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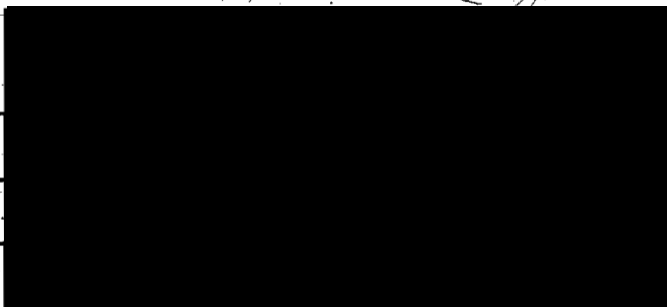
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DIFFERENCES AMONG OBSESSIVE-COMPULSIVE, AGORAPHOBIC AND OTHER PHOBIC PATIENTS  
WITH RESPECT TO SYMPTOMATOLOGY, NATURAL HISTORY AND PERSONALITY

by

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THESIS SUBMITTED IN PARTIAL FULFILLMENT OF

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of

Psychology

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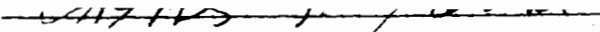
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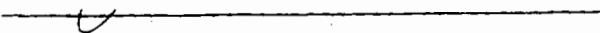
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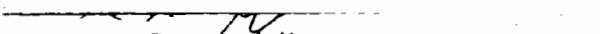
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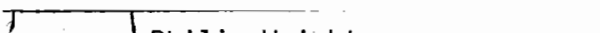
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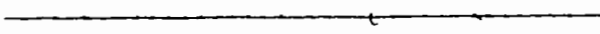
  
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## ABSTRACT

In order to validate disputed diagnostic distinctions between obsessive-compulsive disorder and phobia and secondarily, between agoraphobia and other phobias, a retrospective study of information contained in the files of 159 obsessive patients, eighty agoraphobics and 120 patients with other phobias was carried out. The groups were operationally defined on the basis of the main complaint for which the patient sought treatment. Using documents contained in the files, the groups were compared with respect to fifty-two measures, each reflecting some aspect of symptomatology (obsessive-compulsive symptoms, phobias, anxiety, depression, social adjustment), natural history (sex ratio, marital status, age of onset, precipitating factors, course of disorder, delay in seeking help, mental disorder among relatives) or personality (premorbid personality type, neuroticism, extraversion). The obsessive patients differed from the phobic patients as a group on every dimension. The agoraphobics differed from the patients with other phobias on all dimensions except mental disorder among relatives and premorbid personality type. Classification functions, computed by stepwise discriminant analysis, correctly assigned 88.9% of the 359 cases to the groups to which they originally belonged, even when measures of the intensity of obsessive and phobic symptomatology and variables denoting type of main phobia were not used in the discriminant analysis on the assumption that these measures would correlate highly with the independent variable (i.e., the reason for seeking treatment).

The implication of the results for future research on aetiology and response to treatment are discussed.

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## A. INTRODUCTION

Classification is recognized as the basis of all scientific generalization and therefore is fundamental to the systematic study of any phenomenon.

Though classifications vary according to the purpose they serve, the most useful ones are those which carve nature at the joints, and increase one's predictive power.

In medicine classification consists of arranging disorders into classes possessing common attributes. Ideally classes based on these attributes (symptoms and signs, aetiology, course, prognosis, response to treatment) should coincide. Few classifications approach this ideal, however, and probably the nearest to the ideal that medicine has achieved is in the classification of the more clearcut exanthematous infections.

Typological diagnosis probably originated with Sydenham 300 years ago but it was not until 75 years ago (Kraepelin, 1906) that this concept spread to psychiatry. Prior to Kraepelin, attempts were made to classify mental disorders according to cause (e.g., Morel's Traité des Maladies Mentales, published in 1860), and consisted of a series of more or less rigidly defined "disease entities", each with an aetiology and pathology (presumed but in only a few instances demonstrable), symptomatology, and course of its own. Our ignorance about the aetiology of the majority of mental disorders doomed these attempts to devise an aetiological classification scheme in psychiatry, and Kraepelin's major contribution to psychiatry was the introduction of a method for classifying mental disorders according to manifest symptomatology - a

system of taxonomy the basis of which has survived to the present day, e.g.; the third edition of the American Psychiatric Association's Diagnostic and statistical manual of mental disorders or DSM-III (American Psychiatric Association, 1980). Although it is true that in this method, as in nature, there are no hard and fast boundaries, and that a given symptom will appear in several symptom groups, "the agreement of a great number of cases", as Griesinger (1845) puts it, is the justification for the construction of an empirical division. If further, not simply a cross section of each case is taken, but also a longitudinal section is obtained as well, so that the evolution of the disorder is taken into account in the symptomatology, a more comprehensive foundation is obtained for classification.

The low reliability of psychiatric diagnosis (Ash, 1949) has been used by the anti-psychiatrists, led in the United States by Thomas Szasz, to attack the psychiatric classification of behavior on moral and logical grounds. The moral argument against diagnosis is that the classification of human behavior leads inevitably to abuse. Szasz (1966) refers to the psychiatric diagnosis as "a strategy of personal constraint":

...the 'psychiatric patient' is a person who fails, or refuses, to assume a legitimate social role. This is not permitted in our culture, nor, for that matter, in any other culture. A person unclassified is unpredictable and not understandable, and hence a threat to the other members of society. This is why people who choose this path to personal freedom pay dearly for it: although they succeed in breaking out of their particular cells, they do not remain long at liberty. They are immediately recaptured, first symbolically, by being classified as mentally ill; and, then physically, by being brought to the psychiatrist, for processing into formal psychiatric identities and for psychiatric detention (p.154).

This argument does not question the usefulness of the classification scheme for the purposes of communication, prognosis, choice of treatment or research but rather casts aspersions on some of the uses to which the system is put.



Although clearly there ought always to be some examination of the scruples evoked by scientific endeavors - if not by the scientist then by his critics - such a moral question is outside the realm of scientific investigation and therefore shall not be discussed further here.

The logical argument against psychiatric diagnosis questions the premise underlying classification in psychiatry: that there exist in nature abnormal mental conditions or forms of behavior. As Szasz (1966) put it:

what I question is the logical basis..... of the premise behind all existing systems of psychiatric classification: that human behavior is a natural event, and, like other such events, can and should be classified (pp. 126-127).

Note that Szasz is not ~~attacking~~ the classification of certain behavior as disease but rather the classification of human behavior as a natural event that can be categorized. He does well to do so since the medical model as it applies to modern psychiatry involves no assumptions about the primacy of biological factors in the aetiology of disorder, as illustrated by this quote from three members of the DSM-III Task Force:

We regard the medical model as a working hypothesis that there are organismic dysfunctions which are relatively distinct with regard to clinical features, etiology and course. No assumption is made regarding the primacy of biological over social or environmental etiological factors. In addition, it is assumed that for many medical disorders a single sufficient and necessary cause is unlikely, and that usually what is involved is a complex interaction of biological and environmental events (Spitzer, Sheehy & Endicott, 1977, pp. 5-6).

Szasz's logical argument, unlike the moral one described earlier, represents an empirical question and can be resolved, in theory at least, using the canons of science. If in fact categories of human behavior do exist in nature, it should be possible by careful observation and analysis, to discover those categories. Where a significantly large number of persons manifest the same cluster of behaviors, which develop and evolve in a similar fashion, and

respond to the same kinds of intervention, one could tentatively call that a "syndrome" and crossvalidate the phenomenon using another sample of patients.

The systematic knowledge thus gained about the symptomatology, course, and response to treatment peculiar to each of these syndromes serves a number of purposes. It is first a means by which the profession communicates briefly and clearly within itself about clinically recognizable conditions for which it has professional responsibility for diagnosis, care or research. It provides information about the likely outcome of the psychiatric disorders without treatment and, to the extent that the syndromes are differentiated with respect to response to various treatments, classification has implications for choice of treatment. Finally, carving nature at the joints in this fashion facilitates systematic inquiry with regard to the aetiology of the disorders since isolation of the dysfunction, however crudely, and differentiation of the disorder from other syndromes limits the spectrum of behaviors for which an aetiological theory might be expected to account.

If, on the other hand, no such categories of human behavior exist in nature, any attempt to define them differentially with respect to symptomatology, natural history, aetiology and diagnosis will be non-productive.

Some categories of mental disorder have been shown to produce good inter-rater reliability. Eighty-four percent of the time, for example, there is agreement between two psychiatrists on the diagnosis of "psychosis", as distinct from organic and characterological disorders (Schmidt and Fonda, 1956), and the diagnosis of psychosis has been validated clinically in terms of prognosis without treatment and response to intervention. In an inquiry by Norris (1959), agreement on a diagnosis of schizophrenia was reached in 68

percent of cases and of manic-depressive psychosis in 69 percent. With arteriosclerotic psychosis excluded, agreement was reached as to a diagnosis of organic psychosis in 80 percent of cases. Other categories, however, have produced far less consensus. The general category of neurosis is an example. In the American Psychiatric Association's second edition of its diagnostic manual (DSM-II) the category of neurosis subsumes eight disorders (anxiety state, hysterical reaction, phobia, obsession, depressive reaction, neurasthenia, depersonalization, and hypochondria) that have in common only the fact that "anxiety is the chief characteristic of the neuroses" (American Psychiatric Association, 1968, p.39), and, in fact, one of the subtypes, hysterical neurosis, is occasionally accompanied by hallucinations and other symptoms encountered in psychoses. It is not surprising that agreement in respect of a diagnosis of neurosis was only 46 percent in the Norris (1959) study and only 25 percent in a study by Hunt, Wittson & Hunt (1953). It is not surprising, too, that the recent revision (American Psychiatric Association, 1980) of the eleven-year-old DSM-II does away with the category of "neurosis" altogether, subsuming the traditional neurotic subtypes variously under the categories of Affective Disorders, Anxiety Disorders, Somatoform Disorders and Dissociative Disorders.

The poor inter-rater reliability characteristic of some controversial diagnostic distinctions can be accounted for in one of two ways:

1. Szasz is right and there exist no such categories of human behavior in nature. The disputed categories were "created" rather than "discovered" because we carved human behavior into segments at points where no joints exist in nature.
2. There is a joint in the articulation of human behavior (as it exists in

nature) at or near the disputed classification point but lack of systematic and careful observation and analysis of the controversial syndromes has resulted in a poor match between the syndromes as they exist in nature (criterion-related validity) and, as a consequence, in poor diagnostic reliability..

The lack of an adequate empirical basis for many psychiatric diagnostic categories is conceded by many psychiatrists. In a 1977 text on psychiatric diagnosis, the editors grant that ".....psychiatry has suffered more than its companion healing arts from a lack of generally accepted theoretical approaches or even commonly accepted empirical practice which could have provided the basis of a professional lingua franca" (Rakoff, Stancer and Kedward, 1977, p.xi).

For any controversial diagnostic distinction, however, the issue as to whether or not the categories of behavior have any criterion-related validity is clearly an empirical question. The distinction between phobias and obsessions is a case in point. Descriptions of the two kinds of behavior first appeared more than 100 years ago, but there is still no agreement as to whether they constitute different disorders. The Americans, whose approach to psychiatric diagnosis reflects Freud's emphasis on personality dynamics, have always differentiated between the two disorders (American Psychiatric Association, 1968, 1980). The approach to diagnosis in the mainstream of European psychiatry (including the British, but excluding the French), on the other hand, reflects Kraepelin's emphasis on observable phenomena, and consistent with Kraepelin's original nosological scheme, some European psychiatrists to this day view the two symptoms as part of the same syndrome (Scott, 1966, Curran and Partridge, 1969; Batchelor, 1969).

A brief history of the two concepts in psychiatry and a few classic descriptions of the two syndromes from historic texts will serve to outline the nature of the dispute and the reasons for it.

Full clinical description of phobic disorders in their own right began with Westphal's (1871) classic description of three male patients who feared going into streets and public places, like the agora (marketplace) of ancient Greece, and he coined the term agoraphobia to describe this condition. He pointed out that the thought of a feared situation was as distressing as the situation itself, and noted the relief afforded by companionship, alcohol, a vehicle or use of a cane. The period of Westphal was a seminal one for clinical psychiatry, and excellent accounts of different psychiatric syndromes began appearing from this time onwards. Phobic disorders, however, were not clearly distinguished from delusional fears and many other disorders, including obsessive-compulsive neurosis, which Westphal (1878) also first described fully.

Kraepelin (1906) included in his textbook a brief chapter on obsessions and phobias (which he called "irrepressible ideas" and "irresistable fears", respectively) but, like Westphal, he did not differentiate between the two. In that chapter Kraepelin describes three patients, the first of whom suffered from a variety of fears including illness phobia and agoraphobia; the second from horrific temptations - an obsessive compulsive symptom. The first was a thirty-one year old schoolmaster:

The patient is quite collected, clear, and well ordered in his statements. He says that one of his sisters suffers in the same way as himself. He traces the beginning of his illness back to about eleven years ago. Being a very clever lad, he became a schoolmaster, and had to do a great deal of mental work to qualify. Gradually he began to fear that he had a serious disease, and was going to die of heart apoplexy. All of the assurances and examinations of his doctor could not convince him. For this reason he suddenly left his

appointment and went home one day, seven years ago, being afraid that he would die shortly. After this he consulted every possible doctor, and took long holidays repeatedly, always recovering a little, but invariably finding that his fears returned speedily. These were gradually reinforced by the fear of gatherings of people. He was also unable to cross large squares or go through wide streets by himself. He avoided using the railway for fear of collisions and derailments, and he would not travel in a boat lest it might capsize. He was seized with apprehension on bridges and when skating, and at last the apprehension of apprehension itself caused palpitations and oppression on all sorts of occasions. He did not improve after his marriage three years ago. He was domesticated, good-natured, and manageable, only 'too soft'. On the way here, when he had finally made up his mind to place himself in our hands, he trembled with deadly fear (pp.270-271).

The second case Kraepelin presents is that of a thirty-five year old male acrobat:

As he (the patient) relates it, the apprehension comes on, with violent oppression of the head, that he may, perhaps, blurt out indiscreet remarks, particularly "lese majeste", especially if he finds himself in a large company of people, although it is altogether contrary to his sentiments. Sometimes the apprehension becomes so great that he holds his pocket-handkerchief before his mouth so as not to speak, but yet he has never said anything really punishable. During the last year he has, from preference, performed abroad, where he had no fear of immediate arrest for an offence against the Emperor. Further, on closing an envelope, he had that fear regularly that he must spit into it, and for this reason left his letters to be closed by others (pp. 273-274).

Kraepelin argues that both patients suffer from fears, the difference between the two lying only in the thing feared:

The condition, therefore, differs from that observed in our first patient only in the fact that, in that case, the supposed danger threatened from without, while here it is expected to arise from the patient's own action (p.274).

European psychiatrists still group phobias and obsessions together but instead of classifying obsession as a kind of phobia as Kraepelin did, the European texts view phobia as a manifestation of an obsessional state. The classification in Henderson and Gillespie's Textbook of Psychiatry (Batchelor, 1969) is typical of that in use in Europe:

Obsessional symptoms may take several forms - phobias; intrusive ideas

or images or rumination; impulses and compulsive acts.

"A phobia is a recurrent intense, unreasonable fear associated with some situation or object or idea. The external focus of the fear varies according to the individual sufferer's history. The patient realizes that his fear is irrational, but he is dominated by it. If he enters the fear-producing situation, anxiety, acute tension or panic assail him. Various Greek and Latin names have been assigned to these phobias - agoraphobia - fear of open spaces, claustrophobia - fear of closed spaces and so on. The phobia may be a fear of a recurrence of an attack of anxiety with pronounced somatic symptoms which has once previously occurred, for example, in a crowd (agoraphobia) or in a railway compartment or in a church (claustrophobia). Or the phobia may be of dirt, or disease, or animals, or sharp instruments or many other things. The relationship with anxiety states is close, but the fear has the typical obsessional quality (p.164).

Psychoanalysts eschew diagnosis per se but distinguish between phobias and obsessive-compulsive reaction on the basis of the psychodynamics presumed to underlie each:

In general, the phobic reaction is characterized by anxiety that harm will come to the phobic individual from an external object or situation, and the patient controls his anxiety by avoiding the object. Furthermore, the important mechanisms in phobia formation are displacement, and the underlying conflicts are primarily oedipal in nature. This is, of course, in contrast to the obsessive-compulsive reaction, in which the patient fears that he will hurt others, his anxiety is controlled by compulsive acts and by the mechanisms of undoing and isolation, and the underlying conflicts are predominantly preoedipal in nature (Nemiah, 1967, p.925).

The approach to psychiatric diagnosis in the United States has until recently reflected this Freudian emphasis on personality dynamics. The American Psychiatric Association's DSM-II (1968) definition of neurosis was clearly psychological, being based upon the psychoanalytic concept which regards a neurosis as a pathological way of dealing with anxiety. The current trend in the United States, however, as reflected in the DSM-III, is away from a consideration of underlying dynamics and towards observable behavior. The text of DSM-III systematically discusses each disorder with regard to essential and associated features, in addition to, when known, usual age of onset, course, impairment, complications, predisposing factors, prevalence,

sex ratio, familial pattern, and differential diagnosis. The American distinction between phobia and obsessive-compulsive disorder is maintained in DSM-III, but the question arises whether this distinction, which had its roots in the psychodynamic basis of DSM-I and DSM-II, can be justified on the basis of observable differences. The lack of clear-cut distinctions between obsessive-compulsive disorder and agoraphobia with respect to other symptomatology and natural history in the DSM-III descriptions of the disorders is reflected in Table 1.

The similarities of the syndromes, one to the other, are striking. Phobic patients are preoccupied (I hesitate to use the word, "obsessed") with the feared object; they develop selective attention to anything resembling the feared object in their environment. As Rangell (1952) noted, the phobic patient becomes "married to the object. In order to avoid it his eyes seek it out, he finds it in obscure places, he sees it with his peripheral vision." Furthermore, obsessive-compulsive patients often have strong unreasonable fears (I hesitate to use the word, "phobias") - the fear of harming people or babies, fears of swearing or making obscene gestures, fears of contamination which lead to obsessive handwashing, etc.

According to Marks (1978),

Obsessive-compulsive disorders are similar to phobic disorders in that anxiety is a common accompaniment and there is often avoidance of situations which evoke obsessive thoughts or compulsive rituals. They differ from phobias in that the accompanying unpleasant emotion may not be anxiety but other forms of discomfort such as a sense of feeling dirty, contaminated or uncomfortable. Another difference from phobias is that obsessive-compulsives frequently have a more elaborate set of beliefs about their thoughts and rituals. Finally, obsessive-compulsive discomfort is evoked not so much by contact with the object of dread as by fears of the consequences of such contact.

There have been attempts to distinguish between obsessives and phobics on the basis of symptomatology, natural history, premorbid personality and



Table 1

Non-essential symptoms and natural history characteristics of  
obsessive-compulsive disorder and agoraphobia as listed in DSM-III  
(American Psychiatric association, 1980, pp.226-227, 234)

	Obsessive-compulsive disorder	Agoraphobia
Associated features	Depression and anxiety are common. Frequently there is phobic avoidance of situations that involve the content of the obsessions such as dirt or contamination.	Depression, anxiety, rituals, minor "checking", compulsions, or rumination is frequently present.
Age at onset	Although the disorder usually begins in adolescence or early adulthood, it may begin in childhood.	Most frequently the onset is in the late teens or early 20's but it can be much later.
Course	The course is usually chronic, with waxing and waning of symptoms.	The severity of the disturbance waxes and wanes, and periods of complete remission are possible. The activities or situations that the individual dreads may change from day to day.
Impairment	Impairment is generally moderate to severe. In some cases compulsions may become the major life activity.	During exacerbations of the illness the individual may be housebound. The avoidance of certain situations, such as being in elevators, may grossly interfere with social and occupational functioning.
Complications	Complications include Major Depression and the abuse of alcohol and antianxiety medications.	Some individuals attempt to relieve their anxiety with alcohol, barbituates, or antianxiety medications even to the extent of becoming physiologically dependent on them. Major Depression is another complication.
Predisposing factors	No information	Separation Anxiety Disorder in childhood and sudden object loss apparently predispose to the development of Agoraphobia.

Sex ratio

The disorder is equally common  
in males and females.

The disorder is more  
frequently diagnosed in women.

response to treatment but much of the evidence for differences is unconfirmed and based on studies involving a small number of patients. In many cases there have been contradictory findings and still other alleged differences are the result of speculation or at best casual observation. Beech (1974), who edited what was (until Rachman and Hodgson's (1980) landmark publication) the definitive text on the subject of obsessional states, commented:

It is .... perhaps curious, in the light of lengthy and relatively unrewarding investigations of obsessional disorder, how very much our formalized descriptions of the behavior of obsessionals has become detached from reality. This may well be true of other kinds of psychological disturbances which have become embalmed by their psychiatric labels, but the gulf between the phenomena to be observed and the classical textbook descriptions appears to be wider for obsessionals than for any other group (p.3).

A fairly recent general psychiatric textbook by Redlich and Freedman (1966) provides support for Beech's contention. It contains numerous statements which purport to be factual but which might more reasonably be called conjectural. For example there is no experimental evidence which could lead one to join the authors in concluding that all obsessive symptoms are regarded by the patient as strange, disturbing and incompatible with conscious thought, feeling and striving. Another instance of confusion of hypothesis and fact stems from the authors' claim that all patients with obsessive symptoms show an obsessive character structure (i.e., obstinate, orderly, perfectionistic, overly punctual, meticulous, parsimonious, and frugal).

It is conceivable, given the sad state of our knowledge of obsessional states, as evidenced by Beech's comment above, that the distinction between obsessions and phobias is valid but that lack of systematic observation and analysis has resulted in a failure to delineate the syndromes along meaningful dimensions. The question, in any case, is clearly an empirical one.

The null hypothesis of the present study is that patients whose primary complaint is of a phobia and patients who seek treatment for an obsessive-compulsive symptom do not differ with respect to other symptomatology, natural history of the disorders and premorbid personality. Specifically, the groups are compared on the following variables:

Symptomatology

1. Obsessive-compulsive symptoms
2. Phobias
3. Anxiety
4. Depression
5. Social adjustment

Natural history

1. Sex ratio
2. Marital Status
3. Age of onset
4. Precipitating factors
5. Course of the disorder
6. Delay in seeking help
7. Mental disorder among relatives

Personality

1. Premorbid personality type
2. Neuroticism and Introversion-Extraversion

The data used to measure each of these variables are described in detail in the "Method" section (Table II).

A secondary hypothesis involves that subset of phobic patients whose main phobia is agoraphobia, defined by Solyom et al. as "fear of leaving home, of

being alone on the street, of travelling by car, bus or train" (Solyom, McClure, Heseltine, Ledwidge and Solyom, 1972, p.22).

Agoraphobia, which accounts for roughly 60% of all phobias seen at the Maudsley Hospital in London (Marks, 1969), differs from other phobias in several respects. Most agoraphobics are women and severe cases have not only agoraphobia and other phobias, but also panic attacks, depression, depersonalization, obsessions and other symptoms (Roth, Garside & Gurney, 1965). Snaith (1968) compared twenty-seven agoraphobic patients with twenty-one patients suffering from discrete phobias and found notable differences in the intensity of the basic anxiety, the remitting course of the neurosis and the distribution of phobias. Factor analyses of the self-report data of phobic patients have consistently yielded a distinct factor for agoraphobia (Marks, 1967; Hallam & Hafner, 1978; Arrindell, 1980).

This well-documented distinction between agoraphobia and other phobias led the experimenter to compare the obsessive patients with agoraphobics separately, as well as with the total group of phobic patients.

## B. REVIEW OF THE LITERATURE

The review of the literature which follows suffers from the fact that some researchers and writers (Rachman & Hodgson, 1980; Marks, 1978) distinguish between the two disorders while others (e.g., Kringlen, 1965; Batchelor, 1969) do not. Moreover, it is often unclear which diagnostic concept the writer is using. The published research on phobias does not suffer from this ambiguity but to the extent that some reports on obsessive-compulsives include phobic patients, this review of the literature probably underestimates differences between the two disorders.

## I. Symptomatology

### Obsessive-compulsive symptoms

If phobia is but one of several manifestations of obsessional disorder, as Scott (1966), Batchelor (1969) and Curran and Partridge (1969) suggest, one would expect phobic patients to manifest many obsessive symptoms as well. Orme (1965) and Berg, Butler and Hall (1976) provide some evidence in support of the view that phobic patients manifest much obsessive-compulsive symptomatology. Orme administered two psychometric scales (measuring obsessionalism and emotional stability) to a variety of psychiatric patients. As the 15 obsessional patients and the 15 phobic patients gave "almost identical mean scores on both scales", according to the author, the results were combined. In their follow-up of 100 adolescent school-phobics, Berg, Butler and Hall (1976) found that within the brief space of three years, four patients had developed obsessional disorders and another 26 had "persistent neurotic symptoms including those of anxiety, depression and obsessions" (p.82)..

Several sources, on the other hand, report that, among phobic patients, agoraphobics alone manifest obsessive symptoms. According to Roth, Garside and Gurney (1965) and Marks (1969), agoraphobics often present, in addition to a marked fear of going into open spaces, panic attacks, fluctuating mild depression, depersonalization, and obsessive thoughts and actions. The DSM-III (American Psychiatric Association, 1980) also lists obsessive symptoms as associated features of agoraphobia with or without panic attacks (300.21

and 300.22) but not of the other two phobia types, social phobia (300.23) and simple phobia (300.29). Under "Associated features" of agoraphobia it is stated that "...Depression, anxiety, rituals, minor 'checking' compulsions, or rumination is frequently present" (p.226).

### Phobias

That phobic avoidance is common in obsessive patients is conceded even by those who maintain a distinction between the two disorders. Rado (1959), like other psychoanalysts, separates the two syndromes on the basis of the psychodynamics presumed to underlie them. He observes that phobic avoidance is frequently seen in obsessive behavior but insists that there is no difficulty in telling the two disorders apart. "We speak of phobia", he writes, "when the clinical picture is dominated by the avoidance mechanism but other signs of obsessive behavior are absent. Analogous considerations apply to the differential diagnosis between nonschizophrenic paranoid behavior and obsessive behavior" (p.339). The DSM-III also distinguishes between phobic disorders and obsessive-compulsive disorder but under "Associated features" of the latter it is noted: "Frequently there is phobic avoidance of situations that involve the content of the obsessions, such as dirt or contamination" (p.234).

Pieces of supporting evidence for the view that phobias are not uncommon in obsessive patients can be assembled from a number of investigations of the natural history of obsessional disorders. Skoog (1959), for example, found that his large sample of "anancastic"<sup>1</sup> patients was excessively fearful and five of Warren's (1960) 15 adolescent obsessional patients had "phobic

<sup>1</sup>Although the term "anancastic" is usually used to describe the obsessive personality, Skoog's use of the term refers to obsessive-compulsive neurosis.



symptoms at some time" (p.821). Kringlen (1965) reported that over 50 percent of the 91 obsessional patients included in his series complained of phobic symptoms. Kringlen subdivided the obsessional patients into four categories and concluded that one-third of the group had a mixture of obsessional thoughts, acts, and phobias while 19 percent had "predominantly or solely phobias" (p.714). The stability of the phobic symptoms is attested to by the fact that when the follow-up investigation was carried out, an average of 16 years after admission to the hospital, no less than 69 percent of the remaining 84 patients complained of phobic symptoms. These symptoms were in fact the most common complaint at follow-up. Forty percent of Videbeck's (1975) 104 depressed obsessionals reported phobias. On the negative side, Wilner, Reich, Robins, Fishman and van Doren (1976) found associated phobias in only 7 out of 150 severely obsessional patients.

Additional supporting evidence is found in the significantly high incidence of reported phobias in the childhood of obsessional patients. Lo (1967), for example, reports that 35 percent of his 59 obsessional patients had significant phobias during childhood, and Videbeck (1975) reported the same for half of his 104 depressed obsessional patients. Similarly, Ingram (1961b) reports that 25 percent of his 89 obsessional patients had significant phobias in childhood.

It has been suggested, however, that although obsessive patients frequently present with phobic symptoms, the phobias of obsessives differ in two respects from those of patients whose primary complaint is phobia. In the first place, the fears of obsessive patients have a compelling quality which is absent in other phobias. While phobic patients have irrational fears, the fears are only evoked by the fear-producing situation (being out of doors,

being near birds, etcetera). The obsessional similarly claims to fear certain situations but additionally spends much time scanning his environment and monitoring his own thoughts seeking the very features which are alarming to him in his environment or thoughts. The obsessive patient who fears dirt and feels compelled to check his clothing for its absence will go on thinking of and looking for dirt in the cleanest possible situation, whereas the bird-phobic patient will rest content in an ordinarily bird-free house. Secondly, the phobias of obsessive patients differ from those of phobic patients in that typically the fear is not of a given object or situation, but rather of the results which are imagined to arise from it. Thus the patient who has an impulse to plunge a knife into his friend's or his own neck has an understandable fear of knives and the patient who must bathe and wash his clothes everytime he is "contaminated" understandably goes to great lengths to avoid dirt. Marks (1978) refers to such secondary fears as "obsessive phobias" (the rating of "obsessive phobia" in the "description of present illness" section of the Psychiatric Questionnaire also refers to fear of the imagined consequences arising from exposure to or contact with a given object or situation). Because the fears of obsessives are, as a rule, closely bound up with the patient's rituals, horrific temptations, pervasive doubt and rumination, obsessive phobias often seem bizarre and are not likely to be found on the Wolpe-Lang list of 72 common fears. The patient, for example, who is troubled by obscene thoughts whenever he looks at a naked statue develops a phobia of museums. Even where the content of an obsessive phobia constitutes one of the classical fears, the patient's fear can only be understood within the context of his obsessive thinking. Marks (1978) describes a compulsive gambler, for example, who would not leave home

(agoraphobia) for fear that he would bet more and his wife would discover him.

### Anxiety

The concept of anxiety is central to both the psychodynamic and learning theory formulations of the aetiology and maintenance of phobias and obsessive-compulsive behavior. Mowrer's (1947) two-factor theory of avoidance learning assumes that phobic avoidance is reinforced by a reduction in the anticipatory anxiety elicited (acquired through classical conditioning) by the feared object. Although clearly inadequate conceptually, most learning theory explanations of compulsive behavior (Dollard & Miller, 1950; Taylor, 1963; Walton and Mather, 1964; Carr, 1971) and obsessive thinking (Rachman, Hodgson & Marzillier, 1970) assume that obsessive-compulsive behavior is instrumental in reducing anxiety. Anxiety is also central to psychodynamic formulations of phobic avoidance and obsessive behavior. From the Freudian perspective, phobic reactions and obsessive behavior constitute defensive maneuvers which serve as a means of obtaining relief or protection from the intolerable anxiety elicited by the conflict between hostile and sexual urges on the one hand, and the threat of punishment, on the other. The primary defensive strategy in the phobic reaction is displacement, substitution of the original object of fear by some other object, symbolic of the original object but easier to avoid. Isolation, the separation of the affective and ideational components of an anxiety-provoking impulse, is the dominant mechanism in the psychodynamic formulation of obsessive behavior. If isolation is completely successful, the impulse and its associated affect are totally repressed, and the patient is consciously aware only of the affectless idea that is related to it.

Available data on the relationship between obsessive symptoms and anxiety is contradictory. Several studies (Pollitt, 1957; Wolpe, 1958; Walton & Mather, 1964; Meyer, 1966; Carr, 1970, 1971) have concluded that compulsive behaviors take place at high levels of anxiety and reduce this anxiety to a tolerable level. Other researchers have observed that obsessive behavior, contrary to what might be expected from either theory, increases rather than decreases anxiety (Kanner, 1957; Walton, 1960; Haslam, 1965; Reed, 1968; Walker & Beech, 1969; Solyom, Zamanzadeh, Ledwidge & Kenny, 1971). Similarly, Mellett (1974) noted that obsessional states did not appear to be defences against anxiety since anxiety was not produced (in his 20 experimental patients) by unaggressive prevention of compulsive behavior nor was it apparent when alleged deconditioning to anxiety associated with certain situations was carried out.

Most texts list non-specific anxiety (as opposed to phobic anxiety or anxiety associated with obsessive symptoms), as a feature of both disorders (Scott, 1966; American Psychological Association, 1980) although there is some disagreement. The Cecil-Loeb Textbook of Medicine (Beeson & McDermott, 1963), for example, claims that anxiety per se is not a prominent feature of obsessional neurosis as it is automatically controlled by the repetitive thoughts and acts.

Many phobic patients have, in addition to their fear in the phobic situation, continued anxiety in the absence of the phobic object - so-called free-floating anxiety. This is particularly true of patients with severe agoraphobia and this background of anxiety, sometimes reaching panic proportions, may be more distressing to the agoraphobic patient than are the phobias themselves. Indeed, the DSM-III lists agoraphobia with panic and

agoraphobia without panic attacks as separate disorders. This difference in the intensity of generalized anxiety between agoraphobic patients and other phobic patients is documented in a number of studies. Snaith (1968) using the Anxiety Rating Scale devised by Hamilton (Roberts & Hamilton, 1958) showed that patients with agoraphobia as their primary symptom are more anxious than patients whose primary phobia is some other object or situation. Physiological measures of anxiety also discriminate between agoraphobics and specific phobics. Agoraphobics and patients with social phobias are more anxious than animal phobics, using either GSR habituation rate and GSR fluctuations (Lader & Wing, 1966) or forearm blood flow at rest (Kelly, 1966) as indices.

In an uncontrolled study, Rosenberg (1967a) measured generalized anxiety in a group of 47 patients who had undergone treatment for obsessional neurosis, using Cattell's Sixteen Personality Factor Questionnaire (Cattell, 1962) and the Taylor Manifest Anxiety Scale (Taylor, 1953). On the 16PF second-order factor of anxiety, the male obsessives had a mean score of 8.3 and the females obsessives a mean score of 6.9, compared with the general American population mean score of 5.5. Rosenberg does not indicate whether this represents a significant difference. On the test measuring manifest anxiety the obsessional neurotics did not differ from a normal sample. The majority of Rosenberg's patients were no longer undergoing treatment, however, and "most considered that they had made reasonably good social and work adjustment" (p.472). His results, therefore, probably underestimate the anxiety levels of untreated obsessive patients.

The only direct comparison of generalized anxiety levels in obsessive and phobic patients is that of Mellett (1974), who compared the incidence of

somatic symptoms often associated with anxiety in 20 obsessional patients who had not responded to conventional treatment with 20 patients matched for age and sex and suffering from phobias of such things as enclosed spaces, open spaces, sexual intercourse, birds, and spiders. The symptoms particularly sought were: headache, dizziness, blurring of vision, trembling, abnormal sweating, breathlessness, left sub-mammary pain, palpitations, indigestion, nausea, poor appetite, diarrhea, frequency of micturition and disturbance of menstruation. Somatic symptoms often associated with anxiety appeared in the complaints of only four of the obsessional patients; whereas 18 of the 20 phobic patients complained of at least two of the above physical symptoms and nine of the phobic patients complained of three or more.

#### Depression

The classical textbook descriptions of obsessive-compulsive neurosis are unanimous in the prominence they give to depression as an associated feature of the disorder, but the contradictory available data on the relationship between obsession and depression only supports Beech's (1974) contention that "....the gulf between the phenomena to be observed and the classical textbook descriptions appears to be wider for obsessionals than for any other group" (p.3).

According to Black (1974), "depression is probably the commonest major condition associated with obsessional illness - but then it is itself a common condition" (p.46). Both Nemiah (1967) and Batchelor (1969) point to the difficulty of differentially diagnosing depression with obsessional features (about 20 percent of patients with depressive illness have obsessive-compulsive symptoms, according to Nemiah) and an obsessional state

with secondary depression. Nemiah, in fact, sees the two disorders as two ends of a single continuum. "As in the case of the phobic reaction", he writes, "pure depressive disease and the pure obsessive-compulsive reaction represent two ends of a spectrum that spans an intervening stretch of clinical states with many features shared in common" (p.926).

There is in fact a theory (Beech & Perigault, 1974) that postulates the primacy of mood disturbance in the causal link which culminates in the obsessive thinking or compulsive behavior. According to this theory,

.....the individual who is subject to massive, unsolicited mood changes is prompted to explain these experiences and, in the absence of any 'real' external cause, will create a fiction or pathological idea (such as that concerning some source of contamination) and abnormalities of overt behavior (e.g., rituals or avoidance behavior) which are consistent with these ideas (p.115).

Other writers (Nemiah, 1967; Yaryura-Tobias & Neziroglu, 1981, Reference Note 1) while acknowledging that depression is common in obsessives, see the depression as secondary in that it is the result of an inability to control the obsessions and compulsions that have dominated the patient's life.

Yaryura-Tobias & Neziroglu (Reference Note 1), in support of their view of the secondary role of depression, point out that antidepressant agents reduce depression in obsessive patients but do not ameliorate the obsessive-compulsive symptoms.

The data to support or refute the textbook relationship between depression and obsession, what little there are, are contradictory. Evidence in favor of the proposed causal relationship between depression and obsession comes from Videbech (1975) who studied 104 depressed but "anancastic" Danish patients. In the Videbech study the incidence of obsessions increased from 23 percent to 66 percent of all cases, during depressive episodes. On the other hand, 55 percent of Rachman & Hodgson's (1980) series of 83 obsessional

patients were seemingly free of depressive complaints at the onset of the disorder. Indirect evidence of the correlative kind is equally contradictory. Kiloh and Garside (1963) found a significant correlation between the presence of obsessional symptoms and reactive depression, but Rosenberg (1968) found that depression was no more common in obsessive neurotics (N=144) than in anxiety neurotics (N=144) and the latter group attempted or committed suicide significantly more often than did the obsessives. Similarly, Kringlen (1965) found that, among his patients, four times as many nonobsessional neurotic controls were subject to mood swings (20 controls to a mere 5 obsessionals).

