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**QUESTIONNAIRE AND PROJECTIVE MEASURES  
OF THE  
RELATIONSHIP BETWEEN IRRATIONAL BELIEFS  
AND  
SELF ESTEEM**

**by**

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## SYNOPSIS

The theories of Albert Ellis, known as Rational Emotive Therapy have been tested by means of correlations of measures of Irrational beliefs (measured by a modified Jones questionnaire) with measures of self esteem tested by the Rosenberg questionnaire. In addition Projective methods were used, to detect the patterns of Irrational beliefs by more covert methods. The Incomplete Sentence Technique, and the Thematic Apperception Technique of Murray were used. A cross correlation of the Rosenberg, Incomplete Sentences and Thematic Apperception Test material was used for a self esteem measure, extracted from the protocols of the last two measures. A pattern of correlations was found with convergent validity showing a correlation between high levels of Irrational beliefs and low levels of self esteem, most strongly for 'need for approval'. The scores from the Thematic Apperception Test cards were analysed to find out which cards were most powerful in detecting the relationship between irrational beliefs and self esteem. Questionnaire methods were convergently valid, and the projective methods were convergently valid to some extent, but without agreement between the two alternative forms of measurement, although some intercorrelation was found.

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## INTRODUCTION

Irrational thoughts lead to mental pain. This basic idea, first discovered by the ancient Greeks and Romans, has gradually developed into systems of therapy from the 1960's onwards. In his theory of irrational beliefs (Ellis(1962,1971)), Ellis claims to explain how these irrational beliefs cause mental pain. Previous attempts at validation have been by questionnaire, measuring the Irrational Beliefs and the association between these and measures of wellbeing such as self esteem. This study aims to replicate these questionnaire studies, and to investigate more implicit irrational beliefs by means of additional projective measures, and measure the association between them.

The beginnings of the idea that negative affect could be induced or controlled by the Subject's mental attitude have their first mention in Epictetus (1899), (lived circa 55 A.D. to 135 A.D.) and was followed by Marcus Aurelius (1964).(lived 121 A.D. to 180 A.D.). These thinkers were known as Stoics. The modern interpretation of this term is taken to refer to a person who is willing to bear pain, whereas the original meaning was that a Stoic was a philosopher of life. The real Stoic prefers to avoid unnecessary mental anguish by means of a resilient mental attitude.

This philosophy of life, of refusing to cause oneself unnecessary suffering has been propounded by Beck (1976) and Ellis (1962).

Beck (1976)(a psychiatrist) noted that negative emotion in his clients was often preceded by thoughts that were discrete and plausible. These

thoughts were often idiosyncratic, and peculiar to the symptom rather than the person.

Ellis (1962) has formulated a whole theory of Irrational Beliefs, in that an external happening 'A' produces a certain emotional reaction at 'C'. Which particular emotional reaction depends on what happens at 'B', which is the Subject's cognitive appraisal of the occurrence at 'A'. According to Ellis's theory, a number of 'irrational beliefs' (IB's) come into play here, as these beliefs, stated as axioms by Ellis (i.e. held as axioms by the Subject, although demonstrably false). These ideas can be held as images, ideas or even self-monologues, and seem to be drawn from the Subject by the therapist. Possibly these ideas are different entities.

In a reformulation of Ellis's thinking, Dryden (1984) thinks that emotion and cognition are interactive, including thinking, sensing and acting. The simplest way of changing behaviour is to change thinking, since emotion and behaviour follow.

Quoted in Dryden (1984) is an account by Wessler and Wessler (1980) which presents a more detailed account of the interaction between cognitive mental processes and emotional mental processes. This enlarges the 3 steps of ABC into 8 stages.

Stage 1: A stimulus configuration 'out there'. Questions such as whether it is really possible to see a neutral stimulus without some degree of interpretation being implicit, are left aside in the interests of pragmatism.

Stage 2: The person registers a portion of external reality in his or her sensory apparatus, not necessarily consciously.

Stage 3: The person can describe what happened factually, e.g. “woman coming back from the shop”.

Stage 4: Interpretations of 2 and 3, interpretations of motives, and inferences about states of mind.

Stage 5: This is the true start of evaluation, events are interpreted from the viewpoint of personal wellbeing, leading to emotional experiences and reactions.

Stage 6: Emotional reactions occur.

Stage 7: The behavioural consequences

Stage 8: Feedback from the environment, possibly reinforcing (i.e. strengthening the response) or aversive (i.e. weakening the response). Of course, Feedback from the environment may, in Ellis’s theory, trigger off a whole new chain of emotional reactions and responses.

The above is an extension of the ABC model of Ellis (1962,1971).

The evaluative event happens at step 5, and seems in essence little different from the ‘B’ of Ellis’s ABC schema.

A rational belief refers to matters of personal significance, which are non-absolutist in nature, defined by Ellis as a desire, want, or preference. When a human being achieves a want, they experience pleasure. When a human being doesn’t achieve a want, this leads to displeasure, sadness, and annoyance. Even if rational wants are blocked, a sane alternative is possible.

In contrast, Irrational beliefs (IB’s) are personally significant

matters, stated in absolutistic terms , using phrases like

“must, should, ought, and have to...”

Desires are thereby escalated into demands on external reality, and also on the person themselves. Irrational beliefs give rise to anger, depression and anxiety. A negative and inappropriate reaction to a negative event is characteristic of an IB. Ellis (1962,71) uses the term irrational because the emotions and behaviour that ensues actually makes the situation worse. Irrational beliefs lead to dysfunctional behaviour. Beck (1976) criticises Ellis’s formulation in the following terms:-

“Ideas are generally not irrational but are too absolute, broad, and extreme; too highly personalised; and are used too arbitrarily to help the patient to handle the exigencies of his life.” (Beck,1976, p.246)

Absolute demands are, according to Ellis (1971) counter-empirical, in that there is no universal law to say that a person must get what they want, simply by wanting it. These IB’s can be psychologically disruptive, or they can be disputed, by the inimitable Ellis (1971) method, and changed into a rational belief.

Wessler (1983) considers “awfullising” is primary , and “musts” are conditional are conditional on an “awful ” thing not happening. Ellis (1971) disagrees, he considers that “musterbation” causes “awfulising”, because the person believes that a situation **MUST** not be as bad as it is. Refusal to accept what must not happen causes awfullising.

Awfulising is basically self-damnation. This takes place in two stages. Firstly, the self is rated as totally bad, and secondly, the self is “devil-fied” (to use Ellis’s colourful phraseology)

Previous investigations have focussed on the association, as measured by correlation, between a questionnaire measure of IB’s and

measures of mental health. Self esteem is used as a measure of emotional health (or the converse)(Rosenberg,1965) in that the greater the hypothesised effect of Irrational Beliefs on mental well-being, the lower the level of self esteem. Ellis (1962) does not advocate the holding of self esteem, because he thinks it implies esteem conditional on reaching a standard based on an externally based criterion which can either not be attained or simply lost. Ellis (1961) favours self acceptance, accepting oneself as one is, just for simply living, as self acceptance on this basis cannot be arbitrarily taken away.

Daly and Burton (1983) and Whiteman and Shorkey (1978) have taken the approach that significant positive correlation between measures of irrational belief and mental health implies a causal link between the irrational beliefs and mental distress.

Daley and Burton(1983) used the Irrational Belief Test (Jones,1968) as a measure of IB's, and the Janiss-Field Feelings of Anxiety Scale as a measure of global self-evaluation. Four main Irrational Beliefs were found, Viz:- need for approval,need for Success, anxious overconcern, and problem avoidance, all of which are on Ellis's list. The needs for approval and success were found to be more male associated Irrational Beliefs and 'anxious overconcern and problem avoidance' were found to be more female associated Irrational Beliefs.

