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A RECONCEPTUALIZATION OF ANXIETY

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## A B S T R A C T

The aim of the thesis is three fold: a-To develop a new questionnaire that measures anxiety in terms of four components (feeling, cognitive, behavior and somatic). b-To investigate the relationship between feeling and cognition with regard to anxiety. c-To identify, with the application of Three Systems Theory, the most salient component of anxiety in each of the DSM-III anxiety disorder sub-classifications and to evaluate the validity of DSM-III anxiety disorder sub-classifications.

a-In order to assess the level of anxiety, I have developed a new Four Systems Anxiety Questionnaire (FSAQ). FSAQ incorporates a feeling component along with the behavioral, somatic and cognitive components. A psychometric evaluation (reliability and validity levels) of the questionnaire was found to be satisfactory.

b-Another aim is to reconsider one of the tenets of cognitive therapy that cognitive appraisals are the necessary preconditions for the emergence of feeling. Such a view assumes that feeling is merely an epiphenomenon of cognitive processes. This research establishes, however, that feeling and cognition appear to be relatively independent systems and that their modes of interaction are influenced by the personality structure of the individual. This conclusion was obtained by using the FSAQ on university students and various categories of anxiety patients. In particular, the research compared the scores on the feeling and cognitive components of both males and females, obsessive-compulsives and rest of the DSM-III anxiety patients.

c- A further aim of the reseach was to examine the DSM-III anxiety disorders classification from the Three Systems Theory's point of view.

The Three Systems Theory proposes that anxiety has three relatively independent components: cognitive, behavioral and somatic. In the various anxiety sub-classifications of DSM-III one or other of these three components dominates. The other purpose of my research was to consider each of the DSM-III anxiety disorders separately and to determine which of the three components plays the major role in the manifestation of the particular syndrome.

In general, the results indicate that each anxiety disorder is indeed characterised by a different profile. An anticipated outcome of this research is that a clinician will be able to identify the main component of anxiety in a particular syndrome and hence select most appropriate treatment.

The results of this study support DSM-III classification of anxiety disorders into two main categories of phobic and non-phobic (i.e. phobic and anxiety states).

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## I N T R O D U C T I O N

Anxiety is a ubiquitous phenomenon. Barlow (1985) estimated that 30 to 40 % of the general population had an anxiety problem sometime in their lives. Five to 10 % of the general population (Sheehan, 1978) in America suffer from various anxiety problems . Sheehan (1978) wrote that approximately 10 to 15 percent of all patients seen in general medical practice in America were anxious, hypochondriacal, hysterical, obsessive or fearful. In Britain in 1978 over 25 million benzodiazepine (the most commonly used anti-anxiety drug) prescriptions were dispensed (Inst. for the study of drug dependence, 1982).

Because of the prevalence of anxiety a number of clinical psychologists and psychiatrists have turned their attention to various anxiety related problems with the purpose of finding the most effective treatment for anxiety. One such attempt came from Lang in 1971. Extrapolating from this work Rachman and Hodgson (1974) proposed the Three Systems Theory, according to which anxiety comprises three loosely coupled components: verbal (cognitive), motoric (behavioral) and physiological (somatic). Furthermore, the three components are capable of relatively independent functioning. This approach regards affect (feeling) as a part of the cognitive component.

The focus of the present study is threefold:

A- An investigation of the relationship between cognitions and affect (feelings), with reference to anxiety.

B- Within the framework of the Three Systems Theory, an investigation of the most salient component of anxiety in each anxiety disorder sub-category of the Diagnostic Statistical Manual Third Edition (DSM-III). Also, an evaluation of the validity of anxiety disorders classification in DSM-III.

C- The development of a new anxiety questionnaire.

The first aim is to investigate the relationship between cognition and affect (feeling) in anxiety. The nature of this relationship is not clear as indicated from the ongoing controversy in current literature (Hollandsworth, 1986). In this study it will be argued that for clinical purposes, at least, affect should not be considered as an epiphenomenon within the domain of cognitions. Affect and cognition should be regarded as interacting but relatively independent components.

The positing of a fourth component (affect) suggests a need for a revision of the Three Systems Theory and the assumptions of cognitive therapy. It also implies the need for the development of a new questionnaire which measures anxiety in terms of four components.

The inquiry into the relationship between affect and cognitions, may in the first instance be conceived as relating to psychology in general. However, it has strong implications for clinical psychology in terms of the selection of the most appropriate treatment package for patients with anxiety problems.

The second aim of this study is to identify the most salient component of anxiety in each of the anxiety disorder sub-categories in DSM-III using Three Systems Theory, and to examine the validity of these anxiety disorder sub-categories. The investigation of the manifestation of anxiety disorders from the Three Systems Theory point of view, has direct relevance to clinical psychology, as it is used in the assessment, classification and treatment of anxiety disorders.

I will proceed by examining the main approaches to anxiety in psychology and the Three Systems Theory perspective. Then, I will discuss whether affect should be treated as separate from cognition. Finally, I will present background information about features of

DSM-III, together with a discussion of DSM-III anxiety disorders classification from the framework of the Three Systems Theory.

## 1. CONCEPTUALIZATION OF ANXIETY

This section forms the most comprehensive part of the introduction chapter. It includes different approaches to the concept of anxiety from four main schools of psychology i.e. psychoanalytical, physiological, behavioral and cognitive. The purpose of such presentation is to outline the theoretical approaches of each school to anxiety, and to illustrate the most salient component of anxiety in each approach. Finally, a critical evaluation of the Three Systems Theory will be presented.

### 1.1. PSYCHOANALYTIC APPROACH

All analytical theories regard anxiety as central. For this reason, before explaining anxiety in Freudian terms, the presentation of the analytical theory in general will help the understanding of anxiety within this theory.

Some authors (Prochaska, 1984; Fisher, 1970) state that Freudian theory can be viewed from six different perspectives i.e. dynamic, economic, topographic, structural, genetic and adaptive. Nevertheless, approaching the theory using only the first five perspectives was thought to be more convenient since the sixth perspective i.e. adaptive, which explains inborn preparedness of the individual to interact with ongoing activities in the environment (Prochaska 1984), was not originally put forward by Freud but was later developed by Hartmann (1958).

### 1.1.1. The Dynamic View

The analytical theory explains mental phenomena as continuously interacting, struggling forces. The primary elements that bring about this interaction are named as instincts, drives, which are continuously in motion. These are directly experienced as an urging-energy, pressing for immediate action. As Fenichel (1945) said "They (instincts) have a provocative character" (p.11). Those instincts impel the organism to direct action. The regulating rule of those drives is called the pleasure principle. Any kind of excitation is felt as unpleasure by the organism, and the aim of the instinct is to reduce the level of excitation, and such process of decreasing the excitation level is experienced as pleasure. Although the instincts are the sole motivating agency in the organism, they have a conservative character (Freud, 1932) The aim of the instinct is to sustain the level of homeostatis and to bring the organism back to this equilibrium level whenever the level of excitation increases.

The aim of instincts is to lower the level of excitation by discharge of tension that has been created by internal and external exciting stimuli. The instincts are not always successful in carrying out this action. The counter forces oppose and conflict, and this struggle constitutes the basis of mental phenomena that last until the death of the organism. The governing rule of the forces that are striving for discharge is what Freud calls the pleasure principle, while the counter forces that oppose such an immediate discharge are regulated by what he calls the reality principle. As Fenichel (1945) stated "Impulses toward action are representative of primary biological tendencies, the opposite impulses (counter forces) are brought into the organism by influences from outside" (p.12). At birth an infant is endowed with instincts only, but within a short period of time the newborn realizes that it is not possible to gratify

immediately all of his own drives, later he realizes that attempts for immediate satisfaction of his impulses may even bring punishment from the environment. From the dynamic point of view, the whole theory of personality is based on the struggle between impulses that are striving for immediate gratification and counter forces that are trying to avoid such gratification or at least trying to postpone them until the gratification of such impulses will be in harmony with the demands of the external situation.

Freud divided instincts into two categories, the sex instinct (eros) and the death instinct (thanatos). Mental energy that is derived from eros is called libido. It is the energy which represents the sexual instinct in the psyche. The prime object of the libido is sexual unification but in the course of mental development the original object is deflected into self-love, friendship and love of humanity. The mental representative of thanatos is not named by Freud but Arndt (1974) suggested the name "mortido" to refer to the representative force of thanatos. The behavioral manifestations of Mortido are acts of hostility, aggression and destructiveness.

When these two forces, libido and mortido, become attached to objects it gives rise to what is called cathexis. Cathexis refers to the accumulation or concentration of either of these two mental forces in a particular place or channel. In the psychosexual development of a child, libido first gets cathected to the mouth, second anal and third phallic areas of the body. Thus, sexual pleasure can be obtained by stimulation of these places of the body. For a healthy psychological development of a child, libido must pass through these three cathexis sites of the body, reaching the genital stage in the end (these developmental stages will be explained in the genetic view). But this process can be halted so that a disproportionate amount of libido becomes firmly cathected to one of the above mentioned three areas of

the body. This stopping of a portion of libido at a particular level of development is termed fixation (Arndt 1974).

As causes of fixation Fenichel (1945) referred to two factors:

A- The constitutional structure of an organism

B- Experiences during the stages of psychosexual development.

By constitutional structure of organism, he meant the amount of psychic energy available at birth, and the relative sensitiveness of the three parts of the body. All these are related to physiology and biology rather than psychology. Therefore the second factor will be stressed.

Psychoanalysis deals mainly with experiences that lead to the emergence of fixations. Again two events can be named, excessive satisfaction or excessive frustration. In the case of excessive satisfaction the stage at which this over-gratification occurs is renounced only with reluctance (Fenichel 1945). The organism will always have a tendency to go back to this stage whenever it is confronted even with a small difficulty. In the case of excessive frustration the organism refuses to proceed because of the low level of satisfaction at that level of development. In both situations the level of strength of the instincts that are trying to attain immediate gratification will be high, so the organism must employ its counter instinctual forces to keep those impulses in harmony with the demands of reality.

As Fenichel put it "When tendencies to discharge and tendencies to inhibit are equally strong, there is externally no evidence of activity but energy is consumed in an internal hidden struggle. Clinically this is manifested by the fact that the individual subject to such conflicts shows fatigue and exhaustion with no perceptive work" (1945, p.14).

Because the amount of energy that an individual employs for his psychic life is limited in quantity, the greater the amount spent in internal

conflicts the less is left for external events. This brings the topic to mental economics.

### 1.1.2. The Economic View:

The economic view states that the quantity of energy available for the organism to function is limited. The greater the amount of energy is spent for internal struggle between instinctual forces and counter-instinctual forces, the less is left for other activities. An individual tries to save as much energy as possible so that he can utilize this unused energy to develop himself. The economy principle also means the repetition of suitable behavioral patterns which thereby become automatic, and need little effort to execute them. The organism tends to perform the functions necessary for the maintenance of equilibrium with the minimum expenditure of energy; this is called the principle of economy (inertia-principle) (Alexander, 1963). The principle of inertia (economy) impels the organism to cling to earlier automatic behavior which was satisfactory in the past but which is no longer appropriate for existing conditions. This returning back to the earlier pattern of behaving is more probable if the individual has very little energy to deal with the current problems. The initial amount of energy is partly determined by the individual's constitution, and partly by the individual's mental economics. What is meant by mental economics is the struggle between instinctual forces and counter instinctual forces, which aims to postpone the gratification of drives or tries to inhibit (repress) them totally.

If, then, the amount of energy cathected to the instinctual drives is high, counter instinctual forces will have to exert a greater amount of force to stop the instinctual drives. This means that a disproportionately greater amount of an individual's energy is being spent for internal conflicts, leaving little to be spent for daily

life. Hence, there is a negative correlation between the amount of repression that an individual employs and the quantity of the energy that is left for other activities of the individual. As evidence for such a claim Fenichel (1945) presents the fact that neuroses frequently break out at puberty. Before puberty the person affected is able to withstand a certain amount of undischarged instinctual energy, however, at puberty biological and psychological changes demanded more energy. Counter forces are not sufficient because part of the energy which is employed by counter instinctual forces to repress the instinctual demands pressing for gratification is taken away to be spent for psychological and biological development.

It is often mentioned in this section that personality was seen as an interaction between instinctual forces and counter instinctual forces, but the most interesting point Freud brought into discussion is that an individual is almost totally unaware of this struggle which takes place in a very deep layer of his personality.

### 1.1.3. The Topographic View

Freud divided mental processes into three areas: conscious, pre-conscious and unconscious. He also added that this three-fold division is neither absolute nor permanent. What is preconscious becomes conscious without any assistance or what is unconscious may become conscious through analytical work (1940).

Consciousness was the area of mental process that Freud dealt least with. He referred to consciousness as the most surface layer of personality, and as being made up of "broken lines." Because what is conscious is conscious only for a moment, it may not be conscious the next moment (1940). He believed that consciousness was a transitory mental state.



The pre-conscious occupies the place beneath consciousness, and is that part of mental life that has the capacity for becoming conscious without the definite release of repression (Arndt, 1974). The Pre-conscious consists of what were earlier conscious ideas and memories which can, with relative ease, become conscious again.

The unconscious is one of the most important contributions of psychoanalysis to psychology. This part of the mental processes was given the primary role as the determinant of behavior in Freudian theory.

Unconscious processes have totally different characteristics from conscious processes. Some important characteristics are:

A- No varying degrees of certainty in unconscious. Each event is held to be as certain as the other. In consciousness (everyday life thinking process) the degrees of certainty are vital and are a very often employed dimension along which we arrange our ideas.

B- *Wishes in the unconscious are free from mutual contradiction.* Two contrary wishes may be active at the same time and rather than cancelling each other out, they combine to form an intermediate wish as a compromise.

C- Perhaps the most important peculiarity of the unconscious is that processes taking place in this system are timeless. Early (childhood) unconscious experiences are not past events in the unconscious but they exist in their original freshness in the present. What is unconscious is always immediate even though it may have entered the system a long time ago. So the orderly sequence of events is not the characteristic of unconscious processes, since in conscious life orderly means that one event precedes another (Arndt, 1974).

D- Unconscious processes are governed by the pleasure principle so reality has no meaning for them.

The analytical view of personality is a dynamic one that proposes continuous struggle between instinctual and counter instinctual forces, and most of this struggle is unconscious. But nothing has been said about how such a struggle occurs and through what kind of means.

#### 1.1.4. The Structural View

Structurally, personality is divided up into three parts in psychoanalysis. At birth a newborn's psychological structure is dominated by the id which is the seat of all instinctual drives and wishes. Instinctual forces (libido and mortido) arise from the id. The pleasure principle is the only rule that governs the id. An infant directed by the id is a completely unsocial organism. He has very little contact with reality. Freud referred to the id as a chaos, that part of the personality which is filled with energy reaching it from the instincts, which aims only to bring about the satisfaction of instinctual need subject to the observance of the pleasure principle (1932). What has been said for unconscious processes also applies to the id for it occupies the great part of the unconscious. The id knows no judgement of value, no good or evil, and no morality. Instinctual forces striving for discharge (cathexis) are the sole element of the id (Freud, 1932). In the very beginning of an infant's psychological development the id rules completely, and the mental life consists of promptings and excitations. The infant finds those excitations disturbing and tries to reduce this displeasure by motor activity. Just after birth the infant is exposed to various kinds of frustrations. The infant realizes that his id's wishes cannot be satisfied immediately. He has to wait some time before the wishes of the id are gratified.

This contact with reality, the failure of the real world to provide immediate gratification causes a structural change in the baby's mind: the development of the ego.

The development of the ego is also caused by the fact that the id, governed by the pleasure principle is not able to bring desired satisfaction to the organism. The pleasure principle does not apply to the ego, which has its own governing rule, the reality principle. The ego's primary task is self preservation therefore each step that it takes must be in harmony with the demands of reality.

The point worth noting is that, the principle that regulates the ego -the reality principle- does not contradict the pleasure principle. The reality principle attempts to satisfy the instincts, by taking into consideration the external situation. The reality principle differs from the pleasure principle in one point and that is, the impulses of the id that are striving for satisfaction must wait for the appropriate moment rather than achieving immediate gratification (Arndt, 1974).

When the external and internal tasks of the ego are combined, it can be said that the ego performs the task of mediating between the external world and the id. It accomplishes this task using such means as attention, perception, the control of motor activity, and defence mechanisms. As the infant matures, the ego starts to employ another function that aids the ego in its task; namely, thought. In this way the ego becomes more able to exert control over the pleasure principle (the primary process) and substitute for it the reality principle (the secondary process).

All these functions of the ego are named as the secondary process as they oppose the primary process which controls the activities of the id. The secondary process functioning includes those processes which we are aware of and that are applied in everyday life. The ego develops secondary process to function better as a mediator between the demands of the id and requirements of the external reality. Again, the ego's aim is to satisfy the id's impulses in a way that the

gratification of the id's impulses is in harmony with the demands of the environment. As Freud put it "All the functions of the ego are performed in the service of the id" (1932, p.109).

The ego consults its defense mechanisms (especially repression) when it feels the threat of being dominated by the demands of the id. This is also the moment at which an individual feels anxiety. Freud referred to neurotic anxiety as a signal to the ego that unwanted instinctual impulses are approaching the consciousness. These instinctual forces must be suppressed, stopped or rendered powerless (Freud, 1932). Repression is that mechanism by which those undesired instinctual impulses are pushed back into the unconscious again. But to keep all these instinctual impulses down by the process of repression is a very energy consuming business; as it was stated before, the more energy is spent for internal struggles, the less is left for the other activities of the individual.

But the ego's task is not limited to the id and problems of the external world. Between the ages 4- 7 new structural energy is being formed in the personality, the super-ego which is the internalized (introjected) voice of the same-sex parent, which continually asks the ego to stick to its principles. In fact, through the super-ego all societal rules are passed to the child. The super-ego can roughly be equated with conscience. It is that part of mental life that deals with moral standards, rights or wrongs (Klein, 1984). This agency is also mainly unconscious. The appearance of the super-ego brings an additional burden to the operations of the ego. So the ego has to serve three masters, the id (the seat of unconscious instincts, sexual and destructive), the super-ego (home of morality), and external reality. So in order that it can enjoy a healthy life, the ego has the very difficult task of achieving a compromise between the demands of these three masters. As Freud said "The ego, driven by the id, confined by

the super-ego, repulsed by the reality, struggles to master its economic task of bringing about harmony among the forces and influences working in and upon it; and we can understand how it is that so often we cannot suppress a cry: life is not easy" (1932, p.111).

In the developmental process of a child there are certain stages at which the immature ego is very liable to be afflicted.

#### 1.1.5. The Genetic (Developmental) View

One of the most shocking statements of Freud was the claim that sexual life did not begin at puberty but was manifested as early as birth. He also made a distinction between sexual and genital, postulating that the former is a wider concept and includes many activities that have nothing to do with genitals. Sexual life, he said "includes the function of obtaining pleasure from zones of the body - oral, anal and phallic - a function which is subsequently brought into the service of reproduction" and he added that "the two functions often fail to coincide" (1940, p.10). He referred to an infant as a "polymorphous pervert", since the excitation of certain parts, which are determined by the age of the child, gives him sexual pleasure. Thus, for Freud the stages of psychological development are sexual stages and are determined primarily by the unfolding of sexuality in the oral, anal, and phallic phases. Freud added one more stage; the genital. This stage is nothing more than the reflection of the three important stages in the formation of personality during the period of puberty. Freud also inserted the period of latency between the three pre-genital stages and the genital stage, during which all psychosexual activity of the child subsides temporarily until the beginning of the genital stage. The period of latency corresponds to primary school years.

The first three stages which cover the first five or six years of an infant's life are important because during these years the origins of the personality are established. The interaction between the child and his environment (i.e. significant others) in each of these stages is crucial in determining the variety of traits and types of characters that an individual attains in adulthood. Each stage of psychosexual development is determined by the concentration of sexual energy (libido) in certain parts of the body. At each stage either over-gratification or frustration of the libido causes fixation at one of these developmental stages. When such a fixation of the libido's energy occurs it causes disturbances in the adult's psychological and sexual life which may lead to psychological symptoms and perversions. Nobody has a faultless psycho-sexual development, some kinds of fixations are always present.

The determining factor, whether an adult will have a healthy personality and sexual life is based on quantitative relations (Freud, 1940). Freud comprehended the difference between neurotic and healthy in terms of quantity rather than quality. This was the conclusion that compelled Freud to state that every individual was neurotic to a certain extent.

#### 1.1.6. Implications for Anxiety

I have, up to now, presented a general sketch of Freudian theory. From now on I will outline the conceptualization of anxiety from these five different perspectives.

Freud referred to anxiety as an "affective state, it is the reproduction of an old event which brought a threat of danger. Anxiety serves the purpose of self-preservation and is a signal of a new danger" (1932, p.118). The analytic approach differentiates three types of anxiety.

Realistic anxiety (fear): It is a reaction to a danger that exists in external world. Such an anxiety is connected to the flight reflex. Freud regarded it as a manifestation of the self-preservative instinct (1932).

Neurotic anxiety (includes free floating, panic, phobic etc.): This is a signal of the ego indicating that the unconscious demands of the id are approaching consciousness and threatening the protective wall of the ego.

Moral anxiety (super-ego anxiety, guilt): Individuals having a harsh super-ego are inclined to experience intense guilt feelings when they do something or think about something that opposes the moral norms of their society.

For the purpose of this research, neurotic anxiety will be elaborated, for it is the source of problematic anxiety mostly encountered in clinical practice.

According to the dynamic perspective, anxiety takes place between instinctual and counter instinctual forces. This means economically that a great amount of energy is expended on this struggle. The implications of neurotic anxiety are seen in all its aspects from the structural view. Freud (1932) thought that the ego was the sole seat of the anxiety, that the ego alone can produce anxiety. Anxiety is felt by an individual whenever the ego realizes that it can no longer keep the instinctual forces of the id under control. The ego however, has certain devices -defense mechanisms- through which it can control the id. Repression is the most often employed defence and it is intimately related to anxiety. The process of repression pushes the threatening id impulses back into the unconscious, thus preventing their becoming conscious. When the libido (psychic energy) is deflected from the normal channel of flow during the period of psychosexual development, it prevents the infant's psychic energy from appropriately discharging

during the oral, anal or the phallic phases. This results in the unused energy being pushed into the unconscious in the early years of the infant. Because the repressed instincts are continuously striving for discharge and because the unconscious is timeless, the repressed material continually strives for discharge. The ego (counter instinctual force) attempts to stop this gratification. The more often the individual uses repression, the greater the amount of material pushed back into the unconscious and the greater the force of the material in the unconscious striving for gratification. Eventually, the individual experiences anxiety whenever the ego is threatened to be overwhelmed by the forces of the id. Therefore, a great amount of his psychic energy will be necessary to control this internal struggle.

Freud stressed the primacy of affect, in this whole process, claiming that the first time the ego felt anxious over certain events, it employed the mechanism of repression to overcome this distasteful feeling (importance of affect will be elaborated in the chapter entitled Feelings and Cognitions).

There are instances, however, in which even though the ego employs repression, it may not be able to control the instinctual energy or the id. Under such circumstances the ego resorts to a symptom formation process. For example, in an hypothetical case where repressed homosexual wishes strive for gratification, the ego feels helpless. Its measures are rendered ineffective by the strength of these repressed wishes. Whenever a situation triggers such a latent homosexual wish, the person experiences a panic attack, i.e. the ego panics because it cannot hold the drives of the id under control. The poor ego, left in a very difficult situation, has two alternatives. Either it can let homosexual wishes go i.e. become an overt homosexual, or resort to symptom formation which is a compromise between impulses of the id, demands of external world, and commands of the super-ego.



The first path is very unlikely to be taken by this person since those wishes are already in the unconscious which means that the ego, taking commands from the super-ego and the external world, is strictly forbidding their gratification.

The second alternative is symptom formation. Hence the ego deceives itself into believing that the anxiety is caused by, for instance, being in crowded streets. As a result, that person could develop agoraphobia. In doing so, the ego substitutes a different problem (agoraphobia) more acceptable than homosexual wishes. Furthermore, this phobia prevents the person from entering into situations where those homosexual impulses are likely to be stimulated and thereby causing panic anxiety attacks. This process is termed "displacement". The most important feature of displacement is the removal of the source of anxiety from within one's own personality (seated in the unconscious) and the attribution of it to something else (object, situation etc.) that lies outside the person. It is always possible to escape from something external whereas there is no escape from a threat coming from within (Freud, 1932).

Obsessive-compulsive disorders are referred to by Freud (Arndt, 1974) as another example highlighting the relationship between symptom formation and anxiety. If an obsessive person is prohibited from engaging in compulsive acts (rituals), he suffers from acute anxiety attacks. Such cases seem to illustrate the validity of the Freudian explanation of symptom formation as devices to deal with unmastered drives. Freud asserted (1940) that symptoms of neuroses are either a substitute satisfaction of some sexual urge or a measure to prevent such a gratification. As a rule however, they are a compromise between the two. Whenever there is a problem of anxiety, it means that unconscious id drives, repressed mainly during the period of psychosexual development, are striving for satisfaction.

Before concluding the explanation of anxiety from an analytical point of view, it is crucial for the aim of this research, to stress the importance of feelings (affects) in the formation of anxiety. Recall that anxiety is the fear that repressed material is about to dominate the ego. Repression is caused whenever the ego is desperate to deal with the impulses of the id. Further, such a state is experienced by the ego as disturbing, panicking and terrifying, in other words, a state of unpleasure. Thus, feelings have a primary role in the development of repression, which in turn determines the outcome of the psychosexual stages, the personality make up and the occurrence of neurotic symptoms. So, the centrality of feelings in analytic theory is obvious, accordingly they are the first target of analytic treatment. Freud (1932) thought that the instincts, innate impulses which are mainly unconscious and derive their energy from the id, manifest themselves as feelings.

#### 1.1.7. Summary

The aim of psychoanalytic psychotherapy is to make those problematic wishes and feelings conscious, to bring harmony between of the id, the ego and the super-ego (neurotic problems also mean that these are not working in harmony, rather, conflicts are dominating their relationships to each other). Perhaps here lies the most important contradiction between analytic therapy and cognitive therapy. The Freudian approach, in contrast to cognitive therapy, stresses that feelings rather than cognitions are the primary cause of neurotic anxiety. This conclusion can be traced back to the origin of neurotic anxiety. Recall that in Freudian theory, the occurrence of neurotic anxiety is tied to the excessive amount of repressed material. The ego chooses the way of repression when it realizes that the FEELING of unpleasure, that has been caused by unconscious id impulses, is about

to dominate the personality. Recall also that in the dynamic explanation of Freudian theory, the pleasure principle was introduced to be the basic rule of psychic life (Freud, 1932). All these conditions bring the discussion to the conclusion that, for Freudian theory feelings play the determining function in the formation of personality and psychological problems.

Cognitive therapists argue that a change in cognitions will bring about a change in emotions and feelings; and neurotic problems lurk in the cognitive structures of individuals. But if the basic rule is the pleasure principle and repression is caused by feeling of unbearable unpleasure and excessive repressed material is leading to the neurotic anxiety, then the faulty cognitive structures of an anxiety patient must have been determined by early affective crises. To be explicit: a person has distorted cognitive structures, because he has accumulated such a great deal of unconscious material that he begins to perceive even innocuous situations as dangerous, even very trivial stimuli are able to trigger the repressed material (again, this condition is experienced as unpleasurable feeling) which is waiting for an opportunity to gratify its impulses (unconscious id drives).

Sandberg, Taplin and Taylor (1983) point out the difference between cognitive and analytic approaches by stating that "Psychodynamic thinkers view emotions as the major psychological issue and thinking as a secondary process. Cognitivists, not surprisingly, tend to believe that emotions follow thought" (p.280).

So all these results bring the discussion to the same point again, in analytic therapy, feelings rather than cognitions are considered as the most important component causing the problem and therefore they should be changed first. It is also important to keep in mind that the cognitive structures of a child do not develop out of nothing but are formed by excitations and relaxations (these are experienced by the

organism as feelings) that he has experienced since birth (Fenichel, 1945).

## 1.2. PHYSIOLOGICAL APPROACH

In the physiological tradition, emotions are conceptualized as physical and quantitative phenomena. This approach also stresses the importance of environmental stimuli, but primary importance is attributed to the activity of particular areas of the central nervous system and changes in the levels of certain hormones in the formation of anxiety. Fisher (1970) stated that the aim of physiological psychologists was to clarify the correlations between external stimulation, certain physiological processes and affective experience.

### 1.2.1. Review of Theories

The 1950s witnessed an increasing interest in an area of the brain called the reticular formation, which was thought to be an important determinant of emotional experience. Direct electrical stimulation of specific reticular areas immediately awakens the experimental animal such as cats and rats, because of this peculiarity it is called the reticular activating system (RAS) (Levitt, 1968).

The first theory to show the importance of the RAS came from Lindsley (1951). He proposed that the RAS is closely related to the level of cortical functioning, and that the greater the level of cortical activity, the greater the emotional arousal (Fisher, 1970). Malmö (1957) who adapted a similar approach to Lindsley's activation theory argued that, the cerebral cortex and the reticular system are involved in a reciprocal feed-back loops to maintain an optimal stimulation level. Sensations arriving at the cortex are continuously

sent back to the RAS. When the frequency of impulses becomes too great, the RAS plays a regulating function, sending inhibitory impulses back to the cortex, thereby damping its activity. When stimulation from the external world is low, the sensations arriving at the RAS via the cortex is not optimal, the RAS therefore sends activity provoking impulses to the cortex. It appears that the RAS and the cortex have a reciprocal activity towards each other (Levitt, 1968). Basing his argument on these assumptions Malmö (1957) claimed that the experience of anxiety is a result of a weakening of the inhibitory aspect of the RAS. Such weakening results in too many facilitative impulses being discharged to the cortex leading to a level of arousal which exceeds the optimal. If the cortex cannot handle this excessive level of arousal, the experience of anxiety occurs. Fisher (1970) drew attention to the similarity between Malmö's theory and Freudian theory of anxiety. According to the latter, anxiety is experienced when the ego is overwhelmed by the stimulation coming from the id.

In 1960's the attention in psychophysiology moved to endocrinology and hormones. It was adrenal and pituitary glands that attracted most interest because both appeared to be involved in emotional arousal.

Research on endocrinology of anxiety can be divided into two separate kinds:

a- Those that aim to differentiate emotions according to the activation of certain hormones.

b- Those that attempt to show that regardless of the nature of emotion, physiological and hormonal activation will be the same. That is, the type of emotion is determined by the type of interpretation of a given situation (cognitive structures) (Theory of General Arousal) (Levitt, 1968).

Those psychologists who advocate the first approach (Ax, 1953; Breggin, 1964) attempted to assess specific hormonal changes related to

anxiety and anger. Their research was mainly concerned with the impact of adrenalin/nor-adrenalin ratio in the case of fear and anger. It is known that although both hormones bring about sympathetic responses they have a somewhat different function (Martin, 1971).

Adrenalin has more obvious central effects. It mediates the increase in systolic blood pressure by an increase in heart rate, further it causes an increase in blood sugar level. Whereas effects of nor-adrenalin are manifested at the periphery, e.g. increased blood pressure through constriction of peripheral blood vessels rather than increasing heart rate (Martin, 1971). After a succession of experiments theorists such as Ax (1953), Elmadjian, Hope and Lamson (1957) concluded that anxiety responses were more adrenalin dominated while anger was largely determined by nor-adrenalin.

The General Arousal theorists such as Schachter and Singer (1962) argued that physiological arousal is emotionally non-specific and it consists simply of a general arousal or activation but the type of subjective feeling is determined at the cognitive level (Fisher, 1970; Levitt, 1968). The General Activation theorists suggests that two factors are involved in an emotional state (Duffy, 1962).

A- A degree of activation, low and high.

B- Direction.

A- Activation occurs at the physiological level, is non-specific and may vary from individual to individual.

B- The second aspect operates at the psychological and behavioral level. Two persons may have an equal level of physiological arousal in a situation but the direction of arousal for each may be different, i.e. one may interpret this arousal as an anxiety while the other may remain ignorant of such an activation. Several other theorists (Schachter and Wheeler, 1962; Korchin, 1964) also agreed with this explanation. Levi (1963) experimentally manipulated the experience of

emotions by showing a tragic war film to one group, and a comical film to another. They tested the level of adrenaline after the films. Although the two groups of subjects reported different feelings, they had approximately the same level of adrenaline and nor-adrenaline increase. Similarly Di Giusto, Cairncross and King (1971) suggested that variation in epinephrine level was probably affecting general arousability.

The other area related to the relationship between hormones and emotions is pituitary-adrenocortical activity. Martin (1971) stressed the intimate involvement of pituitary adrenocortical system in emotional reactions. He indicated that when the posterior hypothalamus is activated in response to producing general sympathetic response, it releases hormones which stimulate the nearby pituitary gland to secrete adrenocorticotrophic hormone (ACTH) into the blood stream. The ACTH causes the adrenal cortex gland to secrete adrenocortical hormones (ACH) which aids the organism in responding to stress.

### 1.2.2. Recent Developments

Towards the end of 1970s two new theories of anxiety appeared in the literature one by Gray (1979) the other by Redmond (1979). It is not yet clear whether these two theories are incompatible or complementary (Lader, 1983).

Gray (1979) suggested that anti-anxiety drugs block the behavioral effects of secondary punishing or non-rewarding stimuli (CS). He postulated a behavioral inhibition system which is impaired by the anxiety drugs thereby alleviating anxiety states. He also tried to localize this system neuro-anatomically, giving the primary role to the septo-hippocampus. On the other hand Redmond (1979) concentrated on the locus ceruleus and nor-epinephrine pathways.

Lader (1983) proposed an eclectic approach stating the importance of both Gray's and Redmond's theories. For him, the explanation of anxiety requires both systems to be taken into account. "Septa hippocampal, a specific system that involves the appraisal of specific stimuli and the locus ceruleus a diffuse system that is involved in the mediation of non-specific arousal and hypervigilance. The former is relevant to phobic states the latter to generalized anxiety in tonic states, and panic attacks in phasic states " (Lader, 1983, p.9). Given the lack of conclusive research it is presently premature to determine which theory is the most valid (Gray's, Redmond's or Lader's), and it is better to leave such conclusion to the results of future research.

### 1.2.3. Summary

The physiological tradition views emotion (anxiety) as more related to the activation of certain bodily processes rather than attributing the importance to psychological factors.

In the physiological approach, any emotional state is tied to the arousal of certain parts of the central nervous system or activation of certain neurochemical agents and the subsequent development of somatic symptoms. The treatment package offered for the alleviation of problematic anxiety contains direct intervention to those areas and somatic symptoms by medication (anti-depressants or anti-anxiety drugs) with varying degrees of success. Clinicians who adhere to this approach attempt to discover areas of the CNS or certain neurochemical agents which are related to the problem of anxiety. After identifying the factors responsible for anxiety, they try to design and administer the appropriate drugs which reduce the intensity of such activation i.e. alleviate anxiety.

Lack of successful treatment outcome, using pharmacological interventions based on the physiological approach for the management of



anxiety, has partly led to the increased acceptance of the contributions of environmental factors in the aetiology and treatment of anxiety. This brings the discussion to the behavioral approach to the conceptualization of anxiety.

### 1.3. BEHAVIORAL APPROACH

#### 1.3.1. Development of Behavioral Theories

Before Behaviorism came to prominence, Functionalism and Structuralism were the leading schools. The former devoted itself to the analysis of the operations of consciousness while the latter mainly dealt with the elements of consciousness. Both of these schools relied heavily on introspection in their investigations.

Behaviorism was a revolt against both the subject matter (consciousness) and the method (introspection) of these schools. Instead of consciousness, Watson proposed overt behavior, for introspection he substituted the objective method of experimentation. In his book "Psychology As the Behaviorist Views It" (1913), he referred to psychology as a purely objective, experimental branch of natural sciences.

Although divergent theories appeared later within the behaviorist school, certain principles were accepted by all psychologists adopting this school of thought (Fisher, 1970).

A- Behavior whether human or animal, normal or abnormal, is acquired through the process of conditioning.

B- The processes involved in conditioning display certain consistencies that can be formulated in terms of laws.

Behaviorists conceived all psychological problems as manifestations of inappropriate learning. Since learning meant

stimulus-response connections, the aim of the behaviorist approach to psychological problems was to break the stimulus-response chains that lead to the emergence of the problematic behavior and then to substitute these chains with more adaptive ones. In this process of behavior modification the focus is on the overt behavior, not on the underlying cause or on the cognitive structures of patients.

The success of behavior modification in the laboratory led to the attempts to apply Behaviorists' methods for clinical use, particularly after it was shown that neurosis could be induced experimentally (Kazdin, 1978). This seemed to confirm that the laws of learning could be employed for the explanation and treatment of human psychological disorders.

The first Behaviorists to investigate anxiety were Pavlov and Watson. Watson thought of neurotic disorders as conditioned emotional responses.

The results of his experiments (Watson and Rayner, 1920) indicated him that fears could be conditioned, that the conditioned reaction could be generalized beyond the original conditioned stimulus and that by applying the principles of learning the conditioned reaction could be unlearned. Watson did not attempt to develop a comprehensive theory to explain anxiety, but his studies of conditioned emotional responses in human infants resulted in two conclusions (Kazdin, 1978).

A- Behavioral concepts and objective methods can be applied to investigate emotional states and private experiences.

B- Experimental observations of how emotional responses are experienced, provide clues as to how everyday fears might be created and how they can be treated.

Mowrer (1939) equated anxiety with conditioned fear (Levitt, 1965). He defined anxiety as a learned response occurring to signals (CS) that have been followed in the past by situations of injury or

pain (UCS). Thus anxiety (fear) was thought of as a conditioned form of pain reaction. However, persistence of fear reactions to obviously harmless stimuli (CS) in the absence of further pairing with the fear evoking stimulus (UCS), posed difficulty for Mowrer's explanation of anxiety. Mowrer's critics asserted that if anxiety is a conditioned fear reaction, then repeated exposure of the CS only, should eventually extinguish such fear reactions (Eysenck, 1979).

### 1.3.2. Mowrer's Two-Stage Theory

In 1947 in order to account for the resistance of anxiety reactions to extinction, Mowrer revised his theory, and proposed a two process explanation of fear. He still claimed that anxiety was a conditioned fear reaction but now asserted that conditioning was made up of two different processes. This model proposes that a fear is acquired on the basis of the pairing of neutral and noxious stimuli early in training, drive reduction playing no part in the first instance, and that presenting the previously (now feared) stimulus motivates the organism towards an action (avoidance). Acts leading to the removal of feared stimulus are strengthened by a drive reduction mechanism of reinforcement (Hilgard, 1967). In this way Mowrer combined Pavlovian conditioning with Thorndike's theory. The result is the following:

A- Contiguity Learning (Pavlovian): leading to the establishment of fear.

B- Laws of Effect Learning (Thorndike): through which instrumental responses leading to escape from the feared stimulus are reinforced.

Contiguity learning which Mowrer referred to as a "sign" learning, involves the conditioning of involuntary responses of organs and glands including various emotional reactions. A CS associated with an UCS

becomes a "sign" that an aversive event will follow and itself becomes aversive, thereby eliciting a fear response.

Laws of Effect Learning is called "solution" learning, and involves voluntary responses of skeletal muscles. The problem solving responses acquired in drive (anxiety) reduction are assimilated into the repertoire of the organism.

In short, Mowrer stated that "avoidance learning" was a two stage process in which fear becomes conditioned to some stimulus through sign learning and such a stimulus then acts as a drive. This formulation supports his previous theory in which fear was viewed as a secondary drive, acquired as a result of conditioning. Furthermore, instrumental behavior that reduces the drive is learned through the process of solution learning. That is, fear is learned by escaping from the conditions that arouses it (Kazdin, 1978). This formulation is called the two-stage theory of avoidance behavior because the first stage is necessary for the emergence of the second one. The first phase which consists of acquisition of the fear, is thought to be a prerequisite for the appearance of the second phase in which the avoidance behavior is executed (Rachman, 1976).

Mowrer thought that with the introduction of the two stage theory of avoidance, he could explain the unpredicted resistance of avoidance behavior to extinction. He, therefore, postulated that in the second stage of the process i.e. in solution learning, the relief from anxiety produced by the avoidance of CS led to conditioned avoidance reactions (Eysenck, 1979).

Some psychologists were not satisfied with Mowrer's revised explanation of anxiety. In the late 1960's and early 1970's the Two-Stage Theory came under heavy criticisms (Rescarlo and Solomon, 1967; Balles, 1970; Gray, 1971; Seligman and Johnston, 1973; Rachman, 1976; Eysenck, 1979). Gray and Seligman, for example, questioned

whether all neutral stimuli were all equally prone to be turned into fear signals. Gray argued, for instance, for the innateness of certain fears in animals; Seligman (1971) argued that stimuli were not all equally susceptible to fear transformation. A certain set of stimuli, for human beings, may become a CS more quickly and may be more resistant to extinction than other set of stimuli. Seligman called such phenomena "preparedness".

Rachman (1977) argued that Mowrer presupposed a synchronous causal relationship between fear, arousal and subsequent avoidance behavior. Mowrer claimed that avoidance behavior could emerge only after the conditioning of a fear response to a previously neutral stimulus. The appearance of conditioned fear response acts as a drive leading the organism to execute avoidance behavior(s). So fear and avoidance behaviors are intimately related to each other. But Hodgson and Rachman (1974) who studied patients during in vivo flooding treatment found that although the patients' avoidance behavior improved considerably, there was little change in their subjective fear. In other words, predicted correspondance between fear and avoidance was not observed. These authors, drawing on Lang's (1971) findings, concluded that fear is made up of three loosely connected components: cognitive, behavioral, and somatic. This approach will be discussed at length later.

Eysenck (1979) criticized both Mowrer's and classical Behaviorists' (e.g. Watson) explanations of anxiety. The gist of his criticisms is:

A- The lack of replicability. Later investigations (English, 1929; Bregman, 1934) were unable to replicate Watson's results (conditioning of Albert). Eysenck pointed out that Watson did not take individual differences into account.

B- The assumption of equipotentiality. Equipotentiality accepted by Watson (i.e. any CS is as easily conditioned as any other) does not apply to phobias. Phobic stimuli seem to be nonarbitrary and to be related to the survival of human species through the course of evolution (Landy and Gaupp, 1971; Lawlis, 1971).

C- Single trial conditioning is sometimes reported in connection with the genesis of phobias, yet this is very difficult to produce even in laboratory conditions. There appears to be something in the nature of the certain specific CS that makes them particularly easy to associate with UCS.

D- In order to obtain certain conditioning phenomena, the experimental design must be drawn with high precision. But such accuracy is unattainable in real life conditions.

E- Unreinforced conditioned reactions extinguish with several repetitions of CS presentation. Anxiety reactions (which were accepted as conditioned fear reactions by Mowrer, 1939 and 1947) should be no exception to this rule.

F- Finally Eysenck argued that presentations of unreinforced CS, instead of leading to the extinction under all conditions as assumed by classical behaviorists, actually produces more and more anxiety (CR) in some circumstances.

### 1.3.3. Eysenck's Incubation Theory

In order to overcome these weaknesses of traditional behavioristic explanation of anxiety, Eysenck introduced two concepts: "preparedness" (Seligman, 1971) and "incubation" (Eysenck, 1979).

The concept of preparedness accounts for the first four criticisms, listed above, and incubation the remaining two (E and F). The notion of preparedness was first explicitly introduced by Seligman (1971). In 1971 Seligman stated that "Phobias are highly prepared to be

learned by humans,...they are selective and resistant to extinction, learned with degraded input, and probably noncognitive" (p.312). The concept of preparedness explains English's (1929) and Bregman's (1934) failures to replicate Watson's study. Both these researchers used common household goods, such as curtains, as a CS and thus, according to Eysenck would not have the preparedness value of furry animals (Eysenck, 1979)

The notion of preparedness runs counter to the notion of equipotentiality but, accomodates the fact that humans have innate predispositions to be easily conditioned by certain CSs. Hence, the upshot of introducing all this is that a CS, which has a high level of preparedness value, has the capacity for arousing fear by a single trial conditioning procedure in a non-lab situation.

The phenomenon of incubation was put forward as an answer to the last two criticisms (E and F). Eysenck showed that two albeit suprising consequences would follow upon the CS alone being presented. It may either lead to the extinction of the CR, or it may actually enhance the CR.

He called the second possibility "incubation" (1979). Other experimental findings (e.g. Diven, 1937; Bindra and Cameron, 1953; Brush, 1964) had indicated to Eysenck the existence of incubation. Eysenck asserted that when a CS is unaccompanied by a UCS, there exists tendencies both for incubation (enhancement) and for extinction (weakening) of the CR that oppose each other. The tendency which is stronger dominates the outcome. Usually, the extinction tendency is the stronger, but under certain circumstances the incubation process may prevail. Eysenck explained how the phenomenon of incubation takes place and what the parameters are.

Eysenck's clarification of incubation rested on Grant's classification of Pavlovian conditioning. Grant (1964) called

classical conditioning procedure (food-bell conditioning), Pavlovian A conditioning. He named the other classical conditioning procedure, in which an animal is subjected to repeated injections of morphine, Pavlovian B conditioning. The UCRs to morphine were severe nausea, profound secretion of saliva, vomiting and then profound sleep. With daily continuous daily injections dogs began to exhibit severe nausea and profound secretion of saliva at the first touch of the experimenter. Eysenck listed important characteristics of such conditioning as follows (1979):

A- Stimulation by the UCS is not contingent on subjects' instrumental acts, and hence there is less dependence upon the organism's motivational state. The CS acts as a partial substitute for the UCS.

B- UCS elicits complete UCR. The UCR is not dependent upon the organism's instrumental acts, but is directly caused by the UCS. In the case of type- A conditioning the organism emits the UCR of approach and digesting the food.

The assumptions that the CS acts as a partial substitute for the UCS and that the UCS elicits a complete UCR forms the basis of Eysenck's reformulation of the theory of anxiety.

In this manner, after pairing a CS with a UCS, the presentation of CS alone comes to elicit at least fragments of the UCR. These CRs may be similar to the original UCR. Sometimes they can be quite different. In this way the CS, although unaccompanied by an UCS or an UCR, is in fact followed by a CR which, while not very strong, is real and different from the original UCR. Eysenck called this "nocive reponse" (NR). With the elicitation of NR a kind of reinforcement is also provided for a CS. Thus a positive feedback cycle is set in motion in which The CR (or NR) provides reinforcement for the CS. As Eysenck put it "it is not the CR itself that acts as a reinforcer, but rather



response produced stimuli, not the autonomic, hormonal and muscular reactions themselves but the experience of anxiety based on them " (1979, p.165). The stimuli (CS) associated with the experience of fear (a noxious event) acquires the capacity, through classical conditioning, to arouse more fear which in turn produces more positive feedback.

The Parameters of Incubation Theory are:

A- For a CR to act as a reinforcement, it must have drive properties.

B- The strength of UCS. Incubation is more likely to occur if the UCS is strong.

C- Incubation follows upon short presentations of the CS. The longer the presentation of the CS alone, the weaker the CR will be and the CR will decline over time (Eysenck, 1979). A number of empirical studies (Nunes and Marks, 1975; Borkovec, 1972) provided empirical support for Eysenck's claim.

One implication of Eysenck's reformulated anxiety theory was that a re-examination of the classical administration of desensitization treatments was necessary. This is because, if a CR acts as a reinforcement and is strong enough to overcome the natural process of extinction, then anxiety reactions can be enhanced. Hence, the way to eliminate such a CR is to prolong the CS exposure. Eysenck's reformulation of the anxiety theory makes it necessary to scrutinize, critically, the classical procedures of desensitization treatment. In the classical desensitization, whenever a patient experiences high level of anxiety the procedure is immediately terminated. According to Eysenck's accounts however, the continued exposure to the CS should lead to the extinction of the anxiety reaction. This is because a short exposure of a CS enhances the CR, while prolonged presentation of the CS leads to its extinction.