Depression is said to be a common symptom in all phobic patients (Snaith, 1968; Nemiah, 1967), but it is a prominent feature only in agoraphobic patients (Roth, Garside & Gurney, 1965). According to Marks (1969), agoraphobics, unlike patients with social or specific phobias, complain of "depressive mood, crying spells, feeling hopeless, irritability, increased anxiety and panic attacks, lack of interest in their work, difficulty in falling asleep; mild retardation and suicidal ideas may occur but severe retardation, nihilism and bizarre delusions are not a feature" (p.139). This difference is reflected in the 1980 revision of the American Psychiatric Association's Diagnostic and Statistical Manual (American Psychiatric Association, 1980) which lists five different phobic diagnostic categories (the 1968 version had only one phobia category, phobic neurosis): agoraphobia with panic attacks, agoraphobia without panic attacks, social phobia, simple phobia and unspecified phobia, but lists depression as an associated feature of agoraphobia only.



### Social adjustment

Obsessive-compulsive disorders can be "malignant" or "benign", according to Rachman and Hodgson (1980). In some instances virtually all of the person's waking time is devoted to rumination and carrying out compulsive rituals. Rachman & Hodgson refer to such people as "full-time obsessionals". "At its most malignant," they write, "the damage and suffering caused by the disorder are equal to or exceed that produced by any other psychological disorder" (p.57).

At the other extreme, some patients, the "part-timers", succeed in making a productive and satisfying life for themselves, in spite of their obsessional disorders. Lewis (1965) has pointed out that "the social efficiency of an obsessional may have little discernible relation to the characteristic symptoms of his neurosis" (p.300). He quotes the obsessional problems of Bunyan and Luther as illustrations of "how energy and achievement can be compatible with persistent severe obsessions" (p.302).

Two studies (Kringlen, 1965; Rachman & Hodgson, 1980) have documented the extent to which an obsessional disorder can interfere with the person's capacity for social, occupational, and sexual adjustment, but the patients in both studies were by no means representative of all obsessives. Kringlen's 91 patients were all inpatients at a Norwegian university psychiatric hospital, and all 83 patients in Rachman and Hodgson's series had had previous psychological and psychiatric assistance at other institutions. Although the statistics from these studies clearly overestimate the degree of social maladjustment in obsessive-compulsive patients, they serve to illustrate the degree to which the symptoms can pervade and debilitate virtually every aspect of the patient's life.

Kringlen assessed the social and occupational adjustment of his patients 13 to 20 years after the time of their first admission to hospital. Thirty-three of his 91 patients had been admitted to hospital for psychiatric treatment during the follow-up period and 34 of the 91 patients were worse or unchanged at the time of follow-up. Only 19 were much improved. Only 23 of the 38 males and 32 of the 52 females were married. The marital adjustment of these 55 couples was "extremely bad" in 7 cases and "bad" in another 18. Only 28 percent had never had reduced working capacity on account of their illness, while 65 percent were impaired to some degree and 7 percent were severely impaired at some time during the follow-up period. Nearly 40 percent of the patients - 13 males and 20 females - were living rather isolatedly without any normal contact with friends; less than 20 percent could be said to have an apparently normal social life.

Rachman and Hodgson paint an equally bleak picture of the social adjustment of their patients. Of the series of 83 patients on whom they have detailed information, 37 exhibited an obsessional life style (so called "full-time" obsessionals). Only 6 of the 83 had successfully managed to contain their problem, and the remaining 40 patients displayed moderately distorted life styles. As a group they were significantly less successful in establishing or maintaining satisfactory personal relationships and a disproportionately high number were single, separated or divorced. According to Rachman and Hodgson,

Although many of them were highly intelligent and even gifted people, their productivity was low because of the damaging effects of their disorder. Most of them had required extensive professional help, and many were entirely unable to support themselves financially. In a significant majority of cases, their freedom of travel was impaired, and some of them were almost immobilized. A significant minority were obliged to avoid entire sections of the city in which they lived, or entire regions of the country. In the most extreme cases, the

immobilization was so severe that they were obliged to spend a large part of each day sitting in one comparatively safe spot (p.61).

The degree of social maladjustment in phobic patients is variable and depends upon the natural characteristics of the phobic object or situation. At one end of the spectrum, specific phobias of rare easily avoided stimuli, such as snakes, result in little impairment. Social phobia, although rarely incapacitating in itself, can inhibit the advancement of persons whose occupations require that they socialize easily and speak publicly. At the other end of the spectrum, severe agoraphobia, by definition, is incapacitating. During exacerbations of the disorder, the individual may be literally housebound and nonfunctional outside of the home.

#### Summary of Review of the Literature: Symptomatology

##### 1. Obsessive-compulsive symptoms

Among phobic patients, agoraphobics alone manifest obsessive symptoms.

##### 2. Phobias

Although obsessive patients frequently present with phobic symptoms, the phobias of obsessives, because they are as a rule closely bound up with the patient's obsessive preoccupation, would not be expected to be similar in content to the fears typical of phobic patients.

##### 3. Anxiety

The evidence bearing on the question of whether anxiety is a prominent feature of obsessive-compulsive disorder or whether the anxiety of obsessives is automatically controlled by repetitive thoughts and acts is contradictory.

Many phobics, particularly agoraphobics, experience, in addition to anxiety in the phobic situation, free-floating anxiety. The only direct comparison of anxiety in the two disorders revealed that phobic patients complained of a wider range of somatic symptoms associated with anxiety than did obsessives.

#### 4. Depression

Although it is unclear whether depression among obsessives is a cause or an effect of the disorder, there is agreement in the literature that depression is a prominent feature of obsessional states. Although depression is said to be a common symptom in all phobic patients, it is a prominent feature only in agoraphobic patients.

#### 5. Social adjustment

Although some obsessive-compulsives (e.g., Bunyan and Luther) can be very socially efficient despite their symptoms, the maladjustment of social functioning in most obsessives is profound and pervasive. The degree of social maladjustment in phobic patients is variable, with, at one end of the spectrum, little impairment in patients who fear specific, easily avoided stimuli and, at the other end of the continuum, severe impairment in the housebound agoraphobic.

## II. Natural History

"The natural history of a condition is, simply, an account of its development in time, from beginning to end" (Black, 1974, p.19). The term is used here in its broadest sense, to include, for example, characteristics of the patient's relatives.

### Sex ratio

Ingram's (1961a) view that "on the available evidence there is no reason to suppose that women are more disposed to obsessional disorders than men" is confirmed by a tabulation by Black (1974) of eleven studies (Pollitt, 1957; Register-General, 1953; Rudin, 1953; Muller, 1953; Blacker and Gore, 1955; Ingram, 1961b; Greer and Cawley, 1966; Lo, 1967; Kringlen, 1965; Ray, 1964; Noreik, 1970) which shows a total of 651 men and 685 women, a ratio of 49:51.

Among phobic patients females predominate. The reported proportion of females among agoraphobics ranges from 63% to 100% - 63% in the Snaith (1968) series; 81% in the Klein (1964) series; 89% in Tucker's (1956), Marks & Gelder's (1965, 1966) studies; and the 1963 study of Warburton (cited in Marks, 1969); and 100% in the Bignold (1960) series. Among animal phobics the preponderance of women is even greater than in agoraphobia - only one man was noted in a series of twenty-three patients from the Maudsley Hospital (Marks, 1969) - although animal phobias are common in both males and females under the age of ten (Rutter, Tizard & Whitmore, 1968). The female preponderance among social phobics is smaller than in agoraphobia or animal phobia (60% according to Marks & Gelder, 1966) and social phobias are among the commonest phobias to be found amongst men. No explanation for this is obvious.

### Marital Status

According to Black (1974), the few papers reporting the prevalence of marriage in obsessional patients agree that a large proportion of these patients remain unmarried, over 50% in some surveys (Rudin, 1953; Blacker & Gore, 1955; Ingram, 1961b; Kringlen, 1965; Okasha, Kamel & Hassan, 1968). Ingram (1961b) reported significantly more single obsessional patients (51%) than anxiety neurotics (27%) and Blacker & Gore (1955) found that more obsessional men were single, compared to other neurotic males. Both these papers note a substantially higher proportion of unmarried obsessional men, 68% and 53% respectively, than women. There is also one report (Hare, Price & Slater, 1972) that both male and female obsessional patients, when they do marry, tend to marry at an older age than do other types of patients, a fact that could explain the relatively high proportions of unmarried obsessionals in the surveys cited above.

Gutheil, in the preface to his translation of Stekel's "Compulsion and doubt" (1949), suggests that many obsessives remain unmarried because they "crave freedom and independence" and therefore avoid "the 'compulsion' of matrimony" (p.17). More parsimonious is Ingram's (1961b) interpretation of the finding: that it reflects the social incapacity caused by severe obsessional illness.

Among phobic patients, only those with social phobias, not surprisingly, tend to stay single; half of the 25 social phobics of Marks and Gelder (1966) were not married, but the mean age of this group was only 26. Of the 24 animal phobics presented at the Maudsley in the last decade only 20% were never married and an additional 15% were divorced or separated at the time

they sought treatment. In a series of 47 phobic patients, of whom all but four were agoraphobic, Solyom, Beck, Solyom & Hugel (1974) report that 68% were married.

#### Age of onset

Defining the onset of a disorder is an arbitrary process. Even assuming that patients can usually date the first symptom fairly accurately, this is not necessarily tantamount to the onset of the disorder per se and in obsessional and phobic conditions, precursory phenomena tend to blur the picture (Skoog, 1965).

In the Psychiatric Questionnaire (one of the assessment instruments used in the present study and described in the method section) a distinction is made between the age at which the first obsessive or phobic symptom was experienced and the age of onset of an unremitting train of obsessional or phobic symptoms for which the patient ultimately sought professional help. Both ages are recorded in the Psychiatric Questionnaire but for the purposes of this study the onset of the disorder is defined as the age at which the symptomatology became continuous.

Published accounts of the natural history of obsessional states agree that the age of onset for obsessions is late adolescence and early adulthood. On average, the first symptoms of obsessional illness appear in the early twenties. According to Black (1974),

Lo (1967) found the mean age of onset to be 23.1 years and Ingram (1961b), 24.7 years (compared with 32.3 years for hysteria and 32.2 years for anxiety states); the mean age in Pollitt's (1957) series was a little earlier, with virtually no difference between men (20.2 years) and women (21.6 years). However, the age distribution is skewed: the highest incidence of first symptoms occurs between the ages of 10 and 15 years, by which time the illness has started in nearly a third of cases; by age 25, over half of the patients have

symptoms and by 30 nearly three-quarters (pp. 37-38, based on data from Rudin, 1953; Pollitt, 1960; Ingram, 1961b; Ray, 1964; Kringlen, 1965; Skoog, 1965; Lo, 1967; and Noreik, 1970).

Less than 5 percent of the patients report an onset after the age of 40, according to Rachman and Hodgson (1980).

Agoraphobia usually begins in young adult life, between 18 and 35 years of age and is rare in childhood (Rutter, Tizard & Whitmore, 1968). The mean age of onset was 24 in the Maudsley Hospital series and 28 in the "Open Door" (a British club for agoraphobics) sample (Marks, 1969). Social phobias start mostly after puberty, between the ages of 15 and 30, with a mean onset age of 19 years. The distribution for onset age of social phobia is not dissimilar from that of agoraphobia; very few social phobias start after the age of 30 (Marks & Gelder, 1966) and no cases were found in a large survey of children aged 10 and 11 (Rutter, Tizard & Whitmore, 1968). The great majority of animal phobias, which constitute only 3% of all phobias treated (Marks, 1969), start before the age of 7 and very few begin after puberty though such cases do occur, for example, after dog bites (Freidman, 1966). No data on the age of onset of other specific phobias are available.

### Precipitating factors

The identification of precipitating factors depends on the particular criteria used. Black (1974) states,

Taking definite evidence of adverse change in the physical state or environment of the patient within six weeks of onset of key illness as their yardstick, Greer and Cawley (1966) reported precipitating factors in 30 percent of 23 patients with obsessive-compulsive reactions, compared with 55 percent of 162 patients with other neurotic illnesses. Defined as events considered significant within six months of onset, Lo (1967) noted precipitants in 56 percent of 88 patients, while Ingram (1961b), extending this period to a year, found them in 69 percent of 89 cases. The incidence in Ingram's controls was 46 percent. Rudin (1953) considered precipitating factors to be significant in 58 percent of 130 cases, Pollitt (1957) in 66 percent



of 141 cases, and Kringlen (1965) in 59 percent of 91 cases (pp. 38-39).

The types of precipitating factors most commonly described in obsessive-compulsive patients are sexual and marital difficulties, pregnancy and delivery, and illness or death of a near relative, but there is little agreement on the absolute or relative importance of these. According to Black (1974),

Muller (1953) and Pollitt (1957) agree that sexual and marital difficulties are most frequent and the preponderance of sexual factors in Pollitt's obsessionals - 30 percent of all precipitating factors in this group - was significantly greater than that in his controls - 3 percent. Ingram (1961b), however, found the incidence of sexual or marital precipitants in his obsessional and control patients to be little different - 19 percent and 23 percent, respectively. Pregnancy and delivery, on the other hand, were the most frequent in Ingram's study, occurring in 24 percent of his cases and 10 percent of the controls; the incidence was particularly high in the 19 married women, 9 of whose obsessional illnesses were precipitated by these factors. Nevertheless, in Pollitt's patients, pregnancy and delivery were only modestly represented, in 11 percent of obsessionals and 10 percent of controls, and were also found to be unimportant factors by Lo (1967) and Balslev-Olesen & Geert-Jørgensen (1959). Muller (1953) and Pollitt (1957) noted that illness or death of a near relative often seemed to provoke the onset of obsessional illness. Pollitt found these to account for 15 percent of all precipitating factors in the obsessional patients, compared with 2 percent in controls. Ingram (1961b) observed a similar incidence, 18 percent, but in his study this was matched by 25 percent of controls. The most frequent precipitants in Lo's (1967) series were frustrations and overwork; these constituted 32 percent of all precipitating factors and might be thought to represent the particular cultural and socio-economic stresses to which many Chinese in Hong Kong are exposed. (p. 39)

Figures given about the frequency of precipitating factors at the onset of agoraphobia range from 10% (Freidman, 1950) to 83% (Roth, 1959), which reflects disparate interpretations about what should be regarded as a precipitant. Nevertheless, a substantial number of agoraphobias clearly start after a major change in the patient's life situation, e.g., serious illness in the patient or relative, acute danger or discomfort, leaving home, bereavement, engagement, marriage, pregnancy, miscarriage, childbirth, or

after an unpleasant scene in a shop, street or bus. Marks (1959) remarks, "As with almost any other condition, agoraphobics often regard some trivial event as the trigger to their disorder, even though such events might previously have occurred without undue mishap" (p.128). He discounts the significance of these identified precipitants:

Since a multitude of events can precede agoraphobia it is likely either that such precipitants act as non-specific stressors in a patient already liable to the disorder for some reason, or that the disorder was already present but hidden until the stressor elicited or exacerbated it (p.128).

Solyom, Beck, Solyom & Hugel (1974) agree with Marks' view of the role of precipitants in agoraphobia:

It is obvious from the list of precipitating factors that there is no direct relationship between the precipitating factor and the content of the phobia. A patient might become agoraphobic after a sudden fire in the house or after witnessing the death of a friend. There is, however, some correspondence between the precipitating event and the content of the specific phobias, as when a bee sting leads to an insect phobia (p.73).

Most social phobias, according to Marks (1969), develop slowly over a number of months or years, with no clear history of any precipitating cause. Animal phobias, as mentioned earlier, usually begin in childhood. Adults who suffer from animal phobias usually cannot remember any precipitating event because the origins of such phobias are usually lost in the midst of early childhood memories but a few can be dated to specific incidents. Marks (1969) describes the interesting case of a bird phobia which began after a child posing for a photograph in Trafalgar Square took fright as a bird alighted on her shoulder and she couldn't move - the resultant photograph preserved the record of the origin of her phobias!

### Course of disorder

According to Black (1974), "Four types of initial course of obsessional states were recognized by Ingram (1961b): constant, with progressive worsening; constant and static; fluctuating but never completely symptom-free; and phasic, with one or more remissions" (p. 40). These categories, which Solyom incorporated in his Psychiatric Questionnaire, were also used by Ray (1964) and Lo (1967). As can be seen in Table 2 below, the distribution in these English (Ingram), Indian (Ray) and Chinese (Lo) samples is strikingly similar. In from 38 to 46 percent of the cases the course was fluctuating or phasic. Kringlen (1965) used slightly different categories but obtained similar findings. In an unusually long follow-up - a mean of 30 years after onset - Kringlen found that 31 percent of his series of 91 patients were unchanged throughout the follow-up period; a further 27 percent showed no change for some years, then gradually improved; while another 6 percent made a continuous improvement; 28 percent ran a fluctuating course, with or without periods of complete remission; and 8 percent showed continued worsening.

According to Marks (1969) the course of agoraphobia differs from that of other phobias in that "if (it) persists longer than a year, (the course is) fluctuating with partial remissions and relapses for years" (p.110); the course of animal phobias and of miscellaneous specific phobias he describes as "continuous" and the course of social phobia as "fairly continuous". Snaith's (1968) data support Marks' characterization of the course of phobias. Snaith compared the course of the disorder of 27 agoraphobic patients and of 21 patients whose primary fear was focussed on some other object or situation. Snaith dichotomized course into either "continuous" or "remitting" (defined as "a complete remission of all symptoms", p.686) and reported that whereas only

Table 2

Percentage distribution of obsessional cases according to initial course of illness (from Black, 1974)

Type of Course	Ingram (1961b) N=89	Ray (1964) N=42	Lo (1967) N=88
Worsening	39	33	
Constant	54	61	58
Static	15	28	
Fluctuating	33	24	31
Phasic	13	14	11

one of the 21 (5%) patients with other phobias had a remitting course, 10 of the 27 (37%) agoraphobic patients had experienced one or more complete remissions. Solyom, Beck, Solyom & Hugel (1974) reported that 23 of their series of 47 (49%) agoraphobic patients had temporary remissions.

There has been much discussion in the literature about the causes of these variations in the pattern and severity of symptoms. According to Black (1974),

Improvement may occur (in obsessives) when tension is reduced or when the patient has to deal with new external difficulties (Pollitt, 1957). The beneficial effects of religion were pointed out by Muller (1953);... (and by) Ray (1964), who found in a study carried out in India that in patients with strong religious tendencies, dramatic improvement followed pilgrimages involving the performance of some expiatory rites. The disappearance or reduction of symptoms during a patient's war service has been noted by Janet (1903, 1925),... an improvement attributed by Lewis (1936) to the routine and lack of responsibility (p. 42).

Black also notes that, "Aggravation of symptoms may follow increased responsibility, fatigue, recurrence of situations originally precipitating the disorder, and any circumstances which increase tension (Pollitt, 1969)" p. 42.

Pollitt's list of circumstances that exacerbate obsessional states is not at all incompatible with the Beech and Perigault (1974) theory that postulates a causal link between depressive mood and obsessive-compulsive behavior.

Increased responsibility, tension and fatigue could result in an exacerbation of obsessional states as Pollitt suggests by causing a deterioration in mood which, in turn, leads to obsessive thinking and compulsive behavior.

Alternatively, the mood disturbance may be secondary to the exacerbation in obsessive symptomatology, as suggested by Nemiah (1967) and Yaryura-Tobias & Neziroglu (1981, Reference Note 1)

With respect to remissions in the agoraphobic syndrome, Solyom, Beck, Solyom & Hugel (1974) state:

In many cases it was not possible to identify the causes of these remissions; in some it seemed that more favorable economic conditions such as moving from an unfamiliar to a familiar situation and other changes for the better were instrumental in bringing about a gradual lessening in the intensity of phobias (p.72).

Not all changes that lead to remission are changes "for the better", however; Kral (1952) reported remission of phobic symptoms among patients in concentration camps.

#### Delay in seeking help

Black (1974) claims that, "...patients suffering from obsessional states tend to be more secretive than other neurotic patients and to postpone seeking medical help until later" (pp.21-22). Other writers (Rachman and Hodgson, 1980; Nemiah, 1967) account for the delay by the fact that since people with obsessive-compulsive symptoms are frequently able to work and earn a living despite marked limitations in their social life, their disorder may never be known except to their closest associates. Whatever the reason for the delay,

the evidence for it is strong. Pollitt (1957) found that 31% of obsessive patients sought help within a year but almost a quarter delayed ten years and the mean delay was 7.5 years. Similarly, Lo (1967) found that 38% were seen within one year, although only one in twenty of his series of patients waited ten years.

In Marks' (1969) series of patients the average age of onset for agoraphobia was 24 years and the average age at which professional help was sought was 32 years, a delay of 8 years - almost identical to Pollitt's average delay of 7.5 years for obsessives. Similarly, persons seeking help at Maudsley for social phobias (Marks, 1969) delayed 8 years (age of onset = 19 years; treatment age = 27 years). Animal phobics at Maudsley delayed even longer - an average of 26 years (age of onset = 4 years; treatment age = 30 years). This latter finding is probably more a function of the significantly earlier age of onset of animal phobias than to a delay in seeking treatment per se. Most children aged two through four go through a phase when they are a bit afraid of animals. The great majority of children rapidly lose this fear, however, and by the time they reach puberty, very few children have any fears of animals left at all. A tiny minority do retain their fears into adult life and "adults who complain of fears of animals usually say that their fears began in childhood before the age of six or 'as far back as I can remember'" (Marks, 1978, p.120). Another possible reason for the long delay in seeking treatment for animal phobias, compared to the delay in the case of agoraphobia or social phobia, is that animals are easier to avoid than open space (agoraphobia) or people (social phobia) and therefore the animal phobic is less incapacitated and may elect to postpone treatment until convenient.

Although the evidence cited above would seem to indicate that the obsessives delay seeking help about as long as do agoraphobics and social phobics, there are a number of dangers in comparing this variable across studies. Pollitt's (1957) data is now 24 years old and one would have to assume that improvement of services and education in the interim has probably reduced the 7.5 year mean waiting period before the affected person comes to the attention of the health services. In addition, the delay in seeking treatment is a function of how onset of illness is defined. If one defines onset as the date of the first symptom, the delay in seeking treatment will be longer than if one defines onset as the beginning of the unremitting train of symptoms for which the patient ultimately sought help.

#### Mental illness among relatives

Several authors (Lewis, 1936; Brown, 1942; Rudin, 1953; Muller, 1953; Kringlen, 1965) refer to the raised incidence of personality disorders and neurotic conditions among first degree relatives of obsessional neurotics, according to Black (1974), but results of the only two controlled studies (Brown, 1942; Greer & Cawley, 1966) provide no support for the assertion that the relatives of obsessives are more likely to be mentally ill than the relatives of other neurotic patients.

Black (1974) reports that Rosenberg (1967b), "investigating 547 first degree relatives of 144 inpatient cases of obsessional neurosis, ...found that 9.3 percent had received psychiatric treatment, mainly for anxiety states, phobias, depression and schizophrenia" (p. 26). Brown (1942) reported that 10% of the parents and siblings of his group of 20 obsessional patients suffered from neurotic conditions, another 4% from psychoses and 26% from what

he refers to as "anxious personality" - for a total of 40% of the parents and siblings.

Brown (1942) compared mental illness in the relatives of his obsessive patients with mental illness in 63 cases of anxiety state, 21 cases of hysteria and 31 medical inpatient controls. According to Black (1974), "The incidence of all mental disorders was no greater in the relatives of obsessionals (40%) than in the relatives of anxiety state patients (43%) and the overall incidence of neurosis was smaller in the relatives of obsessionals (10%)" (p. 26). Similarly, Greer and Cawley (1966), who compared the incidence of all mental disorder (not otherwise differentiated) in the parents and siblings of obsessionals (53%) with the incidence in anxiety state patients (43%) and hysteria patients (25%), found no significant difference among the three groups.

According to Black (1974), "The evidence for an increased incidence of obsessional neurosis in the families of obsessional neurotics would seem to be somewhat stronger but the significance of the observations is difficult to assess in the absence of agreed operational definitions and of control data" (p. 28). Although neither Lewis (1936) nor Kringlen (1965) reported any cases of obsessional neurosis per se in the relatives of their patients,<sup>1</sup> Rosenberg (1967b) reported 0.4 percent, Brown (1942) reported 7.5 percent among parents and 7.1 percent among siblings and Rudin (1953) found 4.6 percent and 2.3 percent, respectively. As Black (1974) points out, "If the prevalence rate of obsessional neurosis in the general population is accepted as 0.05 percent

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<sup>1</sup>Lewis found that 37 percent of the parents and 21 percent of the siblings had obsessional traits and it is possible that the obsessional trait figures might include a certain number of obsessional neurosis cases if judged by different criteria. Similarly, Kringlen reported that 10 percent of his patients' parents were "obsessive" but his use of the term "obsessive" makes it difficult to know whether this refers to personality or neurosis.



(Rudin, 1953; Woodruff & Pitts, 1964), clearly the incidence of this condition in first degree relatives reported by Brown (1942), Rudin (1953) and even Rosenberg (1967b) must be regarded as substantially raised" (p. 28).

The incidence of psychiatric disorder reported in the family of agoraphobic patients ranges from 21% to 45.4% (Harper & Roth, 1962; Roberts, 1964; Roth, 1959; Solyom, Beck, Solyom & Hugel, 1974). The only available control is the series of Harper and Roth (1962) who found the incidence of neurosis in the families of agoraphobics ("phobia-depersonalization syndrome") of 33% was significantly higher than in a control group of temporal lobe epileptics. In the Maudsley series of animal phobics (Marks, 1969) only 15% had first degree relatives with the same phobia as the patient; 10% had parents with psychosis, and 20% thought their mothers were "nervous". Among social phobics (Marks & Gelder, 1966), only 9% of cases had a first degree relative with the same phobia as themselves, and none had relatives with a different phobia. None had close relatives who had had psychiatric treatment.

#### Summary of Review of the Literature: Natural History

##### 1. Sex ratio

Obsessive-compulsive disorder is equally common in males and females but among phobic patients females predominate. The proportion of females among phobics varies from phobia to phobia. Among social phobics females account for about 60% of the cases; the reported proportion of females among agoraphobics ranges from 63% to 100%; among animal phobics the female proportion has been estimated to be 96%.

## 2. Marital status

A large proportion of obsessive-compulsive patients remain unmarried - over 50% in some surveys. Among phobic patients, only those with social phobias tend to stay single.

## 3. Age of onset

The mean age of onset of obsessive-compulsive disorder has been variously estimated to be 20.4, 23.1 and 24.7 years. The only available estimates of the mean age of onset of agoraphobia are 24 and 28 years. The age of onset of other phobias is reported to be younger than for obsessives or agoraphobics - 19 years for social phobics and less than 7 years for animal phobics.

## 4. Precipitating factors

Although the identification of precipitating factors depends on the particular criteria used, one or more precipitating circumstances can be identified at the time of onset of the majority (about 60% of cases when the six months preceding onset is taken as the critical period) of cases of obsessive compulsive disorder. The types of precipitating circumstances most commonly described in obsessive-compulsive patients are sexual and marital difficulties, pregnancy and delivery, and illness or death of a near relative, but there is little agreement on the relative importance of these. A substantial number of agoraphobias also clearly start after a major change in the patient's life situation. Social phobias, on the other hand, develop slowly with no clear history of any precipitating cause and adults who suffer from animal phobias usually cannot remember any precipitating event because the origins of such phobias are usually lost in the midst of early childhood

memories.

#### 5. Course

The course of most obsessive-compulsive disorders is either constantly worsening (36%) or fluctuating (29%). The course of agoraphobia differs from that of other phobias, according to Marks (1969), in that, if it persists longer than a year, the course is "fluctuating with partial remissions and relapses for years"; the course of animal phobias and miscellaneous specific fears he describes as "continuous" and the course of social phobia as "fairly continuous".

#### 6. Delay in seeking help

Although there are a number of dangers in comparing delay in seeking help across studies, the available evidence would seem to indicate that obsessives, agoraphobics and social phobics all delay approximately eight years before seeking help. Animal phobics put off therapy for their fears an average of 26 years.

#### 7. Mental illness among relatives

The available data do not permit comparisons with respect to incidence of mental illness among the relatives of the three groups of patients in the present study, but the literature indicates that the incidence of mental illness in the relatives of obsessives is not significantly greater than the incidence in the relatives of anxiety state and hysteria patients. The incidence of psychiatric disorder reported in the family of agoraphobic patients ranges from 21% to 45% - figures not unlike those for

obsessive-compulsive disorder, in absolute terms. Among social phobics and animal phobics the incidence of mental illness in relatives is markedly less than in the other two disorders.

### III. Personality variables

#### Premorbid personality type

Studies of the premorbid personality features of obsessive-compulsive neurotics reveal that the majority of those who develop an obsessional illness have shown previously personality traits which are conventionally described as constituting the obsessional personality, (also referred to as the anancastic or anal personality) although the connections are by no means necessary or sufficient.

Janet (1903) was one of the earliest writers to describe the obsessive personality and his description has been expanded upon by Freud (1908), Lewis (1938), Mayer-Gross, Slater and Roth (1960) and validated by the factor-analytic studies of Lorr, Rubinstein and Jenkins (1953), Sandler and Hazari (1960), and Cooper and Kelleher (1973). Sandler and Hazari analyzed the responses of 100 patients (50 males, 50 females) to the Tavistock Self-Assessment Inventory (Sandler, 1954). They extracted from the data the patients' self-ratings on a set of 40 items relating to obsessive-compulsive character traits and symptoms and subjected them to a centroid factor analysis. Two orthogonal factors emerged, which were then rotated through 45 degrees. The two factors thus identified correspond well to the obsessional character traits and obsessive-compulsive neurotic symptoms, described by earlier writers. Sandler and Hazari describe these factors as follows:

Factor A (obsessional character traits): Picture of an exceedingly systematic, methodical and thorough person, who likes a well-ordered mode of life, is consistent, punctual, and meticulous in his use of

words. He dislikes half-done tasks, and finds interruptions irksome. He pays much attention to detail and has a strong aversion to dirt. Factor B (obsessional symptoms): Person whose daily life is disturbed through the intrusion of unwanted thoughts and impulses into his conscious experience. Thus he is compelled to do things which his reason tells him are unnecessary, to perform certain rituals as part of his everyday behaviour, to memorize trivia, and to struggle with persistent 'bad' thoughts. He tends to worry over his past actions, to brood over ideas, and finds himself getting behind with things. He has difficulty in making up his mind, and he has inner resistance to commencing work (pp.119-129).

According to Slade (1974), whether a single trait factor and a single symptom factor emerge from such factor analyses, or a number of both, is probably a function of the range of behavior studied.

Psychoanalytic theory regards the relationship between obsessional premorbid personality and obsessional neurosis as a necessary one. In 1913, Freud noted a distinction between obsessive-compulsive neurosis and obsessional (anal) character. He stated that in the neurosis there is a failure in the defense mechanism of repression and repressed material emerges or threatens to emerge into consciousness. In the formation of the character traits, the repression is more successful, attaining its aim by reaction formation and sublimation. In his essay on character and anal eroticism, he described the traits of orderliness, parsimony, and obstinacy as constituting the cardinal triad of the anal character (Freud, 1908). In obsessive-compulsive neurosis the successful repression responsible for the anal character breaks down and there is an idea, image or affect that intrudes into the patient's consciousness or an impulse to perform an act which the patient cannot resist. In this view, reflected in the psychiatric textbooks forty years later (Bennet, 1949; Masserman, 1946; Noyes, 1949), the difference between obsessional personality and obsessional illness is one of degree, with the distinction between obsessional traits and symptoms based on whether or not the characteristics are egosyntonic; traits are a source of pride and

symptoms produce anxiety and tension. Some writers who do not endorse the Freudian aetiological assumptions (e.g., Marks, 1978) agree with the analysts, however, that obsessional personality and obsessional neurosis differ quantitatively rather than qualitatively.

This widely held view of the close relationship between obsessional personality and obsessive-compulsive neurosis receives some support from empirical studies but research has shown that the relationship is neither necessary nor sufficient. Very many normal people who never become ill exhibit excessive cleanliness, orderliness, pedantry and uncertainty. Moreover, should the person with an obsessional character suffer a breakdown there is no evidence to suggest that he will necessarily, or even frequently, become an obsessional neurotic (Mayer-Gross, Slater, and Roth, 1960). According to Batchelor (1969), if the possessor of these traits is subjected to stress and breaks down, he is more liable to develop a depression or a psychosomatic syndrome than an obsessional neurosis. Furthermore, some of those who develop an obsessional neurosis have not had obsessional personality traits. Several authors have tried to assess the extent of obsessional traits in obsessional patients before the onset of their illness. Their findings (from Black, 1974) are summarized below (Table 3). Kringlen's (1965) study is the only one that included data on non-obsessional controls. Fifty-three percent of his non-obsessional control patients showed moderate to marked obsessional traits. This figure is significantly lower than the incidence in Kringlen's obsessional patients - 72 percent.

A most thorough clinical study of the premorbid personality of obsessives was conducted by Skoog (1959). He investigated 251 cases and classified them into five personality types - the asthenic (obsessional), hysteroid, syntonic

Table 3

Incidence of obsessional personality traits in obsessional patients before illness

Author	Marked	Moderate	Moderate to marked	None	Total no. of patients
	%	%	%	%	
Lo (1967)	47				88
Ingram (1961a)	31	53	84 (31+53)	16	77
Kringlen (1965)	17	55	72 (17+55)	28	89
Rudin (1953)			72	28	109
Balslev-Olesen & Geert-Jørgensen (1959)			64	36	61
Rosenberg (1967a)			53		47
Pollitt (1960)				34	115
Mean percentages	31	54	71	29	

(cyclothymic), psycho-infantile (immature), and schizothymic (schizoid) types. Skoog found that whereas the obsessional and the immature personality types were more frequent among obsessives than non-obsessives, the hysteroid and schizoid attitudes were relatively under-represented. He considered that the personality structure shaped the clinical picture, resulting in not one but several clinical presentations of obsessional neurosis. Furthermore, he showed that "pure" personality types were uncommon, and that qualities of different types frequently occurred together in the same patient.

In an early attempt to distinguish between different types of premorbid personalities in obsessive-compulsive neurotics, Lewis (1936) postulated two types of obsessional personality - "the one obstinate, morose, irritable, the



other vacillating, uncertain of himself, submissive" (p.328). In 1961 Ingram attempted to recruit support for this but was only partly successful. Only 30 of the 77 patients he examined could be described as falling into one or other of the two categories proposed by Lewis, of which twice as many were of the submissive type as were of the obstinate, morose type (Ingram, 1961a).

In sharp contrast to the plethora of research on the obsessional personality, little is known about the premorbid personality of phobic patients. The premorbid personality of agoraphobics has been variously described as "soft", passive, anxious, shy, dependent (Terhune, 1949; Tucker, 1956; Roberts, 1964; Roth, 1959). The personalities of animal phobics in the Maudsley series (Marks, 1969) were described as anxious, dependent or shy in 35% of the cases and as sociable in 35%. According to Marks & Gelder (1966) half of their social phobics were fearful, timid, or over-shy during their childhood. After puberty 45% of these patients were relative social isolates, while 26% were social personalities.

#### Neuroticism and Extraversion-Introversion

An alternative to the conventional psychiatric approach to the relation between personality and obsessive-compulsive disorder is to be found in the general personality theory advanced by Eysenck (1947, 1957, 1967).

In the Eysenckian system there are three major dimensions of personality - Neuroticism (N), Psychoticism, and Extraversion-introversion (E). Eysenck (1967) has put forward a theory regarding the biological basis of the N and E factors. Briefly, he suggests that individual differences in extraversion-introversion reflect variations in the nature of the ascending reticular activating system of the brain, while emotionality-stability

(neuroticism) is related to characteristics of the visceral brain (i.e., hippocampal structures, amygdala, cingulum, septum and hypothalamus).

The reticular activating system is believed to be responsible for non-specific arousal in the cerebral cortex in response to external stimulation. Eysenck postulates that this state of arousal is higher in introverts than extraverts given identical conditions of external stimulation. This differential in arousal is held responsible for all of the experimentally observed differences between extraverts and introverts, for example the relative speed with which introverts acquire conditioned reflexes compared with extraverts. The difference in conditionability is in turn held responsible for the different types of abnormal behaviour to which introverts and extraverts are relatively prone: emotional introverts show dysthymic<sup>1</sup> symptoms such as obsessions and phobias because of their over-ready conditioning to normally neutral stimuli, while the hysterical and psychopathic behavior typical of emotional extraverts results from a failure of the conditioning which constitutes the normal socialization process in childhood.

The prediction that introverts are more likely to develop obsessions and phobias can be confirmed only by demonstrating, in a longitudinal study, that introverted children are more likely to develop obsessions and phobias than their extraverted peers. Without such a study one cannot assume that elevated

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<sup>1</sup>Eysenck refers to people with high scores on both introversion and neuroticism as dysthymic. This concept, formerly referred to as psychasthenia, incorporates most of the neurotic disorders, including anxiety states, reactive depression, phobias and obsessive-compulsive disorder. In Eysenck's (1957) words, "additional to the dimension of neuroticism, and orthogonal to it, we have another dimension, that of extraversion-introversion, which finds its prototype in the neurotic population, in the hysteric-psychopathic (extraverted) and the anxious-obsessional (introverted) type of personality" (p.88).

neuroticism and introversion scores in obsessives and phobics reflect causal factors; the development of obsessions and phobias is an emotionally disturbing and probably an introverting experience, and therefore the high scores on neuroticism and extraversion in these patients may reflect effects as well as causes. Since no such evidence is available, one must consider the weaker test of the hypothesis, namely, that the relationship should hold for concurrent measures of the two dimensions in the two types of patients. There is good evidence to support this hypothesis.