Whiteman and Shorkey (1978) used the Rosenberg (1965) self esteem test, and the Rational Behaviour Inventory (Shorkey and Whiteman, 1977). These authors found significant positive correlations between the Rational Behaviour Inventory (Smith and Allred,1986) and self esteem. However, Kienhorst, Van den Bout, and deWilde (1993), found that only the more emotional items in the Rational Behaviour Inventory related to emotional distress.

However, a review by Smith (1986) of the way the correlational measures were used in the above studies, pointed to a possible confounding, if a third factor was also operating, This factor could be

due to a common factor of neuroticism, according to Smith and Allred's (1986) review of Zurawski et al (1985). This correlational study appears to support Ellis's theory, but after a re-calculation using zero order correlations (to cancel out a possible common factor measured by the Beck Depression Inventory) , only non-significant correlations were obtained.

A variation on the theme is given by Elliott (1992) where an 'inner critic' is appeased by a 'compensatory buffer' where mastery, competence, and a feeling of perfection result from the satisfactory performance of some task. Loss of this mastery gives rise to depression. The type of Irrational Belief held by the Subject pointed toward the type of compensatory buffer needed to protect against that belief. "Shoulds" in particular have been found by Elliott (1992) to have great power for disturbance.

It is now time to consider the effect that the posited irrational beliefs have on the holder of them. An important gauge of psycho-logical well-being is self esteem, which is a global measure of self regard. A background consideration of self esteem follows.

## **SELF ESTEEM**

Self Esteem is an important indicator of mental health because lack of it is a common reason for the seeking of Psychiatric help, according to Kadushin (1969). Of a large sample of patients, 49% attending a psychoanalytic clinic expressed difficulty with self values, as compared with only 12% who attended a hospital clinic. This is taken by Kadushin (1969) to indicate that while a patient may attend hospital for health and

emotional reasons, and have multiple problems, a psychoanalytic clinic may attract the more healthy who can afford the comparative luxury of worrying about self esteem. The type of problem associated with lack of self esteem is that lack of self confidence prevented them from attaining their full potential (Kadushin,1969).

The measurement of self esteem is an important objective in many types of personality research. and personality intervention. Self esteem is a global concept, held by the individual in reference to his or herself. There seems to be a 'middle ground' of moderate self esteem, with a lower range of unduly low self esteem, and a higher range of self esteem scores which are defensive in nature.

In opposition to Ellis's formulation (1962) of self regard, it would seem that most individuals have a conditional self esteem, in that a positive self regard depends on either attaining, or holding on to, a given state of affairs. In this culture, need for success, and need for approval are considered important, and it seems that individuals are socialised to evaluate their self-worth in terms of this. What Ellis(1962) would consider unfortunate in this apparently reasonable idea is the use of 'must' and 'should' in the formulation of these ideas. This, according to Ellis(1962), places the individual under an impossible demand, and therefore cannot be satisfied. It would be reasonable, therefore, to hypothesize that self esteem in an individual with a high level of belief in these absolutistic demands would be low or compromised. In the words of William James:-

“So our self-feeling in this world depends exactly on what we back ourselves to be or to do” (James,W.,1890,1950,p.309)

## THE CONCEPTUAL HISTORY OF IRRATIONAL BELIEFS

One of the earliest thinkers along the line later followed by Ellis (1961) was Epictetus (died after A.D.118), one of whose chief contributions to philosophy was the phrase:-

“Men are disturbed not by the things which happen, but by their opinions about these things.”(Epictetus 1899).

and also:-

“For another will not damage you, unless you choose...”(Epictetus 1899)

This seems to be a western paralleling of an Eastern idea, that the person has a choice of how to interpret experience and react to a given happening in a more positive way.

Marcus Aurelius (A.D.121-180) was an Ancient Roman citizen, who was educated in Stoic principles and later became Emperor. Aurelius expressed himself in the following words:-

“Life is opinion” (Aurelius,1964)

This has been expanded by Shakespeare:-

“There is nothing good or bad but thinking makes it so”  
(W.Shakespeare, (1993))

A more modern interpretation of this idea is the ‘special person misconception’, in that the individual is brought up to consider themselves special, and apparently is forced to adopt stress-inducing



strategies to confirm this specialness.

“...compulsive attempts to wrest from others confirmation of one’s superiority...” (Raimy (1975).)

Another modern writer on this subject is Beck (1976) who, partially basing his ideas on Ellis (1962) formed a theory of thoughts which tend to cause unhappiness and mental distress. Beck considered that contemporary schools of thought perpetuate the myth that the patient can’t help themselves, and must seek a professional’s services. This ‘myth’ debases common sense and inhibits the patients own judgement.

Beck(1976)found that when asking patients to report their thoughts during free association, that certain automatic thoughts kept reoccurring, and that the same type of thoughts were associated with similar mental disorders. In the formulation of Beck (1976), anxiety is caused by the anticipation of anticipated loss, which is almost as bad as real loss (p.63). The term ‘loss’ is here meant as a social loss, and not just a physical loss. A loss of prestige, or an insulting remark is an example of a ‘social loss’. An unpleasant social stimulus will produce arousal which will express itself in three different ways, depending on the way the stimulus is interpreted. Anxiety will result if the stimulus is perceived as a threat. Anger will result if the stimulus is not accepted (i.e. defied). Lastly, and most importantly, sadness will result if the validity of the stimulus is accepted, and the self evaluation of the person involved is lowered. For example, an insulting remark may be perceived as threatening, producing anxiety, or as ‘a cheap jibe’ producing anger, or as a blow to the self concept, resulting in low self esteem.

Ellis (1962,1971), initially trained as a Freudian analyst and marriage guidance counsellor. After finding limitations to these approaches, he formulated his own approach, partly based on Epictetus and Marcus Aurelius (already mentioned). Ellis’s theory claims that

people hold certain beliefs which they use to interpret the world, inculcated by parents and society generally. If these beliefs are irrational, in Ellis's terms, then some degree of misinterpretation resulting in unhappiness will result. There are currently 14 beliefs, the crucial two being the dire need for approval, and the dire need for success.

In a more recent formulation, Irrational idea no. 1 encapsulates both of these beliefs :-

“I must do well (or perfectly well) in important tasks I choose to perform and must win the approval or love of the people whom I choose to make important to me.” (Ellis 1982)

This has three corollaries according to Ellis. Firstly, a strong need for Success, secondly a strong need for Approval, and thirdly a lack of worth if the person doesn't succeed in the first two corollaries. These beliefs are the 'bare bones' of this research. Ellis clearly states that failure to satisfy the needs for Approval and Success, results in:-

“...profound feelings of depression, despair, shame, guilt and self-hatred after you have presumably functioned poorly...” (Ellis,1982,p.27)

Although sometimes it is possible to satisfy these demands, they can never be either completely or permanently satisfied, and the person holding these beliefs can never feel safe. To sum up, if the person satisfies these beliefs, then they are anxious that one day they might not be able to. If they do not satisfy these beliefs, then sadness and low self esteem result.

A further feature of Irrational Beliefs is that they contain 'must' or 'should' statements, which words are denigrated by Ellis as “Musterbation” (i.e. masturbation) and Shioulding“ (i.e. shi\*\*ing) respectively. This emphasises Ellis's view of these statements (using this form of words as 'bad habits').

## METHODS OF STUDY

A survey follows, as an exploration and justification of the approach to be used in this investigation.

## QUESTIONNAIRE METHODS

A basic feature of the previous studies is that of the use of 'pencil and paper' tests. These are open to a number of criticisms and qualifications as given below.

