	___	PATIENT	___	JOVIAL	___
18	PITYING	___	REPULSIVE	___	BAD	___
19	UNPLEASANT FEELING	___	TENSE	___	INTIMACY	___
20	PIG-HEADED	___	DISCONTENTED	___	CHEERFUL	___
21	PUZZLED	___	AMBIVALENT	___	KIND	___
22	LEISURELY	___	PERSONAL	___	SELF-SATISFIED	___

1	BOOZY	___	DELIGHTED	___	DISTASTE	___
2	CHILLED	___	WASHED OUT	___	ENVIOUS	___
3	TIRED	___	SURPRISED	___	INVOLVED	___
4	ANTICIPATION	___	ENTHUSIASTIC	___	ENTERTAINED	___
5	THWARTED	___	CONTENTED	___	APPROACHABLE	___
6	MOTIVATED	___	SORROWFUL	___	FLATTERED	___
7	STRESSED	___	DEPENDENT	___	IN CONTROL	___
8	PROUD	___	IMPERSONAL	___	FRUSTRATED	___
9	MORTIFIED	___	SHOCKED	___	GLAD	___
10	INCREDULOUS	___	ECSTATIC	___	REMORSEFUL	___
11	FED UP	___	APPRECIATED	___	LOST	___
12	PARANOID	___	PEACEFUL	___	RELAXED	___
13	INSECURE	___	COMPASSIONATE	___	HAPPY	___
14	INTIMIDATED	___	C'EST LA VIE	___	OVERCOME	___
15	SLUGGISH	___	AWED	___	JUBILANT	___
16	ON TOP OF THE WORLD	___	IRRITATED	___	USED	___
17	CHUFFED	___	HUMILIATED	___	DESOLATION	___
18	SATISFIED	___	IMPATIENT	___	RESPONSIBLE	___
19	UNRESPONSIVE	___	APOLOGETIC	___	CROSS	___
20	EMBARRASSED	___	SENTIMENTAL	___	CONSPIRATORIAL	___
21	COMPETENT	___	TROUBLED	___	ATTACHED	___
22	VALUED	___	COMPLETE	___	COLD	___

1	DISTRUSTFUL	___	AWKWARD	___	IMMEDIACY	___
2	PUNISHABLE	___	SOMBRE	___	HOMESICK	___
3	LOW	___	EXPECTATION	___	PANIC	___
4	ILL AT EASE	___	CAUTIOUS	___	SPECIAL	___
5	SELF-SUFFICIENT	___	HELPLESS	___	SERIOUS	___
6	EGO THREAT	___	TIGHT	___	CHALLENGED	___
7	DESERTED	___	URGENCY	___	BIG	___
8	WEAK	___	INDIGNANT	___	VULNERABLE	___
9	OVERWHELMED	___	WRATHFUL	___	STRONG	___
10	SELF-CONFIDENT	___	STUPID	___	SENSUAL	___
11	FRIENDLY	___	LIKING	___	APPREHENSIVE	___
12	ALERT	___	EMPTY	___	BLUE	___
13	IMPULSIVE	___	IRONIC	___	SUPPORTED	___
14	SCARED	___	NON-PLUSSED	___	LUNACY	___
15	DREAD	___	READY TO LAUGH	___	HALF-HEARTED PLEASURE	___
16	HARASSED	___	OPEN	___	WEIGHING	___
17	TRUSTFUL	___	CARING	___	HURT	___
18	WARM-HEARTED	___	NON-IMMEDIACY	___	AMAZED	___
19	STIMULATED	___	ENERGETIC	___	LOSS	___
20	NEEDED	___	SINGULAR	___	EFFORT	___
21	EXHAUSTED	___	FANATIC	___	DEFENSIVE	___
22	UNLOVABLE	___	ASHAMED	___	SYMPATHETIC	___

Appendix 4.3

Intercluster Similarity Coefficients for Solution 2 of Cluster Analysis

	1	2	3	4	5	9	10	13
2	2716							
3	3881	4126						
4	5352*	1098	3833					
5	7063*	2579	2680	4071				
9	8528*	1884	3914	7144*	6048*			
10	*0847	5750*	3430	*0330	1154	*0406		
13	6539*	2238	3695	5256*	4526	6559*	*0364	
14	*0696	5155*	2468	*0290	1043	*0390	7353*	*0272

Notes: 1) Assume all figure are preceded by "0."
2) Figure preceded by * are < .1
3) Figures followed by * are > .5
4) Clusters of 2 or less words not included