The evidence relating obsessiveness to these two general personality parameters comes from two sources, namely correlational and group-difference studies. A number of independent studies have produced significant positive correlations between obsessiveness measures and a measure of neuroticism or emotional stability (Orme, 1965; Forbes, 1969; Cooper, 1970; Kendell & DiScipio, 1970) while a number of independent studies have found significant negative correlations between obsessiveness measures and a measure of extraversion (Foulds, 1965; Barrett, Calbeck-Meenan & White, 1966; Kline, 1967; Forbes, 1969; Kendell & DiScipio, 1970). In some cases the magnitude of the correlations is so great as to account almost entirely for the variance measured by the specific obsessiveness inventories.

The second source of evidence relating obsessiveness to neuroticism and extraversion-introversion comes from group-difference studies. Obsessive patients have high N and low E scores relative to the normal group. The mean Neuroticism scores of Eysenck & Eysenck's (1964) sample of 23 obsessive patients and Rosenberg's (1967a) sample of 47 obsessive patients, 31.9 and 31.6 respectively, were significantly higher than the mean Neuroticism score (19.6) of Eysenck and Eysenck's (1964) normal sample (N = 1931). Likewise,

the Extraversion scores in both samples, 19.5 and 19.9 respectively, were significantly lower than the mean Extraversion score (26.3) of Eysenck & Eysenck's normal sample.

Marks (1969), using data that are a composite of the results of Gelder & Wolff (1967) and Lader (1966), reported that the Neuroticism scores of animal phobics do not differ from those of normals. Agoraphobics and social phobics have N scores that are significantly higher than those of animal phobics but significantly lower than those of anxiety state patients. None of these groups of phobics, according to Marks, have Extraversion scores that differ from the normal sample but all are more extraverted than anxiety state patients (Table 4).

Although no direct comparison of phobic and obsessive patients with respect to neuroticism and extraversion is available,<sup>2</sup> the data presented here provide indirect support for the thesis that phobic patients differ from obsessive patients on these dimensions and that the label, dysthymic, should not be applied to both groups of patients. Whereas Eysenck & Eysenck's (1964) data on anxiety states (N = 32.3, E = 20.7) and obsessionals (N = 31.9, E = 19.5) consistent with his unifying dysthymia concept, fails to discriminate the groups on these dimensions, the data summarized by Marks (1967) indicate that agoraphobics, social phobics and animal phobics all had lower scores on

<sup>2</sup>Although the neurotic groups (including those patients with diagnoses of anxiety state, reactive depression, phobia, and obsessive-compulsive disorder) that constitute Eysenck's dysthymic group were originally combined because all of these patients scored high (relative to normals) on both the Introversion and the Neuroticism scales, the means of each of the constituent groups on these dimensions were not published separately. Eysenck (Note 2) states that the means of the different dysthymic groups were not published separately for a variety of reasons: usually the differences on N and E among the constituent groups were not significant; there were usually age differences among the groups which complicated the picture as both E and N decline with age; diagnoses are unreliable; there were very few phobics in the mixed groups that he and his colleagues studied.

Table 4

Maudsley Personality Inventory  
Scores of various groups

	Anxiety states	Agora- phobias	Social phobias	Animal phobias	Normals
Neuroticism	37**	30	29	21*	20
Extraversion	14**	19	19	24	25

\* differs significantly from other psychiatric groups

\*\* differs significantly from all groups

Neuroticism and higher scores on Extraversion than did anxiety state patients.

Deduction from the Eysenck & Eysenck (1964) and Marks (1967) findings leads to the prediction that the obsessives as a group are more neurotic and less extraverted than phobic patients.

Summary of Review of the Literature: Personality Variables

1. Premorbid personality

Studies of the premorbid personality features of obsessive-compulsive neurotics reveal that the majority of those who develop an obsessional illness have previously shown personality traits which are conventionally described as constituting the obsessional personality although the relationship is by no means necessary or sufficient. Little is known about the premorbid personality of phobic patients.

2. Neuroticism and Extraversion-introversion

Deductions from the findings of Eysenck & Eysenck (1964) and Marks (1967) leads to the prediction that obsessives as a group are more neurotic and less extraverted than phobic patients.

C. METHOD

## I. Subjects

All 359 subjects in this retrospective study were, at the time of assessment, patients of Leslie Solyom, a psychiatrist who at present is Director of the Behaviour Therapy Unit at the Shaughnessy Hospital in Vancouver, British Columbia, and Clinical Professor of Psychiatry at the University of British Columbia (The curriculum vitae of Leslie Solyom can be found in Appendix A). The data were collected during the sixteen-year period from 1965 to 1980. One hundred fifty-nine of the patients presented with obsessive-compulsive symptoms, i.e., rituals, rumination, horrific temptations, and/or pervasive doubt (see Appendix B for definitions and examples of each of these symptoms), as the main complaint; in the other two hundred patients one or more phobias were the main symptoms leading the person to seek treatment. Eighty of the 200 phobic patients were diagnosed as agoraphobic. Although all of the patients were referred to Solyom by other physicians who had already diagnosed the patients as either obsessive or phobic, the final diagnosis rested with Solyom.

Most of the patients (280) were assessed and treated at the Royal Victoria Hospital in Montreal where Solyom practiced from 1960 to 1971 and from 1973 to 1978. Forty three of the patients were assessed and treated at the Ottawa General Hospital where Solyom was employed as a staff psychiatrist for a two-year period (1971-73) and another 35 patients were seen within the context of Solyom's Vancouver practice at the Shaughnessy hospital during 1979 and 1980. The locale of assessment of one patient in the study cannot be ascertained from the documents available in the patient's clinical file.



## II. Procedure

Psychiatrists and, to a lesser extent, general practitioners in the community, aware of Solyom's interest in phobias and obsessional states, referred to him patients who complained of either irrational fears or obsessive-compulsive symptoms. Upon receipt of a referral, Solyom saw the patient and conducted a brief clinical interview to confirm that the fears or obsessive symptoms for which the patient was referred indeed represented the client's primary pathology and were not secondary to some other major disorder (e.g., social phobias due to paranoid state). Judging from notes he made during these intake interviews (available in about half the files), the interview focussed on (i) elaboration of the patient's complaint, (ii) circumstances of onset, (iii) background information (e.g., living arrangements, other family members) and (iv) prior psychological treatment. Two of Solyom's intake notes (one on a phobic patient, Mr. K.R., and one on an obsessive patient, Mr. I.Z.), are reproduced in Appendix C by way of example.

Having confirmed that the irrational fear or obsessive symptoms for which the patient was referred constituted the primary diagnosis and that the patient was therefore an appropriate candidate for treatment of the phobia or obsession, Solyom then contacted the referring physician to accept the referral. In Montreal, the patient at this point was usually placed on a waiting list, sometimes for several weeks, since the rate of referrals to the service, as a rule, exceeded the capacity of the treatment facility. Only when the treatment laboratory could accommodate the patient was the assessment package, described in detail below, administered and treatment initiated. In

no case was group assignment of any patient in this series reversed on the basis of initial administration of the assessment package or on the basis of any subsequent assessment.

One hundred seventy of the 359 patients (most of them subjects in clinical studies) were administered the assessment package again (in the case of the Psychiatric Questionnaire, only the section in which symptoms are rated was repeated) at the time of treatment termination.

The phobic subjects (N=42) in the desensitization-aversion relief treatment comparison (Solyom, Heseltine, McClure, Ledwidge, & Kenny, 1971a) were assessed on a third occasion, at the mid-point of their treatment course.

During the first six years of data collection (1965-1970) the author was employed by Solyom as a behavior therapist and research assistant. In these capacities he assisted in the collection and analysis of the data used in the present study, administered behavior therapy to many of the patients, and collaborated with Solyom in the preparation of eight behavior therapy outcome studies involving phobic or obsessive patients (Solyom, Garza-Perez, Ledwidge, & Solyom, 1972; Solyom, Heseltine, McClure, Ledwidge, & Kenny, 1971a, 1971b, 1972; Solyom, Heseltine, McClure, Solyom, Ledwidge, & Steinberg, 1973; Solyom, Kenny, & Ledwidge, 1969; Solyom, McClure, Heseltine, Ledwidge, & Solyom, 1972; Solyom, Zamanzadeh, Ledwidge, & Kenny, 1971).

#### Assessment instruments

With an eye to possible retrospective research such as the present study, a Psychiatric Questionnaire, in the form of a semi-structured interview, was administered by Solyom to all patients accepted for treatment, prior to their

first treatment session. In the case of some experimental patients, the section of the Psychiatric Questionnaire in which the patient's psychiatric symptoms are rated was completed by a second psychiatrist as well. At the time of this structured interview the patients were asked to complete a number of questionnaires (self-ratings of symptoms and of social adjustment) and personality inventories. The content of the Psychiatric Questionnaire and the self-rating questionnaires, as well as the choice of personality inventories to be used were dictated by issues raised in published research on the symptomatology, aetiology, and treatment of phobias and obsessions. Solyom, who has published extensively on the aetiology and treatment of these disorders, developed the data package.

The following data were collected on all phobic and obsessive patients at each of the assessment points (those forms not published elsewhere or otherwise copyrighted, i.e., Psychiatric Questionnaire, Self-rating of Symptoms, Self-rating of Social Adjustment and General Information Sheet, are reproduced in Appendix D):

#### 1. Psychiatric Questionnaire

This questionnaire was administered in the form of a semi-structured interview by Solyom (and in some cases by a second psychiatrist as well). The content areas of the questionnaire include description and ratings of phobic and obsessive symptoms, ratings of other clinical features (depression, anxiety, hysterical signs, hypochondriasis, paranoia), age of onset and circumstances of onset, course of the disorder, family background, significant events in childhood, premorbid personality, sexual history, description of the

marriage (if applicable), employment history, general interests and hobbies, participation in group activities, religious involvement, prior illness (somatic, psychological, and psychosomatic), prior treatment and its outcome. The Psychiatric Questionnaire for phobic patients differed from that used with obsessive patients (a copy of which can be found in Appendix D), only to the extent that the ratings of obsessive symptoms on the phobic version of the questionnaire are grouped with the ratings of depression and anxiety in the section, "Other clinical features".

In the "Description of present illness" section of the Psychiatric Questionnaire, the psychiatrist rates various symptoms on a five-point scale (0 to 4, with a rating of zero indicating absence of disability and a rating of four indicating incapacitation) on the basis of the patient's answers to detailed questions about specific symptoms. The patient's phobias in each of four areas (agoraphobia, social phobia, specific phobia and obsessive phobia), and each obsessive-compulsive symptom, (i.e., obsessive rumination, ritual, horrific temptation and pervading doubt), were rated separately but, for the purposes of this study, the ratings of depression and anxiety were calculated by summing the ratings of each symptom of anxiety or depression and dividing the total by the number of symptoms rated. To calculate the psychiatric rating of anxiety, for example, the psychiatrist's ratings of (a) "feelings of anxiety", (b) "tension", (c) "physical manifestations", and (d) "poor concentration" were totaled and divided by four.

The Psychiatric Questionnaire was expanded on several occasions over the data collection period (1965-1980). In 1969, for example, ratings of rituals and horrific temptations were added. Cases assessed before that time are missing values for these two variables. To make ratings of anxiety and

depression on all patients comparable, only those symptoms on the final version (reproduced in Appendix D) that are common to all previous versions of the Psychiatric Questionnaire, were used in the calculation of symptom ratings. In calculating the mean rating for depression, the ratings of "lack of appetite", "insomnia", "suicidal ruminations", "loss of interest", and "guilt" were averaged, but the ratings of "sad mood", "fatigue" and "diurnal fluctuation" were not included in the calculation as the latter symptoms were not included in earlier versions of the form. For the same reason, "irritability", which is rated as a symptom of anxiety in the final version of the Psychiatric Questionnaire, was not used in the calculation of a mean rating for anxiety in the present study.

The initial versions of these symptom rating scales were obtained on request from two British psychiatrists, M.G. Gelder and I.M. Marks, who developed and tested the scales. Gelder and Marks (1966) measured the reliability of these scales by calculating the product-moment correlations between the ratings of the patient's therapist and those of a second psychiatrist, as well as the correlations between these ratings and the patient's own ratings of the same symptoms, also on a five-point scale, using the same symptom self-rating questionnaire that we have used in the present study. Their findings are summarized in Table 5. In commenting on these correlations Gelder and Marks conclude, "In general the reliability of ratings is of the order usually obtained in this kind of clinical study" (Gelder & Marks, 1966, p.311). In defense of their emphasis on clinical ratings, Gelder, Marks, and Wolff (1967) state, "Emphasis was on clinical rating, which although less reliable than certain psychometric methods are more relevant to the changes in these patients" (p.56).

Table 5

Product-moment correlations (r)  
between symptom ratings  
(Gelder & Marks, 1966)

	Therapist and Assessor (N=58)	Therapist and Patient (N=58)	Assessor and Patient (N=58)
Main phobia	0.82	0.74	0.81
Other phobia	0.80	0.69	0.78
Anxiety	0.67	0.56	0.66
Depression	0.59	0.45	0.61
Obsessions	0.77	0.60	0.47

Estimates of the reliability of the psychiatric ratings in our data are based on the ratings of the symptoms of 52 phobic patients who were assessed by two of four Royal Victoria Hospital psychiatrists, L. Solyom, G. Heseltine, D. McClure, and H. Gelber, who were involved in a project that ultimately led to the publication of four papers (Solyom, Heseltine, McClure, Ledwidge, & Kenny, 1971a, 1971b, and 1972; Solyom, McClure, Heseltine, Ledwidge, & Solyom, 1972). These ratings were made before treatment, after 12 hours of therapy, and at the time of treatment termination. Twenty-one patients were assessed by Solyom and Helestine; ten by Solyom and Gelder; ten by Solyom and McClure; seven by Heseltine and Gelber; and four by Heseltine and McClure. No patients were rated by three psychiatrists.

The reliability coefficients were calculated using pre-treatment ratings only, except in three cases in which, because of the unavailability of a second assessor, the pre-treatment rating were made by only one psychiatrist. In these cases, post-treatment ratings were used in the calculations.

Reliability ratings were calculated for the psychiatrists' ratings of main phobia, obsessive symptoms, depression, and anxiety. Although hysteria, hypochondriasis, and paranoia were also rated in the Psychiatric Questionnaire, reliability coefficients were not calculated for these since these areas of symptomatology are not involved in the hypotheses of the present study. The reliability coefficient used is that of Ebel (1951):

$$\bar{r}_{11} = \frac{v_p - v_e}{v_p + (k-1)v_e}$$

where  $\bar{r}_{11}$  = reliability of ratings for a single rater

$v_p$  = variance for persons.

$v_e$  = variance for error

$k$  = number of raters

A summary of the reliability coefficients thus calculated appears in Table 6.

These are probably conservative estimates of the inter-rater reliabilities since the patients were typically not seen by the raters on the same day and day-to-day fluctuations in the symptomatology (especially depressive mood and level of background anxiety) of acute patients can be very dramatic. The mean intervals, in days, between the two assessments for each pair of raters appear in Table 7.

Some of the discrepancies between pairs of ratings, therefore, are undoubtedly due to changes in the patients between assessments, although this is treated as "error" in the analysis of variance of the ratings and thus artificially depresses the value of the reliability coefficient.

Table 6

Reliability of Psychiatric Ratings  
using the Psychiatric Questionnaire

	Main phobia	Obsessive symptoms	Depression	Anxiety
Solyom & Heseltine (N=21)	0.41	0.49	0.73	0.57
Solyom & Gelber (N=10)	0.53	0.53	0.86	0.71
Solyom & McClure (N=10)	0.90	0.22	0.15	0.47
Helestine & Gelber (N=7)	0.25	0.57	0.75	0.60
Heseltine & McClure (N=4)	0.57	0.77	0.95	0.44
Weighted means	0.52	0.48	0.66	0.57



Table 7

Intervals, in days, between the assessments  
by each pair of psychiatrists

	Mean	Standard deviation	Range
Solyom & Heseltine (N=21)	8.2	7.6	0-26
Solyom & Gelber (N=10)	3.8	4.3	0-12
Solyom & McClure (N=10)	9.8	19.3	0-63
Heseltine & Gelber (N=7)	6.5	4.6	2-15
Heseltine & McClure (N=4)	11.3	2.5	10-15

The trivial coefficients obtained for the ratings of "Obsessive symptoms" and "Depression" by Solyom and McClure are, in part, due to the fact that the variances for patients ( $v_p$ ) of these two sets of ratings are much smaller than the variances for patients of "Obsessive symptoms" and "Depression" ratings of the other four rater-pairs. Perusal of the individual ratings on these ten Solyom-McClure patients indicates that this low variance for patients is due to the fact that neither psychiatrist rated any of the ten patients as having a clinically significant amount of either symptom; neither Solyom nor McClure rated any patient over 1.0 ("Mild") on "Obsessive symptoms" and only one patient is rated by Solyom as higher than 1.0 (2.0 or "Moderate") on "Depression". When no patient in a set displays a clinically significant amount of a symptom the ratings are likely to correlate poorly since ratings

of 0.2 and 0.6, for example, are clinically equivalent, i.e., both are trivial, but if one patient is rated 0.2 on a symptom by Rater 1 and 0.6 on the same symptom by Rater 2 and a second patient is rated 0.6 on that symptom by Rater 1 and 0.2 by Rater 2, the result is a negative correlation although clinically the raters agree.

Closer scrutiny of the data used in the calculation of the reliability coefficients reveals that Solyom consistently rates "Main phobia" higher than his three colleagues and his mean rating of "Anxiety" across patients is 39%, 21%, and 50% lower than the mean rating of "Anxiety" by Heselstine, Gelber, and McClure, respectively. These systematic discrepancies could have been minimized with rater training. Gelder and Marks, unlike Solyom, supplied their "second medical assessors" with the questions to be used in rating symptoms. Although these rater-trait interactions and the delay between assessments, described earlier, tend to underestimate the reliability of the instrument, they are not a source of error in the statistical analyses of the present study since only Solyom's ratings are used in the study, and the hypothesis tests involve the difference between Solyom's ratings of a symptom on one set of patients (phobics) and Solyom's ratings of the same symptom on another set of patients (obsessives). Thus variance in the ratings that are due to Solyom's overvaluing (or undervaluing) of a certain trait ("rater-trait interaction error") or his tendency to rate everyone higher or lower, across traits, compared to other raters (the so-called "leniency error") do not affect the reliability of the findings of the present study.

## 2. Self-rating of Symptoms

At the time that the Psychiatric Questionnaire was administered the patient was presented with a self-assessment package. The self-assessment procedure was explained to the patient and he was asked to complete and return the forms to his therapist. One of the forms in the package was a booklet on which the patient was asked to rate his symptoms on a 0-4 scale by choosing the one of five statements that best describes how he had been feeling with respect to each symptom during the previous week, e.g.:

Do you suffer from the following: sweating, trembling or palpitations, uneasiness, apprehension or anxiety for no adequate reason? If so, how severe are these? (Do not include your phobias here - they are on separate sheets).

Very severe, hardly ever absent

Severe, and frequently present

Moderately severe and often present

Mild symptoms which occur occasionally

I do not suffer from these symptoms


These self-assessment forms, like the psychiatric symptom rating forms, were adapted from Gelder and Marks (1966). On both five-point scales the five points roughly correspond to absent (0), mild (1), moderate (2), severe (3), and extremely severe (4).

Symptoms rated by the patient were his main phobia (the person explaining the assessment package to the patient instructed him to specify his worst fear in the blank on page 2 of the form), general anxiety (pages 3 and 4), depression (page 5), depersonalization (page 6), obsessive symptoms (pages 8 to 11) and change of habits (pages 12 and 13).

### 3. Self-rating of Social Adjustment

The self-assessment package that the patient was asked to complete also included a booklet in which she was asked to rate, on a five-point scale, the extent to which her symptoms interfered with her adjustment at work (either outside of the home or as a housewife), adjustment with regard to leisure activities (including holidays), sexual adjustment, social adjustment within the family, social adjustment with people outside of her immediate family, and her expressed self-satisfaction.

This rating scale, like the psychiatric rating of symptoms and the patient's rating of his own symptoms, were adapted from those of Gelder and Marks (1966). The social adjustment ratings used by Gelder and Marks were, in turn, a modified version of Miles, Barrabee and Finesinger's (1951) ratings of social adjustment. Gelder and Marks altered the wording of the Miles, Barrabee and Finesinger ratings slightly to make definitions as relevant as possible to their patients' difficulties.

### 4. IPAT Anxiety Scale Questionnaire

Included in the patient's self-assessment package was a copy of the Anxiety Scale Questionnaire from the Institute for Personality and Ability Testing. Cattell's (1963) measure of anxiety consists of 40 questions distributed among five anxiety-measuring components of personality as follows: defective integration (8 items), lack of ego strength (6 items), suspiciousness (4 items), guilt proneness (12 items), and frustrative tension (10 items). The 40 questions can also be divided into those which manifestly

refer to anxiety, the score from which may be called overt, symptomatic, conscious anxiety (the last 20 items of the test), and into the more covert hidden-purpose probes (the first 20 items). Cattell (1963) has also developed normalized sten equivalents for total raw scores obtained by adult men and adult women and various clinical groups. Reliability coefficients and normative data for the IPAT Anxiety Scale Questionnaire are documented in Table 8.

#### 5. Wolpe-Lang Fear Survey Schedule (FSS-III)

This is a patient self-rating, on a five-point scale ("not at all" [0], "a little" [1], "a fair amount" [2], "much" [3], and "very much" [4]) of the amount of fear elicited by 72 common phobic stimuli. The 72 anxiety-evoking stimuli are classified into six fear clusters: death and tissue damage (18 items), social (17 items), other classical phobias (16 items), animal (9 items), miscellaneous (8 items), and noise (4 items). The Wolpe-Lang FSS-III (Wolpe & Lang, 1964) is a revision and extension of two earlier inventories of anxiety stimuli: Lang & Lazovik's (1963) FSS-I and Geer's (1965) FSS-II.

#### 6. Maudsley Personality Inventory

This 48-question inventory, developed by Eysenck (1958), yields scores on two orthogonal dimensions of personality, neuroticism or emotionality and extraversion. Neuroticism according to Eysenck (1959) refers to "... the general emotional lability of a person, his emotional overresponsiveness, and

Table 8

Reliability coefficients and normative data for the IPAT Anxiety Scale  
Questionnaire (Cattell, 1963)

Reliability:

1. Test-retest

One-week interval = 0.93 (87 male and female adults)

Two-week interval = 0.87 (277 Japanese university students)

2. Homogeneity

Split-half = 0.91 (120 in mixed sample of normals and hospitalized neurotics)

Kuder-Richardson = 0.83 (200 college students)

Normative data (sten scores)

Normal = 5.5 (N=935)

Anxiety state = 8.1 (N=174)

Depressive reaction = 7.7 (N=55)

Neurosis = 7.6 (N=427)

Obsessive Compulsive = 6.8 (N=15)

Psychosis = 5.8 (N=479)

his liability to neurotic breakdown under stress" (p.3). Extraversion, as opposed to introversion, refers to the outgoing, uninhibited, social proclivities of a person. Reliability coefficients and normative data for the Maudsley Personality Inventory are documented in Table 9.

7. Leyton Obsessional Inventory (Cooper, 1970)

This inventory consists of 69 items, 46 of which relate to symptoms of obsessive-compulsive neurosis (yielding a Symptomatology score) and 23 of which involve obsessive personality traits (yielding a Trait score). As well as providing a wider coverage than previous inventories, e.g., the Sandler-Hazari (Sandler, 1954) and the Hysteroid Obsessive Questionnaire (Caine & Hawkins, 1963), the Leyton Obsessional Inventory has the advantage of two intensity scales (Resistance and Interference) designed to measure the degree to which the patient resists indulging in obsessive activities and the extent to which the obsessive symptoms interfere with other activities. Reliability coefficients and normative data for the Leyton Obsessional Inventory are documented in Table 10.

The Leyton Obsessional Inventory was not published until 1970 and was only added to the data package a few years ago. Consequently a completed LOI is available for only a minority of the patients (32.9%) in this study.

Table 9

Reliability coefficients and normative data for the Maudsley Personality Inventory (Eysenck, 1958)

Reliability

	Neuroticism	Extraversion
1. Split-half & Kuder-Richardson	0.85-0.90	0.75-0.85
2. Test-retest	0.83	0.81

Normative data

	Neuroticism		Extraversion	
	Mean	S.D.	Mean	S.D.
Normals (English)	19.89	11.02	24.91	9.71
Normals (American students)	20.91	10.69	28.53	8.28
Dysthymics (Hospital patients)	38.18	10.84	17.86	10.02
Prisoners (Recidivists)	30.35	10.73	24.09	9.11
Hysterics (Hospital patients)	30.82	11.84	24.91	9.26
Psychosomatics (Hospital patients)	35.69	10.89	25.38	9.33
Psychopaths (Hospital patients)	35.55	10.91	30.77	9.51



Table 10

Reliability coefficients and normative data for the Leyton Obsessional Inventory (Cooper, 1970)

	Symptom		Trait		Resistance		Interference	
	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
<u>Test-retest reliability</u>	0.87		0.91					
<u>Normative data</u>								
Obsessional patients (N=17)	33.3	7.7	11.0	3.2	36.0	11.2	36.7	18.4
Houseproud housewives (N=25)	19.7	8.7	7.6	3.5	16.1	11.8	10.7	12.4
Normal women (N=60)	11.4	6.7	5.1	3.5	7.3	6.1	3.8	4.3
Normal men (N=41)	8.7	5.6	5.1	3.8	4.4	3.9	3.6	3.8
Husbands of houseproud housewives (N=19)	12.5	6.3	6.9	3.6	5.9	3.0	4.1	3.2

## 8. General Information Sheet

The seventh and final form included in the patient's self-assessment package was a single-page questionnaire in which the patient was asked to provide information about date and place of birth, marital status, children, schooling, religion, siblings, and death of parents. This form was included in the pre-treatment assessment package only, since it contains only "tombstone" information which is not subject to change during the course of treatment.

### III. Statistical Analysis

All of the scores and the coded non-numeric information in the 15 questionnaires administered to each patient (eight questionnaires prior to treatment and all but the General Information Sheet readministered at the time of treatment termination) were transferred to coding sheets, key punched, and stored in a computer file. Although many of these 136 variables are not involved in the hypothesis tests of this study, all data in the files were coded and key punched for possible future analysis. An additional 88 variables were created by transformations of the original variables. Most of these new variables were dichotomous variables created from those nominal variables which assumed more than two values in the original coding. This was necessary because multivariate analyses can only utilize nominal variables in dichotomous form. The data matrix thus produced consists of 80,416 values (224 variables x 359 patients).

#### Univariate analysis, using only available data

The hypothesis of the present study is that patients whose primary complaint is of a phobia and patients who seek treatment for an obsessive-compulsive symptom differ with respect to other symptomatology (other obsessive-compulsive symptoms, other phobias, anxiety, depression and social adjustment), natural history of the disorder (sex ratio, marital status, age of onset, precipitating factors, course of disorder, delay in seeking help and mental disorder among relatives) and personality variables

(premorbid personality type, neuroticism and extraversion).<sup>1</sup>

A secondary hypothesis involves that subset of phobic patients whose main phobia is agoraphobia. Specifically, it is further hypothesized that agoraphobic patients differ from other phobic patients (and obsessive patients) with respect to the same variables.

To test the primary hypothesis, the 159 obsessive and the 200 phobic patients were compared on 52 measures, culled from the eight questionnaires administered to the patients - each measure reflecting some aspect of the symptomatology, natural history and personality variables listed above. A complete list of the measures used in these univariate significance tests of hypothesized differences between groups can be found in Table 11. To test the secondary hypothesis, the phobic group was subdivided into agoraphobic patients and patients with other phobias and significance tests of differences among the groups with respect to all 52 dependent variables were repeated on the three groups.

All univariate tests of significance among groups utilized whatever values of the variable in question are available in the original data matrix; no estimated values were used. A computer program for one-way analysis of variance, ONEWAY (Nie, 1975), was used to test group differences with respect to variables in which the level of measurement was ordinal or better. Only

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<sup>1</sup>Although a review of the outcome literature (Black, 1974; Cooper, Gelder & Marks, 1965; Meyer, Levy & Schurmer, 1974) and his own experience in behavioral treatment of the two kinds of patients has convinced the experimenter that the differential response of the two disorders to treatment, especially treatment based on the reciprocal inhibition or extinction of anxiety, constitutes the strongest argument against the identity of the two disorders, the data available in the retrospective study of this group of 359 patients do not permit the comparison of the groups with respect to response to treatment because there were too many different treatments (28) administered to the 170 cases on whom at least some post-treatment data are available, to make meaningful comparisons.

Table 11

Variables used in univariate significance tests of hypothesized differences between groups

Hypothesis topic	Variable used in analyses	Significance test	Questionnaire containing variable
<u>Symptomatology</u>			
1. Obsessive-compulsive symptoms	Psychiatrist's rating of ruminations	Analysis of variance	PQ
	Psychiatrist's rating of rituals	Analysis of variance	PQ
	Psychiatrist's rating of horrific temptations	Analysis of variance	PQ
	Psychiatrist's rating of pervading doubt	Analysis of variance	PQ
	Patient's rating of ruminations	Analysis of variance	SRS
	Patient's rating of rituals	Analysis of variance	SRS
	Patient's rating of horrific temptations	Analysis of variance	SRS
	Patient's rating of pervading doubt	Analysis of variance	SRS
	Obsessional Symptomatology score	Analysis of variance	LOI
	Score on measure of resistance to obsessive symptoms	Analysis of variance	LOI
Score on measure of interference from obsessive symptoms	Analysis of variance	LOI	
2. Phobias	Psychiatrist's rating of agoraphobia	Analysis of variance	PQ
	Psychiatrist's rating of social phobia	Analysis of variance	PQ

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Psychiatrist's rating of specific phobia	Analysis of variance	PQ
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Psychiatrist's rating of obsessive phobia	Analysis of variance	PQ
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Psychiatrist's rating of main phobia	Analysis of variance	PQ
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Category of main phobia using FSS categories	Chi square	SRS
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Category of main phobia using PQ categories	Chi square	SRS
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Patient's rating of main phobia	Analysis of variance	SRS
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Total phobia score	Analysis of variance	FSS
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Mean score on phobias of death and tissue damage	Analysis of variance	FSS
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Mean score on social phobias	Analysis of variance	FSS
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Mean score on other classical phobias	Analysis of variance	FSS
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Mean score on miscellaneous phobias	Analysis of variance	FSS
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Mean score on animal phobias	Analysis of variance	FSS
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Mean score on noise phobias	Analysis of variance	FSS
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Score on phobias of "contamination" and "hurting others"	Analysis of variance	FSS
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### 3. Anxiety

Psychiatrist's rating of anxiety	Analysis of variance	PQ
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Self-rating of "nerves"	Analysis of variance	SRS
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Self-rating of anxiety symptoms	Analysis of variance	SRS
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	Anxiety step score	Analysis of variance	ASQ
	Overt anxiety score	Analysis of variance	ASQ
	Covert anxiety score	Analysis of variance	ASQ
4. Depression	Psychiatrist's rating of depression	Analysis of variance	PQ
	Patient's rating of depression	Analysis of variance	SRS
5. Social adjustment	Patient's rating of social adjustment	Analysis of variance	SRSA

#### Natural history

1. Sex ratio	Sex	Chi square	GIS
2. Marital status	Married (yes/no)	Chi square	GIS
3. Age of onset	Age of onset of disorder	Analysis of variance	PQ
4. Precipitating factors	Circumstances of onset (15 categories)	Chi square	PQ
5. Course of disorder	Course (5 categories)	Chi square	PQ
6. Delay in seeking help	Age when patient first sought help minus Age of onset of illness	Analysis of variance	PQ
7. Mental disorder among relatives	Mental disorder in mother (6 categories of illness)	Chi square	PQ
	Mental disorder in father (6 categories of illness)	Chi square	PQ
	Mental disorder among siblings (6 categories of illness)	Chi square	PQ
	Mental disorder among non-nuclear family (6 categories of illness)	Chi square	PQ

Personality

1. Premorbid personality type	"Submissive, shy" (yes/no)	Chi square	PQ
	"Parsimonious, obstinate, orderly" (yes/no)	Chi square	PQ
	"Aggressive, morose" (yes/no)	Chi square	PQ
	Obsessional trait score	Analysis of variance	LOI
2. Neuroticism and Extraversion	Neuroticism score	Analysis of variance	MPI
	Extraversion score	Analysis of variance	MPI

PQ = Psychiatric Questionnaire  
SRS = Self-Rating of Symptoms  
LOI = Leyton Obsessional Inventory  
FSS = Fear Survey Schedule  
ASQ = Anxiety Scale Questionnaire  
SRSA = Self-Rating of Social Adjustment  
GIS = General Information Sheet  
MPI = Maudsley Personality Inventory



variables that involve the patient's age at the time of certain events in his or her life (ratio variables) are better than ordinal in terms of level of measurement; all other variables are ordinal or nominal. The use of analysis of variance with ordinal data, dictated by the practical consideration that no computer-programmed analyses for ordinal data are available, can be justified on the grounds that violations of the assumptions underlying the F test have little impact on the power of the test. Theoretically, the ratio of mean squares in the analysis of variance will be distributed as F if and only if the data conform to the assumptions underlying the test, viz., that the errors associated with the scores (i.e., the parts of the scores that cannot be accounted for by group membership) are (a) independently distributed, (b) normally distributed, and (c) have the same variances in each of the treatment populations. In practice, however, the technique is very robust. Even extreme departures from normality have little impact on Type I or Type II errors, and although heterogeneity of variance leads to a slight elevation of the power function, it is rarely by more than 5% (Myers, 1979).

Where the overall F among the three groups (for the comparisons involving all three groups) was significant at the .05 level, the Tukey B procedure (Wine, 1964) was used to compare the means of the three groups, two at a time. The Tukey B (one of the optional 'a posteriori contrasts' in the ONEWAY program) uses the average of Tukey's Honestly Significant Difference range value and that of the Student-Newman-Keuls procedure as the range value for testing differences at each step.

Differences between groups with respect to categorical variables were analyzed with a computerized chi-square program, SPSS CROSSTABS (Nie, 1975).

## Estimation of missing values and analysis of pattern of missing data

Many of the entries in this data matrix are either missing data codes or codes that carry some non-numerical information about that patient with respect to that variable. The code "99" with respect to the variable "Age when patient first married", for example, indicates that the patient has never married.

Some of the missing data in the present study simply represent the price of doing clinical research with very sick patients (e.g., post-treatment data missing because the patient unilaterally discontinued treatment against medical advice without completing the post-treatment assessment). Other data are missing because of the casual data collection procedure (e.g., one test or another not available at the time that the patient was seen). Most of the missing data, however, can be accounted for by the fact that the data, collected over the sixteen-year period from 1965 to 1980, were not collected for the purposes of this retrospective study. Many of the forms used were changed or replaced during the data collection period and in some experimental studies conducted during that period, data collection was deliberately restricted to only certain tests. During the process of data encoding the following reasons for the missing data manifested themselves:

1. During the data collection period (1965-1980) some of the forms used were replaced or changed. The Minnesota Multiphasic Personality Inventory and the IPAT 16 Personality Factor test were replaced by the Maudsley Personality Inventory around 1970. The files of all patients seen before that time are missing Neuroticism and Extraversion scores (from the MPI). The Psychiatric Questionnaire was expanded on several occasions. In 1969,

for example, it was expanded to include ratings of rituals and horrific temptations. Patients seen before that time have no psychiatric ratings of these two obsessive-compulsive symptoms.

2. In some experimental studies, data collection was restricted, by design, to only certain tests. In a controlled comparison of several treatments for fear of flying (Solyom, Shugar, Bryntwick, & Solyom, 1973), for example, only the Fear Survey Schedule, the Maudsley Personality Inventory, the Anxiety Scale Questionnaire, and the General Information Sheet were administered.
3. One test or another was not available at the time that the patient was seen. Some forms were not available at all in French.
4. The patient was sometimes seen only by a psychologist, after Solyom's brief initial interview, and therefore a Psychiatric Questionnaire was never completed.
5. A form was only partially completed or filled out sloppily by the psychiatrist or the patient.
6. Occasionally a patient would refuse to fill out tests or would be unable to do so.
7. Some post-treatment data are missing because the patient refused treatment or unilaterally discontinued treatment against medical advice, without completing the post-treatment assessment package.

A patient was included in the study if his or her file contained at least one completed pre-treatment questionnaire. No patient was excluded from any analysis on the basis of the amount of data missing from his or her clinical file. The percentage of cases missing each of the questionnaires is as follows:

Pre-treatment (N=359)	
Psychiatric Questionnaire	23.9%
Self-Rating of Symptoms	24.0%
Rating of Social Adjustment	29.2%
Anxiety Scale Questionnaire	10.9%
Fear Survey Schedule	11.4%
Maudsley Personality Inventory	42.6%
Leyton Obsessional Inventory	67.1%
General Information Sheet	3.6%

Post-treatment (N=170)	
Psychiatric Questionnaire	8.8%
Self-Rating of Symptoms	15.8%
Rating of Social Adjustment	21.2%
Anxiety Scale Questionnaire	15.9%
Fear Survey Schedule	17.1%
Maudsley Personality Inventory	45.3%
Leyton Obsessional Inventory	62.9%

Note that the percentages of missing post-treatment questionnaires are based only on that subset (N=170) of the total group of patients (most of them subjects in treatment experiments) who were assessed at the time of treatment termination.