A number of factors affect the 'response set' of the Subject, (as reviewed in Vernon, 1963). Several of these are given in the list below, coming under the general heading of social desirability:-

1. Deliberate falsification in order to create a good impression.
2. More Subjects say 'no' to a negative item than say 'yes' to the same item reversed.
3. There is considerable overlap between tests of different traits, intercorrelations are claimed by Vernon to be as high as those amongst tests of similar traits.
4. Due to self-deceptions and rationalizations, Subjects don't know themselves factually.

5. Some classes of Subjects are more susceptible than others. Highly educated students are more likely to be self-analytic, introspective and self-deprecatory. Edwards, (1957) suggests that a common finding is that college students usually appear more neurotic and introverted than the general population. In addition to this there are indications that tests can 'paradoxically' measure a continuum between cultural sophistication and conventionality. (Loevinger and Ossario (1959).

6. If a semantic differential scale is used, some Subjects tend to give more extreme answers (at the extreme ends of the scale), and others tend strongly to give very moderate answers (or even 'don't know' answers).

7. Subjects can be divided into 'yea' and 'nay' sayers, due to preferential answering habits. (Couch and Keniston, 1960).

The 'Yeasayer' is a Subject who yields to internal and external pressures, and has conventional and superficial values. The 'Naysayer' on the other hand is held to have more ego control, self-determination, and control of immediate responses.

Sarason (1950) suggests that the predictive value of personality tests is limited, because of certain factors that affect scores that are external to the traits of the Subject, such as the particular instructions given, the time of day, the personality of the tester, (Brown, 1961) and most importantly, what the Subject thinks the experimenter wants. This does not necessarily mean that this is what will be given, as both cooperation and 'sabotage' of the test has been encountered by Sarason (1950). Quite often the Subjects were Psychology students, who would be sophisticated, and possibly cynical about any investigation. Cooperation in experiments and investigations often count toward course credits in American Universities, possibly further adding to any cynicism.

In addition to the above factors, books have been written on how to

cheat at personality tests, such as “The Organisation Man” by Whyte (1956), in which is given the advice e.g. “be conformist, and like your father more than your mother” and also ‘How to Beat Personality Tests’ by Charles (1965). It is of course possible to mask questionnaires, but this tends to be counterproductive, as this makes the questions ambiguous and lacking in validity.

If questionnaires have all these disadvantages, what measures can be used to either replace or support them? One alternative, which has temporarily dropped out of fashion in recent years, is the range of projective techniques, as explained and justified below.

## **PROJECTIVE MEASURES**

Projective tests are more properly regarded as Projective techniques. They are a means of quantifying certain aspects of behaviour or experience. The basic supposition of the projective technique is that everything one does bears, to a greater or lesser extent, the stamp of one’s personality.

Three corollaries follow from this:-

1) A conceptual framework is needed to systematise variations in behaviour. Most techniques in fact have standardised stimuli and standardised scoring categories.

2) A means must exist by which the “import” of the Subject’s behaviour can be understood by an outside observer.

3) Any projective response must transcend a description of the situation.

Possible drawbacks of this situation are that the tester may project his or her own preconceptions onto the test protocol (the material obtained as a response to the test stimuli.) The careful training of the tester, and the normal scientific cautions guard against this. The interpersonal relationship between tester and Subject may also affect the outcome, also this of course can be used to advantage, so long as the testing situation is identical for all Subjects in this regard.

The development of projective testing started early this century with Freud (1911). Internal, unacceptable drives can be projected on to an external object or person.

Murray et al (1938) stated that:-

“...Of all our technical procedures, the series that were termed projection tests, which were designed to evoke imagery and fantasy, brought to light the most significant data.”

Murray et al (1938)

Murstein and Pryer (1959) evolved four definitions of projection:-

1. The classical definition of projection of the unacceptable impulse according to Freud.

2. The attributive model takes the view that the Subject's own feelings are denied and attributed to someone else.

3. The autistic model is where the wishes of the observer affect what is observed.

4. The rationalisation model is where the 'unconscious' projects in the manner described above, but invents a good 'logical' reason.

The form of projection occurring in Projection Tests is considered to be a mixture of attributive and autistic types of projection. (p.9, Murstein and Pryer, 1959) · Personality is viewed as

...“a dynamic process, the conformal ability of the individual who is involved in creating, maintaining, and defending that 'private world.’“  
(Murstein and Pryer, 1959)

In the 1930's, for fifteen years, the growing field of clinical psychology was a profession of personality testers. There was only the Stanford-Binet intelligence test, and the new projective tests gave an opportunity for expansion. The new world of personality structure, drives and diagnosis could be explored.

In World War Two, an urgent need for personnel selection of all types further boosted the need for further numbers and types of technique.

## c1) SENTENCE COMPLETION METHODS

A reasonably validated method of investigation which is intermediate between the questionnaire method, and the fully projective measure, such as the Thematic Apperception Test, is the Incomplete Sentences method. An in-depth study of this methodology follows.

Tests can be devised for a particular task, on face validity grounds. This may have a similarity with the Rosenberg Self Esteem Test which may be a reason for a high correlation between the incomplete sentences technique and the Rosenberg self esteem test, in the present study. This, says Goldberg (1965) has militated against systematic and parametric studies.

Another question is, are the responses to the incomplete sentences method answers or samples? Owing to the free nature of the instructions, they must be samples. Campbell (1957) thinks that it doesn't really matter, what matters is exactly what are the intrapsychic processes that give rise to production of the material. The incomplete sentence technique is considered projective, but differs from the fully projective tests in that:-

“...rarely is the respondent unaware that he has been revealing his own attitudes” (Campbell,1957, p.294).

A further question, which follows on from the above, is the response to the incomplete sentence technique a conscious one, or one tapping deeper urges, of which the Subject is barely aware? A quotation from Frank (1939) gives an answer:-

“When an individual is forced to impose meaning or order on an ambiguous stimulus complex, his response is a ‘projection’ of his feelings urges, beliefs, attitudes and desires” (Frank,p.66, 1939)



The Subject is presented with a sentence fragment, which they are asked to complete. By varying the content and structure of stems (as the incomplete sentence fragments are known), a variety of data can be elicited. The way the sentence stem is angled toward a particular direction is known as the 'pull'. The content of stems can be aimed toward almost any research or clinical purpose. This flexibility and popularity has led to a proliferation of methods and measurements, and due to this proliferation, theory has not kept up with practice. An interesting exception is the Rotter Incomplete Sentence Blank, for which a distinct theory, and coherent marking scheme has been devised, as a test of general adjustment. (Rotter and Willerman (1947) Rotter and Rafferty (1950)).

## **c2) THEMATIC APPERCEPTION TECHNIQUE (TAT)**

A well researched and extensively used projective test (or more properly termed a technique) is the Thematic Apperception Test. This was devised by Murray and Morgan (1935). Murray reported research at the Harvard Psychological Clinic, for evaluating college students. In studies by Lindzey (1958), and Lindzey and Kalnins (1958), it was found that the central character, or 'hero' of the story reflects many aspects of the story teller's personality. Not all characters are like the Subject, possibly reflecting less obvious parts of the Subject's personality.

Because of a lack of specific instructions from Murray, a large number of methods of scoring have been devised. A study by Harrison (1940), found that it was possible to distinguish between male and female groups. In addition to this, Harrison wrote personality profiles, of which 75% were considered accurate by independent judges. One example of the successful use of the TAT technique is that of Morgan (1955) where spies and saboteurs were successfully selected by the Thematic Apperception Test cards.