Eysenck calls his approach "the third theory of anxiety" (Eysenck, 1979). Bindra (1979) criticised the dual assumption of CS-CR links and response reinforcements, as being inadequate to explain flexibility of innovative action. He argued that while Eysenck's model may well account for the stereotype and persistence of neurotic symptoms, it fails to explain adequately the adaptive flexibility of the rituals of obsessives (Bindra, 1979). Bolles (1979) criticised Eysenck for focusing on the non-extinction of fear while ignoring the fact that not only do CS's keep recurring but they also keep changing. Kimmel, Wolpe, Mineka, McAllister and McAllister (1979) pointed to the scarcity of data supporting the incubation theory. Eysenck was able to cite only Napalkov's experiment (1963) as the only clear demonstration of incubation. Paxton (1983) argued that the strengthening of the CR with the repeated presentation of CS alone is not adequate for explaining the development of neuroses. Other processes (observational learning) which can also lead to the formation of neurotic problems are ignored in Eysenck's theory.

Although its position is not well defined in the behavioristic approach, Eysenck's approach to the phenomenon of anxiety is the most comprehensive one, especially in terms of its possibilities to explain some clinical data which are difficult to understand staying within the framework of traditional conditioning theories.

#### 1.3.4. Summary

In spite of the considerable disagreement that exists between Behaviorist theorists, they generally accept that anxiety is a learned reaction and that stimulus-response connections should be the target of investigation. Therefore, behavior therapists, when treating anxiety, focus on maladaptive behavior only. They first, aim to identify and then to eliminate environmental cues that reinforce the problematic

behavior. Second, they try to extinguish maladaptive responses by applying the principles of conditioning. In explaining problematic behavior, strict behaviorists tend to attribute little importance to the evaluation and interpretation of environmental events by the individual.

However, cognitive explanations of psychological events are gaining strength even within the behavioristic school itself. Today's theories are trying to be more comprehensive in nature, including different approaches ( e.g. Cognitive Behavior Modification).

#### 1.4. COGNITIVE APPROACH

The Cognitive approach to psychological problems gained a widespread acceptance in the field of clinical psychology in the early 1970s. However, importance of cognition in the development mental problems was established at an earlier period (Adler, 1926; Kelly, 1955; and Rogers, 1961). Factors that resulted in the growth of cognitive therapy in clinical psychology can be stated as follows (Murray and Jacobson, 1978).

A- Information Processing: Deriving from the logic of computers and information processing, concepts such as feed-back loops and serial information processing, are applied to explain perception, memory, language, learning, cognitive development and problem solving.

B- Works of Piaget: Piaget's methods provided a new way of studying the interaction between the organism and the environment in terms of intellectual, moral and social development. Piaget suggested that mental structures (cognitions) could be viewed as organizing experience and regulating behavior. The developing child is regarded as an active, information seeking and processing organism rather than a

passive receptacle for environmental inputs, the latter view being synonymous with 'strict' behaviorism.

C- Social Learning Approach: Within this approach different processes are assumed to regulate different behaviors (Bandura, 1969, 1974).

a- Some behaviors are under the influence of external stimuli. These are influenced by classical conditioning processes.

b- Some response patterns are influenced by reinforcement. These are influenced by operant conditioning processes.

c- Some behaviors are regulated by cognitive mediational processes (Wilson 1978). Modelling is the primary example of this domain of learning. The basic premise underlying this argument suggests that learning, to occur, does not need to be followed by direct reinforcement; humans acquire new behavior through observation alone (cognitive learning).

#### 1.4.1. Development of Cognitive Theories

Bandura (1969) asserted that psychological functioning involves a reciprocal interaction between a person's behavior and the environment. This reciprocal deterministic view immediately brings with it a new way of conceptualizing human behavior, attributing to it a capacity for self-directed behavior change which contradicts the behavioristic view of situational and environmental control.

Meanwhile, behaviorists also started to reduce their emphasis on environmental factors in explaining behavior and tried to modify their strict stimulus-response approach. First, behaviorists recognized the importance of covert events (cognitions and thought) in manipulating behavior as well as the overt events (stimulus) (Honne, 1963). Behaviorists suggested that covert events could be controlled by the factors which could also be applied to overt phenomena. Honne (1963)

introduced the concept of coverants (covert-operants) to describe covert behavior within the learning theory paradigm.

As a result of all these developments cognitive therapy flourished opposing the behavioristic emphasis on environmental events (antecedent, consequent, stimulus response connections), and the importance they had given to the automaticity of human behavior. Cognitive therapists stressed the clients view on those events happening in the environment. Cognitive therapists, while appreciating the importance of environmental events, attribute primary importance to the client's evaluation of those events. In other words, rather than stimulus-response chains alone, the perception of these stimulus-response chains by the clients is accepted as the fundamental factor in manipulating behavior. Thus, cognitive therapists do not interpret classical conditioning as automatic reflexive responses. Rather, they see conditioned responses as "self-activated on the basis of learned expectations, and reinforcements accepted not as automatic strengtheners of behavior but as a source of information and incentive that regulate behavior" (Wilson, 1978, p.17) Therefore what a client says to himself, how he evaluates his circumstances and how he labels events are the targets of intervention for cognitive therapy.

Cognitive therapy deals with thinking. The starting point for cognitive therapy is the recognition of the importance of what has been going on inside the patient's mind (cognitive structures) and the effect of this on the development of mental problems.

Whatever the kind of cognitive therapy, each centres its emphasis on the faulty thinking processes (cognitive structures, belief systems) which are accessible to the consciousness of clients. The aim is, first to make the client aware of his faulty thinking style and to replace it by substituting more adaptive and realistic ones. In these processes variations among different cognitive approaches come to the surface.

One type may choose to stress automatic thoughts and coping strategies (Meichenbaum, 1977) while another kind of cognitive approach addresses itself to a more global change through modification of faulty belief structures (Ellis, 1962).

In the following pages the cognitive approach to the problem of anxiety by three leading figures (Ellis, Beck and Meichenbaum) will be presented.

#### 1.4.2. Ellis's Rational Emotive Therapy

Ellis who developed Rational Emotive Therapy (RET) endorses the words of Epictetus "man is disturbed not by the facts but the views he takes of them" (Meichenbaum, 1977). Ellis explained his theory postulating an ABC approach to the psychological events. Ellis argued that an activating event (A), let's say, failing to perform well in an examination, is not followed directly by an emotional and/or behavioral consequence (C), such as a depressive reaction. The consequence, however, is mediated by event (B), which is a person's belief about the event (A). So the target of therapy is to change those beliefs that are causing the problem behavior or emotion. Since those irrational, erroneous ideas about the events happening around and about patients themselves create the psychological problems, the therapist's task is to enable patients to identify the irrational ideas and to replace them with more adaptive ones.

Ellis identified, what he called, 'must-urbatory' thinking as the primary element leading to the establishment of irrational belief structures. To him, psychological problems are usually caused by absolutistic evaluation of unqualified shoulds, oughts, musts and commands. Psychological problems rise because people do not only wish, want or prefer to perform important tasks adequately. They insist that they 'must', that they 'have to do so' (1982). In their belief system

patients have, what Karen Horney (1965) called, a 'tyranny of shoulds'. Whenever people employ 'must-urbatory' thinking they inevitably end up with emotional problems.

All types of irrational 'musts' and derivative thinking styles combine together to produce psychological problems, such as anxiety, depression etc. Ellis and Grieger (1977) referred to anxiety as an internal warning signal that one is in imminent danger of not getting or of losing something thought to be needed.

From RET's point of view, anxiety involves three fantasies (Grieger and Boyd, 1980). The first fantasy is made up of a belief in a "have to", a belief that something must occur, such as "I have to be liked". The second fantasy is over "NOT" happening of this "have to", such as "nobody will approve me, nobody will like me". The last one is about the "awfulness" of the situation if the "have to" does not happen, such as, "it will be terrible when nobody will like me". Greiger and Boyd (1980) suggested three anxiety types related to these fantasies:

A- Approval Anxiety: This type of anxiety has to do with the importance placed upon being accepted by others and the necessity for performing well in order to gain acceptance (1980, p.38). To gain approval is positive and desirable to all individuals. But in the case of an anxiety patient, to obtain approval from others is beyond being merely desirable, it is essential for such a person and failing to get it is a calamity. In RET terms, individuals who have such anxiety believe that they must perform well and obtain approval of others. A vicious cycle occurs because they are over anxious about winning that crucial approval from others otherwise they cannot function well. This further increases their anxiety leading to poorer performance and more anxiety.

B- Ego Anxiety: This type of anxiety is very similar to that mentioned above. Indeed, sometimes both of them are regarded as one (Ellis, 1982). Ego anxiety arises when people feel that their self or personal worth is threatened (Greiger and Boyd, 1980). Such people believe that they must perform well and be approved by others so that they, as humans, can have some worth. If they cannot get that desired approval it is awful and terrible. In their belief system their worth and essence is equated with gaining approval.

C- Discomfort Anxiety: This type includes a fear of pain, frustration or discomfort. It is an outcome of a 'must-urbatory' style of thinking. In contrast to ego anxiety which relates to a poor opinion of self, discomfort anxiety relates to a poor opinion of other people and the conditions in which one lives. The belief system, prototype of discomfort anxious individuals, has a world view that requires people and conditions to be the way he wants them to be and conversely, not to exist in any manner that will cause him severe discomfort. Individuals who have discomfort anxiety can stand little frustration, since the notion of tolerance to a normal level of frustration hardly exists in their belief system.

Greiger and Boyd (1980) pointed out that while both ego anxiety and approval anxiety are more dramatic and severe, discomfort anxiety is usually less dramatic, though more common.

#### 1.4.3. Beck's Cognitive Therapy

Beck's 'Cognitive therapy' is similar to that of Ellis's RET, except for certain practical points and the kind of terminology used. In common with all variations of cognitive therapies, the goal of Beck's cognitive therapy is to develop rational and adaptive thought patterns.



Cognitive therapy's primary target is again the thinking styles of clients. Beck (1976) viewed neurosis as caused by 'channelized thinking', 'attention fixation' and 'distortions in reality'. He stressed that the difference between neurotic disorders is not form but content. In each kind of neurosis reality is changed in order to fit the concepts that dominate the patient's thinking. In mental disorders the problem is not the labelling of the stimuli but the meanings and importance that a patient gives to those stimuli. In other words, the client's interpretation of stimuli is pathologically unrealistic. As a result the client begins to mis-construe the events happening around him using 'arbitrary inference', 'selective abstraction' and 'overgeneralization'. As Beck pointed out, such distortions occur especially when the ideation is related to a patient's specific problem. These distorted ideas have another characteristic; that is being 'automatic' in nature. They appear as if reflexes without any apparent precedent (antecedent) sign or reasoning. They are much more difficult to change by logic, reason and opposing evidence than other thoughts. One of the most important tasks of the therapist is to identify those automatic thoughts and help the client to become aware of his automatic thoughts. Since these types of thoughts have the characteristics of being reflex like and automatic, clients usually are not aware of them.

Cognitive therapists concentrate on clients' distortions of reality. In therapy the client is, first, trained to recognize his automatic thoughts. Once this is accomplished, the therapist encourages the patient to identify and articulate his faulty automatic thoughts which are causing the problems. Beck called his psychotherapy process as 'learning to learn'. He said that this kind of therapy "... is conducive to the patient's developing new ways to learn from his experiences and to solve problems ....., this approach attempts to

remove obstacles that have prevented the patient from profiting from experience and from developing adequate ways of dealing with internal and external problems" (1976, pp.230-231).

According to the cognitive explanation of neurosis, thinking disorders lie at the core of all problems. In each psychological problem there are different types of distortions in the belief structures of patients. In anxiety, the faulty belief structures are about the concepts of exaggerated danger and patient's unrealistically low estimate of his capacity for coping with it (Beck, 1976). Such persons anticipate catastrophic occurrences to themselves or to loved ones. For example, "I am in a terrible condition, if I touch that place I will get an incurable disease" etc. Such distorted ideation, with a threatening content attached to it, produces anxiety. The feedback cues of this anxiety cause the development of more anxiety producing ideation, leading to the vicious cycle. Beck called this phenomenon "spiralling of fear and anxiety".

Attention of an anxiety patient is absorbed by concepts of danger. That is, little attention is left to be spent for other activities (similar to Freud's economy principle). Because most attention is directed to certain concepts of danger, even a trivial event is perceived as extremely harmful, and induces anxiety in the person.

To replace these faulty anxiety producing ideas with adaptive and healthy ones, first the patient is trained to become aware of and to identify these automatic thoughts (faulty rules). Then the therapist and the patient, working together, substitute more realistic and rational alternative thoughts.

#### 1.4.4. Meichenbaum's Cognitive Behavior Modification

The kind of cognitive therapy developed by Meichenbaum was an explicit mixture of cognitive and behavioristic methods. He attempted

to make explicit the cognitive elements which were employed implicitly in behavior therapy techniques. He stated that "if operant training procedures could be improved by explicitly including in the treatment regimen a client's thought and images, then perhaps overt behavior therapy techniques could similarly be improved" (Meichenbaum, 1977, p.107). Meichenbaum did not take the path of developing comprehensive therapy methods as Ellis and Beck did, rather, he tried to introduce specific techniques to make cognitive elements more explicit.

In general Meichenbaum's contribution can be named as 'achieving self-control through coping statements'. The application of this method to the treatment of anxiety was two fold.

A- Stress Inoculation training

B- Modification of classical behavior therapy techniques (especially systematic desensitization) with the introduction of coping self statements (Cullen, 1981)

A- Stress Inoculation Training

The aim of this technique is to equip clients with skills to cope with stressful situations. The underlying assumption is that 'the way in which an individual evaluates or labels the situation determines his subsequent emotional reaction'. The claim is that, if someone can be trained to employ coping strategies by looking at a stressful situation from a different perspective, then the negative affect will be lessened.

In brief, stress inoculation training involves discussing the nature of emotional stress reactions, rehearsing coping skills and testing those skills under actual stressful conditions (Meichenbaum, 1977).

B- Modification of Classical Behavior Therapy Methods

Meichenbaum modified the systematic desensitization procedure by introducing two new elements; a- discussion of problem generating ideas

in the beginning of each session, and b- employment of coping imagery instead of mastery imagery.

By introducing the discussion of problem-generating thoughts clients are made aware of their distorted ideation and erroneous thinking styles.

In mastery imagery the process of 'counterposing' stressful situations in the imagination with a relaxed state is repeated until the client is able to master such a visualization without anxiety. In coping imagery, even though the client feels anxious, he is encouraged to keep on visualizing, employing coping self statements to alleviate his anxiety in the stressful situation. If the anxiety still persists the procedure is first terminated and then repeated, until the client is able to reduce his anxiety for that item in the hierarchy, with the help of coping self-statements.

As an advantage of coping-imagery Meichenbaum (1977) indicated that in this way clients learn to confront and reduce their anxiety. So when they feel anxious again in a real life situation, they have a tool (coping self-statements) that will assist them to deal with their anxiety.

#### 1.4.5. Summary

Despite their different techniques Beck, Ellis and Meichenbaum agree that psychological problems (e.g. anxiety) are caused by irrational belief systems (or cognitive distortions or mis-construing reality). Cognitive therapists attribute both the causes of psychological problems and the remedy for them to the patient's thinking structures. The aim of cognitive therapy is to overcome patient's blind-spots, blurred perceptions, distorted cognitions and self-deception. In a broader sense, it aims to reduce psychological

distress by correcting misconceptions and wrong self-signals. Cognitive therapists' stress on cognition does not mean that they underestimate the importance of emotions in the formation of psychological problems, but they prefer to change emotions by manipulating cognitions (Beck, 1976). They assume that a change in the cognitive structures will directly lead to a change in problematic feelings (affect).

Many psychologists of different orientations agree that cognitive structures play an important role in psychological problems. Nevertheless, difference in the conception of the relationship between cognition and affect exist. If the psychoanalytical claim that "... cognition is distorted by unbearable AFFECT ..." (Lewis, 1983, p.168) has any validity, then the relevance of direct intervention into the cognitive structures needs to be re-examined. This point will be elaborated in later chapters.

As noted earlier, one of the factors that contributed to the development of cognitive therapy was the recognition of the limitations of behavior therapy which chose only the observable behavior as its subject matter. Introduction of covert events (thoughts) into the behavioristic sphere is gaining popularity in clinical psychology, specifically in relation to anxiety problems. At present, effectiveness of multi-modal approaches to psychological problems is widely accepted in clinical psychology (Barlow and Wolfe, 1981).

Before discussing the Three Systems Theory which offers a multi-modal approach to anxiety problems by combining cognitive, behavioral and physiological approaches, a brief summary of the conceptualization and treatment of anxiety disorders from four main schools of psychology will be presented.

## 1.5. DIFFERENCES IN THE CONCEPTUALIZATION OF ANXIETY BETWEEN FOUR MAIN SCHOOLS OF PSYCHOLOGY

The main differences between psychoanalytic, physiological, behavioral and cognitive conceptualizations of anxiety are as follows.

From the psychoanalytical point of view the central role in anxiety is attributed to unconscious intra-psychic conflicts. These conflicts are assumed to take place during the psychosexual development stages, mainly around the phallic stage and between the child (patient) and significant others (usually the parent of the same sex). In classical psychoanalytical theory, these conflicts are regarded as basically an affective one (repressed hate, love, fear etc.). Thus psychoanalytically oriented psychotherapists view the anxiety disorders as manifestations of underlying conflicts. Therefore they, first, try to uncover the hidden problem, while helping the patient re-live the denied, repressed feelings. Then, by working together with the patient, the therapist aims to develop a healthier ego in the patient that can handle future problems more constructively.

The physiological approach, on the other hand, concentrates mainly on the somatic symptoms of anxiety problems. The aim of such intervention is to identify the bodily correlates of anxiety. The medical approach to the assessment and treatment of the anxiety disorders endorses a physiological approach. The physiological perspective conceptualizes anxiety as malfunctioning in some areas of the central nervous system or an imbalance in the hormone levels (adrenaline). The goal is to modify these factors directly by medication (e.g. benzodiazepines, imipramine etc.).

Behavior therapists conceptualize anxiety disorders as learned (conditioned) reactions to previously neutral stimuli. Maladaptive

behavior like any other behavior is regarded as being acquired through learning. Behavior therapists include only objective and observable psychological events in their sphere of interest, consequently focusing directly on the maladaptive behavior and attempting to identify the stimuli that control the problematic behavior. The aim is, to apply the principles of learning, to break the stimulus-response chain (unlearn the behavior) responsible for anxiety symptom and to get the patient to re-learn more adaptive responses to those stimuli.

Cognitive therapists regard the client's faulty belief structures as the cause of anxiety. The way in which the client conceptualizes events happening in his environment, his assumptions and appraisals about these events are considered to be the elements responsible for the development of anxiety disorders. Following this line of thinking cognitive therapists, first, try to help their clients realize the role played by faulty belief structures, appraisals and assumptions in the development of the psychological problems; second, working with their clients, therapists try to help substitute new, adaptive and rational belief structures instead of the erroneous one(s).

In a more simplistic and also clearer manner the differences among the four main schools of psychology can be seen in the Table-1.

After reviewing the traditional approaches to the problem of anxiety, in the next section the Three Systems Theory will be presented. This new approach, combining different conceptualizations, offers a more comprehensive account of anxiety problems.

School of <u>Psychology</u>	Aetioloical <u>Factors</u>	Treatment <u>Strategy</u>
Psychoanalysis	Unconscious affective conflicts taking place between the patient and the significant others during the developmental stages causing disharmonous interaction between the id, the ego and the super-ego.	Restoring harmonious interaction between the id, the ego and the super-ego through affective reexperience of the unconscious conflictual relationship between the patient and the important figures but this time with regard to the therapist at a regressive level.
Physiological	Mal-functioning of certain part of the CNS or imbalance in the hormone levels.	Intervening at the problematic area directly by medication.
Behavior Therapy	Learned maladaptive behavior patterns to previously neutral stimuli.	Re-learning adaptive behavioral patterns to the same stimuli; with the application of experimentally derived learning principles.
Cognitive Therapy	Faulty cognitive structures which are easily available to the consciousness of the client, causing misconstruing of reality.	Changing faulty cognitive structures through specifically developed techniques of persuasion (e.g. challenging the accuracy of the client's assumptions and appraisals).

TABLE- 1 Differences between four main schools of psychology in terms of aetioloical factors and treatment strategies for anxiety disorders.



## 1.6. THE THREE SYSTEMS THEORY

Lang (1968 and 1971) played a pioneering role in the development of the Three Systems Theory of fear and emotion. Although Campell and Fiske (1959) introduced the multitrait-multimethod assessment of psychological events a decade before Lang, this approach was ignored by American behaviorists who relied heavily upon a single index of behavioral change (e.g. rate of pedal pushing or frequency of pecking) (Himadi, Boice and Barlow, 1985).

### 1.6.1. The Development of the Three Systems Theory

The empirical finding that led Lang to propose the Three Systems Approach to anxiety was the realization that during automated desensitization of snake phobics (Lang and Lazovik, 1962), some subjects showed rapid improvement in their overt behavior (phobic avoidance) yet still regarded themselves as fearful. Furthermore, some subjects exhibited a reduction of fear as measured by fear questionnaires, while nevertheless showing an increased cardiovascular tonus. Lang (1971) stated that "emotional behaviors were multiple system responses (verbal-cognitive, behavioral-motor, and physiological-somatic) that interact through interoceptive (neural, hormonal) and exteroceptive channels of communication. All systems are controlled or influenced by brain mechanisms but the level of important centres of influence (cortical or subcortical, limbic or brainstem) are varied, and like the resulting behaviors partially independent ..... Perhaps the most obvious examples of system independence are apparent when emotion is attenuated. With a reduction in intensity systems are often diminished in an unbalanced way, and evidence of arousal may actually disappear from one system and not from another. So called mild feeling may involve no more than the verbal report, and we might find

little specific activity in the autonomic or behavioral sphere"

(p.108).

Bernstein and Paul (1971) argued that anxiety is a tridimensional phenomenon that includes cognitive, behavioral and physiological components. Leitenberg, Agras, Butz and Wince (1971) showed that the relationship between avoidance behavior and heart rate is varied. In some cases heart rate increased as phobic behavior decreased. This provided support for the Three Systems Theory of fear and emotion. The studies of Bernstein and Paul (1971) and Leitenberg et.al. (1971) support Lang's idea that anxiety comprises relatively independent systems.

A few years later Rachman and Hodgson (1974), adopting Lang's conceptualization of anxiety, conducted quite comprehensive investigations. The main impetus behind their eager acceptance of the Three Systems conceptualization of fear was their dissatisfaction with the two-factor theories of fear and avoidance (Mowrer, 1939). Around 1974 the two-factor theory had come under heavy criticism (as stated in the previous chapter), as fear and avoidance were often found to be discordant. Rachman and Hodgson (1974) in support of the Three Systems approach claimed that "avoidance can co-vary with fear or vary inversely or vary independently" (p.311). They introduced two new concepts to explain such inconsistent variation among the three components of anxiety, namely discordance and desynchrony. Discordance means a lack of co-variation within the three components at any given time. Desynchrony refers to the unequal changes between those components within a given time period. The emphasis placed upon the concepts of discordance and desynchrony are the innovations of the Three Systems approach.

Rachman and Hodgson (1974) proposed several hypotheses about the conditions under which discordance or desynchrony can occur. In particular they argued that:

A- Concordance between response systems is likely to be high during strong emotions while discordance will occur when emotional responses are relatively mild.

This hypothesis is based on Lang's (1971) claim that mild feeling states may be reflected via verbal reports rather than via the autonomic or behavioral systems, because verbal behaviour of humans is capable of expressing mild affective states, whereas automatic systems may be totally unresponsive to such states.

B- Concordance between response systems will be greater under low levels of demand while high levels of demand will produce discordance.

This hypothesis was inferred from Miller and Bernstein's (1972) demonstration that avoidance behavior in claustrophobic patients is, in part, a function of instructionally mediated demand characteristics. In their study, the low demand condition instructions were to stay in a small dark chamber until patients got fairly uncomfortable. The patients in the high demand condition were asked to stay in the chamber for ten minutes. Miller and Bernstein (1972) reported that the correlation between heart rate, subjective anxiety and respiration rate was higher under low demand conditions than under high demand conditions.

High demand conditions influence the behavioral response system independently from the other response systems. For example, Rachman and Hodgson (1974) reported that highly motivated subjects were able to control a tendency towards flight in spite of autonomic and experiential signs of fear.

C- The degree of synchrony that results from therapeutic intervention will be a function of the particular therapeutic technique employed.

The basic premise for this hypothesis is obtained from the previous one i.e. partial uncoupling of fear and avoidance under high demand conditions. Rachman and Hodgson (1974) suggested that clear desynchrony could be observed in the application of flooding, which was assumed to put quite high demand on clients. Modelling treatment, contrary to flooding, was considered to produce synchronous changes by placing considerably low levels of demand on clients (Rachman and Hodgson 1974).

D - After treatment intervention (in the follow up period) the degree of concordance between measures in different response systems should increase.

The idea here is that whatever the initial level of desynchrony is, successful treatment will result in an increased synchrony in the three systems. That is, anxiety will decline in all the cognitive, behavioral and physiological systems.

Sartory, Rachman and Grey (1977) investigated whether or not the concordance between the three response systems was high during strong emotional arousal, and whether discordance occurs when emotional responses are relatively mild. They used a 100-point "fear thermometer" to tap anxiety expressed through the cognitive system and measured physiological arousal by heart-rate. The results were inconclusive since they found the concordance between response systems to be high during strong emotional arousal. Nevertheless, they reported only slight support for the hypothesis that discordance will occur when emotional responses are relatively mild.

Grey, Sartory and Rachman (1979) employing subjects with circumscribed fears also investigated whether the concordance between

the response systems will be greater under low levels of demand, and whether high levels of demand will produce discordance. Reformulating this hypothesis to adapt to the limitations of their experiment, Grey et al. (1979) proposed that "a high demand condition would produce considerable desynchrony and, secondly, a low demand treatment condition would produce little or no desynchrony" p.137. Three treatment conditions (high, low and increasing demand), with the application of in vivo presentations of the phobic situation were used. Fear thermometer and heart rate were administered to measure the level of anxiety in cognitive and physiological channels, respectively. The differentiation of each treatment condition was based on the level of fear indicated in the fear thermometer upon the presentation of the phobic stimulus. In high demand conditions the presentation of the phobic stimulus always happened at a distance which elicited maximum fear ratings (100). In the increasing demand condition, confrontation with the phobic object was graded, eliciting ratings of 50, 75 and 100 in the fear thermometer in each of the three sessions respectively. Finally, presentation of the phobic object aroused maximum rating of 50 in the fear thermometer in the low demand group.

The hypothesis was supported by overall findings, thus providing positive support for the Three Systems Theory.

Sallis, Lichstein and Glynn (1980) tested the first of the four hypotheses put forward by Rachman and Hodgson (1974). They reviewed 41 clinical and 54 analogue studies to assess the relationship between the three anxiety response channels. They assumed that "Intrinsically motivated clinical patients were more intensely anxious than were extrinsically constrained" (p.180, 1980). Of the 95 studies reviewed in the study, 32 applied assessments on the three channels. Their review indicates that the level of concordance decreases as one moves from studies employing clinical populations, to those studies that use

analogue populations. Clinical populations are assumed to have higher levels of anxiety in comparison to analogue populations. These results offer some support to the hypothesis under investigation, that under high levels of emotional arousal synchrony between the three response channels is likely to occur, whereas low levels of emotional arousal are likely to produce desynchrony.

Barlow, Mavissakalian and Schofield (1980) attempted to investigate the level of correspondence (synchrony and desynchrony) between heart rate and subjective anxiety during twelve sessions of cognitive therapy in three agoraphobic women. The results showed substantial behavioral improvement in all three cases. However, different patterns of synchrony and desynchrony were observed between heart rate and self-reports of anxiety. In one case they found a substantial increase in heart rate at the end of the therapy. Mavissakalian and Schofield concluded desynchrony as "an established fact in the treatment of phobias" (p.447, 1980).

Lehner and Leiblum (1981) studied physiological, behavioral and cognitive measures of assertiveness anxiety. In this study one of their aims was to find how closely the three dimensions of assertiveness anxiety were related. Results revealed low correlations between the three channels, thus giving support to the Three Systems Theory of anxiety.

Craske and Craig (1984) approached the question of system independence from a somewhat different angle. They compared the claims of the Three Systems Theory and Bandura's Self-Efficacy Theory (1977) with regard to the performance anxiety of pianists. Self-efficacy theory supports a unitary model of fear, assigning cognitive variables a causal status. Bandura's theory claims that a conviction of one's ability to perform particular tasks determines subjective, autonomic and behavioral anxiety. Thus, Self-Efficacy Theory views response

systems as interlocking consequences of a more unified construct, i. e. self-efficacy.

As a result of this claim the three systems are viewed as concordant in direct correspondance to the level of strength of self-efficacy. In contrast to the Self-Efficacy Theory, Lang's (1971) approach describes the three systems as interactive but relatively independent. Independence is a consequence of the fact that none of the three systems uniquely define an emotional state. The three systems also differ in their sensitivity to stress stimuli. Autonomic indices were found to be the least sensitive (Lang 1971; Agras and Jacob, 1981). Rachman and Hodgson (1974) associated system concordance and discordance with specific conditions. They predicted high concordance among the three systems under high levels of anxiety. Under this condition the Self-Efficacy Theory also predicts the same pattern of responding, i.e. concordance. Fearful individuals, having low self efficacy, will tend to respond with comparably high levels of anxiety in each response system. The difference between the two theories appears when considering situations which evoke relatively low levels of emotional arousal. The Three Systems Theory forecasts discordance, whereas Self-Efficacy Theory predicts just the opposite, concordance. Self-Efficacy Theory claims that if anxiety is low self-efficacy will be high, leading to performance mastery causing very little autonomic arousal and subjective anxiety.

The result of Craske and Craig's (1984) music performance study offered clear support for the Three Systems Theory. Concordant relationships between the three systems were observed in relatively anxious pianists, while for relatively non-anxious pianists the results indicated disconcordance between the three response systems.

The research presented above has aimed directly at testing the claim of relative system independence in the area of anxiety. In

summary, studies indicate some support for the system's relative independence. While patterns of desynchrony and discordance have gained an established acceptance, investigations dealing with the implication of the phenomenon of system discordance for the development of effective treatment methods for anxiety disorders began to flourish towards the end of the 1970s and in the early 1980s.

#### 1.6.2. Application of the Three Systems Theory for More Effective Treatment of Anxiety

Acceptance of anxiety consisting of three relatively independent systems led to the idea that different components of anxiety can be treated by different treatment methods. This idea was introduced at the very beginning of the three systems approach by Rachman and Hodgson (1974) but application of this claim had to wait until the early 1980s, partially because of the acceptance of the triple response measurement as the appropriate assessment method of anxiety by the National Institute of Mental Health (NIMH) at the Albany research conference (1981) and partly because of experimental findings in favor of desynchrony and discordance. With an increased interest in the three systems approach, different psychologists tried to formulate more effective treatment regimens for anxiety problems based on this new model of emotions. Their claim was quite simple and clear: since each treatment is regarded as focusing on one specific component of anxiety (Cobb, 1983; Jerremalm and Johnson, 1981, 1982 and 1984; Hugdahl, 1981), the aim was first to assess which of the three components plays the prominent role in the manifestation of patients' problematic anxiety, and then to apply the treatment method which focuses specifically on the main problematic component. Having this idea in mind, psychologists (Cobb, 1983; Ost et al. 1981) classified treatment methods for anxiety according to the following scheme.



- A - Treatment Methods Focusing on the Cognitive Component:
  - a- Stress inoculation
  - b- Coping self-statements
  - c- Cognitive therapy
  
- B - Treatment Methods Focusing on the Behavioral Component:
  - a- Exposure in vivo
  - b- Reinforced practice
  - c- Modelling
  
- C - Treatment Methods Focusing on the Physiological Component:
  - a- Progressive muscular relaxation
  - b- Autogenic training
  - c- Meditation techniques
  - c- Bio-feedback

(Pharmacological interventions can be added to the treatment methods focusing on the physiological component.)

Those psychologists who followed this approach in the assessment and treatment of anxiety disorders emphasized individual differences in anxiety response profiles. Furthermore, they pointed out the problems of treating anxious patients in terms of general categories provided by the classical diagnostic approach (Ost et al. 1981, 1982 and 1984; Hugdahl, 1981). Hugdahl (1981) for instance, suggested that "treatment methods should be individually tailored to the particular component response profile displayed by each patient" (p.75). Similarly, Ost et al. (1984) stated that "grouping patients into broad problem categories, such as agoraphobia, ignores the fact that the individual response pattern seems to be of great importance to obtain optimal effectiveness in the treatment" (p.697).

At present, no reported research exists in the literature about the relationship between the classification of anxiety disorders and the Three Systems Theory. Without this information at hand, to imply the appropriateness or inappropriateness of general diagnostic categories may be an unqualified jump. Nevertheless, focusing on individual differences, Ost et al. have carried-out studies on three

different kinds of phobias; social phobia, claustrophobia and agoraphobia. In each study, prior to the treatment, subjects' anxiety when exposed to the phobic situation was assessed on both behavior and heart rate measures. On the basis of this information the subjects were divided into two groups as behavioral and physiological responders. Those subjects who displayed marked behavioral problems and less physiological arousal under phobic conditions were assigned to the behavioral group; and those subjects who displayed marked physiological arousal and less behavioral problems were assigned to the physiological group. Behaviorally focused methods included exposure in vivo for claustrophobics and agoraphobics, and social skill training for social phobics. Applied relaxation was used for physiologically oriented treatments in all three studies. Half of the subjects in each group were randomly assigned to behaviorally focused treatment while the other half were assigned to a physiologically oriented treatment package. It was predicted that the physiological group would benefit more from relaxation whereas the behavioral group would do so from exposure in vivo. Results of the first two studies (on social phobia in 1981 and on claustrophobia in 1982) were promising. In both studies, subjects placed in the physiological responders group benefited preferentially from applied relaxation while behaviorally focused methods (social skills training and exposure in vivo) were more effective for subjects with marked behavioral reaction. In the case of agoraphobia, although the trend of the results was in the predicted direction i.e. physiological responders obtaining more benefit from applied relaxation while exposure in vivo was more effective for behavioral responders, as Ost et al. (1984) state in their paper "in no case was exposure in vivo significantly better than applied relaxation for the behavioral reactors, or vice versa for the physiological reactors" (p.705).

Ost and Hugdahl (1981 and 1983) set up studies which had somewhat similar logic to those stated above, yet were quite different in terms of the practical implications. Acceptance of anxiety comprising three loosely coupled components constituted the basic premise of their study, but the main aim of the study centered on Rachman's (1977) introduction of three pathways of fear acquisition. Rachman proposed that fears could be acquired in three different ways: by conditioning, by vicarious learning or by transmission of instructions. In the first study, Ost and Hugdahl (1981) investigated the different ways that patients acquire their phobias. Results indicated that a substantial proportion of the patients (58%) reported to have acquired phobias via conditioning, whereas (17%) of patients attributed the acquisition of their phobias to vicarious experiences, (10%) to the transmission of information and (15%) could not recall any specific onset condition. Ost and Hugdahl (1981) did not find any clear relationship between the ways of acquisition and the loadings on the three components of anxiety. However, interesting findings were obtained in animal phobics. Those who attributed their phobias to conditioning experiences also displayed their anxiety mainly in the physiological component. Just the opposite response patterns appeared for subjects who had acquired their phobias indirectly, the manifestation of their anxiety being mainly in the cognitive (subjective) component.

Ost and Hugdahl (1983) in another study investigated the acquisition of phobias in eighty (80) agoraphobic patients, but they did not find any relationship between the forms of acquisition and the loadings in the three anxiety components.

Another line of investigation within the Three Systems Theory focused on the phenomenon of synchrony and desynchrony and their relation to therapy outcome (Grey, Rachman and Sartory, 1981; Barlow et.al., 1980; Vermilyea, Boice and Barlow, 1984; Himadi, Boice and

Barlow, 1985). In a recent study by Vermilyea et al. (1984) one aim was to establish patterns of synchrony that related to treatment outcome. Although all subjects improved overall when the same data were sub-categorised according to synchronous and desynchronous patients, treatment effectiveness appeared to be greater for the synchronous group. In the desynchronous group there was a tendency towards increased heart rate. The authors further subdivided the subjects into two groups as treatment responders and treatment non-responders. The treatment responders group consisted of twenty two (22) subjects half of whom were synchronous, the other half desynchronous. However, in the treatment non-responders group which had a total of six subjects, five were desynchronous subjects while one was synchronous.

The research cited so far can be categorised in four different groups in terms of their focal points in the Three Systems Theory:

A- Studies that attempt to show that desynchrony and discordance are real phenomena rather than an artifact of faulty measurement. (e.g. Sartory et al., 1977; Grey et al., 1979; Craske and Craig, 1984).

B- Studies aiming to indicate that anxiety problems can be managed most effectively if the selection of treatment method is made on the basis of the most problematic component of anxiety in a given case (e.g. Ost et al., 1981, 1982 and 1984)

C- Studies investigating the relationship between the way in which phobias are acquired (conditioning, vicarious learning or transmission of information) and the loading of each of the three components of anxiety (e.g. Ost and Hugdahl, 1981 and 1983).

D- Studies examining the relationship between patterns of synchrony and desynchrony and treatment outcome (e.g. Barlow et al., 1980; Vermilyea et al., 1984).

Studies in the first, second and fourth categories are supported by experimental data. Studies in the third category have received very little, if any, support.

### 1.6.3. Criticism of the Three Systems Theory

Although the results of several experiments (e.g. Sallis et al., 1980) lend support to the original claims of Lang (1971) indicating that cognitive, behavioral and physiological systems are loosely coupled, the Three Systems Model of anxiety and emotion was criticised from different perspectives.

A- The Problem of Convergent Validity: In the process of assessment of fear the basic question is whether particular dependent measures are suitable indices of fear (Kaloupek and Levis, 1983). In a general sense different measures of a construct like anxiety need to show relatively high correlation with other ways of measuring the same construct in order to fulfil the requirements of convergent validity (Cone, 1979). But the Three Systems Theory claims exactly the opposite, (i.e. divergence among three components of anxiety), Himadi et al. (1985) state "some authors .....thought that the triple response measurement (TRM) produces nothing but confusion i.e. lack of convergence, why bother" (p.315).

Lang, however, (1968 and 1971) warned that the response modes will not necessarily correspond in expected ways. He called the expectations of correspondence the indicant fallacy. He also argued that the great variety of internal and external stimuli can differentially effect responses and, therefore produce low correspondence. He also added that assuming any single event could be used in an exact substitutive way to index a psychological state could lead to serious problems (Himadi et al., 1985). The Three Systems Theory is built on the assumption that the three systems reveal

different manifestations of the same phenomenon i.e. anxiety. Thus, such criticisms can be dismissed on the grounds that the basic logic of the theory encourages the phenomenon of low correspondence among the three systems. Construing the phenomenon of anxiety in terms of the three relatively independent components is gaining strength in psychology (Kuiper et al., 1983).

B- Hugdahl (1981), Miller and Kozak (1982) have questioned the definition of fear and anxiety in the Three Systems Theory. Hugdahl asked which of two people can be said to be anxious if one shows an increase in autonomic responsivity but lack of cognitive and behavioral anxiety to a given stimulus, while the other reports cognitive anxiety but shows no change either in behavior and physiological indices of anxiety to the same stimulus. From the Three Systems Model's point of view both are regarded as anxious, regardless of the component through which the anxiety is manifested. The differentiation of anxiety into three components helps the clinical psychologists to decide on the appropriate treatment methods (Rachman, 1978; Ost et al., 1981, 1982 and 1984).

C- Cone (1979) posed a serious difficulty for the Three Systems Theory that still awaits a satisfactory outcome. Cone (1979) stated that "failure to find a relationship among the measures may be due to content differences, method differences or to content method interaction differences ...it has been difficult to know whether lack of correspondence between systems or contents was due to real differences between them or to differences in the method used to assess responding within them (pp.89-91).

As stated before, the three different components (cognitive/verbal, motoric/behavioral and physiological/somatic) have been measured by different methods. The cognitive component has been

measured by different questionnaires. The fear-thermometer was the most commonly employed scale (Hugdahl, 1981).

The Behavioral component has usually been measured by behavioral avoidance tests. The nature of these tests differed as the behavior in question changed. For example, in the case of claustrophobia (Ost et al., 1982) the assessment of the behavioral component was made on the basis of patients' behavioral reactions when asked to enter a small chamber. The measure was obtained on a 0-34 point scale where each number stood for a particular kind of behavior.

0 = Refuse to enter

1 = Went in

2 = Closed the door, and so on.

The most commonly used physiological indicator of anxiety is heart rate. Ost et al. (1981, 1982 and 1984), Grey, Sartory and Rachman (1979 and 1981), Craske and Craig (1984), Vermilya et al. (1984) and Mavissakalian and Michelson (1982) all used heart rate to measure the level of physiological arousal when working within the Three Systems Theory paradigm.

Cone (1979) touches on an important point. The studies that employ three different kind of measurement to assess the three components of anxiety were bound to obtain low levels of correlation. Cone (1979) indicated that the relationship between two behaviors that underlie the same construct (e.g. anxiety), could vary depending upon the methods used to measure them. The relationship between two behaviours (e.g. I tremble and I do not look) which were related to the same underlying construct (heterosexual interpersonal anxiety) was consistently highest when measured in the same way. For example, both behaviors are measured by observations of an assessor. The next highest relationship occurs for the same behavior measured differently. For instance, trembling is measured by directly asking the subject and

also by observing the subjects' behavior. Lowest correlations are obtained when different behaviors assessed in different ways (e.g. trembling is assessed by asking the subject and the other behavior 'I do not look' is measured by observations of an assessor).

Cone's criticism directly attacks the centre of the Three Systems Model, namely the phenomenon of desynchrony. Desynchrony can be caused by method differences or content differences or both. None of the studies investigating desynchrony adequately dealt with this problem. One study, however, by Lehrer and Woolfork (1982) employed self-report assessment of anxiety in terms of cognitive, behavioral and somatic modalities, which they subjected to a factor analysis. They found that self-reports of cognitive, behavioral and somatic varieties could be measured as orthogonal factors. In terms of Cone's terminology, they used the same method of measurement (self-report) to assess the level of anxiety in three different content areas (cognitive, behavioral and somatic) and obtained orthogonal factors.

Gathering some kind of support for the relative independence of the three systems, (i.e. the three content areas) with the employment of the same assessment method (self-report), Lehrer and Woolfork showed that desynchrony and discordance could not be attributed to the method differences in assessing the level of anxiety in the three different systems. Thus, this low correlation among the three systems is less likely to be due to methodological error. The use of questionnaires to tap the level of anxiety in different content areas also helps to clarify the ambiguity in the verbal/cognitive component. Cone (1979) argued that to equate the cognitive system with a client's verbal statements could lead to methodological confusion. He stated that "cognitive activity is not the only content area indexed by verbal behavior, the referent may be some motor or physiological activity



(1979, p.89). Presentation of a brief example may help to clarify what has been said on this issue.

Within the Three Systems Theory, subjects' verbal-statements, irrespective of the content of the statements, are accepted as the assessment of the cognitive anxiety. Consider some verbal-statements.

I usually think of the black side of events.

I perspire

My heart beats faster

I avoid behaving freely

It is quite unlikely that the above self reports will be related to the assessment of responses in the cognitive domain. Only the first item is related to the cognitive component. Probably, the second and third items will be highly related to physiological measures (such as heart rate and respiration rate), while the relationship between item four and a behavioral avoidance test may be expected to be quite high.

In a way the problem lies in the confusion of content areas with measurement methods. Lehrer and Woolfolk (1982) used self report as a method of assessment of anxiety in the three response channels (cognitive, behavioral and somatic), whereas Lang (1971) treated self-reports of anxiety as assessment of the cognitive component only. In this way Lang referred to the self-reports of anxiety as a content area (the cognitive component). The result of Lehrer and Woolfolk's (1982) study supported the validity of shifting self-report from being regarded as a content area to being regarded as a method of assessment. Factor analysis showed that "three orthogonal factors (somatic, cognitive and social avoidance) can be extracted from a pool of self-report items of somatic, cognitive and behavioral anxiety related complaints" (p.175, 1982). As Lehrer and Woolfolk indicated, confirmation of the validity of this questionnaire requires the finding of high correlations between direct measures of overt behavior and physiological arousal and the corresponding components of the measure.

However, low correlations do not directly negate the validity of the questionnaire if the subject's own perception of the behavioral and physiological anxiety is accepted as the focus of attention (Reisenzein, 1983). As long as physiological arousal does not reach the threshold of the awareness of the person, it is not likely to be considered as problematic. Therefore, focusing on the person's perception of his autonomic arousal for the assessment of anxiety and selection of the appropriate treatment method rather than focusing on objectively measured physiological arousal alone may be a more pragmatic and realistic way of assessing a patient's anxiety.

Certainly, finding a high correlation between a subject's own perception of his physiological arousal and an objective measure would support the validity of using the subject's self-report measures. Fortunately a promising conclusion related to this issue can be drawn from the study of Ost et al. (1982). In this study the treatment of social phobia was approached from the Three Systems Theory's point of view. An Autonomic Perception Questionnaire (A.P.Q.) was used as one of the self report assessments and heart-rate as the physiological assessment of anxiety. Changes in the A. P. Q. were parallel to the changes in heart-rate. Thus, this study indicates that a person's perception of his own physiological changes are correlated with the physiological changes measured by an objective method (heart-rate). Before considering another criticism, one more problem related to the physiological/somatic component is worth noting.

Although in most instances the third component of the three systems questionnaire is termed 'physiological', it has sometimes been labelled as somatic (Kaloupek and Lewis, 1982; Lehrer and Woolfolk, 1982). It is not the terminological differences that the present author wishes to discuss but their relation to physiological assessment. In most studies, heart-rate (H-R) was regarded as being representative of

the physiological component of anxiety, rarely being employed with galvanic skin resistance or respiration rate. However, employing one or two physiological measures, such as heart-rate or respiration rate, may create problems, because indices of physiological arousal rarely coincide (Lang, 1971; Plutchik, 1970). The somatic component of Lehrer and Woolfolk's (1982) questionnaire overcomes this problem. Because the somatic component consists of sixteen (16) items which assess various somatic symptoms in different parts of the body, the present author regards it as measuring the level of 'somatization' of anxiety.

A valid measure of the physiological component should cover the whole range of physiological indices in order that the degree to which an individual somatizes his anxiety can be accurately assessed. Adequate physiological measurement of anxiety should include all possible indices, but such an approach would be quite costly in terms of time and finance. This conclusion brings the topic back to the advantages of employing a questionnaire which aims to measure three different components of anxiety. I will finish this discussion stating once more that Lehrer and Woolfolk's results (i.e. moderate correlation among the three components ranging from .47 to .66), gives a promising indication for the usefulness of the questionnaire method. It should also be kept in mind that, as stated previously, the relationship is consistently highest when two behaviors related to the same underlying construct (e.g. anxiety) are measured in the same way (e.g. by a questionnaire) (Cone, 1979). Thus, obtaining moderate correlations among the three systems under the condition where highest correlations between two different behaviors were expected, provides quite strong grounds for both the conceptualization of anxiety as comprising of three relatively independent modalities and the application of questionnaires to assess anxiety on these three components.

D- The last criticism concerns the confusion about what is meant by the cognitive component (Kozak and Miller, 1982; Cone, 1979; Hugdahl, 1981). Although all the above psychologists have criticised the vagueness of the term "cognitive component" of anxiety, each focused on a different area. Cone and Hugdahl drew attention to the fact that in spite of a general agreement over what is meant by behavioral and physiological components, there exist large discrepancies in the definition of the cognitive / verbal component. Hugdahl's (1981) criticism is the most significant one from the point of view of the present study.

Lang (1971), Lang, Rice and Sternbach (1972) included verbal statements of the overall subjective feelings in the verbal /cognitive component without specifying the source of statements (in Cone's terms, without specifying whether the referrent is physiological or behavioral activity, 1979). Sartory et al. (1977), Grey et al. (1979), and Ost et al. (1981, 1982 and 1984) used the "fear-thermometer" (which simply asks subjects to report their feelings when confronted with a phobic stimulus) to asses the subjects' cognitive anxiety. The research which employ fear-thermometers, implicitly (perhaps explicitly) assume that cognitions and feelings are controlled by the same system. Ohmen and Ursin (1979) contrary to above assumption, changed the referrent of the cognitive component from subjective feeling to the awareness of the irrationality of the behavior.