For computer-assisted multivariate analysis of the data (e.g., discriminant analysis, described in Section 3, below) the missing values in the original data matrix must first be replaced with estimated values. The BMDP PAM program (Frane, 1979) was used to generate these estimates. Using all of the variables involved in the hypothesis tests described earlier (Table 11)<sup>2</sup>, every missing value for each variable was estimated, with PAM, by regressing that variable on up to two variables selected by stepwise regression.

<sup>2</sup>Nominal variables which assumed more than two values in the original coding (Category of main phobia, using FSS categories; Category of main phobia, using PQ categories; Circumstances of onset; Course; Mental disorder in mother; Mental disorder in father; Mental disorder among siblings; Mental disorder among non-nuclear family) were first transformed into sets of dichotomous variables, one for each value, since the BMDP PAM program can only utilize nominal variables in dichotomous form.

Before using the completed data matrix thus generated in a statistical analysis it must be shown that the estimated values of any one variable do not differ in some systematic fashion from the known values of that variable. If this is not the case - if, in fact, the estimates of the missing values of a variable are systematically and significantly different from those values of that variable that are available - then the multivariate analysis utilizing the estimated values in the completed data matrix (to replace the missing values in the original data matrix) can be misleading and the results of the univariate significance tests, utilizing only available (i.e., non-estimated) values, described in section 1 above, are not generalizable to the total sample of 359 patients or, in turn, to the population of all obsessive and phobic patients seeking psychiatric treatment.

To determine if any systematic bias existed in the estimated data, for each ordinal or ratio variable<sup>3</sup>, the estimates of the missing values, generated by BMDP PAM, were compared within each group<sup>4</sup>, using one-way analysis of variance, with the known (i.e., non-estimated) values of that variable. A computer program for one-way analysis of variance, BMDP P1V (Engelman, 1977) was used for this analysis.

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<sup>3</sup>Estimated values of a dichotomous nominal variable could not be compared with known values of a dichotomous nominal variable in this way, since the known values of a nominal variable can only take on discrete values whereas the estimates of a nominal variable generated by BMDP PAM, are continuous.

<sup>4</sup>Estimated values were compared with known values within each group because the groups are known to contain unequal amounts of missing data on some variables (data collection in some experimental studies, involving either obsessive patients only or phobic patients only, was restricted by design to only certain tests) and in addition, the groups were hypothesized to differ from each other on each of these variables.

## Stepwise discriminant analysis

Using the completed data matrix generated by BMDP PAM, discriminant analysis was used to find classification functions (linear combinations of the variables that best characterize the differences among groups). P7M, the BMDP stepwise discriminant analysis program (Jennrich & Sampson, 1979) was used for this purpose. In P7M, variables are entered into the classification function one at a time until the group separation ceases to improve notably. At each step, P7M uses a one-way analysis of variance F statistic (F-to-enter) to determine which variable should join the function next. At step zero, the standard univariate analysis of variance test is made for each of the variables. The variable for which the means differ most is entered first into the classification function. After step zero, the computed F-to-enter values are conditioned on the variables already present in the function. This is like an analysis of covariance, where the previously entered variables can be viewed as covariates and the non-entered variables are each considered as a dependent variable.

A variable is eligible for entry only if its partial F is sufficiently large. This F (called the "F-to-enter") is a test for the statistical significance of the amount of centroid separation added by this variable above and beyond the separation produced by the previously entered variables. The F-to-enter in the discriminant analysis described here had to be 4.0 for the variable to be entered.

Four stepwise discriminant analyses were carried out. First, classification functions for discriminating obsessives from phobics were computed using all of the pre-treatment variables (replacing the nominal

variables that assume more than two values with sets of dichotomous variables, one for each value, as in the missing data analysis, described in section 2, above).

On the assumption that variables which measure the intensity of obsessive and phobic symptomatology and variables which denote the type of phobia designated by the patient as the main phobia might be expected to correlate highly with the independent variable (i.e., the nature of the primary complaint for which the patient sought help) and therefore spuriously elevate the discriminating power of the variables, a second set of classification functions for discriminating obsessives from phobics were computed excluding all variables which measure the intensity of obsessive or phobic symptomatology or denote the type of phobia designated by the patient as the main phobia, viz., Psychiatrist's ratings of ruminations, rituals, horrific temptations, pervasive doubt, agoraphobia, social phobia, specific phobia, obsessive phobia, and main phobia, Patient's ratings of ruminations, rituals, horrific temptations, compulsions, and main phobia, Leyton Obsessional Inventory Symptomatology, Resistance and Interference scores and Fear Survey Schedule total scores, death and tissue damage phobia mean scores, social phobia mean scores, other classical phobia mean scores, miscellaneous phobia mean scores, animal phobia mean scores, noise phobia mean scores, scores on phobias of "contamination" and "hurting others", PQ category of phobia designated by the patient as the main phobia and FSS category of phobia designated by the patient as the main phobia.

The other two discriminant analyses computed classification functions for discriminating obsessives, agoraphobics and other phobic patients from each other, using the same two sets of variables involved in the two discriminant

analyses described above.

Output from the P7M stepwise discriminant analysis includes:

1. Summary table of steps in discriminant analysis: For each step of the discriminant analysis, the F-to-enter (or remove) for the variable entered (or removed) is calculated. Two multivariate tests for group differences (multivariate analyses of variance) are also computed at each step of the analysis: Wilks' lambda (U statistic) and the F approximation to lambda.
2. Classification functions (linear combinations of the variables) that best characterize the differences between the groups: One classification function is computed for each group and these classification functions can then be used to classify cases into groups; the case is assigned to the group with the largest value of the classification function. The classification functions can be used to make a differential diagnosis about cases observed in the future.
3. Classification matrix: Each case is classified into a group according to the classification functions (each case is assigned to the group in which the value of the posterior probability is maximum); the number classified into each group and the percent of correct classifications are printed. The discriminant analysis procedure is successful if few cases are classified into the wrong group. If a large percentage of the cases are classified correctly (i.e., if the posterior probability assigns them to their original group) this is evidence that group differences do exist and that the selected set of variables do exhibit the differences.
4. Jack-knifed classification matrix: Each case is classified into a group according to the classification functions computed from all the data except the case being classified. The function is then used to classify



the omitted case. This results in a classification with less bias since a classification function can produce optimistic results when it is used to classify the same cases that were used to compute it (Lachenbruch & Mickey, 1968).

5. The group means and all cases are plotted in a scatter plot. The axes are the first two canonical variables. The X-axis is the direction where the groups have the maximum spread; the Y-axis shows the maximum spread of the groups in a direction orthogonal to the X-axis.

D. RESULTS

## I. Variables not involved in hypotheses

Much of the data collected, coded and stored are irrelevant to the hypotheses of the present study. Some of these irrelevant variables do discriminate among the groups (e.g., a higher level of sexual perversion among the obsessive patients) and will be published elsewhere.

A few variables not involved in the hypothesis tests are worth mentioning here because they are descriptive of the groups. The agoraphobic patients were older, 36.0 years compared to 32.6 years for the obsessives and 32.7 years for the other phobics ( $F = 3.28$ ,  $df = 2 \text{ \& } 353$ ,  $p < .05$ ), and less educated, 10.2 years compared to 12.8 years and 12.7 years for the obsessives and other phobics respectively ( $F = 15.4$ ,  $df = 2 \text{ \& } 307$ ,  $p < .001$ ), than patients in the other two diagnostic groups. The agoraphobic patients were also distinguished by their occupation, fully 64% of them being housewives (See Table 12), and their place of birth (See Table 13).

Among the obsessive patients there was a disproportionately large number of inpatients and of Jews (with a preponderance of Protestants among the phobic patients), as documented in Tables 14 and 15 respectively.

Group differences on variables about which hypotheses have been made (e.g., sex, marital status) are reported elsewhere in this section.

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Table 12

Occupations of obsessive, agoraphobic  
and other phobic patients

	Obsessive	Agoraphobic	Other phobic	
Professional/ managerial	39 (25.2%)	9 (12.0%)	36 (34.0%)	84
Clerical/sales	34 (21.9%)	10 (13.3%)	26 (24.5%)	70
Service	9 (5.8%)	0 (0.0%)	2 (1.9%)	11
Skilled labor	6 (3.9%)	0 (0.0%)	2 (1.9%)	8
Semiskilled labor	2 (1.3%)	1 (1.3%)	3 (2.8%)	6
Unskilled labor	4 (2.6%)	0 (0.0%)	0 (0.0%)	4
Housewife	29 (18.7%)	48 (64.0%)	26 (24.5%)	103
Student/ unemployed	32 (20.6%)	7 (9.3%)	11 (10.4%)	50
	155	75	106	

Chi square = 68.5, df = 14, p < .001

Table 13

Number of Canadian-born patients  
in each of the three diagnostic groups

	Obsessive	Agoraphobic	Other phobic	
Canadian- born	105 (71.9%)	58 (86.6%)	66 (68.0%)	229
Foreign- born	41 (28.1%)	9 (13.4%)	31 (32.0%)	81
	146	67	97	

Chi square = 7.6, df = 2, p < .05

Table 14

Inpatient/outpatient status of obsessive,  
agoraphobic, and other phobic patients

	Obsessive	Agoraphobic	Other phobic	
Inpatient	20 (12.8%)	4 (5.1%)	3 (2.6%)	27
Outpatient	136 (87.2%)	75 (94.9%)	111 (97.4%)	322
	156	79	114	

Chi square = 10.6, df = 2, p < .005

Table 15

Religious affiliations of obsessive, agoraphobic  
and other phobic patients

	Obsessive	Agoraphobic	Other phobic	
Judaism	41 (28.1%)	19 (18.3%)	5 (7.5%)	65
Roman Catholicism	46 (31.5%)	40 (38.5%)	30 (44.8%)	116
Protestantism	25 (17.1%)	26 (25.0%)	19 (28.4%)	70
Other	9 (6.2%)	1 (1.0%)	1 (1.5%)	11
None	25 (17.1%)	18 (17.3%)	12 (17.9%)	55
	146	104	67	

Chi square = 2.2, df = 8, p < .01

## II. Symptomatology

### Obsessive-compulsive symptoms

Obsessive symptomatology was measured in three ways: psychiatrist's ratings on a five-point (0-4) scale (Psychiatric Questionnaire), patient's self-ratings on a five-point (0-4) scale (Self-rating of Symptoms), and three scales of the Leyton Obsessional Inventory.

The psychiatrist's ratings of ruminations, rituals, horrific temptations and pervading doubt were significantly higher for obsessive-compulsive patients than for phobic patients. The obsessive patients' self-ratings of ruminations, rituals and compulsions were higher than those of the phobic patients but the two groups did not differ with respect to their self-ratings of horrific temptations. On the Leyton Obsessional Inventory the obsessive patients scored higher than the phobic patients on the Symptomatology, Resistance (degree to which patient resists indulging in obsessive activities), and Interference (extent to which the obsessive symptoms interfere with other activities) scales. The means of the two groups with respect to each of these variables and the values of F obtained in the comparison of the two groups, using analysis of variance, are reproduced in Table 16. Complete information on each of the analyses of variance is documented in Appendix E, Tables E1-E11.

When the phobic patient group was separated into agoraphobic patients and patients with other phobias and the three groups compared with respect to obsessive symptomatology, the agoraphobics' scores (except on "Patient's

Table 16

Group means of obsessive and phobic patients on measures of  
obsessive-compulsive symptomatology

Variable	Obsessive	Phobic	<u>F</u>	<u>df</u>	<u>p</u>
Psychiatrist's rating of ruminations	2.0	0.4	148.0	1,271	<.001
Psychiatrist's rating of rituals	1.8	0.3	84.5	1,172	<.001
Psychiatrist's rating of horrific temptations	1.0	0.4	12.3	1,175	<.001
Psychiatrist's rating of pervading doubt	2.1	0.6	53.5	1,167	<.001
Patient's self rating of ruminations	2.2	1.4	20.6	1,227	<.001
Patient's self rating of rituals	2.1	0.7	8.6	1,139	<.005
Patient's self rating of horrific temptations	1.2	1.2	0.0	1,133	.90
Patient's self rating of compulsions	2.4	0.1	96.1	1,234	<.001
LOI Symptomatology score	24.6	17.5	10.6	1,116	<.005
LOI Resistance score	32.0	16.3	14.2	1,110	<.001
LOI Interference score	33.3	14.0	16.0	1,110	<.001



self-rating of horrific temptations") fell between those of the obsessive patients and the other phobic patients on each of the measures. The three groups did not differ from each other with respect to "Patient's self-rating of horrific temptations" but on the other ten measures of obsessive symptomatology the overall F ratio yielded by the group comparisons were significant and in each case the other phobic patients scored lower than the obsessive patients (Tukey B procedure). The agoraphobic patients, however, did not differ from the obsessives with respect to the "Psychiatrist's rating of horrific temptations", "Patient's self-rating of ruminations", "Patient's self-rating of rituals", or any of the three scales of the Leyton Obsessional Inventory. The means of the three groups on each of the variables, the overall F obtained from group comparisons using analysis of variance, and significant differences ( $p < .05$ ) yielded by 'a posteriori' contrasts using the Tukey B procedure, are listed in Table 17. Complete information on each of the analyses of variance is documented in Appendix E, Tables E12-E22.

### Phobias

The type and intensity of the patient's phobic fears were measured in three ways: psychiatrist's ratings on a five point (0-4) scale (Psychiatric Questionnaire), patient's self-ratings on a five-point (0-4) scale (Self-rating of Symptoms), and the Wolpe-Lang Fear Survey Schedule.

#### (a) Main phobia type

The person explaining the assessment package to the patient instructed him to specify his worst fear in the blank provided on page 2 of the

Table 17.

Group means of obsessive, agoraphobic and other phobic patients on measures of obsessive-compulsive symptomatology

Variable	Obsess.	Agora.	O. phob	F-ratio	df	p
Psychiatrist's rating of ruminations	<u>2.0</u>	<u>0.6*</u>	0.2	77.0	2,270	<.001
Psychiatrist's rating of rituals	1.8	<u>0.5</u>	<u>0.2</u>	42.8	2,171	<.001
Psychiatrist's rating of horrific temptations	<u>1.0</u>	<u>0.7</u>	0.2	9.6	2,174	<.001
Psychiatrist's rating of pervading doubt	2.1	0.8	0.4	27.3	2,166	<.001
Patient's self-rating of ruminations	2.2	<u>1.8</u>	<u>1.1</u>	14.2	2,226	<.001
Patient's self-rating of rituals	<u>2.1</u>	<u>1.3</u>	0.5	4.6	2,138	<.01
Patient's self-rating of horrific temptations	<u>1.2</u>	<u>2.0</u>	<u>0.9</u>	0.84	2,132	.84
Patient's self-rating of compulsions	2.4	0.9	0.9	47.9	2,233	<.001
LOI Symptomatology score	<u>24.6</u>	<u>19.1</u>	16.3	5.5	2,115	<.005
LOI Resistance score	<u>32.0</u>	<u>22.3</u>	12.5	8.0	2,109	<.001
LOI Interference score	<u>33.2</u>	<u>18.1</u>	11.4	8.3	2,109	<.001

\* Means underlined by the same line do not differ from each other at the 0.05 level of significance using the Tukey B procedure

Self-rating of Symptoms form. This description of the patient's main phobia was then classified by the experimenter in terms of the six FSS-III fear clusters (death and tissue damage, social, other classical, miscellaneous, animal and noise) and in terms of the four types of phobia rated by the psychiatrist on the PQ (agoraphobia, social, specific and obsessive<sup>1</sup>). The distributions of these categories in the two groups of patients were then used to compare phobia type. The distribution of main phobias, classified by FSS fear cluster, of the obsessives differed from that of the phobic patients (Chi square = 113.9, df = 6,  $p < .001$ ). Categorizing the patient's main phobia in terms of the four phobia categories used in the Psychiatric Questionnaire also resulted in a different distribution of phobia type in the two groups of patients (chi square = 145.5, df = 4,  $p < .001$ ). As can be seen from Table 18<sup>2</sup>, the difference between groups in distribution of phobia type by FSS category reflects the fact that 37.7% of the obsessives' main phobias were categorized by the experimenter as "Miscellaneous" in terms of FSS fear cluster whereas only 2.6% of the phobic patients' main phobias were so classified. Among the phobic patients the most common (52.8%) FSS category of

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<sup>1</sup>Following Marks (1969), obsessive phobia is defined as "fears which have a compelling quality. They intrude into the patient's consciousness; he ruminates about, rather than just anxiously anticipates, the phobic object or situation, even in its absence. The obsessive phobia appears to be a fear of the imagined consequences arising from contact with a given object or situation." (Solyom & Ledwidge, 1981, Note 3, pp.1-2). Thus a patient with an obsessive phobia of possible injury from glass splinters may be more afraid of fragments she suspects but cannot find at home than of the glass splinters she actually found and removed with her bare hands.

<sup>2</sup>Note that throughout the Results section rows and columns of contingency tables are never combined to increase cell frequencies, regardless of how small the expected cell frequency in any one cell is. Although this introduces some error in the significance test since small expected frequencies result in discontinuity in the sampling distribution of chi square and therefore a poor fit between the data and the theoretical continuous curve, no rows or columns are collapsed in the interests of clarity of presentation.

Table 18

FSS category of fear designated as main phobia  
by obsessive and phobic patients

	Obsessive	Phobic	
Death and tissue damage	25 (19.2%)	13 (6.7%)	38
Social	22 (16.9%)	50 (25.9%)	72
Other Classical	25 (19.2%)	102 (52.8%)	127
Miscellaneous	49 (37.7%)	5 (2.6%)	54
Animal	2 (1.5%)	23 (11.9%)	25
Noise	1 (0.8%)	0 (0.0%)	1
No phobia	6 (4.6%)	0 (0.0%)	6
	130	193	

Chi square = 113.9, df = 6, p < .001

the main phobia was "Other classical" (which includes "crossing streets", "journeys by train, bus, car", "large open spaces", and many other complaints of agoraphobic patients). Only 19.2% of obsessive patients' phobias were so classified. Obsessives describe their main phobia in terms of death and tissue damage more often than do phobic patients, whereas the latter more frequently fear animals than do obsessive patients.

Many of the obsessive patients' phobias were categorized as "Miscellaneous" by default in that many of the obsessive patients' self-defined fears are not included in the FSS-III list of 72 common fears nor could they be logically subsumed under the death and tissue damage, social, other classical, animal or noise fear categories.<sup>3</sup> The bizarre phobias of many obsessive patients (e.g., "Brewer's yeast and fuzz on my nose", "my testicles will fall off", "fear of making an effort of any kind") reflects the fact, mentioned earlier, that obsessives often fear the consequences of contact with the phobic object or situation rather than the phobic object per se and the phobia is understandable therefore only within the context of the obsessive symptom of which it is a function. A complete list of the self-described main phobias of the obsessive and phobic patients can be found in Appendix F.

The difference between the two groups in the distribution of main phobia by PQ category (Table 19) reflects the fact that 53.5% of the phobias of obsessives were categorized as "obsessive phobia" (e.g., "fear of cleaning stove" because of patient's obsession re contamination by poisonous substances, like "Easy Off", or phobia of "driving a car alone" because of patient's horrific temptation to drive his car into somebody). Only 1.6% of

<sup>3</sup>Some of the fears of the obsessive patients (e.g., "choking my son" or "undressing in public") are phobic (i.e., unreasonable) fears only to the extent that they are not likely to occur. The event feared, however, if it were to occur, is truly frightening to contemplate.

Table 19

PQ category designated as main phobia  
by obsessive and phobic patients

	Obsessive	Phobic	
Agoraphobia	6 (4.7%)	73 (37.8%)	79
Social	17 (13.2%)	47 (24.4%)	64
Specific	31 (24.0%)	70 (36.3%)	101
Obsessive	69 (53.5%)	3 (1.6%)	72
No phobia	6 (4.7%)	0 (0.0%)	6
	129	193	

Chi square = 145.5, df = 4, p < .001

the fears of phobic patients were so categorized. The PQ category encompassing the largest number of the main phobias of phobic patients was, not surprisingly, "agoraphobia". More phobic patients than obsessives described a social fear as their main phobia and six obsessive patients (4.6%) claimed to have no phobia.

(b) Phobic intensity

Although the psychiatrist's rating of the main phobia is higher for the phobic patients than for the obsessives, the patient's own ratings (self-rating of main phobia and total FSS-III fear score) indicate that the fears of obsessive patients are just as intense as those of phobic patients (Table 20). The psychiatrist rated "agoraphobia" and "specific phobia" higher in the phobic group than in the obsessive group and rated the obsessive patients higher on "obsessive phobia". These ratings, however, reflect the types of phobias present in the two groups rather than the intensity of the phobias that any one patient manifests. The FSS-III failed to discriminate the two groups with respect to total fear score (obsessives = 111.4 and phobics = 109.8) and the only two fear clusters that did discriminate were "other classical" (higher for the phobics because of the agoraphobic patients' classical fears) and "miscellaneous" (higher for the obsessives because of the bizarre nature of obsessive phobias). Even the scores of the two groups on a subset of items chosen by the experimenter to measure fear of contamination and hurting others (#42: "dirt"; #47: "sick people"; #26: "feeling angry"; and #41: "weapons") failed to discriminate the two groups. Complete information on each of the analyses of variance is documented in Appendix E, Tables

Table 20

Group means of obsessive and phobic patients  
on measures of phobic intensity

Variable	Obsessive	Phobic	F	df	P
Psychiatrist's rating of agoraphobia	0.7	2.0	32.0	1,165	<.001
Psychiatrist's rating of social phobia	1.1	1.3	0.8	1,147	.40
Psychiatrist's rating of specific phobia	1.0	2.1	19.4	1,149	<.001
Psychiatrist's rating of obsessive phobia	1.7	0.3	28.3	1,142	<.001
Psychiatrist's rating of main phobia	2.9	3.3	6.6	1,163	<.05
Patient's rating of main phobia	2.7	2.8	0.7	1,259	.40
FSS-III total score (72 items)	111.4	109.8	0.1	1,316	.78
Mean score on fears of death and tissue damage (18 FSS-III items)	1.6	1.6	0.0	1,315	.94
Mean score on social fears (17 FSS-III items)	1.8	1.7	0.8	1,315	.36
Mean score on other classical fears (16 FSS-III items)	1.2	1.4	5.2	1,315	<.05
Mean scores on miscellaneous fears (8 FSS-III items)	1.8	1.5	7.2	1,315	<.01



Mean score for animal fears (9 FSS-III items)	1.2	1.0	3.6	1,315	.06
Mean scores on noise fears (4 FSS-III items)	1.2	1.1	1.1	1,315	.30
Scores on fears of "contamination" and "hurting others" (FSS-III items # 26, 41, 42 & 47)	6.4	5.6	3.2	1,315	.07

E23-36.

When the phobic patient group is divided into subgroups of agoraphobic patients and patients with other phobias and the same analyses repeated, some of the findings of the previous analysis become more readily interpretable.

With respect to main phobia type by FSS category (Table 21), it becomes obvious that the greater frequency of social and animal phobias among the phobic patient group is due almost entirely to the group of non-agoraphobic phobic patients, 45 (39.8%) of whom complained mainly of social fears and 23 of whom (20.4%) presented with animal phobias as the primary complaint.

Similarly, with respect to phobia type by PQ category, (Table 22), the separation of agoraphobics and patients with other phobias reveals that almost all the specific phobias belong to the other phobic group.

With respect to phobic intensity, the separation of the two phobic groups reveals many differences that were masked by lumping them together. The breakdown in Table 23 indicates that the higher psychiatric rating of agoraphobia in the phobic group was due almost entirely, not surprisingly, to the agoraphobic patients and the higher PQ rating of specific phobia in the phobic group was due almost entirely to the group of other phobic patients. When the FSS-III scores of the three groups are compared the two differences in FSS-III scores noted in the previous obsessive-phobic comparison are clarified and consistent differences among the three groups become obvious. When the obsessive group was compared to the total group of phobic patients with respect to FSS-III scores no difference between the two groups in total fear score was revealed and only two fear cluster scores ("other classical" fears higher in the phobic group and "miscellaneous" fears higher in the obsessive group) discriminated the two groups. When the agoraphobic patients

Table 21

FSS category of fear designated as main phobia by obsessive, agoraphobic, and other phobic patients

	Obsessive	Agoraphobic	Other Phobic	
Death and Tissue Damage	25 (19.2%)	1 (1.3%)	12 (10.6%)	38
Social	22 (16.9%)	5 (6.3%)	45 (39.8%)	72
Other Classical	25 (19.2%)	74 (92.5%)	28 (24.8%)	127
Miscellaneous	49 (37.7%)	0 (0.0%)	5 (4.4%)	54
Animal	2 (1.5%)	0 (0.0%)	23 (20.4%)	25
Noise	1 (0.8%)	0 (0.0%)	0 (0.0%)	1
No Phobia	6 (4.6%)	0 (0.0%)	0 (0.0%)	6
	130	80	113	

Chi square = 221.3, df = 12, p < .001

Table 22

PQ category designated as main phobia by obsessive, agoraphobic, and other phobic patients

	Obsessive	Agoraphobia	Other Phobic	
Agoraphobia	6 (4.7%)	73 (91.3%)	0 (0.0%)	79
Social	17 (13.2%)	2 (2.5%)	45 (39.8%)	64
Specific	31 (24.0%)	3 (3.8%)	67 (59.3%)	101
Obsessive	69 (53.5%)	2 (2.5%)	1 (0.9%)	72
No Phobia	6 (4.7%)	0 (0.0%)	0 (0.0%)	6
	129	80	113	

Chi square = 383.4, df = 8, p < .001

Table 23

Group means of obsessive, agoraphobic, and other phobic patients on measures of phobic intensity

Variable	Obsess.	Agora.	O.Phob	F	df	p
Psychiatrist's rating of agoraphobia	0.7	3.4*	0.4	107.5	2,164	<.001
Psychiatrist's rating of social phobia	<u>1.1</u>	<u>1.8</u>	<u>1.1</u>	2.5	2,146	.22
Psychiatrist's rating of specific phobia	<u>1.0</u>	<u>0.7</u>	2.6	18.3	2,148	<.001
Psychiatrist's rating of obsessive phobia	1.7	<u>0.4</u>	<u>0.3</u>	14.1	2,141	<.001
Psychiatrist's rating of main phobia	2.8	<u>3.3</u>	<u>3.3</u>	3.4	2,162	<.05
Patient's rating of main phobia	<u>2.7</u>	<u>2.7</u>	<u>2.8</u>	0.6	2,258	.54
FSS-III total score (72 items)	111.4	132.6	94.6	12.4	2,315	<.001
Mean score on fears of death and tissue damage (18 FSS-III items)	1.6	1.9*	1.4	9.7	2,314	<.001
Mean score on social fears (17 FSS-III items)	1.8	1.9**	1.6	4.1	2,314	<.05
Mean score on other classical fears (16 FSS III items)	1.2	1.9*	1.0	31.1	2,314	<.001
Mean scores on miscellaneous fears (8 FSS-III items)	<u>1.8</u>	<u>1.8</u>	1.3	11.0	2,314	<.001
Mean score for animal fears (9 FSS-III items)	<u>1.2</u>	<u>1.1</u>	<u>0.9</u>	2.4	2,314	.09

Mean scores on noise fears (4 FSS-III items)	<u>1.2</u>	<u>1.3</u>	1.0	3.5	2,314	<.05
Scores on fears of "contamination" and "hurting others" (FSS-III items # 26, 41, 42 & 47)	<u>6.4</u>	<u>6.9</u>	4.7	8.4	2,314	<.001

Underlined groups do not differ from each other  
 \*Agoraphobic group differs from other two groups which do not differ from each other  
 \*\*Agoraphobic group differs from group of other phobics only

are separated from the other patients a very different pattern is revealed. In terms of total fear score the obsessive patients are significantly less fearful than the agoraphobic patients and significantly more phobic than the other phobic patients. The agoraphobic group also had significantly higher scores on all but one ("animal" fears) of the FSS-III fear clusters than did the non-agoraphobic group. On the "death and tissue damage" and "other classical" clusters the agoraphobics also scored higher than the obsessives but on the other FSS subcategories, including the contrived category, fears of "contamination" and "hurting others", the agoraphobic and obsessive groups did not differ. Complete information on each of the analyses of variance is documented in Appendix E, Tables E37-E50.

### Anxiety

Anxiety was measured in three ways: psychiatrist's rating on a five-point scale (Psychiatric Questionnaire), patient's self-ratings, also on a five-point scale (Self-rating of Symptoms) and IPAT Anxiety Scale Questionnaire.

On the psychiatrist's rating of anxiety (sum of psychiatrist's ratings of (a) "feelings of anxiety", (b) "tension", (c) "physical manifestations" and (d) "poor concentration" divided by four), the patient's rating of nervousness ("How have your nerves been in the past week?"), Anxiety Scale Questionnaire sten score and covert anxiety score, the obsessives scored higher than the phobic patients. The patient's rating of anxiety symptoms ("Do you suffer from the following: sweating, trembling or palpitations, uneasiness, apprehension or anxiety for no adequate reason?") and the Anxiety Scale Questionnaire overt anxiety score failed to differentiate the two groups of

patients (Table 24). Complete information of each of the analyses of variance is available in Appendix E, Tables E51-E56.

When the phobic group is subdivided into agoraphobics and patients with other phobias and the analyses described above repeated, it becomes obvious that the differences between the two groups is due entirely to the lower anxiety of the non-agoraphobic patients; agoraphobic patients are not less anxious than obsessive patients. On the psychiatrist's rating of anxiety, the patient's self-rating of "nervousness", the Anxiety Scale Questionnaire sten score, overt anxiety scale and covert anxiety scale, the obsessive patients and the agoraphobic patients scored higher than the group of other phobic patients but the obsessives and agoraphobics did not differ from each other. On the patient's self-rating of anxiety symptoms, no two groups differed significantly at the 0.05 level (Table 25). Complete information on each of the analyses of variance is documented in Appendix E, Tables E57-E62.

### Depression

Depression was measured in two ways: psychiatrist's rating on a five-point scale (Psychiatric Questionnaire) and patient's self-rating, also on a five-point scale (Self-rating of Symptoms).

Both the psychiatrist and the patient rated the depression of the obsessives higher than that of the phobics, the only difference between the two kinds of ratings being that the psychiatrist rated depressive symptomatology of both groups of patients between 0 (none) and 1 (mild), whereas the patients themselves rated their depression as mild (1) to moderate (2) on the same five-point (0-4) scale. The mean psychiatrist's rating of depression was 0.81 for the obsessive group and 0.56 for the phobic group ( $F =$



Table 24

Group means of obsessive and phobic patients on measures of anxiety

	Obsessive	Phobic	<u>F</u>	<u>df</u>	<u>p</u>
Psychiatrist's rating of anxiety	1.5	1.2	8.4	1,252	<.005
Patient's rating of "nervousness"	2.7	2.2	18.7	1,271	<.001
Patient's rating of anxiety symptoms	2.1	1.9	1.8	1,271	<.18
Anxiety Scale Questionnaire sten score	8.8	8.1	5.0	1,318	<.05
Anxiety Scale Questionnaire overt anxiety score	22.1	21.3	1.0	1,315	.32
Anxiety Scale Questionnaire covert anxiety score	25.2	23.1	6.0	1,315	<.01

Table 25

Group means of obsessive, agoraphobic, and other phobic patients on measures of anxiety

	Obsess.	Agora.	O.Phob	F	df	p
Psychiatrist's rating of anxiety	<u>1.5</u>	<u>1.6</u>	1.0	12.5	2,251	<.001
Patient's rating of "nervousness"	<u>2.7</u>	<u>2.4</u>	2.1	12.0	2,270	<.001
Patient's rating of anxiety symptoms	<u>2.1</u>	<u>2.1</u>	<u>1.7</u>	2.3	2,270	.11
Anxiety Scale Questionnaire sten score	<u>8.8</u>	<u>8.8</u>	7.7	6.8	2,317	<.005
Anxiety Scale Questionnaire overt anxiety score	<u>25.2</u>	<u>25.9</u>	21.3	11.1	2,314	<.001
Anxiety Scale Questionnaire covert anxiety score	<u>22.1</u>	<u>23.2</u>	20.0	4.9	2,314	<.01

Underlined groups do not differ from each other

11.25,  $df = 1,254$ ,  $p < 0.001$ ). The obsessive patients rated their own depression as 2.00 and the phobic patients gave themselves a rating of 1.60 ( $F = 7.00$ ,  $df = 1,269$ ,  $p < .01$ ). Complete information on each of the analyses of variance is available in Appendix E, Tables E63-64.

When the phobic group is subdivided into agoraphobics and patients with other phobias and the analyses described above repeated, the obsessives remain the most depressed of the three groups on both ratings, and the ratings of depression of the agoraphobic patients fall between those of the obsessives and the other phobics, who score lowest on both types of ratings. Both the obsessives and the agoraphobics rate themselves as more depressed than those patients with other phobias but on the psychiatrist's rating only the obsessives score higher than the group of other phobic patients (Table 26). Complete information on each of the analyses of variance is documented in Appendix E, Tables E65-66.

#### Social adjustment

Social adjustment was measured by asking the patient to rate, on a five-point scale, the extent to which symptoms interfered with (a) adjustment at work (either outside of the home or as a housewife), (b) adjustment with regard to leisure activities (including holidays), (c) sexual adjustment, (d) social adjustment within the family, (e) social adjustment with people outside of the immediate family, and (f) expressed self-satisfaction. The greater the score, to a maximum of 24 (6x4), the greater the maladjustment.

The mean self-rating of the obsessive group, 19.3, was significantly higher than that of the phobic group, 16.3 ( $F = 6.88$ ,  $df = 1,252$ ,  $p < .01$ ).

Table 26

Group means of obsessives, agoraphobics and other phobic patients on measures of depressive symptomatology

Variable	Obsess.	Agora.	O.Phob	F-ratio	df	p
Psychiatrist's rating of depression	<u>0.8</u>	<u>0.7</u>	0.5	7.3	2,253	<.001
Patient's rating of depression	<u>2.0</u>	<u>1.9</u>	1.4	6.1	2,268	<.005

Groups underlined by the same line do not differ from each other

When the phobic group is subdivided into agoraphobics and other phobic patients, it can be seen that the impairment of agoraphobic patients, 19.4, is just as severe as that of the obsessives and both groups rate themselves as significantly more disabled than do the other phobic patients, whose mean self-rating is only 13.8 ( $F = 10.02$ ,  $df = 2,251$ ,  $p < .001$ ). Complete information on these analyses of social adjustment can be found in Appendix E, Tables E67-E68.

Impotence or frigidity, an index of sexual maladjustment, was noted, if present, in the Psychiatric Questionnaire (p.7), and those data reflect exactly the same pattern of impairment as do the scores on the Self-rating of Social Adjustment. Almost 35% of the obsessives were impotent or frigid compared to 26.5% of the phobic patients as a group, a non-significant difference, but when the agoraphobics and other phobic patients are separated it turns out that the sexual adjustment of the agoraphobics is even poorer than that of the obsessives (42% impotent or frigid compared to 34.7%), whereas only 17% of the other phobic patients complain of lack of sexual satisfaction ( $\chi^2 = 12.6$ ,  $df = 2$ ,  $p < .005$ ).

### III. Natural History

#### Sex ratio

Of the series of 159 obsessive patients, exactly half (49.7%) were female; whereas almost three-quarters (73.9%) of the 199 phobic patients on whom we have gender data were women (Chi square = 21.2, df = 1,  $p < .001$ ).

When the phobic group is divided into agoraphobics and patients with other phobias, the preponderance of females among the agoraphobic patients, 86.3%, is even greater than that among the other phobic patients, 65.5% (chi square = 31.0, df = 2,  $p < .001$ ).

#### Marital Status

Over forty-seven percent (54.5% of the males and 40.3% of the females) of the obsessive patients had never married (49.4% were married; the remaining 3.2% were widowed, divorced or separated), whereas only 27.1% (40.4% of the males and 22.8% of the females) of the phobic patients were still single (70.8% married; 2.1% widowed, divorced or separated). This disproportionately large number of single obsessives (chi square = 22.4, df = 4,  $p < .001$ ) have not remained single because obsessives, as a group, marry later; the age of first marriage of those obsessives who did marry was 24.0 years, of the phobic patients, 23.2 years ( $F = 1.1$ , df = 1,191,  $p = .30$ ). Nor is the difference attributable to any difference in the mean age of the groups; the mean age of the obsessives is 32.6, of the phobics 34.0 ( $F = 1.6$ , df = 1,354,  $p = .21$ ).

When the phobic patients are separated into agoraphobics and other phobic patients, the agoraphobic patients, as a group, prove most likely to marry. Only 20.5% of the agoraphobics were single, compared to 31.6% of the other phobics and 47.4% of the obsessives (Chi square = 29.4, df = 8,  $p < .001$ ).

#### Age of onset

The mean age of onset of the unremitting train of symptoms for which the patient ultimately sought help was identical in the two groups; the age of onset in the obsessive group was 21.6 years, in the phobic group 21.8 years ( $F = 0.01$ , df = 1,240,  $p = .91$ ). The age at which the first obsessive or phobic symptom was experienced, however, does discriminate between the two groups, with the obsessives claiming to have experienced the first symptom three years earlier, on average, than the phobic patients - 15.2 years of age for the obsessive group compared to 18.2 years for the phobic group ( $F = 5.16$ , df = 1,282,  $p < .05$ ).