## Previous Investigations

Previous investigations have focused on the association, as measured by correlation, between a questionnaire measure of Irrational Beliefs (IB's) and some measures of emotional disturbance. Self esteem is commonly used as an instrument of measuring emotional disturbance (Goldberg 1965). The greater the effect of hypothesised effect of IB's on mental well-being, the lower the value of self esteem. (Ellis himself states that self esteem is not, in fact, a linear measure, as a high self esteem could be a defence against feelings of unworthiness, and a low self esteem is usually linked with suggestibility). McLennan (1987) found a definite link between irrational beliefs, low self esteem and depression. This study is relevant to the present study, as students were used in this Australian study.

Daly and Burton (1983) and Whiteman and Shorkey (1978) have taken this approach, with significant correlations between measures of IB's such as the Irrational Beliefs Test (Jones 1968) and the Janis-Field feelings of inadequacy scale.

A more direct approach was taken by May and Johnson (1973) and Rimm and Litvak (1969) who had Subjects repeat sentences of varying degrees of irrationality. (This is according to Ellis's definition of irrationality, in which unrealistic demands are made on either the self, or reality, not to be confused with frank psychiatric conditions.) The Subject's reactions were measured physiologically for heart rate and respiration, and significant changes in these were observed in a direction congruent with emotional disturbance. This again tested the theory by looking for disturbing stimuli (according to Ellis) and a measure of the Subject's reactions (either physiological or questionnaire measures).

Goodwin and Cramer (1985) tried an alternative approach, and found that manipulating self esteem enabled a prediction to be made of the level of Irrational Beliefs. That is, a manipulation of the Subject's

self esteem to a low state (i.e. giving a low score) is associated with a high score on the IB Test. Woods (1992) studied 'belief and 'non-belief' items from the Jones Irrational Beliefs Test, and found that the assertions of Ellis (1970) about Rational Emotive Theory were supported.

These studies are correlational because a classical experiment would entail manipulating the levels of Irrational Belief as the independent variable. Since the level of acceptance of any given belief is (presumably) fairly fixed, it would be difficult to manipulate this. May and Johnson (1973) and Rimm and Litvak (1969) are attempts to manipulate the level of Irrational Beliefs, but the stimulus 'triads' of phrases meant to simulate the holding of Irrational Beliefs are only momentary, as against a lifetime exposure to Irrational Beliefs, according to Ellis (1962). This lifetime exposure would seem to imply a lifetime of rehearsal of IB statements. An alternative interpretation would be a lifetime spent applying Irrational Beliefs in a self judgemental manner, with the beliefs themselves only existing implicitly in the judgements.

### Aims of the present study

In order to investigate and measure the more covertly held beliefs, two projective tests, the incomplete sentence method, and the Thematic Apperception Test cards are used.

A number of projective measures have been devised, derived from Freudian theory. Inner drives are not amenable to introspection, so that an indirect approach must be tried. However, it is possible to have standardised stimuli (e.g. the Thematic Apperception Test, incomplete sentences, Rorschach inkblots) and standardised scoring categories. The import of the response (i.e. its meaning to the Subject) must be communicated in either speech or writing, and the response must transcend the situation. (i.e. not just describe the stimulus). Therefore projective techniques will be used in this study in order to explore the

nature of irrational beliefs.

As a further yardstick, Self-Esteem will be measured by Incomplete Sentences and the Thematic Apperception Test, and interjudged by a recognised method, by assessment of the Subject's protocol and Incomplete sentences. A high correlation between self esteem and the irrational beliefs would indicate again a non-causal connection between these beliefs and a low level of self-esteem. The approach of Mischel (1972) will be used in that protocols, and sentence completion techniques are a main feature. Although Mischel (1972) considers these unreliable, the use of self report measures directly studying Self-Esteem is "just as hazardous" (Mischel 1972,p.323). This approach is shared by Epstein (1955) who asked Subjects to study disguised representations of people (one of which is themselves, but they were in fact ignorant of this fact) by means of fuzzy films, mirrored handwriting, and disguised voices, and somehow judged their own 'behaviour samples' as the best.

The approach of correlations between irrational beliefs and self-esteem measures was found by Whiteman and Shorkey (1978) to support the validity of Ellis's ideas with reservations. (The scores for the Rosenberg self esteem test are reversed in the present study so that a positive high correlation coefficient implies a high level of irrational beliefs, and a high deficit in self esteem.

Covert self esteem scores, as mentioned above, will be drawn from the Incomplete Sentences and Thematic Apperception Test protocols by interjudging. This is a form of covert self esteem as investigated by Epstein (1955). These ideas will be put to the test in the following investigation.

## HYPOTHESES

1. A significant positive correlation will be found between the modified Jones (Irrational Belief Test) scale for Approval needs with the Rosenberg Self-Esteem scale (reversed so that a high correlation would show a high degree of 'distress') this would, if found, demonstrate an association between self esteem and irrational beliefs of 'need for approval' as found by Daley and Burton (1983).

2. The correlation coefficients between the different measures of self esteem (Rosenberg, incomplete sentence measure of self esteem, and the Thematic Apperception Test self esteem measure respectively) and the different measures of irrational beliefs (Jones based questionnaire, incomplete sentence measure of self esteem, and the Thematic Apperception Test measure of self esteem respectively) will be significant for all beliefs and all measures.

3. The average correlation coefficient between different measures will be lower than the average correlation coefficient between different measures of a particular trait. This is to say that discriminant validity is obtained.

4. A word count of the protocols for each card will correlate significantly and negatively with the Rosenberg self esteem test (because the Rosenberg scores have been reversed.)

5. A word count of protocols for each card will correlate significantly and positively with the modified Jones Irrational Belief questionnaire.

## **METHOD**

### **Subjects**

The Subjects were 61 male Loughborough University of Technology students (undergraduates) living in the student village. Subjects were recruited by approaching them individually. An explanation of the project, an explanation of the time involved in the testing, and a request that they volunteer was given. Originally 81 Subjects volunteered, but some sets of data was incomplete due to tape-recorder malfunctions, or spoiled answer sheets. As it was important to be able to analyze several variables simultaneously on the same Subjects, the decision was made to discard incomplete sets of data.

### **Apparatus and Materials**

Five Thematic Apperception cards (nos.1,2,4,10,14) from the set devised by Murray (1943) were used to draw out imaginative stories from the Subjects. The stories were then recorded on a cassette tape recorder, and transcribed into a written form.

These particular cards were chosen by means of face validity, because no previous work has been done on eliciting Irrational Beliefs by means of Thematic Apperception Test cards.

An incomplete sentences test was devised, using the 8 items, 4 for dire need for success; and 4 for dire need for approval (see Appendix 1).

The Incomplete sentences test was used, because, as above, Ellis's ideas are hypothesised to be held as slogans. It will hypothesised for the purpose of this study that these beliefs would be more easily elicited by the incomplete sentences technique. As above, 4 stems contained 'I' stems and 4 stems contained 'he ' or 'she' stems, because a sentence stem is more likely to produce a response containing Irrational Beliefs because the third person is seen as triggering more revelatory responses, because the third person is less threatening.(Hanfman and Getzels,1953).

In order to assess the levels of Irrational Beliefs held at the 'conscious' level, a questionnaire was devised using Cramer's (1983) factor analysis of Jones's (1968) study of Irrational Beliefs(see Appendix 3). Questions on the need for "success" and "approval" were selected by the criterion of having a factor loading of at least 0.6 of the relevant factor.

To study Self-Esteem, two approaches were chosen in line with the overt/covert approach of this study.

Firstly, to assess the conscious, overt, level of self esteem, Rosenberg's self esteem questionnaire was used. (see Appendix 2). This test has the advantage of brevity, and has been found to be reliable and valid (Wylie 1974), and to represent global self esteem on a Likert scale.

Secondly, to estimate self esteem at deeper 'levels', an interjudged rating of the protocols for Incomplete Sentences and Thematic Apperception Test was done as described in Rabin (1981).