Hugdahl (1981) argued that due to the lack of a consistent definition of the cognitive component it is difficult to compare different studies that intend to measure the relationship among different components. He added that "without such clarification the cognitive component may mean at least three different things." (p.79).

a- First, the cognitive component can be conceptualized as the client's perception of his autonomic arousal and labelling it as fear

or anxiety. Such a view was apparent in the studies of Schachter (1964), Sartory et al. (1977), and Grey et al. (1979) in which linear relationships between self-report and heart-rate have been reported. In such a conceptualization there is no room for desynchrony and discordance between cognitive and physiological components of anxiety since a linear relationship has been predicted. Vermilyea et al. (1984) and Himadi et al. (1985) have shown that desynchrony and discordance among the three response systems are well established. Thus it can be argued that conceptualization of the cognitive component as a perception of autonomic arousal and labelling it as anxiety is not supported by the empirical data.

b- Another alternative conceptualization of the cognitive component is similar to those proposed by cognitive therapists (Ellis, 1962; Beck, 1976; Michenbaum, 1977) who argued that the thinking style of the phobic patient, i.e. what he says to himself, and his faulty cognitive structures, play an important role in the preservation of maladaptive neurotic behavior. In this respect the cognitive component can be defined as habitual automatic negative self-statements. Such a "cognitive" component (automatic negative self-statements) would be impossible to measure by the usual anxiety measures, for example, the fear thermometer. The fear thermometer, as stated before, does not refer to negative thoughts at all, it just asks how a person feels in a given situation.

c- Hugdahl (1981) suggests another way to define the cognitive component: "subject's anticipatory fear and anxiety in the form of worrying and brooding about the forthcoming fear provoking events. In this content, the cognitive verbal component denotes negative thoughts in advance of exposure, including fear of not being able to instrumentally cope with the situation" (p.79). In this definition the cognitive component is accepted as referring to negative thoughts

rather than the perception of physiological arousal or subjective feeling. Hugdahl (1981) also argued that a person might not experience any anticipatory negative thoughts before an event, but nevertheless could experience intense feelings of anxiety when confronted with an anxiety arousing situation. On the basis of the two different definitions (the cognitive component as negative thoughts or feelings of anxiety), Hugdahl suggested further subdivision within the single cognitive component. He, however, missed the essential point by proposing "further subdivisions within the cognitive component". In fact what he implied was: one individual's response could be manifested as anticipatory negative thoughts while another person could display his anxiety by intense feeling states (perhaps with little or relatively less negative thoughts). In a way he proposed a kind of distinction between cognitions and feelings, which was much more clearly stated by Zajonc (1980). Rather than suggesting a subdivision between the cognitive component (negative thoughts and sudden feelings), The present author suggests a fourth component- feeling or affect. As indicated by Kozak and Miller (1983), "there is not a tripartite classification of responses inherent in the fear related phenomena" (p.352).

#### 1.6.4. Summary

The approach proposed by the Three Systems Theory promises a better understanding of the nature of anxiety problems. Initial studies (Ost et al., 1981 and 1982) suggest that matching the type of treatment with each patient's anxiety profile may be very effective in alleviating anxiety. Nevertheless, certain issues within the Three Systems Theory await clarification to make this approach more effective. At present, the definition of the cognitive component seems

the most problematic area of the Three Systems Theory (Hollingworth, 1986).

These considerations bring the topic to the discussion of whether the affective (subjective feeling) system should be included within the cognitive system or whether it should be treated as a relatively independent system. This issue will be explored in the next section.

## 2. FEELINGS AND COGNITIONS

In this section, the question of whether feelings can be separated from cognitions and treated as a relatively independent component will be discussed. The implications of such a separation in the treatment of anxiety disorders will be explained within the framework of the Three Systems Theory.

In this study, the words 'feeling' and 'affect' are used interchangeably. It should be noted that the word "feel" is generally regarded as having a meaning that refers to all affective states, in this paper, however, it will refer specifically to anxiety.

In the following pages a conceptualization of affect as a relatively independent system will be examined from a cognitive, a psychoanalytical and a physiological perspective. In addition, contemporary approaches supporting the conceptualization of feeling as a relatively independent system will be presented and possible advantages of including feeling (affect) as a relatively independent system in clinical psychology will be discussed. Finally, the application of the feeling-cognition dichotomy in the present research will be outlined.

## 2.1. THE COGNITIVE PERSPECTIVE

### 2.1.1. Principles of Cognitive Therapy and Feeling

In philosophy, feeling and cognition have been distinguished as two opposing faculties, (Plato, Kant and Hume). This tradition was carried into psychology by Wundt (1907), Freud (1925) and Jung (1923). Nevertheless with the dominance of the cognitive approach in psychology in early 1960's, the distinction between feeling and cognition was abandoned. The very basic assumption of Ellis (1962) is that feeling is only post-cognitive. Kuiper and MacDonald (1983) state that "Implicit in Ellis's approach is the fundamental assumption that irrational cognitions are a basic cause of emotions" (p.298). Kuiper and MacDonald quoted from Beck who claimed that "irrational cognitions are the primary cause of psychopathology" (1983, p.289). Kuiper and McDonald (1983) identified two assumptions that underly almost all forms of cognitive psychotherapy:

A- Emotional and psychological disturbances are caused largely by illogical or irrational thinking.

B- The restructuring of cognitions accessible to awareness represents a therapeutic solution.

Cognitive therapy largely restricts itself to a narrow sphere where only illogical thinking styles which are accessible to the consciousness are accepted as the sources of psychological problems. Thereby problematic thinking styles are the target of cognitive interventions. In cognitive therapy the individual's way of conceptualization and interpretation of a given condition is considered to be the determinant of the person's emotional state.

### 2.1.2. The Definition of Cognitions and Cognitive Therapy



According to Plutchik (1980) "cognitions should be considered as synonymous with thinking and should include such functions as perceiving, conceptualizing and remembering" (p.286).

Arnold (1970) introduced the term 'appraisal' to explain how cognitions caused the development of emotions. This term refers to the person's evaluation of a given situation as good or bad. Strongman (1978) suggested that appraisals are cognitions that intervene between environmental stimulation and physiological and behavioral responses. He said that "Essentially appraisals were evaluations of the personal worth of incoming stimulus" (p.105). Peters (1970) defined appraisals as the connections between emotions and classes of cognitions. Arnold (1970) claimed that appraisals are the crucial elements which lead to the development of emotions. Peters stated that "They (emotions) differ from each other because of the differences in what is appraised ....these differences in appraisals are largely constitutive of the different emotions. By that I mean that at least logical necessary condition for the use of the word emotion is that some kind of appraisal should be involved and that different emotions must be involved in different appraisals. In other words, emotions are basically forms of cognition" (p.188).

Lazarus, Averill and Opton (1970), proposed a definition of emotion very similar to that of Peters. They argue that "each emotional reaction, regardless of its content, is a function of a particular kind of cognition or appraisal" (p.218). Arnold (1970), asserts that the generation of emotions presupposes the evaluation of a stimulus situation as good or bad. So cognitive appraisals are again considered to be the sole factors in the appearance of emotions. Thus two principles of cognitive therapy emerge.

A- A cognitive process (appraisal) is a prerequisite for the emergence of emotions.

B- In dealing with psychological problems, the focus of attention is directed to the faulty appraisals (cognitions), since the problem is held to be generated by them.

So in the case of anxiety, cognitive therapy assumes that whenever a person encounters a particular situation he panics. This is because his erroneous cognitive structures lead him to interpret and evaluate the condition as dangerous. The aim of the cognitive intervention is to make the person aware of his own irrational cognitive structures and replace them with healthier and more adaptive ones.

Certain pre-suppositions about human nature underlie the assumptions of cognitive therapy. The human being is regarded as an evaluating organism, searching his environment for cues about what he needs and wants and evaluating each stimulus as to its personal relevance and significance (Lazarus et al., 1970).

### 2.1.3. Cognitive Therapy and Human Nature

The picture of a human being that emerges is of a being who controls and satisfies all of his internal needs by active scanning and evaluating. Such a view of human nature is very similar to that of computers. The analogy between computers and human beings led to the development of quite novel and innovative theories of the functioning of the human psyche (e.g. cognitive theories in general). Nevertheless, investigators need to be cautious when explaining human nature in terms of computers and feedback loops. The limits of the resemblance between the two should not be exceeded. Neisser (1963) arguing just the opposite of what has been put forward by cognitive therapists, supported the idea of "cognitions being in the service of emotions". He emphasized the point that although humans can be regarded as similar to computers in certain respects, i.e. both are goal directed, both learn

from experience and both can produce novel or creative output, four major differences exist between the two.

A- Computers never get bored, but people do.

B- Computers have a single motivation whereas people have many.

C- Computers' memories can be instantaneously erased but people have little control over what they will learn or forget.

D- Computers neither dream nor play.

Cognitive theorists are also aware of the problems of explaining human psychic functioning in terms of information processing systems. Some cognitive psychologists accept that apart from those cognitions (or appraisals or belief systems) there are other factors to be considered. Arnold (1970) concludes that emotions could be conceptualized as composed of two elements: "one static, the appraisal, which is a mere acceptance or refusal of the expected effect of the situation on us; another dynamic, the impulse toward what is appraised as good and away from anything appraised as bad" (p.176). Accordingly, emotion becomes a felt tendency towards anything appraised as good and away from anything appraised as bad. Arnold also stated that her definition could help to explain how emotions are generated. "Whatever is perceived, remembered, imagined will be appraised: if it is appraised as desirable or harmful an action tendency is aroused" (p.176).

Furthermore, if the appraisal is intense i.e. the person evaluates the condition or the object as very desirable, a person becomes aware not only of the tendency toward the desirable object but also the fact that this is an emotional tendency (Arnold, 1970). Within this approach although a cognitive appraisal conceptualization of emotion has been reformulated by the introduction of one more element, i.e. a felt tendency, the determining role in the development of an emotional state still remains assigned to appraisals. The explanation of the

development of unrealistic appraisals was, and still is, one of the controversial areas within cognitive psychotherapy. Lazarus et al. (1970) assumed that people have certain dispositions or tendencies to respond selectively to stimuli and these dispositions may be the product of psychogenetic, cultural and ontogenetic development, probably a mixture of the three. On the basis of these dispositions, the individual cognitively filters the incoming information and the resulting "appraisals" determines whether the situation is evaluated as threatening, relevant or something else.

The first point that needs to be elucidated is the term "tendency" or "disposition". Unfortunately this is an area where cognitive psychology does not offer a comprehensive explanation, and leaves the nature of the word "disposition" rather ambiguous. A similar problem arises in Arnold's theory of emotion. She refers to appraisals as evaluations of situations. She also mentioned that some appraisals are "intuitive" (1970).

#### 2.1.4. Criticisms

Strongman (1978) pointed out the contradiction between cognitive therapists over the definition of appraisals as intuitive. He stated that "if cognition is heavily involved (as suggested by cognitive therapists), the implication is that man can control his emotions. How can this be so, if appraisals are immediate, intuitive and innate?" (1978, p.107). Attributing an intuitive property to some appraisals is incompatible with the definition of the same concept as an information processing system. Also accepting some appraisal as intuitively determined opposes the concept of the human being as an evaluating organism delineated by cognitive therapists.

Cognitive therapists' stress on the determining role of appraisals in the development of emotions has also been criticised by Costello

(1976) and Kenny (1963) on the grounds that conceptualizing emotions as caused by appraisals implies that the object of emotion must always be its cause. But this is not true for all cases; sometimes the cause may be inaccessible to awareness at that moment.

The other assumption of cognitive therapy, which regards the restructuring of those problematic cognitions accessible to consciousness as the therapeutic solution, has been criticised by Derry and Kuiper (1981). Kuiper and MacDonald (1983) claimed that although cognitive schemata could play an integral role in the etiology and maintenance of depression, it was not clear whether these schemata were readily accessible to consciousness. He argued further that cognitive psychology has a broader definition of cognitions, which makes no requirement for accessibility to awareness as a criterion for acceptance as cognitions. Cognitive therapists (e.g. Beck and Ellis) restricted the definition of cognitions to include only those accessible to awareness. Such restriction could render cognitive therapy ineffective due to the fact that cognitions inaccessible to awareness may be immune to change utilizing this therapeutic procedure.

Costello (1976) questions the usefulness of focusing therapy on the cognitive level alone. He also criticises another assumption of cognitive therapy, namely, that negative emotions are referred to as disorganizing and useless, and are caused by faulty belief structures. Castello thought that negative emotions serve a "signalling" function and indicate that a "mismatch" exists between the demands of the environment and the person's behavioral repertoire. Kuiper and MacDonald (1983), however, propose that negative emotions may have a broader signalling function, in which irrational cognitions may not always be the source of emotional disturbance. Psychological problems may be brought about by a quite rational realization by the client that his present behavior repertoire is inadequate to cope with the demands

of the environment. Thus, Kuiper and MacDoald (1983) state that "if the client's irrational cognitive structures are not the major source of disturbance, it may be futile to focus the therapy on altering these cognitions" (p.308). As an alternative treatment approach to psychological problems Kuiper and McDonald (1983) recommend an eclectic therapy package that places the emphasis on the modification of faulty cognitions or on the modification of inadequate behavior patterns or even on the modification of the clients' environment, depending upon the nature of the case.

Cognitive therapy assumes affect is post-cognitive. Feelings and cognitions are assumed to be isomorphic, with the governing function being given to the cognitions. Within cognitive therapy there is no place for feeling as a relatively independent system from thought. Feeling as a relatively independent system is also overlooked by the other psychological approaches. Scheff (1985) criticized the general trend in psychology towards the conceptualization of 'feeling'. He remarked that "in modern psychology feelings are referred to as epiphenomena, that means they can not be considered to be the cause" (p.849).

## 2.2. THE PSYCHOANALYTIC PERSPECTIVE

### 2.2.1. Affect In Psychoanalytic Literature

Cantor and Gluckman (1983) after reviewing various definitions of affect from a psychoanalytic approach, concluded that, although variation among theories exists, certain common aspects can be identified. Almost all psychoanalytical approaches to affect refer to it as a subjective feeling tone or feeling quality which is often but not invariably accompanied by discernible physiological or motoric reactions.

The psychoanalytical perspective assigns importance to the affect component. For example, in Affect and Memory Rapaport (1967) states "...the field of affects and emotions, in other words non-sensory and non-intellectual processes, has been a generally isolated field within the sphere of psychology. The explanation of them has remained unsatisfactory, and in the main has attempted to reduce them to physiological-sensory or at best intellectual processes . . .in psychoanalytical theory, affects and emotions are not isolated terrain; no concept is more central to it than that of emotions, affect, drive." (p.140).

While centrality of affect has clearly been illustrated by several analysts (Drellich, 1981; Green, 1977), almost all agree that psychoanalysis does not possess a unique theory of affect (Rapaport, 1953; Fanel, 1974; Basch, 1976). The differences between psychoanalysts on the theory of affect reach such a point that agreement over the definitions of affect, emotion and feeling becomes unattainable (Cantor and Gluckman, 1983).

Drellich (1981) for instance, says that "some authors use the terms affect, feeling and emotion synonymously and interchangeably, others make sharp distinctions between the inner subjective experience and the expressive phenomena . . . . Rapaport (1967) supported the use of the term for the conscious subjective feeling experience and the word emotion for the objective physiological and motor discharge manifestations" (p.17). Plutchik (1980) follows Rapaport's conceptualization of emotions as a complex chain of reactions, including inferred cognition, feeling and behavior. I will follow this trend of thought in this paper.

Psychoanalysis attributes a primary role to affects in the process of therapy. Drellich (1981) remarked that "The patients' affects are among the most important data which psychoanalysts monitor in the

psychoanalytical process" (p.11). Rapaport (1953) also emphasized the role of affects in analytical theory and he endorsed the views of S.Freud, Fenichel and A. Freud that liberation of drives from repression was necessarily accompanied by an appearance of affects. Therefore, therapy depends upon mastering the appearance of these affects in a certain way. In Green's (1977) paper the significance attributed to the affects in the Freudian approach is indicated in the following way, "...analytical treatment using the transference gives affect an increasingly large part to play .... Nevertheless it remains that affect keeps its place as the primary system in Freudian theory, regulated by the pleasure and unpleasure principle whose possibilities of transformation and evaluation offer less room for manoeuver than the representations (ideas). But on the other hand, because the aim of psychoanalysis is to gain an access to the most fundamental systems of psychic life, those which regulate the basic functioning of the psychic apparatus, the place taken by affect in the evolution of the theory is completely justified" (pp.139-140).

In 1890, Freud referred to neurosis as caused by "strangulated affect", defining affects as the libido or the psychic energy (Sulloway, 1979). So when an affective discharge was not allowed its expression by the process of repression, it accumulates or builds up. This strangulated affect tries to express itself (discharge) through indirect ways such as dreams, slips of the tongue, and in extreme cases, by neurotic symptoms. Freud introduced the technique of abreaction which consists of helping the client to express his built up tension, as the therapeutic cure (Sulloway, 1979). Freud realized that benefits of abreaction are quite short lived - patients often relapsed and symptoms recurred - . Freud then reformulated his therapeutic process and called it psychoanalysis. In addition to abreaction,



psychoanalysis includes three further processes - transference, interpretation and working through.

### 2.2.2. Affect In The Psychoanalytic Process

The aim of psychoanalysis is to release repressed impulses stored in the unconscious. To achieve this, the analytic atmosphere must convince the patient that there is nothing to fear in letting previously repressed impulses express themselves. The key features in the analytical atmosphere are the permissive attitude of the therapist and his encouragement of the patient to free expression of repressed impulses (Alexander, 1963). Within these conditions the infantile oedipal relationships are recreated and the relationship between the patient and important figures in his childhood are transferred to the therapist. Alexander and French (1974) specified the transference as "a kind of relationship which is obtained within the therapeutic situation wherein the therapist is indeed the representative of a figure of importance from out of patients past" (p.73).

The most significant feature of transference is illustrated by Kline (1984), who states that "... what is normally repressed and beyond the awareness of the patient is now literally in the open, existing between the patient and the therapist. All deep emotion and ambivalence of love and hate can be worked through, the feelings expressed and come to terms with. Thus transference is the core of the therapy" (p.35).

When a transference situation is created, a new phase in therapy appears: the corrective emotional experience. This phase leads to the resolution of the transference. In this new stage the aim is to correct those emotions that were previously repressed. Alexander (1963) writes of the corrective emotional experience "When the early conflictual relationship is repeated in the transference, the

therapist's attitude must reverse that of the intimidating parent. He can be objective and understanding because he is not emotionally involved, this permits the patient to express himself/herself more freely. The parental intimidation is corrected by the more tolerant and sympathetic attitude of the therapist, who replaces the authoritarian parents in the patient's mind. As the patient realizes that his modest self-assertion will not be punished, he will experiment more boldly. At the same time he can express himself more freely towards persons in authority in his present life. This increases the ego's capacity to deal with aggressive attitudes which anxiety had previously repressed" (pp.286-87). In short, the therapist emotionally responds to the patient's transference in a way that neutralizes negative consequences (affects) of the parental behavior (Alexander, 1963).

In transference and corrective emotional experience, the primary role ascribed to affects is undoubtedly clear. Nevertheless, psychoanalysis recognizes the role of intellectual processes. The 'Intellectual insight' of a patient into the nature of the origins of his condition is referred to as one of the most important steps towards the cure. Alexander (1963), however, stresses that the "patient must feel what he understands, otherwise he could be cured by a textbook" (p.288). Intellectual insight, as a principle, is built in and associated with emotional experiences, it helps the perpetuation of emotional gains and improves the effects of emotional experiences. Valenstein (1962) while he grants the fundamental significance to emotional reliving for the achievement of insight and cure, nevertheless appreciated the contribution of intellectual processes to this end. He states that "Psychoanalysis can be described as an experience in the broad sense, that is to say, both as a source of affective connotative knowledge (consequence of awareness through emotional and experiential acquaintanceship) and also of cognitive

knowledge (consequent of predominantly intellectual awareness) ...  
Sometimes the emotional state or the affect leads the thought representations, sometimes it is the ideas which leads the affect into consciousness and into expression. The important point is that there be a ready association of one to the other" (pp.321-322).

### 2.2.3. Affect and Cognition: Two Separate Systems

In cognitive therapy, affects (feeling) are treated as an epiphenomenon (i.e. they cannot be considered to be causes) (Scheff, 1985) and as post-cognitive, therefore, a patient's cognitive structures have been targeted for intervention. In the psychoanalytical approach, however, the emphasis is shifted from cognitive structures to affects. Part of the reason for this contradiction can be found in the differences of the models which originally informed the theorists of each school. Psychoanalytical theory was developed when such concepts as energy, closed systems and hydraulic models were popular in physics whereas information-processing feedback-loops, computers are the models adopted by cognitive theorists.

Psychoanalysts emphasize the importance of affects but also accept the role of cognitions in psychic processes. Cognitive theorists play down emotions and emphasize cognitions. But the important difference is that psychodynamic theory advocates a relative independence of affect from cognition. Freud (1915), Valenstein (1962), and Green (1977) for example, endorse a parallelism between affective and cognitive processes but, nevertheless, argue for their separateness. For instance Freud in his essay on the unconscious (1915) states that "the whole difference arises from the fact that ideas are cathexes ultimately of memory traces whilst affect and emotion corresponds with process of discharge the final expression of which is perceived as feeling" (p.111). In New Introductory Lectures On Psychoanalysis (1932) Freud

discusses the role repression plays in anxiety "It is the idea which is subject to repression and which may be distorted to the point of being unrecognized, but its quota of affect is regularly transformed into anxiety" (p.115).

Valenstein's paper (1962) reflects the cleavage in a somewhat different manner. He held the idea that "Affects and ideas stand in an interesting relationship to one another developmentally. Affects being closely related to instinctual drives and tension levels close to the primary process, and in this sense, more archaic than ideas. Ideas as thought representatives are expression of secondary processes and Ego functioning" (p.322). Valenstein's separation of affects from thought in terms of primary and secondary processes stems from Freud's ideas in "the Project". Ostow (1961) when referring to the Project states that "...an affect, Freud says, intensifies the idea to which it is attached, inhibits thought and facilitates primary process, uninhibited instinctual discharge. The Ego acts to inhibit further release of affect after a small amount has been released" (p.85).

The primary process refers to the disposition towards the immediate discharge of psychic energy characterised by the high mobility of instinctual impulses. Cathexes of mental energy (ideas) are the materials that represent the aims of discharge. In early childhood, the primary process dominates psychic life, pushing the representations towards discharge. Such a process is experienced by the child as a wish or a desire (Arlow and Brenner, 1974). The primary process, which is regulated by the id, includes imagination and ideas accompanying instinctual energy.

The secondary process the emergence of which is tied up to the development of the ego, is characterised by its ability to bound and delay the instinctual energy. The ego which has the task of self-preservation, evaluates and processes the incoming information and

decides whether or not the conditions are appropriate for the satisfaction (release) of the instinctual energy. So the secondary process acts as the regulator of the desires and wishes generated in the id. Nevertheless, the function of the ego is to satisfy those drives of the id, under the conditions where its discharge does not possess any threat to the organism. Freud stressed that the function of the ego was to serve the desires of the id as well as preserving a harmonious interaction between the organism and the environment (1932).

#### 2.2.4. Affect And Cognition: Two Processes Of Mental Functioning

To reformulate what has been said above: affects and cognitions can be considered at least partially separate on the basis of their mode of functioning. Some theorists (e.g. Valenstein, 1962) hold that the operation of affect functions at the primary process level, while cognitions function at the level of secondary process. The point to emphasize is that the absence or the presence of ideas are not the discriminating factors between the primary process (feeling or affect) and the secondary process (cognitions). That is, in the primary process both affects and ideas exist and the aim of the affect is to satisfy its idea. The differentiating power is attributed to the level of functioning and the quality of ideas. Ideas are just cathexes of the psychic energy, they are brought about by this energy automatically, and have no power of controlling the drives. The instinctual energy is regulated by the pleasure principle, and its sole aim is to obtain satisfaction by discharge.

In the secondary process the instinctual energy is bound and controlled by thought processes which have emerged through relationship between the infant and the environment. In the secondary process the determining function is assigned to the ideas (thought processes) in

this level of functioning. The secondary process is characterized by the binding of instinctual energy by processing the information coming from the environment. Acting as a control agent, the secondary process regulates the release of the psychic energy. Therefore, it is more appropriate to identify those ideas in the primary process as images or phantasies related to the instinctual energy, and those ideas in the secondary process as thoughts. Rapaport (1959) stated that "... Freud contrasts the terms ideation and thinking. The implication is that ideation pertains to drive-representations, thinking to reality representation; these terms express the difference between the id and the ego-organization of thought. ....The memory trace of the excitation and that of the need satisfying object become associated and, when the need again arises, the memory of the need-satisfying object emerges with hallucinatory vividness. This memory image becomes the ideational representation of the drive underlying the need. ... Ideation yields its place in the course of development to the process of thought in which all ideas related to the need satisfying object are so organized as to enable a planful search for the need satisfying object in reality" (pp.324-325).

Arlow and Brenner (1974), suggest that the terms primary and secondary processes do not indicate the quality of the level of functioning. A healthy mental operation does not imply the domination of a personality by the secondary process functioning i.e. binding of affective discharge all together. A well adapted personality has both processes functioning harmoniously. The predominance of either one may be a precursor for the development of emotional problems.

Valenstein (1962) asserted that affects, being more archaic than cognitions, are closer to the primary process; and cognitions are the consequence of the interaction between environment and organism and therefore are nearer to secondary process functioning. In fact, such

separation of affect from cognitions can be understood more clearly when Arlow and Brenner's (1974) conceptualization of secondary process and Plutchik's explanation of the development of cognitive processes are considered jointly. Arlow and Brenner (1974), in describing the nature of the secondary process, stated that "...this quality of mental functioning (the secondary process) is a later acquisition of the mind. The secondary process results from the impact of reality and of the environment upon the developing mental apparatus. It reflects the effects of experiences of mastering frustration, of being rewarded by important objects in the environment, and of socially determined moral concepts" (p.86).

Plutchik (1980) explains the development of cognitions, from an evolutionary perspective. He said "In the most basic sense, any organism must predict on the basis of limited information whether there is a danger in its environment or a food or a mate, depending on the prediction made, the organism makes a decision to run, to attack, or to play or to mate. From this point of view the complex processes of sensory input, evaluation, symbolisation, comparison of memory states and the like, those processes we call cognitive are in the service of emotions and biological needs" (p.295). Plutchik reiterates, however, that cognition developed later for more accurate prediction of the future so that the organism could function more effectively in his/her life. Parallelism between the authors implies that cognitions and the secondary process can be conceptualized as being similar to each other. Plutchik, in conceptualizing cognitions as in the service of emotions seems to restate Freud's (1932) claim: the Ego is in the service of the Id.

The functions of the ego are similar to the functions of the secondary process, nevertheless, the total domination of a personality by the secondary process operations i.e. excessive inhibition of drive

(affective) discharge, does not lead to a better functioning personality. What needs to be clarified is the nature of the secondary process and the place of the super-ego in the interaction between the primary and secondary processes. These two processes as defined by Arlow and Brenner (1974) refer roughly to the releasing and binding of instinctual energy. The id then functions at the primary process and the ego at the secondary process level. Then the super-ego, from the dynamic view point, can be considered to reside in the secondary rather than the primary process. It acts as an agent of societal rules within one's personality by inhibiting the impulses from the id.

There is a qualitative difference between the super-ego's inhibitions and the ego's delay of the id drives. The aim of the ego is to satisfy the id's drives under appropriate conditions so that the satisfaction does not threaten the organism's existence. The super-ego, however, does not have such a self-preservation duty. Rather, its aim is to suppress the id's impulses indefinitely. From this point of view the domination of a personality by the secondary process (inhibitory forces) is as detrimental as the domination by the primary process. A healthy ego regulated by the reality principle is one that sustains a harmonious interaction between the primary and the secondary processes. In other words, a healthy ego releases the instinctual impulses at appropriate occasions but also withholds them when necessary, until a convenient situation arises again. The conceptualization of a healthy ego in terms of harmonious interaction of the primary and the secondary processes rather than the domination of the primary process by the secondary process have also been proposed by Green (1986). He stated that "...in opposition to what Freud thought, it is not so much a question of the secondary process dominating the primary processes, but rather that the analysand can make the most creative use of their coexistence and do so in the most elaborate activities of the mind just



as he does in everyday life." (p.20). Thus, the aim of a healthy ego is to satisfy as well as inhibit drive discharges that are represented by affects.

#### 2.2.5. Conclusion

The approach adopted in this paper is that affect (feeling) and cognition can be conceptualized as two relatively independent systems. Information presented in the above sections indicated that affect is closer to primary process functioning (i.e. discharge of drives) and cognition is more similar to secondary process functioning (i.e. binding and neutralization of affective discharges). The separation of affect from cognition implies that the psychic structure of each person can differ in terms of the level of influence of the affective and cognitive systems. For example, the affective (primary process) may predominate in one person, while the cognitive (the secondary process) may dominate in another. In the case of anxiety, the former may experience the distress mainly in his affective domain, whereas the latter may experience exactly the same phenomenon largely in his cognitive domain and in terms of negative, anticipatory thoughts. Thus, the same objective phenomenon (anxiety) is perceived and expressed differently. This conceptualization is similar to Kendall's (1984) who regards affect and cognition as issues that can produce variability among people. He thought that some people were excessively cognitive (ruminative) whereas others were insufficiently cognitive (impulsive). He said "it is, in my opinion, possible for there to be individual differences in the degree to which affect versus cognition contributes to the development and/or maintenance of certain types of maladjustments" (p.131). Those people whose psychic life is relatively more dominated by the primary process are characterized by the mechanism of displacement and condensation (Arlow and Brenner, 1974).

Valenstein (1962) discusses affectualization as a defense mechanism, which is usually employed by hysterical characters who are prone to powerful and relatively primitive affect responses. He also referred to individuals with obsessive personality as having been characterised by the containment of drive impulses and subsequently the isolation of affect from the idea. He stated that "In psychoanalysis such individuals intellectualize and isolate affect from their conscious experience and communication to ward off insight through depriving the analytical material of the quality of emotional authenticity" (p.317). Either of the processes (the primary and the secondary) can be employed to avoid insight and the advance of the therapeutic procedure. Neither one of them can be regarded as more healthy in terms of psychic "well being" since the domination of a personality by either one of them may result in psychological problems. Only the nature of the problem varies. For example, if the primary process is dominant there arises an excess of affect and hysterical symptoms, if the secondary process is dominant, it leads to the inhibition of affect and obsessive-compulsive symptoms.

Up to this point assumptions of cognitive and psychoanalytic treatment approaches to emotional problems have been stated to indicate that while in the main cognitive therapy leaves no room for the separation of feeling from cognition, such discrimination is possible within psychoanalysis. However, to treat the topic evenly, it should be noted that some authors (Basch, 1976; Krystal, 1977 and Schur, 1969) within the psychoanalytic school defend the inseparability of affects from ideas, but their opposition is directed more to the complete separation of the two. But they at least acknowledge the variability of the role of cognitive elements from emotion to emotion (Schur, 1969). It is important to note at this point that the separation of affect from cognitions should not be taken to extreme. Their independence is

relative, for it is a well recognized phenomenon that feelings and cognitions are closely related, being effected by the same events and continuously interacting through feedback mechanisms (Zajonc, 1980).

### 2.3. PHYSIOLOGICAL PERSPECTIVE

In the psychoanalytical literature physiological arousal was regarded as common but not a necessary accompaniment of affects (Rapaport, 1967). Rapaport claimed that "affect could manifest itself in the psychological level or physiological level or in both levels. Emotion is a process which may have a great variety of phenomenological manifestations. One could then have to deal with the process emotion in psychosomatic terms, maintaining that sometimes its physiological manifestations may become more obvious to such an extent that they may seem altogether absent" (p.11). Plutchik (1980), however, maintained that emotional reactions do not depend on prior presence of a physiological state of arousal.

Schachter and Singer (1962) proposed that physiological arousal and cognitive attribution are the necessary components of an emotional experience. This is the cognitive arousal theory of emotion in which affect is treated as post cognitive, in the sense that it occurs only after physiological arousal and cognitive attribution of this arousal has been completed. Lader and Tyrer (1975) point to an ambiguity of the term "arousal". They remark that Schachter's use of the word refers to a heightened activity of the the peripheral vegetative system. Moreover, in Schachter's theory the perceived arousal has been employed as the measure of physiological state. The perceived arousal refers to the perception of feed-back from the periphery, not the peripheral physiological arousal. For Schachter then arousal and its feed-back becomes psychologically significant only to a level that is perceived by the individual (Mandler, 1975). So, those arousals which

were unable to reach the threshold to be perceived by a person were not taken into account in the theory. This assumption seems quite reasonable, for as long as a person cannot perceive his own physiological arousal, such changes in his body will have no relevance in the evaluation of a situation.

Reisenzein (1983) hypothesized that if physiological arousal, more correctly its feed-back, is crucial for the emergence of emotion, then if either such feed-back is blocked or its intensity is reduced, the level of the emotional experience will be reduced accordingly. To test this assertion he examined two types of studies:

A- Studies of emotional experience in people with spinal cord injuries. This type of patients were selected because functional transection of the spinal cord eliminates proprioceptive, cutaneous and visceral input from a substantial portion of the body. Studies by Janas and Hakmiller (1975) and Hohmann (1966) showed that patients' level of subjective feeling (sexual and aggressive) declined in intensity as the lesion became more marked. In Hohmann's (1966) study patients also reported higher levels of sentimentality after their injuries. However, because of methodological shortcomings the results of these studies were inconclusive. Several important variables were left uncontrolled. Reisenzein stated that "considering the dramatic life changes resulting from severe spinal-cord injuries, reports of declined intensity of feeling could be the result of psychological adaptation the patient has to make ... or of any number of causes other than the injury itself" (1983, p.241).

B- Studies on the effects of adrenergic receptor blocking substances in emotion. Beta-blockers reduce peripheral arousal reactions, that act mainly on the cardiovascular system reducing the effect of sympathetic nerve activity (Weiner, 1980). Results of several studies (Liu, Debus and Janke, 1978 and Tyrer, 1976) indicate that,

with the administration of beta-blockers and the expected reduction of peripheral arousal, there is no observed reduction in the level of reported anxiety. Reizezein, contradicting Schachter's and Singer's assertions, suggests that the perception of physiological arousal is not directly related to the intensity of the feeling. However, it is difficult to arrive at a conclusion at this stage of the research because numerous sources of autonomic feed-back were left unaffected by beta-blocking agents. Nevertheless, it can be argued that if the link between the perception of physiological arousal and the emotional experience is as intimate as Schachter claims, the reduction of cardiovascular feed-back obtained by beta-blockers would result in a significant reduction in the level of emotional experience. This conclusion was supported by investigations of Fahrenberg (1965) and Shield and Stern (1979) which showed that cardiovascular feed-back accounts for the most salient components of perceived arousal.

The upshot of this research is that subjective feeling (affect) need not be equated with the perception of physiological arousal. The discrepancy between bodily reaction and subjective emotional feeling is the point where the Three Systems Theory and Schachter's theory are in conflict (Rachman, 1978). Schachter and Singer (1962) have regarded the physiological arousal as the "necessary condition" for the formation of anxiety, whereas the Three Systems Approach offers grounds for the experience of anxiety without marked physiological accompaniments (Rachman and Hodgson, 1974).

If feelings can be conceptualized as relatively independent from both cognitions and physiological arousal, then a need to reconsider the position of feelings in modern psychology seems to be inevitable.

#### 2.4. AFFECTS AND COGNITIONS IN THE RECENT LITERATURE

The relative separation of affect (feeling) from cognitions is not confined to psychoanalysis alone. Since the 1980s studies emphasizing the importance of feelings have flourished (Plutchik, 1980; Zajonc, 1980, 1984; Izard, Zajonc and Kagan, 1984; Sheff, 1985).

Plutchik (1980) defined emotions as consisting of three related but relatively independent components: cognition, feeling and behavior. He proposed that although those three systems, (especially cognition and feeling) are intimately related, some variations can occur among them. He stated that "Even if the cognition is accurate, it is still possible for the feeling aspect of the emotional chain to be blocked, modified or distorted. This is presumably what ego defenses such as denial and repression do. However, even if the feeling is clearly present, appropriate action may or may not occur. This is simply because environment or internal restraints prevent the action. Emotions may thus be conceptualized as sequential chains of events, involving inferred cognition, feeling states and behavioral effects" (p.290).

His approach to emotions is from a psychoevolutionary perspective, from which he argues for the primacy of emotions (I think it would be more accurate to say the primacy of affect) over cognitions. He claims that the very first organism had to "emote" -fight or flee-, and cognitions developed later in order to ensure those primitive and essentially emotive activities had been executed in the best interest of the organism.

The most comprehensive study on the separation of feelings from cognitions is Zajonc's (1980 and 1984). He argues (1980) "Preferences Need No Inferences": Affects and cognitions are separable and partially independent systems, while they usually work jointly. Nevertheless, affect can be generated without prior cognitive process. He criticised

contemporary psychology on the grounds that it regards feelings (or affects) as post-cognitive, that is, elicited only after considerable processing of information has been completed. Zajonc, (1980) examining mainly social psychological research concluded that "...affect and cognition are under the control of separate and partially independent systems that can influence each other in a variety of ways ..." (p.152). He goes on to say that even though both feeling and thought involve energy and information, feeling has been described as mainly energy, while a substantial weight has been given to information in the composition of the latter. Referring to this issue, Zajonc (1980) stated that "In the pure case, the analysis of feelings attends primarily to energy transformations, in contrast, the analysis of thoughts focuses primarily on information transformations" (p.154).

Zajonc's debt to Freud can easily be detected. In the analytical approach, affect is accepted as standing closer to the primary process characterised by the continuous striving of the psychic energy for discharge. Similarly, Zajonc defined feeling as predominantly energy transformation. Intellectual processes are regarded as closer to the secondary process, which have the role both of evaluating the environment and processing the information in order to regulate the discharge of the psychic energy. Furthermore, cognition is regarded as consisting of mainly information transformation in Zajonc's definition. Zajonc (1984) argued that the point in separating feeling from cognitions is not how much information the organism requires from the environment in order to produce an emotional reaction, but how little work it must perform on this information to produce an emotional reaction. He proposes that, for a mental phenomenon to be called a cognition, it must involve operations of the sensory input in which such input has been transformed into a form that may become

subjectively available. The transformation of the sensory input implicitly presupposes active involvement from the organism.

Here it is useful to refer to the distinction between ideas and thought. In the primary process the ideas are generated by the instinctual energy, representing the goal of the discharge. Hence, the ideas in the primary process are completely dependent on the instinctual impulse. Furthermore, by being generated through psychic energy alone, processes such as information processing or evaluation of the environment do not operate. It may be said that these ideas manifest themselves in terms of a wish or a desire. By contrast, in the secondary process thoughts are assumed to function via the processing of information coming from the environment. The aim of the secondary process is to control and regulate the instinctual demands with the help of mechanisms peculiar to the secondary process, that is, thought. However, feeling and cognition - mentioned previously in terms of instinctual energy and information processing - would best be regarded as independent but interacting systems. Because each, cognition and feeling, include both energy and information only their relative weight differs (Zajonc, 1980).

Zajonc supports his theoretical claim by reviewing the literature for empirical research. His arguments can be presented as follows.

A- Affective reactions show phylogenetic and ontogenetic primacy (Izard et al., 1984). Izard et al. (1984) after reviewing the empirical studies pertinent to feeling-cognition controversy, concluded that "emotions and cognitions can be considered as separate but interactive systems" (p.33).

B- Separate neuroanatomical structures can be identified for affect and cognition.

a- Emotional reactions are likely to be under the control of right brain hemisphere, whereas cognitive processes are predominantly



the concern of the left hemisphere (Cacioppo and Petty, 1981; Schwartz, Davitson and Maer, 1975).

b- Emotional features of speech are controlled by the right hemisphere, whereas semantic and lexical aspects are controlled by the left (Ross and Mesulam, 1979).

C- Appraisal and affect are often uncorrelated and disjoint.

a- Affective judgements of a person are characterised by a primacy effect, whereas appraisal informations are influenced by a recency effect (Anderson and Hubert, 1963; Pasner and Synder, 1975).

b- The weighting assigned to trait adjectives that contribute to preferential judgements of hypothetical individuals are uncorrelated with the recall of these adjectives (Dreben, Fiske and Hastie, 1979).

c- If cognitive appraisal is the necessary determinant of affect, then changing the appraisals should result in a change in affect. This is usually not so (Petty and Cacioppo, 1981).

Zajonc's approach is more constructive than that of cognitive therapists (e.g. Lazarus, 1982) who reject the possibility of independence of affect from cognition. According to cognitive therapists, appraisals are the preconditions for the emergence of feelings. As Zajonc stated "Assuming that cognitive appraisal is always a necessary precondition of emotion preempts research on the matter" (p.117). His idea was to leave the final word in the problem of separating feeling from cognitions to empirical findings, rather than to assumptions and definitions.

Wilson (1983) and Rachman (1981) have discussed the implications of referring to feelings as a relatively independent component within clinical psychology. Rachman (1981) postulates an asymmetrical relationship between the two, saying that, while it is easier to find examples in which affective reactions were triggered and intensified

by cognitive elements, the reverse does not hold. Once an affective reaction has been formed, it is quite difficult to alleviate it by cognitive means. Thus, he concluded that "cognitive operations were relatively ineffective means of reducing affective reactions but potentially powerful means of inducing and increasing affective reactions" (1981, p.282). Rachman also draws attention to the current position of cognitive therapies by indicating that "...attempts at overcoming psychological problems by cognitive methods have fallen short of hopes and expectations. The relative weakness of most forms of rational psychotherapy can perhaps be traced to two assumptions that have been challenged by Zajonc.

A - Most forms of rational psychotherapy have assumed that affect is post-cognitive rather than pre-cognitive.

B - Rational psychotherapy is based on the implicit assumption that cognition and affect operate within the same system" (p.283).

In general, it appears from the foregoing that there are ample grounds for attributing relative independence to the affective (feeling) system. Affects can be considered as similar to a- the primary process functioning, b- the concept of psychic energy and c- the dynamic component of emotion. On the other hand, it seems appropriate to refer to cognitions as being nearer to a- the secondary process functioning, b- the concept of information processing and c- the static component of emotion.

Once the status of "feeling (or affect)" is established as a relatively independent system, an important question arises for clinical psychology: Given the affective system has the capacity of relatively independent functioning, what therapeutic methods specifically modify the affective component?

In this paper anxiety is conceptualized as consisting of four components rather than three, feeling is given a position similar to

those of the three systems (cognitive, behavioral and somatic). Hugdahl (1981) pointed out the vagueness in the definition of the cognitive component and suggested a further subdivision within the cognitive component. The same problem was mentioned by Izard et al. (1984). Izard et al. (1984) drew attention to the controversial nature of the definition of the subjective-experiential component: "The central question is whether the third component of emotion is basically a feeling state, a special type of cognitive process (e.g. "hot cognition"), or a combination of feeling and cognition. We do not consider it a trivial question. For those who consider the component as consisting solely a feeling state, there is a large and relatively unexplored territory of the emotion-cognition relationship" (p.3).

## 2.5. THE IMPLICATIONS OF SEPARATING AFFECT FROM COGNITION IN CLINICAL PSYCHOLOGY

Clinical psychology is currently dominated by cognitive, behavioral and physiological approaches. The primary target of cognitive therapy is to change a client's faulty cognitive structures. The assumption is that such change will improve affective problems. Behavior therapists, on the other hand, focus on the maladaptive behavior pattern. The assumption is that changing maladaptive behavior patterns will directly improve the affective problem of the person. The physiological approach attempts to induce affective improvement in patients through the assistance of drugs. The Three Systems approach embodies a combination of these three treatment methods. To include affect as a separate system contradicts the underlying assessment and treatment assumptions of these approaches since they regard affect as an epiphenomenon. In contrast to the Three Systems approach, psychoanalysis focuses on affect, and attributes a primary role to feeling in the aetiology of anxiety. Psychodynamic approaches,

therefore, do not attempt to modify affects by changing a patient's behavior or by modifying cognitive structures. Rather, the treatment focuses on the affective relationship between the therapist and the patient (e.g. transference). The significance of the therapeutic atmosphere in the process of psychoanalysis has always been stressed as one of the most important elements determining the outcome of the therapy (Valenstein, 1962).

If affect is incorporated into the Three Systems approach, it may be possible to assess a patient's anxiety in a more detailed form. For example, one person may experience anxiety with numerous anticipatory negative ideas, a certain level of subjective feeling and behavioral avoidance and somatic symptoms. While another person may react to the same situation with relatively few anticipatory negative ideations, but quite high levels of subjective feeling of anxiety. In clinical practice there are cases where after a certain period of therapy patients state that although he/she knows that nothing aversive is going to happen, he/she still experiences an uneasy feeling. The response of a cognitive therapist, usually, is to suggest that although the patient reports no irrational or negative cognitions about the situation, he/she still exhibits automatic thoughts that are outside of his/her awareness.

For the same case, however, a psychoanalyst would assert that the problem is mainly unconscious and the patient's affective problem should be dealt with first, but certainly not through intellectual processes alone. Hence, when subjective feelings play a dominant role in the manifestation of anxiety, psychoanalytically oriented treatment packages may be more effective.

In summary, I suggest that conceptualization of feeling (affect) as a relatively independent system may improve assessment and treatment of anxiety disorders. The treatment methods for anxiety disorders could

change depending on whether patients are affectively oriented or cognitively oriented. Because, affectively oriented clients may be more responsive to certain aspects of the treatment which may have relatively less curative property for cognitively oriented clients.

Since the advent of cognitive psychology, cognitive (behavior) therapy techniques have been routinely applied to each patient without considering each patient's personality structure and without paying enough attention to affective component during the therapy. Thus, instead of the Three Systems conceptualization, I propose a Four Systems Approach, adding an affective (feeling) system as the fourth component. I also suggest that psychoanalytic therapy is an appropriate method of modifying the affective system.

#### 2.6. APPLICATION TO THE PRESENT RESEARCH

To examine whether feelings and cognitions can be conceptualized as interacting but relatively separate systems in the manifestation of anxiety, the following groups will be compared:

A - Male and female subjects.

B - Obsessive-compulsive patients and all other DSM-III anxiety patients.

##### A- Male female differences

I suggest that females will experience anxiety relatively evenly on cognitive and feeling components. Males, on the other hand, will tend to experience anxiety more in the cognitive domain and relatively less in the feeling when compared to the female sample. Such differences are thought to appear due to relatively different personality structures of male and female subjects as proposed by Freud (1925) and Torgerson (1980).

Psychoanalytic and social psychological investigations provide the rationale for this claim. Psychoanalysts (e.g. Freud, 1913) clearly state that the male personality structure is closer to the obsessive type while females have personality disposition similar to hysterical traits. Adams (1973) and Freud (1925) point out that obsessive-compulsive disorders are mainly found in male patients, Abse (1975), Arieti (1975), Torgerson (1980) argued that hysterical personality structure and hysterical problems are closely related to the female personality. Torgersen (1980) in a study to replicate the factor structure demonstrated by Lazare et al. (1966 and 1970) on oral, obsessive and hysterical personality syndromes, found that a hysterical factor structure is poorly replicated in a male sample, but clearly appeared in a female sample. He suggests that "perhaps it was true that the hysterical personality was a typical female characteristic" (p.1276).

Both, obsessive-compulsive personality and obsessive compulsive disorder are characterised by certain defense mechanisms such as undoing, isolation and reaction formation (Salzman and Frank, 1981; Insel, 1982). In this study isolation is the focus of interest. This defense mechanism denotes the separation of affect from the idea. A person who employs this defense mechanism has been described as "exerting severe control over his emotions, thereby producing a pseudoplacid unafect, flattened emotional state "( Salzman and Frank, 1981, p.287). Lazare et al. (1966) in their study investigating the validity of the psychoanalytic obsessive type include nine adjectives that are supposed to indicate the features of an obsessive personality. One of these adjectives is "emotional constriction", referring to the use of the isolation defense mechanism . They defined emotional constriction in terms of a narrow range of affective reaction; difficulty in warm outgoing contact; cold; abstract and emotionless,

and avowed rationality. In sharp contrast to this obsessive type, a hysterical personality structure is marked by high levels of emotionality. Valenstein (1962) referred to affectualization as a typical defense deployed by hysterical personalities. Lazare et al. (1966) regard emotionality as one of the important denominators of a hysterical personality structure. These people are characterised by: an easy excitability; an inconsistency in reactions; labile affectivity; irrational emotional outbreaks; intensity of expression of feelings, deficiency in emotional control; a lack of emotional inhibition and an extravagance of emotional color.