When the phobic group is separated into agoraphobic patients and those with other phobias, the agoraphobic patients prove to have the latest age of onset, 26.0 years, significantly later than the age of onset of the patients with other phobias, 19.3 years, and the obsessives 21.6 years ( $F = 4.95$ , df = 2,239,  $p < .01$ ). The differences in age of onset among the three groups is perhaps more graphically illustrated in Table 27. Thirty-five percent of the obsessives report onset before age 10, compared to only 2.3% of the agoraphobics and 17.5% of the other phobic patients. Symptomatology is continuous in 76.1% of the obsessives by age 20, compared to 22.7% of the agoraphobics and 46.0% of the other phobic patients. To put it yet another way, obsessives are most likely to experience an unremitting train of symptoms

Table 27

Percentage of each group reporting  
age of onset before various ages

Age	Obsessive (%)	Agoraphobic (%)	Other phobic (%)
5	9.4	2.3	7.7
10	35.0	2.3	17.5
15	59.0	9.1	28.6
20	76.1	22.7	46.0
25	86.3	45.5	61.9
30	90.6	68.2	84.1

during the second decade of life (41.1%), whereas the period from 20 to 30 is the 10-year period in which agoraphobics (45.5%) or other phobics are most likely to experience onset. The age of first symptom for the three groups reveals exactly the same pattern among the three disorders but the differences are greater than in the case of age of onset of the disorder. The agoraphobics claim not to have had a phobic experience until after age 24, on average - about ten years later than the obsessive patients (15.2 years) or the patients with other phobias (14.4 years). As in the case of age of onset of disorder, the age of first symptom of the latter two groups do not differ from each other but both are significantly younger ages than the age of first symptom of the agoraphobic group. Complete information on these analyses of age of onset can be found in Appendix E, Table E69-E72.

#### Precipitating factors

Data on the events considered significant to the onset of the disorder were garnered from that part of the Psychiatric Questionnaire in which the patient is queried about memorable events in his life which occurred during the six months immediately preceding onset (viz., A. 4 e. "Circumstances of onset of present illness: known causes"). In that part of the questionnaire the psychiatrist checked off (or described in the space provided) those of the 14 precipitating factors listed therein which characterized the patient's life during the six months preceding the time of onset of an unremitting train of symptoms for which the patient ultimately sought professional help. The 14 factors listed are: fright, acute danger, serious illness, death of relative or friend, domestic crisis, unavoidable conflict, sexual, betrothal, occupational, school, childbirth, pregnancy, menopause and other crisis. In



many cases more than one circumstance was checked off in the Psychiatric Questionnaire, and in encoding the data for analysis, all of the categories of precipitating factors that applied to a patient were included, as well as a fifteenth possible category, "no known circumstance of onset". This coding procedure precluded the use of an overall chi square analysis (patient groups X categories of precipitating factor) of the data since one patient could contribute to the frequency in several cells of such a contingency table and the cell frequencies are thus non-independent. The data, therefore, were analyzed separately for each category of circumstance of onset and the frequencies in the contingency table cells represent the number of patients in that patient group for whom that particular circumstance (among others, in some cases) applied.

The obsessives and the total group of phobic patients did not differ with respect to the number for whom no circumstance of onset could be identified (Table 28) but the types of circumstances of onset that characterized the two groups were clearly differentiable.

Sexual factors, occupational or academic circumstances, childbirth and other crisis (descriptions of the "other crisis" in the lives of those obsessive and phobic patients, for whom it constituted a precipitating factor can be found in Appendix G) were significantly more common circumstances of onset among the obsessives than among the phobic patients. Fright and unavoidable conflict, on the other hand, were significantly more common precipitating factors among the phobic patients than among the obsessives (Table 29).

The most common precipitant in both patient groups was domestic crisis, a factor in 22.4% of the obsessive cases and 22.3% of the phobic cases. As can

Table 28

Number of obsessive and phobic patients for whom there was no identifiable  
circumstance of onset

	Obsessive	Phobic	
yes	28 (22.4%)	47 (28.3%)	75
no	97 (77.6%)	119 (71.7%)	216
	125	166	291

Chi square = 1.30, df = 1, p = .25

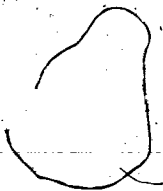


Table 29

Number of obsessive and phobic patients  
to whom the circumstances of onset applied

		Obsessive	Phobic		
Fright	yes	5 (4.0%)	23 (13.9%)	28	Chi square=7.96 df=1, p<.01
	no	120 (96.0%)	143 (86.1%)	263	
		125	166	291	
Acute danger	yes	0 (0.0%)	1 (0.6%)	1	Corrected chi square=0.00 df=1, p=1.00
	no	125 (100.0%)	165 (99.4%)	290	
		125	166	291	
Serious illness	yes	5 (4.0%)	13 (7.8%)	18	Chi square=1.80 df=1, p=.17
	no	120 (96.0%)	153 (92.2%)	273	
		125	166	291	

Table 29 (continued)

		Obsessive	Phobic		
Death of a relative or friend	yes	13 (10.4%)	26 (15.7%)	39	Chi square=1.70 df=1, p=.19
	no	112 (89.6%)	140 (84.3%)	252	
		125	166	291	

		Obsessive	Phobic		
Domestic crisis	yes	28 (22.3%)	37 (22.3%)	65	Chi square=0.00 df=1, p=.98
	no	97 (77.6%)	129 (77.7%)	226	
		125	166	291	

		Obsessive	Phobic		Corrected
Unavoidable conflict	yes	1 (0.8%)	12 (7.2%)	13	Chi square=5.48 df=1, p<.01
	no	124 (99.2%)	154 (92.8%)	278	
		125	166	291	

		Obsessive	Phobic		Corrected
Sexual	yes	24 (19.2%)	2 (1.2%)	26	Chi square=26.6 df=1, p<.001
	no	101 (80.8%)	164 (98.8%)	265	
		125	166	291	

Table 29 (continued)

		Obsessive	Phobic		Corrected
Betrothal	yes	2 (1.6%)	0 (0.0%)	2	Chi square=0.84 df=1, p=.36
	no	123 (98.4%)	166 (100.0%)	289	
		125	166	291	
Occupational	yes	10 (8.0%)	3 (1.8%)	13	Chi square=5.04 df=1, p<.05
	no	115 (92.0%)	163 (98.2%)	278	
		125	166	291	
School	yes	15 (12.0%)	6 (3.6%)	21	Chi square=7.49 df=1, p<.01
	no	110 (88.0%)	160 (96.4%)	270	
		125	166	291	
Childbirth*	yes	9 (7.2%)	1 (0.6%)	10	chi square=7.47 df=1, p=.18
	no	116 (92.8%)	165 (99.4%)	281	
		125	166	291	

Table 29 (continued)

		Obsessive	Phobic		Corrected
Pregnancy (females only)	yes	3 (5.3%)	1 (0.8%)	4	chi square=1.80 df=1, p=.18
	no	54 (94.7%)	122 (99.2%)	176	
		57	123	180	

		Obsessive	Phobic		Corrected
Menopause	yes	3 (0.0%)	0 (0.0%)	0	chi square=0.00 df=1, p=1.00
	no	125 (100.0%)	166 (100.0%)	291	
		125	166	291	

		Obsessive	Phobic		Corrected
Other crisis	yes	21 (16.8%)	15 (9.0%)	36	Chi square=3.91 df=1, p<.05
	no	104 (83.2%)	151 (90.1%)	255	
		125	166	291	

\* All subjects for whom data were available were included in this analysis (rather than females only) because for one male subject the birth of his child was seen as significant to the onset of his illness

be seen from Table 30, the death of a relative or friend and other crisis were also among the five most common precipitating factors in both groups.

When the total group of phobic patients is subdivided into agoraphobic and other phobic patients, three differences between the two kinds of phobic patients emerge:

1. Fright, which was significantly more common as a circumstance of onset among the total group of phobic patients than among the obsessives, was a factor mainly among the other phobic patients (18.4%), for whom it was the most common precipitant. Among the agoraphobic patients it was a precipitant only 6.3% of the time, a figure not much higher than the incidence among obsessives (4.0%).
2. Domestic crisis was as frequently a circumstance of onset among the obsessive patients (22.4%) as among the total group of phobic patients (22.3%) but when the two groups of phobics are considered separately, domestic crisis does discriminate between the three groups (Chi square = 7.14,  $df = 1$ ,  $p < 0.05$ ). It was most commonly a precipitant in the agoraphobic group (33.3%) and least commonly a precipitant among the other phobic patients (15.5%).
3. The higher incidence of unavoidable conflict as a precipitant among the total group of phobic patients (7.2%) compared to the obsessives (0.8%) was due mainly to the agoraphobic patients in whom the incidence is 12.7%. By comparison, unavoidable conflict was a factor among only 3.9% of the other phobic patients (Chi square = 14.02,  $df = 2$ ,  $p < .001$ ).

4. The proportion of patients in each of the three groups to whom each precipitant applies is documented in Table 31.

Table 30

Percentage of cases in which precipitant was a factor and rank order of rate  
of incidence of precipitants among obsessive and phobic patients

Precipitant	Obsessive		Phobic		
	Percentage	Rank order	Percentage	Rank order	
Fright	4.0	8.5	13.9	3	*
Acute danger	0.0	13	0.6	11	
Serious illness	4.0	8.5	7.8	5	
Death of a relative or friend	10.4	5	15.7	2	
Domestic crisis	22.4	1	22.3	1	
Unavoidable					
conflict	0.8	12	7.2	6	*
Sexual	19.2	2	1.2	9	**
Betrothal	1.6	11	0.0	13.5	
Occupational	8.0	6	1.8	8	**
School	12.0	4	3.6	7	**
Childbirth	7.2	7	0.6	11	**
Pregnancy	2.4	10	0.6	11	
Menopause	0.0	14	0.0	13.5	
Other crisis	16.8	3	9.0	4	**

\*-Significantly more common among phobic patients

\*\*Significantly more common among obsessive patients



Table 31

Number of obsessive, agoraphobic and other phobic patients  
to whom each of the circumstances of onset applied

		Obsessive	Agoraphobic	Other phobic	
No known circumstance of onset	yes	28 (22.4%)	14 (22.2%)	33 (32.0%)	75
	no	97 (77.6%)	49 (77.8%)	70 (68.0%)	216
		125	63	103	291

Chi square=3.27, df=2, p=.19

		Obsessive	Agoraphobic	Other phobic	
Fright	yes	5 (4.0%)	4 (6.3%)	19 (18.4%)	28
	no	120 (96.0%)	59 (93.7%)	84 (81.6%)	263
		125	63	103	291

Chi square=14.54, df=2, p<.001

		Obsessive	Agoraphobic	Other phobic	
Acute danger	yes	0 (0.0%)	1 (1.6%)	0 (0.0%)	1
	no	125 (100.0%)	62 (98.4%)	103 (100.0%)	290
		125	63	103	291

Chi square=3.63, df=2, p=.16

Table 31 (continued)

		Obsessive	Agoraphobic	Other phobic	
Serious illness	yes	5 (4.0%)	6 (9.5%)	7 (6.8%)	18
	no	120 (96.0%)	57 (90.5%)	96 (93.2%)	273
		125	63	103	291

Chi square=2.30, df=2, p=.32

		Obsessive	Agoraphobic	Other phobic	
Death of a relative or friend	yes	13 (10.4%)	14 (22.2%)	12 (11.7%)	39
	no	112 (89.6%)	49 (77.8%)	91 (88.3%)	252
		125	63	103	291

Chi square=5.47, df=2, p=.07

		Obsessive	Agoraphobic	Other phobic	
Domestic crisis	yes	28 (22.4%)	21 (33.3%)	16 (15.5%)	65
	no	97 (77.6%)	42 (66.7%)	87 (84.5%)	226
		125	63	103	291

Chi square=7.14, df=2, p<.05

Table 31 (continued)

		Obsessive	Agoraphobic	Other phobic	
Unavoidable conflict	yes	1 (0.8%)	8 (12.7%)	4 (3.9%)	13
	no	124 (99.2%)	55 (87.3%)	99 (96.1%)	278
		125	63	103	291

Chi square=14.02, df=2, p=.001

		Obsessive	Agoraphobic	Other phobic	
Sexual	yes	24 (19.2%)	1 (1.6%)	1 (1.0%)	26
	no	101 (80.2%)	62 (98.4%)	102 (99.0%)	265
		125	63	103	291

Chi square=28.40, df=2, p<.001

		Obsessive	Agoraphobic	Other phobic	
Betrothal	yes	2 (1.6%)	0 (0.0%)	0 (0.0%)	2
	no	123 (98.4%)	63 (100.0%)	103 (100.0%)	289
		125	63	103	291

Chi square=2.67, df=2, p=.26

Table 31 (continued)

		Obsessive	Agoraphobic	Other phobic	
Occupational	yes	10 (8.0%)	0 (0.0%)	3 (2.9%)	13
	no	115 (92.0%)	63 (100.0%)	100 (97.1%)	278
		125	63	103	291

Chi square=7.18, df=2, p<.05

		Obsessive	Agoraphobic	Other phobic	
School	yes	15 (12.0%)	0 (0.0%)	6 (5.8%)	21
	no	110 (88.0%)	63 (100.0%)	97 (94.2%)	270
		125	63	103	291

Chi square=9.47, df=2, p<.01

		Obsessive	Agoraphobic	Other phobic	
Childbirth*	yes	9 (7.2%)	0 (0.0%)	1 (1.0%)	10
	no	116 (92.8%)	63 (99.0%)	102 (99.0%)	281
		125	63	103	291

Chi square=9.46, df=2, p<.01

Table 31 (continued)

		Obsessive	Agoraphobic	Other phobic	
Pregnancy(females only)	yes	3 (5.3%)	0 (0.0%)	1 (1.5%)	4
	no	54 (94.7%)	56 (100.0%)	66 (98.5%)	176
		57	56	67	180

Chi square=3.86, df=2, p=.14

		Obsessive	Agoraphobic	Other phobic	
Menopause	yes	0 (0.0%)	0 (0.0%)	0 (0.0%)	0
	no	125 (100.0%)	63 (100.0%)	103 (100.0%)	291
		125	63	103	291

Chi square=0.00, df=2, p=1.00

		Obsessive	Agoraphobic	Other phobic	
Other crisis	yes	21 (16.8%)	6 (9.5%)	9 (8.7%)	36
	no	104 (83.2%)	57 (90.5%)	94 (91.3%)	255
		125	63	103	291

Chi square=3.96, df=2, p=.13

\* All subjects for whom data were available were included in this analysis (rather than females only) because for one male subject the birth of his child was seen as significant to the onset of his illness

### Course of the disorder

When the obsessive and phobic patients are categorized according to Ingram's (1961b) four types of disorder course (constant static, constant worsening, fluctuating and phasic), the distributions of course within the two groups differs significantly (Chi square = 36.1, df = 4,  $p < .001$ ). The largest differences between the two groups occur in the "constant static" and "constant worsening" categories. The course of the disorder of 39.0% of the phobic patients is classified as "constant static"; whereas the course of only 14.5% of the obsessive patients is so categorized. The course of 29.1% of the obsessive patients is described as "constant worsening" compared to 9.7% of the phobic patients. A similar proportion of each group (56.5% of the obsessives and 50.7% of the phobics) report a changeable course, i.e., "fluctuating" or "phasic". The complete contingency table is reproduced in Table 32.

Where the patient reported changes in the disorder over time, the psychiatrist asked the patient if he or she was able to identify what the circumstances of exacerbation were. If the patient was aware what the circumstances were, his response was recorded in the Psychiatric Questionnaire (A. 5 d. "Exacerbation connected with:") and the response was subsequently classified, where applicable, into one of the 12 categories described earlier under "circumstances of onset". If none of the 12 categories was descriptive of the patient's response, the circumstances of exacerbation were classified as "Other crisis" or "Other". The resulting distributions for the two groups (Table 33) differ significantly from each other (Chi square = 27.4, df = 13,  $P = .01$ ). The largest single difference between the groups is in the category, "No known circumstances"; 37.9% of the obsessive patients (63.8% of those who

Table 32

Course of disorder of obsessive and phobic patients

Course	Obsessive	Phobic	
Constant static	17 (14.5%)	60 (39.0%)	77
Constant worsening	34 (29.1%)	15 (9.7%)	49
Fluctuating	54 (46.2%)	48 (31.2%)	102
Phasic	12 (10.3%)	30 (19.5%)	42
Getting better	0 (0.0%)	1 (0.6%)	1
	117	154	271

Chi square = 36.1, df = 4, p < .001

Table 33

Circumstances of exacerbation of obsessive and phobic patients

	Obsessive	Phobic	
Acute danger	1 (0.9%)	0 (0.0%)	1
Serious illness	1 (0.9%)	3 (2.0%)	4
Death of relative or friend	2 (1.7%)	2 (1.4%)	4
Domestic crisis	5 (4.3%)	8 (5.4%)	13
Unavoidable conflict	1 (0.9%)	1 (0.7%)	2
Sexual	3 (2.6%)	1 (0.7%)	4
Occupational	3 (2.6%)	6 (4.1%)	9
School	1 (0.9%)	1 (0.7%)	2
Childbirth	0 (0.0%)	1 (0.7%)	1
Pregnancy	0 (0.0%)	1 (0.7%)	1



Other crisis	2 (1.7%)	10 (6.8%)	12
No known circumstances	44 (37.9%)	22 (15.0%)	66
Does not apply (i.e., there was no exacerbation)	47 (40.5%)	74 (50.3%)	121
Other	6 (5.2%)	17 (11.6%)	23
	116	147	263

Chi square = 27.4, df = 13, p = 0.01

report exacerbations) were unaware of the circumstances, if any, surrounding exacerbations of their condition, compared to only 15.0% of the phobics (30.1% of those who report exacerbations). Eight (6.9%) of the circumstances of exacerbation described by the obsessive patients and 27 (18.4%) of the circumstances described by the phobic patients were not classifiable in the 12 categories used in the Psychiatric Questionnaire. A list of these can be found in Appendix H.

When the phobic group is separated into agoraphobics and patients with other phobias, the distribution of types of course across disorders reveals that the agoraphobics are more like the obsessives than are the other phobics (Table 34). The modal category of course in both of these disorders is "fluctuating" (46.2% of the obsessives and 35.0% of the agoraphobics); the modal course in the other phobic patients is "constant static" (44.7%). The course of the obsessive group remains different from both phobic groups in that more obsessives report a "constant worsening" course and fewer describe their course as "constant static". The agoraphobic patients describe the course as "phasic" (i.e., one or more complete remissions) more often than do other phobic patients or obsessives. With respect to the distribution of types of circumstances of exacerbation across the three groups (Table 34), the agoraphobics do not differ markedly from the other phobic patients except that "domestic conflict" is more often reported as "circumstances of exacerbation" by the agoraphobic patients (12.5%) than by the other phobics (1.1%). Lack of awareness as to what causes exacerbations distinguishes the obsessive patients from both groups of phobic patients (Table 35).

Table 34

Course of disorder of obsessive, agoraphobic and other phobic patients

Course	Obsessive	Agoraphobic	Other Phobic	
Constant static	17 (14.5%)	18 (30.0%)	42 (44.7%)	77
Constant worsening	34 (29.1%)	4 (6.7%)	11 (11.7%)	49
Fluctuating	54 (46.2%)	21 (35.0%)	27 (28.7%)	102
Phasic	12 (10.3%)	17 (28.3%)	13 (13.8%)	42
Getting better	0 (0.0%)	0 (0.0%)	1 (1.1%)	1
	117	60	94	271

Chi square = 45.8, df = 8, p < .001

Table 35

Circumstances of exacerbation  
of obsessive, agoraphobic and other phobic patients

	Obsessive	Agoraphobic	Other Phobic	
Acute danger	1 (0.9%)	0 (0.0%)	0 (0.0%)	1
Serious illness	1 (0.9%)	2 (3.6%)	1 (1.1%)	4
Death of a relative or friend	2 (1.7%)	2 (3.6%)	0 (0.0%)	4
Domestic crisis	5 (4.3%)	7 (12.5%)	1 (1.1%)	13
Unavoidable conflict	1 (0.9%)	1 (1.8%)	0 (0.0%)	2
Sexual	3 (2.6%)	1 (1.8%)	0 (0.0%)	4
Occupational	3 (2.6%)	0 (0.0%)	6 (6.6%)	9
School	1 (0.9%)	0 (0.0%)	1 (1.1%)	2
Childbirth	0 (0.0%)	0 (0.0%)	1 (1.1%)	1
Pregnancy	0 (0.0%)	1 (1.8%)	0 (0.0%)	1
Other Crisis	2 (1.7%)	4 (7.1%)	6 (6.6%)	12

No known circumstance	44 (37.9%)	8 (14.3%)	14 (15.4%)	66
Does not apply	47 (40.5%)	22 (39.3%)	52 (57.1%)	121
Other	6 (5.2%)	8 (14.3%)	9 (9.9%)	23
	116	56	91	263

Chi square = 55.1, df = 26, p < .001

### Delay in seeking help

Defining delay as the interim between the time when symptomatology became continuous and the time when the patient first sought psychiatric help, a comparison of the two groups reveals a significantly longer delay in the phobic group. On average the phobics deferred treatment eight years longer than did the obsessives - 10.8 years compared to 2.7 years ( $F = 22.2$ ,  $df = 1,163$ ,  $p < .001$ ). Separating the phobic group into agoraphobics and other phobic patients, however, a very different pattern emerges; the 11-year mean delay of the phobics is not representative of both phobic subgroups. The group of other phobic patients delayed seeking treatment 14.5 years on average, significantly longer (Tukey B a posteriori comparison) than the agoraphobics (1.0 years) or the obsessives (2.7 years), who do not differ from each other with respect to delay ( $F = 22.2$ ,  $df = 2,162$ ,  $p < .001$ ). Complete information on these analyses of delay in seeking help can be found in Appendix E, Tables E73-E74.

### Mental disorder among relatives

From information recorded in that part of the Psychiatric Questionnaire dealing with "Family Background" (Sections B 1. a, b, c, d, & e), the incidence of neurosis, personality disorder, psychosis, organic brain syndrome, stuttering<sup>1</sup>, and no psychiatric disorder in the patient's father, mother, siblings and other relatives, was coded and compared across patient

<sup>1</sup>Stuttering was included as a possible disorder of relatives in the Psychiatric Questionnaire because in an unpublished study on the natural history of 43 obsessive patients (Reference Note 4), Solyom found that about 7% of phobic patients in that study claimed to have members of their immediate family who stuttered. By way of explaining this finding he wrote, "That some link exists between stuttering and obsessive neurosis on a phenomenological and perhaps on an etiological level is frequently commented upon in the literature".

groups using chi square.

With respect to mental disorder in the patient's father, the distribution of categories of mental disorder among the fathers of obsessive patients differed from the distribution of categories of disorder among the fathers of phobic patients (chi square = 12.5, df = 5,  $p < .05$ ). The proportion of the fathers of obsessive patients with some form of mental disorder (45/113) is significantly larger than the proportion of fathers of phobic patients (40/147) with a disorder (chi square = 17.62, df = 1,  $p < .001$ ). This difference would seem to be largely due to the higher incidence of neurosis among the fathers of obsessive patients (23.9% compared to only 12.8% of the fathers of phobic patients). The percentages of patients' fathers in each of the categories of disorder are documented in Table 36.

The same general pattern of difference is found in the incidence of mental disorder among the patients' mothers, although here the differences fail to reach statistical significance. The percentage of mothers of obsessives with some form of mental disorder (43/114 or 37.7%) compared to the proportion of maternal disorder in the phobic group (40/147 or 27.2%) yields a chi-square of 3.27 (df = 1,  $.05 < p < .10$ ). The percentages of patients' mothers in each of the categories of disorder is documented in Table 37.

The incidence of mental disorder among the siblings and remote family was coded in such a way that does not permit an overall chi-square on the categories of disorder by patient group.<sup>2</sup> The data, therefore, are analyzed

<sup>2</sup>The illness categories of up to three siblings or three members of the patient's remote family were coded as three different variables. Thus zero to three siblings and/or zero to three remote relatives of each patient could appear in the contingency table of illness category X patient group, making the observed frequencies in the cells of the contingency table non-independent, in that the same patient can contribute to the frequency in as many as three different cells.

Table 36

Mental disorder in the fathers of the obsessive and phobic patients

	Obsessive	Phobic	
Neurosis	27 (23.9%)	19 (12.8%)	46
Personality disorder	10 (8.8%)	10 (6.8%)	20
Psychosis	4 (3.5%)	6 (4.1%)	10
Organic brain syndrome	2 (1.8%)	0 (0.0%)	2
Stuttering	2 (1.8%)	0 (0.0%)	2
No mental disorder	68 (60.2%)	113 (76.4%)	181
	113	148	261

Chi square = 12.5, df = 5, p = .03



Table 37

Mental disorder in the mothers of the obsessive and phobic patients

	Obsessive	Phobic	
Neurosis	35 (30.7%)	33 (22.4%)	68
Personality disorder	3 (2.6%)	2 (1.4%)	5
Psychosis	3 (2.6%)	4 (2.7%)	7
Organic brain syndrome	2 (1.8%)	1 (0.7%)	3
No mental disorder	71 (62.3%)	107 (72.%)	178
	114	147	261

Chi square = 3.9, df = 4, p = .42

separately for each category of disorder and the frequencies in the contingency table cells represent the number of patients in that patient group who had one or more siblings or one or more remote relatives with that disorder.

As can be seen from Table 38, the two groups did not differ with respect to the incidence of any of the categories of disorder among siblings. The most common disorder among siblings in both groups was neurosis; 34.9% of the obsessives and 29.9% of the phobics had one or more neurotic siblings. Forty-four percent of the obsessives and 35.0% of the phobics had one or more siblings with some form of mental disorder.

With respect to mental disorder among the patients' other relatives i.e., other than nuclear family (Table 39), significantly more obsessive patients (59.4% compared to 35.6% of the phobics) had one or more other relatives with some form of mental disorder (Chi square = 12.74, df = 1,  $p < .001$ ). The only specific categories of disorder on which the two groups differed was personality disorder; the incidence of personality disorder was higher among the other relatives of obsessive patients than among the other relatives of phobic patients (corrected chi square = 6.75, df = 1,  $p < .01$ ).

When the phobic group was subdivided into agoraphobic and other phobic patients, the incidence of some form of mental disorder in the fathers of the patients in the three groups differed significantly. The agoraphobic patients and other phobic patients had the same proportion of fathers with some form of mental disorder (23.2% and 23.9% respectively), which was significantly lower than the rate of disorder (39.8%) among the fathers of obsessives (chi square = 7.94, df = 2,  $p < .05$ ), due mainly to the higher incidence of neurosis in the fathers of obsessives. There was no difference, however, in the overall

Table 38

Mental disorder among siblings of obsessive and phobic patients

		Obsessive	Phobic		
Neurosis	yes	38 (34.9%)	35 (29.9%)	73	Chi square=0.63 df=1, p=.43
	no	71 (65.1%)	82 (70.1%)	153	
		109	117	226	
Personality disorder	yes	7 (6.4%)	3 (2.6%)	10	Corrected chi square=1.18 df=1, p=.28
	no	102 (93.6%)	114 (97.4%)	216	
		109	117	226	
Psychosis	yes	6 (5.5%)	5 (4.3%)	11	Chi square=0.18 df=1, p=.67
	no	103 (94.5%)	112 (95.7%)	215	
		109	117	226	

Table 38 (continued)

		Obsessive	Phobic		
Organic brain syndrome	yes	2 (1.8%)	2 (1.7%)	4	Corrected chi square=0.00 df=1, p=1.00
	no	107 (98.2%)	115 (98.3%)	222	
		107	117	226	

		Obsessive	Phobic		
Stuttering	yes	4 (3.7%)	3 (2.6%)	7	Corrected chi square=0.01 df=1, p=.92
	no	105 (96.3%)	114 (97.4%)	219	
		109	117	226	

		Obsessive	Phobic		
No mental disorder	yes	61 (56.0%)	76 (65.0%)	137	Corrected chi square=1.91 df=1, p=.17
	no	48 (44.0%)	41 (35.0%)	89	
		109	117	226	

Table 39

Mental disorder among non-nuclear family of the obsessive and phobic patients

		Obsessive	Phobic		
Neurosis	yes	30 (26.4%)	21 (16.1%)	51	Chi square=3.50 df=1, .05<p<.10
	no	76 (73.6%)	97 (83.9%)	173	
		106	118	224	

		Obsessive	Phobic		
Personality disorder	yes	15 (14.2%)	5 (4.2%)	20	Chi square=6.75 df=1, p<.01
	no	91 (85.8%)	113 (95.8%)	204	
		106	118	224	

		Obsessive	Phobic		
Psychosis	yes	28 (26.4%)	19 (16.1%)	47	Chi square=3.58 df=1, .05<p<.10
	no	78 (73.6%)	99 (83.9%)	177	
		106	118		

Table 39 (continued)

	Obsessive	Phobic		
Organic brain syndrome	yes	9 (8.5%)	3 (2.5%)	12
	no	97 (91.5%)	115 (97.5%)	212
		106	118	224
				Corrected chi square=2.81 df=1, .05 < p < .10

	Obsessive	Phobic		
Stuttering		2 (1.9%)	1 (0.8%)	3
	no	104 (98.1%)	117 (99.2%)	221
		106	118	224
				Corrected chi square=0.01 df=1, p=.93

	Obsessive	Phobic		
No mental disorder	yes	43 (40.6%)	76 (64.4%)	119
	no	63 (59.4%)	42 (35.6%)	105
		106	118	224
				Chi square=12.75 df=1, p<.001

distribution of categories of disorder among the fathers of the three groups of patients (Table 40).

The distribution of categories of maternal mental disorder across the three patient groups (Table 41) was similar in pattern to the distribution of paternal mental disorder but the proportions of mothers with some form of mental disorder did not differ among the three patient groups (Chi square = 3.64,  $df = 2$ ,  $.10 < p < .20$ ).

As can be seen from Table 42, the three groups did not differ with respect to the incidence of any of the categories of disorder among siblings.

With respect to the incidence of some form of mental disorder among the patient's non-nuclear family (Table 43), the three groups differed significantly, with the obsessives having the highest incidence, 59.4%, compared to 31.7% and 37.7% for the agoraphobics and other phobics, respectively. The only category of disorder on which the three groups differed was personality disorder, with the relatives of obsessives having the highest incidence.

Table 40

**Mental disorder in the fathers  
of the obsessive, agoraphobic and other phobic patients**

	Obsessive	Agoraphobic	Other phobic	
Neurosis	27 (23.9%)	7 (12.5%)	12 (13.0%)	46
Personality disorder	10 (8.8%)	4 (7.1%)	6 (6.5%)	20
Psychosis	4 (3.5%)	2 (3.6%)	4 (4.3%)	10
Organic brain syndrome	2 (1.8%)	0 (0.0%)	0 (0.0%)	2
Stuttering	2 (1.8%)	0 (0.0%)	0 (0.0%)	2
No mental disorder	68 (60.2%)	43 (76.8%)	70 (76.1%)	181
	113	92	56	261

Chi square = 12.59, df = 10, p = .25



Table 41

Mental disorder in the mothers  
of the obsessive, agoraphobic and other phobic patients

	Obsessive	Agoraphobic	Other Phobic	
Neurosis	35 (30.7%)	15 (26.8%)	18 (19.8%)	68
Personality disorder	3 (2.6%)	1 (1.8%)	1 (1.1%)	5
Psychosis	3 (2.6%)	1 (1.8%)	3 (3.3%)	7
Organic brain syndrome	2 (1.8%)	0 (0.0%)	1 (1.1%)	3
No mental disorder	71 (62.3%)	39 (69.6%)	68 (74.7%)	178
	114	56	91	261

Chi square = 5.43, df = 8, p = 0.71

Table 42

Mental disorder among siblings  
of the obsessive, agoraphobic and other phobic patients

		Obsessive	Agoraphobic	Other phobia	
Neurosis	yes	38 (34.9%)	12 (26.7%)	23 (31.9%)	73
	no	71 (65.1%)	33 (73.3%)	49 (68.1%)	153
		109	45	72	226

Chi square=0.98, df=2, p=.61

		Obsessive	Agoraphobic	Other phobia	
Personality disorder	yes	7 (6.4%)	2 (4.4%)	1 (1.4%)	10
	no	102 (93.6%)	43 (95.6%)	71 (98.6%)	216
		109	45	72	226

Chi square=2.60, df=2, p=.27

		Obsessive	Agoraphobic	Other phobia	
Psychosis	yes	6 (5.5%)	2 (4.4%)	3 (4.2%)	11
	no	103 (94.5%)	43 (95.6%)	69 (95.8%)	215
		109	45	72	226

Chi square=0.19, df=2, p=.91

Table 42 (continued)

		Obsessive	Agoraphobic	Other phobia	
Organic brain syndrome	yes	2 (1.8%)	0 (0.0%)	2 (2.8%)	4
	no	107 (98.2%)	45 (100.0%)	70 (97.2%)	222
		109	45	72	226

Chi square=1.23, df=2, p=.54

		Obsessive	Agoraphobic	Other phobia	
Stuttering	yes	4 (3.7%)	1 (2.2%)	2 (2.8%)	7
	no	105 (96.3%)	44 (97.8%)	70 (97.2%)	219
		109	45	72	226

Chi square=0.26, df=2, p=.88

		Obsessive	Agoraphobic	Other phobia	
No mental disorder	yes	61 (56.0%)	28 (62.2%)	48 (66.7%)	137
	no	48 (44.0%)	17 (37.8%)	24 (33.3%)	89
		109	45	72	226

Chi square=2.14, df=2, p=.34

Table 43

Mental disorder among non-nuclear family  
of the obsessive, agoraphobic and other phobic patients

		Obsessive	Agoraphobic	Other phobia	
Neurosis	yes	30 (28.3%)	7 (17.1%)	14 (18.2%)	51
	no	76 (71.7%)	34 (82.9%)	63 (81.8%)	173
		106	41	77	224

Chi square=3.52, df=2, p=.17

		Obsessive	Agoraphobic	Other phobia	
Personality disorder	yes	15 (14.2%)	0 (0.0%)	5 (6.5%)	20
	no	91 (40.6%)	41 (100.0%)	72 (93.5%)	204
		106	41	77	224

Chi square=8.14, df=2, p<.05

		Obsessive	Agoraphobic	Other phobia	
Psychosis	yes	28 (26.4%)	7 (17.1%)	12 (15.6%)	47
	no	78 (73.6%)	34 (82.9%)	65 (84.4%)	177
		106	41	77	224

Chi square=3.62, df=2, p=.16

Table 43 (continued)

		Obsessive	Agoraphobic	Other phobia	
Organic brain syndrome	yes	9 (8.5%)	1 (2.4%)	2 (2.6%)	12
	no	97 (91.5%)	40 (97.6%)	75 (97.4%)	212
		106	41	77	224

Chi square=3.90, df=2, p=.14

		Obsessive	Agoraphobic	Other phobia	
Stuttering	yes	2 (1.9%)	0 (0.0%)	1 (1.3%)	3
	no	104 (98.1%)	41 (100.0%)	76 (98.7%)	221
		106	41	77	224

Chi square=0.80, df=2, p=.67

		Obsessive	Agoraphobic	Other phobia	
No mental disorder	yes	43 (40.6%)	28 (68.3%)	48 (62.3%)	119
	no	63 (59.4%)	13 (31.7%)	29 (37.7%)	105
		106	41	77	224

Chi square=13.13, df=2, p=.001

#### IV. Personality

##### Premorbid personality type

Data on the premorbid personality of the patients comes from two sources:

- (1) That part of the Psychiatric Questionnaire (B. 3 "Premorbid personality") in which the psychiatrist noted whether the patient's premorbid personality could be described as "parsimonious, obstinate, orderly" (the so-called "obsessional personality") or whether one of the two types of premorbid personalities postulated by Lewis (1936) as characteristic of chronic severe obsessives, namely the anancastic personality ("aggressive and morose") or the psychasthenic personality ("submissive, shy"), applied to the patient. In many cases the psychiatrist checked off more than one of the three personality types as applying to the patient since the characteristics of the classic obsessional personality ("parsimonious, obstinate and orderly") are not incompatible with the descriptors Lewis uses to characterize his two types of premorbid personality (viz., "submissive and shy", "aggressive and morose").<sup>1</sup> For this reason these data were analyzed separately for each type of premorbid personality (an overall chi square would have non-independent cell frequencies, the same individuals contributing to the frequency in more

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<sup>1</sup>These data, although important to the understanding of the disorders, must be interpreted with caution since they are no more reliable than the patient's memory and the material to be recalled ("the kind of person you were before you got sick") is more difficult to elicit and more subject to retrospective distortion than more specific recollections (e.g., age at which first symptom occurred).

than one cell).

- (2) The Obsessive Trait score from the Leyton Obsessional Inventory. The LOI yields a Symptom score and a Trait score. To the extent that the Trait score measures enduring personality characteristics, this score is a measure of the extent to which the patient's premorbid personality was of the obsessional type.

With respect to the two types of premorbid personality postulated by Lewis (1936) to characterize obsessive patients, the psychasthenic personality ("submissive and shy") characterized the obsessive patients premorbidly in 46.9% (46/98) of the cases, compared to 64.5% (20/31) of all of the phobic patients (Chi square = 2.91, df = 1, p = .09) and the anancastic personality ("aggressive and morose") was characteristic of 24.7% (24/97) of the obsessive patients and none (0/31) of the phobic patients (corrected chi square = 7.89, df = 1, p < .01). The classic obsessive personality ("parsimonious, obstinate and orderly") was equally common premorbidly in the two patient groups; 54.5% (54/99) of the obsessive patients and 62.5% (20/32) of the phobic patients could be so described (Chi square = 0.62, df = 1, p = .43).