The Incomplete Sentences and the Thematic Apperception Test scores were marked '1' or '0'. The Incomplete Sentences were marked for each sentence completed, and the Thematic Apperception Test was marked for each picture. Due to difficulty in obtaining inter-judge agreement for a rating scale with an increased number of steps, and the

subjectively felt difficulty in deciding on levels (or quantities) of irrationality of a belief to give a reasonable level of interjudge agreement. The “1” or “0” dichotomy was adhered to, and the results summed for each Subject.

The interjudging of the material was carried out in the following manner. The material was judged separately by myself and one other person trained by me. Items on which disagreement was found on comparison of results, was then rejudged by further discussion between the judges. This technique was taken from Rabin (1981) and the following instructions given to both judges:-

Thematic Apperception Test instructions. “You will be asked to score 5 stories per person on the forms provided, using the number on the transcript. For each story, consider if there is a demand that something must happen, or that it is catastrophic if the main character does not do or achieve something. If there is an important need for approval, put ”1“ in the appropriate box, and if there is an imperative, absolutistic need for success, put ”1“ in the appropriate box. If no absolute need is perceived, put ”0“ in the box.”Demandingness“ is the quality required for a ”1“.

Incomplete Sentences Test. “These instructions are similar to the previous ones. If the completed sentence maintains the same meaning as the stem(i.e. a ‘must’ stem has a ‘must’ sentence, which agrees with the stem) then score a ‘1’ in the box. If no demandingness can be found, score ‘0’.

As stated in the materials section, the Thematic Apperception Test and Incomplete Sentences protocols were rated for levels of self esteem with a three point scale. Zero means no disturbance, “1” means the Subject is no better than anyone else (with some uncertainty), and “2” means the Subject feels they are unworthy and lacking in self esteem. Similar tables and instructions were given to the judges, and inter-judgement was carried out in the same manner in the same manner as the Irrational Beliefs judgements.



## Procedure

After the Subject had volunteered, a brief introduction was read out, and then particular instructions for the Thematic Apperception Test cards, Incomplete Sentences, modified Jones (Irrational Beliefs Test), and the Rosenberg self esteem test. As the Thematic Apperception Test cards were presented as an investigation of creative responses, and ability to perceive situations, the Subjects were debriefed. The real purpose of the investigation was then revealed to the Subject, as recommended by Badia, Haber and Runyon(1970). The Subjects were given an explanation that certain beliefs have been claimed to cause unhappiness and depression, and the tests were ways of investigating these relationships between beliefs and self esteem.

## RESULTS

The scores, means and Standard Deviations of the 61 male Subjects are given for each test in Table 1 below:-

**TABLE 1**

Means and Standard Deviation. of scores for each measure  
(N=61)

01. Rosenberg Quest.	19.35	3.95
02. Approval Quest.	18.61	4.32
03. Success Quest.	16.45	4.15
04. Approval (Incomplete Sentences)	2.03	1.31
05. Success (Incomplete Sentences)	2.13	1.62
06. Approval TAT (Thematic Apperception Test)	0.89	0.89
07. Success TAT (Thematic Apperception Test)	1.98	1.16
08. Self Esteem TAT (Thematic Apperception Test)	2.53	1.45
09. Self esteem (Incomplete Sentences)	2.98	2.12

A matrix of intercorrelations was prepared for the above measures, and significance levels of correlations is given in Table 2 below:-

**TABLE 2**

	01	02	03	04	05	06	07	08	09
1. Rosenberg Quest. .									
2. Approval Quest. .37**									
3. Success Quest. .25* .30**									
4. Approval (Incomplete Sentences) .29* .35** .24									
5. Success (Incomplete Sentences) -.03 -.09 .06 .30*									
6. Approval (Thematic Apperception Test) -.04 -.22 .05 .00 .16									
7. Success (Thematic Apperception Test) -.02 -.17 - .07 .00 .54** .30									
8. Self Esteem (Thematic Apperception Test) .08 .15 .26* .09 -.16 .33** .04									
9. Self Esteem (Incomplete Sentences) .21 .26* .41** .54** .13 .11 - .10 .25* .									

\* p=<0.05

\*\* p=<0.01

N.B. the scores for the Rosenberg self esteem test have been reversed so that a high correlation would indicate a high level of association of irrational beliefs and distress. The decimal points have been omitted.

A positive statistically significant correlation between the modified Jones Test on 'need for Approval' and the Rosenberg self esteem test (modified) was obtained, of 0.37, sig. at  $p \leq 0.01$ .

The null hypothesis is disproved with regard to hypothesis one, and the alternative hypothesis is supported by the data.

There was a significant correlation of 0.25, with a probability level of 0.05 between the modified Jones test for "need for Success", and the Rosenberg self esteem test. Therefore the null hypothesis was not supported for Hypothesis Two. The alternative hypothesis was supported.

A significant positive correlation between the incomplete sentence test for Approval and the self esteem measures taken from the incomplete sentences material was obtained of 0.41, this was significant at a probability level of  $p = < 0.01$ . The null hypothesis is therefore rejected for hypothesis three, and the alternative hypothesis was supported.

Hypothesis Four is rejected by the correlation between the Incomplete Sentence interjudged scores for "need for Success", with a correlation of 0.13, which is not statistically significant. The null hypothesis is supported, and the alternative hypothesis is rejected.

Hypothesis Five is not supported by a positive correlation between 'need for Approval' as measured by Thematic Apperception Test protocols, and self esteem as measured by Thematic Apperception Test protocols, of 0.33, with a probability value of  $p < 0.01$ , because a negative correlation was predicted by Hypothesis Five. The null hypothesis is supported, and the alternative hypothesis is rejected.

## TABLE 2a

Using the approach of Campbell and Fiske (1959) the multi-trait multi-method average correlation of all correlation coefficients is:-

average  $r = 0.13$

The Multi-trait Multi-Method averages are

Questionnaire method	= 0.33
Incomplete Sentences	= 0.31
Thematic Apperception Test	= 0.22

The Mono-Trait Multi-method averages are:-

(TABLE 2a continued)

Need for Approval	= 0.19
Need for Success	= 0.22
Self Esteem	= 0.18

Using the conversion table from Cohen (1969) p.108, and converting the correlation coefficients to z scores, and finding the significance of difference between these z scores, this gives a q value, the statistic 'q' is defined as the effect size difference between correlation coefficients (Cohen, 1969 p.106). The statistic q gives a meaningful figure for each difference in correlation coefficients between the average of all

correlation coefficients (i.e.  $r=0.13$ ) and the individual correlation coefficients respectively. Using Table 4.2.2 on p.108 of Cohen (1969), to obtain  $q$  values, the  $q$  values can be inserted into Table 4.3.2 on p.115 of Cohen (1969) to obtain power values expressed as the percentage of tests, carried out under the given condition, which would reject the null hypothesis.

The above line of reasoning gives the following table 2b.

**TABLE 2b**

**Multi-trait mono-method**

Questionnaire method power value ( $q=0.212$ ) = 28%

Incomplete sentences power value ( $q=0.19$ ) = 28%

Thematic Apperception Test power value ( $Q=0.093$ ) = 13%

**Mono-trait multi-method**

Need for approval power value ( $Q=0.061$ ) = 13%

Need for success power value ( $Q=0.093$ ) = 13%

Self esteem power value ( $Q=0.051$ ) = 13%

## TABLE 2c

**Intercorrelations with self esteem for each measure respectively.**  
(Abstracted from Table 2.)

### **Rosenberg self esteem test:-**

Questionnaire(need for Approval)	= 0.368**
Questionnaire(need for Success)	= 0.246
Incomplete sentences(need for Approval)	= 0.289*
Incomplete sentences(need for Success)	= 0.351*

Thematic Apperception Test(need for Approval)= n.s.