In the light of this, males can be considered to be closer to the obsessive type personality structure, and will exhibit less emotionality but higher levels of emotional constriction when compared to females. In general the opposite is true for women. The female personality is generally a hysterical type and is characterised by higher emotionality and less emotional constriction.

Social psychologists explain the male-female differences in emotional and intellectual functioning in terms of the differences in socialization. Spence and Helmrich (1978), for instance, suggested that through societal rules and pressures, females are forced to accept a more feminine identity which results in a personality structure that is characterised by emotionality and sensitivity. Males, on the other hand, are required to take on a masculine identity which is more competitive, more active, more independent and less emotional.

Lateralization studies (Buffery and Gray, 1972; Levy and Reid, 1976) indicated that females were less lateralized than males. That means that the left hemisphere, which organizes mainly cognitive processes, is more dominant in males. Whereas in females lateralization is less complete. These findings also suggest that males, having

greater lateralization, will exhibit more separation between their feelings and cognitions than females.

In terms of the feeling versus cognitive issue, females will reveal anxiety in both cognitive and feeling components more or less equally, while males will manifest higher differences between cognitive and feeling domains of anxiety in the direction of the cognitive component.

2- Obsessive-compulsive and all other DSM-III anxiety patients.

Secondly, the anxiety manifestation patterns of obsessive-compulsives and remaining anxiety patients of DSM-III (hysterical) on the feeling and the cognitive components are planned to be compared. First of all, I would like to clarify the meaning of the term 'hysterical' as used here. In this study this term is viewed completely from a psychoanalytical perspective.

The term 'hysterical' has been used in the past to refer to a particular female psychological problem. Freud revolutionized the meaning of this term by claiming that the title of hysteric should be used for both sexes. He used the term to refer to a particular personality structure. Freud contrasted the hysterical personality with the obsessive-compulsive. He suggested that these two types of personality structures were different in terms of types of defense mechanisms employed and the stage of fixation at their psychosexual development. He further suggested that the terms obsessive and hysteric could apply to both sexes. In general, however, male personality structures are similar to the obsessive type, whereas female personality structures are similar to hysterical. Later on, the term hysteric in psychoanalysis has been applied to certain groups of patients who are suffering from either generalized anxiety and panic or



various phobias. In this research the term hysteric will be applied to all other DSM-III anxiety disorder patients apart from obsessives.

The logic behind the comparison of obsessive compulsive patients with all other anxiety patients relates to two different areas of psychology: psychoanalysis and neuropsychology. Individuals with obsessive-compulsive traits or disorders tend to separate the affect from the thought and to present an emotionless personality structure. By contrast, individuals with hysterical personality structures tend to exhibit excessive affect in their interactions.

Neuropsychological data pertinent to the present discussion come from lateralization studies (Tucker, 1981; Gur and Gur, 1975). The studies show that the two hemispheres have different involvements in cognitive and emotional operations. The left hemisphere is lateralized for linguistic functioning and other tasks involving cognitive operations while the right hemisphere is lateralized for emotional functioning. Smokler and Shervin (1979) report that subjects who have hysterical personality styles have right hemisphericity, while those who have obsessive personality styles have left hemisphericity. The authors suggest that the emotionality of hysterical personalities and the ruminative and less affective nature of obsessive personalities can be explained in terms of differences in their lateralization.

In the present study it is hypothesized that the difference between the cognitive and feeling components of anxiety will be higher in obsessive-compulsive patients than that in a group of other anxiety patients. Furthermore, obsessive-compulsives are expected to reveal this difference in the direction of the cognitive component.

#### 2.6.1. Summary

In this study males and obsessive compulsives are expected to show greater difference between the cognitive and feeling components of

anxiety than females and hysterics. The logic behind these assumptions is as follows: Male and obsessive-compulsive personality structures are emotionally constricted in comparison to females and hysterics for various reasons. Males and obsessives cognitively apprehend anxiety, but because of their emotional constriction, the manifestation of anxiety in terms of feeling will be relatively low, and the discrepancy between the two components will be larger. Females and hysterics, however, after cognitively apprehending anxiety, will express its corresponding affective charge. Furthermore, males and obsessives will experience anxiety more in the cognitive component in comparison with females and hysterics. A reverse pattern will be observed in the feeling component: females and hysterics will experience anxiety more intensely on this component than male and obsessives.

The aim is to examine whether cognitions and feelings could be conceptualized as two interacting but relatively independent systems. Cognitive therapy's assumptions about feeling are that they are post cognitive, that they appear only after cognitive appraisals, and that they are completely dependent on cognitive structures. If these assumptions are correct, then affect will always be determined by cognitions, irrespective of sex differences or personality structure or type of anxiety disorder. This means that, if one individual experiences a higher level of anxiety on the cognitive component than another, the first individual should exhibit a higher level of anxiety on the affective component as well. Suppose, however, that a higher level of cognitive anxiety is not followed by a higher level of the feeling component of anxiety. If this were the case then the assumptions of cognitive therapy will have to be reevaluated. Furthermore, Zajonc's claim that affect and cognition are interacting but relatively independent systems, will have been vindicated.

### 3. DIAGNOSTIC STATISTICAL MANUAL - III (DSM-III) AND ANXIETY DISORDERS

#### 3.1. AN OVERVIEW OF DSM-III

In this section, first, a general overview of the DSM-III classification on which the categorization of anxiety disorders are based will be presented. Secondly, specific features of each anxiety disorder relevant to the study will be discussed.

##### 3.1.1. Important Features of DSM-III

DSM-III or any other descriptive diagnostic nosology is, in a way, a development from Kraepelin tradition. As Frances and Cooper (1981) state "If most contributions to psychoanalysis were made by Freud, a parallel observation applies to descriptive psychiatry and Kraepelin" (p.1198). According to their view, DSM-III, with its descriptive emphasis, is more close to Kraepelian approach than DSM-I or II. The major reason for such a descriptive emphasis in DSM-III was the general dissatisfaction over the categories of DSM-II.

Because explicit definitions and diagnostic criteria were not provided in DSM-I, DSM-II and International Classification of Diseases (ICD-9), clinicians had to decide on their own judgement in defining the content and boundaries of the diagnostic categories. Such practice caused quite unreliable diagnostic classifications. When DSM-III began to be developed between the years of 1974-1980, the Task Force on Nomenclature and Statistics, the responsible body for reviewing the drafts of DSM-III and guiding its development, placed a great emphasis on the problem of reliability of the diagnostic categories.

DSM-III came into effect in the United States in 1980. Some important features of this new edition of DSM can be described as follows.

A- The Process of Development: Spitzer, Williams and Scodol (1980) regard the developmental process of DSM-III as of major importance. Field trials and involvement of a great number of clinicians are two elements to be identified as important in this period.

The Task Force believed that field trials on the drafts of DSM-III should be performed in the development period to identify the problem areas in the classification systems and to offer solutions to problematic categories. The predecessors of DSM-III, i.e. DSM-II and ICD-9 were not field tested adequately (APA, 1984).

B- Descriptive Approach: The system of classification adopted by the DSM-III designers was said to be descriptive, in other words, the definitions of mental disorders generally consist of descriptions of the clinical features of the disorders. So the method adopted by DSM-III was atheoretical with regard to aetiology. Apart from some of the mental disorders, organic mental disorders (organic factors necessary for the development of disorders have been identified) and adjustment disorders (the disturbance is a reaction to psychological stressor) where aetiology was known, DSM-III exclude any implications to aetiology. This approach was deliberately selected for two reasons.

a- Descriptive criteria can be framed in relatively clear statements which achieve higher reliability (Frances and Cooper, 1981).

b- Inclusion of an aetiological approach would be an obstacle for the use of the manual by clinicians of different theoretical orientations. So the aim of constructing a nonaetiological, atheoretical and descriptive diagnostic classification was not to alienate potential users from various theoretical orientations (Eysenck, Wakefield and Friedman, 1983).

Related to the issue of the descriptive approach of DSM-III was the inclusion of diagnostic criteria. Neither DSM-II nor ICD-9 had

diagnostic criteria, both left the definition of the content and boundaries of the diagnostic categories to each clinician. These criteria were included in DSM-III to increase the reliability of diagnosis, since it had been demonstrated that the use of such criteria improves diagnostic agreement among clinicians (Spitzer et al., 1980).

In fact, the aim of both the descriptive approach and the diagnostic criteria were the same: to achieve better diagnostic reliability. Hyler, Williams and Spitzer (1982), examining reliability of DSM-III between two clinicians interviewing over 150 patients, obtained a satisfactory level of correlation (.67).

C- Multiaxial Evaluation: Multiaxial evaluation provides for the assessment of an individual along several variables (axes) quasi-independent of each other. (Spitzer et al., 1980). With the use of multiaxial classification diverse patterns of patients' features could be accommodated into the diagnostic process. In this way DSM-III tries to take into consideration the uniqueness of each individual patient. DSM-III is made up of five axes each representing different classes of information. The first two axes include the entire set of categories (18 groups) relevant in making a diagnosis, though the first three axes constitute the official diagnostic assessment.

#### D- Definition of Mental Disorders

Critics of diagnostic classifications often raised the question of the absence of a definition of mental disorders. To overcome this definition the Task Force, after several unsuccessful attempts, proposed an acceptable definition which had some novel and important implications. In DSM-III, a mental disorder has been defined as "a clinically significant behavioral or psychological syndrome or pattern that occurs in an individual and that is typically associated with either a painful symptom (distress) or impairment in one or more important areas of functioning (disability). In addition, there is an

inference that there is a behavioral, psychological, or biological dysfunction, and that the disturbance is not only in the relationship between an individual and society" (APA, 1984, p.6).

#### E- Exclusion of The Category of Neurotic Disorders

One of the peculiarities of the third edition of DSM was its exclusion of the category of neurotic disorders as a distinct category from its classification system. The Task Force claimed that the term neurosis has been variously used in the clinical setting, sometimes implying a total personality trait and on some other occasions referring to specific symptomatic disorders (Frances and Cooper, 1981). In other words, the concept of neurotic disorder has two quite different implications and usages, one referring to a descriptive phenomenon and the other to the process. While the descriptive implications of the term neurotic disorder are in line with the atheoretical, nonaetiological approach adopted by DSM-III, the term neurotic process directly refers to a specific aetiological approach involving a psychodynamic explanation of the phenomenon. DSM-III applied the descriptive usage indicating that neurotic disorders refer to a mental disorder "in which the predominant disturbance is a symptom or group of symptoms that is distressing to the individual, and is recognized by him or her as an unacceptable and alien; reality testing is grossly intact; behavior does not actively violate gross social norms; the disturbance is relatively enduring or recurrent without treatment and is not limited to a transitory reaction to stressor; there is demonstrable organic aetiology" (APA, 1984, pp.9-10). Thus, the term 'neurotic disorders' has been used in DSM-III without any implication of a special aetiological process. DSM-III also avoided having a discrete category of neurotic disorders such as was included in DSM-II; instead "neurotic disorders appear in a bold type within the classification to announce the new categories under which the

formerly unified neuroses are now subsumed" (Frances and Cooper, 1981, p.1201).

DSM-III as outlined above has been studied extensively by clinicians of different orientations. Some positive and negative approaches towards this new system of categorization of mental disorders will be presented below.

### 3.1.2. Criticisms of DSM-III

Skinner (1981) considered DSM-III as a scientific theory that should be open to empirical falsification, and as a diagnostic system that could be subjected to standards similar to those required for a psychological test.

Cantar, Smith, French and Mezzief (1980) referred to psychiatric diagnosis made with DSM-III as an example of prototype classification whereas DSM-II classification was considered to be similar to classical diagnosis. They indicated that prototype classification consists of larger sets of correlated features rather than selected defining features as in the classical diagnostic system. Prototype classification mainly tries to overcome such problems as heterogeneity of category membership, borderline cases and imperfect reliability which cause problems in classical diagnostic system.

On the other hand, some clinicians adopted a rather sceptical and critical attitude towards this new diagnostic system. McReynolds (1979), Gormezy (1978) and Zubin (1977) criticised the Neo-Kraepelian, descriptive, medical model of DSM-III. They referred to DSM-III as an extension of a medical approach to behavioral disturbances. In fact, this was a point criticised by many psychologists.

Schacht and Nothan (1977) noted a possible negative impact of DSM-III on psychologists. They think DSM-III increases the domain of psychiatry while reducing that of mental health workers, as DSM-III

considered mental disorders as a subset of medical disorders, and required a statement about nonmental medical disorders on the axis-III to complete diagnostic evaluation. They have warned psychologists about possible misuse of DSM-III, in which legislators and insurers could use the adoption of DSM-III to require that mental disorders should first be diagnosed by physicians who would then decide whether psychologists might treat them.

Foltz (1980) indicated his worries over the use of DSM-III in that DSM-III had extended the definition of mental illness into areas not included in the domain of psychiatry (e.g. malingering, gambling etc.).

One of the most important problems in DSM-III was the validity of the diagnostic categories. This question of the level of validity in discriminating among the categories of DSM-III was listed as one of the areas of ambiguity by its designers in the manual of DSM-III. The problem of validity of the categories was also raised by many clinicians (Eysenck et al., 1983). The popular scepticism was brought about by the fact that, differentiation between DSM-III categories was based on nothing else but a degree of consensus among members of the Task Force. Referring to this problem, Eysenck et al. (1983) stated that "consensus of opinions among psychiatrists had been of central importance in determining whether any particular category was included in DSM-III" (p.169). Construction of the diagnostic categories on the basis of agreement places the validity of this diagnostic system in a highly questionable position which can only be solved by the results of future research carried out on actual data. Nevertheless, this situation has been acknowledged by the designers of the third edition of DSM, "...for most of the categories the diagnostic criteria are based on clinical judgement, have not been fully validated by data about such important correlates as clinical course, outcome, family history and



treatment response. Undoubtedly, with further study the criteria for many of the categories will be revised" (APA, 1984, p.8).

Psychoanalytical clinicians also criticized DSM-III for sacrificing validity in favour of reliability (Vaillant, 1984). The architects of DSM-III in reply indicated that reliability was a prerequisite for validity (Klerman, 1984). Vaillant (1984) insisted that "although reliability is a prerequisite of validity this did not mean that the fastest route to validity is to start with maximum reliability. It was easy to establish reliable categories that have no relevance or validity. The strategy of science was to construct hypotheses that seem to be good candidates for validity .... and then to make these hypotheses as reliable as possible without relinquishing their relevance" (p.549). Vaillant, in the same article, suggests that the designers of DSM-III performed a perfect job in implementing the goals of the nomenclature, but were quite inefficient in defining those goals. In this aspect he criticised DSM-III for excessive emphasis on methodological issues (e.g. reliability), and negligence of theoretical matters. Vaillant pointed to an error made several decades ago by psychoanalytical clinicians who were only interested in the mind and its workings, and neglected the social and biological as well as psychic determinants of mental behavior. He argued that "DSM-III does not correct their error, it repeats it. Dr. Spitzer and his group has led us from the brainless psychiatry of the 1950s to the threat of mindless psychiatry for the 1980s. We await the integration" (pp.550-551).

In spite of the criticisms listed above, it can be said that DSM-III has achieved some of its main objectives, specifically one, higher reliability (Hyler et al., 1982). Now, with the help of higher reliability, investigators have a common language, with which they can communicate about their research and they can rely on its diagnosis. It

is obvious that DSM-III has many disadvantages (such as, too medically oriented, too descriptive, too much emphasis on reliability, ignores validity etc.) but when compared with the other available diagnostic systems, it appears to be the most widely accepted. In fact, when examined, it becomes clear that DSM-III is accepted as the best among all existing nosological systems, although the critics suggest that it could be further improved.

### 3.2. DSM-III ANXIETY DISORDERS

Having looked at DSM-III categorization in general, the focus of attention will now be limited to the anxiety disorders. Anxiety is regarded as an ubiquitous phenomenon. A survey of a large sample in Virginia in the United States indicated that anxiety was the 5th most common diagnosis in medical practice (Marsland, Wood and Mayo 1976). Hoehn-Saric (1979) reported that using the Morbid Anxiety Inventory (a scale which correlates highly with autonomic indices of anxiety) a British survey classified 44% of the adult population as anxious. In the same research 31% were classified as suffering from sub-clinical anxiety and 5% from life long anxiety state.

DSM-III divided the anxiety disorders into two main categories as phobic and non-phobic anxiety disorders.

Phobic anxiety disorders include four main types:

- 1- Agoraphobia
  - a- with panic attacks
  - b- without panic attacks
- 3- Social phobia
- 4- Simple phobia

And non-phobic anxiety (anxiety states) disorders consists of five essential categories:

- 1- Panic Disorder (PD)

- 2- Generalized anxiety disorders (GAD)
- 3- Obsessive-compulsive disorders
- 4- Post traumatic disorders
- 5- Atypical anxiety disorders

Although most of above stated disorders have been recognized and studied for many years, panic disorders and post traumatic stress disorders are the innovations of DSM-III (Cerny, Himadi and Barlow, 1984). Cerny et al. also indicated that the new composition of the classification of anxiety disorders was an important attempt to apply an empirical approach to the diagnosis of clinical problems. The findings of two people played a key role in the construction of anxiety disorders in DSM-III. As clearly indicated by Spitzer and Williams (1983) the DSM-III classification of phobias was influenced by Marks' diagnostic system (1970). Following Marks' suggestions, agoraphobia was divided into two categories; with or without panic attacks. The first considerations for division of phobic anxiety into three general categories as agoraphobia, social phobia and simple phobia can be found in his 1970 paper.

Klein (1964) was the second major influence on the conceptualization of anxiety disorders in DSM-III. His results, suggesting that imipramine could alleviate panic attacks, indicated that persons with panic attacks differed from those people who were suffering from generalized anxiety. This finding led to the differentiation of panic disorder from generalized anxiety disorder in DSM-III. Referring to DSM-III anxiety disorders categorization Freedman, Dornbush and Shapire wrote that "different diagnostic and specific differential treatment is now emerging in sharp contrast to the previous tendency to lump together all anxiety as a universal symptom to be treated always in the same fashion" (p.44, 1981).

Because a statistical approach has been advocated in DSM-III, classification of anxiety disorders in this diagnostic system permits the generation of testable hypotheses through which validity of such sub-categorizing can be tested (Leckman, Weisman and Merikangos, 1983). If, for example, it can be shown that social phobia can be differentiated from simple phobia in terms of different variables (e.g. age of onset, severity, manifestation of anxiety) the validity of separating social from simple phobia would be more strongly justified. Pointing to the heterogeneous nature of anxiety disorders, Sheehan (1984) stated that "anxiety disorders were multidimensional in nature that could manifest themselves in many different parts of the body" (p.141). In the following part of this section six different categories of anxiety disorders will be presented (post traumatic stress disorders and atypical anxiety disorders are not included in this study due to the very low number of patients reported throughout the literature) from the point of view of the Three Systems Theory of anxiety. Possible ways of discriminating each anxiety disorder from the others in terms of the the way in which anxiety is manifested will also be discussed.

### 3.2.1. Phobic Anxiety Disorders

In DSM-III (1980) the main features of phobic anxiety disorders are been defined as the presence of persistent and irrational fear of a specific object, activity or situation which brings about an involuntary desire to avoid the dreaded object, activity or situation (the phobic stimulus). The fear is recognized by the individual as excessive and unreasonable in proportion to the actual dangerousness of the object, activity or situation.

It has been pointed out by Emmelkamp (1982) that, although a moderately high proportion of the adult population have various

phobias, only a minor proportion of those who are affected seek out psychological or medical treatment. Agras, Silvester and Oliveau (1969) estimated the prevalence of phobias in general population at 77/1000. However only 9 out of 1000 had consulted health authorities for treatment of their phobias. Marks (1970) indicated that although phobias were common in other psychiatric disorders, the frequency of phobic disorders in clinical practice was about 3%. As stated before, phobic anxiety disorders were further divided into three sub-categories.

#### 3.2.1.1. Agoraphobia

The central features of this anxiety disorder are defined as a marked fear of being alone, or being in public places where escape may be difficult or help may not be easily obtainable, as in the case of an unexpected anxiety attack. Agoraphobic patients tend to avoid numerous situations including busy streets or stores, crowds, tunnels, bridges or public transportation (APA, 1984). This is the commonest phobia for which people seek out professional help, although other types of fears (snake, rat etc.) are more pervasive in the general population (Agras et al., 1969). Agoraphobia is one of the most disabling types of phobias (Marks, 1970). Marks indicated that 60% of all phobias seen at the Maudsley were agoraphobic. Agras et al. (1969) investigated the prevalence of agoraphobia and concluded that six out of every 1000 individuals were agoraphobic. Using these figures Chambless and Goldstein (1980) estimated the number of agoraphobics in The United States as being 1.25 million. It was reported (Buns and Thorpe, 1977; Chambless, 1982) that agoraphobia covers 50 to 80 % of all the phobic population seeking some kind of professional help. Prevalence rates of agoraphobia have been estimated at from .06 to 3.76 % (Meyers, Weissman, Tischler, Holzer, Leaf, Orvaschel, Antony, Boyd, Burke,

Kramer, and Staltzman, 1984; Uhlenhuth, Balter, Melliger, Cisins and Clinthorne, 1981).

In terms of sex ratio, agoraphobia is dominated by females. Marks' research (1970) revealed that 75% of all agoraphobics in his study were women. The domination of this phobic disorder by female patients was also indicated in the DSM-III manual (1980).

Clear delineation of the symptoms of agoraphobia is difficult. Marks (1970) claimed that the term "agoraphobia" did not clearly reflect the nature of the problem. The difficulty arose because the patients with this disorder did not only avoid open spaces and going into public places as the name implied, but also avoided other conditions such as travelling or closed spaces. However, Marks (1970) pointed that "fear of going out was probably the most frequent symptom from which others developed" (p.380). Later, modifications towards a clearer definition of the problem have been offered. Most investigators agreed that it is reasonable to refer to agoraphobia as the fear of fear (Golstein and Chambless, 1978; Mavissakalian, 1983). That means, the essential element in agoraphobia involves a fear of one's own physiological responses in various situations rather than as Marks suggested (1970), phobic avoidance and fear of multiple panic situations (Cerny et al., 1984).

It is thought that these patients are mainly afraid of their own somatic reactions and panics, therefore avoid situations where help is not easily available. Most agoraphobics feel relatively relieved when accompanied by a person whom they can trust. Attacks of panics and somatic symptoms of anxiety can be considered to be significant characteristics of an agoraphobic syndrome. Marks (1970) had pointed out that agoraphobia could manifest itself without any incidence of panic attacks.

Following Marks' suggestion, DSM-III has divided this phobic disorder into two categories as agoraphobia with panic attacks and without panic attacks. But the validity of this two-fold representation of agoraphobia have been questioned by Cerny et al. (1984) on the grounds that agoraphobia develops after experiencing a first panic attack. DSM-III indicates that in order to make a diagnosis of agoraphobia without panic attacks there should be no history of panic attacks accompanied with the phobic avoidance. Barlow (1985) was able to diagnose only one case of agoraphobia without panic out of 41 agoraphobics. In the reliability study of Anxiety Disorder Interview Scale (ADIS) conducted by Di Nardo, O'Brain, Barlow, Waddell and Blanchard (1983) none of the 23 agoraphobic patients fulfilled DSM-III criteria to be diagnosed as agoraphobic without panic, and all had displayed panic attack(s). Goldstein and Chambless (1978) referred to the fear of panic attacks of agoraphobics as the discriminating element of these patients from simple phobics. Foa, Steketee and Young (1984) pointed to the fact that "the incidence of panic attacks among agoraphobic patients varied from one sample to another, and greatly depended upon the criteria by which patients were selected" (p.433). However, it is suggested that as long as existing DSM-III criteria are applied to the diagnosis of agoraphobia to identify the presence or absence of panic attacks, it seems almost inevitable that an extremely low number of patients will meet the criteria for agoraphobia without panic attacks. DSM-III stipulates that even occurrence of only one panic attack is enough to place cases into the category of agoraphobia with panic attack. Since the onset of this problem has been considered to be closely related to the occurrence of apparently spontaneous panic attacks (Mendel, 1969), the condition naturally leads to diagnosis of almost all cases of agoraphobia into the category of "with panic attacks". For those cases of agoraphobia where no history of panic

attacks are reported, it may be due to a patient being unable to remember an early panic attack especially if the person has been suffering from agoraphobia for long time.

In order to sub-divide phobic disorders further into three separate categories the discriminating features of these three categories should be clearly defined. Several studies have been carried out to test the validity of the three-fold separation of phobic disorders in DSM-III.

It has been generally agreed that agoraphobics usually have higher levels of physiological arousal than patients with other phobias (Snaith, 1968). On the other hand, Kelly (1980) and Lader (1978) have indicated that although increased autonomic arousal was found to be characteristic of agoraphobics, the same factor was also characteristic of obsessive-compulsive disorders and anxiety neurosis. In the study conducted by Fisher and Wilson (1985) in spite of the physiological finding that agoraphobics did not show significantly higher levels of autonomic arousal (heart-rate and skin -conductance) than non-agoraphobics, somatic complaint ratings of agoraphobics were significantly higher than those of non-agoraphobics. This finding supports the conceptualization of agoraphobia as the fear of fear. Arrindel (1980) and Gardos (1981) revealed that in their study agoraphobic patients reported high-levels of somatic symptoms. The above investigations suggest that a high level of somatic symptomatology may be regarded as an important feature of agoraphobia.

Although an agoraphobic syndrome may be differentiated from other phobic disorders, it is difficult to differentiate agoraphobia from anxiety states (Fisher and Wilson, 1985; Turner, MacCann, Beidel, and Mezzich, 1986). Hallam (1978) claimed that agoraphobia should not be classified with the phobic disorders, it was rather a variable feature of patients suffering from anxiety neurosis. He further suggested that



"agoraphobia merges imperceptively with anxiety states, affective disorders and obsessive-compulsive neurosis" (p.314). In 1972 Gurney, Roth, Gardise, Kerr and Schapiro found, in a discriminant function analysis, the presence of panic attacks and agoraphobia as a predictor of a diagnosis of anxiety state. They also reported that a mild form of agoraphobia was common in patients with anxiety state and depression. The marked phobic avoidance present in agoraphobia constituted the most important feature which separated this phobia from the non-phobic anxiety states (Marks, 1970). So it can be asserted that though manifestation of agoraphobia resembles anxiety states, a higher level of avoidance behavior would be considered as the discriminating feature of this phobic disorder from anxiety states.

Snaith (1968) and Marks (1970) revealed that agoraphobic patients exhibited high levels of diffuse anxiety in comparison with other types of phobias. Fisher and Wilson (1985) have replicated the findings of Marks and Snaith by showing that agoraphobics, when compared to non-agoraphobics, had significantly higher scores in the Global Severity Index (GSI) which measures general anxiety level.

In summary, agoraphobic patients can be said to have higher levels of somatic complaints than patients with other types of phobias. Agoraphobics also resemble patients with non-phobic anxiety (such as generalized anxiety disorders or panic disorders) but exhibit higher behavioral avoidance. In general agoraphobics are expected to exhibit high levels of anxiety in all components, especially on the somatic and the behavioral.

#### 3.2.1.2. Social Phobia

The first attempt of representing social phobia as a distinct phobic disorder came from Marks (1970) who differentiated social phobia from agoraphobia on the grounds that although agoraphobics also have

fear of crowds, their fear is related to the apprehension about a mass of people together, rather than about the individuals who make up the crowd. Pasnau (1984), following the diagnostic criteria provided by DSM-III, defined social phobia as "a persistent irrational fear of, and compelling desire to avoid situations in which the patient may be exposed to the scrutiny of others, there is also fear that the individual will behave in a manner that will be humiliating or embarrassing" (p.12).

Initially Marks (1970) reported that 8% of patients treated at a general psychiatric treatment centre in Europe were social phobics. In a questionnaire survey by Byrant and Trower approximately 3 to 10 % of first year British college students were found to have a typical social phobic syndrome. Di Nardo et al. (1983) reported that 13.3 % (8 out of 51) patients diagnosed as anxiety disorders were social phobics. A study conducted by Carrant, Miller, Zwick, Manti and Stout (1980) revealed that social phobia covered the complaints of approximately 7% of psychiatric inpatient population. Leibowitz, Garman, Fyerand and Klein (1985) reported that in their anxiety disorder clinic, social phobia was the third most common anxiety disorder after panic disorder and agoraphobia.

Research indicates that the sex ratio of social phobia is almost equal with a slight dominance of males. Marks (1970) indicated that this type of phobia could occur in men or women with equal frequency. Amies and Gelder (1983) stated that in their sample of 87 social phobics 60% were male. Late childhood and early adolescence was found to be the most common age of onset (Cerny et al., 1984).

In comparing social phobia with agoraphobia and animal phobia, Marks stated that social phobia had characteristics intermediate between those of the latter two. Social phobics were found to have more phobias (i.e. tend to avoid variety of situations) than animal phobics

(who reported very specific phobias), but fewer than agoraphobics. Also in terms of overt anxiety Marks placed social anxiety midway between agoraphobia and animal phobia, indicating that agoraphobics had the highest level of overt anxiety.

Resemblance between agoraphobia and social phobia in terms of the manifestation of the problem has been reported by Marks (1970), Foa, Steketee and Young (1984) and Arrindel (1980). Some other investigators (Goldstein and Chambless, 1980) raised doubts about the validity of social phobia as a distinct syndrome. In contrast to these psychologists various others (Liebowitz, 1985; Amiens, 1983) indicated that to separate social phobia from agoraphobia promised better diagnosis and prognosis. Marks (1970) suggested the discriminating elements between social phobia and agoraphobia as being sex ratio, number of symptoms and level of overt anxiety. While agoraphobia was dominated by female patients (75%), only half of social phobics were women. Social phobics reported more specific phobias than those having agoraphobia, who displayed numerous other symptoms. Amies and Gelder (1983) have conducted research with the aim of identifying factors that help to discriminate social phobia from agoraphobia. They again found that in social phobia the male ratio was higher than in agoraphobia (percentage of males in social phobia 60% and in agoraphobia 14%). Although Marks observed no difference in terms of age of onset between the two phobic conditions, Amiens and Gelder (1983) reported that age of onset of social phobia was earlier than that of agoraphobic individuals (incidence of social phobia and agoraphobia reach their peaks around the age of 10-19 and 20-24, respectively).

An important feature of social phobia that causes confusion with agoraphobia is the presence of panic attacks in both disorders. Although Barlow, Vermilyea, Blanchard, Vermilyea, DiNardo and Cerny (1985) reported that most social phobics displayed panic attacks only

in social situations, they drew attention to the fact that 3 out of 19 (15.79 %) patients with social phobia exhibited unpredictable panic attacks in non-phobic situations.

To investigate whether social phobia differs from agoraphobia with panic attacks and panic disorders Leibowitz et al. (1985) set up a study in which the reaction of patients, diagnosed as one of the three anxiety disorders stated above, to lactate infusion was examined. As judged by a psychiatric evaluator "blind" to patient diagnoses, it was found that four of nine (44%) agoraphobics displayed panic reaction to lactate infusion, in contrast to one of fifteen (7%) social phobics. Although this finding supports the separation of the two disorders, it is too early to derive a clear conclusion. Another attempt at separating social phobia from agoraphobia focused on the occurrence of panic attacks (Leibowitz et al., 1985). It was thought that social phobics were experiencing somatic symptoms when under scrutiny, whereas in panic disorder and agoraphobia, somatic reaction (panic) occurs unpredictably. Furthermore, panic disorder and agoraphobic patients' avoidant behavior seems to be linked to situations where the patient would be unable to get help if he/she had a panic attack rather than general fear of humiliation as in the case of social phobia.

The difference between social and simple phobias was also investigated by Marks (1970) who stated that social phobia could be placed midway between agoraphobia and animal (simple) phobia. Social phobics were observed to complain of more fears and other symptoms than do simple phobics whose problems are concentrated on a specific object or situation. Simple phobics, in comparison with social phobics (where the sex ratio was 1:1), had been found to be dominated by females (95%). General overt anxiety level of simple phobics was observed to be the lowest in Marks' research whereas social phobics obtained the

second highest score in this measure. Age of onset was later for social phobics when compared to patients with simple phobias.

Golden (1981) reported that social anxiety and irrational belief were closely related. In his study subjects who displayed irrational beliefs indicated high levels of social anxiety when compared with individuals who did not report such beliefs. Mandel and Shrauger's (1980) reported similar results in regard to non-assertiveness. Their research illustrated the importance of cognitive factors in social anxiety. Mandel and Shrauger (1980) study was, however, inconclusive, because they did not report any information with respect to the level of irrational belief of other individuals who had different types of anxiety disorders (agoraphobia, simple phobia ect.).

On the basis of the information obtained from the above studies, social phobics are expected to show anxiety profiles similar to agoraphobics. However social phobics are expected to indicate their highest levels of anxiety on the cognitive and behavioral components.

#### 3.2.1.3. Simple Phobia

These type of phobias are conceptualized as a persistent, irrational fear of and compelling desire to avoid an object or situation other than (1) being alone in a public place away from home (agoraphobia) or (2) being humiliated or embarrassed in certain social situations (social phobia) (Pasnau, 1984, p.12). The patient is aware of the fact that his fear is unreasonable and excessive (DSM-III, 1980). Although simple phobias are quite common in the general population, (Agras et al. (1969) reported that approximately 18% of the general population experienced this disorder), in clinical samples the number of cases is quite low. DiNardo et al. (1983) reported that 2 out of 51 patients with DSM-III anxiety disorders were diagnosed as simple phobias. Barlow (1985) reported that 6.8% of all cases seen at a phobia

and anxiety disorders clinic were diagnosed as simple phobias. Marks (1970) found the majority of animal phobics to be females (95%).

The introduction of this category in the clinical realm can be attributed to the study of Marks (1970), however his categories were somewhat different from those offered in DSM-III. After differentiating two distinct phobic disorders (agoraphobia and social phobia) Marks introduced a third distinct phobic disorder: animal phobia. When these three phobias were put into a hierarchy in terms of severity of the problem, animal phobics exhibited the least anxiety. Animal phobics exhibited no tension or panic in the absence (both in vivo and in vitro) of the phobic object, they were the group of phobics that resembled normal people most; physiological measures (e.g. galvanic skin resistance, fore-arm blood flow) were parallel to the clinical observations which indicated the absence of diffuse anxiety (Marks, 1970). In Marks's study another characteristic of animal phobias appeared; the specificity of symptoms. Although animal phobias start usually in early childhood and persist for a long time, they usually stay specific i. e. monosymptomatic, with little generalization. Occasionally other symptoms develop but they are usually quite few. Marks thought that the monosymptomatic nature of animal phobias was the main reason why these individuals usually have low scores on overt anxiety measures. As long as they can avoid the phobic situation (which is assumed to be quite specific therefore usually relatively easy to avoid) they can function as a normal individual. In some cases animal phobics were reported to have more extensive symptoms, nevertheless, it was found that in these cases animal phobia happened to be associated with another disturbance (e.g. agoraphobia, personality disturbance).

In his article Marks (1970) differentiated another group calling it miscellaneous specific phobias. In fact, this group was very similar to animal phobias in many respects. This group of patients was also

characterised by a low level of overt anxiety and as having monosymptomatic phobias. The nature of these phobias varied from case to case but in general remained fairly specific for a given case. Examples of such situations include fear of heights, wind, darkness etc. . Marks (1970) placed claustrophobia in this category, indicating that despite the fact that agoraphobics also report fears of closed places such as lifts and tubes, the reverse is not always found. Patients with claustrophobia tend to have relatively isolated fears. In the end of the discussion on miscellaneous specific phobias, Marks suggested that these two groups of phobias, animal and miscellaneous, might have been indistinguishable from one another apart from the sex incidence and age of onset.

In his study he did not report any information about sex-ratio of miscellaneous phobias. In terms of age of onset, despite the fact that miscellaneous phobias exhibited greater variability, both animal and miscellaneous groups reached their peak prevalence rate around the childhood ages of 3-6 years. Based on the common nature of the two groups of phobias (monosymptomatic and relatively mild), DSM-III has combined these phobias under the title of "simple phobic disorders". Literature about simple phobias is relatively rare. One of the reasons for this can be related to the very small number of patients consulting professionals with the problem of simple phobia. This assertion can be related to Marks' finding that simple (animal and miscellaneous) phobias were the mildest form of all three.

Seif and Atkins (1979) tried to determine the most prominent defensive styles of various types of phobias. In fact they were investigating the controversy between one group of psychoanalysts (Freud, 1925; Fenichel, 1945) who asserted that phobics usually had hysterical characters and repression could be regarded as the central defense mechanism, and an opposing group (Glover, 1939; Salzman, 1965)

who postulated that phobias resembled obsessive phenomena relying mainly on the defense mechanism called "isolation". In the view of Sheif and Atkins (1979), the source of controversy stems from the failure to recognize that different forms of phobias may be the manifestations of different dynamics. In their study Seif and Atkins (1979) divided phobias into two categories of animal and situational phobias and attempted to differentiate these two groups in terms of the type of defense mechanism employed. The central hypothesis examined in the study claimed that animal phobics were expected to exhibit greater use of obsessional defenses such as intellectualization and isolation when compared with situational phobics (agoraphobics and social phobics) who were assumed to display more hysterical defenses with the predominance of repression and displacement. Although the results they obtained confirmed their hypotheses, it is difficult to derive any conclusion from this study in terms of the DSM-III anxiety disorders classification for it was not clearly indicated what kinds of patients were included in each group (animal and situational). For example no information was given about claustrophobic and acrophobic. Although such phobias appear to be situational, a closer examination reveals that they share common characteristics with animal phobias (Marks, 1970).

If the above information is considered in terms of the Three Systems Theory, the following summary about the nature of simple phobias can be presented.

The general overt anxiety scores of simple phobics are assumed to be the lowest among all anxiety disorders classified in DSM-III.

In the anxiety profile of simple phobics, the cognitive component, in comparison to other components of anxiety, is considered to be the highest. The behavioral component of anxiety is expected to be very low. Low behavioral scores of simple phobics are also predicted, given



that the questionnaires (the assessment scales will be explained in the method chapter) employed in the present study are supposed to measure general or social avoidance and are, therefore, more relevant for agoraphobics and social phobics. Simple phobic patients, due to the mild nature of this anxiety disorder, are expected to show low somatic anxiety as well.

### 3.2.2. Non-Phobic Anxiety Disorders (Anxiety States)

As noted before, the anxiety disorders have been divided into two categories of phobic and non-phobic (anxiety states). Non-phobic anxiety disorders are thought to have quite a high level of prevalence (Barlow, Cohen, Waddell, Vermilyea, Klosko, Blanchard and DiNardo, 1984). It is estimated that this category covers 15% of all out patient problems (Lader, 1978). In DSM-III, after taking into consideration the findings of psychopharmacological research, (Klein and Fink, 1962) a division of non-phobic anxiety states into two categories of panic disorders (PD) and generalized anxiety disorders (GAD) was introduced. Obsessive-compulsive disorders are also included under the non-phobic anxiety disorders category because of the important role played by anxiety in the formation of this problem (APA, 1980).

#### 3.2.2.1. Panic Disorder (PD)

This anxiety disorder has been defined in DSM-III as the occurrence of recurrent unpredictable anxiety attacks which consist of discrete and sudden onset of apprehension of fear and at least four of the following twelve symptoms; dyspnea, palpitations, chest pain or discomfort, choking sensations, dizziness, feelings of unreality, paresthesias, hot and cold flashes, sweating, faintness, trembling and

fear of dying, going crazy, or doing something uncontrolled. Also, panic attacks must not be precipitated by exposure to a circumscribed phobic stimulus, they must occur at least three times within a three week period, and finally, the panic should not be due to a physical disorder or associated with agoraphobia.

The NIMH (National Institute of Mental Health) found a six-months incidence of PD in approximately 1% of the population (Myers et al., 1984). Life-time incidence was reported to be around 1.5% (Robins, Helzer, Weisman, Orcaschel, Gruenberg, Burke, and Reiger, 1984). DiNardo et al., (1983) reported that 8 out of 51 anxiety disorder patients were diagnosed as panic disorders. Also an excess of females among patients with panic disorders has been reported by Marks and Lader (1973). A study conducted by Crowe, Noyes, Pauls and Slymen (1983) has confirmed the high ratio of women in PD. In fact, their result which included a family study of patients diagnosed as PD, provided better representation of the sex-ratio in comparison with other studies in which only the percentage of women in a sample of PD was reported. Simply reporting the percentage of females in a sample may reflect a sex preference to seek treatment. Family studies provide a unique opportunity to eliminate the effect of a sex preference to seek treatment in examining the sex ratio. Crowe et al., (1983) found that women were more affected with this disorder, the sex ratio being 2:1. Thus they concluded that the predominance of women in this anxiety problem could be regarded as a gender characteristic of this disorder, rather than a selection bias.

As stated at the beginning, the initial impetus which promoted the separation of PD from the GAD came from psychopharmacological studies of Klein (1964) and Klein and Fink (1962) in which it was demonstrated that the pharmacological treatment of panic attacks differs from that of GAD. Panic attacks were best controlled by antidepressants, such as

monoamine oxidase inhibitors (MAOIs) and tricyclic antidepressants (TACs) (Grunhouse, Gloger and Weisstub, 1981). Whereas minor tranquilizers were effective in alleviating generalized anxiety disorders (Raskin, Peeke, Dickman and Pinsker, 1982). Although Barlow and Beck (1984) raised doubts as to the qualitative differentiation of PD and GAD, because of the presence of panic attacks in GAD, psychopharmacological findings indicated that panic and anticipatory anxiety responded differently to different medication. A number of investigators (Rickel, 1981; Schuckit, 1981; Greenblatt and Shader, 1978) replicated Klein's (1964) finding that minor tranquilizers (benzodiazepines) were the most effective anxiolytic agents in the treatment of GAD, however, they were not effective in the management of panic disorders where somatic and autonomic manifestations of anxiety were the predominating symptoms. On the other hand, anti-depressants and beta-blockers (propranolol) have been found to be effective in reducing unpredictable panic attacks with high autonomic component. Contrary to the effect of benzodiazepines, anti-depressants were not effective in alleviating the cognitive (anticipatory) component of anxiety. Furthermore, anxiolytics were not effective in reducing phobic behavior (Freedman et al., 1981).

A number of studies have been conducted with the purpose of identifying certain factors which could differentiate PD from GAD (Raskin et al., 1982; Anderson, Noyes and Crowe 1984; Hoehn-Saric, 1982, Barlow, Cohen, Waddel, Vermilyea, Klosko, Blanchard and DiNardo, 1984; Crowe et al., 1983). In all these studies the factor that appeared to discriminate PD from GAD most clearly was the high intensity of somatic symptoms in the former. Hoehn-Saric (1982) failed to find a difference between patients with PD and GAD in terms of their childhood history. In their study PD patients were found to exhibit more somatic symptoms and with higher frequency than were those of GAD.

Reported somatic symptoms were most notably related to the cardiovascular system (Hoehn-Saric, 1982). Norton, Bryan, Haunchand and Rhodes (1985) found more somatic symptoms and somatic anxiety in PD patients in comparison with GAD patients. Barlow et al., (1984) revealed a similar finding by indicating that PD patients demonstrated a stronger somatic anxiety component than patients diagnosed as GAD on both physiological assessment and questionnaire measures of anxiety. Finally Barlow et al. (1984) noted the severity of somatic symptoms in PD as the primary element differentiating this disorder from GAD.

A high level of somatic anxiety and different psychopharmacological treatment outcome support DSM-III's contention that PD may be qualitatively different from GAD. Apart from these two differentiating points PD and GAD can be separated along other lines. When PD patients have been compared with GAD patients, those with PD have reported:

A- More negative cognitions associated with social, psychological and physiological disasters (Hibbert, 1984).

B- Higher overt anxiety scores on standardised tests (STAI trait form, Affect Balance Scale) (Hoehn-Saric, 1982).

C- More grossly disturbed childhood environment (Raskin, 1982).

Torgersen (1983) noted that genetic factors may possibly be involved in the aetiology of PD. Crowe, Pauls and Slymen (1980) and Crowe et al. (1983) also indicated that PD could be familial and most likely genetic. Patients with PD did not have an increased incidence of GAD among family members but the incidence of PD was markedly higher. The lifetime morbidity risk for definite and probable panic disorders among the first degree relatives of persons with panic disorder was nearly 25%. Consistent with the separation of PD from GAD in DSM-III, a study of Crowe et al. (1980) showed no clustering of GAD in families of patients with PD. It was evenly distributed between patients and control families. In short, these studies contributed to the

qualitative differentiation of the two disorders, as well as referring to the possible involvement of genetic factors in PD.

The other point worth noting is related to the ambiguities in the diagnosis of PD. As Cerny et al., (1984) pointed out, a high frequency of additional diagnoses given to PD patients complicated the diagnostic process. Data reported by Barlow et al., (1985) demonstrated that 88% of PD cases received an additional diagnosis. In most cases of PD simple and social phobias were common, nevertheless, they were not severe enough to merit a separate diagnosis. Panic attacks were not peculiar to PD patients, 83% of the patients in all other anxiety disorders reported the experience of at least one panic attack which was cued or uncued. Half of the patients with GAD had experienced at least one unpredictable panic, also 33% of social and simple phobic patients indicated that they had unpredictable panic attacks. The frequency criterion (at least 3 panic attacks in a 3 weeks period) imposed by DSM-III for the diagnoses of a panic disorder was thought to be very useful in discriminating patients with PD from the rest of anxiety disorders (Cerny et al., 1984; Norton, Bryan, Haunch and Rhodes, 1985).

When PD has been evaluated on the basis of the information provided in the above pages, and taking the Three Systems Approach into consideration, the following summary on the PD can be presented.

The manifestation of anxiety on the somatic component is considered to be the most salient one for PD patients. Expression of anxiety of PD patients on the behavior component is expected to be low due to the absence of both, avoidance responses and avoided places or conditions. Due to the lack of information it is difficult to say how PD patients will score on the cognitive component. The results of this study are expected to clarify this point.

### 3.2.2.2. Generalized Anxiety Disorder (GAD)

GAD has been identified as a residual category of anxiety states with continuous, persistent generalized anxiety which is manifested in autonomic hyperactivity, motor tension, apprehensive expectation, vigilance and scanning (APA, 1980; Cerny et al., 1984). As noted in the PD section, the study which provided the data for the division of anxiety states into two categories as generalized anxiety and panic anxiety came from Klein and Fink (1962).

These investigations demonstrated that patients with panic attacks responded better when treated with tricyclic anti-depressants while those without panic attacks showed significant improvement to benzodiazepines. As a result of these findings, patients who do not report panic attacks are now diagnosed as generalized anxiety disorders.

The prevalence of generalized anxiety disorders has been reported to vary from 2.5 to 6.4% (Weissman, 1983). Anderson et al., (1984) have reported the prevalence of generalized anxiety disorders as 2.5% in the families of patients with panic disorders. Di Nardo et al., (1983) indicated that the number of patients diagnosed as GAD was 6 out of 51 anxiety patients. Although the sex ratio of this anxiety disorder has been estimated to be 1 to 1, Anderson et al., (1984) found that females had a higher ratio. In their study 66.5% of GAD patients were females. In this aspect GAD and PD were demonstrated to be very similar (70.8% of panic disorders patients were female).

In the diagnosis of GAD, occurrence of panic attacks among patients acts to reduce the reliability and validity of this anxiety disorder. As Cerny et al., (1984) stated "...in the DSM-III patients are diagnosed as GAD if they report both chronic anxiety and panic attacks, if the panic attacks do not occur often enough to meet the panic frequency criterion of panic disorders. This diagnostic process reflects both the

residual nature of GAD and the potentially mixed nature of this anxiety state" (p.310). Barlow (1985) and Di Nardo et al., (1983) have demonstrated the diagnostic reliability (Kappa) of GAD as .571 which was below the reliability level of other anxiety disorders. Cerny et al., (1984) have suggested that the finding of lower reliability of GAD in comparison with other anxiety disorders could be attributed to several factors. First of all, the number of subjects in these studies was quite low. Secondly, 84% of patients diagnosed as agoraphobia with panic attacks and 78.6 % of those diagnosed as panic disorders met the diagnostic criteria for GAD. And also 50% of GAD cases reported uncued panic attacks, but the frequency was not high enough to place these patients in the panic disorders category. Thus the data presented above indicate that the symptoms characteristic of GAD seem to be frequently represented in other anxiety disorders and panic attacks occur in GAD as well, but with low frequency.