The LOI Trait scores of the two groups of patients support the finding from the Psychiatric Questionnaire that obsessional premorbid personality is as common in phobic patients as in obsessive-compulsive patients. The mean Trait score of the obsessives (10.67) and of the total group of the phobic patients (9.21) did not differ significantly (F = 2.38, df = 1, 116, p = .13).

Subdividing the phobic patients into agoraphobics and other phobic patients, the same pattern of results emerged. The three groups did not differ with respect to the incidence of psychasthenic ("submissive and shy") premorbid personality (Chi square = 4.54, df = 2, p = .10) but the groups did

differ with respect to the incidence of the other premorbid personality (anancastic: "agressive and morose") postulated by Lewis (1936) as characteristic of obsessive patients; 24.7% of the obsessives and none of the phobic patients were so characterized (Chi square = 9.44, df = 2,  $p < .01$ ). The premorbid personality of over half of the patients in all three groups was classified in the Psychiatric Questionnaire as obsessional (i.e., "parsimonious, obstinate and orderly") but the three groups did not differ significantly with respect to the incidence of this type of premorbid personality (Table 44).

Other characteristics of the patients' premorbid personalities, as noted by the psychiatrist in the Psychiatric Questionnaire (B. 3. d "Premorbid personality: Other characteristics") are listed in Appendix I. The LOI Trait scores of the three groups do not differ significantly from one another ( $F = 2.03$ ,  $df = 2, 115$ ,  $P = .13$ ), supporting the finding from the Psychiatric Questionnaire that the incidence of obsessional premorbid personality does not differ among the three groups. Complete information on the analyses of variance involving LOI Trait scores is documented in Appendix E, Tables E75-E76.

#### Neuroticism and Extraversion-Introversion

The obsessive patients scored significantly higher on the Neuroticism scale of the Maudsley Personality Inventory than did the phobic patients (33.3 compared to 26.3,  $F = 24.2$ ,  $df = 1, 204$ ,  $p < .001$ ). The means of both groups are significantly higher than the mean Neuroticism score of Eysenck's (1959) standardization group of 1800 English normals (mean = 19.89, s.d. = 11.02).



Table 44

Incidence of premorbid personality type  
(as classified in Psychiatric Questionnaire)  
in the three patient groups

		Obsessive	Agoraphobic	Other phobia	
Psychasthenic ("submissive and shy")	yes	46 (46.9%)	6 (85.7%)	14 (58.3%)	66
	no	52 (53.1%)	1 (14.3%)	10 (41.7%)	63
		98	7	24	129

Chi square=4.54, df=2, p=.10

		Obsessive	Agoraphobic	Other phobia	
Anancastic ("aggressive and morose")	yes	24 (24.7%)	0 (0.0%)	0 (0.0%)	24
	no	73 (75.3%)	7 (100.0%)	24 (100.0%)	104
		97	7	24	128

Chi square=9.44, df=2, p<.01

		Obsessive	Agoraphobic	Other phobia	
Obsessional ("parsimonious, obstinate and orderly")	yes	54 (54.5%)	5 (62.5%)	15 (62.5%)	74
	no	45 (45.5%)	3 (37.5%)	9 (37.5%)	57
		99	8	24	131

Chi square=.62, df=2, p=.73

On the Extraversion dimension of the Maudsley Personality Inventory, the mean score of the obsessives, 18.8, was significantly lower than that of the phobic patients, 22.3 ( $F = 6.3$ ,  $df = 1,204$ ,  $p = .01$ ). The mean Extraversion score of Eysenck's (1959) 1800 normals was 24.9, with a standard deviation of 9.71.

Subdividing the phobic patients into separate groups of agoraphobics and other phobic patients reveals that the significantly lower Neuroticism scores and higher Extraversion scores of the phobic patients as a group are due almost entirely to the other phobic patients who are significantly less neurotic than either the obsessives or the agoraphobic patients who do not differ from each other in this respect and are significantly more extraverted than the obsessive patients (Table 45). Complete information on the analyses of variance involving MPI Neuroticism and Extraversion scores is documented in Appendix E, Tables E77-E80.

Table 45

MPI Neuroticism and Extraversion scores of obsessives, agoraphobic and other phobic patients

	Obsess.	Agora.	O.Phob	F-ratio	<u>df</u>	<u>p</u>
Neuroticism	<u>33.3</u>	<u>30.3</u>	24.0	16.5	2,203	<.001
Extraversion	<u>18.8</u>	<u>20.6</u>	23.3	3.9	2,203	<.05

Means underlined by the same straight line do not differ from each other

V. Estimation of missing values and analysis of pattern of missing data

Before attempting computer-assisted discriminant analysis of the data, the missing values of each variable in the original data matrix<sup>1</sup> had to be replaced with estimated values. These estimates were generated by regressing the variable concerned on up to two variables selected by stepwise regression (BMDP PAM program, described by Frane, 1979). Before using the completed data matrix thus generated in a multivariate analysis, it behooves the researcher to show that the estimated values of any one variable do not differ in some systematic fashion from the known values of that variable. If this is not the case - if, in fact, the estimates of the missing values of a variable are systematically and significantly different from those values of that variable that are available - then the multivariate analysis utilizing the estimated values in the completed data matrix can be misleading and the results of the univariate significance tests, utilizing only available (i.e., non-estimated) values, are not generalizable to the total sample of 359 patients or, in turn,

<sup>1</sup>See "Method" section, p.84 (III. Statistical analysis, Estimation of missing values and analysis of pattern of missing data) for extent of, and reasons for, missing data.

to the population of all obsessive and phobic patients seeking treatment.

To determine if any systematic bias exists in the estimated data, the estimates of the missing values for each ratio or ordinal variable, generated by stepwise regression, were compared, within each group, using one-way analysis of variance, with the known (i.e., non-estimated) values of that variable. The probabilities for the F-values obtained in these tests of significance are listed in Table 46.

Since only 3 of the 121 one-way analyses of variance of differences between known and estimated variables proved to be significantly different at the 0.05 level of significance, it can be assumed that the missing values, if they were known, would not differ in any systematic way from the data available, and therefore that the findings based on available data can be generalized to the total sample of 359 patients and, to the extent that this sample is representative of all obsessive and phobic patients, to the population of all obsessive and phobic patients.

Table 46

Probabilities for F-values obtained in one-way analyses of variance of differences between estimated and known values of ordinal and ratio variables

Variable	Obsessive	Agoraphobic	Other phobic
Age	.71*	.71*	.71*
Psychiatrist's rating of ruminations	.50	.84	.87
Psychiatrist's rating of rituals	.83	.86	.90
Psychiatrist's rating of horrific temptations	.60	.93	.67
Psychiatrist's rating of pervading doubt	.27	.04**	.57
Patient's rating of ruminations	.23	.96	.93
Patient's rating of rituals	.54	.12	.91
Patient's rating of horrific temptations	.44	.66	.50
Patient's rating of compulsions	.93	.98	.38
Leyton Obsessional Inventory Symptomatology score	.31	.48	.64
Leyton Obsessional Inventory Resistance score	.93	.25	.35
Leyton Obsessional Inventory Interference score	.70	.54	.72
Psychiatrist's rating of agoraphobia	.04**	.34	.52
Psychiatrist's rating of social phobia	.87	.80	.60

Table 46 (continued)

Psychiatrist's rating of specific phobia	.92	.77	.42
Psychiatrist's rating of obsessive phobia	.67	.81	.88
Psychiatrist's rating of main phobia	.98	.88	.75
Patient's rating of main phobia	.81	.85	.80
Fear Survey Schedule total score	.46	.83	.82
Mean score on FSS fears of death and tissue damage	.41	.63	.83
Mean score on FSS social fears	.46	.89	.86
Mean score on FSS other classical fears	.85	.97	.90
Mean score on FSS miscellaneous fears	.60	.79	.98
Mean score on FSS animal fears	.64	.30	.98
Mean score on FSS noise fears	.58	.85	.96
Mean score on FSS fears of "contamination" and "hurting others"	.59	.70	.55
Psychiatrist's rating of anxiety	.82	.64	.29
Patient's rating of "nervousness"	.61	.92	.52
Patient's rating of anxiety symptoms	.84	.97	.60

Table 46 (continued)

Anxiety Scale Questionnaire sten score	.89	.51	.78
Anxiety Scale Questionnaire overt anxiety score	.93	.41	.82
Anxiety Scale Questionnaire covert anxiety score	.73	.44	.98
Psychiatrist's rating of depression	.52	.84	.92
Patient's rating of depression	.55	.83	.52
Patient's rating of social adjustment	.77	.92	.95
Age of onset	.85	.34	.57
Age of first symptom	.76	.82	.96
Delay in seeking help	.95	.54	.72
Leyton Obsessional Inventory Trait score	.03**	.22	.09
Maudsley Personality Inventory Neuroticism score	.44	.35	.47
Maudsley Personality Inventory Extraversion score	.21	.68	.70

\* There were only three missing values on this variable, making within-group comparisons of known values with estimated values of the variable unfeasible; instead the three estimates of the missing values were compared with the 356 known values, across groups.

\*\* Difference between mean of estimated values and mean of known values significant at 0.05 level

## VI. Stepwise discriminant analysis

Using the completed data matrix generated by BMDP PAM, discriminant analysis was used to find linear combinations of the variables that best characterize the differences among the groups. P7M, the BMDP stepwise discriminant analysis program (Jenrich and Sampson, 1979), was used for this purpose. Four stepwise discriminant analyses were carried out.

### Discriminant analysis to discriminate obsessives from phobics, using all of the variables involved in the hypothesis tests

First, the linear functions that best discriminate obsessives from phobics were computed using all of the pre-treatment variables (replacing the nominal variables that assume more than two values with sets of dichotomous variables, one for each value). The results of this analysis were as follows:

#### (a) Summary table of steps in discriminant analysis

Table 47 lists the 22 variables that best discriminate between the two groups and the F-to-enter (or remove) for each variable entered (or removed) at each step of the discriminant analysis. Wilks' lambda (U-statistic) and the F approximation to lambda, two multivariate tests for group differences, are also tabled for each step of the discriminant analysis.

The step at which a variable is entered is a measure of how well that variable discriminates between the groups. The P7M procedure begins by



Table 47

Summary table of steps in discriminant analysis of obsessive and phobic groups  
using all variables

Variable	F-to-enter	No. of variables	U-statistic	F	d. f.
1 PQRIT	340.1211	1	0.5121	340.122	1.00 357.00
2 PQRUMIN	90.7318	2	0.4081	258.172	2.00 356.00
3 MAINPQ4	72.8366	3	0.3386	231.124	3.00 355.00
4 PQRMAIN	81.5090	4	0.2752	233.032	4.00 354.00
5 PQOBS	77.0743	5	0.2259	241.904	5.00 353.00
6 PREMOR3	53.5052	6	0.1961	240.488	6.00 352.00
7 PQAGORA	21.9321	7	0.1846	221.524	7.00 351.00
8 PQPERV	19.0158	8	0.1751	206.160	8.00 350.00
9 PQSPEC	19.7313	9	0.1657	195.253	9.00 349.00
10 MIREMO6	18.7717	10	0.1572	186.553	10.00 348.00
11 COURSE2	10.1601	11	0.1527	174.982	11.00 347.00
12 MAINFSS1	9.9259	12	0.1485	165.353	12.00 346.00
13 MAINPQ4 *	2.3322	11	0.1495	179.484	11.00 347.00
14 MIPATER6	8.5723	12	0.1459	168.832	12.00 346.00
15 CIRCUM7	6.7837	13	0.1431	158.972	13.00 345.00
16 CIRCUI1	7.6278	14	0.1400	150.997	14.00 344.00
17 MINUC3	11.1829	15	0.1355	145.848	15.00 343.00
18 PQHORR	8.6911	16	0.1322	140.342	16.00 342.00
19 CIRCUI8	6.8283	17	0.1296	134.739	17.00 341.00
20 CIRCUM6	5.2331	18	0.1276	129.124	18.00 340.00
21 PREMOR2	5.1572	19	0.1257	124.096	19.00 339.00
22 PREMOR1	6.0768	20	0.1235	119.960	20.00 338.00
23 MIREMO3	6.6942	21	0.1211	116.491	21.00 337.00
24 MIREMO4	5.1234	22	0.1193	112.790	22.00 336.00

\* Variable removed

Legend: PQRIT = Psychiatrist's rating of rituals  
PQRUMIN = Psychiatrist's rating of ruminations  
MAINPQ4 = Obsessive phobia (PQ category) designated as main phobia by patient  
PQRMAIN = Psychiatrist's rating of main phobia  
PQOBS = Psychiatrist's rating of obsessive phobia  
PREMOR3 = Anancastic premorbid personality ("aggressive and morose")  
PQAGORA = Psychiatrist's rating of agoraphobia  
PQPERV = Psychiatrist's rating of pervading doubt  
PQSPEC = Psychiatrist's rating of specific phobia  
MIREMO6 = No mental disorder in patient's non-nuclear family  
COURSE2 = "Constant worsening" course of disorder

MAINFSS1 = Death and tissue damage (FSS category) designated as main phobia by patient  
MIPATER6 = No mental disorder in father of the patient  
CIRCUM7 = Circumstances of onset: Sexual

Table 47 (continued)

CIRCU11 = Circumstances of onset: Childbirth  
MINUC3 = Psychosis among siblings of patient  
PQHORR = Psychiatrist's rating of horrific temptations  
CIRCU18 = Circumstances of onset: Other  
CIRCUM6 = Circumstances of onset: Unavoidable conflict  
PREMOR2 = Obsessional premorbid personality ("parsimonious, obstinate  
and orderly")  
PREMOR1 = Psychasthenic premorbid personality ("submissive and shy")  
MIREMO3 = Psychosis in the patient's non-nuclear family  
MIREMO4 = Organic brain syndrome in the patient's non-nuclear family

selecting the single best-discriminating variable, using the overall multivariate F ratio for the test of differences among the group centroids. In the present discriminant analysis, the "Psychiatrist's rating of rituals" (PQRIT1) was found to be the variable that best discriminates between obsessive and phobic patients. Wilks' lambda (U-statistic), an inverse measure of the discriminating power of the variable(s) in the discriminant function, is 0.5121 with only PQRIT1 entered (approximate  $F=340.1$ ,  $df=1,357$ ). Having selected the best-discriminating variable, a second variable (in this case, the "Psychiatrist's rating of ruminations") is selected as the variable best able to improve the value of the discrimination criterion in combination with the first variable. The third and subsequent variables are similarly selected according to their ability to contribute to further discrimination. At each step, variables already selected may be removed if they are found to reduce discrimination when combined with more recently selected variables. Thus the variable, "Obsessive phobia (PQ category) designated as main phobia by patient", was removed at step 13 of the present discriminant analysis. Eventually, either all variables will have been selected or it will be found that the remaining variables are no longer able to contribute to further discrimination. P7M uses the specified minimum F-to-enter (F-test for the statistical significance of the amount of centroid separation added by the test variable above and beyond the separation produced by the previously entered variables) as the criterion for deciding when a variable fails to improve the discrimination between the groups. In the present analysis, the specified minimum F-to-enter was 4.0 and after the 22 best-discriminating variables were entered into the function, no other variable resulted in a partial F greater than or equal to 4, when it was entered into the function.

A measure of the discrimination produced by the 22 variables entered into the function is the value of Wilks' lambda (U-statistic), a multivariate statistic that tests the equality of group means in the discriminant function, after all 22 variables are entered in the function. In the present analysis Wilks' lambda with all 22 variables included is 0.1193 (the smaller the lambda, the better the discrimination) and the associated approximate F statistic (transformation of Wilks' lambda that can be compared with the F distribution) is 112.79 (df=22,336).

(b) Classification functions

P7M computes classification functions (linear combinations of the variables), one for each group, which can be used to classify cases; the case is assigned to the group with the largest value of the classification function.

The coefficients and constants of the classification functions for the obsessive and phobic groups are listed in Table 48.

The classification score of a case for group  $i$  is calculated by multiplying the classification coefficients for group  $i$  by the raw variable values, summing them together and adding on the classification constant for group  $i$ . The equation for one group appear as

$$G_i = c_{i1}V_1 + c_{i2}V_2 + \dots + c_{ip}V_p + c_{i0}$$

where  $G_i$  is the classification score for group  $i$ , the  $c_{ij}$ 's are the classification coefficients with  $c_{i0}$  being the constant, and the  $V$ 's are the raw scores on the discriminating variables. There is always a separate equation for each group; thus if there are three groups, each case will have

Table 48

Classification functions for obsessive and phobic groups  
generated by discriminant analysis using all variables

Variable	Obsess	Phobic
PQRUMIN	-0.29499	-2.56298
PQRIT	-3.46283	-6.23467
PQHORR	9.21156	8.24557
PQPERV	6.86590	5.06841
PQAGORA	-3.66325	-1.67507
PQSPEC	-1.82884	-0.00418
PQOBS	4.15087	0.56555
PREMOR1	24.03032	26.91325
PREMOR2	25.40776	28.45297
PREMOR3	25.93365	15.57005
PQRMAIN	5.42997	10.86031
CIRCUM6	72.45183	68.32417
CIRCUM7	49.80139	56.24335
CIRCU11	76.10597	84.24104
CIRCU18	63.80814	67.91058
MINUC3	51.33060	43.34740
MIREMO3	34.42656	31.63182
MIREMO4	88.09853	92.39206
MIREMO6	30.48120	27.05255
MAINFSS1	16.45258	13.12273
COURSE2	24.78592	28.26236
MIPATER6	6.99661	4.30782
Constant	-552.82861	-567.33862

- Legend:
- PQRUMIN = Psychiatrist's rating of ruminations
  - PQRIT = Psychiatrist's rating of rituals
  - PQHORR = Psychiatrist's rating of horrific temptations
  - PQPERV = Psychiatrist's rating of pervading doubt
  - PQAGORA = Psychiatrist's rating of agoraphobia
  - PQSPEC = Psychiatrist's rating of specific phobia
  - PQOBS = Psychiatrist's rating of obsessive phobia
  - PREMOR1 = Psychasthenic premorbid personality ("submissive and shy")
  - PREMOR2 = Obsessional premorbid personality ("parsimonious, obstinate and orderly")
  - PREMOR3 = Anancastic premorbid personality ("aggressive and morose")
  - PQRMAIN = Psychiatrist's rating of main phobia
  - CIRCUM6 = Circumstances of onset: Unavoidable conflict
  - CIRCUM7 = Circumstances of onset: Sexual
  - CIRCU11 = Circumstances of onset: Childbirth
  - CIRCU18 = Circumstances of onset: Other
  - MINUC3 = Psychosis among siblings of patient
  - MIREMO3 = Psychosis in the patient's non-nuclear family
  - MIREMO4 = Organic brain syndrome in the patient's non-nuclear family

Table 48 (continued)

MIREM06 = No mental disorder in patient's non-nuclear family  
MAINFSS1 = Death and tissue damage (FSS category)-designated as main  
phobia by patient  
COURSE2 = "Constant worsening" course of disorder  
MIPATER6 = No mental disorder in father of the patient

three scores. The case would be classified into the group with the highest classification score.

(c) Classification matrix

P7M classifies each case into a group according to the classification functions. If the discriminant procedure is successful (i.e., if the groups differ on the variables included in the discriminant function) the functions will classify most cases into the correct groups. The P7M output presents this information in a table of counts indicating how many cases from each original group are assigned to each of the possible groups; the percent of correct classifications is also printed (Table 49).

(d) Jack-knifed classification matrix

A pseudo-jack-knife classification matrix is also printed by P7M (Table 50): each case is classified into a group according to classification functions computed from all the data except the case being classified. This results in a classification with less bias since a classification function can produce optimistic results when it is used to classify the same cases that were used to compute it.

Even using this stricter criterion, only four of the 359 cases are classified into the wrong group.

Table 49

Classification of obsessive and phobic cases  
according to classification functions  
generated by discriminant analysis  
using all variables

Group	Percent correct	Number of cases classified into group:	
		Obsess	Phobic
Obsess	99.4	158	1
Phobic	99.0	2	198
Total	99.2	160	199

Table 50

Jack-knifed classification of obsessive and phobic cases  
according to classification functions  
generated by discriminant analysis  
using all variables

Group	Percent correct	Number of cases classified into group:	
		Obsess	Phobic
Obsess	98.7	157	2
Phobic	99.0	2	198
Total	98.9	159	200

(e) Plot of group means and all cases

P7M prints the group means and all cases in a scatter plot. The axes are the first two canonical variables.<sup>1</sup>

<sup>1</sup>Another aid in judging the importance of a discriminant function is its associated canonical correlation. The canonical correlation is a measure of association between the discriminant function and the set of (g-1) dummy variables which define the g group memberships. It tells us how closely the function and the "group variable" are related, which is just another measure of the function's ability to discriminate among the groups. The linear combination of the set of variables in the discriminant function that most highly correlates with the "group variables" (i.e., best separates the groups) is called the first canonical variable; the linear combination of the discriminating variables that best separates the groups as much as possible in



The X axis is the first canonical variable (the direction where the groups have the maximum spread); the Y axis is the second canonical variable (direction orthogonal to the X axis that produces the maximum spread of the groups). If there is only one canonical variable, a histogram is plotted. A histogram of the canonical variable for discriminating obsessives and phobics is depicted in Figure 1.

Near the 0.00 point on the abscissa, the two phobic patients (P) whose scores on the canonical variable are closer to the centroid of the obsessive group (1) than to that of the phobic group (2) can be seen. One obsessive patient's (O) score is closer to the centroid of the phobic group than to the centroid of the obsessive group.

Discriminant analysis to discriminate among obsessive, agoraphobic and other phobic patients, using all of the variables involved in the hypothesis tests

The total group of phobic patients was subdivided into agoraphobic patients and other phobic patients and the stepwise discriminant analysis procedure (BMDP 7M), described above, using all of the pre-treatment variables, was repeated in an attempt to find the linear combinations of those variables that would best discriminate among the three patient groups. The results of this analysis were as follows:

(a) Summary table of steps in discriminant analysis

<sup>1</sup>(cont'd) an orthogonal direction given the first separation; the third function provides maximal separation in a direction orthogonal to the first two, etc.

Figure 1

Histogram of scores of obsessive and phobic patients  
on the canonical variable generated by discriminant analysis  
using all variables

```

P
P
P
P
P
PPPP
PPPP
PPPP
PPPP
PPPP
PPPP
P PPPPPPPP
P PPPPPPPP
PPPPPPPPPP
P PPPPPPPPP
P PPPPPPPPP
P PPPPPPPPP P
P PPPPPPPPP P
PPPPPPPPPP P
PPPPPPPPPPPP P
P PPPPPPPPPPPPP
P P PPPPPPPPPPPPP P P P 0 000000000000000000000000 0
P P P PPPPPPPPPPPPPPP PP PPOOP 0 000000000000000000000000 00
+...+...+...+...+...+...+...+...+...+...+...+...+...+...+...+...+...+...+...+...+...+
-4.50 -3.00 -1.50 0.00 1.50 3.00 4.50
-5.25 -3.75 -2.25 -.750 .750 2.25 3.75 5

```

Legend: O=Obsessive case    1=Mean of Obsessive group  
P=Phobic case            2=mean of Phobic group

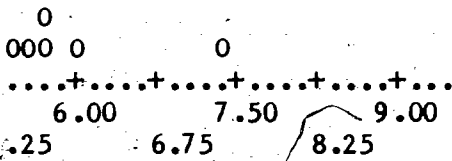


Table 51 lists the 21 variables that best discriminate among the three groups and the F-to-enter (or remove) for each step of the discriminant analysis. Wilks' lambda (U-statistic) and the F approximation to lambda, two multivariate tests for group differences, are also tabled for each step of the discriminant analysis.

(b) Classification functions

The coefficients and constants of the classification functions for classifying cases into each of the three groups are listed in Table 52.

(c) Classification matrix

Computing the classification functions described above for each case and then classifying the cases into whichever of the groups yields the highest classification score, seven of the 359 cases are assigned to the wrong groups (Table 53).

(d) Jack-knifed classification matrix

Classifying the cases into groups on the basis of all data except the case being classified, eleven cases are misclassified (Table 54).

Table 51

Summary table of steps in discriminant analysis  
of obsessive, agoraphobic and other phobic groups  
using all variables

Variable	F-to-enter	No. of variables	U-statistic	F	d. f.
1 MAINPQ1	717.0022	1	0.1989	717.002	2.00 356.00
2 PQRIT	166.4965	2	0.1026	376.587	4.00 710.00
3 PQSPEC	73.9307	3	0.0724	320.583	6.00 708.00
4 PQAGORA	56.1371	4	0.0549	288.326	8.00 706.00
5 PQRUMIN	38.7387	5	0.0450	261.425	10.00 704.00
6 PREMOR3	31.2888	6	0.0382	240.807	12.00 702.00
7 PQPERV	22.4766	7	0.0339	221.751	14.00 700.00
8 MAINPQ2	21.5753	8	0.0301	207.708	16.00 698.00
9 CIRCUM7	14.8760	9	0.0278	193.428	18.00 696.00
10 CIRCUM8	12.2179	10	0.0259	180.794	20.00 694.00
11 MAINPQ3	12.2896	11	0.0242	170.704	22.00 692.00
12 PQRMAIN	11.4222	12	0.0227	162.046	24.00 690.00
13 PQOBS	17.2268	13	0.0206	157.732	26.00 688.00
14 MAINPQ3 *	2.6831	12	0.0210	169.830	24.00 690.00
15 CIRCUM10	8.2385	13	0.0200	160.637	26.00 688.00
16 MIPATER5	8.6514	14	0.0190	153.045	28.00 686.00
17 MIREM06	5.6826	15	0.0184	145.149	30.00 684.00
18 COURSE2	5.9018	16	0.0178	138.373	32.00 682.00
19 CLAMEAN	5.5800	17	0.0172	132.291	34.00 680.00
20 PREMOR1	5.8442	18	0.0167	127.026	36.00 678.00
21 SRHORR	5.4903	19	0.0161	122.205	38.00 676.00
22 SEX	4.9883	20	0.0157	117.700	40.00 674.00
23 CIRCUM14	4.5460	21	0.0153	113.480	42.00 672.00

\* Variable removed

Legend: MAINPQ1 = Agoraphobia (PQ category) designated as main phobia by patient

PQRIT = Psychiatrist's rating of rituals

PQSPEC = Psychiatrist's rating of specific phobia

PQAGORA = Psychiatrist's rating of agoraphobia

PQRUMIN = Psychiatrist's rating of ruminations

PREMOR3 = Anancastic premorbid personality ("aggressive and morose")

PQPERV = Psychiatrist's rating of pervading doubt

MAINPQ2 = Social phobia (PQ category) designated as main phobia by patient

CIRCUM7 = Circumstances of onset: Sexual

CIRCUM8 = Circumstances of onset: Betrothal

Table 51 (continued)

MAINPQ3 = Specific phobia (PQ category) designated as main phobia by patient  
PQMAIN = Psychiatrist's rating of main phobia  
PQOBS = Psychiatrist's rating of obsessive phobia  
CIRCU10 = Circumstances of onset: School  
MIPATER5 = Stuttering in the father of the patient  
MIREMO6 = No mental disorder in patient's non-nuclear family  
COURSE2 = "Constant worsening" course of disorder  
CLAMEAN = Mean FSS score on classical fears  
PREMORI = Psychasthenic premorbid personality ("submissive and shy")  
SRHORR = Patient's rating of horrific temptations  
SEX = Sex of patient  
CIRCU14 = Circumstances of onset: Other crisis

Table 52

Classification functions for obsessive, agoraphobic and other phobic groups  
generated by discriminant analysis using all variables

Variable	Obsess	Phobic	Agora
PQRUMIN	6.09671	4.22048	4.30082
PQRIT	-6.75218	-9.70754	-8.27944
PQPERV	4.59005	3.27496	2.78601
PQAGORA	8.91391	8.51728	15.61021
PQSPEC	7.09454	10.31139	6.75037
PQOBS	-6.33673	-9.61592	-8.97164
PREMOR1	39.20100	40.35556	44.63072
PREMOR3	27.50288	17.16760	21.24237
SRHORR	3.71357	2.99982	4.83862
SEX	5.28584	5.09670	8.09608
PQRMAIN	5.90371	11.17133	8.92320
CIRCUM7	33.85968	38.99501	34.55423
CIRCUM8	393.29541	401.24561	421.28784
CIRCUM10	26.27763	24.62173	32.28920
CIRCUM14	46.89273	46.36499	51.71689
MIREMO6	17.36873	14.62171	14.31975
MAINPQ1	36.16463	39.90434	11.20441
MAINPQ2	-4.50285	-10.36582	-4.72245
COURSE2	25.89992	29.42181	27.24596
MIPATER5	402.49414	419.07666	405.09570
CLAMEAN	-7.93972	-7.37635	-10.86091
Constant	-1017.95117	-1073.06787	-1078.21362

Legend: PQRUMIN = Psychiatrist's rating of ruminations  
PQRIT = Psychiatrist's rating of rituals  
PQPERV = Psychiatrist's rating of pervading doubt  
PQAGORA = Psychiatrist's rating of agoraphobia  
PQSPEC = Psychiatrist's rating of specific phobia  
PQOBS = Psychiatrist's rating of obsessive phobia  
PREMOR1 = Psychasthenic premorbid personality ("submissive and shy")  
PREMOR3 = Anancastic premorbid personality ("aggressive and morose")  
SRHORR = Patient's rating of horrific temptations  
SEX = Sex of patient  
PQRMAIN = Psychiatrist's rating of main phobia  
CIRCUM7 = Circumstances of onset: Sexual  
CIRCUM8 = Circumstances of onset: Betrothal  
CIRCUM10 = Circumstances of onset: School  
CIRCUM14 = Circumstances of onset: Other crisis



Table 52 (continued)

MIREM06 = No mental disorder in patient's non-nuclear family  
MAINPQ1 = Agoraphobia (PQ category) designated as main phobia by patient  
MAINPQ2 = Social phobia (PQ category) designated as main phobia by patient  
COURSE2 = "Constant worsening" course of disorder  
MIPATER5 = Stuttering in the father of the patient  
CLAMEAN = Mean FSS score on classical fears

4

Table 53

Classification of obsessive, agoraphobic and other phobic cases according to classification functions generated by discriminant analysis using all variables

Group	Percent Correct	Number of cases classified into group:		
		Obsess	Phobic	Agora
Obsess	97.5	155	2	2
Phobic	99.2	1	119	0
Agora	97.5	1	1	78
Total	98.1	157	122	80

Table 54

Jack-knifed classification of obsessive, agoraphobic and other phobic cases according to classification functions generated by discriminant analysis using all variables

Group	Percent Correct	Number of cases classified into group:		
		Obsess	Phobic	Agora
Obsess	96.2	153	4	2
Phobic	98.3	2	118	0
Agora	96.2	2	1	77
Total	96.9	157	123	79

(e) Plot of group means and all cases

The group means and all cases in the three patient groups are plotted in a scatter plot, the axes of which are the first two canonical variables (Figure 2).

Discriminant analysis to discriminate obsessives from phobics, eliminating those variables which measure obsessive or phobic symptomatology

Since ratings of the intensity of obsessive and phobic symptomatology and the type of phobia designated by the patient as the main phobia might be expected to correlate well with reason for seeking help (i.e., obsessive symptom or phobia), which defines group membership, and so spuriously elevate the discriminating power of the variables<sup>2</sup>, the two discriminant analysis described above were repeated using all of the pre-treatment variables except those variables measuring the intensity of obsessive or phobic symptomatology or denoting main phobia type.

First, this subset of variables was used in the stepwise discriminant analysis procedure to discriminate obsessive and phobic patients. The results of this analysis were as follows:

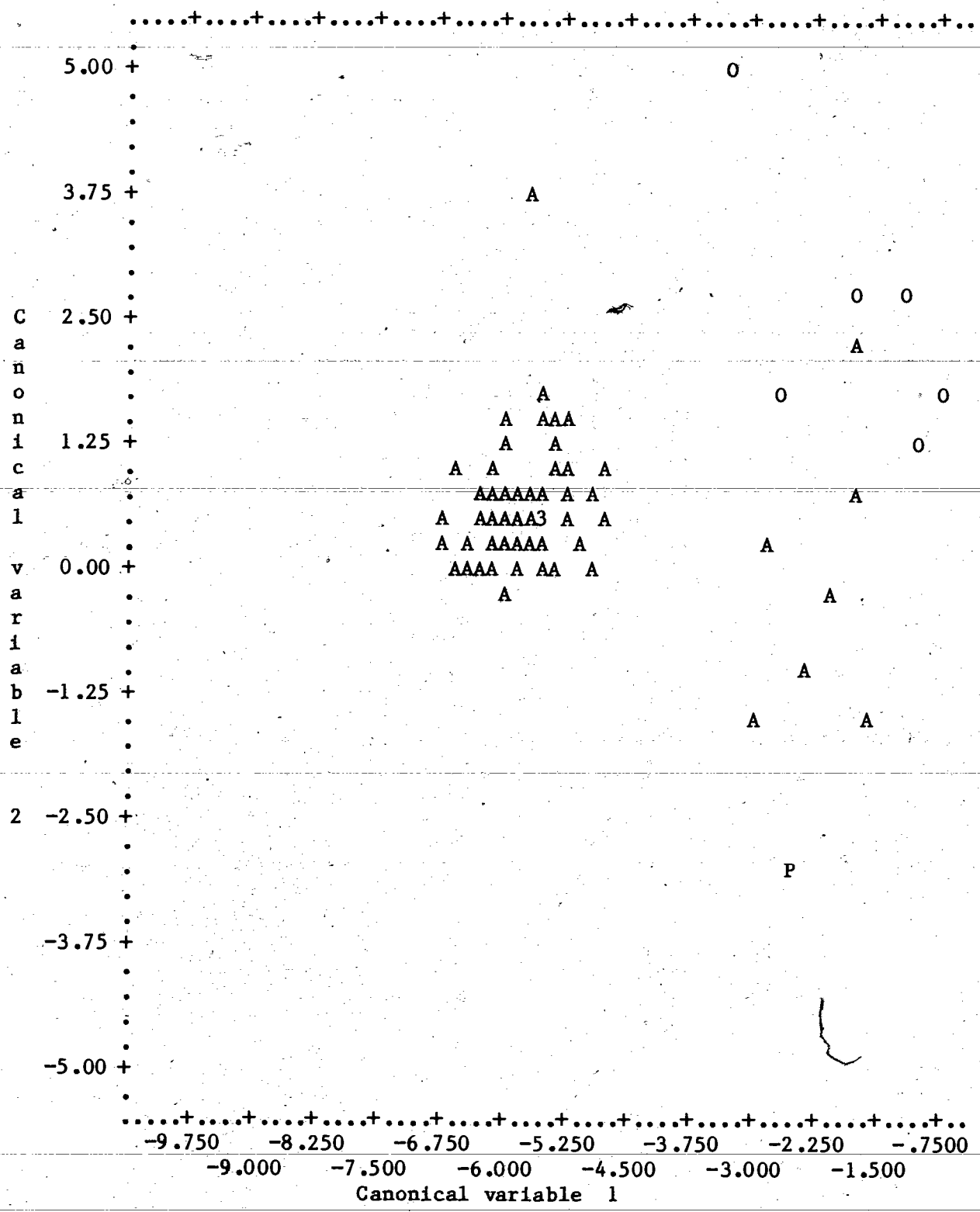
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<sup>2</sup>In fact, nine of the the 22 variables that best discriminate between obsessives and phobics (Psychiatrist's ratings of ruminations, rituals, horrific temptations, pervading doubt, agoraphobia, specific phobia, obsessive phobia, main phobia and the patient's designation of death and tissue damage as main phobia) and ten of the 21 variables that best discriminate among obsessives, agoraphobics and other phobic patients (Psychiatrist's ratings of ruminations, rituals, pervading doubt, agoraphobia, specific phobia, obsessive phobia and main phobia, Patient's rating of horrific temptations, the patient's designation of agoraphobia as main phobia and the patient's designation of social phobia as main phobia) are measures of obsessive and phobic symptomatology.

Figure 2

Scatter plot of scores of obsessive, agoraphobic and other phobic patients on the first two canonical variables generated by discriminant analysis, using all variables

Legend: O=Obsessive case                    1=Mean of Obsessive group  
P=Other phobic case                    2=mean of Phobic group  
A=Agoraphobic case                    3=Mean of agoraphobic group  
\*=Overlap of different groups





(a) Summary table of steps in discriminant analysis

Table 55 lists the 20 variables that best discriminate between the obsessive and phobic patients and the F-to-enter for each step of the discriminant analysis. Wilks' lambda (U-statistic) and the F approximation to lambda, two multivariate tests for group differences, are also tabled for each step of the discriminant analysis.

(b) Classification functions

The coefficients and constants of the classification functions for the obsessive and phobic groups are listed in Table 56.

(c) Classification matrix

Using the classification functions described in Table 56, each case was assigned to the group for which the classification function score was highest. The accuracy of these predictions is reflected in Table 57.

As can be seen from Table 57, the elimination of variables that rate the intensity of obsessive and phobic symptomatology results in less accurate classification, but not substantially so. Even without these variables, only 19 of the 359 cases (5.3%) were incorrectly assigned.