Thematic Apperception Test(need for Success) = n.s.

\*  $p \leq 0.05$

\*\*  $p \leq 0.01$

### **Thematic Apperception Test self esteem measure:-**

Questionnaire (need for Approval)	= n.s.
Questionnaire (need for Success)	= 0.261*

Incomplete Sentences (need for Approval) = n.s.

Incomplete Sentences (need for Success) = n.s.

Thematic Apperception Test (need for Approval) = 0.329\*\*

Thematic Apperception Test (need for Success) = n.s.

Construct validity is defined as the ability of a test to measure what it purports to measure.

In Table 2b significant correlations occur between the Rosenberg self esteem test, and questionnaire and Incomplete Sentence measures for both need for success and need for approval. Using the Incomplete Sentence Technique as a self esteem measure, significant results were obtained for Questionnaire methods, and the largest correlation in the matrix, of 0.54, for Incomplete Sentence Technique and Incomplete Sentences measures of self esteem.

The Thematic Apperception Technique used to measure self esteem yielded a positive correlation for the questionnaire method for Success, and the Thematic Apperception Test for need for Success.



## TABLE 2c

Intercorrelations between 'need for Success' and 'need for Approval', for each measure respectively, (abstracted from table 2).

Thematic App. Test Approval) correlated with Thematic  
Apperception Test(Success) = 0.286

Incomplete Sentences (Approval) correlated with Incomplete  
sentences (Success) = 0.300

Questionnaire(Approval) correlated with Questionnaire  
(Success) = 0.301

The correlations between Approval and Success for each type of measure are approximately equal, demonstrating the association between success and approval, significant at  $p < 0.05$ .

### The 'Capitalisation' Problem

When dealing with large arrays of correlations, such as Table 2, the problem arises of correlations achieving significance purely due to the large numbers involved. This would lead to a type 1 error, over-estimating the power of the alternative hypothesis. There are two ways of counteracting this effect. The first way is to check if all the correlations are in the expected direction.

The second method is to raise the significance level and observe the direction of the correlations which achieve the required significance level. This would in fact increase the chance of committing a type 2 error, viz. underestimating the power of the alternative hypothesis, and

over-emphasizing the likelihood of a false null hypothesis. As Blalock (1960,1972) has stated:-

“ (The) researcher should lean over backwards to prove himself wrong, or to obtain results that he does not want to obtain.”

Blalock (1960,1972)

In other words, an investigation should aim to lean towards a type 2 error.

If Table 2 is re-examined in this light, then as will be seen below, 6 correlations meet the higher significance level of  $p < 0.01$ .

Approval and Success needs, as measured by the modified Jones questionnaire, correlate at the level of  $p < 0.01$ . This would indicate a common link between these two separate beliefs.

Approval, measured by Questionnaire, has a correlation of 0.37 with the Rosenberg self esteem test, with a significance level of  $p < 0.01$ . This would indicate that the alternative hypothesis is upheld for Approval, but not Success needs.

Success as measured by the Thematic Apperception Test correlates positively with Success needs as measured by the Incomplete Sentence method, with a value of 0.54, with a significance level of at least  $p < 0.01$ . This would appear to be an example of mono-trait multi-method validity as described by Campbell and Fiske (1959).

There is a correlation between self esteem as measured by the Thematic Apperception Test, and the need for Approval as measured by the Thematic Apperception Test, of 0.33, with a significance level of  $p < 0.01$ .

Self esteem, as measured by the Incomplete Sentence technique, correlates significantly with need for Success, as measured by the modified Jones questionnaire, with a correlation of 0.41. Self Esteem, measured by Incomplete Sentences, correlates significantly with need for Approval, measured by Incomplete Sentences with a correlation of 0.54,

both correlations with a significance level of  $p < 0.01$ .

These results indicate that the correlations occur in a pattern that does not indicate the presence of spurious correlations occurring by chance due to an excessively large number of correlations.

**TABLE 2 (only high significance level correlations shown)**

	01	02	03	04	05	06	07	08	09
1. Rosenberg Quest. .									
2. Approval Quest. .37**									
3. Success Quest. .00 .30**									
4. Approval (Incomplete Sentences) .00 .35** .00									
5. Success (Incomplete Sentences) -.00 .00 .00 .00									
6. Approval (Thematic Apperception Test) .00 .00 .00 .00 .00									
7. Success (Thematic Apperception Test) .00 .00 .00 .00 .54** .00									
8. Self Esteem (Thematic Apperception Test) .00 .00 .00 .00 .00 .33** .00									
9. Self Esteem (Incomplete Sentences) .00 .00 .41** .54** .00 .00 .00 .00 .									

\*  $p < 0.05$

\*\*  $p < 0.01$

N.B. the scores for the Rosenberg self esteem test have been reversed so that a high correlation would indicate a high level of association of irrational beliefs and distress. The decimal points have been omitted.

**TABLE 3**

Correlations between word-counts of Thematic Apperception Test protocols as a Self Esteem measures, and Irrational Belief measures.

**TAT cards 1-5**

	1	2	3	4	5
Rosenberg self esteem test	.009	.031	.157	.23	.086
Questionnaire (need for approval)	.49**	.066	.052	-.028	-.084
Questionnaire (need for success)	-.09	-.139	.052	-.028	-.084
Incomplete sentences (need for approval)	-.111	.056	.119	.065	-.013
Incomplete sentences (need for success)	-.291*	-.108	-.154	-.019	-.022
Thematic Apperception Test (need for approval)	.154	.040	.254*	.336*#	.054
Thematic Apperception Test (need for success)	.017	.209	.261*	.183	.163
Thematic Apperception Test (self esteem measure)	.143	.162	.372**	.26*	.228
Incomplete sentences (self esteem measure)	-.05	.135	.267*	.162	.134

\*  $p < 0.05$ ,      #\*  $p < 0.01$  (The decimal points have been omitted)

To test hypothesis 4, in order to determine which of the Thematic Apperception Test cards is most productive, word counts of the Thematic Apperception Test protocols were used as a measure of psychological

health (Karon.B.P.,(1981) p95, in Rabin 1981). These scores were then correlated with each of the measures for self esteem as measured by the Rosenberg self esteem test. Since no significant correlations were found, hypothesis 4 is not supported.

Hypothesis 5, Card no. 3, has a strong association with TAT for 'approval', 'success', and also self esteem measures measured by TAT and Incomplete Sentences. Card no. 4 has a significant association with Thematic Apperception Test measure of 'approval' and the Thematic Apperception Test measure of Self Esteem. Since the scores for both Irrational Belief measures and self esteem measures are arranged so that high scores (and therefore high intercorrelations between these scores) indicate high pathology, and positive correlations indicate 'positive pathology', it seems paradoxical that the Thematic Apperception Test word counts (the greater the count of words, the greater the self esteem) correlate positively with these measures.

The tendency to write more rather than less words as a response to Thematic Apperception Tests cards 3 and 4 may be affected by the pull of the respective card, in that each card has a definite theme which might encourage fluency in a Subject who has a high level of that particular 'dire need' for success or approval. Being Thematic Apperception Test cards, this theme of the picture cards would naturally tend to have a significant correlation with the scoring taken from them. This would account for cards 3 and 4. The Incomplete Sentences technique would then agree with the TAT self esteem score for card 3. Thematic Apperception Test card 1 has only one significant correlation for success with the incomplete sentence technique.

Capitalisation, i.e. the number of correlations achieving significance due to the large number of correlations, is a problem that will now be addressed.