The heterogeneous nature of the GAD category has been discussed by Hoehn-Saric (1981). In order to clarify the nature of this anxiety disorder, he proposed a further sub-division of GAD as GAD with or without panic attacks. In his study Hoehn-Saric indicated that patients with panic attacks reported both more severe and frequent headaches, palpitations, perspiration, hot flushes and respiratory symptoms than did non-panic GAD patients. As Cerny et al., (1984) noted that such findings should be viewed with caution because the group of anxiety patients with panic attacks included cases of phobic, obsessive-compulsive and transitory depression patients. While the discussion of a further subdivision of GAD seems unwarranted at the moment, GAD patients as diagnosed by DSM-III criteria have been shown, by various psychologists (Hibbert, 1984 and Raskin, 1982), to have more distinct features than patients diagnosed as panic disorders.

As noted in the previous discussion, the clear cut distinction between the two disorders (GAD and PD) is related to the somatic component of anxiety. Barlow, Cohen, et al. (1984) reported GAD patients having lower patterns of electromyogram (EMG) scoring and heart rate during pre-treatment physiological assesment. The patients also scored lower on a pre-treatment somatic anxiety questionnaire in comparison with PD patients. A study conducted by Anderson et al., (1984) revealed that subjects with PD report a greater number of autonomic symptoms than patients with GAD. Hoehn-Saric (1981) has also pointed to the higher level of physical symptoms found in PD when compared with GAD. Higher scores of patients with PD on the somatic aspect of anxiety seems highly likely because of the autonomic symptoms that clearly accompany panic attacks (Hoehn-Saric, 1981).

While PD patients score higher on the somatic component of anxiety the same phenomenon was not observed on the cognitive component. In the study conducted by Barlow et al., (1984) a cognitive-somatic anxiety questionnaire was administered to PD and GAD patients. PD patients' scores on the somatic component of anxiety were significantly higher than those of GAD. On the cognitive component just the opposite pattern was observed, i.e. GAD patients scored higher than that of PD patients, however, the difference was not found to be significant.

A study conducted by Hoehn-Saric (1982) demonstrated a similar result to that reported above. He concluded his study by stating that his investigation confirmed previous findings indicating higher scores for PD patients on somatic anxiety but not on psychic anxiety when compared with GAD patients. In his study Hoehn-Saric (1982) applied a number of questionnaires such as Hamilton Anxiety Scale, Global Rating of General Anxiety, State-Trait Anxiety Inventory (STAI) and Eysenck Personality Inventory (EPI). On questionnaires measuring somatic anxiety, PD patients scored significantly higher than patients



diagnosed as GAD. On questionnaires measuring psychic (cognitive) anxiety, although GAD patients seemed to score a little higher than PD patients, the difference was not significant.

Anderson et al., (1984) reported that PD and GAD patients did not differ in terms of STAI and EPI. Barlow et al., (1985) suggested that it could be useful to conceptualize GAD not as a residual category of anxiety disorders, but rather, as a primary diagnostic category whose cardinal feature is based on the focus of apprehensive expectation. If this diagnostic suggestion for GAD is accepted, patients should be included in this disorder only if the apprehensive expectation is focused on multiple life circumstances which are not related to the anticipatory anxiety of the phobic exposure of a panic attack. In this way GAD obtains the status of being a primary rather than a residual diagnostic category.

The nature of GAD, when viewed from the Three Systems perspective, can be summarized in the following way:

The overall anxiety levels of GAD patients are suggested to be relatively high. These type of patients are expected to express their anxiety mainly on the cognitive component. The somatic component of their anxiety is also thought to be high due to the substantial involvement of bodily symptoms in the diagnosis of this disorder. The behavioral avoidance component of anxiety may be predicted to be relatively low because of the absence of an overt avoidance behavior.

### 3.2.2.3. Obsessive-Compulsive Disorders

Obsessive-compulsive disorder is defined as recurrent persistent ideas, thoughts, images or impulses that are experienced as ego-synchronous (involuntary). Senseless or repugnant compulsions are said to be stereotyped repetitive behaviors that are seemingly purposeless, but are in fact emitted in order to produce or prevent

some future event or situations. The person usually recognizes the meaninglessness of his behavior, but continues to do so because the behavior releases tension (APA, 1980; Cerny et al., 1984). This category has been incorporated into the anxiety disorders because whenever individuals attempt to master their symptoms i.e. to resist obsessions and compulsions, a very high level of anxiety is experienced.

Obsessive-compulsive disorder is regarded as the least common of all anxiety disorders. Myers et al., (1984) obtained a six months prevalence rate of 1.3 to 2% in the general population. Udangui (1977) in a group of 3400 cases with ages ranging between 50-60, obtained a prevalence rate of 0.32%. The incidence among out patients seen at a clinic specializing in anxiety disorders was predicted to be 0.3 to 0.6% (Cerny et al., 1984). Leitenberg (1976) indicated that approximately 1% of psychiatric in-patients and out-patients were diagnosed as obsessive-compulsive. Nemiah (1975) estimated the rate of obsessive-compulsive patients among neurotics at approximately 5%. Yayruka-Tobias and Neziroglu (1983) suggested that the real ratio of obsessive-compulsive patients in the general population could be higher, because these patients tend to be selective and usually do not consult professionals for help unless the problem becomes too intense to cope with. Therefore present estimates may be misleading.

Regarding the sex ratio of this anxiety disorder, the reported numbers reflect conflicting theoretical approaches. Both DSM-III and Judd (1965) report the ratio to be 1 to 1. But conversly, figures reported by Freud (1925), Adams (1973) and Hollingworth (1980) suggest a dominance of males. Adams (1973) reported that obsessive-compulsives were predominantly male. He obtained 39 males to 10 females, 4:1 ratio. In Hollingworth's study (1980) the male to female ratio of obsessive-compulsive patients was 3:1. Initially Freud (1925)

indicated that obsessive illness had a greater frequency in males. While the discussion on the sex ratio seems unclear at the present, another point of disagreement closely related to sex ratio concerns the question of the distinction between obsessive-compulsive personality and obsessive-compulsive disorder.

Yayruka-Tobias and Neziroglu (1983) noted that the distinction between obsessive-compulsive personality and obsessive-compulsive disorder has gained considerable support in the clinical realm. Sandler and Hazari (1960), Foulds (1965), Kline (1967) and Cooper (1970) investigated this issue. As reported by Insel (1984) 10 to 36% of obsessive compulsive patients display no evidence of premorbid obsessional traits. However, research indicating that obsessive-compulsive personality and obsessive-compulsive disorder are two different points in the same continuum has also been supported. Half a century ago Masserman (1946), Benet (1949) and Noyes (1949) claimed that obsessive-compulsive neurosis appears when thoughts and acts of a person with an obsessive-compulsive character become disrupted or deviant. Rapaport (1948) also suggested that the breakdown of an obsessive-compulsive character was unavoidably followed by the development of obsessive-compulsive neurosis. Kringlen (1965) after comparing an obsessional adult group with a control neurotic group, (anxiety state, hysteria, depression) concluded that obsessives had significantly more obsessive premorbidity than the control group. As noted above, controversy regarding the sex-ratio of obsessive-compulsive disorder is closely related to the question of whether obsessive-personality traits are a precondition (or at least related) to obsessive-compulsive disorder. These two areas of dispute are closely related to each other because Freudian theory suggests that obsessive-compulsive personality traits are characteristic of the male personality (Freud, 1925) and hysterical traits are characteristics of

the female personality (Arieti, 1975). If obsessive-compulsive personality traits are related to the development of obsessive-compulsive disorder, this may explain the high ratio of males to females in this anxiety disorder.

Obsessive-compulsive disorder patients are assumed to have a stereotyped personality structure which is reflected in the defense mechanism they utilize. While several defense mechanisms are important in the development of this anxiety problem (undoing, intellectualization, reaction-formation) (Nagera, 1976), isolation of affect from the content (thought), will be specifically stressed in the present study. As Freud (1909) stated "contrasted with hysteria, where repression leads to amnesia, other defense mechanisms were said to be more typical of obsessive-compulsive neurosis. Although repression takes place it is often incomplete" (pp.195-196). Obsessive-compulsive patients resort to another way of handling their unwanted drives. Freud emphasized the defense mechanism called, 'isolation', where an important phenomenon is deprived of its affect rather than forgetting (repressing) the significant experience as in hysteria. White and Gilliland (1976) defined this defense mechanism as follows "...the unconsciously instituted, automatic, and involuntary separation of idea of an unconscious impulse from its appropriate affect, thus allowing only the idea and not the associated affect to enter awareness." (p.70). This process results in the personality being affectless or acting with very little affect. The constriction of affect in obsessive-compulsive patients has been reported by many investigators (Turns, 1985; Goldstein, 1985; Yayruka-Tobias and Neziroglu, 1983).

The presence of other symptoms often acts as an obstacle for the reliable diagnosis of this anxiety disorder. Cerny et al. (1984) reported that in a sample of 111 patients diagnosed in the Albany Phobia and Anxiety Disorders Clinic, obsessive-compulsive symptoms have

been revealed by 32% of agoraphobics with panic, 14% of simple phobias, 16% of social phobias and 17% of GAD. In the same study 83% of obsessive compulsive patients reported having panic attacks. However, clinicians were able to diagnose obsessive-compulsive disorder quite reliably (interrater reliability 0.82) (Barlow et al., 1985).

Taking the information presented above into account, the following brief review of obsessive-compulsive disorders from the Three Systems Theory can be presented.

Patients in this category are expected to exhibit their anxiety mainly on the cognitive component because of the primacy of cognitions (negative thoughts) in the development of this problem.

The most important prediction regarding obsessive-compulsive disorder is related to the difference between the feeling and cognitive components of anxiety in this disorder compared with other DSM-III anxiety disorders. If psychoanalytic claims concerning the use of the isolation defense mechanism are correct, it can be expected that anxiety scores on the cognitive component will be much higher than scores on the feeling component. More importantly, the difference between the cognitive and feeling components of anxiety will be significantly more marked in obsessive-compulsives when compared with other anxiety disorders. As noted previously, findings of studies investigating the lateralization and personality styles yield support to psychoanalytical claims. In fact, the cognitive component is expected to be highest and feeling relatively low in obsessive-compulsives. In other anxiety disorders feeling and cognitive components are predicted to be more or less the same, or at least the difference between cognitive and feeling components will not be as great as it is in obsessive-compulsives. The reason for high cognitive and low feeling scores in obsessive-compulsive patients, apart from the analytic assumption that the isolation defense mechanism is playing a

predominant role in this disorder by causing suppression of affect and leaving personalities of these types of patients relatively emotionless in their experiences, may be explained by other approaches. For instance, the lateralization studies indicate that the left hemisphere, which controls mainly cognitive operations, is more dominant in obsessive-compulsives.

It can be concluded that, regardless of the source, e.g. psychoanalytic, physiological etc., all arguments suggest the dominance of cognitive structures in obsessive-compulsives. In other words, obsessive-compulsives can be expected to score very high on the cognitive component of anxiety. Due to the nature of this anxiety disorder, obsessive compulsive patients are thought to score substantially lower on the remaining, especially on the behavioral avoidance, components of anxiety.

#### 4. AIM OF THE RESEARCH

The aim of this study is mainly three-fold. The first aim is to investigate whether it is possible to conceptualize feeling and cognition as two interacting but relatively independent systems. The second aim is, applying The Three Systems Theory, to identify the predominant component of anxiety in each of the DSM-III anxiety disorder categories and to examine the validity of the DSM-III classification of anxiety disorders. The third aim is to develop a new questionnaire to measure anxiety in terms of four components (feeling, cognitive, behavior and somatic).

To investigate the relationship between feeling (affect) and cognition, human sex differences and differences between patients with obsessive-compulsive disorder and other DSM-III anxiety disorder

sub-categories will be examined in terms of the manifestation of anxiety on cognitive and feeling components. It is suggested that females experience anxiety relatively evenly between cognitive and feeling components, while males tend to experience anxiety more in the cognitive domain and relatively less in the feeling domain when compared with the female sample. Such differences can be attributed to various sources: relatively different personality structures of male and female subjects (Freud, 1909; Torgerson, 1980), different socialization processes of sexes (Hoyenga and Hoyenga, 1979) or to sex differences in lateralization (Baeton, 1985). For the anxiety patients the same hypothesis is put forward, indicating that in the case of obsessive-compulsive disorder manifestation of anxiety is expected to be relatively more in the cognitive component and less in the feeling component in comparison to patients with other types of anxiety disorders where the cognitive and feeling components of anxiety are predicted to be at the similar level. This difference may be caused by various factors: different personality structures or different lateralization.

Thus, the difference between feeling and cognitive components in males and obsessives is supposed to be higher (in the direction of the cognitive component) than the difference between these components in females and other types of anxiety disorder patients.

By showing that higher cognitive scores do not necessarily go together with higher scores on the feeling component regardless of any intervening variables, the purpose is to suggest that feeling and cognition can be considered as relatively independent systems.

The second aim of this research is to identify the salient component(s) of anxiety in each sub-categories of DSM-III anxiety disorder classification from the Three Systems Model point of view. The three response systems (cognitive, behavioral and somatic) are assumed

to be separately influenced by different environmental conditions (Borkovec, 1976) and a particular therapeutic intervention is suggested to attenuate a specific component of anxiety (Schwartz, Davitson and Goleman, 1978). Thus, identification of salient component(s) in each anxiety disorder can assist in choosing more effective treatment methods for each anxiety disorder. Furthermore, an investigation of the validity of DSM-III classification of anxiety disorders is another aim in the present study. As stated by Spitzer and William (1983) diagnostic categories of DSM-III were determined by compromise between clinicians rather than empirical findings. Therefore, as they have indicated, future research will decide about the validity of these categories. So, the aim of this research is to examine the differences in the manifestation of anxiety among patients of various anxiety disorders from the Three Systems Theory point of view. If the anxiety is found to have different manifestations in different anxiety disorders, it will be further evidence for the validity of DSM-III for differentiating the anxiety disorders in the manner it presents.

Apart from these two central aims the present study regards the development of a new questionnaire, which can measure anxiety in terms of four different components, as another purpose of this research. A detailed explanation as to the nature of the questionnaire will be presented in the method chapter.



## M E T H O D

In this part, first the process of the construction of a new self report measure for the assessment of anxiety (the Four Systems Anxiety Questionnaire) will be introduced. Secondly the assessment measures used in the study will be presented, then the three studies, first, with university students, second, with anxiety patients and, third, with only agoraphobic patients as subjects, will be outlined.

### 5. DEVELOPMENT OF A NEW ANXIETY MEASURE

#### 5.1. THE REASONS FOR DEVELOPING A NEW ANXIETY QUESTIONNAIRE

The need to develop a new anxiety questionnaire stems from two sources. The first one is related to one of the purposes of this study, namely, to investigate the relationship between the feeling and the cognitive components of anxiety. Since there is no anxiety questionnaire that can be utilized for this end, it was necessary to develop a new anxiety measure which distinguishes feeling and cognitive components. Secondly, the two existing Likert type anxiety questionnaires- Three Systems Anxiety Questionnaire (TSAQ) (Lehrer and Woolfolk, 1982) and the Cognitive Somatic Anxiety Questionnaire (CSAQ) (Schwartz, Davitson and Goleman, 1978), which incorporate multi-systems conceptualizations of anxiety (Lang, 1971; Rachman and Hodgson, 1974) have a number of shortcomings in terms of practical usefulness and psychometric properties. Although CSAQ is reported to have high levels of validity and reliability (Schwartz et al., 1978;

Delmonte and Ryan, 1983), the questionnaire, nevertheless, has an important drawback arising from the small number of items included in each of the somatic and the cognitive components of anxiety. With the inclusion of only seven items in each component, the level of variation in the manifestation of anxiety across individuals is poorly reflected. The low number of items is one of the factors which may reduce the soundness of a given Likert scale (Maranell, 1974). As the number of items increases, the scale satisfies the condition of interval measurement (Bailey, 1978) and reliability also improves (Kerlinger, 1973).

The TSAQ has the defect of having an unequal number of items in each of the cognitive, the behavioral and the somatic components of anxiety. The inclusion of different numbers of items in each component (16 items in the somatic, 11 in the behavioral and 9 in the cognitive) makes it particularly difficult to compare the scores of each component. Further calculations are required to permit comparison of anxiety scores on each component within each individual and across different individuals.

## 5.2. THE REASONS FOR DEVELOPING A THURSTONE TYPE SCALE

In order to develop the new questionnaire to measure anxiety in terms of four different components (feeling, cognitive, behavioral and somatic), a design yielding a Thurstone scale was chosen. The reasons underlying the selection of this type of questionnaire can be given as follows:

A- One of the important features of the Thurstone scale, which Likert or Guttman type questionnaires lack, is that it claims to measure the psychological property under scrutiny in terms of an interval scale (Bailey, 1978; Blalock and Blalock, 1968). Bailey

(1978) states that "Summated rating, Likert scaling and Guttman scalogram analysis techniques all construct scales that are at most ordinal rather than interval....There are at least two good reasons for attempting to construct an interval scale: (a) the added information available from the knowledge that the intervals between any two adjacent points on the scale are equal and (b) the requirement of many statistical techniques for interval data. One technique designed to construct an interval scale is the Thurstone method of equal appearing intervals." (p.364)

B- Thurstone scales permit differentiation between large numbers of people regarding their attitudinal position (Black and Champion, 1976). The scores obtained in a Thurstone scale reveal a greater variety of attitudinal positions in comparison with Likert scales.

C- Black and Champion (1976) see the employment of judges in the development of a Thurstone scale as another advantage. They think that the judges, who are usually professionals in the area to be measured, perform a quite effective screening function by eliminating ambiguous items that yield little or no agreement.

D- The last reason for selecting a Thurstone type scale rather than a Likert type has to do with the number of choices in each item. In Likert scales each item is responded to by selecting one from several choices, usually 4 or 5 although the number can range from 3 to 9. It is a common observation that scales with items that allow 3 or more choices encourage a response bias. That is, subjects tend to avoid the extreme answers and select their choices from the middle of the range and disregard the meaning of the item. This problem does not arise with Thurstone type scales for the items are responded to only either by agreement or disagreement.

### 5.3. CONSTRUCTION OF THE SCALE

An item pool of 142 statements was formed to develop a Thurstone type scale. Some items were taken from various well known anxiety scales and some were prepared by the investigator. To select the items for inclusion in the questionnaire, an item selection process for the development of a Thurstone scale has been employed to these 142 statements. In the first step of this procedure a total of 25 judges consisting of 21 clinical psychologists at an anxiety workshop in Glasgow Southern General Hospital and 4 psychology postgraduates at the University of Stirling were employed to determine the items to be included in the final version of the questionnaire. Edwards (1957) reports that reliable scale values can be obtained with small groups of judges. Correlations as high as .99 were reported (Edwards, 1957) for scale values obtained independently from two groups with 15 judges in each group. Black and Champion (1974) suggest that as few as 15 judges can be employed, but in general at least 25 judges should be included for a soundly constructed Thurstone scale. As to the type of judges they recommend the use of professional persons in social sciences or students majoring in social sciences, because these individuals are considered to have more experience with social measurement. Furthermore, they can use their knowledge and experience to classify items better than a lay person.

#### 5.3.1. Application Of 142 Items To The Judges

The 142 items were presented to each judge with the instructions to rate each item on an 11 point scale (Table-2) according to the level of anxiety being implied by each.

Low Anxiety			Moderate Anxiety					High Anxiety		
1	2	3	4	5	6	7	8	9	10	11

Table-2 The eleven point scale on which the judges rated the anxiety level of each item.

The 142 items were ordered in terms of the four components (starting with the 41 items related to the feeling component, then 37 items in the cognitive, 36 in the behavior and finally 28 items referring to the somatic component). At the top of each page the numbers from 1 to 11 were printed evenly spaced in order to give the impression that intervals between the 11 categories (scale-points) were equal. If an item was indicative of low levels of anxiety it was rated at the lower end of the scale (into either of 1st, 2nd, 3rd or 4th categories). If the item implied high levels of anxiety it was placed somewhere in the higher end of the continuum (into either of 8th 9th 10th or 11th categories). The judges wrote their ratings into the brackets provided at the right side of each question. After obtaining these ratings selection of items proceeded in the following manner.

### 5.3.2. Evaluation And Selection Of The Items

The selection of an item for the final questionnaire is contingent on two parameters. One captures the level of anxiety attributed to each item. This is called the scale value or the weight of the item. The other parameter measures the ambiguity of the item and is called the quartile deviation.

Several methods are available to calculate these values (Edwards, 1957). In this study, an ogive for each of the 142 items was drawn by taking the cumulative frequency of the allocation of each statement

along the categories between 1 and 11. In this ogive the median value (50%) denotes to the weight of the item, and the quartile deviation (75% - 25%) indicates its ambiguity. The quartile deviation refers to a measure of the variation of the distribution of the values attributed to a statement by a group of judges. It contains the middle 50 % of the judgements (Edwards, 1957).

To find these values three perpendicular lines were dropped from each ogive to the base line at the values of cumulative frequency (proportion) equal to 25%, 50% and 75% respectively. The point where the perpendicular line dropped from the 50% value intersects the base line gives the scale value (weight) of an item. The difference between the two points, where the other two perpendicular lines dropped from the graph at the values of cumulative proportion equal to 25% and 75%, intersects with the base line, gives the value of the quartile deviation. The purpose of the Thurstone scale is to include items with different weights covering the range between 1 to 11, and also to include those items that have low quartile deviations which indicates that the judges are more or less agree about the level of anxiety reflected in the item. The higher the quartile deviation the more ambiguous the item is and therefore should be dropped from the questionnaire.

In this manner, 142 ogives were obtained and scale values and quartile deviations were calculated. Based on these criteria sixty (60) items including 15 in each four components of anxiety were selected for the final questionnaire. In this selection process items in each of the four components were evaluated separately. This added a third selection criterion for the items. The third selection criterion was that the means and standard deviations of the weights and quartile deviations of items in each of the four components should be quite similar. This enables a person's scores across different components of

anxiety to be compared. Thus, on the basis of these criteria 60 items for the final version of the questionnaire were selected.

### 5.3.3. Examination Of The Four Anxiety Components Of The Scale.

Each component of anxiety has been separated by semantic differences in the items. Those statements which are assumed to be related to the feeling component always included the word 'feel' (e.g. A jittery feeling has become a part of my life). Statements in the cognitive component were made up of the words 'negative thoughts, ideas or worry' (e.g. I sometimes think of myself as an inefficient person). Items in the behavioral component referred to the avoidance of executing certain behaviors (the items were not specifically related to any particular type of avoidance, rather covering range of everyday situations) (e.g. I avoid participating in discussions). Finally, the items assessing the somatic component of anxiety included various bodily sensations (e.g. I often have a headache).

One point needs to be clarified here, the inclusion of 'worrying' in the cognitive component rather than feeling. The word 'worry' has both, cognitive and feeling connotations. In this study following Rado's (1969) classification, it was thought that inclusion of worrying in the cognitive component would be appropriate. Rado considered 'worry' between feeling and cognition, because worrying implied consideration and evaluation of the situation rather than a direct affective reaction. Although it has affective implications, worrying indicates negative assumptions and ideations. Also inclusion of worrying in the cognitive component could improve assessment of the difference between the cognitive and affective components of anxiety of subjects. If worrying was not included in the study at all, the differences between cognitive and feeling component of anxiety would be

reflected by the words of 'feeling versus thinking' alone, subjects could identify the two components very easily, and might give intentionally or unintentionally distorted responses to the questions.

The next step was to test if the questionnaire was really made up of four different components of anxiety. To examine this issue, the selected 60 items, with 15 in each component, were presented in a random order to 15 first year undergraduate students in the University of Stirling with the instruction to assign each item to one of the four categories (feeling, cognitive, behavioral and somatic). This was all the information given to these subjects. They were totally blind to the purpose of the application. Subjects did not know how many items were in the each category and how each category had been defined. Subjects just read the items and allocated them into one of the four categories. This method of testing, which examines if the questionnaire is made up of the number of components that it is claiming to contain has been called 'the sorting technique' (similar analyses have been reported by Miller and Johnson-Laird, 1976). Mean of the incorrectly allocated items has been found to be 5.7 out of 60 (9.5%). In other words 90.5% of the items were correctly located into the categories in which they were supposed to be. These values indicated a high degree of agreement about the allocation of items into four different categories. Therefore it was concluded that the 60 items in the questionnaire could be systematically differentiated, with the accuracy of 90.5% into the four different components of anxiety which have been claimed to be assessed by the questionnaire.

#### 5.3.4. The Method Of Scoring The Scale

Before finishing this section of the scale construction process, an important point related to the scoring of Thurstone type scales merits attention. In a Thurstone scale, subjects' scores are determined



by computing the mean or median value of the scale scores of the items agreed as indicative of the construct in question. (Edwards, 1957; Blalock and Black, 1968) However, an important problem which is related to the number of statements agreed with and the range of the scale covered, have been noted by Guilford (1954). He indicated that those who mark more statements tend to obtain average values closer to the middle point. This is a regression phenomenon which mainly effects individuals with extreme scale positions. In other words, when a subject agrees with more statements, regardless of his real position in the scale, his score approaches to middle scale values (mean of all scale values). To avoid this phenomenon Guilford (1954) recommended constricting subjects choices to a certain number, in this way subjects could concentrate on the statements which are nearest to their own positions. Instead of solving the regression problem by implementing limitations to the number of items subjects can choose, in the present research another way of tackling this problem was considered. Basically the subjects scores have been calculated by simply adding the scale values (weights) of items with which they agreed.

## 6. ASSESSMENT SCALES USED IN THE STUDY

In this study four different questionnaires have been employed to measure the anxiety level of the subjects.

### 6.1. THE FOUR SYSTEMS ANXIETY QUESTIONNAIRE (FSAQ)

A comprehensive account of this questionnaire has already been presented in the previous section. The above section can briefly be summarized as follows: The FSAQ has been developed specifically for the present study by the investigator. It consists of sixty (60) Thurstone type (yes-no) items. This instrument aims to measure anxiety in terms of four (feeling, cognitive, behavioral and somatic) relatively

independent components. Each component of anxiety has been measured by the same number of items (15) which have been developed so that mean weights of each component were almost equal (5.50). Information about the psychometric properties (reliability and validity levels) of the questionnaire will be presented in the results section.

## 6.2. The THREE SYSTEMS ANXIETY QUESTIONNAIRE (TSAQ)

Developed by Lehrer and Woolfolk (1982). Supporting the conceptualization of anxiety as a multidimensional phenomenon, Lehrer and Woolfolk undertook a study to find out whether self-reported cognitive, behavioral and somatic varieties of anxiety could be measured as orthogonal factors. Assessments of anxiety by questionnaires in terms of two-subsets, as somatic and psychic (cognitive) have been reported in the literature (Hamilton, 1959). However there was no reported research referring to the examination of items that measure behavioral manifestation of anxiety. This was the novelty introduced by Lehrer and Woolfolk (1982) in their study.

To begin with, drawing items from the MMPI, Spielberger's STAI and their own clinical experience, Lehrer and Woolfolk constructed a Likert type scale in which each item was rated on a 9-point, ranging from 'never' to 'almost always'.

Two studies were constructed, each with different versions of the questionnaire. In each case three factors were extracted and submitted to a varimax rotation. In the present study the second version of the questionnaire is employed, as it has been noted by Lehrer and Woolfolk (1982) that the second form has been found to have a greater number of items (36) in comparison with the number of items included in the first form (30).

This second version was administered by Lehrer and Woolfolk (1982) to a sample of 70 neurotic clients of mental health practitioners, 289

night school students at Rutgers University and 67 participants in a stress workshop. For this version the reliability was .93 for the cognitive (worrying factor), .91 for the behavioral and .92 for the somatic. As a validation of the inventory derived from the second study, 65 of the subjects in that study were administered the trait form of State Trait Anxiety Inventory (STAI) (Spielberger, Gorsuch and Lushere, 1970). Subjects scores on the STAI correlated highly with the items that load greater than .50 on each of the three factors, indicating that the three factors (cognitive, behavioral and somatic) are closely related to measure of trait anxiety. The correlation of STAI with the cognitive anxiety sub-scale was somewhat higher than the correlation with the other two sub-scales.

A 36-item inventory was then constructed consisting of those items which loaded greater than .50 on one of the three rotated factors in the second study. This scale was then administered along with various other psychometric inventories to three sets of subjects. (see Table-3 below).

<u>Questionnaire</u>	<u>N</u>	<u>Somatic</u>	<u>Behavioral</u>	<u>Cognitive</u>
Trait Form of STAI	65	.79	.60	.86
Hamilton Anxiety Inventory				
General Anxiety	57	.51	.19	.24
Physiological	57	.53	.08	.16
Psychic	57	.07	.22	.24
IPAT Anxiety Inventory	140	.39	.34	.51

Table-3: Showing correlations between the components of the TSAQ and other scales.

As a result Lehrer and Woolfork concluded that their data had indicated three orthogonal factors from a pool of self report items of somatic, cognitive and behavioral anxiety related complaints and these factors corresponded to the three hypothesized dimensions. Initial examination of the questionnaire (36-items) obtained out of a factor analysis in the second study suggested that this scale was a highly reliable and valid measure of the three kinds of anxiety. However it is suggested by the present author that the Lehrer and Woolfolk's scale has a number of shortcomings as previously mentioned.

### 6.3. THE COGNITIVE SOMATIC ANXIETY QUESTIONNAIRE (CSAQ)

The CSAQ has been developed by Schwartz, Davidson and Goleman in 1978. The idea which led to the development of this questionnaire came from the Three Systems Model of emotion (Lang, 1971; Rachman and Hodgson, 1974). Schwartz et al. (1978) taking into consideration the multi-dimensional nature of anxiety, thought that two relatively independent types of anxiety, cognitive (psychic) and somatic could reliably be measured.

In the study designed for the development and validity testing of CSAQ 77 subjects were included. The CSAQ was constructed by selecting items from well known questionnaires that three independent judges had unanimously agreed to reflect cognitive or somatic anxiety. The questionnaire was completed with 14 items, half of the items measuring somatic anxiety and the other half cognitive anxiety. The 77 subjects participating in the study were instructed to rate the degree to which they generally or typically experience these symptoms when anxious, by circling a number from 1 to 5 with 1 representing 'not at all' and 5 representing 'very much so'. The sum of the circled ratings was separately computed for cognitive and somatic items which appeared in random order in the questionnaire.

To measure the validity of CSAQ, correlations between this questionnaire and the trait form of STAI (Spielberger et al., 1970) were calculated using the same 77 subjects. Significant results were found,  $r=0.67$ ,  $r=0.40$  ( $p < 0.001$ ) for the cognitive and somatic anxiety respectively. The correlation between the somatic and the cognitive sub-scales of CSAQ was  $r=0.42$  indicating a moderate level of relationship.

In the study reported above, no information was given regarding the level of reliability of CSAQ. In 1983, Delmonte and Ryan undertook another study to investigate the level of reliability of CSAQ and to examine whether the discrimination of items as cognitive or somatic had any statistical validity. Employing 100 subjects and a method of factor analysis, they examined the validity of separation of items in CSAQ into two sub-categories as cognitive and somatic. Factor loadings for the 14 items of CSAQ strongly corresponded with the cognitive and somatic items of CSAQ, especially with respect to the somatic items. One item in the cognitive sub-scale did not reach the cut off point and another loaded with the somatic items. Overall the results lend support for the twofold separation of items in the questionnaire.

The reliability of the CSAQ as calculated by Cronbach's Alpha (measure of internal reliability) was reported to be quite high 0.81 and 0.85 for somatic and cognitive components respectively. In this study (Delmonte and Ryan, 1983), the correlation between the cognitive and the somatic sub-scales was found to be higher (0.64) than that reported in Schwartz et al., (1978).

These reported studies suggest that CSAQ can be considered as a reliable and valid instrument in the measurement of anxiety in terms of cognitive and somatic sub-scales. The reason why CSAQ was selected to be used in the present research is related to the fact that both in the development of CSAQ and in the present research the phenomenon of

anxiety was conceptualized as multidimensional. It was thought that application of CSAQ along with the the Four Systems Anxiety Questionnaire (FSAQ) could supply useful information about the validity of the newly developed questionnaire (FSAQ) and its components as well as yielding some information about the nature and level of anxiety of the patients.

#### 6.4. STATE-TRAIT ANXIETY INVENTORY (STAI)

STAI developed by Speilberger, Goursh and Lushene (1970) is made up of two separate self-report scales for measuring two different types of anxiety, state anxiety (A-state) and trait anxiety (A-trait), both of which consist of 20 4-point Likert type items.

The A-trait items ask people to describe how they generally feel. The A-trait scale provides a means for measuring the anxiety proneness of subjects. In other words A-trait refers to relatively stable individual differences in anxiety proneness. The A-state scores indicate how individuals feel at a particular moment in time. Speilberger et al. (1970) conceptualized A-state as a transitory emotional state and condition that is characterised by subjective, consciously perceived feelings of tension and apprehension and heightened automatic nervous system activity (1966).

The split-half reliabilites of the STAI A-state and A-trait scales using over 1500 college and high-school students have been calculated. The results indicated that both of the scales have quite high levels of reliability (between the ranges of .92-.83) Test re-test reliabilites of the measure over 1 hour, 20 days and 104 days intervals employing different number of subjects (197, 113 and 47 respectively) indicated that although A-trait scores were quite reliable, ranging from .86 to .73, A-state scores were found to have very low levels of reliability, ranging from .16 to .54. Nevertheless, low correlations of A-state

scores are anticipated, because by definition A-state refers to a transient level of anxiety in a given situation.

Given these figures and the nature of the concept of A-state Spielberger et al., (1970) commented that measures of internal consistency would be a more appropriate index of reliability of A-state than test-retest correlation.

Concurrent validity of A-trait has been evaluated by calculating the correlation between A-trait and IPAT (Cattell and Scheier, 1963), the Taylor Manifest Anxiety Scale (1953) and the Zuckerman Affective Checklist (1960). The results indicated that A-trait has a satisfactory level of validity (ranging from .52 to .84).

Construct validity of the A-state scale has been calculated by administering this questionnaire to 977 university students. The students were given the A-state with the standard instructions first, then they were asked to respond according to 'how they think they would feel just prior to the final examination in an important course'. The mean scores of the A-state scale was considerably higher in the exam condition than the normal condition in for both sexes.

Overall psychometric evaluation of A-state and A-trait forms indicate that both scales were reliable and valid instruments in the measurement of anxiety.

#### 6.5. SELF-DIAGNOSTIC FORM

This self-diagnostic form was adapted from the DSM-III Decision Tree for Anxiety Disorders and converted to a form applicable to patients. The self-diagnostic form consists of brief descriptions of each of the six DSM-III anxiety disorders included in the present study. The patients were instructed to select two of the descriptions which represented their problem best.

The reason behind the application of the self-diagnostic form was to obtain some information regarding the relationship between patients' conceptualization of their own problems and clinicians' diagnoses of the patients problem.

## 7. APPLICATION OF THE SCALES TO THE SUBJECTS

Mainly two groups of subjects were included in the study; a- university students, b-anxiety patients. In addition to these two groups, a group of agoraphobics were also included but only for the examination of the sensitivity of the FSAQ to pre and post treatment changes in level of anxiety.

### 7.1. APPLICATION OF FSAQ AND TSAQ TO UNIVERSITY STUDENTS

#### 7.1.1. Subjects :

In the first study 218 first year undergraduate university students were included as subjects, comprising 143 females and 71 males (4 subjects did not indicate their sex on the questionnaires). Mean age was, 20.3 for females, and 21.8 for males.

#### 7.1.2. Procedure:

The TSAQ and FCAQ were administered to first year Stirling university students on three different occasions in academic sessions 1985 and 1986. On each occasion, before the beginning of the practical session, students were asked to complete the questionnaires (TSAQ and FCAQ) and return them to the investigator at the end of each session. Students were informed that participation was totally voluntary. In the first application 74 and in the second 80 students participated in the study. The third and the last application took place in the education department, 64 subjects participated, adding up the total number of subjects to 218.



## 7.2. APPLICATION OF FSAQ, TSAQ, CSAQ, STAI and SELF-DIAGNOSTIC FORM TO ANXIETY PATIENTS

### 7.2.1. Subjects:

Fifty four anxiety patients who were referred from GPs to different clinical psychologists were included as subjects. Among the subjects 18 were male and 36 were female. The age of males ranged between 19 and 59 with a mean of 36.5 and of females ranged between 24 and 68 with a mean of 39.5.

### 7.2.2. Procedure:

Due to having no direct patient contact, the experimenter himself could not participate in the process of distributing the questionnaires to the anxiety patients. The process of distributing and recollecting the questionnaires was co-ordinated by K. Power. The present author prepared the instructions for the clinical psychologists, indicating the use of DSM-III anxiety disorders diagnostic system in recruiting and diagnosing the patients. Each patient's voluntary consent was obtained before completing the questionnaires and he/she was informed of confidentiality. In order to avoid biases in the selection of patients, the clinicians were required to ask all anxiety patients who were referred whether they would like to participate. The clinicians were urged not to include patients following their own preferences.

Although the data about the patients came mainly from their self-reports, information as to the nature of the patients' anxiety problems was obtained by the clinicians' ratings. For each patient the clinicians were requested to complete the 'therapist assesment sheets' which aimed to obtain information regarding the type of diagnosis, length of treatment (both psychological and medical), and severity of the illness. The severity of the illness was assessed on a 7-point

scale (1 indicating normal and 7 severe conditions). Those patients who consented to participate in the study were asked to complete a booklet of questionnaires consisting of FSAQ, TSAQ, CSAQ, both forms of STAI together with a self-diagnostic form. Using these criteria over a period of 1.5 year (from 1985 March to 1986 December) 54 anxiety patients were recruited to the study.

### 7.3. APPLICATION OF FSAQ TO AGORAPHOBICS BEFORE AND AFTER BEHAVIORAL TREATMENT

#### 7.3.1. Subjects:

The subjects of this study were 14 agoraphobics. Only 2 of the subjects were male. The ages of the subjects ranged between 20 and 72 with the mean age of 46.

#### 7.3.2. Procedure

A study undertaken by K. Smith, as a part of his master thesis, and supervised by K. Power, provided the present author with the opportunity to apply the FSAQ prior to and following a structured treatment programme. The study conducted by K. Smith aimed to assess the effectiveness of a behavioral intervention technique developed by Mathews, Gelder and Johnston (1981) in the treatment of agoraphobia. The FSAQ was administered to patients with the aim of assessing whether the scale was able to reveal differences in the anxiety levels before and after treatment. A brief description of K. Smith's study is as follows.

Patients were taken directly from GPs' referrals. To select patients appropriate for K. Smith's study a semi-structured interview was conducted. Patients who met DSM-III criteria for the diagnosis of agoraphobia (with or without panic attacks) were included into the study. Following the initial interview, the patients were seen for five consecutive weekly appointments, they then missed a week and were then

seen again in the seventh week. They were not seen again until five weeks later for the concluding appointment. Thus, the process of the therapy lasted for twelve weeks. The FSAQ together with other anxiety questionnaires and assessment measures, specifically designed for K. Smith's study, was administered to the agoraphobic patients at the initial interview and at the last session.

The content of the treatment was mainly behavioral (graded exposure) with some cognitive elements included. Each patient was issued with a copy of Mathews et al.'s (1981) Programmed Practice for Agoraphobia: Clients Manual.

In summary, the subject groups of the present study are as follows.

A- The sample of university students included 218 subjects. The anxiety scales administered to this sample were FSAQ and TSAQ.

B- The anxiety disorders group included 54 patients, diagnosed according to DSM-III anxiety disorders criteria. The scales administered to this group were FSAQ, TSAQ, CSAQ, STAI and a self-diagnostic form.

C- The FSAQ was administered to the agoraphobics patients (N=14) of K. Smith's study in order to examine the sensitivity of FSAQ to the pre and post treatment differences on the anxiety level of agoraphobic patients.

## R E S U L T S

In this section, demographic data of each category of anxiety patients and comparison of the self-diagnostic form with clinicians' diagnoses will briefly be presented. Secondly, psychometric evaluation of FSAQ will be reported. Thirdly, test results pertinent to the issue of separating affect from cognition will be introduced, and finally, psychometric examination of DSM-III anxiety disorders classification will be given.

### 8. DEMOGRAPHIC EVALUATION OF ANXIETY PATIENTS

The number of male and female patients in each category of anxiety disorders has been calculated (Table-4). Means and standard deviations of patients' age, length of treatment (psychological and/or pharmacological) and severity of the problem have been calculated for each sub-category of anxiety disorders (Table-5). Analysis of variance tests have been performed between sub-categories of anxiety disorders on each of the variables presented above. The results indicated no significant difference between the six sub-categories of anxiety disorders on the these three variables.

### 9. COMPARISON OF PATIENTS' SELF-DIAGNOSES WITH CLINICIANS'

#### DIAGNOSES

In this study, patients were placed into DSM-III anxiety disorder categories according to the clinicians' primary diagnosis. However, patients' self-diagnoses were also included in order to examine the relationship between the diagnoses of the patients and the clinicians. In the self-diagnostic form, patients were presented with a description

	<u>AG-P</u>	<u>SO-P</u>	<u>SM-P</u>	<u>PD</u>	<u>GAD</u>	<u>OB-CO</u>	<u>TOTAL</u>
MALE	1	4	3	4	4	2	18
FEMALE	9	6	6	3	6	6	36
TOTAL	10	10	9	7	10	8	54

TABLE-4 Number of male and female anxiety patients in each sub-category of DSM-III anxiety disorders.

	<u>AG-P</u>	<u>SO-P</u>	<u>SM-P</u>	<u>PD</u>	<u>GAD</u>	<u>OB-CO</u>	<u>F-VALUES</u>
AGE	43 (14)	33 (4.1)	47 (14.2)	40 (10.1)	37 (13.1)	32 (9.8)	2.37
LENGTH OF TREATMENT (IN MONTHS)	9.2 (12.5)	31 (68.7)	17.6 (43.1)	6.5 (10.1)	46.4 (13.7)	0.5 (0.8)	1.13
RATINGS OF SEVERITY	4.9 (0.9)	5.5 (0.7)	5.3 (1)	5.1 (0.4)	4.6 (1.2)	5.4 (0.7)	1.61

TABLE-5 Means and standard deviations of each sub-category of DSM-III anxiety patients on age, length of treatment and severity; and comparison (analysis of variance) of anxiety categories on these three variables.

KEY TO TABLES:

AG-P= Agoraphobia

PD= Panic Disorders

SO-P= Social Phobia

GAD= Generalized Anxiety Disorders

SM-P= Simple Phobia

OB-CO= Obsessive-Compulsive Dis.

of each DSM-III anxiety disorder sub-categories and they were required to tick the best suited two. In the clinicians' diagnoses and the subjects' self-diagnoses, two separate diagnoses - as primary diagnosis and secondary diagnosis - were allowed.

Table- 6 shows the frequencies of patients in DSM-III anxiety disorders diagnosed by different methods.

Table-7 shows the number of agreements and names of disagreed categories between clinicians' primary diagnosis and patients' self-diagnoses (primary and secondary). The results indicated that patients' primary self-diagnosis was more related to the clinicians' primary diagnosis than patients' secondary self-diagnosis. Therefore, in the remaining calculations only patients' primary self-diagnosis was included.

Furthermore, ratio of agreement and kappa ( $k$ ) correlation coefficient between clinician's primary diagnosis and patients' self-diagnosis was calculated (Table-8). The ratio of agreements between various diagnostic methods were calculated by dividing the number of times two diagnostic approaches allocated patients into the same anxiety disorder category over the total number of cases.

"K"s and ratios of agreement between patients' self-diagnosis and the clinicians' primary diagnosis have been computed for each sub-category of anxiety disorders (see Table- 9). In each anxiety sub-category, the total number of times clinician's primary diagnosis agreed with the diagnosis carried out by patients was divided by the number of patients included in that category according to the clinicians' primary diagnosis. This gave the ratio (%) of agreements between clinician's primary diagnosis and different types of subjects' self-diagnosis in each anxiety disorder.

	<u>AG-P</u>	<u>SO-P</u>	<u>SM-P</u>	<u>PD</u>	<u>GAD</u>	<u>OB-CO</u>	<u>MIS</u>	<u>TOTAL</u>
CLINICIANS' PRIMARY								
DIAGNOSIS	10	10	9	7	10	8	-	54
CLINICIANS' SECONDARY								
DIAGNOSIS	5	3	1	4	3	1	37	54
PATIENTS' SELF-								
DIAGNOSIS (PRIMARY)	12	13	8	4	10	7	-	54
PATIENTS' SELF-								
DIAGNOSIS (SECONDARY)	4	12	5	8	12	4	9	54

TABLE-6 Frequencies of each sub-category of DSM-III anxiety disorder patients across different diagnostic methods.

KEY TO TABLE:

AG-P= Agoraphobia

PD= Panic Disorder

SO-P= Social Phobia

GAD= Generalized Anxiety Disorder

SM-P= Simple Phobia

OB-CO= Obsessive Compulsive Dis.

MIS= Missing Cases

CLINICIANS' PRIMARY DIAGNOSIS

	N= 10		N=10		N=9	
	AGORAPHOBIA		SOCIAL-PHOBIA		SIMPLE-PHOBIA	
	NO OF AGREE	DISAGREE	NO OF AGREE	DISAGREE	NO OF AGREE	DISAGREE
PATIENTS' SELF-DIAGN. (PRIMARY)	7	1 SO-P 1 SM-P 1 GAD	9	1 AG-P	4	2 AG-P 2 GAD 1 PD
PATIENTS' SELF-DIAGN. (SECONDARY)	1	4 SO-P 2 PD 2 GAD 1 SM-P	1	4 MIS 2 AG-P 2 GAD 1 OB-CO	1	3 SO-P 2 PD 1 AG-P 1 GAD 1 OB-CO

CLINICIANS' PRIMARY DIAGNOSIS

	N=7		N=10		N=8	
	PANIC DISORD.		G A D		OBSESSIVE-COMP.	
	NO OF AGREE	DISAGREE	NO OF AGREE	DISAGREE	NO OF AGREE	DISAGREE
PATIENTS' SELF-DIAGN. (PRIMARY)	3	2 GAD 1 SO-P 1 SM-P	5	2 AG-P 2 SO-P 1 SM-P	7	1 SM-P
PATIENTS' SELF-DIAGN. (SECONDARY)	0	2 GAD 2 MIS 1 SO-P 1 SM-P 1 OB-CO	2	4 PD 1 SO-P 1 SM-P 1 GAD 1 OB-CO	0	3 GAD 2 SO-P 2 MIS 1 SM-P

TABLE-7 Number of agreements and disagreements between clinicians' primary diagnosis and patients' self-diagnoses (primary and secondary) in each sub-category of DSM-III anxiety disorders.

KEY TO TABLE:

AG-P= Agoraphobia                      PD= Panic Disorders  
 SO-P= Social Phobia                    GAD= Generalized Anxiety Disorders  
 SM-P= Simple Phobia                    OB-CO= Obsessive Compulsive Disorders





## 10. PSYCHOMETRIC EVALUATION FSAQ

As noted in the previous chapter FSAQ is a 60-item Thurstone scale and aims to measure anxiety in four different components. The process of determining the weights and quartile deviations of the 60 items selected according to the ratings of 25 judges (clinical psychologists and psychology postgraduates), has been outlined in the method chapter. The weights, quartile deviations and number of items included in each component of the questionnaire are presented in Table-10.

Means and standard deviations of weights and quartile deviations of the items comprising each component of the questionnaire have been calculated and found to be very similar to each other (see Table-11).