Table 55

Summary table of steps in discriminant analysis of obsessive and phobic groups  
using all variables except those which measure  
obsessive or phobic symptomatology

Variable	F-to-enter	No. of variables	U-statistic	F	d.f.
1 PREMOR3	96.7582	1	0.7868	96.758	1.00 357.00
2 CIRCUM7	55.2848	2	0.6810	83.378	2.00 356.00
3 COURSE2	34.1493	3	0.6212	72.145	3.00 355.00
4 DELAY	34.0950	4	0.5667	67.677	4.00 354.00
5 PREMOR1	33.4405	5	0.5176	65.791	5.00 353.00
6 LOITR	33.0208	6	0.4732	65.302	6.00 352.00
7 PREMOR2	26.4260	7	0.4401	63.792	7.00 351.00
8 AGESYMP	27.4529	8	0.4081	63.456	8.00 350.00
9 EXTRAV	23.2493	9	0.3826	62.574	9.00 349.00
10 COURSE3	18.0731	10	0.3637	60.879	10.00 348.00
11 MIPATER1	13.5732	11	0.3500	58.579	11.00 347.00
12 CIRCUM4	8.4664	12	0.3417	55.558	12.00 346.00
13 MIREMO2	8.1070	13	0.3338	52.961	13.00 345.00
14 CIRCUM9	7.3349	14	0.3268	50.605	14.00 344.00
15 CIRCUM12	7.6737	15	0.3197	48.660	15.00 343.00
16 INOROUT	5.7012	16	0.3145	46.600	16.00 342.00
17 MARITAL1	5.3691	17	0.3096	44.735	17.00 341.00
18 CIRCUM11	8.0582	18	0.3024	43.572	18.00 340.00
19 AGE	6.4349	19	0.2968	42.277	19.00 339.00
20 MIMATER4	4.3294	20	0.2930	40.774	20.00 338.00

Legend: PREMOR3 = Anancastic premorbid personality ("aggressive and morose")  
 CIRCUM7 = Circumstances of onset: Sexual  
 COURSE2 = "Constant worsening" course of disorder  
 DELAY = Delay in seeking help  
 PREMOR1 = Psychasthenic premorbid personality ("submissive and shy")  
 LOITR = Leyton Obsessional Inventory trait score  
 PREMOR2 = Obsessional premorbid personality ("parsimonious, obstinate and orderly")  
 AGESYMP = Age when first symptom was experienced  
 EXTRAV = Maudsley Personality Inventory extraversion score  
 COURSE3 = "Fluctuating" course of disorder  
 MIPATER1 = Neurosis in the father of the patient  
 CIRCUM14 = Circumstances of onset: Other crisis  
 MIREMO2 = Personality disorder in the patient's non-nuclear family  
 CIRCUM9 = Circumstances of onset: Occupational  
 CIRCUM12 = Circumstances of onset: Pregnancy  
 INOROUT = Inpatient or outpatient



Table 55 (continued)

MARITAL1 = Marital status: Single

CIRCU11 = Circumstances of onset: Childbirth

AGE = Age of patient

MIMATER4 = Organic brain syndrome in mother of the patient

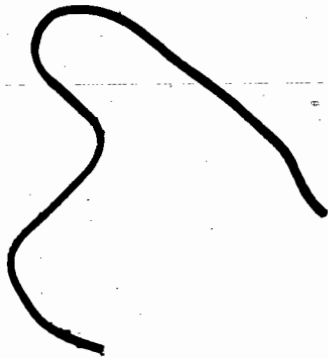


Table 56

Classification functions for obsessive and phobic groups generated by discriminant analysis using all variables except those which measure obsessive or phobic symptomatology

Variable	Obsess	Phobic
AGE	-0.02091	-0.07294
INOROUT	46.24716	48.45186
AGESYMP	0.81596	0.95209
PREMOR1	56.32254	62.49664
PREMOR2	45.60425	50.36125
PREMOR3	26.67494	20.95161
EXTRAV	0.96207	1.08847
LOITR	0.40879	0.01261
CIRCUM4	28.79420	27.30940
CIRCUM7	64.29469	70.90077
CIRCUM9	71.75002	74.96788
CIRCU11	122.75075	126.55707
CIRCU12	263.92700	270.77881
MIREMO2	60.69810	63.81985
MARITAL1	28.05194	29.89024
COURSE2	42.45792	46.94272
COURSE3	14.59565	16.38446
MIPATER1	22.03726	24.19923
MIMATER4	264.85986	269.61353
DELAY	1.00459	1.18561
Constant	-1095.71753	-1181.42798

Legend: AGE = Age of patient

INOROUT = Inpatient or outpatient

AGESYMP = Age when first symptom was experienced

PREMOR1 = Psychasthenic premorbid personality ("submissive and shy")

PREMOR2 = Obsessional premorbid personality ("parsimonious, obstinate and orderly")

PREMOR3 = Anancastic premorbid personality ("aggressive and morose")

EXTRAV = Maudsley Personality Inventory extraversion score

LOITR = Leyton Obsessional Inventory trait score

CIRCUM4 = Circumstances of onset: Death of relative or friend

CIRCUM7 = Circumstances of onset: Sexual

CIRCUM9 = Circumstances of onset: Occupational

CIRCU11 = Circumstances of onset: Childbirth

CIRCU12 = Circumstances of onset: Pregnancy

MIREMO2 = Personality disorder in the patient's non-nuclear family

Table 56 (continued)

MARITAL1 = Marital status: Single  
COURSE2 = "Constant worsening" course of disorder  
COURSE3 = "Fluctuating" course of disorder  
MIPATER1 = Neurosis in the father of the patient  
MIMATER4 = Organic brain syndrome in mother of the patient  
DELAY = Delay in seeking help

Table 57

Classification of obsessive and phobic cases according to classification functions generated by discriminant analysis using all variables except those which measure obsessive or phobic symptomatology

Group	Percent correct	Number of cases classified into group:	
		Obsess	Phobic
Obsess	92.5	147	12
Phobic	96.5	7	193
Total	94.7	154	205

(d) Jack-knifed classification matrix

Classifying the cases into groups according to classification functions computed from all the data except the case being classified, 27 of the 359 cases (7.5%) of the cases were incorrectly assigned (Table 58).

(e) Plot of group means and all cases

A histogram of the canonical variable for discriminating obsessives and phobics is depicted in Figure 3.

Discriminant analysis to discriminate among obsessive, agoraphobic and other phobic patients, eliminating those variables which measure obsessive or phobic symptomatology

The total groups of phobic patients was subdivided into agoraphobic patients and other phobic patients and the stepwise discriminant analysis, using all of the pre-treatment variables except those which measure obsessive

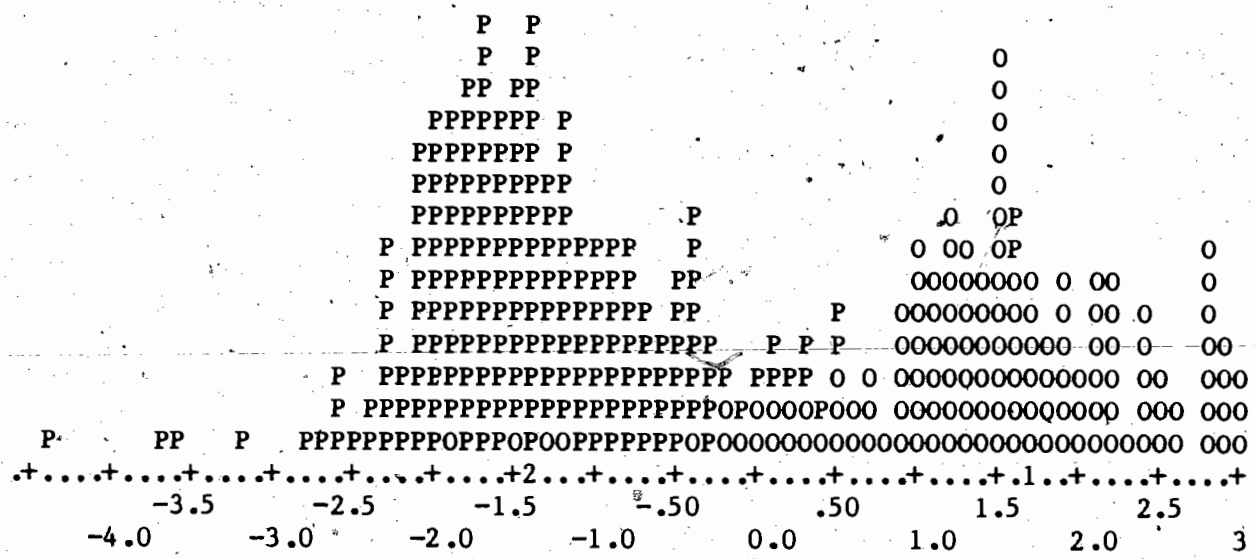
Table 58

Jack-knifed classification of obsessive and phobic cases  
according to classification functions  
generated by discriminant analysis  
using all variables except those which measure  
obsessive or phobic symptomatology

Group	Percent correct	Number of cases classified into group:	
		Obsess	Phobic
Obsess	89.9	143	16
Phobic	94.5	11	189
Total	92.5	154	205

**Figure 3**

**Histogram of scores of obsessive and phobic patients  
on the canonical variable generated by discriminant analysis  
using all variables except those which measure  
obsessive or phobic symptomatology**



Legend: 0=Obsessive case    1=Mean of Obsessive group  
P=Phobic case            2=mean of Phobic group

0            0  
0 0        0        0 0  
00000000 0        .00 0  
.....+.....+.....+.....+.....+.....  
3.5        4.5        5.5  
.0        4.0        5.0



or phobic symptomatology, as described above, was repeated in an attempt to find linear combinations of this subset of the variables that would best discriminate among the three patient groups. The results of this analyses were as follows:

(a) Summary table of steps in discriminant analysis

Table 59 lists the 20 variables that best discriminate among the three groups and the F-to-enter (or remove) for each step of the discriminant analysis. Wilks' lambda (U-statistic) and the F approximation to lambda, two multivariate tests for groups differences, are also tabled for each step of the discriminant analysis.

(b) Classification functions

The coefficients and constants of the classification functions for classifying cases into each of the three groups are listed in Table 60.

c) Classification matrix

Computing the classification functions described above for each case and then classifying the cases into whichever of the groups yields the highest classification score, 29 of the 359 cases (8.1%) are assigned to the wrong groups (Table 61), even without using variables that rate obsessive and phobic symptomatology.

Table 59

Summary table of steps in discriminant analysis of obsessive, agoraphobic and other phobic groups using all variables except those which measure obsessive or phobic symptomatology

Variable	F-to-enter	No. of variables	U-statistic	F	d.f.
1 DELAY	84.7643	1	0.6774	84.764	2.00 356.00
2 PREMOR3	43.4187	2	0.5443	63.096	4.00 710.00
3 CIRCUM7	26.1308	3	0.4743	53.346	6.00 708.00
4 PREMOR1	27.0622	4	0.4112	49.370	8.00 706.00
5 LOITR	27.1314	5	0.3563	47.543	10.00 704.00
6 COURSE2	18.8708	6	0.3217	44.641	12.00 702.00
7 PREMOR2	13.1889	7	0.2991	41.417	14.00 700.00
8 AGESYMPT	18.9588	8	0.2698	40.357	16.00 698.00
9 EXTRAV	13.6691	9	0.2502	38.639	18.00 696.00
10 AGEILL	12.8435	10	0.2329	37.197	20.00 694.00
11 AGEHELP	28.2823	11	0.2002	38.844	22.00 692.00
12 COURSE3	9.2696	12	0.1900	37.208	24.00 690.00
13 CIRCUM9	7.7850	13	0.1818	35.605	26.00 688.00
14 MIPATER6	6.8163	14	0.1748	34.096	28.00 686.00
15 EDUCAT	4.9377	15	0.1699	32.512	30.00 684.00
16 CIRCUM6	4.7637	16	0.1653	31.108	32.00 682.00
17 CIRCUM15	5.2682	17	0.1603	29.949	34.00 680.00
18 CIRCUM5	7.8632	18	0.1532	29.281	36.00 678.00
19 CIRCUM4	6.8989	19	0.1472	28.576	38.00 676.00
20 MIREMO2	4.5783	20	0.1433	27.660	40.00 674.00

Legend: DELAY = Delay in seeking help

PREMOR3 = Anancastic premorbid personality ("aggressive and morose")

CIRCUM7 = Circumstances of onset: Sexual

PREMOR1 = Psychasthenic premorbid personality ("submissive and shy")

LOITR = Leyton Obsessional Inventory trait score

COURSE2 = "Constant worsening" course of disorder

PREMOR2 = Obsessional premorbid personality ("parsimonious, obstinate and orderly")

AGESYMPT = Age when first symptom was experienced

EXTRAV = Maudsley Personality Inventory extraversion score

AGEILL = age of onset of disorder

AGEHELP = Age when patient first sought help

COURSE3 = "Fluctuating" course of disorder

CIRCUM9 = Circumstances of onset: Occupational

MIPATER6 = No mental disorder in father of the patient

EDUCAT = Years of schooling

CIRCUM6 = Circumstances of onset: Unavoidable conflict

Table 59 (continued)

CIRCU15 = No identifiable circumstances of onset  
CIRCUM5 = Circumstances of onset: Domestic crisis  
CIRCUM4 = Circumstances of onset: Death of relative or friend  
MIREM02 = Personality disorder in the patient's non-nuclear family

Table 60

Classification functions for obsessive, agoraphobic and other phobic groups  
generated by discriminant analysis using all variables  
except those which measure obsessive or phobic symptomatology

Variable	Obsess	Phobic	Agora
AGESYMPT	0.49544	0.53649	0.76902
AGEILL	0.85780	1.02317	0.49603
AGEHELP	-0.68069	-0.83404	-0.41265
PREMOR1	40.45757	44.66884	47.91583
PREMOR2	28.69403	32.75703	34.48894
PREMOR3	29.71938	22.54881	24.36282
EXTRAV	0.82516	0.92813	1.00675
LOITR	1.78430	1.32391	1.51653
EDUCAT	3.14652	3.31981	3.08278
CIRCUM4	25.09489	23.93488	21.81104
CIRCUM5	27.66782	27.62874	25.11269
CIRCUM6	84.51312	83.94518	79.66660
CIRCUM7	53.19110	59.91660	58.82086
CIRCUM9	82.67189	84.70425	86.97652
CIRCUM15	37.51019	38.63547	35.61438
MIREMO2	58.22183	60.34523	61.53571
COURSE2	40.21297	44.53712	44.22673
COURSE3	22.82715	24.80659	25.15320
MIPATER6	9.55458	7.67012	8.23226
DELAY	1.33320	1.72785	1.08060
Constant	-521.15186	-556.79565	-551.80371

Legend: AGESYMPT = Age when first symptom was experienced  
 AGEILL = age of onset of disorder  
 AGEHELP = Age when patient first sought help  
 PREMOR1 = Psychasthenic premorbid personality ("submissive and shy")  
 PREMOR2 = Obsessional premorbid personality ("parsimonious, obstinate and orderly")  
 PREMOR3 = Anancastic premorbid personality ("aggressive and morose")  
 EXTRAV = Maudsley Personality Inventory extraversion score  
 LOITR = Leyton Obsessional Inventory trait score  
 EDUCAT = Years of schooling  
 CIRCUM4 = Circumstances of onset: Death of relative or friend  
 CIRCUM5 = Circumstances of onset: Domestic crisis  
 CIRCUM6 = Circumstances of onset: Unavoidable conflict  
 CIRCUM7 = Circumstances of onset: Sexual  
 CIRCUM9 = Circumstances of onset: Occupational

Table 60 (continued)

CIRCU15 = No identifiable circumstances of onset  
MIREM02 = Personality disorder in the patient's non-nuclear family  
COURSE2 = "Constant worsening" course of disorder  
COURSE3 = "Fluctuating" course of disorder  
MIPATER6 = No mental disorder in father of the patient  
DELAY = Delay in seeking help

Table 61

Classification of obsessive, agoraphobic and other phobic cases according to classification functions generated by discriminant analysis using all variables except those which measure obsessive or phobic symptomatology

Group	Percent Correct	Number of cases classified into group:		
		Obsess	Phobic	Agora
Obsess	90.6	144	6	9
Phobic	90.0	5	108	7
Agora	97.5	0	2	78
Total	91.9	149	116	94

d) Jack-knifed classification matrix

Using the stricter, less-biased pseudo-jack-knife classification procedure, 40 of the 359 (11.1%) cases are misassigned (Table 62).

e) Plot of group means and all cases

The groups means and all cases in the three patient groups are plotted in a scatter plot, the axes of which are the first two canonical variables (Figure 4).

Table 62

Jack-knifed classification of obsessive, agoraphobic and other phobic cases according to classification functions generated by discriminant analysis using all variables except those which measure obsessive or phobic symptomatology.

Group	Percent Correct	Number of cases classified into group:		
		Obsess	Phobic	Agora
Obsess	86.2	137	9	13
Phobic	87.5	7	105	8
Agora	96.2	1	2	77
Total	88.9	145	116	98

Table 62

Jack-knifed classification of obsessive, agoraphobic and other phobic cases according to classification functions generated by discriminant analysis using all variables except those which measure obsessive or phobic symptomatology.

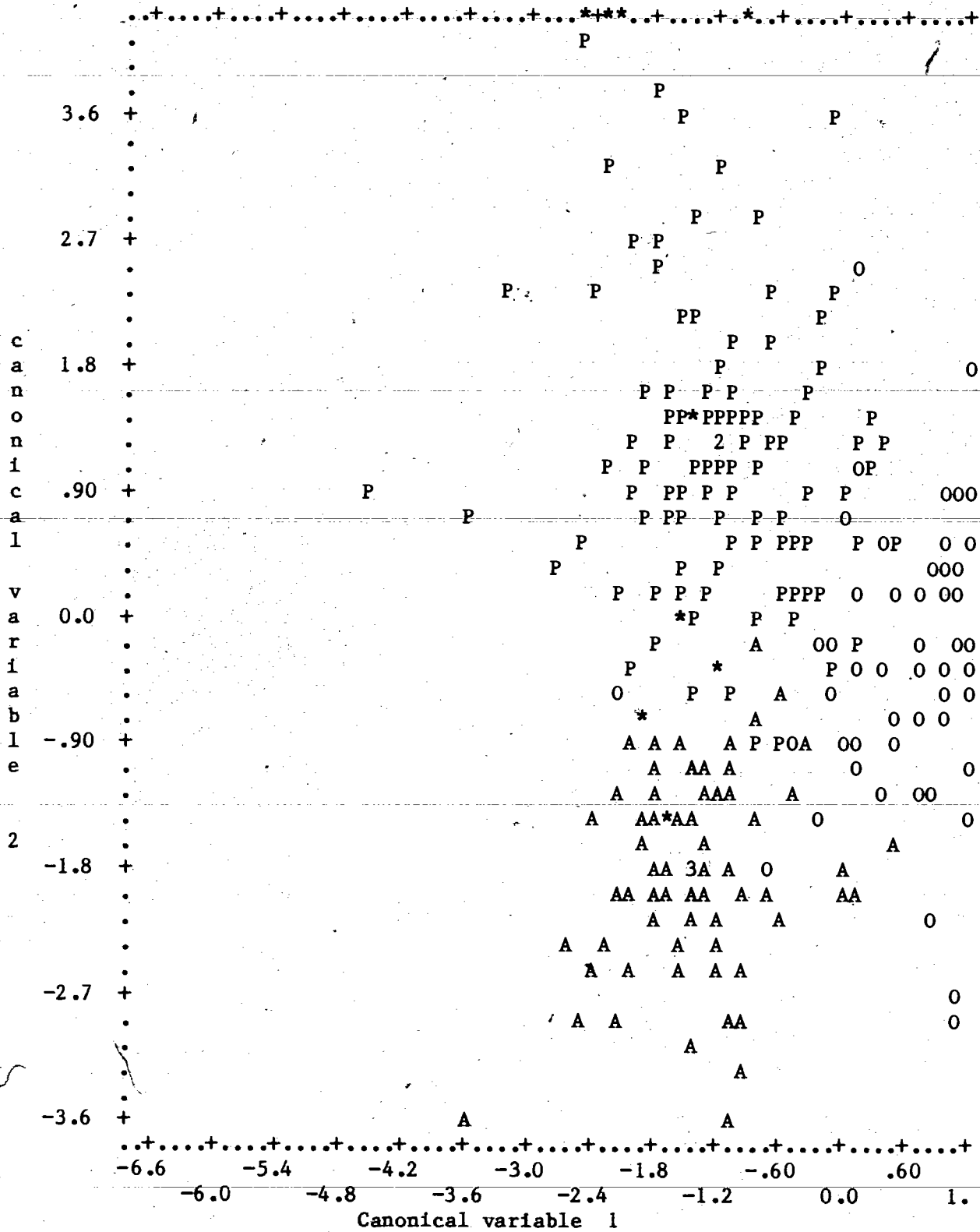
Group	Percent Correct	Number of cases classified into group:		
		Obsess	Phobic	Agora
Obsess	86.2	137	9	13
Phobic	87.5	7	105	8
Agora	96.2	1	2	77
Total	88.9	145	116	98



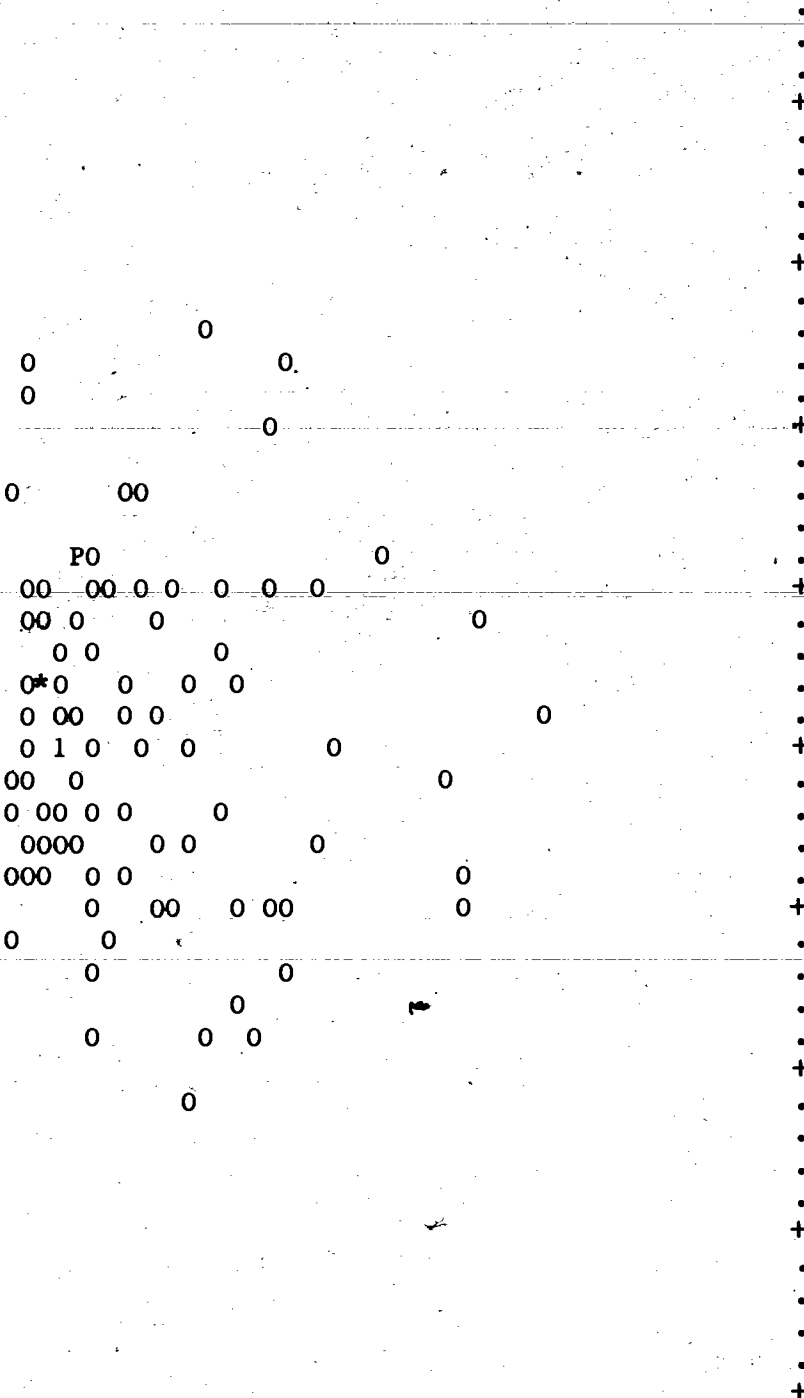
Figure 4

Scatter plot of scores of obsessive, agoraphobic and other phobic patients on the first two canonical variables generated by discriminant analysis, using all variables except those which measure obsessive or phobic symptomatology

Legend: O=Obsessive case                    1=Mean of Obsessive group  
P=Other phobic case                    2=mean of Phobic group  
A=Agoraphobic case                    3=Mean of agoraphobic group  
\*=Overlap of different groups



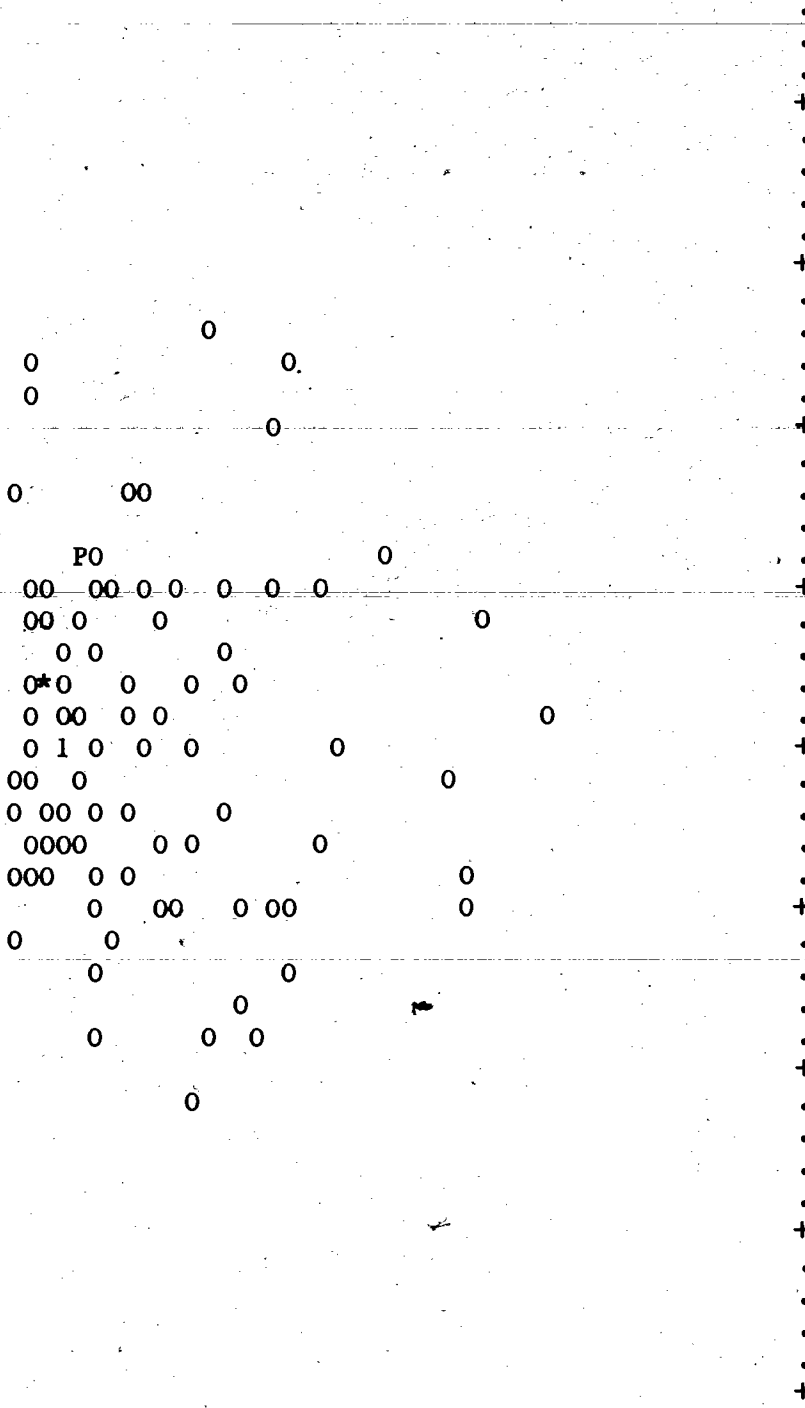
.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....



.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....

2 1.8 2.4 3.0 3.6 4.2 4.8 5.4 6.0

.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....



.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....+.....

2 1.8 2.4 3.0 3.6 4.2 4.8 5.4 6.0 6.6

## E. DISCUSSION OF RESULTS

The results of the present study permit the unambiguous rejection of the null hypothesis: that patients whose primary complaint is of phobia and patients who seek treatment for an obsessive-compulsive symptom do not differ with respect to symptomatology, natural history of the disorder and personality. Statistically significant differences between the two groups were found with respect to every dimension studied. These differences are summarized below and their relationship to the results of previous studies is discussed. The secondary hypothesis, that patients whose primary complaint is of agoraphobia will differ from both patients whose primary complaint is of another phobia and patients who seek treatment for an obsessive-compulsive symptom, was also supported. On some variables (obsessive-compulsive symptomatology, intensity of miscellaneous and noise fears [FSS categories] and fears of "contamination" and "hurting others", anxiety, depression, social maladjustment, "fluctuating" course of the disorder, delay in seeking help and neuroticism) the agoraphobics were indistinguishable from the obsessive patients but both groups differed significantly from the group of other phobic patients; on other variables (age of first symptom and age of onset of disorder, sex ratio, marital status, and "domestic crisis" and "unavoidable conflict" as precipitants) the agoraphobics differed from both of the other patient groups. These findings are discussed below in the context of the findings of other researchers as reported in the literature.

## I. Symptomatology

### Obsessive-compulsive symptoms

Not surprisingly, the obsessive patients scored significantly higher than the phobic patients on 10 of the eleven indices that measure the intensity of obsessive-compulsive symptomatology.

When the phobic group was subdivided into agoraphobic and other phobic patients, the scores of the obsessive patients on the same ten measures remained significantly greater than those of the other phobic patients but, consistent with the literature (Roth, Garside and Gurney, 1965; Marks, 1969; American Psychiatric Association, 1980) which indicates that, among phobic patients, agoraphobics alone manifest obsessive symptoms, the agoraphobic patients did not differ significantly from the obsessive patients on nine of the 11 measures of the intensity of obsessive-compulsive symptomatology.

### Phobias

#### (a) Main phobia type

The distribution of category of main phobia differed significantly between the two groups, whether FSS-III categories (death and tissue damage, social, other classical, miscellaneous, animal, and noise) or PQ categories (agoraphobia, social, specific, and obsessive) were considered. This is

consistent with the view of Marks (1978) who states that the phobias of obsessive patients differ from those of phobic patients in that typically the fear of the obsessive is not of a given object or situation, but rather of the consequences that are imagined to result from it. Because the fears of obsessives are, as a rule, closely bound up with the patient's rituals, horrific temptations, pervasive doubt and rumination, obsessive phobias often seem bizarre and are not likely to be found on the Wolpe-Lang list of 72 common fears. The patient, for example, who is troubled by obscene thoughts whenever he looks at a naked statue develops a phobia of museums.

When the phobic group was subdivided into agoraphobics and other phobic patients, it became obvious that the greater frequency of the FSS categories of "social" and "animal" phobias among phobic patients compared to obsessives was due almost entirely to the designation of these as main phobia by the other phobic patients. Similarly, with regard to PQ categories of main phobia, almost all "specific" main phobias belonged to other phobic patients.

(b) Intensity

Although the phobias of obsessives are clearly different in type from the kinds of fears that phobic patients complain of, they are no less severe. The patient's own ratings of the intensity of their main phobia did not differentiate the two groups, nor did the FSS total score or the patient's mean scores on five of the seven FSS categories of fear ("death and tissue damage", "social", "animal", "noise", and the contrived categories of fears of "contamination" and "hurting others"). The psychiatrist rated the intensity of the main phobia, specific phobia and, not surprisingly, of agoraphobia

higher in the phobic groups but saw the two groups as equally socially phobic and, not surprisingly, rated the obsessive groups as having more intense obsessive phobias.

When the phobic group was subdivided into agoraphobics and patients with other phobias, the FSS data indicated that the fears of the agoraphobic patients were more intense than those of the obsessive patients, which in turn were more severe than the fears of the patients with other phobias. On fears of "death and tissue damage" the agoraphobic patients scored higher than did either of the other two patient groups but on the FSS categories of "social", "miscellaneous", "noise" and fears of "contamination" and "hurting others", the agoraphobic and obsessive groups did not differ from each other but both groups scored higher than the group of other phobic patients.

### Anxiety

Measures of anxiety in the 359 patients studied here contradict the only direct comparison of generalized anxiety levels in obsessive and phobic patients cited in the literature (Mellett, 1974). Whereas Mellett found more somatic symptoms of anxiety among the phobic patients, in the present study the psychiatrist's rating of anxiety, the patient's rating of "nervousness" and the sten score and covert anxiety score of the Anxiety Scale Questionnaire were all higher in the obsessive group than in the phobic group. The two groups of patients did not differ significantly with respect to the patient's rating of anxiety symptoms or the overt anxiety score on the Anxiety Scale Questionnaire.

The often reported higher level of free-floating anxiety in agoraphobic compared to other phobic patients (Kelly, 1966; Lader & Wing, 1966; Snaith,



1968; American Psychiatric Association, 1980) was supported by the results of the present study. When the phobic group was subdivided into agoraphobic and other phobic patients, the agoraphobic patients scored significantly higher than the other phobic patients on five of the six measures of anxiety.

### Depression

The prominence given depression as an associated feature (e.g., Nemiah, 1967) or even a causal factor (Beech and Perigault, 1974) in obsessive-compulsive disorder is supported by the results of the present study. Both the psychiatrist and the obsessive patients themselves rated their depressive symptomatology as more severe than that of the phobic patients.

The present results also support the findings of Roth, Garside and Gurney (1965) and Marks (1969) that among phobics, depression is a prominent feature only in agoraphobic patients. When the phobic group was subdivided into agoraphobics and other phobic patients, the ratings of depression in the agoraphobics by the psychiatrist and by the patient fell between those of obsessive patients (from whom they did not differ significantly) and those of the other phobic patients. In the case of the patients' self-ratings, the agoraphobic patients scored significantly higher than the other phobic patients. This finding is also consistent with the recent revision of the American Psychiatric Association's Diagnostic and Statistical Manual (American Psychiatric Association, 1980) which lists five different phobic diagnostic categories but lists depression as an associated feature of agoraphobia only.

### Social Adjustment

The degree to which obsessive-compulsive symptoms can pervade and debilitate every aspect of a patient's life is well documented in the literature (Kringlen, 1965; Rachman & Hodgson, 1980). Although the degree of social impairment in phobics is variable and depends upon the natural characteristics of the environment, only in the case of the agoraphobic, who may be housebound during exacerbations of the disorder, is it incapacitating. The results of the present study confirm this. The obsessives were significantly more maladjusted than the phobics as a group but when the phobic group was subdivided into agoraphobic and other phobic patients, the agoraphobics and the obsessives did not differ from each other and both groups were significantly more socially maladjusted than the group of other phobic patients. With respect to sexual maladjustment (i.e., impotence/frigidity) the obsessives did not differ from the phobics as a group but when the phobics were subdivided into agoraphobics and other phobic patients the differences between groups reached significance; the incidence of impotence/frigidity was more than twice as common among obsessives (35%) and agoraphobics (42%) as among other phobic patients (17%).

## II. Natural history

### Sex ratio

The sex ratios reported in the literature for obsessive-compulsive and phobic patients are almost identical to those reported here. A tabulation of eleven studies of obsessive-compulsive disorder (Pollitt, 1957; Registrar-General, 1953; Rudin, 1953; Muller, 1953; Blacker & Gore, 1955; Ingram, 1961b; Greer and Cawley, 1966; Lo, 1967; Kringlen, 1965; Ray, 1964; Noreik, 1970) showed a total of 651 men and 685 women, a ratio of 49:51. In the present study the ratio was 50:50, significantly different from the ratio (26:74) among the total group of phobic patients. Among agoraphobics, the literature indicates that the proportion of females ranges from 63% to 100% - 63% in the Snaith (1968) study; 81% in the Klein (1964) study; 89% in the Tucker (1956) and Marks & Gelder (1965, 1966) studies and in the 1963 study of Warburton (cited in Marks, 1969); and 100% in the Bignold (1960) series. In the present study the proportion of females was 86.3%. Among other phobic patients the female preponderance is reported to range from 60% among social phobics (Marks & Gelder, 1966) to 96% among animal phobics (Marks, 1969). In the present study the proportion of females among the other phobic patients was 66%.

### Marital status

The finding here that significantly more obsessive patients (47.4%) than phobic patients (27.1%) had never married is consistent with reports in the literature that obsessional patients are more likely to be single (over 50% in some surveys) than are other neurotic patients (Rudin, 1953; Blacker & Gore, 1955; Ingram, 1961b; Kringlen, 1965; Okasha, Kamel & Hassan, 1968). As Ingram (1961b) suggests, this is probably simply a function of the severe social and sexual maladjustment caused by the disorder.

The attribution of the obsessives' failure to marry to social and sexual maladjustment would seem to be contradicted by the finding that only 20.5% of the agoraphobic patients, whose maladjustment was as severe as that of the obsessives, had never married, but it should be borne in mind that 86.3% of the agoraphobic patients are women, living in a society that continues to foster dependency in married women. In fact, in such a society marriage represents a solution of sorts for such women. Alternatively, it is quite possible that the dependence of married women is in part the cause of the agoraphobia rather than an attempt at a solution; the correlational nature of the data does not permit unambiguous interpretation.