All the following correlations are with the word counts of the protocols (as an average for each card) used as measures of self

esteem. The need for Approval as measured by questionnaire correlates positively at the  $p < 0.01$  level of significance. Need for Approval as measured by the Thematic Apperception Test has a positive correlation of 0.336, with a significance level of  $p < 0.01$ . Self esteem as measured by the Thematic Apperception Test correlated significantly with 0.0372, with a significance level of  $p < 0.01$ .

This gives results in opposition to those predicted by Hypotheses Five and bears out the main implications of the results, based on the lower level of significance. The implications of this are that it is highly improbable that the correlations supported the hypothesis, and were significant by chance.

An interesting finding is that the protocol method of measuring self esteem by the Thematic Apperception Test correlates significantly and positively with the word count protocol (measuring self esteem) of the average word-count of card Three. This would imply that from the mono-method multi-trait viewpoint of Campbell and Fiske (1959), the method used (of the Thematic Apperception Test) is outweighing the trait of self esteem being measured.

## DISCUSSION

Ellis (1971) theorised a relationship between certain ideas which he termed 'irrational beliefs' and various forms of mental distress. The relationship between irrational beliefs and self esteem (the basic measure of 'mental wellbeing' as used in this study) is not a simple one. Most of the irrational beliefs correlate with self esteem, but a strong technique effect, and a weak construct effect found in the Campbell and Fiske (1959) type of analysis in Table 2a seem to point to a weakness and oversimplification in the theories of Ellis (1971).

Some of the inter-relations predicted by Ellis's (1971) theories, that Irrational Beliefs in the form of dire needs causing mental distress, only occur in a more complex form. An 'across the board' substantiation of Ellis's theories is not given by this study.

In the questionnaire part of the present study, mental distress is measured by the Rosenberg self esteem test (with the scores reversed, so that a correlation supporting Ellis's (1971) theory would be positive). This means that Ellis (1971) is supported by this type of measure. Whiteman and Shorkey (1978) used this type of measure and their study supported the theories of Ellis (1971) (with reservations).

However, due to criticisms of the questionnaire method given in the Introduction above, more projective methods were used, viz. the Thematic Apperception Technique, and the Incomplete Sentences Technique.

With the incomplete sentence technique, the 'need for approval' was found to be valid as correlated with self esteem, using this approach, but not the 'need for success'.

The thematic apperception test method, which is a fully projective method, again validates the 'need for approval', but not 'need for success'.

A summary of this picture takes place in table 2b where the correlations are considered by means of the type of self esteem measurement (Rosenberg, Incomplete sentences, thematic apperception test), separately and respectively. The questionnaire results associate positively with the Rosenberg self esteem as above, as does the incomplete sentences method for 'need for approval' but not 'need for success'. The Thematic Apperception Technique method of self esteem measurement yields the following:- a positive significant correlation was found for the questionnaire method for need 'for success', and a strongly significant finding ( $p \leq 0.01$ ,  $r = 0.329$ ) for the Thematic Apperception Test score for approval. This reflects the tendency of 'need for approval' to appear strongly in this study in all methods. 'Need for Success' at the Thematic Apperception Test level is the only significant correlation found in a projective instrument, using the joint results of the five Thematic Apperception Test cards. In order to discover which cards are most effective, table 3 was drawn up and the average word-counts of each card were correlated with previous measures. What was revealed was a pattern of cards and tests which show that particular cards have particular 'pulls', and at particular types of measurement. The 'need for approval' has a strong and consistent effect throughout table 2. 'Need for success' is found scattered at particular places in the matrix, in a fragmented fashion, while 'approval' is present in a systematic way.

In table 2c the correlations between approval and success measures, in each type of assessment, are very close to 0.3, which is at a significance level of  $p \leq 0.05$ . There is obviously a lot in common between these constructs (of approval and success needs). There seems to be a pool of general unhappiness and demandingness, acting in a generalised way.



Perhaps these constructs appear at the questionnaire level most strongly, because these measures are the most 'face valid'. The Subject can easily tell what is wanted, as described in the introduction above, and will give the socially approved answer. In more covert measures, a more complex pattern occurs. Perhaps Ellis's (1971) theories refer to a superficial, conscious, face-valid type of belief. However, due to Ellis's Socratic style of therapeutic dialogue, ideas held more 'subconsciously' or implicitly may somehow be 'dragged into the light of day'. These more 'subconsciously' held beliefs may be what is shown up in the more projective part of this investigation.

To bear out this idea, more powerfully acting Irrational beliefs (measured by projective means) do not correlate positively with the Rosenberg self esteem test. This would denote divergent validity between 'questionnaire self esteem', and projective measures of self esteem. Stronger correlations are however found between the incomplete sentences self approval test, and questionnaire need for success, need for approval measured by incomplete sentences, and an agreement between TAT measure of success, and incomplete sentences measure of success.

A significant correlation between irrational beliefs and self esteem does not mean that one causes the other. Following an analysis by Cramer (1992, p.105), three possibilities present themselves. The first is that low self esteem (or distress generally) may bring about irrational thinking. The second is that the two variables may have a reciprocal interaction, irrational beliefs lowering self esteem, and also low self esteem tending to encourage irrational beliefs, in a continuously interacting mode, resulting in a vicious circle. Thirdly, another factor is that an exterior causal agent may be acting on the individual to produce both lowered self esteem and irrational beliefs.

The relationship between irrational beliefs and self esteem is therefore a complicated one. The evidence seems to suggest that there is definitely a relationship, but not clear cut. The question is, are there entities actually present, which are clearly demarcated, corresponding to irrational beliefs? One answer might be that these beliefs might be simply exaggerations of 'normal' evaluative processes. To live in human society, a desire for approval, and a desire for success are useful attributes, inculcated in the individual from an early age. Perhaps these functional, basic human drives can become over-emphasised. In the form of a 'demand' these beliefs can be seized on by an anxious or unhappy individual as a 'rod for their own back', in an exaggerated form of self-flagellation. Of course irrational beliefs can also result in unhappiness being caused to other people by one person's interiorised demands, but that phenomenon is outside the scope of this study.

The 'uniqueness' of irrational beliefs is questioned by two studies. In the first, Subjects were asked to perform a thought experiment in which the Subject was asked to imagine that they had been abandoned by their partner at a party. Two sets of Subjects were used, one asked to answer as if they were 'rational', and one set asked to answer in an 'irrational' way. When asked to rate themselves on a scale of strength of feelings, on a list of seven 'rational' emotions (e.g. annoyance, frustration, sorrow), and seven 'irrational' emotions (e.g. resentment, anxiety, depression ) the 'irrational Subjects' gave a more 'emotional' rating to both the irrational and rational items (Cramer and Ellis, 1988). Although this does not rule out a reciprocal effect between emotional upset and irrationality, a continuous scale of unhappiness seems to be implied, breaking down the division between rationality and irrationality as two dichotomous entities.

In the second study (Rosin and Nelson, 1983), Subjects were asked to read out both rational (e.g. 'I'm really going to look dumb in front of the experimenter if I can't do these relatively simple tasks correctly') and irrational statements (e.g. 'There is really no logical reason why I should consider myself a less competent or worthwhile person if I make a simple mistake on this task'). The Subjects saying the 'rational' self statements rated themselves as less anxious than the Subjects who had said the irrational statements to themselves. It should be noted that a difficult and complex task followed these self statements. (Rosin and Nelson, 1983) This particular study seems to bear out Ellis's (1962, 1971) theory, but relies on the verisimilitude of the method of self-statements (of rational and irrational beliefs) as a paradigm of life-long irrational beliefs. However, the approach of Rosin and Nelson (1983) is borne out by that of May and Johnson (1973) as mentioned in the introduction.