### 10.1. RELIABILITY (INTERNAL CONSISTENCY)

First, including all subjects (university students and anxiety patients) the split-half (Alpha) reliability and confidence intervals (95%) of the reliability coefficients of the questionnaire, as a whole and for each of the four components separately, have been evaluated. The confidence intervals were found with the use of statistical tables (Neave, 1978), therefore the values reflect approximate rather than exact boundaries. The results were found to be satisfactory ( $n=272$ ) ( $r=0.92$ ,  $0.89 < p < 0.94$  for total anxiety score,  $r=0.82$ ,  $0.76 < p < 0.86$ ;  $r=0.81$ ,  $0.71 < p < 0.85$ ;  $r=0.68$ ,  $0.59 < p < 0.74$  and  $r=0.68$ ,  $0.59 < p < 0.74$  for feeling, cognitive, behavioral and somatic anxiety).

Secondly, reliabilities and confidence intervals of the scale were calculated separately for two different subject groups (anxiety patients and university students) (Table-12). Results indicated that feeling and cognitive components of the scale were more reliable than behavioral and somatic components.

Sub-Categories of The Four Systems Anxiety Questionnaire

<u>FEELING</u>			<u>COGNITIVE</u>			<u>BEHAVIOURAL</u>			<u>SOMATIC</u>		
item's			item's			item's			item's		
<u>No</u>	<u>Weight</u>	<u>QD</u>	<u>No</u>	<u>Weight</u>	<u>QD</u>	<u>No</u>	<u>Weight</u>	<u>QD</u>	<u>No</u>	<u>Weight</u>	<u>QD</u>
2	8.6	2.0	10	8.1	1.8	4	3.6	2.8	1	6.6	1.7
7	4.4	2.4	13	8.5	1.9	5	9.0	1.0	3	7.9	1.7
8	7.8	1.8	15	7.8	1.3	16	7.4	2.5	6	6.7	1.7
12	1.0	1.0	17	4.5	2.5	21	1.1	0.9	9	8.5	2.0
14	2.8	1.8	19	6.4	2.4	25	7.0	2.4	11	1.4	1.0
18	8.2	2.6	27	1.0	1.0	28	6.8	2.5	22	1.3	0.7
20	3.1	2.8	29	7.0	1.8	30	6.4	3.0	24	8.2	2.4
23	1.9	0.8	31	1.1	1.0	33	6.0	1.7	26	5.7	2.8
32	7.9	2.4	36	4.7	2.0	38	1.1	0.7	34	1.4	1.0
35	5.2	1.9	40	8.1	1.7	45	1.1	0.8	37	4.8	2.8
39	3.7	2.2	42	8.5	2.0	46	6.8	2.6	41	1.5	1.6
44	6.9	2.1	47	1.0	1.0	52	7.7	2.1	43	8.2	2.4
50	6.1	1.9	49	5.9	2.3	54	7.5	3.3	48	6.7	3.1
53	7.5	2.0	57	3.1	3.1	56	4.6	2.7	51	7.2	2.5
55	7.3	2.3	59	6.7	2.1	60	6.4	2.2	58	6.3	2.4

TABLE -10 Showing items numbers (in the questionnaire), weights and quartile deviations (QD) in each component of FSAQ. Weights and quartile deviations were determined by the ratings of the judges.

<u>Anxiety Component</u>	<u>Mean</u>	<u>S. Dev</u>
<b>FEELING</b>		
Weight	5.49	2.51
Q. Dev.	2.00	0.54
<b>COGNITIVE</b>		
Weight	5.49	2.78
Q. Dev.	1.86	0.60
<b>BEHAVIORAL</b>		
Weight	5.50	2.60
Q. Dev.	2.08	0.85
<b>SOMATIC</b>		
Weight	5.49	2.73
Q. Dev.	1.98	0.72

TABLE- 11 Means and standard deviations of weights and quartile deviations of the items included in each component of FSAQ.

	<u>NO OF ITEMS=15</u>	<u>NO OF ITEMS=15</u>	<u>NO OF ITEMS=15</u>	<u>NO OF ITEMS=15</u>	<u>NO OF ITEMS=60</u>
	<u>FEELING</u>	<u>COGNITIVE</u>	<u>BEHAVIOR</u>	<u>SOMATIC</u>	<u>TOTAL SCALE</u>
UNI. STUDENTS N=218	.73 .64<p<.79	.73 .64<p<.79	.54 .41<p<.61	.52 .40<p<.60	.85 .79<p<.86
ANXIETY PATIENTS N=54	.80 .68<p<.88	.84 .71<p<.89	.77 .61<p<.83	.66 .47<p<.79	.92 .84<p<.94
BOTH GROUPS N=272	.82 .76<p<.86	.81 .72<p<.85	.68 .59<p<.74	.68 .59<p<.74	.92 .89<p<.94

TABLE- 12 Reliability (alpha) levels and confidence intervals of the reliability correlation coefficients of FSAQ in different subject groups (university students, anxiety patients and both).

## 10.2. CORRELATIONS BETWEEN DIFFERENT COMPONENTS OF THE FSAQ

Including all subjects of the study, correlations between four components of FSAQ have been calculated and confidence intervals presented (Table-13). Then the same computation was carried out in two different subject groups of the study (anxiety patients and university students) separately (Tables 14-15). The results indicated that the correlation between the cognitive and feeling components of FSAQ was the highest in comparison with the correlations between other components of the scale.

A clarification of the higher correlation between feeling and cognitive components, in comparison with the reliability levels of these two components, is appropriate. Although it seems on the Table-13 that the correlation between these two components ( $r=0.83$ ) is higher than the reliability level (internal consistency) of the feeling component ( $r= 0.82$ ) the figures are misleading, because the former correlation (between feeling and cognitive components of FSAQ) includes 15 items in each component whereas in the latter (reliability of feeling component) reflects the correlation between 7 items. The application of Spearman Brown formula indicated that had the item number been increased to 15, the reliability of the feeling component would have been much higher ( $r= 0.89$ ).

## 10.3. VALIDITY

In the assessment of the validity level of the questionnaire two different methods were used.

### 10.3.1. Concurrent Validity

Correlations between FSAQ and TSAQ including all subjects and on each different subject groups (university students and anxiety patients) were calculated (Table-16). The results indicated acceptable

N=272

	<u>FEELING</u>	<u>COGNITIVE</u>	<u>BEHAVIORAL</u>	<u>SOMATIC</u>
<u>FEELING</u>	1.00	.83 .81<p<.88	.74 .65<p<.79	.68 .59<p<.72
<u>COGNITIVE</u>		1.00	.68 .59<p<.72	.61 .52<p<.68
<u>BEHAVIORAL</u>			1.00	.60 .50<p<.67
<u>SOMATIC</u>				1.00

TABLE-13 Correlations (confidence intervals - <p< - of correlations) between the components of FSAQ including all subjects (university students and anxiety patients).

N=218

	<u>FEELING</u>	<u>COGNITIVE</u>	<u>BEHAVIORAL</u>	<u>SOMATIC</u>
<u>FEELING</u>	1.00	.77 .70<p<.81	.53 .43<p<.62	.44 .33<p<.53
<u>COGNITIVE</u>		1.00	.60 .50<p<.69	.45 .34<p<.54
<u>BEHAVIORAL</u>			1.00	.40 .38<p<.51
<u>SOMATIC</u>				1.00

TABLE-14 Correlations ( and confidence intervals - <p< - of correlations) between components of FSAQ in a sample of university students.

N=54

	<u>FEELING</u>	<u>COGNITIVE</u>	<u>BEHAVIORAL</u>	<u>SOMATIC</u>
<u>FEELING</u>	1.00	.75 .60<p<.84	.75 .60<p<.84	.63 .44<p<.77
<u>COGNITIVE</u>		1.00	.55 .32<p<.71	.39 .14<p<.60
<u>BEHAVIORAL</u>				.54 .31<p<.69
<u>SOMATIC</u>				1.00

TABLE-15 Correlations (and confidence intervals - <p< - of the correlations) between components of FSAQ in anxiety patients.

FOUR SYSTEMS ANXIETY QUESTIONNAIRE

TOTAL

FEEL    COGNITIVE    BEHAVIORAL    SOMATIC    SCORE

INCLUDING BOTH  
SUBJECT GROUPS (UNIVERSITY STUDENTS AND ANXIETY PATIENTS)  
N=272

THREE-SYSTEMS  
ANXIETY QUES.

Cognitive	.75	.82	.63	.62	.81
Behavior	.70	.64	.78	.54	.76
Somatic	.67	.61	.60	.78	.74
Total score	.80	.78	.76	.71	.87

UNIVERSITY STUDENTS ONLY  
N=218

THREE-SYSTEMS  
ANXIETY QUES.

Cognitive	.68	.77	.55	.50	.78
Behavior	.52	.55	.65	.40	.63
Somatic	.45	.50	.39	.64	.59
Total score	.65	.71	.64	.57	.79

ANXIETY PATIENTS ONLY  
N=54

THREE-SYSTEMS  
ANXIETY QUES.

Cognitive	.71	.81	.55	.56	.79
Behavior	.75	.56	.83	.44	.78
Somatic	.56	.38	.52	.74	.64
Total score	.80	.66	.73	.66	.85

TABLE- 16 Correlations between FSAQ and Three Systems Anxiety questionnaire in three different subject groups.



level of validity . As seen in Table-16, correlations between corresponding components of anxiety in the two scales are higher than correlations between different components of anxiety.

Significance-testing showed that, when both subject groups are included, correlations between corresponding components of FSAQ and TSAQ, except the behavior component, were significantly higher than the correlations between non-corresponding components of the two anxiety questionnaires. Also correlations between FSAQ and other anxiety questionnaires, Cognitive-Somatic Anxiety Scale (CSAQ) and State-Trait Anxiety Inventory (STAI), in anxiety patients are calculated (Table-17). The level of validity is found to be satisfactory. FSAQ was found to be more correlated with trait form of STAI than the state form. The highest correlation between FSAQ and CSAQ was between the cognitive components of both scales.

#### 10.3.2. Criterion Validity

FSAQ scores of the university students and the anxiety patients were compared. First of all, means and standard deviations of the Four Systems Questionnaire (FSAQ) scores of anxiety patients and university students were calculated (Table-18). On the basis of this information, anxiety profiles of both groups were obtained (Figure-1). Analysis of variance have been performed between each group's anxiety scores assessed by FSAQ (Table-19). The two groups were found be significantly different on the anxiety profiles. T-tests between university students and anxiety patients scores were performed (Table-18). The results of these tests indicated that FSAQ is well able to discriminate anxious people from non-anxious (criterion validity). Total anxiety scores of the university students as measured by the FSAQ, were found to be significantly lower than that of the anxiety patients ( $t=9.9$   $df=266$   $p<0.001$ , two-tail). Furthermore, anxiety scores of the university

FOUR SYSTEMS ANXIETY QUESTIONNAIRE

FEELING COGNITIVE BEHAVIORAL SOMATIC WHOLE  
SCALE

ANXIETY PATIENTS  
N=54

COGNITIVE-SOMATIC  
ANXIETY QUES.

Cognitive	.54	.75	.38	.32	.61
Somatic	.62	.39	.39	.46	.55
Total score	.67	.66	.50	.47	.69

STATE-TRAIT  
ANXIETY INV.

Anxiety-State	.50	.45	.59	.43	.62
Anxiety-Trait	.75	.76	.62	.47	.80

TABLE-17 Correlations between FSAQ and two other  
(Cognitive-Somatic anxiety questionnaire and State-Trait Anxiety  
Inventory) anxiety questionnaires.

	N=218		N=54		
	<u>UNIVERSITY STUDENTS</u>		<u>ANXIETY PATIENTS</u>		
	<u>MEAN</u>	<u>S.DEV.</u>	<u>MEAN</u>	<u>S.DEV</u>	<u>T-VALUE</u>
TOTAL FSAQ					
SCORES	20.21	11.77	46.10	18.08	9.88 ***
FEELING	17.33	14.02	48.49	21.93	12.82 ***
COGNITIVE	23.98	18.22	53.91	23.60	8.68 ***
BEHAVIOR	20.08	13.05	40.29	22.16	6.37 ***
SOMATIC	18.89	11.98	41.09	18.12	8.54 ***

df=266

\*\*\* p< 0.001

TABLE- 18 Comparison (t-test) of university students with anxiety patients on FSAQ scores.

<u>VARIABLES COMPARED</u>	<u>DF</u>	<u>MEAN SQUARE</u>	<u>F</u>	<u>TAIL-PROB</u>
GROUPS	1	120181.69	171.98	0.000 ***
ERROR	270	698.80		
C	3	2997.88	24.53	0.000 ***
GROUPS X C	3	1469.27	12.02	0.000 ***
ERROR	810	122.23		

\*\*\*P<0.001

TABLE- 19 Results of analysis of variance comparing university students with anxiety patients on FSAQ scores.

KEY TO TABLE

GROUPS= Univeristy students - anxiety patients.

C= Components of FSAQ.

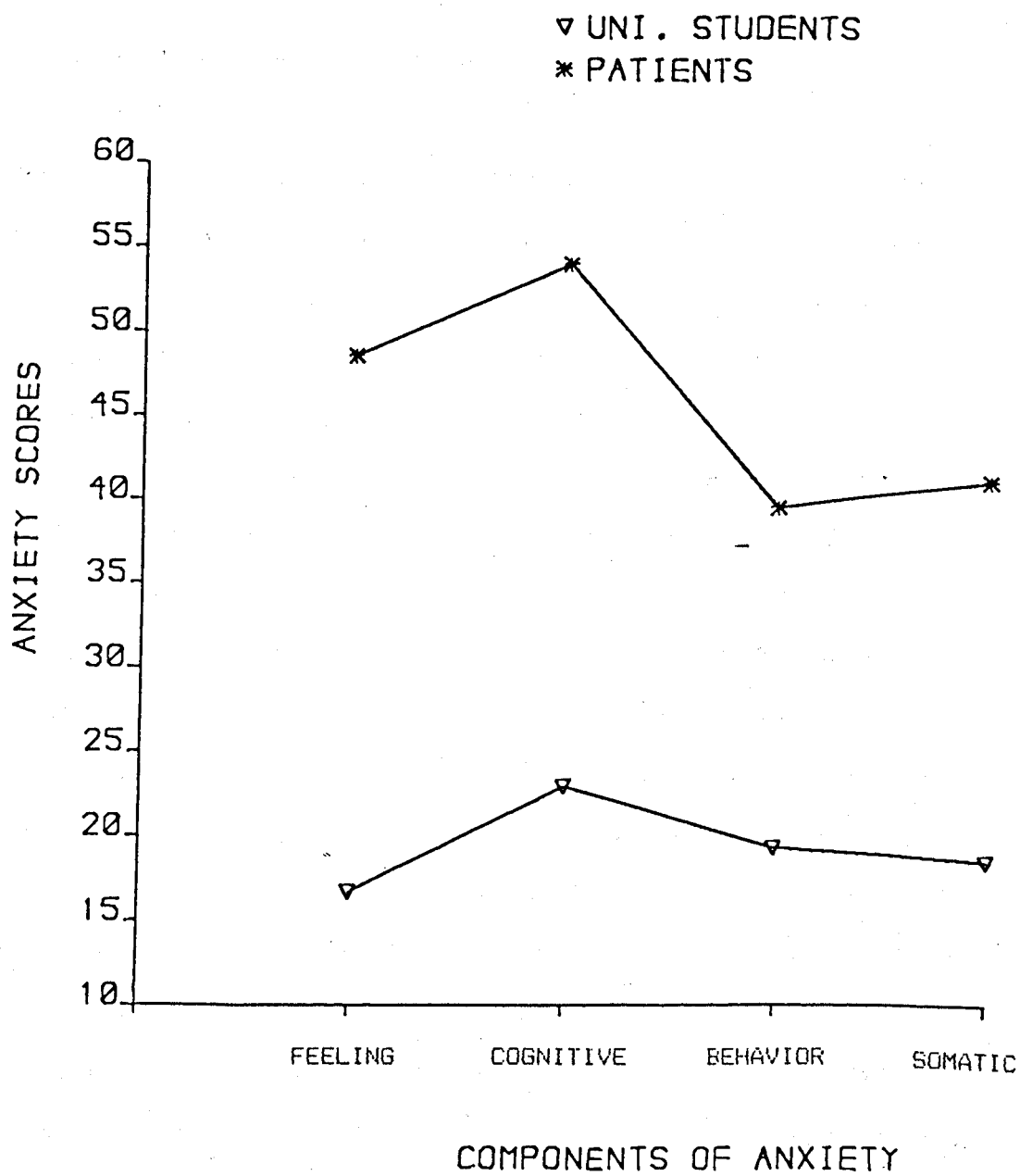


FIGURE-1 Anxiety profiles of university students and patients assessed by FSAQ.

students in each four component of anxiety have been found to be significantly lower than those of anxiety patients, ( $p < 0.001$  two-tail in all tests) (see Table-18).

#### 10.4. PRE AND POST TREATMENT ASSESSMENT OF AGORAPHOBICS BY FSAQ

The FSAQ was administered to an agoraphobic group (N=14) before and after treatment. The purpose of this application was to examine whether FSAQ was able to assess the changes on the anxiety levels of these patients following psychological treatment. With this purpose, FSAQ was included into another study in which various other anxiety scales were applied as well. Means and standard deviations of FSAQ scores of patients before and after treatment were calculated (Table-20, Figure-2). Analysis of variance was carried out (Table-21). The results showed that the anxiety profile of the patients were significantly reduced after the treatment (Figure-2). Furthermore, t-tests were performed (Table-20). Apart from the cognitive component, all other components of FSAQ and the total anxiety level were significantly reduced after the treatment. On the cognitive component although pre-post treatment difference was obvious, it just failed to achieve significance. Possible reasons for this latter finding was the relatively low pre-treatment scores of agoraphobics on the cognitive component ( $X=35.2$ ) and inclusion of a rather small number of patients (3 patients were not included in the statistical analysis due to missing values). Overall, findings indicated that FSAQ was well able to detect before-after treatment changes in the anxiety profiles of agoraphobics.

	<u>PRE-TREATMENT</u>		<u>POST-TREATMENT</u>		<u>T-VALUE</u>
	<u>MEAN</u>	<u>S.DEV.</u>	<u>MEAN</u>	<u>S.DEV.</u>	
TOTAL FSAQ					
SCORES	41.44	15.30	23.89	19.64	4.80 **
FEELING	43.16	18.63	25.68	23.55	4.75 **
COGNITIVE	35.22	22.76	24.29	24.49	2.19
BEHAVIOR	48.92	13.81	21.91	20.96	5.35 ***
SOMATIC	38.46	14.74	23.69	15.40	3.36 *

df=10

\*\*\* p<.001

\*\* p<.01

\* p<.05

TABLE 20 Comparison (paired T-test) of agoraphobic patients' FSAQ scores before and after treatment.

<u>VARIABLES COMPARED</u>	<u>DF</u>	<u>MEAN SQUARE</u>	<u>F</u>	<u>TAIL-PROB.</u>
GROUPS	1	18061.94	24.32	0.003 ***
ERROR	13	742.79		
C	3	192.73	1.34	0.275
ERROR	39	144.02		
GROUPS X C	3	274.90	3.98	0.014 *
ERROR	39	69.10		

\*\*\*p<0.001

\*p<0.05

TABLE- 21 Comparison (analysis of variance) of agoraphobic patients' FSAQ scores before and after treatment.

KEY TO TABLE:

GROUPS= Before treatment - after treatment

C= Components of FSAQ

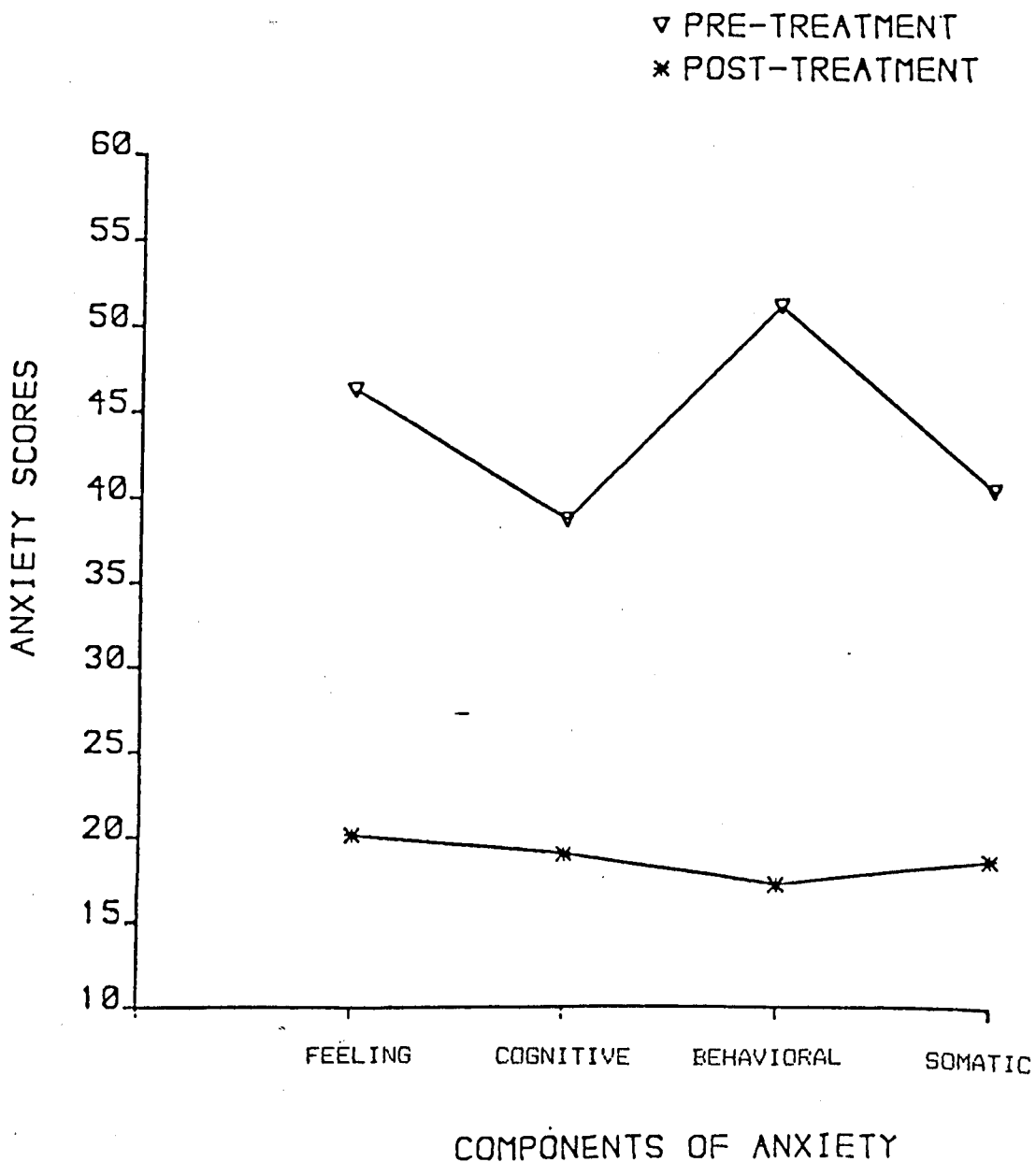


FIGURE-2 Anxiety profiles of agoraphobic patients before and after treatment, assessed by FSAQ.

## 11. ANXIETY PROFILES OF UNIVERSITY STUDENTS AND ANXIETY PATIENTS ASSESSED BY FSAQ

An overall analysis of variance was carried out to compare two different subject groups (university students and anxiety patients) and different sexes on the scores of FSAQ. The results indicated (Tables-22 and 23) (Figure-3) that FSAQ total anxiety scores of the subject groups were significantly different. However, total anxiety scores of male and female subjects did not differ significantly.

When the scores on the different component of FSAQ was taken into consideration, the interaction of these scores with sex and with groups was significant (Table-23). The results suggest that dividing anxiety into four different components could reveal more about the nature of anxiety. The results show that females score higher on all components of FSAQ except on the cognitive component. On this component males scored higher than females (Table- 22).

In the following section, though similar analysis will be applied, the interest will be focused on the relationship between feeling and cognitive components across sexes and different categories of anxiety disorder.

## 12. COMPARISON OF ANXIETY SCORES ON FEELING AND COGNITIVE COMPONENTS OF FSAQ

### 12.1 SEX DIFFERENCES

Three analysis of variance tests were performed to investigate the effect of the feeling and cognitive scores on sex differences in both subject groups.

The means and standard deviations of feeling and cognitive scores of sexes in each subject group were presented before (Table-22). Analysis of variance to examine the scores on feeling and cognitive



<u>SUBJECT-GROUPS</u>	<u>SEX</u>	<u>COMPONENTS OF FSAQ</u>				<u>TOTAL</u>
		<u>FEELING</u>	<u>COGNITIVE</u>	<u>BEHAVIORAL</u>	<u>SOMATIC</u>	<u>SCORE</u>
UNIVERSITY STUDENTS	MALE	16.8 (15.0)	25.7 (18.5)	20.0 (11.9)	17.3 (10.4)	19.9 (11.3)
	FEMALE	17.7 (14.9)	23.1 (18.4)	20.0 (13.5)	19.5 (12.7)	20.4 (12.1)
ANXIETY PATIENTS	MALE	46.8 (22.3)	56.1 (21.7)	36.4 (23.1)	36.2 (15.3)	44.8 (16.5)
	FEMALE	49.3 (22.0)	52.8 (24.7)	41.1 (22.6)	43.5 (19.1)	46.7 (18.9)

TABLE-22 Means and standard deviations of male and female subjects' FSAQ scores in two different (university students and anxiety patients) groups.

<u>VARIABLES COMPARED</u>	<u>DF</u>	<u>MEAN SQUARE</u>	<u>F</u>	<u>TAIL-PROB.</u>
GROUPS	1	97764.01	135.00	0.000 ***
SEX	1	323.13	0.45	0.503
GROUPS X SEX	1	282.69	0.39	0.531
ERROR	252	751.26		
C	3	3544.07	30.48	0.000 ***
C X GROUPS	3	1353.89	11.64	0.000 ***
C X SEX	3	338.69	3.34	0.018 *
C X GROUPS X SEX	3	77.03	0.66	0.575
ERROR	756	116.26		

\*\*\* p<0.001

\* p<0.05

TABLE- 23 Comparison (analysis of variance) of groups and sex on FSAQ components.

KEY TO TABLE:

GROUPS= University students - anxiety patients

SEX= Male - female

C= Anxiety scores on four components of FSAQ

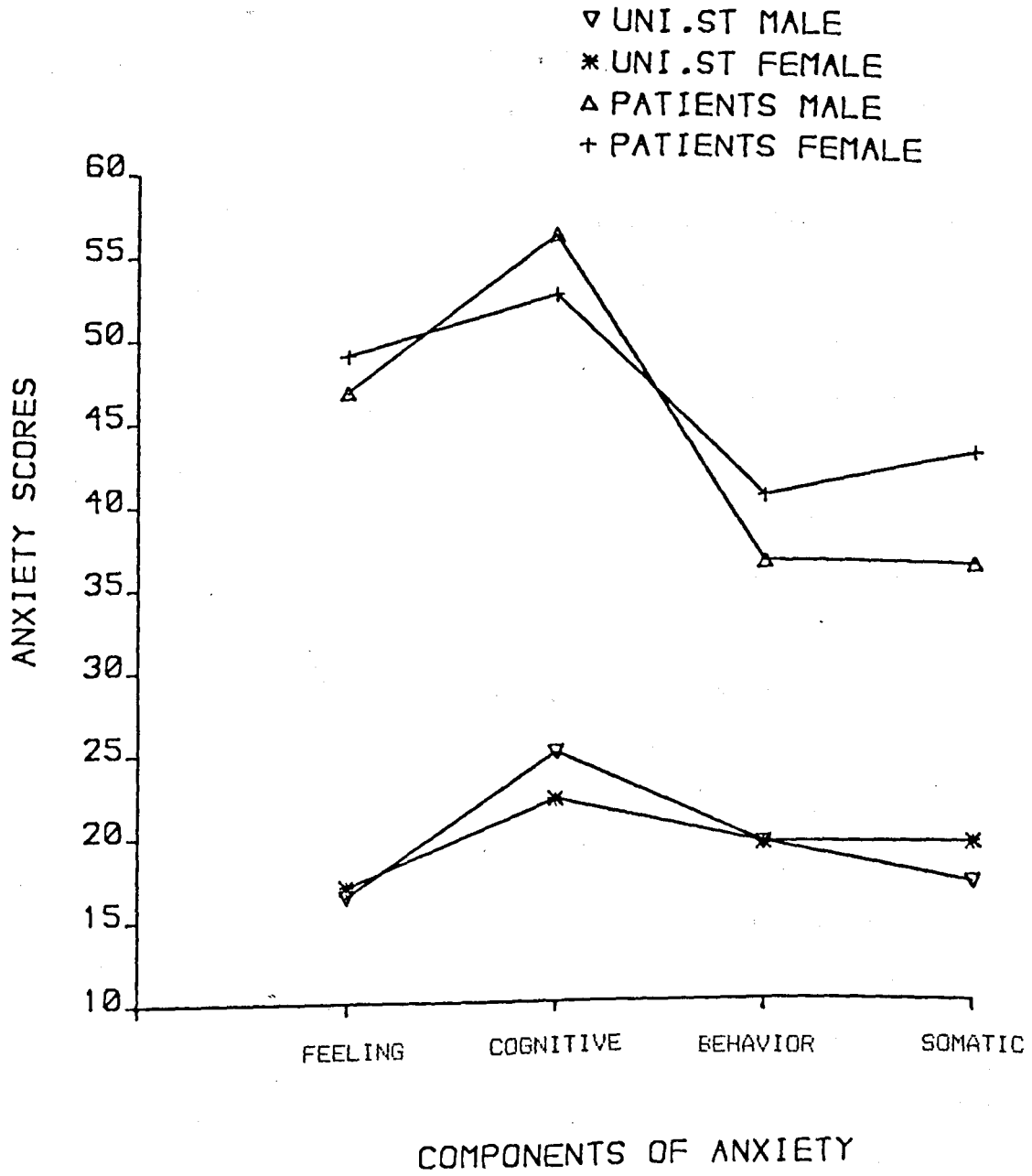


FIGURE- 3 Anxiety profiles of males and females in two different subject groups (university students and anxiety patient) measured by FSAQ.

components of FSAQ across two different subject groups (university students and anxiety patients) and different sexes was performed. The findings suggest that sex differences have a significant effect on feeling and cognitive scores (Table- 24, Figure-4). Secondly, analysis of variance between sexes, for university students alone, on the feeling and cognitive anxiety scores was applied (Table-24, Figure-4). The results indicate that scores on the feeling and cognitive components of FSAQ are significantly influenced by sex differences in the university students group. Thirdly, with regard to anxiety patients only, analysis of variance between sexes on the scores of feeling and cognitive components was carried out. The results indicate that FSAQ feeling and cognitive anxiety component scores are not significantly influenced by sex differences (Table-24, Figure-4). As seen in Figure-4, the absolute difference between male and female scores on feeling and cognitive components of FSAQ is greater in the anxiety patients than in the university students. Nevertheless, feeling and cognitive components of FSAQ were found to be significantly affected by sex differences in the university students, but not in the anxiety patients. A possible reason for having non-significant results in the anxiety patients may be related to the relatively low number of subjects (N=18 for males, N=36 for females) in this group.

Overall, the results indicate that the feeling and cognition scores were significantly affected by sex differences in general. In order to examine sex differences further t-tests were applied in two different subject groups.

#### 12.1.2. University Students

Paired t-tests between the feeling and the cognitive components of FSAQ for each sex were carried out. The results indicated that the difference between cognitive and feeling components of FSAQ was

INCLUDING BOTH SUBJECT GROUPS (UNIVERSITY STUDENTS AND ANXIETY PATIENTS)

<u>VARIABLES COMPARED</u>	<u>DF</u>	<u>MEAN SQUARE</u>	<u>F</u>	<u>TAIL-PROB.</u>
GROUPS	1	70341.50	123.23	0.000 ***
SEX	1	27.97	0.05	0.825
GROUPS X SEX	1	3.13	0.01	0.941
ERROR	251	570.80		
FC	1	3429.17	42.77	0.000 ***
FC X GROUPS	1	8.57	0.11	0.744
FC X SEX	1	385.86	4.81	0.029 *
FC X GROUPS X SEX	1	30.18	0.38	0.540
ERROR	251	80.18		

UNIVERSITY STUDENTS ONLY

SEX	1	59.95	0.13	0.723
ERROR	200	476.07		
FC	1	4640.29	69.10	0.000 ***
FC X SEX	1	265.29	3.95	0.048 *
ERROR	200	67.15		

ANXIETY PATIENTS ONLY

SEX	1	3.92	0.00	0.948
ERROR	52	924.19		
FC	1	980.05	7.54	0.008 **
FC X SEX	1	200.10	1.54	0.220

\*\*\* p<0.001

\*\* p<0.01

\* p<0.05

TABLE- 24 Comparison (analysis of variance) of FSAQ feeling and cognitive anxiety scores, first, between sexes and conditions, secondly, between sexes in each condition.

KEY TO TABLE

GROUPS= University students - anxiety patients

SEX= Male - female

FC= Feeling and cognitive components of FSAQ

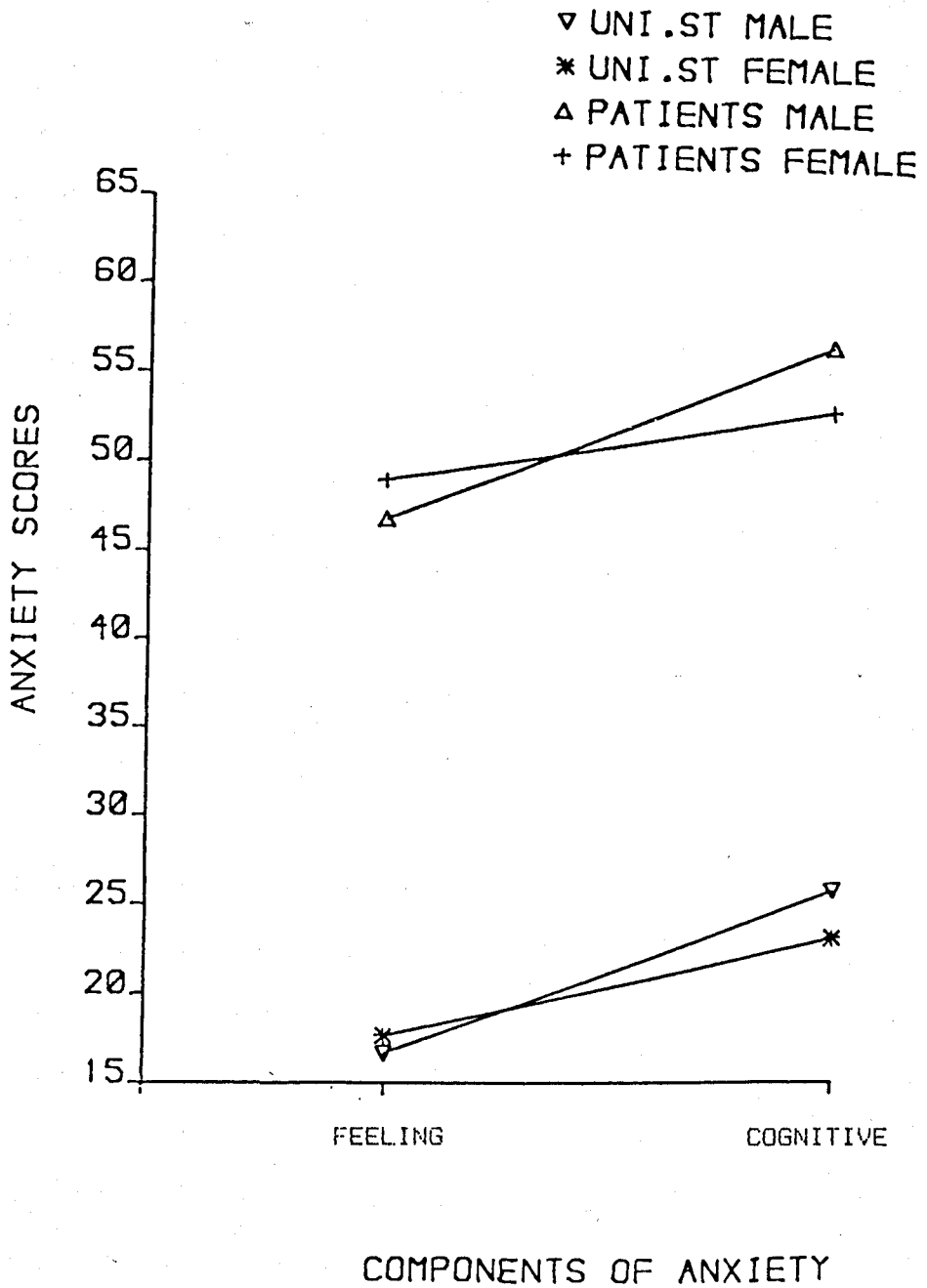


FIGURE-4 Feeling and cognitive scores of male and female subjects of both groups (university students and anxiety patients) measured by FSAQ.

significant for both cases ( $t=5.79$   $df=69$ ,  $t=5.43$   $df=132$ ,  $p < 0.001$ , two-tail, for male and female subjects). Then t-tests between male and female university students' scores on feeling and cognitive components of FSAQ were performed. The results were found to be non-significant ( $t=0.43$   $df=206$  for feeling,  $t= 0.82$   $df=203$  for cognitive components, two-tail).

The mean differences between cognitive and feeling components of both sexes were calculated ( $\bar{X}=6.9$   $Sd=12.7$ ,  $\bar{X}=5.4$   $Sd=10.9$  for male and female subjects respectively). A difference of means t-test was carried out between male and female university students on the differences between cognition and feeling components of FSAQ. The discrepancy between cognitive and feeling components of FSAQ in males was significantly higher than that in females ( $t= 1.99$ ,  $df= 200$   $p<0.05$ , two-tail).

#### 12.1.2. Anxiety Patients

Similar statistical analyses have been carried out for male and female anxiety patients scores on FSAQ.

Paired t-tests between feeling and cognitive components scores of each sex were evaluated. It was found that the difference between the feeling and the cognitive components of male anxiety patients was significant ( $t=2.36$ ,  $df=17$ ,  $p < 0.05$ , two-tail) whereas the same difference was observed to be non-significant for female patients ( $t=1.32$ ,  $df=35$ ). Secondly, t-tests between male and female anxiety patients scores on feeling and cognitive components of FSAQ were carried out. The results indicated no significant difference between sexes on these components ( $t=0.39$   $df= 42$  for feeling,  $t=0.48$   $df=52$  for cognitive components, two-tail).

Difference scores between the cognitive and the feeling components of FSAQ for male and female anxiety patients were computed. The mean

difference was found to be  $\bar{X}=9.3$   $SD=16.6$  for males and  $\bar{X}=3.5$   $SD=5.9$  for females. The differences between male and female anxiety patients on the feeling and the cognitive components of FSAQ are presented in the Figure- 4. A differences of mean t-test between male and female anxiety patients in terms of their difference scores was performed. The result was found to be non-significant ( $t= 1.24$   $df=52$ ). Figure- 5 shows the discrepancy between the cognitive and the feeling components, assessed by FSAQ, of male and female subjects belonging to both groups; university students and anxiety patients.

## 12.2. OBSESSIVE-COMPULSIVE DISORDERS AND THE REST OF DSM-III ANXIETY DISORDERS

Means and standard deviations of the scores on the feeling and the cognitive components of FSAQ were calculated for each sub-category of DSM-III anxiety disorders (Table-25).

Again, an analysis of variance between six sub-categories of anxiety disorder patients on feeling and cognitive scores was applied (Table-26). The results showed that the differences between the six sub-categories of anxiety disorder on feeling and cognitive components were significant.

Paired t-tests between the cognitive and the feeling components of each sub-category of anxiety disorder have been performed. Apart from patients in the obsessive-compulsive disorder category, no significant differences between the cognitive and the feeling components of FSAQ in the other sub-groups of anxiety disorder were observed. In the case of obsessive-compulsive disorders the difference between the cognitive and the feeling components was significant ( $p < 0.01$ , two-tail) (Table-25).

The difference scores between cognitive and feeling components of FSAQ for each anxiety disorder were calculated, means and standard



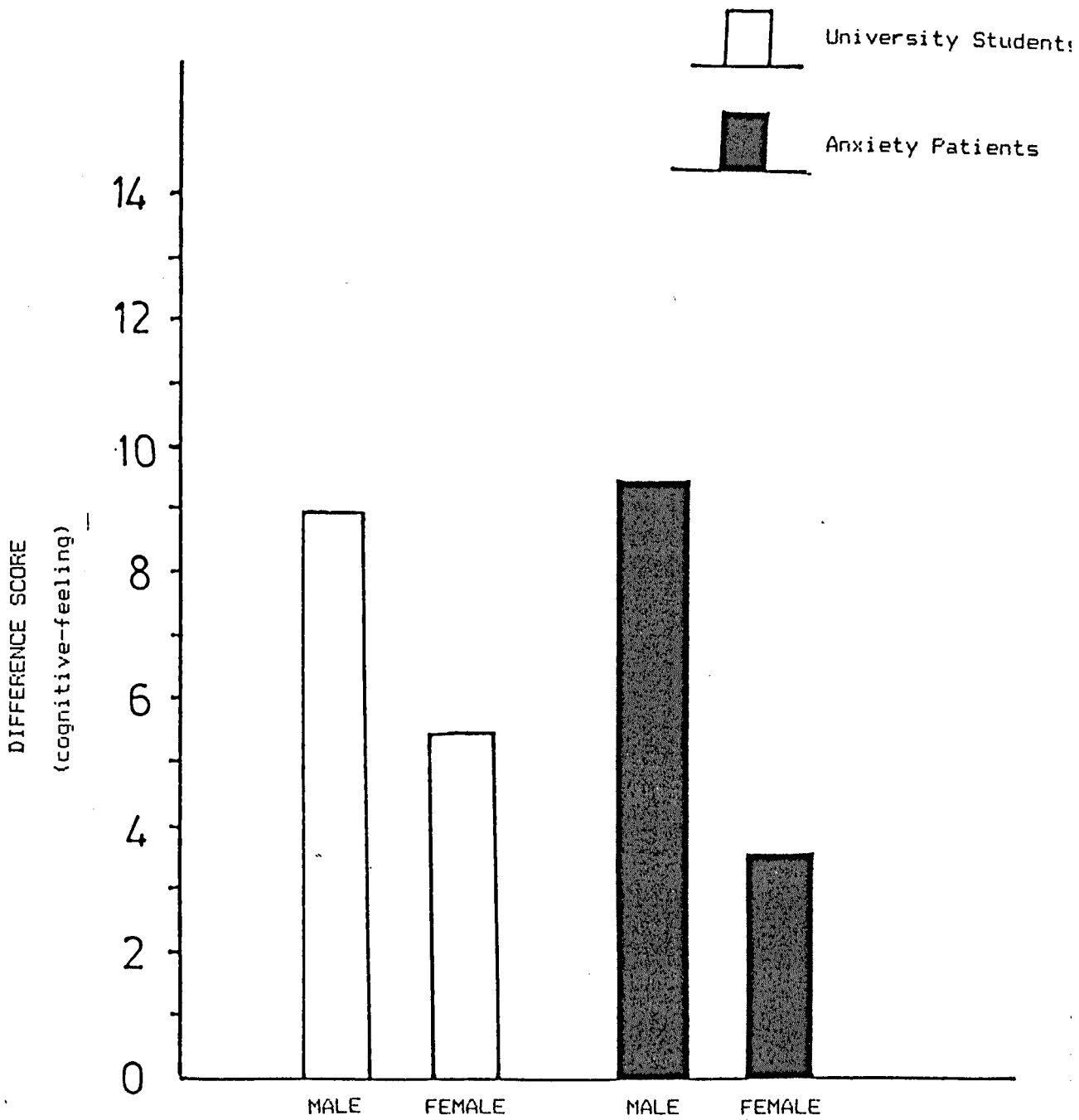


FIGURE-5 The difference between males and females on the cognitive and the feeling components of anxiety in both subject groups (university students and anxiety patients) assessed by FSAQ.

	<u>FEELING</u>		<u>COGNITIVE</u>		<u>DF</u>	<u>T-VALUE</u>
	<u>MEAN</u>	<u>S.DEV.</u>	<u>MEAN</u>	<u>S.DEV.</u>		
AGORAPHOBIA	51.9	20.5	47.3	24.5	9	1.80
SOCIAL PHOBIA	67.1	12.1	67.8	12.4	9	0.15
SIMPLE PHOBIA	33.1	20.5	36.9	20.3	8	0.61
PANIC DIS.	37.4	27.8	39.9	34.7	6	0.55
GENERALIZED ANXIETY DIS.	54.6	20.3	59.8	17.7	9	1.93
OBSESSIVE- COMP. DIS.	40.3	13.1	68.6	11.7	7	6.84***

\*\*\* p<0.001

TABLE-25 Means, standard deviations and paired t-test results of each sub-category of anxiety disorder patients' scores on feeling and cognitive components of FSAQ.

<u>VARIABLES COMPARED</u>	<u>MEAN SQUARE</u>	<u>DF</u>	<u>F</u>	<u>TAIL-PROB.</u>
GROUPS	2622.06	5	3.60	0.007 **
ERROR	728.16	48		
FC	962.53	1	11.00	0.002 **
FC X GROUPS	2760.42	5	6.31	0.000 ***
ERROR	4201.00	48		

\*\*\* p<0.001

\*\* p<0.01

TABLE-26. Comparison (analysis of variance) of sub-categories of anxiety disorders on FSAQ feeling and cognitive scores.

KEY TO TABLE

GROUPS= Six sub-categories of anxiety disorders

FC= Feeling and cognitive components of FSAQ

deviations of the difference scores of each anxiety disorder were presented (Table-27 and Figure- 6).

In terms of the relationship between cognitive and feeling (affect) components, obsessive-compulsive patients were conceptualized to be different from other anxiety disorders, in the introduction chapter. Therefore, t-tests between the obsessive-compulsive disorder patients and the patients belonging to each of the remaining the anxiety disorders on the difference scores of cognitive and feeling components were performed. The t-test (two-tail) results indicated that the difference scores of cognitive and feeling components of FSAQ of obsessive-compulsive patients were significantly greater than those of the patients in each of the remaining sub-categories of DSM-III anxiety disorder (Table-28).

The six anxiety disorder categories were grouped into two, the first group including only obsessive-compulsive patients, and the second group including all other anxiety disorders. Means and standard deviations of the scores of patients in each group on feeling and cognitive components of FSAQ were calculated. (Table-29, Figure-7). An analysis of variance between obsessive-compulsive patients and the remainder of anxiety patients on feeling and cognitive component of FSAQ was carried out. The results indicated that feeling and cognitive scores were different across the two groups (Table-30). To evaluate this point further t-tests were employed.

Paired t-tests between feeling and cognitive scores of patients in each category were performed. Previously, the result of paired t-test had shown that the difference between feeling and cognitive scores of obsessive-compulsive patients was significant ( $t=6.84$   $df=8$ ,  $p<0.001$ , two-tail). However, the same difference is found to be non-significant for the group which included the remainder of anxiety patients ( $t=0.73$ ,  $df=46$ ). T-tests between these two groups on the feeling and cognitive

	<u>MEAN</u>	<u>S. DEVIATION</u>
AGORAPHOBIA	-4.7	8.2
SOCIAL PHOBIA	0.7	16.1
SIMPLE PHOBIA	3.8	18.9
PANIC DIS.	2.6	12.6
GENERALIZED ANXIETY DIS.	5.2	8.5
OBSESSIVE COMP. DIS.	28.3	11.7

TABLE- 27 Means and standard deviations of the differences between FSAQ cognitive and feeling scores of each sub-category of anxiety disorders.

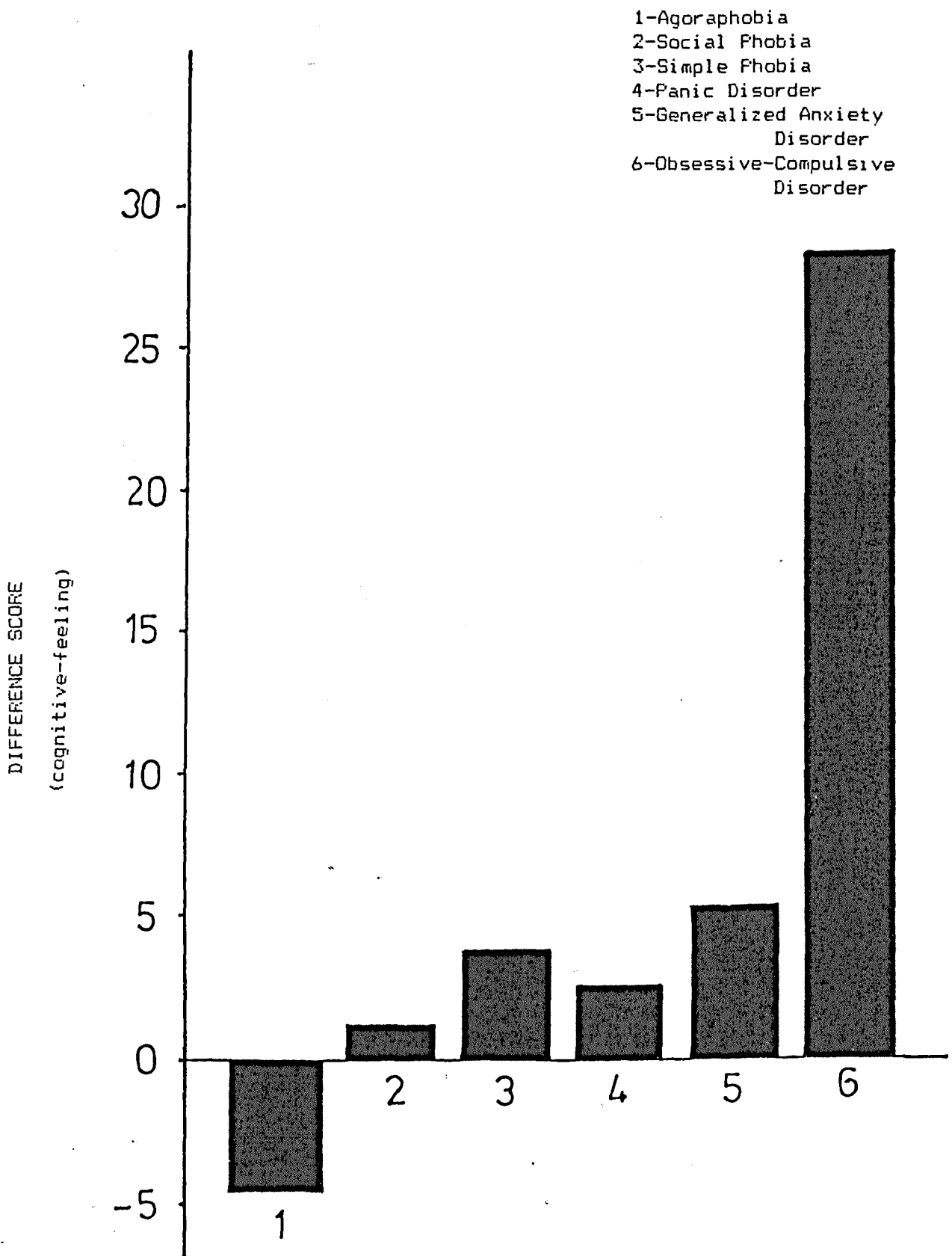


FIGURE-6 The difference between the cognitive and the feeling components of anxiety in each of the anxiety disorders assessed by FSAQ.

	<u>DF</u>	<u>T-VALUE</u>	<u>2-TAIL PROB.</u>
AGORAPHOBIA	16	7.04	0.000 ***
SOCIAL PHOBIA	16	4.05	0.001 **
SIMPLE PHOBIA	15	3.16	0.006 **
PANIC DIS.	13	4.09	0.001 **
GENERALIZED ANXIETY DIS.	16	4.66	0.000 ***

\*\*\* p<0.001

\*\*p<0.01

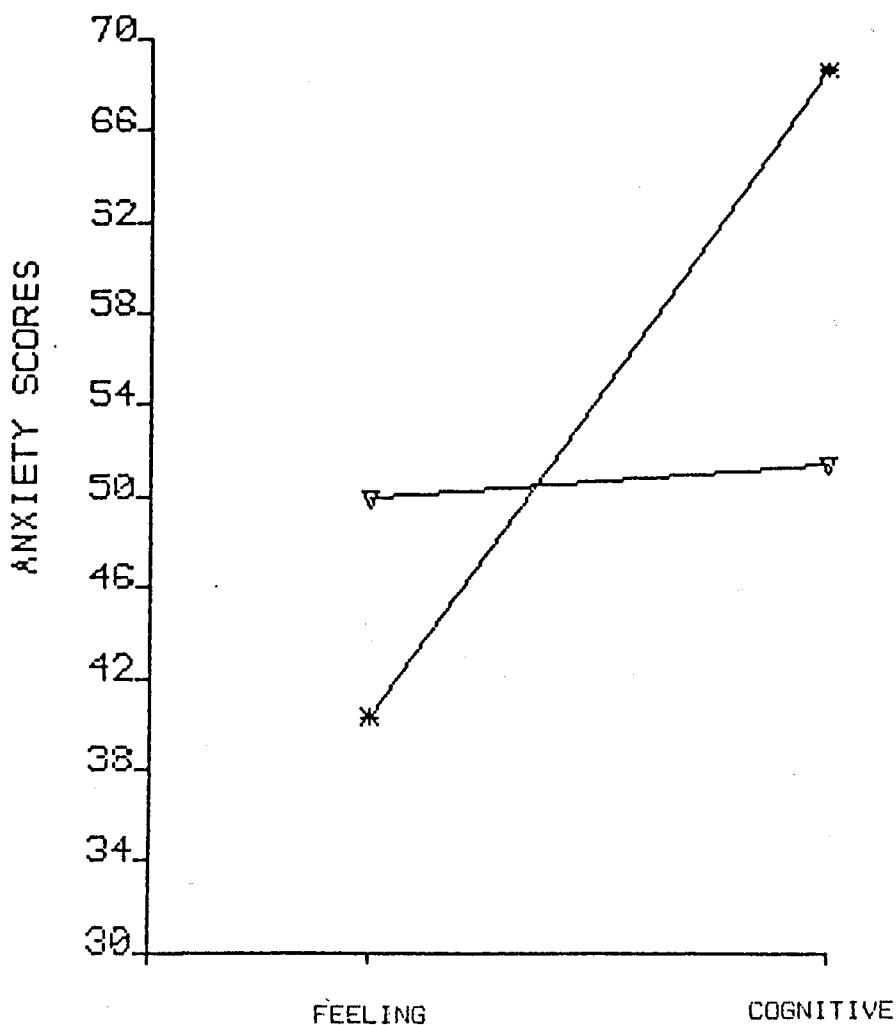
TABLE- 28 T-tests results between obsessive-compulsive disorder patients and patients in others categories of anxiety disorder on the difference between cognitive and feeling scores of FSAQ.

	<u>FEELING</u>		<u>COGNITIVE</u>		<u>C-E DIFF.</u>	
	<u>MEAN</u>	<u>S.DEV.</u>	<u>MEAN</u>	<u>S.DEV.</u>	<u>MEAN</u>	<u>S.DEV.</u>
OBSESSIVE						
COMPULSIVE DIS.	40.2	13.0	68.6	22.9	28.4	11.7
REMAINING ANXIETY						
PATIENTS	49.9	22.9	51.4	24.3	1.5	13.4

TABLE-29 Means and standard deviations of obsessive compulsive patients and remaining anxiety patients scores on feeling, cognitive and the difference between cognitive and feeling components of FSAQ.



▽ REMAINING ANXIETY PATIENTS  
\* OBSESSIVE-COMPULSIVES



### COMPONENTS OF ANXIETY

FIGURE- 7 The scores of obsessive-compulsives and the remaining anxiety patients on the cognitive and the feeling components of anxiety measured by FSAQ.

<u>VARIABLES COMPARED</u>	<u>MEAN SQUARE</u>	<u>DF</u>	<u>F</u>	<u>TAIL-PROB.</u>
GROUPS	197.27	1	0.21	0.645
ERROR	920.48	52		
FC	3026.26	1	35.04	0.000***
FC X GROUP	2469.92	1	28.60	0.000***
ERROR	86.37	52		

\*\*\* p<0.001

TABLE-30 Comparison (analysis of variance) of obsessive-compulsives with remaining anxiety patients on the FSAQ feeling and cognitive components scores.

KEY TO TABLE

GROUPS= Obsessive compulsives - remaining anxiety disorders

FC= Feeling and cognitive components of FSAQ

scores of FSAQ were performed. On the feeling and cognitive components of FSAQ, the differences between the scores of the obsessive-compulsive group and the group of remaining anxiety patients were found to be non-significant ( $t=1.69$ ,  $df=52$  for feeling,  $t=1.96$ ,  $df=52$  for cognitive). Regarding the difference between cognitive and feeling scores of FSAQ, however, the obsessive-compulsive group ( $X=28.4$ ,  $sd=11.7$ ) was found to be significantly higher than the group of remaining anxiety disorder patients ( $X=1.4$ ,  $SD=13.3$ ) ( $t=5.35$ ,  $df=52$ ,  $p<0.001$ , two-tail).

### 13. EVALUATION OF DSM-III ANXIETY DISORDERS CLASSIFICATION WITHIN THREE SYSTEMS THEORY FRAMEWORK

In this section, scores of patients on FSAQ and TSAQ anxiety profiles and the most salient component of each sub-category of anxiety disorder will be investigated. Anxiety disorders will then be compared with each other to examine the differences and similarities between them regarding the manifestation of anxiety components. However, first of all, a general analysis of variance including different components of anxiety in each anxiety questionnaire in all of the six anxiety sub-categories will be performed.

#### 13.1. GENERAL EVALUATION OF ANXIETY DISORDER SUB-CATEGORIES

In this analysis of variance, six anxiety disorder sub-categories have been compared on each of the scales included in the study, i.e. FSAQ, TSAQ, CSAQ and both forms of STAI. Firstly, means and standard deviations of scores of each of the six sub-categories of anxiety disorder on all questionnaires have been calculated (Table-31). Anxiety profiles of each sub-category of anxiety patients on FSAQ and TSAQ have been obtained (Figures-8 and 9), and the analysis of variance was applied. The results (Table-32) indicated that in terms of overall



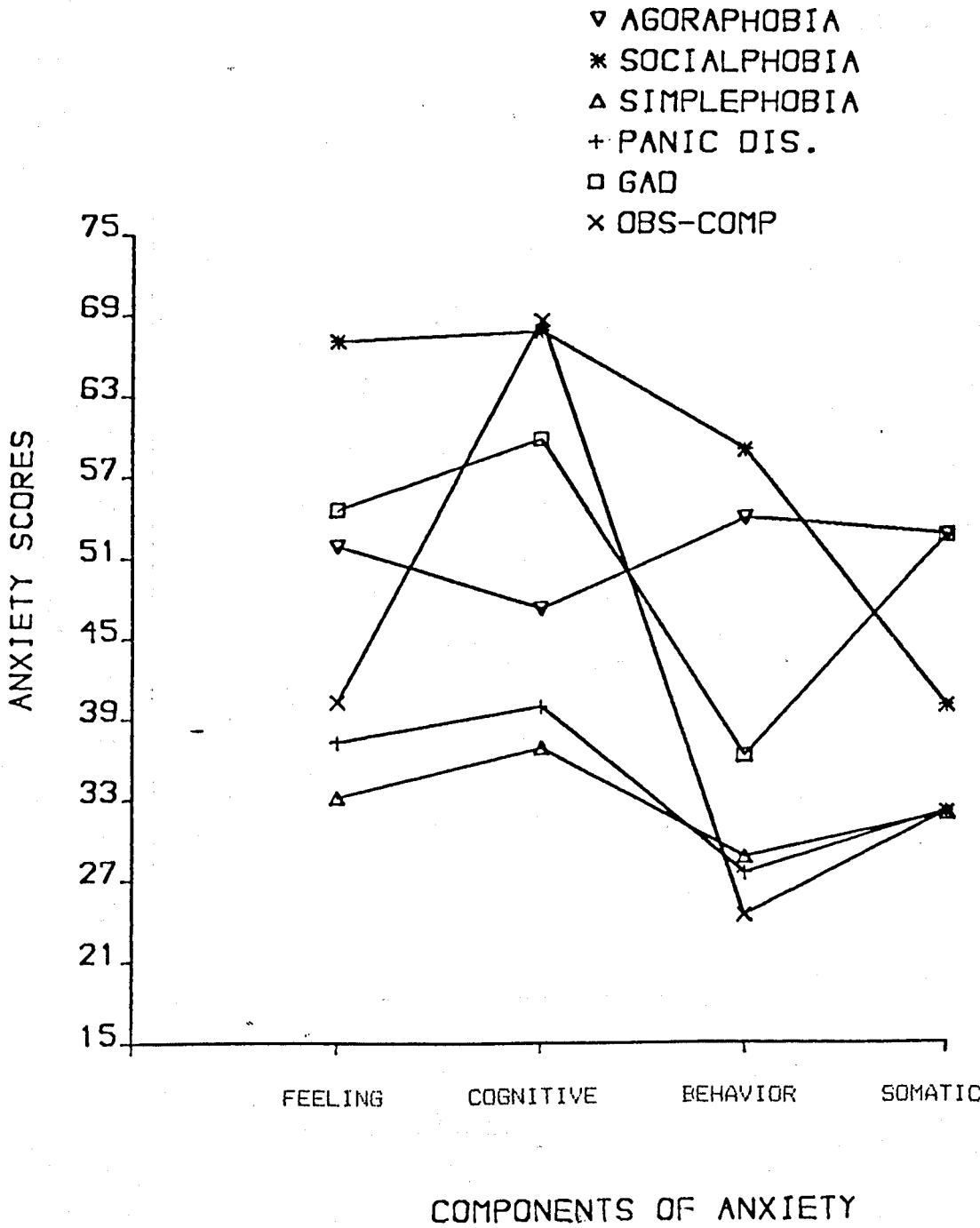


FIGURE-8 Anxiety profiles of each sub-category of DSM-II anxiety disorders assessed by FSAQ.

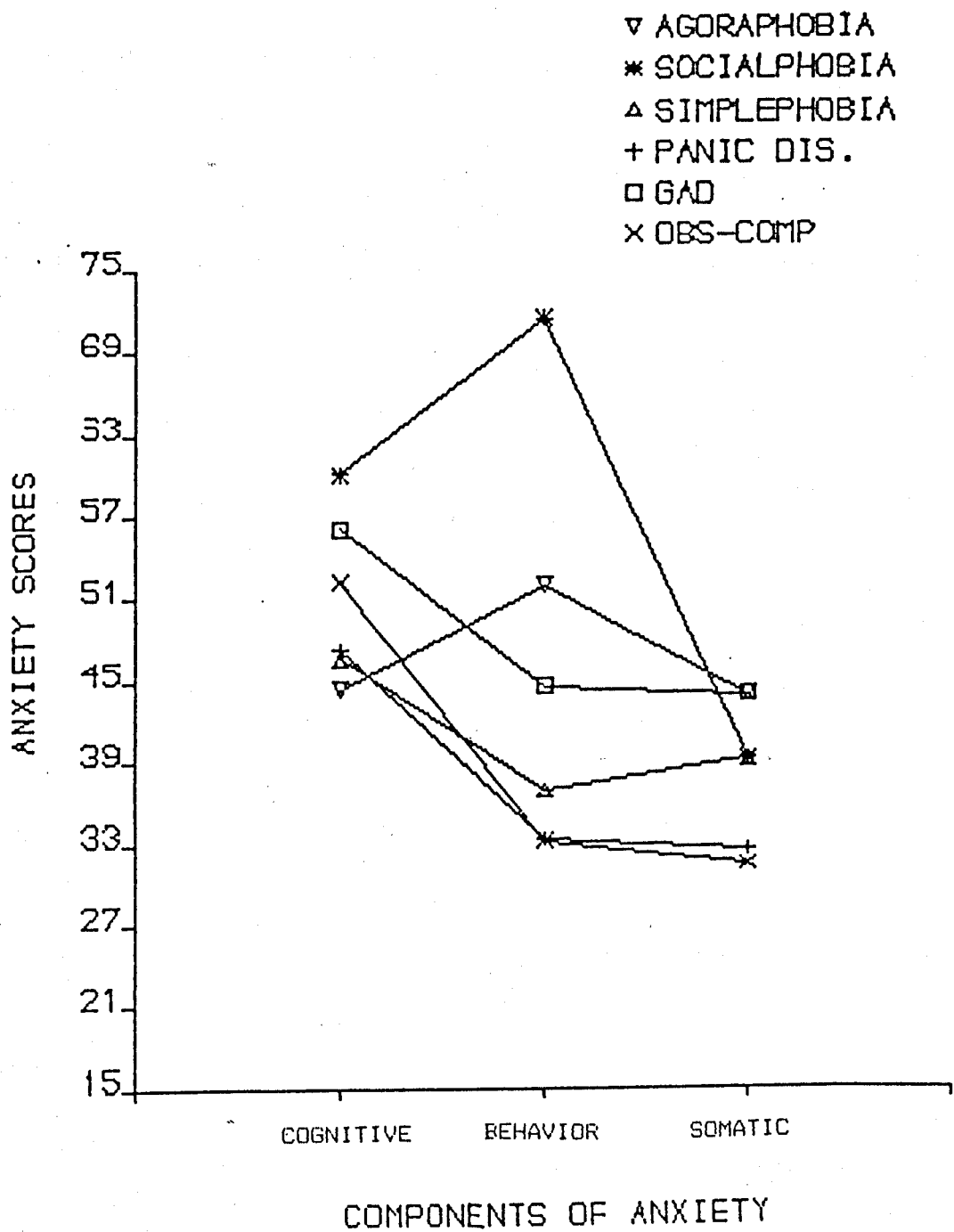


FIGURE-9 Anxiety profiles of each sub-category of DSM-II anxiety disorders assessed by TSAQ.

<u>VARIABLES COMPARED</u>	<u>DF</u>	<u>MEAN SQUARE</u>	<u>F</u>	<u>TAIL-PROB.</u>
FSAQ				
GROUPS	5	3842.96	3.68	0.006 **
ERROR	48	1044.54		
FC	3	2565.82	19.30	0.000 ***
FC X GROUPS	15	738.59	5.56	0.000 ***
ERROR	144	132.94		
TSAQ				
GROUPS	5	1307.34	1.45	0.222
ERROR	48	899.53		
TC	2	2458.77	16.20	0.000 ***
TC X GRUOPS	10	694.36	4.57	0.000 ***
ERROR	96	151.77		
CSAQ				
GROUPS	5	84.34	1.21	0.318
ERROR	48	69.59		
CS	1	210.07	6.91	0.011 *
CS X GROUPS	5	83.66	2.75	0.029 *
ERROR	48	30.41		
STAI- STATE				
GROUPS	5	937.40	4.27	0.003 **
ERROR	48	219.49		
STAI-TRAIT				
GROUPS	5	506.62	2.12	0.078
ERROR	48	238.76		

\*\*\* p<0.001

\*\* p<0.01

\* p<0.05

TABLE- 32 Analysis of variance comparison of six sub-categories of anxiety disorder in each anxiety questionnaire.

KEY TO TABLE

GROUPS= Six sub-categories of DSM-III anxiety disorders

FC= Four components of FSAQ

TC= Three components of TSAQ

CS= Cognitive and somatic components of CSAQ

anxiety, significant differences among the six anxiety categories on FSAQ and State form of STAI existed. In terms of the interaction between components of anxiety and different categories of anxiety disorders, FSAQ, TSAQ and CSAQ showed significant differences. The results indicate that comparison of sub-categories of anxiety disorder in terms of components of anxiety reveals the differences more clearly. The nature of anxiety in DSM-III anxiety disorder sub-categories was investigated further. The manifestation of anxiety, first, in each sub-category, second, across different sub-categories have been examined.

### 13.2. COMPARISON OF DIFFERENT COMPONENTS OF ANXIETY IN EACH ANXIETY DISORDER SUB-CATEGORY

The anxiety profiles of each sub-group of anxiety disorders are obtained by the scores on FSAQ and TSAQ (Figures- 8 and 9). The figures also indicated that profiles of the same groups of patients obtained by two different questionnaires (FSAQ and TSAQ) were similar. One-way analysis of variance was applied to each sub-category of anxiety disorders scores on FSAQ and TSAQ (Table-33). The results showed that differences between various components of anxiety of social phobic, GAD and obsessive-compulsive patients were significant on both questionnaires. The results of panic disorder patients were significant only on TSAQ but not on FSAQ. Analysis of variance results of agoraphobics and simple phobics were not significant on either of the scales. The results can be summarized as follows:

Agoraphobia : No significant differences among the components of anxiety were observed in either of the scales. The behavioral component appeared to be the most salient component of this anxiety disorder in both scales (FSAQ AND TSAQ).



<u>VARIABLES COMPARED</u>	<u>DF</u>	<u>MEAN SQUARE</u>	<u>F</u>	<u>TAIL-PROB.</u>
AGORAPHOBIA				
FSAQ	3	81.94	0.75	0.533
ERROR	27	109.76		
TSAQ	2	186.95	0.61	0.552
ERROR	18	305.01		
SOCIAL PHOBIA				
FSAQ	3	1684.12	9.98	0.000 ***
ERROR	27	168.76		
TSAQ	2	2715.16	15.85	0.000 ***
ERROR	18	171.45		
SIMPLE PHOBIA				
FSAQ	3	106.03	0.65	0.588
ERROR	27	162.01		
TSAQ	2	229.47	1.26	0.309
ERROR	18	181.42		
PANIC DISORDER				
FSAQ	3	214.16	1.49	0.25
ERROR	27	143.68		
TSAQ	2	481.93	7.04	0.001 **
ERROR	18	68.49		
GENERALIZED ANX. DIS.				
FSAQ	3	1036.30	10.33	0.000 ***
ERROR	27	100.29		
TSAQ	2	461.90	6.25	0.025 *
ERROR	18	73.86		
OBSESSIVE- COMP. DIS.				
FSAQ	3	2987.85	25.70	0.000 ***
ERROR	27	116.24		
TSAQ	2	1761.00	26.23	0.000 ***
ERROR	18			

\*\*\* p<0.001

\*\* p<0.01

\* p<0.05

TABLE- 33 Analysis of variance comparing components of anxiety on the scores of FSAQ and TSAQ in each anxiety sub-categories.

Social Phobia : In both scales (FSAQ and TSAQ) significant differences among the components were found. In FSAQ the feeling and cognitive components were the highest. In the TSAQ, however, the behavioral component was the highest.

Simple Phobia: Results of analysis of variance on FSAQ and TSAQ showed no significant difference between the components of anxiety. The cognitive component was found to be the most salient component of anxiety. Their scores on the behavior component were comparatively low.

Panic Disorder: Only analysis of variance results of TSAQ indicated a significant difference. Their highest score was on the cognitive component.

Generalized Anxiety Disorders: Analysis of variances in both scales (FSAQ and TSAQ) indicated significant difference among components of anxiety. This group of patients' highest anxiety score was on the cognitive component of anxiety in both scales (FSAQ and TSAQ).

Obsessive-Compulsives: The results of analysis of variance on both scales were significant. This group of patients revealed the most erratic anxiety scores across different components of anxiety in both scales. They scored very high on the cognitive component and very low on the others on FSAQ and TSAQ.

### 13.3 COMPARISON OF DIFFERENT COMPONENTS OF ANXIETY BETWEEN SUB-CATEGORIES OF ANXIETY DISORDER

To examine the differences between the six anxiety sub-categories in terms of components of anxiety, one-way of analysis of variance between the six categories on each component of anxiety scales was applied. The results (Table- 34) indicated that all components of FSAQ, and behavior component of TSAQ and state form of STAI were

<u>VARIABLES COMPARED</u>	<u>DF</u>	<u>MEAN SQUARE</u>	<u>F</u>	<u>TAIL-PROB.</u>
<b>FSAQ</b>				
FEELING	5	7075.04	3.83	0.005 **
ERROR	52	469.78		
COGNITIVE	5	1678.00	3.74	0.006 **
ERROR	52	566.65		
BEHAVIOR	5	1779.68	5.02	0.001 **
ERROR	52	491.31		
SOMATIC	5	907.31	3.33	0.012 **
ERROR	52	333.93		
TOTAL SCORE	5	936.51	3.57	0.008 **
ERROR	52	262.09		
<b>TSAQ</b>				
COGNITIVE	5	237.80	0.76	0.581
ERROR	50	304.07		
BEHAVIOR	5	1926.39	4.34	0.003 **
ERROR	50	591.51		
SOMATIC	5	319.31	1.01	0.419
ERROR	50	314.15		
TOTAL SCORE	5	416.89	1.47	0.217
ERROR	50	296.16		
<b>CSAQ</b>				
COGNITIVE	5	73.19	1.64	0.167
ERROR	51	47.31		
SOMATIC	5	39.65	0.94	0.459
ERROR	51	41.60		
TOTAL SCORE	5	120.72	0.90	0.48
ERROR	51	132.57		
<b>STAI</b>				
STATE	5	605.01	3.77	0.006 **
ERROR	50	204.92		
TRAIT	5	200.43	1.90	0.113
ERROR	50	114.87		

\*\*\* p<0.001

\*\* p<0.01

\* p<0.05

TABLE- 34 Analysis of variance comparison of six sub-categories of anxiety disorder patients on each component of anxiety questionnaires.

significantly different across six anxiety categories. The results have shown significant differences across sub-categories of anxiety disorder on the different components of anxiety scales. Nevertheless, the behavior component of anxiety differentiated sub categories of anxiety most significantly and consistently (on FSAQ and TSAQ).

Social phobics, apart from the somatic component, scored highest among all anxiety disorders (Figures 8 and 9). This was mainly due to the nature of items included in the questionnaire (specifically in FSAQ and TSAQ). Behavior and cognitive components of TSAQ and the cognitive component of FSAQ were related to anxiety in social situations. On the somatic component, agoraphobics scored highest and they were followed by GAD patients.

In the comparison of anxiety sub-categories, one important point is the difference between agoraphobia and generalized anxiety disorder patients. Although their total anxiety scores were very close to each other, agoraphobics scored higher on the behavior component but low on the cognitive component. On the other hand, the pattern was just the opposite for GAD patients, i.e. the cognitive scores were higher than the behavior scores. This situation indicates the usefulness of comparing different anxiety disorders in terms of components of anxiety rather than their overall anxiety scores.

Following DSM-III classification, the six sub-categories of anxiety disorder were re-categorised into two main groups of phobic anxiety disorders and non-phobic anxiety disorders (anxiety states). Means and standard deviations of each of the two groups on all anxiety scales were calculated (Table-35) and anxiety profiles were presented (Figures-10 and 11). T-tests between these two main groups on the components of anxiety (Table-35) were carried out. The results of t-tests (two-tail) indicated that these two major groups (phobic

	<u>PHOBIC</u>				<u>T-VALUES</u>
	<u>ANXIETY DISORDERS</u>		<u>ANXIETY STATES</u>		
	<u>MEAN</u>	<u>S.DEV.</u>	<u>MEAN</u>	<u>S.DEV.</u>	
FSAQ					
FEELING	51.3	22.3	45.2	21.4	1.03
COGNITIVE	51.2	23.0	57.1	24.2	0.91
BEHAVIORAL	47.7	21.9	31.5	19.9	2.88 **
SOMATIC	41.8	17.9	40.3	18.7	0.31
TOTAL SCORE	48.0	17.7	43.7	18.6	0.85
TSAQ					
COGNITIVE	52.3	18.1	54.2	17.6	0.39
BEHAVIOR	54.1	26.2	37.8	19.5	2.54 *
SOMATIC	44.0	18.6	36.7	17.4	1.45
TOTAL SCORE	50.8	17.1	42.9	16.7	1.67
CSAQ					
COGNITIVE	21.9	6.6	22.9	7.7	0.54
SOMATIC	19.9	6.1	18.7	7.5	0.65
TOTAL SCORE	42.1	10.9	41.1	12.4	0.31
STAI- STATE	49.9	14.1	49.1	14.7	0.20
STAI-TRAIT	54.4	11.4	53.7	10.0	0.29

\*\* p<0.01

\* p<0.05

TABLE-35 Comparison (t-test) of the two main groups of anxiety disorders by all anxiety scales included in the study.

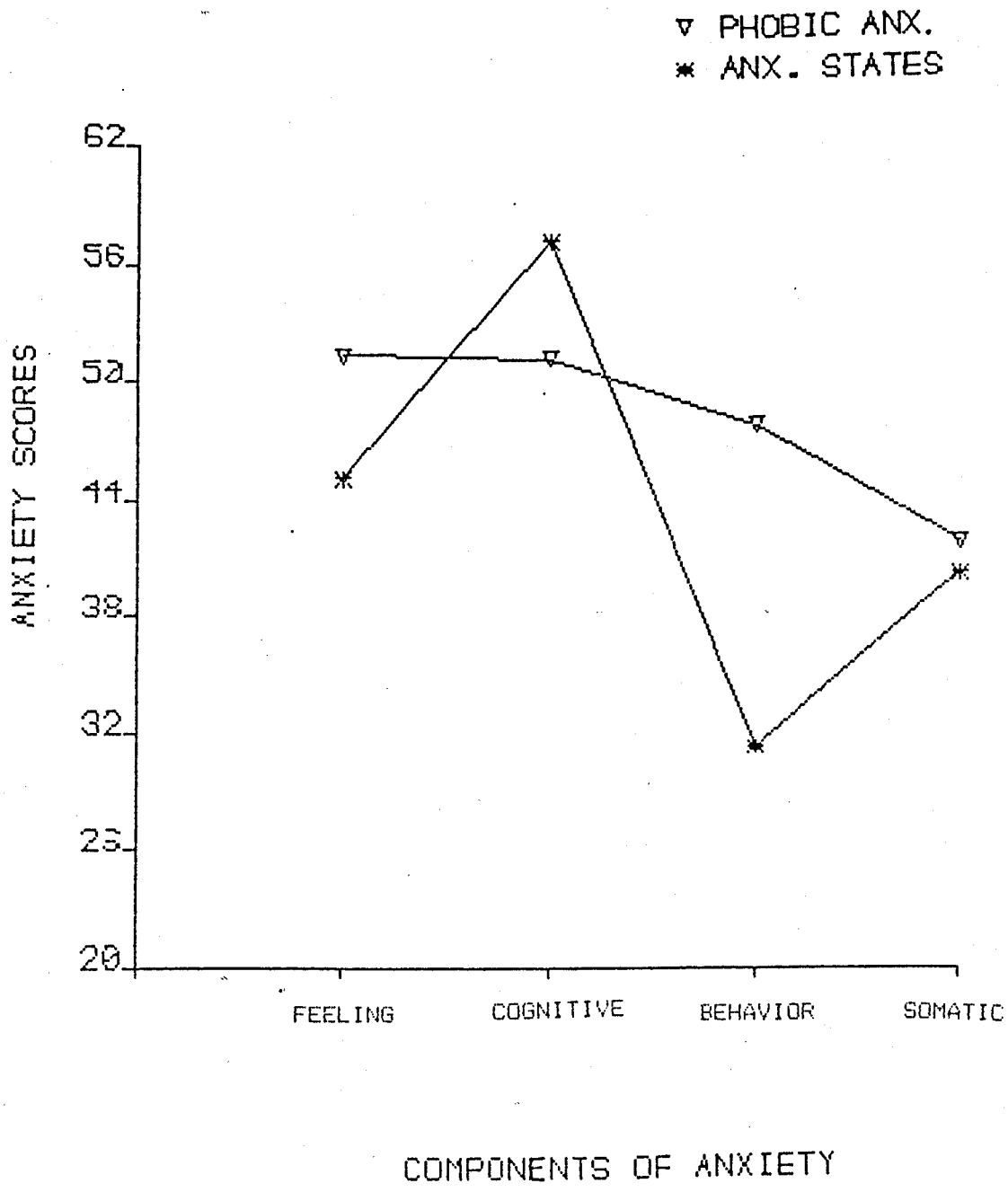


FIGURE-10 Anxiety profiles of phobic disorders and anxiety states patients assessed by FSAQ.

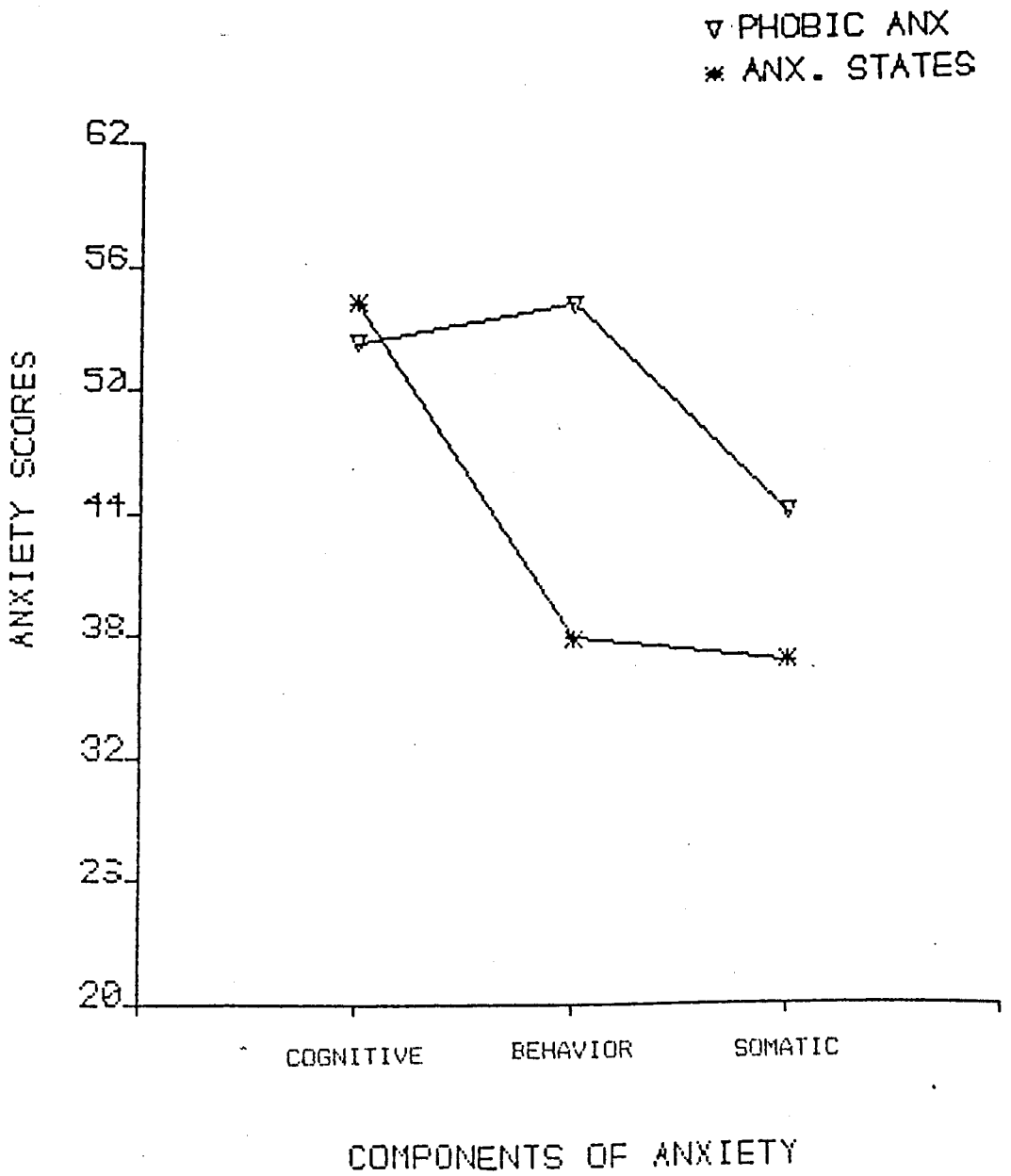


FIGURE-11 Anxiety profiles of phobic disorders and anxiety states patients assessed by TSAQ.

anxiety disorders and anxiety states) were significantly different on the behavior component of the scales (FSAQ and TSAQ) alone.

Very high behavioral avoidance scores (as measured by FSAQ and TSAQ) of agoraphobics and social phobics in comparison to the rest of anxiety disorders were obvious (Figures-8 and 9). Low scores of simple phobic patients on the behavior components of these anxiety scales were caused by the structure of items in FSAQ and TSAQ and the discrete nature of simple phobias. The results obtained up this point indicated that though variation among anxiety sub-categories in the manifestation of anxiety exists it is most significant on the behavioral component of anxiety. On this component, as assessed by FSAQ and TSAQ, phobic disorder patients scored significantly higher than the anxiety states, even though simple phobics tended to score low.

#### 14. Summary

A- There were no differences among sub-categories of anxiety disorder in terms of age, length of therapy or severity of problem.

B- Patients' self-diagnoses (primary) were moderately correlated with the clinicians' diagnoses.

C- Reliability and validity levels of the anxiety questionnaire (FSAQ) developed in this study were satisfactory.

#### D- Feeling and Cognition

a- Overall sex differences were found to influence the interaction between feeling and cognitive components of anxiety assessed by FSAQ. Such differences were significant in the group of university students but not in the anxiety patients. The absolute difference between males and females on the feeling and the cognitive components was higher in the anxiety patients than that in the university students. This difference did not reach the level of



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significance in the anxiety patients, probably owing to the low number of subjects in this group.

b- The interaction between the feeling and the cognitive components of anxiety was significant across two groups of anxiety disorders (1-obsessive-compulsives, 2-Rest of anxiety patients).

E- Each anxiety disorder's manifestation of anxiety across various components was different in a way reflecting the clinical understanding of each anxiety disorder. For example, agoraphobics showed more evenly distributed profiles indicating high levels of anxiety on each component but a specifically high level of anxiety on the behavioral and somatic components in comparison with other anxiety sub-categories. Obsessive-compulsive patients, on the other hand, revealed very high levels of anxiety on the cognitive component only and showed low levels of anxiety on the other components. An unexpected finding was low scores of PD patients, specifically on the somatic components of the scales.

F- When anxiety disorders were compared among themselves in terms of the manifestation of anxiety, social phobics showed the highest level of anxiety on every component except the somatic. On the somatic component agoraphobics together with GAD patients revealed the highest anxiety. Obsessive-compulsive patients showed very high on the cognitive component and considerably low on the remaining components of anxiety. Simple phobics, as expected, and panic disorders patients, surprisingly, were the categories with the least levels of anxiety.

G- The behavior component appeared to be the component of anxiety which most clearly differentiated phobic disorders from anxiety states. In a way this result supported the classification of anxiety disorders into two major categories, in terms of presence or absence of avoidance behavior, as indicated by DSM-III.

## D I S C U S S I O N

In this section the order of the discussion will follow that of results presented in the previous chapter.

### 15. DEMOGRAPHIC FACTORS

An important point was the severity level of different anxiety disorder patients as assessed by the clinicians. The results indicated that all six anxiety disorder groups had similar severity ratings. If the severity ratings of the anxiety disorders had been different, it would have been difficult to interpret the observed differences between the anxiety disorders, because of the confounding effect of anxiety severity across the various sub-groups. Having found no significant difference amongst the six anxiety disorders on the severity level, we can be more confident that the observed differences are due to the nature of anxiety in each anxiety disorder.

### 16. COMPARISON OF PATIENTS' SELF-DIAGNOSIS WITH CLINICIANS'

#### DIAGNOSES

In this research a self-diagnostic method and the clinicians' diagnoses were compared. In the self-diagnostic form six brief statements describing each of the DSM-III anxiety disorder sub-categories were presented. The clients were required to tick two items that best represented their problem. In the present study the aim of applying the self-diagnostic form was to obtain some idea of the patients' conception of their problem, and how closely it was related to the clinicians' view.

The results showed that when anxiety patients are given the opportunity to select the diagnoses best suited to their problems,

their choices are similar to the clinicians' diagnoses. In the present study correlations (kappa) between anxiety patients' primary self-diagnosis and the clinicians' primary diagnoses ranged from 0.38 (for GAD) to 0.92 (for obsessive-compulsives) for different categories of anxiety disorders (Table-9). These figures indicate that patients' self diagnoses were moderately related to clinicians' diagnosis.

## 17. PSYCHOMETRIC EVALUATION OF FSAQ

### 17.1. RELIABILITY

First of all, the FSAQ which was developed in this study has been proved to be psychometrically satisfactory. Studies on the internal-consistency (split-half reliability) indicate that each of the four parts of the questionnaire and the scale as a whole is reliable. In this study the split-half reliability of the questionnaire has been calculated. The reasons underlying the selection of this type of reliability were related to the easy application and widespread acceptance of this type of reliability (Black and Champion, 1976). As presented in the results section, the figures that were obtained indicated that the FSAQ has a satisfactory level of reliability.

### 17.2 VALIDITY

FSAQ also proved to have satisfactory validity. The validity of the questionnaire was evaluated using two different approaches, concurrent and criterion related validity:

#### 17.2.1. Concurrent Validity

To assess the level of concurrent validity of the FSAQ the correlations between this anxiety scale and the TSAQ, CSAQ and STAI were calculated (Tables-16 and 17). Total anxiety levels as measured by

the FSAQ and TSAQ were found to be highly correlated ( $r=.85$ ). Furthermore, the corresponding components of anxiety between the two questionnaires had higher correlations with each other than the correlations between non-corresponding components (see Table-16). The finding of high correlations between the same components of anxiety in two different types of anxiety questionnaires indicate that different components of anxiety (as supposedly measured by the FSAQ) have satisfactory levels of validity. It is important to bear in mind that the two anxiety questionnaires (FSAQ and TSAQ) were developed through different techniques. The TSAQ is a Likert-type scale and the three components of anxiety that it claims to measure have been developed through a factor-analytical study. The FSAQ, on the other hand, is a Thurstone-type scale and the verification of the four components was obtained through a sorting technique. Obtaining high correlations between the two anxiety scales on the same anxiety components may indicate the actual validity of dividing anxiety into at least three relatively independent components.

Correlations between the FSAQ and CSAQ indicate a moderately strong relationship between the two scales. The highest correlation, however, was obtained between the cognitive component of both scales ( $r=.75$ ).

The correlation results between the FSAQ and both forms of STAI suggests that the type of anxiety assessed by the FSAQ was an anxiety trait type as opposed to an anxiety state. This conclusion holds true not only for the level of anxiety assessed by each of the four components but also the total score of the FSAQ (Table-17). When the high correlation between FSAQ and TSAQ is taken into consideration, the strong relationship between the trait form of STAI and FSAQ becomes more meaningful. Mackay and Liddel (1986) reported that anxiety

assessed by TSAQ was highly related to the trait-type measured by STAI.

Overall, examination of the concurrent validity of the FSAQ indicates that the questionnaire has a satisfactory level of validity, and that the FSAQ assessment of anxiety is similar to the trait anxiety measured by STAI.

#### 17.2.2. Criterion Validity

The other type of validity, criterion related, also indicates that the FSAQ is capable of differentiating an anxious population from a non-anxious population. Anova results indicate that the differences between anxious subjects (anxiety patients) and non-anxious subjects (university students) on total anxiety scores of FSAQ and on each of the four components of the FSAQ were significant.

#### 17.3. ASSESSMENT OF PRE-POST TREATMENT ANXIETY LEVELS OF AGORAPHOBIC PATIENTS BY FSAQ

FSAQ was applied to agoraphobic patients in another study, to examine whether it was able to assess the differences in the anxiety levels of patients before and after behavioral treatment. The results showed that patients' scores after the treatment were significantly lower than before the treatment. The only exception to this was the score on the cognitive component of FSAQ. Although after treatment scores of the patients on this component were clearly lower than their scores before the treatment ( $X=35.2$  before and  $X=24.3$  after) the difference did not reach the level of significance. One possible reason for obtaining a non-significant result on this component was the inclusion of a low number of subjects.

#### 17.4. CONCLUSION

The reliability and validity evaluations indicate that the scale is psychometrically sound. One reservation can be made regarding the lack of items with very high scale values (weight). Items that occupied the higher end of the scale values had weights around 8.5. The scale included no item having a scale value of more than 9. This lack of items with very high scales values (10 or 11) can be thought to reduce the variance in subjects' scores. However, evaluation of FSAQ indicated that the scale was well able to discriminate an anxious subject group from a non-anxious subject group. Therefore, this shortcoming is considered to have no important effect in the assessment of subjects by FSAQ.

In the light of the present findings, it can confidently be stated that the FSAQ appears quite satisfactory in terms of validity and reliability levels. Furthermore, FSAQ was observed to be sensitive to the changes in the anxiety levels of agoraphobic patients before and after treatment, though the number of patients was low. The scale, therefore, can be considered as a useful instrument in the assessment of anxiety.

#### 18. FEELING (AFFECT) AND COGNITION

As noted by the present author and by others (Zajonc, 1980, 1984; Lewis, 1983) the relationship between cognitions and feelings is one of the unresolved issues in psychology, specifically in clinical psychology. One viewpoint (Zajonc, 1984) that has recently gained increased acceptance, indicates that the interaction between feeling and cognition is not as one directional and simple as cognitive therapists advocate. Cognitive therapists have claimed that affective responses (feelings) are directly determined by cognitions, thus, affect is regarded as an epiphenomenon i.e., affect develops only after

cognitive processes have operated. As such, affect is regarded as of secondary importance and a causal role is attributed to cognitions. Therapists who adhere to the cognitive camp claim that the way in which a person thinks about a given event determines his/her feelings related to that event (Beck, 1976). Cognitive therapists think of the relationship between feelings and cognitions as unidimensional. They think that increases in negative ideation will directly lead to increased levels of feeling in general. Although such a claim has a substantive validity (Beck and Emery, 1979), it may be an over-simplification of the cognition-affect interaction. As presented in the introduction chapter, other psychologists (Zajonc, 1984; Plutchik, 1980) have indicated that feeling can influence cognitions. Some psychologists suggest that the interaction is not as one sided as cognitive therapists believe (Rachman, 1981), while others claim that perhaps it is affect which distorts cognitions rather than vice versa as suggested by cognitive psychologists (Lewis, 1983).

The purpose of this research was to investigate whether or not affect and cognition operate relatively independently of each other.

The author of this study concurs with those psychologists who oppose the rather one sided conceptualization of cognitive therapists, that changes in cognitions are not necessarily and immediately followed by changes in feelings. Some other elements, such as personality traits, gender, defense mechanisms employed or hemispheric dominance may play a part in this process. If the assumption of cognitive therapists is correct i. e. if feelings are directly influenced by cognitions, then high scores on the cognitive component of anxiety should be followed by high scores on the feeling component of anxiety. Conversely, low scores on the cognitive component of anxiety should be followed by low scores on the feeling component. These factors will



operate regardless of any intervening variables, such as, the influence of sex differences on personality structure.

In this study male students scored higher on the cognitive component while females scored higher on the feeling component. Furthermore, the difference between the cognitive and the feeling components of anxiety of male subjects was higher than that of female subjects. The findings indicate that males cognitively experience anxiety in terms of negative expectations and ideations, and report much less anxiety in the feeling domain. Females, on the other hand, cognitively experience anxiety at a lower level than males, and by comparison with male subjects score higher in the feeling component of anxiety. Similar findings were obtained in the comparison of obsessive-compulsive patients with the rest of the anxiety disorder patients. The difference between the cognitive and feeling components of anxiety was higher in the obsessive-compulsive patients than in the remainder of the anxiety patients. Comparison of the manifestation of anxiety in obsessive-compulsive patients and the rest of anxiety disorder patients on the feeling and cognitive components of FSAQ produced similar results to the comparison of female and male scores on these components. Obsessive patients scored very high on the cognitive component of FSAQ, in fact, their mean score on the cognitive component was the highest of all the anxiety sub-categories. However, they scored much lower on the feeling component, thus exhibiting a significant difference between the scores on these two components of anxiety. By contrast, the anxiety scores, as measured by FSAQ, of the remainder of anxiety disorder patients on the feeling and cognitive components were not significantly different. These findings suggest that it is not quite appropriate to postulate a simple and straightforward relationship between affect (feeling) and cognitions in general, and affective and cognitive components of anxiety in particular. These

results also provide support for the conceptualization of affective and cognitive processes as interacting but relatively independent.