There is a definite effect of emotional distress resulting from the interpretations put on the event by the Subject, as in explained in the Introduction. Ellis (1962, 1971) puts stress on the B in the ABC schema, but the actual way in which these beliefs operate seems more complex. As we have seen, Irrational beliefs measured by questionnaire seems to affect self esteem, but on a face-valid level. As explained in the Introduction, the questionnaire method is suspect because of compliance and social conformity effects. Going on to more covert levels of measurement, and correlating the measures, the incomplete sentence technique yielded an effect for 'need for approval', while the Thematic Apperception Technique yielded some strong correlations for both needs.

There is a basic human tendency to make sense of the world, with different parts of the mind, some of which were measured in the present study, and this tendency may be counterproductive, if the 'making sense of the world' is distorted or exaggerated in some way.

As for further research, a battery of Irrational Belief Tests, and the complete set of Thematic Apperception Test cards may further elucidate this problem. An effective means of manipulating the level (conscious or unconscious) of irrational beliefs would be invaluable.

Possibly the very insatiability of these demands, rather than their 'irrationality' is what makes these beliefs so productive of distress. An ordinary need for achievement and success is a useful attribute to have in a Western society, but when these needs become apparently autonomous and tyrannical that they perhaps take control and obsess the personality, that is where the harm is done.

Ultimately a simplistic cause and effect theory seems inadequate. Negative feelings may give rise to irrational beliefs, because unhappiness may give rise to distorted thinking, and irrational beliefs may themselves cause unhappiness, and a continuous interaction may lead to a maelstrom of interacting causes and effects.

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## APPENDIX ONE

### The Incomplete Sentences Test

The Subjects were requested to complete the sentences in a way that was a true description of them at the time.

1. I can't succeed in everything I do...
2. If he doesn't win all the time...
3. If everyone doesn't approve of me all the time...
4. He likes people to approve of him...
5. I must succeed...
6. He must win all the time...
7. Everyone must like me...
8. He feels he must be approved of...

## APPENDIX TWO

### The Rosenberg Self Esteem Test

This is scored on a Likert scale:-

strongly agree . . . . . 1

agree . . . . . 2

disagree . . . . . 3

strongly disagree . . . . 4

1. On the whole, I am satisfied with myself.
2. All in all, I am inclined to think that I am a failure.
3. I am able to do things as well as most people.
4. I feel I do not have much to be proud of.
5. I take a positive attitude toward myself.
6. I wish I could have more respect for myself.
7. I feel I'm a person of worth, at least on an equal base with others.
8. At times I think I'm no good at all.
9. I feel that I have a number of good qualities.
10. I certainly feel useless at times.

## APPENDIX THREE

### The IRRATIONAL BELIEFS TEST

This Test is scored on a Likert scale, and the Subject is requested to ring the number corresponding to how strongly he or she agrees with each statement. viz :-

1. Strongly agree
2. Agree
3. Neither agree nor disagree
4. Disagree
5. Strongly disagree

Question:-

- 1) I have considerable concern with what people are feeling about me.
- 2) I'm not afraid to do things which I cannot do well.
- 3) It is important to me that others think well of me.
- 4) I enjoy activities for their own sake, no matter how good I am at them.
- 5) I like the respect of others, but I don't have to have it.
- 6) I hate to fail at anything.
- 7) If others dislike me, that's their problem and not mine.
- 8) It upsets me to make mistakes.

continued . .

- 9) Although I like approval, It's not a real need for me.
- 10) I don't mind competing in activities where others are better than I.
- 11) I often worry about how much people approve of and accept me.
- 12) It bothers me when others are better than I am at something.

## APPENDIX FOUR

Raw scores by Subject number (completed scores only, according to Method: Subjects section)

- A = Self esteem according to Rosenberg
- B = Modified Jones Questionnaire-need for Approval
- C = Modified Jones questionnaire-deed for Success
- D = Incomplete sentences measure-need for Approval
- E = Incomplete sentences measure-need for Success
- F = Thematic Apperception Test-need for Approval
- G = Thematic Apperception Test-need for Success
- H = Self esteem-Thematic Apperception Test
- I = Self esteem-Thematic Apperception Test

	A	B	C	D	E	F	G	H	I
<b>SUBJECT</b>									
<b>1</b>	23	23	17	2	1	1	0	5	4
<b>2</b>	23	16	17	3	3	0	2	2	3
<b>3</b>	23	15	15	3	4	3	0	4	4
<b>4</b>	11	19	20	1	1	1	1	3	5
<b>5</b>	18	16	09	0	3	0	0	2	3
<b>6</b>	22	21	18	1	0	1	1	2	1
<b>7</b>	19	20	19	3	2	0	1	3	2
<b>8</b>	13	12	18	0	1	2	1	3	1
<b>9</b>	23	23	22	4	2	2	2	6	9
<b>10</b>	23	23	15	3	3	1	2	1	8
<b>11</b>	22	21	17	3	4	1	0	2	3
<b>12</b>	18	13	13	2	2	0	0	2	7
<b>13</b>	22	18	15	0	2	0	0	2	7
<b>14</b>	19	15	14	0	1	1	1	2	1
<b>15</b>	27	15	25	2	2	2	1	2	4

continued . .

	A	B	C	D	E	F	G	H	I
16	27	20	09	2	2	1	1	3	1
17	17	24	18	1	3	1	1	2	4
18	20	17	14	3	4	1	0	3	5
19	20	21	13	4	2	1	0	0	5
20	15	17	12	3	3	0	0	1	0
21	16	09	18	0	2	3	1	3	2
22	16	16	12	3	2	2	3	2	5
23	20	21	16	4	3	0	0	0	4
24	28	22	23	4	2	1	0	4	9
25	24	15	22	3	2	2	3	4	4
26	17	13	13	2	1	2	0	3	3
27	15	11	10	2	1	3	1	2	0
28	17	15	13	0	0	1	0	2	1
29	23	27	15	1	3	1	0	2	2
30	23	15	14	0	1	1	0	3	0
31	22	16	16	2	2	0	1	2	0
32	18	19	15	1	1	2	2	1	2
33	29	26	21	3	2	2	2	5	4
34	22	25	21	3	3	1	1	4	4
35	23	16	17	3	3	1	2	2	3
36	25	22	19	2	1	0	1	5	2
37	20	14	22	3	4	1	1	3	5
38	17	18	15	3	4	0	2	1	3
39	22	25	25	3	1	2	1	4	3
40	18	16	13	2	1	0	1	1	1
41	15	12	25	2	4	2	1	2	5
42	20	21	14	2	2	0	4	2	3
43	24	21	16	2	3	0	3	2	3
44	15	22	23	2	4	0	0	2	2
45	21	23	25	1	4	0	2	0	3

continued . .



	<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>	<b>I</b>
<b>46</b>	21	23	17	0	1	0	0	2	0
<b>47</b>	13	11	14	1	1	0	1	4	3
<b>48</b>	20	14	16	1	1	0	1	1	2
<b>49</b>	19	13	12	0	1	2	1	4	2
<b>50</b>	24	24	21	3	2	0	1	4	6
<b>51</b>	22	18	10	4	2	1	0	1	2
<b>52</b>	18	17	12	1	1	0	1	2	1
<b>53</b>	18	22	15	4	2	0	0	2	1
<b>54</b>	14	22	13	2	0	1	0	3	4
<b>55</b>	18	20	15	3	1	2	3	4	2
<b>56</b>	14	19	10	0	0	1	2	3	0
<b>57</b>	19	21	12	1	0	1	1	4	1
<b>58</b>	23	21	16	2	2	0	0	0	2
<b>59</b>	21	23	18	4	2	0	1	1	5
<b>60</b>	13	24	21	4	3	1	3	7	5
<b>61</b>	19	13	18	0	1	0	4	2	0

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