If the claims of cognitive therapists are valid, male subjects and obsessive-compulsives who scored high on the cognitive component of anxiety should also have scored high on the feeling component assuming that people's feelings are determined directly by their thoughts and assumptions. The reverse could be expected for females and remaining anxiety patients, since their overall score in the cognitive component is lower than the males' and obsessive-compulsives' scores, and they should therefore score lower in the feeling component of anxiety. However, as noted above, the results of this study indicate that the relationship between cognition and feeling was not so straightforward. Thus, the overall findings of this research have provided credence to the conceptualization of affect and cognition in terms of two interacting systems, as originally put forward by Zajonc (1980).

The findings of the present study related to the interaction of affect and cognition in obsessive-compulsive patients have supported the claims of Freud. The results indicate that obsessive-compulsives can be distinguished from other anxiety disorders in terms of excessive use of the isolation defense mechanism. The dominance of the isolation defense mechanism manifests itself in a great difference between the cognitive and feeling components of FSAQ in these patients.

A short review of the literature indicates that from an evolutionary point of view, affects can be considered as taking precedence over cognitions (Plutchik, 1980). Such a view assumes that in a new born baby no a priori cognitive structures exist apart from the inborn structures which receive and process incoming stimuli. The cognitive structures, such as thinking, judging etc. develop later through the interaction between the infant and the external environment. The main ingredients of this interaction are the sensation

of pleasure and unpleasure (Fenichel, 1945; Sutherland, 1963). A baby does not initially know that his/her mother is good. This idea develops in his/her mind because the presence of his/her mother brings pleasure by satisfying the needs of the baby. Humans do not stagnate in this phase of development where feelings of pleasure and unpleasure play the determining role in all of their mental processes. Later, with the development of intellectual structures (especially of thought) the relationship between cognitions and feelings becomes more complicated. Cognitions begin to exert an influence over feelings (affect) acting as an inhibitory agent. To what extent cognitions exert an influence over affective states is difficult to determine. All that can be stated is that such relationships are difficult to conceptualize as one sided and simple, because their very nature is largely based on each individual's personality structure which are determined by the unique way of gratification of his/her instinctual needs via interaction with his/her environment.

The relationship between affect and cognition can be investigated from a neuropsychological point as well. Lateralization studies already offer some explanation. Buffery and Gray (1972) have claimed that females show reduced cerebral lateralization of function in comparison with males; that means, the left hemisphere which organizes mainly cognitive processes, is less dominant in females. This point may be considered as another explanation of males showing higher discrepancy between feeling and cognitive components of FSAQ than females. However, the data supporting such a claim are equivocal and the issue is accepted as inconclusive at present (Beaton, 1985).

In this research the application of FSAQ to male and female students and patients has found, contrary to the cognitive therapists' assumptions, that the high levels of anxiety expressed in the cognitive component are not directly followed by high levels of anxiety expressed

on the feeling component. Therefore, some intervening variables between the feeling and cognitive components could be considered to be playing an important role. In the present study sex-differences (because of their implications for different types of personality structures in psychoanalytic theory) have been employed as a factor influencing the relationship between cognitions and feelings. The results indicate that although the overall anxiety levels of males and females were almost identical, females scored higher on the feeling component of anxiety while male scores were higher on the cognitive component of anxiety. Furthermore, the difference between the cognitive and feeling components of anxiety of male subjects was found to be significantly greater than that of female subjects, indicating that the relationship between the feeling and cognitive components has been influenced by gender differences. The finding of significant differences between male and female subjects (university students and patients) and between obsessive-compulsives and the rest of DSM-III anxiety disorder patients, not on the over-all anxiety scores but on the feeling and cognitive components, indicates the significance of assessing the feeling and cognitive components of anxiety separately.

#### 18.1. EXPLANATION OF THE DIFFERENCE BETWEEN FEELING AND COGNITION

The difference between scores on the feeling and cognitive components of anxiety of males and females may be related to personality structure. Males are thought to be similar to obsessive-compulsive types who are characterised by an over emphasis of cognitive (intellectual) processes and suppression of affect due to the utilization of the isolation defense mechanism. Therefore, males are expected to exhibit a greater difference between the cognitive and affective components of anxiety. On the other hand, the female

personality structure is conceptualized as being similar to that of hysterics, being characterised by an over emphasis of affect. Consequently, females in comparison to males, are expected to indicate less difference between cognitive and affective components of anxiety.

The finding of a significant difference between male and female scores on the difference between cognitive and affective components in the expected direction provides more support for the affiliation of male personality with obsessive-compulsive and female with hysterical as originally put forward by Freud (1926). The comparison of the manifestation of anxiety in obsessive-compulsive patients and the other anxiety disorder patients on the feeling and cognitive components of FSAQ produced similar results to the comparison of male and female scores on these components. Obsessive patients scored very high on the cognitive component of FSAQ, in fact, their mean score on the cognitive component was the highest of all the anxiety sub-categories. However, their scores were quite low in the feeling component, thus exhibiting a significant difference between the scores on these two components of anxiety. By contrast, anxiety scores, as measured by FSAQ, of the remainder of anxiety disorder patients on the feeling and cognitive components were not significantly different.

It is difficult to explain these results solely in terms of the socialization process, since the male-female ratio was similar for both diagnostic groups (2 males and 6 females in obsessive-compulsives and 16 males and 30 females in remainder of anxiety patients). As noted previously Gur and Gur (1975) indicated that obsessive-compulsive people usually have left brain dominance, as opposed to people with hysterical trends who indicate a right brain dominance. In the light of this finding, it may be suggested that obsessive-compulsive patients who have left brain dominance, express their anxiety more in the cognitive domain. Counteracting this assumption, lateralization

findings (Hoyenga and Hoyenga, 1979) related to sex-differences indicate that males are more lateralized than females. So, it follows that females are likely to show little discrepancy between cognitive and feeling components. Males on the other hand, being more lateralized, will tend to exhibit a larger difference between the cognitive and feeling components. Because the majority of patients in the obsessive-compulsive category were female (6 out of 8) the difference between the cognitive and feeling components of anxiety would have been expected to be minimal in the patients of this category. However, the present results indicated that the difference between the feeling and cognitive components of the FSAQ of obsessive patients was significantly larger than the difference between the same components of the FSAQ in the rest of anxiety disorders patients. This finding indicates that sex differences alone may not account for the differences between cognitive and feeling components of FSAQ. Otherwise, a predominantly female obsessive-compulsive group would not exhibit such a large discrepancy between the feeling and cognitive components of FSAQ.

In the light of the information presented above, the explanation of the difference between the cognitive and feeling components of the FSAQ for both subjects groups (males-females, obsessive-compulsive and rest of anxiety patients) in terms of personality structures and variations in the socialization process seems more plausible.

## 18.2. THE LIMITATIONS OF THE PRESENT STUDY

A- Sex differences on the feeling and cognitive components of FSAQ were compared in two different subject groups, university students and anxiety patients. Neither of these groups is necessarily representative of the normal male and female population, but rather skewed in nature. Therefore results obtained may not be a proper

reflection of male and female differences on the feeling and cognitive components of FSAQ. The reason for selection of university students and anxiety patients was related to easy access to these groups, and also it was assumed that types of the subject groups would not influence male female differences on the feeling and cognitive components of FSAQ. However, application of FSAQ to subjects who better reflect "normal" population is necessary for the verification of the results obtained in the present study.

B- The application of a questionnaire to measure the different response channels (affective and cognitive) can be criticized on the grounds that the questionnaire itself operates on a single response channel e.i. verbal-cognitive. The use of a questionnaire can be seen as obtaining information about cognitive and affective processes through a verbal-cognitive filter. Nevertheless, such an argument need not necessarily weaken the basis of this research, it may, in fact, increase the validity of the present findings. If the affective and cognitive systems are found to be relatively independent under circumstances where both affective and cognitive information passes through a verbal-cognitive filter, then the independence of the two systems may be even more obvious than the findings of this research indicate.

C- Another problem in the present study relates to the possible limitations of information obtained by questionnaire. Questionnaires are a subjective method of measuring psychological constructs, relying solely on the self-reports of subjects. Therefore, the level of accuracy of the information provided can easily be manipulated by the subjects themselves. This implies that the lower scores of male subjects in the emotionality component may be due to their active avoidance of the items measuring levels of feeling in the experience of anxiety. This may be because emotionality is often regarded as

incompatible with accepted masculinity. Low scores in the affective component of the anxiety questionnaire may thus not reflect the true personality structure of males but, instead, may indicate that male subjects are reluctant to reveal their emotionality. This is a drawback related to self-report information gathering techniques. To ensure that the sex differences found in this study are the true reflections of the differences between males and females, less obvious ways of measuring the same concepts could be employed, such as the use of projective techniques. These techniques leave little room for the subject to distort the information about himself. Fortunately, the application of projective techniques and dream analysis has also indicated that the female personality structure, in comparison to the male, is more emotionally dominated (Lewis, 1981).

In short, in spite of some shortcomings of the study, the results indicate that some grounds can be found to suggest feeling and cognition as interacting but relatively independent systems. The findings also suggest that some variables can influence the relationship between affect and cognition. In the present research (male vs female and obsessive-compulsives vs remaining anxiety disorders) personality factors have been found to have an important effect on this relationship. However, their influence can be explained by various perspectives e.g. defense mechanisms, socialization, lateralization.

### 18.3. CONCLUSION

First of all, it should be noted that the view adopted by the present author does not aim to degrade the importance of cognitions at the expense of emphasizing affect. Nor is the aim to suggest that feeling and cognition are two totally independent systems. As can clearly be seen in Table - 13 the correlation between the feeling and



cognitive components of the FSAQ is highest in comparison to the correlation between the other components of the same questionnaire. In the present study it has been argued that feeling (affect) is not an epiphenomenon. Contrary to the cognitive therapists' claim which places feeling under the control of cognitions, the author suggests that feeling and cognition should be conceptualized as partially interacting but partially independent systems. Furthermore, the relationship between feeling and cognition is thought to be influenced by various intervening variables. In this study, individual personality traits and the type of defense mechanisms employed have been considered to be important variables influencing the relationship between cognition and affect. After the conceptualization of feeling and cognition as two relatively independent systems, it is possible to suggest that certain individuals may be more affectively oriented whereas others may be cognitively oriented.

The investigation of the relationship between the affective and cognitive components of anxiety has some implications for the treatment methods used to alleviate anxiety problems. If the cognitive therapists' claim that the feelings of people are directly and always influenced by their cognitive structures needs to be reconsidered and the role of intervening variables needs to be recognized, then it would be better not to apply routine cognitive therapy techniques to every case. Rather, it may prove to be more effective to adopt an eclectic and flexible approach, to take the peculiar relationship between the affect and cognition of each individual into account and thus to design an intervention strategy accordingly. As noted previously, some people are more affectively oriented, others more cognitively. For those people whose experiences are dominated by their affective system, more direct ways of dealing with the problematic affect may be the choice of treatment. In psychoanalytical therapy, affect is given the determining

role in the manifestation of anxiety problems as in any psychological problem. Re-experiencing the original problem in the therapy has been conceptualized as an important therapeutic step (Alexander, 1963). Thus, depending upon each individual's personality makeup, the therapist may plan his/her intervention strategy, whether cognitive structures would be the main treatment targets or whether the case requires a mixture of analytical-cognitive intervention strategies. In this way feeling (affect) can be incorporated into the Three Systems approach as a fourth component.

The results of this study support the idea of conceptualizing feeling as a relatively independent system. It follows that the therapy method suitable to patients who manifest their anxiety more evenly on both of the components may be different from those applied to patients who experience their anxiety mainly on the cognitive or feeling component. Thus, the assessment of affective and cognitive experiences of anxiety can be useful for the selection of effective treatment techniques for different individuals.

## 19. EVALUATION OF DSM-III ANXIETY DISORDERS WITHIN THE FRAMEWORK OF THREE SYSTEMS THEORY

The other aim of this study was to investigate the manifestation of anxiety from the Three Systems Theory point of view, both within each anxiety disorder and across the different anxiety disorder sub-categories as delineated by DSM-III.

### 19.1. COMPARISON OF THE COMPONENTS OF ANXIETY WITHIN EACH ANXIETY DISORDER SUB-CATEGORIES

Research on the Three Systems Theory started in 1974 and intensified during the early 1980. The main interest lay both in the individual response patterns and their effect on the outcomes of

different psychotherapy methods, and in the importance of synchrony and desynchrony for treatment outcome. No research to date has investigated anxiety response profiles. Referring to the lack of investigation in this area, Michelson (1984) stated that "examination of individual differences, response profiles and treatment consonance may decrease heretofore unexplained treatment outcome variance in comparative outcome studies. However, it will be necessary to construct response profile typologies for each of the separate anxiety disorders as their specific patterns, etiological, maintenance and treatment parameters may differ widely" (p. 358). Thus, an aim of this research has been to fill this gap in the anxiety research.

The results showed that apart from agoraphobia and simple phobia, differences between the different components of anxiety in each of the six sub-groups of anxiety disorder were significant. The nonsignificant differences across components of anxiety in agoraphobics were expected since agoraphobics were thought to score high on each anxiety component (Barlow, 1985).

Patients diagnosed as social phobics scored very high on the feeling and cognitive components of FSAQ. In the TSAQ, however, the behavioral component was the highest. The reason for having highest anxiety scores on the cognitive and feeling components of FSAQ but on the behavior component of TSAQ was probably related to the nature of items in the scales (FSAQ and TSAQ). The behavior component of TSAQ was reported to assess avoidance in specifically social situations, while the behavioral component of FSAQ measures general avoidance in everyday life.

Simple phobics scored the lowest anxiety scores among all six sub-categories of anxiety disorders, especially on FSAQ. As expected, their scores on the behavior component were considerably low on both scales (FSAQ and TSAQ), because both of the anxiety scales measure

behavioral avoidance in general or in social situations. Simple phobics, having a circumscribed avoidance behavior which is object or situation specific, were bound to score low on the behavior component of both scales.

Panic disorder patients together with simple phobics exhibited the lowest levels of anxiety on both scales (FSAQ and TSAQ). Their low scores specifically on the somatic components of FSAQ and TSAQ were unexpected. The anxiety profile of panic disorder patients reflected ambiguity regarding the nature of this anxiety disorder in the literature (Turner, Williams, Beidel and Mezzich, 1986). This issue will be elaborated in the following pages.

Generalized anxiety disorder patients scored high on all components apart from the behavioral. Their low scores on the behavior component was apparent especially on FSAQ.

Obsessive-compulsive patients showed the most drastic changes across components of anxiety, scoring very high on the cognitive component and low on the remaining ones. The most interesting finding related to the manifestation of anxiety of this category of patients was the relationship between their cognitive and feeling scores. As noted elsewhere in the thesis they exhibit a very high discrepancy between these two components of anxiety.

The overall findings indicated that each anxiety disorder, as defined by DSM-III, had a different anxiety profile peculiar to the nature of the disorder.

The obtained anxiety profiles for each disorder give an idea of the type of anxiety treatment best suited for that anxiety disorder. On the basis of these findings it can be claimed that for agoraphobics who score relatively high on each component of anxiety a more comprehensive treatment package which includes behavioral, cognitive, analytical and pharmacological approaches may be more appropriate, whereas for

obsessive-compulsive patients who manifest their anxiety mainly on the cognitive component a mainly cognitive approach may be more effective. For social phobics, cognitive behavior modification may be the best suited treatment since their anxiety reaches its peak on the cognitive and behavior components. For GAD patients, who score high on the cognitive and somatic components, cognitive therapy supplemented with relaxation training and pharmacological treatment may be more suitable. However, in order to substantiate the finding of different anxiety profiles for different anxiety disorders obtained in the present research, further studies with more subjects are needed. Moreover, comparative studies investigating the effect of different therapeutic approaches on different anxiety disorders are also necessary. In this way, the effect of different therapy methods on alleviating the different components of anxiety can easily be observed.

#### 19.2. COMPARISON OF THE COMPONENTS OF ANXIETY BETWEEN ANXIETY DISORDER SUB-CATEGORIES

One of the main innovations introduced by DSM-III is firstly, the separation of anxiety disorders into the two main categories of phobic anxiety disorders and non-phobic anxiety disorders (anxiety states), and secondly, a further breakdown of each of the two main categories into three sub-categories. The logic behind the division of anxiety disorders into two main categories came from the fact that certain sub-categories of anxiety disorders showed clear avoidance behavior, whereas in the other sub-categories there was no clear avoidance behavior but either episodic or chronic anxiety states.

The results of the present research support the idea of dividing the anxiety disorders into two main categories. Behavioral avoidance was found to be the only discriminating factor among the six anxiety disorders. Agoraphobia and social phobia patients scored very high on

the behavioral components of the both scales (FSAQ and TSAQ). GAD, panic disorder and obsessive-compulsive patients, on the other hand, scored considerably low on this component of anxiety. Furthermore the behavioral scores appeared to be the only significant difference between phobic anxiety disorders and anxiety states. Simple phobics, as indicated before, were also found to have low scores on this component. But these low scores were in fact expected, given the very circumscribed nature of the phobic avoidance and the nature of behavioral anxiety (general avoidance in everyday situation) assessed by the questionnaire.

In the present research social phobic patients exhibited the highest level of anxiety among all the six disorders on overall anxiety and on the cognitive and behavioral components of anxiety on both of the scales (FSAQ and TSAQ). Agoraphobic patients showed the highest level of anxiety on the somatic component, and they were followed by GAD patients. Obsessive-compulsive patients, as expected, showed very high levels of anxiety on the cognitive component but less on the other components. Profiles of simple phobics and panic disorders were similar to each other. Both groups had the lowest scores of the six anxiety disorders. Simple phobics scored slightly lower than the panic disorder patients. The low scores of simple phobics were consistent with the results of other studies reported in the literature (Marks, 1970). On the other hand, the low scores of panic disorder patients contradicts the findings of other research (Cameron, Tyer, Nesse and Curtis, 1986; Barlow, Blanchard, James, Vermilya, Vermilya and DiNardo, 1986). These investigators found anxiety levels of panic disorders rather high in comparison with other sub-groups of anxiety disorders. They also found that the somatic component of anxiety in panic disorder was one of the highest in all the anxiety disorders.

Contrary to the findings of the studies cited above, in the present research panic disorder patients were found to exhibit very low levels of anxiety on every component, having the second lowest level of anxiety after simple phobics. One obvious reason for this finding may be the limited number of patients. However, the number of patients in all six sub-groups of anxiety disorders were approximately the same, and the anxiety profiles of other anxiety sub-categories were similar to the results of the studies reported in the literature on the related issues.

Another possible reason for having different results on the panic disorders in comparison with the studies in the literature may be related to the diagnostic criteria for this disorder in DSM-III. Problems concerning the definition of panic and the diagnosis of panic disorder have been pointed to by several investigators (Cerny, Himadi et al., 1984). The same difficulty was mentioned in relation to the diagnosis of agoraphobia with or without panic attacks. Without defining exactly what "panic attack" means, the type of anxiety patients included in this sub-category may vary from study to study.

No clear agreement regarding the level of anxiety exhibited by panic disorder patients exists in the literature at the present. Turner, McCann, Beidel and Mezzich (1986) applying STAI found that panic disorders had the lowest level of anxiety among the anxiety states categories. On the other hand, Cameron, Thyer et al. (1986) reported panic disorder patients together with agoraphobia as having the highest symptom severity.

It seems that the level of anxiety in panic disorders may vary in different studies because of the different assessment instruments used, and a rather loose definition of panic attacks. On the symptom severity rating (Cameron, Thyer et al., 1986) panic disorders had the highest rating, therefore it can be suggested that they should have scored high

on the somatic component of anxiety. However, their scores on the somatic component of anxiety were very low in both of the questionnaires (FSAQ and TSAQ).

Findings of low anxiety scores for panic disorders may be related to the discrete nature of the problem. Both panic disorders and simple phobias have one similar feature, namely the discrete nature of the anxiety. Regardless of how severe the anxiety may be at a specific point in time, it is not continuous, that is, the problem does not cover all the daily activities of the afflicted person. Such patients are usually incapacitated during the panic attack, but function moderately well at other times. If they have constant worries placing them under GAD, or if they exhibit avoidance of certain objects or situations due to their panic attacks, then placing them under an appropriate phobic condition would be a more accurate diagnosis. Since these patients are diagnosed as suffering from panic disorder they should not show any particular behavioral avoidance nor they should have a general apprehensiveness. If general apprehensiveness is accepted as a part of panic disorder, it would be almost impossible to discriminate panic disorder from GAD, as half of the GAD patients are reported to exhibit uncued panic attacks (Cerny, Himadi et al., 1984). The only discriminating factor between panic disorder and GAD would then be the frequency of the panic attacks. This situation would render the difference between the two disorders meaningless. Therefore, the inclusion of general apprehensiveness into panic disorder category seems quite problematic. Thus, if we accept panic disorders as having a discontinuous nature, it would not be surprising to see them exhibiting low anxiety scores on questionnaires (FSAQ and TSAQ) measuring trait aspects of anxiety. All these contradictory findings about the level of anxiety and confusion about the definition of the term 'panic' itself indicate that this anxiety disorder is not well defined in DSM-III.



Turner, Williams, Beidel and Mezzich, (1986) suggested that rather than having a separate classification for panic disorders it could be merged with the category of agoraphobia with panic attacks. They claimed that panic disorder could be viewed as a pre-agoraphobic stage.

### 19.3 PLACE OF AGORAPHOBIA AMONG THE TWO MAIN CATEGORIES OF ANXIETY DISORDERS

The other area of interest in the present study was the investigation of the relationship between agoraphobia vis a vis phobic and anxiety states. The idea that agoraphobia is more similar to anxiety states than to phobic anxiety disorders was introduced by Hallam (1978), and supported by the results of Turner, McCann et al. (1986). In this recent study by Turner, McCann et al. (1986) a variety of questionnaires (e.g. STAI, Beck Depression Inventory) were administered to different sub-categories of anxiety patients. The scores of agoraphobic patients on these scales were more similar to the scores of anxiety states patients than to phobic disorder patients (this category included social phobics and simple phobics). On the basis of this finding Turner, McCann et al. suggested that the placement of agoraphobia in the anxiety states category would more accurately reflect the true nature of the disorder.

However, the above study has important methodological and clinical shortcomings. When Turner, McCann et al. (1986) combined simple phobics and social phobics to make up a phobic category, they did not take into account the varying numbers of patients in each category. In their study 32 simple phobics and 12 social phobics were included. The resulting phobic category predominantly reflected the features of simple phobics. In effect they compared agoraphobics with a phobic anxiety grouping which predominantly carried the features of simple phobics.

On the other hand, several studies (Solyom, Ledwidge and Solyom, 1986; Amiens, Gelder and Show, 1983 and Cameron, Thyer, Nesse and Curtis, 1986) have found that in terms of the level of anxiety assessed by various questionnaires and symptom severity, social phobics are quite similar to agoraphobics, and rather distinct from simple phobics. Thus, to lump simple and social phobics into the same category where simple phobics predominate distorts the relationship between social phobics and agoraphobics. The above criticisms, one methodological (predominance of simple phobics in the phobic category) and the other clinical (assuming social phobics being similar to simple phobics), clearly illustrate the shortcomings of Turner and McCann et al's study (1986).

The findings of the present study support the results of Cameron, Thyer et al. (1986), Solyom, Ledwidge et al. (1986). Social phobics appear to be more similar to agoraphobics than to simple phobics in terms of the anxiety profiles (Figures-8 and 9). The anxiety profiles of simple phobics, as obtained by the FSAQ and TSAQ, are similar to the profiles of anxiety states patients (due to low scores on the behavioral component of anxiety). Agoraphobics together with social phobics indicate very high levels of phobic avoidance. Furthermore, the other agoraphobic group which was assessed before and after behavioral intervention exhibited an anxiety profile very similar to that of first agoraphobic group. Both agoraphobic groups obtained their highest scores on the behavioral component of anxiety and scored relatively lower on the cognitive component. These findings suggest that placing agoraphobia in the phobic rather than the anxiety states category is a better reflection of the nature of the anxiety of agoraphobics. As noted before, high behavioral avoidance was the only component that separated social phobics and agoraphobics from anxiety states. The reason for the low scores of simple phobics on the behavioral component

was the specific nature of their avoidance behavior and the assessment of general avoidance by the questionnaires (FSAQ and TSAQ). It can be concluded that the separation of anxiety disorders in DSM-III, in terms of the presence or absence of avoidance behavior is supported by the findings of this research.

One final note relates to the advantages of applying anxiety scales with different components in the comparison of anxiety disorders. Classical anxiety scales usually give scores about the two levels of anxiety (e.g. STAI measures state and trait aspects of anxiety, the Hamilton Anxiety Scale assesses psychic and somatic anxiety). Scales adopting the Three Systems view-point measure anxiety in terms of different components. In this way they reveal the nature of anxiety in each category of anxiety disorders. Although the overall level of anxiety can be similar among several disorders, the anxiety profiles can be significantly different. For example, the overall anxiety levels of GAD and agoraphobics as measured by the FSAQ and TSAQ were almost identical. Perhaps this was the reason why certain psychologists regard agoraphobics as similar to GAD (Hallam, 1978). However, when the nature of anxiety in these anxiety disorders was investigated from the perspective of Three Systems Theory, very clear differences appeared. GAD patients obtained high scores on the cognitive, and low scores on the behavioral component of anxiety. The opposite pattern was observed for agoraphobics who manifested their anxiety mainly on the behavioral component. These results indicate the appropriateness of placing agoraphobics into the phobic category and also support the DSM-III division of anxiety disorders.

#### 19.4. LIMITATIONS OF THE STUDY

A- One of the important shortcomings of the study was having a low number of patients in each category of anxiety disorders. The number of

patients in the anxiety categories varied between 7 and 10. This situation obviously reduces the validity of the generalization that we can make about the anxiety profiles of each anxiety sub-classification that was obtained from the present study.

B- The other problem is related to patients' medication. Most of the anxiety patients were on anti-anxiety drugs. The effect of medication on the anxiety profiles of the patients was not controlled in the study. The main reason for this problem was the tendency for GPs to prescribe anxiolytics to patients prior to referral to clinical psychology services where patients were recruited. The cessation of medication for the patients was, therefore, totally outwith the present author's responsibility and control. However, since the patients were all referrals from GPs to clinical psychologists following non-response to medication, it is assumed that the effect of medication on the anxiety problems of the patients was minimal. Otherwise the patients would not have been referred to clinical psychologists.

C- There was no control over selection of patients for this study on two different levels:

I- GP referrals to clinical psychologists: Not all anxiety patients that GPs see are referred to clinical psychology services. Those patients whose anxiety problems are alleviated by anti-anxiety drugs, or who are managed by their respective GPs without use of medication, or whose GPs preferentially refer to psychiatric services, are not referred to clinical psychology services. Patients included in the present study were those referred from GPs to clinical psychology services, then selected by these psychologists according to DSM-III anxiety disorders classification.

Anxiety profiles of patients managed without referral to clinical psychology services may be different than those anxiety patients who are referred to clinical psychology services. Unfortunately, control of

patients selection in this respect was out with the responsibility of the present author.

II- Selection of patients by clinical psychologists was not controlled. All clinicians participating in the study were issued DSM-III anxiety disorders classification and they were requested to follow DSM-III criteria for the selection of each patient. How well each clinical psychologist complied with DSM-III classification was not controlled. It was assumed that each clinician followed the given instructions adequately.

D- Another criticism of the study can be the lack of inter-rater reliability for severity of patients' anxiety problems. A very severe case for one clinician may be regarded as moderately severe by another clinician. Therefore, when clinicians mark severity of their patients problems they may have applied their own subjective definition of severity, which makes severity ratings of patients difficult to compare.

All clinicians included in the study were assumed to have similar definitions of severity. Whether this was a justifiable assumption or not can only be understood by asking certain number of clinicians to rate same anxiety patients in terms of severity of the problem.

#### 19.5 CONCLUSION

The results of this study have indicated that the assessment of anxiety within the framework of the Three Systems Theory offers a better understanding for the nature of anxiety. Various anxiety sub-categories were found to differ in terms of the most salient component of anxiety. Social phobics and agoraphobics scored very high on the behavioral avoidance component. These two clinical groups also differed between themselves. Agoraphobics indicated high levels of anxiety on all components of anxiety; social phobics, however, scored

very high on the cognitive and behavior components but low on the somatic component. Anxiety states patients, on the other hand, showed their anxiety mainly on the cognitive component but scored very low on the behavioral component. Thus, the results of the present study showed that the anxiety profiles of each anxiety sub-category differed.

Obtaining different anxiety profiles for different anxiety patients suggest that the most effective treatment packages for different anxiety disorders may vary. Matching the focus of the intervention method with the most problematic component of anxiety in a given anxiety disorder may increase treatment effectiveness.

The results also supported the validity of the DSM-III anxiety disorders classification. The differences between the anxiety profiles of different anxiety disorders were in accordance with DSM-III classification. First, phobic anxiety disorders and anxiety states were found to differ on the behavior component of anxiety. Furthermore, the anxiety profiles of agoraphobics indicated that placing agoraphobia in the phobic anxiety disorders category rather than anxiety states would better reflect the nature of this anxiety disorder, as the most salient component of anxiety in agoraphobics was on the behavioral component in both scales (FSAQ and TSAQ).

## 20. SUGGESTIONS FOR FURTHER RESEARCH

A- In this research the relationship between affect and cognition was found to be influenced by various factors (sex differences and obsessive-compulsive personality structure). This finding implies in the first place that affect and cognition can be conceptualized as interacting but relatively independent systems. This conceptualization of the interaction opens up a new area of investigation where variables influencing the affect-cognition relationship could be identified.

These variables could be related to other branches of psychology, eg. neuropsychology or information-processing.

If it can be found that affectively oriented individuals are more attentive to different properties of stimuli, information or interpersonal communication than cognitively oriented individuals, treatment processes tailored according to the type of orientation of individuals may be more effective in alleviating anxiety. For example, it can be investigated whether affectively oriented individuals will be more effected by non-verbal components of the treatment i.e. gestures of the therapist, manner of therapist's talk, tone of voice, the quality of rapport between themselves and the therapist. On the other hand, cognitively oriented individuals may be more sensitive to the content and theoretical richness of the therapy. The identification of such variables may facilitate the modification of affective and cognitive components of anxiety.

B- The relationship between different components of anxiety and different modes of measurement should be investigated. The question of the correlation between, for example, the behavior score of a patient on the FSAQ and on a behavioral avoidance test must be clarified. If a strong relationship is established between the overt measurement of behavioral and physiological components of anxiety and the scores on the corresponding components of the FSAQ, the validity of the FSAQ will be substantiated. Finding a high correlation would also mean that, due to the simplicity and easy application, this questionnaire could be preferred to the assessment of behavioral and physiological components of anxiety by behavioral avoidance tests and physiological measurement. As noted before, there is an other advantage of using questionnaires in comparison with different methods for assessments of each response channel. When applying questionnaires, one can at least be sure that

the differences between various components of anxiety are not caused by differences in the assessment techniques themselves.

C- Once the validity of the questionnaire has been sustained, the next step would be to replicate the findings of different anxiety profiles of DSM-III anxiety disorders obtained in this research. This is necessary because this study only attempts to delineate the anxiety response profiles of anxiety disorder patients. For the agoraphobic group however, the anxiety profiles obtained in two different samples of agoraphobic patients showed remarkable similarities. In both samples of agoraphobics the highest anxiety score was on the behavioral component, and the lowest was on the cognitive component. Replication of the anxiety profiles of other sub-categories of anxiety disorders will enhance the findings of the present research.

In a study investigating the anxiety profiles of different sub-groups of anxiety disorder, control of the subjects in terms of medication would clarify the points that the present study left ambiguous. The comparison of anxiety patients as on versus off medication within each sub-group of anxiety disorders could provide more valid anxiety profiles.

D- The next step would be the application of different treatment methods for each anxiety disorder to compare the effect of these treatments on different components of anxiety. Different therapeutic methods eg. cognitive, behavioral, psychoanalytic and pharmacological approaches could be applied to four different groups of agoraphobics to investigate the effect of different treatment packages on the different components of anxiety. In this way we could observe which component of anxiety is most affected by which treatment method. The results of such studies may reveal some ideas about the relative efficacy of different treatment approaches in alleviating different components of anxiety. For example, the results may indicate that certain approaches



may drastically reduce one specific component of anxiety, without effectively alleviating anxiety on the other components, while other approaches may moderately reduce all components of anxiety.

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A P P E N D I X - I

CLINICIANS' ASSESSMENT SHEETS

CASE NO:

SHEET-1

PATIENT'S AGE :

SEX :

Length of Time on All Psychotherapy and medication :

Please note your own clinical assessment of each patient in terms of primary and secondary diagnosis .

Please use DSM-III criteria for diagnosis of each case .

Primary Diagnosis:

Secondary Diagnosis:

Please Check ( X ) one.

SEVERITY of PROBLEM:

Considering your total clinical experience with this particular population, how disturbed is the patient at this time?

- 1- ( ) Normal -not at all disturbed ,absence of symptoms.
- 2- ( )
- 3- ( ) Mild symptoms definately present, but no significant impairment of function.
- 4- ( )
- 5- ( ) Moderate- a definite degree of impairment.
- 6- ( )
- 7- ( ) Severe- or incapacitating condition.

Thank you for help.

A P P E N D I X - I I

-

S E L F D I A G N O S T I C F O R M

- Please chose two of the statements below as indicators of your problem. Specify your order of choice by putting 1 beside the statment that best describes your problem and by putting 2 beside the statement that second best describes your problem.

A - The occurance of my anxiety is related to leaving home and being alone in crowded public places.

B- My anxiety is related to being in sccial situations

C - My anxiety is related to certain objects or heights or closed places.

D - I have recurring panic attacks not related to any specific situation or object.

E - I have recurring disturbing thoughts and compulsive repetitive behaviours.

F - My anxiety is very general not related to certain objects or situations, showing itself in terms of general apprehensiveness and uneasiness.

A P P E N D I X - I I I

F O U R S Y S T E M S A N X I E T Y Q U E S T I O N N A I R E

**AGE:**

**SEX:**

This questionnaire contains sixty (60) items concerning difficulties that most people experience from time to time. Read each item carefully, IF YOU HAVE experienced any of the thoughts, feelings, physical symptoms or behaviours in the manner indicated by any of the items, then put an X into the bracket under the column headed YES. IF YOU HAVE NOT put an X in the bracket under the column headed NO. Please make sure that none of the items are omitted.

There are no right or wrong answers, this is not a measure of intelligence or ability. Do not spend too much time over any question we are interested in your first reaction, not a deeply considered response.

Thank you for participation.



YES

NO

- ( ) ( ) 1 - I blush easily
- ( ) ( ) 2 - I often feel so helpless, and desperate that life becomes a source of suffering for me.
- ( ) ( ) 3 - Poor sleep is one of my biggest problems.
- ( ) ( ) 4 - I often avoid talking to people in a train or a bus.
- ( ) ( ) 5 - I tend to avoid going out
- ( ) ( ) 6 - I often have a headache
- ( ) ( ) 7 - I often experience the feeling of embarrassment
- ( ) ( ) 8 - A jittery feeling has become part of my life
- ( ) ( ) 9 - I often have dizzy attacks
- ( ) ( ) 10- I sometimes cannot think of anything except for my worries
- ( ) ( ) 11- I seldom experience chest pains
- ( ) ( ) 12- I seldom feel on edge
- ( ) ( ) 13- I cannot concentrate on a task because of disruption by uncontrolled thoughts.
- ( ) ( ) 14- I rarely feel joyful.
- ( ) ( ) 15- I have persistent disturbing thoughts
- ( ) ( ) 16- I definitely avoid going to any kind of place again, where I previously had a difficult time (for example, a social gathering or a street etc).
- ( ) ( ) 17- I sometimes think of myself as an inefficient person
- ( ) ( ) 18- My feelings dominate my personality so much that I have no control over them
- ( ) ( ) 19- I worry a lot when I think of possible disapproval of me from others
- ( ) ( ) 20- I often experience the feeling of excitement
- ( ) ( ) 21- I rarely try to steer clear of challenging jobs
- ( ) ( ) 22- I rarely have disturbed sleep
- ( ) ( ) 23- I sometimes feel upset
- ( ) ( ) 24- My muscles are quite tense throughout the day
- ( ) ( ) 25- When at home I usually try not to stay alone at night.
- ( ) ( ) 26- I sometimes get easily tired even when not working hard

- | <u>YES</u> | <u>NO</u> |                                                                                                  |
|------------|-----------|--------------------------------------------------------------------------------------------------|
| ( )        | ( )       | 27- I rarely worry about unimportant events.                                                     |
| ( )        | ( )       | 28- I seldom laugh freely                                                                        |
| ( )        | ( )       | 29- I usually worry that I will not be able to cope with difficulties in my life                 |
| ( )        | ( )       | 30- I tend to avoid talking to someone who is above me such as my boss                           |
| ( )        | ( )       | 31- I rarely find myself lost in worrying                                                        |
| ( )        | ( )       | 32- Wherever I go, or whatever I do, I always have a feeling of discomfort                       |
| ( )        | ( )       | 33- I sometimes avoid participating in discussions even though I know the topic well             |
| ( )        | ( )       | 34- My hands rarely shake                                                                        |
| ( )        | ( )       | 35- I sometimes feel extremely self-conscious                                                    |
| ( )        | ( )       | 36- I am worried that others may misunderstand me                                                |
| ( )        | ( )       | 37- I occasionally experience a tingling sensation around my body                                |
| ( )        | ( )       | 38- I rarely try to keep away from social gatherings                                             |
| ( )        | ( )       | 39- I sometimes feel happy but it easily fades away                                              |
| ( )        | ( )       | 40- Even if everything is going well, my mind is occupied by imaginary upsetting ideas           |
| ( )        | ( )       | 41- I seldom have palpitations                                                                   |
| ( )        | ( )       | 42- I cannot think clearly about anything because disrupting thoughts keep occurring in my mind. |
| ( )        | ( )       | 43- There seems to be a lump in my throat much of the time                                       |
| ( )        | ( )       | 44- I cannot feel relaxed, even though I am not in a hurry                                       |
| ( )        | ( )       | 45- I seldom avoid speaking at social occasions                                                  |
| ( )        | ( )       | 46- Even if it is necessary, I sometimes avoid asking other people questions                     |
| ( )        | ( )       | 47- I very rarely imagine myself being unpopular with my friends                                 |
| ( )        | ( )       | 48- I have diarrhoea once a month or more                                                        |
| ( )        | ( )       | 49- I often find myself thinking about possible embarrassing situations                          |
| ( )        | ( )       | 50- I usually feel quite insecure in my life                                                     |
| ( )        | ( )       | 51- I have a tight sensation at my neck                                                          |

YES

NO

- ( ) ( ) 52- I usually avoid getting involved in social activity
- ( ) ( ) 53- My uneasy feelings flare-up at any moment
- ( ) ( ) 54- I usually try to avoid walking in crowded streets
- ( ) ( ) 55- I always feel irritable
- ( ) ( ) 56- I hardly ever tell jokes
- ( ) ( ) 57- I am concerned about how others view me
- ( ) ( ) 58- I sometimes have stomach problems
- ( ) ( ) 59- Half of my thoughts are related to some kinds of worries
- ( ) ( ) 60- I try to avoid standing up to other people even if they have taken advantage of me.

A P P E N D I X - I V

THREE SYSTEMS ANXIETY QUESTIONNIRE

Some statements that indicate certain problems related to thoughts, behaviours, physiological symptoms and experienced by most of people presented below. Read each statement then circle the appropriate number under each statement to indicate your response.

Before beginning to give your response to the items, please read the two examples below that show how to respond to this questionnaire.

EXAMPLE 1

I avoid going to the cinema

never

almost always

1      2      3      4      5      6      7      ⑧      9

---

This answer indicates that the respondent strongly avoids going to the cinema.

EXAMPLE 2

My liver disturbs

never

almost always

①      2      3      4      5      6      7      8      9

---

This answer shows that the respondent does not have such problems.

Thank you for your assistance.

1 - My stomach hurts  
never almost always  
1 2 3 4 5 6 7 8 9

---

2 - I pass by school friends, or people I know but have not seen for a long time unless they speak to me first  
never almost always  
1 2 3 4 5 6 7 8 9

---

3 - I think about possible misfortunes to my loved ones  
never almost never  
1 2 3 4 5 6 7 8 9

---

4 - My muscles twitch or jump  
never almost always  
1 2 3 4 5 6 7 8 9

---

5 - I cannot get some thoughts out of my mind  
never almost always  
1 2 3 4 5 6 7 8 9

---

6 - My neck feels tight  
never almost always  
1 2 3 4 5 6 7 8 9

---

7 - My limbs tremble  
never almost always  
1 2 3 4 5 6 7 8 9

---

8 - My arms or legs feels tight  
never almost always  
1 2 3 4 5 6 7 8 9

---

9 - My heart pounds  
never almost always  
1 2 3 4 5 6 7 8 9

---

10 - I am concerned that others might not think well of me  
never almost always  
1 2 3 4 5 6 7 8 9

---

11 - I have difficulty in swallowing

never almost always  
1      2      3      4      5      6      7      8      9

---

12 - I cannot get some pictures of images out of my mind

never almost always  
1      2      3      4      5      6      7      8      9

---

13 - I experience chest pains

never almost always  
1      2      3      4      5      6      7      8      9

---

14 - I have an uneasy feeling

never almost always  
1      2      3      4      5      6      7      8      9

---

15 - I breath rapidly

never almost always  
1      2      3      4      5      6      7      8      9

---

16 - I experience tingling sensation somewhere in my body

never almost always  
1      2      3      4      5      6      7      8      9

---

17 - My arms and legs feel weak

never almost always  
1      2      3      4      5      6      7      8      9

---

18 - I have to be careful not to let my real feelings show

never almost always  
1      2      3      4      5      6      7      8      9

---

19 - I picture some future misfortunes

never almost always  
1      2      3      4      5      6      7      8      9

---

20 - I cannot concentrate at a task or job without irrelevant thoughts intruding

never almost always  
1      2      3      4      5      6      7      8      9

---

21 - I avoid talking to people in authority (my boss, policeman)  
never almost always

1      2      3      4      5      6      7      8      9

---

22 - I avoid going into a room by myself where people are already gathered and talking

never almost always

1      2      3      4      5      6      7      8      9

---

23 - I experience muscular aches and pains

never almost always

1      2      3      4      5      6      7      8      9

---

24 - I prefer to avoid making specific plans for self improvement

never almost always

1      2      3      4      5      6      7      8      9

---

25 - I try to avoid social gatherings

never almost always

1      2      3      4      5      6      7      8      9

---

26 - I feel dizzy

never almost always

1      2      3      4      5      6      7      8      9

---

27 - I try to avoid challenging jobs

never almost always

1      2      3      4      5      6      7      8      9

---

28 - I avoid new or unfamiliar situations

never almost always

1      2      3      4      5      6      7      8      9

---

29 - I feel numbness in my face, limbs or tongue

never almost always

1      2      3      4      5      6      7      8      9

---

30 - I dwell on mistakes that I have made

never almost always

1      2      3      4      5      6      7      8      9

---



31 - My throat gets dry  
never almost always  
1 2 3 4 5 6 7 8 9

---

32 - I try to avoid starting conversations  
never almost always  
1 2 3 4 5 6 7 8 9

---

33 - I imagine myself appearing foolish with a person whose opinion  
is important  
never almost always  
1 2 3 4 5 6 7 8 9

---

34 - I cannot catch my breath  
never almost always  
1 2 3 4 5 6 7 8 9

---

35 - I find myself staying home rather than involving myself in  
activities outside  
never almost always  
1 2 3 4 5 6 7 8 9

---

36 - I keep busy to avoid uncomfortable thoughts  
never almost always  
1 2 3 4 5 6 7 8 9

---

A P P E N D I X - V

COGNITIVE SOMATIC ANXIETY QUESTIONNAIRE

Please rate the degree to which you generally or typically experience this symptom when you are feeling anxious by circling a number from 1 through 5 with 1 representing "not at all" and 5 representing "very much so".

- 1 - I cannot keep anxiety provoking thoughts out of my mind  
not at all 1 2 3 4 very much so 5
- 
- 2 - I become immobilized  
not at all 1 2 3 4 very much so 5
- 
- 3 - I imagine terrifying scenes  
not at all 1 2 3 4 very much so 5
- 
- 4 - My heart beats faster  
not at all 1 2 3 4 very much so 5
- 
- 5 - I worry too much over something that doesn't really matter  
not at all 1 2 3 4 very much so 5
- 
- 6 - I feel jittery in my body  
not at all 1 2 3 4 very much so 5
- 
- 7 - Some unimportant thoughts run through my mind and bothers me  
not at all 1 2 3 4 very much so 5
- 
- 8 - I nervously pace  
not at all 1 2 3 4 very much so 5
- 
- 9 - I find it difficult to concentrate because of uncontrolled thoughts  
not at all 1 2 3 4 very much so 5
- 
- 10 - I feel like I am losing out on things because I cannot make up my  
mind.  
not at all 1 2 3 4 very much so 5
- 
- 11 - I perspire  
not at all 1 2 3 4 very much so 5
- 
- 12 - I get diarrhoea  
not at all 1 2 3 4 very much so 5
- 
- 13 - I cannot keep anxiety provoking pictures out of my mind  
not at all 1 2 3 4 very much so 5
- 
- 14 - I feel tense in my stomach  
not at all 1 2 3 4 very much so 5
-

A P P E N D I X - V I

STATE-TRAIT ANXIETY INVENTORY

# SELF-EVALUATION QUESTIONNAIRE

Developed by C. D. Spielberger, R. L. Gorsuch and R. Lushene

STAI FORM X-1

NAME \_\_\_\_\_ DATE \_\_\_\_\_

**DIRECTIONS:** A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you *feel* right now, that is, *at the moment*. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

	NOT AT ALL	SOMEWHAT	MODERATELY SO	VERY MUCH SO
I feel calm .....	①	②	③	④
I feel secure .....	①	②	③	④
I am tense .....	①	②	③	④
I am regretful .....	①	②	③	④
I feel at ease .....	①	②	③	④
I feel upset .....	①	②	③	④
I am presently worrying over <u>possible</u> misfortunes .....	①	②	③	④
I feel rested .....	①	②	③	④
I feel anxious .....	①	②	③	④
I feel comfortable .....	①	②	③	④
I feel self-confident .....	①	②	③	④
I feel nervous .....	①	②	③	④
I am jittery .....	①	②	③	④
I feel "high strung" .....	①	②	③	④
I am relaxed .....	①	②	③	④
I feel content .....	①	②	③	④
I am worried .....	①	②	③	④
I feel over-excited and "rattled" .....	①	②	③	④
I feel joyful .....	①	②	③	④
I feel pleasant .....	①	②	③	④

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IS CLOSE TO THE  
EDGE OF THE  
PAGE**

SELF-EVALUATION QUESTIONNAIRE

STAI FORM X-2

NAME \_\_\_\_\_ DATE \_\_\_\_\_

DIRECTIONS: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you *generally* feel. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe how you generally feel.

	ALMOST NEVER	SOMETIMES	OFTEN	ALMOST ALWAYS
21. I feel pleasant .....	①	②	③	④
22. I tire quickly .....	①	②	③	④
23. I feel like crying .....	①	②	③	④
24. I wish I could be as happy as others seem to be .....	①	②	③	④
25. I am losing out on things because I can't make up my mind soon enough ....	①	②	③	④
26. I feel rested .....	①	②	③	④
27. I am "calm, cool, and collected" .....	①	②	③	④
28. I feel that difficulties are piling up so that I cannot overcome them .....	①	②	③	④
29. I worry too much over something that really doesn't matter .....	①	②	③	④
30. I am happy .....	①	②	③	④
31. I am inclined to take things hard .....	①	②	③	④
32. I lack self-confidence .....	①	②	③	④
33. I feel secure .....	①	②	③	④
34. I try to avoid facing a crisis or difficulty .....	①	②	③	④
35. I feel blue .....	①	②	③	④
36. I am content .....	①	②	③	④
37. Some unimportant thought runs through my mind and bothers me .....	①	②	③	④
38. I take disappointments so keenly that I can't put them out of my mind ....	①	②	③	④
39. I am a steady person .....	①	②	③	④
40. I get in a state of tension or turmoil as I think over my recent concerns and interests .....	①	②	③	④