### Age of onset

The age of onset of the disorders and the age of first symptom reported here agree remarkably well with published accounts of the natural history of the disorders. The eighty agoraphobics in the present sample reported that the disorder did not begin, on average, until age 26 - significantly later than the onset of either obsessive disorder (21.6 years) or other phobia (19.3

years). These ages of onset agree well, in absolute terms, with those reported in the literature: 20.9 (Pollitt, 1957), 24.7 (Ingram, 1961b), and 23.1 (Lo, 1967) years for obsessives; 24 and 28 years for two samples of agoraphobic patients (Marks, 1969) and 19 years for social phobics (Marks and Gelder, 1966).

### Precipitating factors

The groups are clearly discriminable on the basis of the type of significant life events which occurred during the six months immediately preceding the onset of the disorder. Sexual factors, occupational or academic circumstances, childbirth and "other crisis" were significantly more common circumstances of onset among the obsessives than among the phobic patients. Although there is little agreement in the literature about what circumstances precipitate obsessive-compulsive disorders, it is noteworthy that each of the precipitants discovered here to be more common in the obsessionals than in phobic patients was found to be the most frequent precipitant in one or more studies of the natural history of obsessive disorder: Muller (1953) and Pollitt (1957) agree that sexual and marital difficulties are the most frequent precipitants; pregnancy and delivery were the most common precipitants in Ingram's (1961b) study and Lo (1967) reported frustrations and overwork as the most frequent precipitating factors in his sample. Fright and unavoidable conflict were significantly more common precipitants among the phobic patients than among the obsessives. The preponderance of fright as a factor among the phobic patients was due mainly to the other phobic patients for whom it was the most common precipitant; unavoidable conflict, on the other hand, was mainly a factor among the

agoraphobics. Domestic crisis also discriminated the two subgroups of phobic patients; it was the most common precipitant among the agoraphobics and the least common precipitant among the other phobic patients. Whether a dependent marital relationship is a cause or an effect of agoraphobia, as discussed in the section on "marital status", above, it is not surprising that domestic crisis is a common precipitating factor.

### Course of disorder

The findings with respect to course of disorder show clearcut differences among the groups, with more phobic patients than obsessives demonstrating a "static" course and more obsessives than phobics showing a "worsening" course. The two phobic groups differ in that the modal course among the agoraphobics is "fluctuating" whereas the other phobic patients typically have a "static" course. More agoraphobics than either of the other two patient groups demonstrate a "phasic" course (i.e., one or more complete remissions).

Although no direct comparisons of the course of obsessive disorder with that of phobia have been published, the absolute values of the proportions of patients demonstrating each type of course in the present study agree well with published reports. Fifteen percent of the obsessives in this study showed a "static" course, compared to 15% (Ingram 1961b) and 28% (Ray, 1964) reported in the literature; 29% of these obsessive patients had a "worsening" course, compared to Ingram's 39% and Ray's 33%. Forty-six percent of the obsessives in this study had a "fluctuating" course, compared to 33% reported by Ingram, 24% reported by Ray, and 31% reported by Lo (1967). Ten percent of these obsessives had one or more remissions, whereas 13% of Ingram's sample, 14% of Ray's sample and 11% of Lo's sample showed such a "phasic" course.

With respect to published reports of the course of phobic disorder, Marks (1969) and Snaith (1968) agree that temporary remissions are more common in agoraphobics than in other phobic patients and the present findings confirm this but the disproportion with respect to the incidence of "phasic" course among agoraphobics and other phobic patients as reported by Snaith (37% vs 5%) is more extreme than that reported here (28% vs 14%). The estimate of the proportion of agoraphobic patients with "phasic" course reported by Solyom, Beck, Solyom & Hugel (1974) is even higher - 49%.

#### Delay in seeking help

Although no direct comparisons have ever been carried out, the literature would seem to indicate that the delay in seeking help is about the same for obsessive patients, (7.5 years, according to Pollitt, 1957), agoraphobics (8 years, according to Marks, 1969) and social phobics (8 years, according to Marks, 1969). Animal phobics, on the other hand, according to Marks (1969) delay on average of 26 years before seeking treatment.

In the present study it was found that obsessives do not wait as long (2.7 years) to seek treatment as do phobic patients, but when the group of phobic patients is subdivided into agoraphobics and other phobic patients it is revealed that the delay in seeking treatment of obsessive patients (2.7 years) and agoraphobics (1.0 years) do not differ at the 0.05 level of significance; however, both groups delay less than the group of other phobic patients, who did not seek treatment on average, until 14.5 years after the onset of an unremitting train of phobic symptoms.

### Mental disorder among relatives

Several authors (Lewis, 1936; Brown, 1942; Rudin, 1953; Kringlen, 1965) refer to the raised incidence of personality disorders and neurotic conditions among first degree relatives of obsessional neurotics, but results of the only two controlled studies (Brown, 1942; Greer and Cawley, 1966) provide no support for the assertion that the relatives of obsessives are more likely to be mentally ill than the relatives of other neurotic patients. Neither of the two controlled studies involved phobic patients as a control group, however. Brown compared the incidence of mental disorder in the relatives of his obsessives with the incidence in the relatives of anxiety state patients, hysteria cases and medical inpatients. Greer and Cawley's controls were anxiety state patients and hysteria patients.

In the present study significant differences were found between the groups. The fathers of the obsessive patients had a higher rate of some form of disorder (due mainly to a higher incidence of neurosis) than did the other two groups and the obsessives had more relatives with some form of mental disorder than did either phobic group, although the only specific category of disorder showing a significant difference was personality disorder.

In terms of absolute values, the present findings with respect to the incidence of psychiatric disorder among the parents and siblings of obsessive and agoraphobic patients estimate the rate of incidence of disorder to be much higher than previously published estimates. The findings reported here, that 40%, 38% and 56% of the fathers, mothers and siblings, respectively, had suffered from some form of mental disorders, exceed the estimates of Brown (1942) and Greer & Cawley (1966) that 40% and 53% of obsessive patients have a parent or sibling who has suffered from some form of psychiatric condition.



Similarly, the published estimates (Roberts, 1964; Roth, 1959; Solyom, Beck, Solyom & Hugel, 1974) of the incidence of psychiatric disorder in the family of agoraphobic patients, ranging from 21% to 45.4%, are considerably lower than the findings presented here - that 23%, 30% and 62% of the fathers, mothers and siblings, respectively, had suffered from some form of disorder. Only ~~Harper~~ and Roth's (1962) estimate (33%) of neurosis in the family of agoraphobics is comparable with the present finding that 13%, 27%, and 27% of the fathers, mothers and siblings of agoraphobics had suffered from a neurotic condition.

### III. Personal variables

#### Premorbid personality type

The view that the majority of those who develop an obsessive-compulsive disorder have previously manifested obsessional personality traits was supported; 55% of the obsessive patients were judged by the psychiatrist to have had obsessive personality traits premorbidly, fewer than has been estimated in the literature, where reported proportions range from 53% to 84% (Rudin, 1953; Balslev-Olesen & Geert-Jorgensen, 1959; Ingram, 1961a; Kringlen, 1965; Rosenberg, 1967a). The presence of obsessional personality traits premorbidly was just as common (63% and 63%, respectively) among the two phobic groups, however, and the mean Leyton Obsessional Inventory Trait scores of the three patient groups confirm the findings that obsessional traits are common in all three groups and that the three types of patient do not differ in this respect. The Trait score of the obsessives was 10.7, which agrees well with Cooper's (1970) published norm for obsessive patients of 11.0 (Cooper's norms for normal men and normal women are 5.1 and 5.1 respectively); the mean Trait scores of the agoraphobic patients and of the other phobic patients were 10.5 and 8.3, respectively. The mean LOI Trait scores of the three groups do not differ significantly from one another.

Similarly, the presence of psychasthenic personality traits ("submissive and shy") is common in obsessives (47%), agoraphobics (86%) and other phobic patients (58%) and does not discriminate the groups.

Only the anancastic personality ("aggressive and morose") postulated by Lewis (1936) discriminated the three groups of patients; the premorbid personality of obsessives was judged by the psychiatrist to be anancastic in 25% of the cases; the premorbid personality of none of the phobic patients was so characterized. This finding is consistent with that of Ingram (1961a) who, in an attempt to recruit support for Lewis' hypothesized two types (anancastic and psychasthenic) of premorbid personalities in obsessive-compulsive neurotics, found twice as many psychasthenic as anancastic premorbid personalities among the 77 patients he examined. In the present sample the ratio of anancastic to psychasthenic personalities among the obsessive patients was 46:24.

#### Neuroticism and Extraversion-Introversion

The absolute value of the mean Neuroticism and Extraversion scores (on the Maudsley Personality Inventory) of the three groups of patients agree well with the MPI norms for obsessives (Eysenck and Eysenck, 1964), the E and N scores of Rosenberg's (1967a) sample of obsessives and Marks' (1969) findings with three different types of phobia, but do not support Eysenck's theory that the three patient groups do not differ on these indices. The mean of the obsessive group on Neuroticism was 33.3, compared to the MPI norm for obsessives of 31.9 and Rosenberg's finding of a mean of 31.6 in a sample of 47 obsessional patients (the mean N score of Eysenck & Eysenck's sample of 1931 normals was 19.6). Similarly, the absolute values of the mean Extraversion scores of the obsessive patients in the present study are consistent with the findings of others: the mean score of the obsessives in this study was 18.8, compared to Eysenck & Eysenck's 19.5 and Rosenberg's 19.9 (the mean of the MPI

normal sample was 26.3). The N and E scores of the phobic patients in this study also agree well with published findings. The agoraphobics studied here had mean N and E scores of 30.3 and 20.6, respectively, compared to Marks' (1969) findings of 30 and 19; the other phobics in the present study had mean scores of 24.0 and 23.3 on N and E respectively, which are midway between Marks' findings with social phobics, of 29 and 19 (i.e., very introverted and neurotic), and the essentially normal scores of his sample of animal phobics (21 and 24).

Eysenck's unifying dysthymia concept notwithstanding, however, the three patient groups are discriminable on the basis of their Neuroticism and Extraversion scores; both the obsessives and agoraphobic patients had significantly higher neuroticism scores than did the other phobic patients and the obsessives had significantly lower Extraversion scores than the other phobics.

#### IV. Stepwise discriminant analysis

Discriminant analysis provides a measure of the multivariate difference between groups and thus represents a single overall test of the hypotheses that the present study was designed to confirm or refute: (a) that patients whose primary complaint is of phobia differ from patients who seek treatment for an obsessive-compulsive symptom with respect to symptomatology, natural history and personality, and (b) that patients whose primary complaint is of agoraphobia differ, with respect to the same dimensions, from both patients whose primary complaint is of another phobia and patients who seek treatment for an obsessive-compulsive symptom.

The accuracy with which the classification functions, computed by stepwise discriminant analysis, assign the 359 cases to the groups to which they originally belonged is a measure of the degree to which the group differences, reflected in the variables included in the classification functions, validate, case by case, the diagnosis made on the basis of primary complaint. In short, the percentage of cases correctly classified is a measure of the validity of the three diagnostic categories.

In the present study the percentage of cases correctly classified into the three patient groups using the less biased jack-knife procedure, is 88.9% overall, even when measures of the intensity of obsessive and phobic symptomatology and variables denoting type of main phobia were not used in the discriminant analysis (on the assumption that these measures would correlate highly with the independent variable, i.e., the nature of the primary complaint for which the patient sought help).

## F. GENERAL DISCUSSION

Nosological practice in psychiatry and clinical psychology has been attacked on a number of grounds: (1) the lack of relevance of the medical model to psychiatric problems, (2) the use of multiple and often overlapping bases for classification, (3) the limited value of psychiatric diagnosis with respect to choice of treatment and prognosis, and (4) the notoriously low degree of reliability of current psychiatric diagnostic practice. I will deal with each of these in turn.

Much of the rhetoric directed against conventional psychiatric diagnosis and treatment is aimed at the medical model. Anti-psychiatrists, like Thomas Szasz, Erving Goffman and R. D. Laing, argue that the disease model is not appropriate when applied to mental problems, or, to use Szasz' phrase, "problems in living". Mental illness is not really illness, they say, and psychiatric diagnoses are nothing more than value-laden social constructions used to constrain those persons whose behavior offends society. The sociologist, Peter Sedgwick (1975), has argued cogently that all sickness, physical and mental, is by definition a value-laden social construction since, outside the significance that man voluntarily attaches to certain conditions, there are no illnesses or diseases in nature. Sedgwick states:

The fracture of a septuagenarian's femur has, within the world of nature, no more significance than the snapping of an autumn leaf from its twig; and the invasion of a human organism by cholera-germs carries with it no more the stamp of 'illness' than does the souring of milk by other forms of bacteria (p.194).

and again:

Out of his anthropocentric self-interest, man has chosen to consider as 'illnesses' or 'diseases' those natural circumstances which precipitate the death (or the failure to function according to certain values) of a limited number of biological species: man himself, his

pets and other cherished livestock, and the plant varieties he cultivates for gain or pleasure (p.195).

Sedgwick's defense of the psychiatrist who embraces the disease model, although logical and eloquent, is unnecessary since the defendant is a much vilified straw man. The latest version of the Diagnostic and Statistical Manual of the American Psychiatric Association, DSM-III (American Psychiatric Association, 1980), redefines the medical model in such a way that makes it invulnerable to attack on these grounds. Specifically, no assumption is made regarding the primacy of biological over social or environmental aetiological factors, and "illness" is replaced by "disorder" as a more appropriate general term to be applied to all conditions listed in DSM-III (Spitzer, Sheehy & Endicott, 1977). The question that remains therefore, is not whether the medical model is appropriate for classifying and treating problems in living, but whether any classification system for categorizing varieties of human behavior, regardless of its basis, can be justified. In replying to the other three grounds for current attacks on psychiatric diagnosis, it will be argued that refinement of procedures for classifying disorders, based exclusively on what has actually been observed, should be the focus of research in psychiatry and clinical psychology today. Without such a system of classification we have no science. With such a system, our attempts to explain disorders and to develop effective treatments for them will be much enhanced since causes and cures will elude us unless we know what we are studying or talking about.

The second focus of the attack on psychiatric diagnosis is the current use of multiple and often overlapping bases for classification. A final phase I report from the 1977 American Psychological Association's Task Force on Descriptive Behavioral Classification charged that DSM-III development suffered from "consistently unreliable categorical groupings, variously based

on symptom clusters, antisocial behaviors, theoretical considerations or developmental influences". The report adds that symptom categories were "created or deleted based on committee vote rather than on hard data" (Foltz, 1980).

The criticism is well founded but the conclusion often drawn from the evidence - that classification per se does not add to our understanding of mental, emotional and behavioral disorders - does not follow. Classification based on inferences about the meaning of observed behavior is a desirable goal but it is not possible until we have a well-validated classification scheme based solely on differences in observable behavior. Alvan Feinstein (1977) in his critical overview of diagnosis in psychiatry states:

In choosing an anchor or focus for the taxonomy, we can engage in two distinctly different types of nosologic reasoning. The first is to form names, designations, or denominations for the observed evidence, and to confine ourselves exclusively to what has actually been observed. The second is to draw inferences from the observed evidence, arriving at inferential titles representing entities that have not actually been observed (p.195).

Clearly, the validation of a taxonomy based on observables must precede any attempt to classify disorder on the basis of inferences from the observed evidence (e.g., classification on the basis of inferred cause).

Although the terms of reference of the present study, viz., validation of three diagnostic categories, do not include hypothesis testing of the various theories of aetiology of the disorders, the data could be used for such purposes.<sup>1</sup>

<sup>1</sup>The data do not consistently support or refute either the psychodynamic or learning theory explanations of the origin or developmental course of obsessive-compulsive disorder but they do support the view (Snaith, 1968; Solyom, Beck, Solyom & Hugel, 1974) that agoraphobia is produced by an essentially different mechanism (anxiety state) from that of other phobias (conditioning). The significantly higher level of anxiety (on five of the six measures used) among the agoraphobics, as well as the commonly "remitting" course of the disorder and its insidious onset (both inconsistent with a



Such speculation, however, is premature. There are no data to refute or support the DSM-III distinctions between social phobia and "simple" phobia or between agoraphobia with and without panic attacks. Until these distinctions and the distinction between obsession and compulsion, hypothesized by Rachman & Hodgson (1980) and elaborated below, have been validated and we have a scheme for classifying phobias and obsessive-compulsive phenomena that is both valid and reliable, speculation about causes cannot be justified. Roy Grinker (1977), in his documentation of the inadequacies of contemporary psychiatric diagnosis, states:

The scientific attitude is characterized by curiosity expressed in the form of three questions: What, How and Why? The order of these questions is important since causes (How) and purposes (Why) are not understandable unless we know What we are studying or talking about (p.79).

Once we know "what we are talking about", systematic inquiry with regard to the aetiology of the disorders will be facilitated since isolation of the dysfunction, however crudely, and differentiation of the disorder from other syndromes limits the spectrum of behaviors for which an aetiological theory might be expected to account. To illustrate the handicap to aetiological research that invalid classification represents, the reader is encouraged to imagine a researcher gathering evidence to support (or refute) a particular theory of the aetiology of phobia. If the researcher fails to distinguish

<sup>1</sup>(cont'd)conditioning theory of aetiology) lend support to the theory that agoraphobia is not a phobia at all (a "pseudo-phobia", Snaith called it) but simply the reflection of an anxiety level so severe that the sufferer feels secure only at home. Likewise the typically tangible onset of other phobias ("Fright" is the most common precipitant) and the modal "constant, static" course of the other phobias is consistent with the view that other phobias are conditioned classically and maintained instrumentally by avoidance (Mowrer, 1947), provided that Mowrer's two-factor theory is amended to account for the non-random variation in the content of phobias by including the notion that humans are more "prepared" to develop some conditioned fears than others because of their importance to the survival of the species (Seligman, 1971; Seligman & Hager, 1972).

between agoraphobia (which the present study indicates is, in many aspects, more like an obsession than a phobia) the research is doomed since the experiment is unwittingly designed to find commonalities in the origins of apples and oranges.

The third focus of the attack on psychiatric diagnosis is the limited practical value of psychiatric diagnosis for choice of treatment and prediction of outcome. The noted British psychiatrist, Martin Roth (1967), in a philosophical paper, The clinical interview and psychiatric diagnosis; have they a future in psychiatric practice?, argued that the Kraepelinian system of classification has been validated by observed differences in the effectiveness of various treatment modalities when applied to different diagnostic categories:

A review of progress in psychiatric treatment in the past four decades, provides some striking examples of validation of the concepts implied in the Kraepelinian system of classification. The discovery by Meduna of the therapeutic effects of convulsions provided independent evidence in favor of the distinction made by Kraepelin between the manic-depressive group of conditions, in which convulsive therapy exerted its most striking effects, and schizophrenia in which improvements were often unimpressive or short-lived. Chlorpromazine, originally introduced as a "tranquilizer" proved effective in the control of schizophrenic symptoms and certain organically caused disturbances, but of little value in anxiety neuroses or depressive states. The first of the tricyclic compounds, imipramine, was initially expected to show tranquilizing properties but proved a highly effective anti-depressive agent. Thus, a number of the differentiations within the Kraepelinian system were independently supported by these advances. It is to be noted further that each advance originated from astute, discerning and bold clinical observation (p.436).

The evidence tendered by Roth demonstrates that classification can have implications for choice of treatment; it does not demonstrate that the present (basically Kraepelinian) classification scheme is adequate. On the contrary, if outcome research is to be fruitful, the classification scheme must be improved; otherwise we will continue to test the effectiveness of treatment

procedures on patient samples which are assumed, incorrectly, to be homogeneous. The recent work of Rachman and Hodgson (1980) illustrates this well. Rachman & Hodgson found that obsessive-compulsive rituals respond well to behavioral treatment (i.e., flooding in vivo and modeling in vivo) while obsessional rumination does not. Furthermore, Rachman and Hodgson maintain that ritualistic cleaning differs from ritualistic checking in important respects. Ritualistic cleaning, unlike ritualistic checking, responds well to behavior therapy and has a tangible onset suggestive of a conditioning process. Rachman (1976) claims that there is a significant similarity between cleaning rituals and circumscribed phobias and that the degree of this similarity exceeds the degree of similarity between cleaning rituals and obsessional ruminations.

Perhaps the most telling criticism of psychiatric diagnosis, and one for which ample data rather than rhetoric are available, has to do with the well-known low degree of reliability of current diagnostic practice (Spitzer & Fleiss, 1974). Spitzer, Endicott & Robins (1975) studied the various sources of this unreliability (subject variance, occasion variance, information variance, observation variance and criterion variance) and found that criterion variance (differences in formal inclusion and exclusion criteria used to classify patient data into diagnoses) is the largest source of diagnostic unreliability in psychiatry. They described the efforts that have been made to reduce these differences, particularly the specified criteria approach to defining diagnostic categories, which was developed for research purposes. On the basis of studies showing that the use of specified criteria increases the reliability of diagnostic judgments, they suggested that including such criteria in the next edition of the American Psychiatric

Association's Diagnostic and Statistical Manual of Mental Disorders would improve the reliability of routine psychiatric diagnosis. DSM-III, when it appeared three years later, did include such diagnostic criteria, but DSM will require more than explicit formal inclusion and exclusion criteria to improve its reliability. Categories of disorder that reflect opinion, interpretation, and casual uncontrolled observation rather than established fact must be reexamined. Instead of creating and deleting symptom categories based on committee vote, as charged by the American Psychological Association's Task Force on Descriptive Behavioral Classification (Foltz, 1980), the American Psychiatric Association must lend its support to research designed to test the validity of the syndrome categories, many of which have become embalmed by their psychiatric labels. The present research supports the distinctions made in DSM-III between obsessive-compulsive disorder and phobia and between agoraphobia and other phobia but Rachman and Hodgson (1980) make a case for the differential diagnosis, on the basis of response to treatment, of obsession and compulsion and Rachman (1976) has published data which indicate that cleaning rituals (but not checking rituals) are more like specific phobias than they are like obsessional ruminations.

In the light of such findings it would seem useful to study the degree of relationship among the four types of obsessive symptomatology (rumination, ritual, horrific temptation and pervading doubt) and to compare and contrast, along the dimensions used in the present study, groups of obsessive patients who present with one or another of these symptoms as the primary complaint. Future research might also examine the distinction made in DSM-III between social phobia and simple phobia and between agoraphobia with and without panic attacks.

**G. APPENDICES**

8

**Appendix A**

**Curriculum Vitae of Leslie Solyom**

CURRICULUM VITAE

Name: Leslie Solyom, M.D.

Current Position: Clinical Professor of Psychiatry, The  
University of British Columbia, Vancouver,  
B.C., Canada

Active Staff, Shaughnessy Hospital,  
Vancouver, B.C.

Date of Birth: April 16, 1921

Place of Birth: Budapest, Hungary

Education: Lorand Eotvos, University of Budapest

M.D. - Sept. 8, 1950

McGill University, Montreal

Diploma in Psychiatry - 1961

**Qualifications as a**

**Specialist:**

**Certification in Psychiatry**

1955 - Hungary

1961 - Royal College of Physicians and  
Surgeons, Canada

1966 - College of Physicians and Surgeons,  
Quebec

1971 - F.R.C.P.(C)

1973 - M.R.C.Psych.

**Appointments:**

**Joint Academic and Hospital**

**Neuropsychiatric Teaching Hospitals,**

**University of Budapest**

1950-51 **Demonstrator**

1951-56 **Practitioner**

1956 **Assistant Professor**



**Academic**

**McGill University, Montreal**

1959-62 Research Assistant

1962-68 Lecturer

1968-73 Assistant Professor

Associate Professor

**University of Ottawa**

1971-73 Associate Professor

**University of B.C.**

1978- Clinical Professor

**Hospital**

Provincial Hospital, Lancaster, N.B.

1957-59 Medical Officer

Royal Victoria Hospital, Montreal

1960-62 Clinical Fellow

1962-68 Assistant Psychiatrist

1968-73 Associate Psychiatrist

1973-78 Senior Psychiatrist

Ottawa General Hospital, Ottawa

1971-73 Active Staff

1973-76 Courtesy Medical Staff

St. Mary's Hospital, Montreal

1971-74 Consultant

1974-78 Active Staff

Shaughnessy Hospital, Vancouver, B.C.

1978- Active Staff

Director, Behaviour Therapy Unit

**Teaching Experience:**

General neurology and psychiatry from 1950 onwards to medical residents, internes and students; 1976-77, undergraduate psychology students of McGill University.

**Research Experience:**

The effect of prolonged insulin coma and sleep treatment upon psychiatric conditions. The effect of intensive electroshock on the conditioned responses of white rats. The use of eyeblink reflex method in the study of schizophrenic and neurotic conditions. The effect of high dosage chlorpromazine treatment on chronic schizophrenics. The measurement of memory impairment and perseveration by conditioning in the aged. The treatment of memory impairment of the aged with RNA, uridine, vitamin B 12 , etc. The establishment at the Allan Memorial Institute of a human conditioning lab where eyelid closure, GSR and plethysmograph techniques are used. Psychophysiological measurement of sexual deviation. Implementation of behaviour therapy techniques for phobias, obsessive neurosis and sexual dysfunctions. The effect of nucleic acids, malonitrile dimer, vitamin B 12 , etc. on the conditioning of white rats.

Treatment of phobias and obsessive neurosis by phenelzine, Doxepin and Chlomipramine. The development of a behaviour therapy unit in the Allan Memorial Institute, 1962; in St. Mary's Hospital, 1971; and in the Ottawa General Hospital, 1971. Etiologic studies of phobias and obsessive neurosis. Descriptive survey of couples with sexual dysfunction. Use of biofeedback techniques in the treatment of headaches, anxiety states, ulcerative colitis and Reynaud's Disease.

**Membership in Professional Societies:**

Canadian Psychiatric Association  
American Psychiatric Association  
Quebec Psychiatric Association  
Ontario Psychiatric Association  
Association for the Advancement of Behavior Therapy  
Society of Biological Psychiatry  
Argentina Association of Biological Psychiatry  
Royal College of Psychiatrists (UK)  
Behavior Therapy and Research Society, Fellow

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**Appendix B**

**Definitions and examples of each of the  
four obsessive-compulsive symptoms rated  
in the Psychiatric Questionnaire**

### 1. Obsessive rumination

Obsessive rumination refers to the continuous preoccupation with some topic or group of topics, to the exclusion of most other interests and to the distress of the patient.

An example from a narrative written for use in treatment by Mr. S.C.:

"At the present time the most frequent group of ruminations are: 'Train', 'Q', and 'Flam'. The second most frequent rumination is: 'An accident, an accident, a wonderful opportunity, and so forth - I hope I am not killed by a train or a cat or shot by a bullet'. All of these ruminations dominate my thoughts every waking moment....."

### 2. Ritual

A ritual is a sequence of motor acts which the patient feels compelled to carry out, often repetitively. Most often these sequences are ceremonial and distortive elaborations of some routine of daily life, such as going to bed, getting up, taking a bath, dressing and undressing.

An example from a narrative written for use in treatment by Mr. C.P.:

"I then proceed to the shirt. I empty the only pocket, take off my nametag, etc. All this in quite a normal fashion. I then check (by sight - I don't know why) the breast (only) pocket to make sure it is empty. I then hold up the shirt, and repeat the same procedure as with the pants, to make sure nothing is attached or hanging on. I do this three times, and am ready to put away the shirt when the phone rings. I answer, and finish the phone call (very short). I must then start at the beginning of the shirt (by checking the pocket), and it takes me four times to reach the point where anxiety abates and I am ready to roll the shirt tightly around the pants. I do so, and go through the slapping routine once, then again, then again. Finally the old uniform as a unit is ready to go back. I shake it (vibrate) slightly in the spot on which I am standing, so that anything attached or stuck will fall off. I then put it down on the place on the hall floor (broad empty space) where are the rest of the things I must take to work. I put it down, remove my hand, then must touch it again to make sure it is really my old uniform, the pockets are really all empty (mental review), it is really there, etc. I then touch the uniform for the last time, I tell myself, or I will suffer a penalty. The whole above takes ten minutes, when it should take one....."

### 3. Horrific temptation

In his fits of horrific temptation the patient is suddenly beset by the urge to commit some terrible act, usually aggressive or sexual in nature. The idea, which is viewed as alien to his entire being, is never acted upon by the patient (except in the case of self-injury) but the temptation is persistent and frightening.

An example from a narrative written for use in treatment by Mrs. S.:

"I go to the kitchen to prepare supper. Four of us are there. I see a big knife on the table. I feel terrified because I have to think that I will pick up the knife and kill somebody with it. I am terribly anxious. I don't dare to look at the knife. However, I can't avoid picking it up and putting it in its place. My hands are trembling. The thought that I will have to pick it up and plunge it into someone - into my child or my husband, keeps haunting me. I am terrified at what I may do until I remove the knife and put it back into the drawer. Even after I remove the knife, I am still under the effect of the anxiety. I am terrified that I may lose my mind and go insane, and one day, I will become a killer. I love my children and I don't want to hurt or harm anybody."

#### 4. Pervading doubt

Pervading doubt (folie du doute) refers to the spells of brooding in which the patient vacillates between the same set of pros and the same set of cons without being able to reach a decision. They are thought activities that tend to defeat the purpose of thinking.

An example from a narrative written for use in treatment by Mr. M.C.:

"I am at work in the morning. I felt I said something wrong to a friend of mine last night. It is bothering me. I wonder should I phone him up at work or should I wait till I get home. It's frustrating me. I can't make up my mind. Maybe the best thing to do is forget about it. No, what I'll do is mention it to him the next time I see him. Well it's four o'clock, time to go home. It's a nice day out. I think I'll walk home. No I guess I can call my friend on the phone and sort of make things up with him."

**Appendix C**

**Examples of intake notes**

March 1, 1971

Re: Mr. K.R.  
22 years old

Mr. R. is travel phobic. The further away from the city he is, the more fearful he becomes, particularly if he is far from medical help - in the bush, for instance. He is fearful if he has to stay overnight alone. He is also fearful of the metro, buses, and to some extent elevators. He was able to fly, although he was very afraid. He usually drinks to quiet his nerves.

He recently moved away from home because he was being nagged by his mother. His father died three years ago from complications resulting from a heart condition and operation.

He has no obsessive symptoms, except that he sometimes checks and rechecks.

He has a strong bisexual drive, but he had his last physical contact about three years ago. Since then he masturbates. He seems to be anxious about masturbation - he claims that it may not be normal.

He claims that his mother is not overprotective ("she couldn't care less") but attempts to dominate him. He has a brother of 14 and a sister of 20. They are healthy and alright. He has had quite a number of jobs recently. Sometimes he left his job because of his fear of travelling. He had group therapy in the General hospital, but it did not seem to help him. He is somewhat shy and unassertive. He should have behavior therapy, but on account of the long waiting list, he will have to wait two or three months. Until then, I will suggest Nardil, 15 mgm, t.i.d., and Valium, 5 mgm, t.i.d.

Mr. I.Z.

24 years old

referred by Dr. H. Batallion

Queen Mary Veteran's Hospital

January 20, 1975

His main complaint is an obsessive idea against which he feels a resistance. He recognizes that in content it is wrong and it is forced upon him to think that way but he is alone in the works and the rest of he world is a figment of his imagination. He tries to test this by assuming that something has happened and depending on whether or not his assumption is confirmed, he feels that this obsessive idea is justified or not. He looks at licence plates and if they don't end with 7, then he is happy and if they do end with 7 then he is unhappy. If he walks on the street and sees an empty cigarette box and it is of a certain kind, this is also a sign that this is right or wrong. Nevertheless, it makes him quite anxious.

Apart from this obsessive idea, he is also very ritualistic. He has a counting obsession. Before he does anything he has to count up to a certain number. He has to check and recheck the door, electricity, cigarette stubs, ashtrays, etc. Also he washes his hands many times but not because he feels that his hands are dirty or that he touched a doorknob, but that it became a functionally autonomous ritual.

He has no particular horrific temptations, but he is hesitant, a vacillating type. Characterwise he is not obsessive. He is not orderly, meticulous, fussy and perfectionistic. In certain ways he feels that he is perfectionistic. He has some minor phobias, but they do not lead to avoidance. Generally he is uneasy in crowds no matter where. His social phobia is far more pronounced. He has difficulty in finding dates. If he goes out with a girl he feels very anxious, hoping that it will be over soon. No particular specific phobia and no other obsessive phobia. Mother is obsessive, checking and rechecking the doors and he has a 29 year old sister who is also ritualistic. His father is more or less a hermit. He is going to be placed on the waiting list.

Earlier he was treated here in the Day Hospital, two years ago and he even had a suicidal attempt. He ran with his bike into a car, but landed on his head and did no harm. He spent 7 months in a Zen Buddhist group in Montreal which did not harm his tender soul either.

**Appendix D**

**Assessment instruments**



ALLEN MEMORIAL INSTITUTE - DEPARTMENT OF PSYCHIATRY

Questionnaire of Obsessive-Compulsive Neurosis

Name of Psychiatrist \_\_\_\_\_ Date \_\_\_\_\_  
Name of Patient \_\_\_\_\_ Age \_\_\_\_\_  
Nationality \_\_\_\_\_ Religion \_\_\_\_\_  
Occupation \_\_\_\_\_ In or Out Patient \_\_\_\_\_  
\_\_\_\_\_

A. DESCRIPTION OF PRESENT ILLNESS:

1. Obsessive Symptoms:

None Mild Moderate Severe Incapa- Frequency  
citating

a. Obsessive Ruminations \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

None Mild Moderate Severe Incapa- Frequency  
citating

b. Rituals

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c. Horrific Temptations

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d. Pervading Doubt

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2. Other Clinical Features:

None Mild Moderate Severe Incapa- Frequency  
citating

a. Depression:

Sad Mood  
Lack of appetite  
Insomnia  
Suicidal Ruminations  
Loss of Interest  
Guilt  
Fatigue  
Diurnal Fluctuation

b. Anxiety:

Feelings of anxiety  
Tension  
Irritability  
Physical manifestations  
Poor concentration

c. Phobias:

Agoraphobia  
Social phobia  
Specific phobia  
Obsessive phobia

d. Hysterical:

Dramatization  
Immature  
Vain  
Dependent  
Egocentric  
Conversion symptom

None Mild Moderate Severe Incapacitating Frequency

e. Obsessive Features:

Orderliness  
Checking  
Rumination  
Intropunitive  
Obstinance

f. Hypochondriacal

Heart attack  
Cancer  
Other \_\_\_\_\_

g. Paranoid:

Feelings of inadequacy  
Feelings of unpopularity  
Feelings of persecution

h. Doubtful schizophrenia:  
Poor reality contact

not resistant to  
obsessive symptoms

no recognition of  
absurdity of  
obsessive symptoms

i. Psychopathic

Acting out  
Violence  
Aggression  
Manipulation  
Crime  
Impulsivity

j. Other \_\_\_\_\_  
\_\_\_\_\_

3. Fainting Experiences:

4. Onset:

a. Age of first obsessive and/or phobic symptom \_\_\_\_\_

b. First obsessive and/or phobic symptoms \_\_\_\_\_  
\_\_\_\_\_

c. Age at onset of present illness \_\_\_\_\_

d. Symptoms at onset \_\_\_\_\_  
\_\_\_\_\_

e. Circumstances of onset of present illness: known causes:

Fright \_\_\_\_\_

Acute Danger \_\_\_\_\_

Serious Illness \_\_\_\_\_

Death of relative or friend \_\_\_\_\_

Domestic crisis \_\_\_\_\_

Unavoidable conflict \_\_\_\_\_

Sexual \_\_\_\_\_

Betrothal \_\_\_\_\_

Occupational \_\_\_\_\_

School \_\_\_\_\_

Childbirth \_\_\_\_\_

Pregnancy \_\_\_\_\_

Menopause \_\_\_\_\_

Other crisis \_\_\_\_\_

f. Age at which incapacity occurred \_\_\_\_\_

g. Circumstances of onset of incapacity \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

h. Age at which first sought psychiatric help \_\_\_\_\_

i. Reason \_\_\_\_\_

5. Course:

a. Constant Static

b. Constant Worsening

c. Fluctuating

d. Phasic

-Ages and lengths of previous attacks \_\_\_\_\_

\_\_\_\_\_

-Temporary remission connected with: \_\_\_\_\_

\_\_\_\_\_

-Exacerbation connected with: \_\_\_\_\_

\_\_\_\_\_

6. Severity

a. Impairment of Function:

Function unimpaired \_\_\_\_\_

Somewhat disabled \_\_\_\_\_

Incapacitated \_\_\_\_\_

B. BACKGROUND:

1. Family Background

a. Mother:

Phobic Features \_\_\_\_\_

Obsessive Features \_\_\_\_\_

Overprotective (domineering/indulgent) \_\_\_\_\_

Other Characteristics \_\_\_\_\_

Separation from mother (for 3 months before age 14) \_\_\_\_\_

b. Father:

Phobic Features \_\_\_\_\_

Obsessive Features \_\_\_\_\_

Overprotective (domineering/indulgent) \_\_\_\_\_

Other Characteristics \_\_\_\_\_

Separation from father (for 3 months before age 14) \_\_\_\_\_

c. Marriage: good or bad -

d. Number of siblings \_\_\_\_\_

<u>Name</u>	<u>Ages</u>	<u>Obsessive features</u>	<u>Other Characteristics</u>
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e. Mental illness in other relatives

(P-Paternal; M-Maternal; N-Nuclear; R-Remote Family)

Neurotic:  
Personality:  
Psychotic:  
Organic:  
Stuttering:



2. Childhood

a. Socialization: \_\_\_\_\_

b. Reaction to strangers: \_\_\_\_\_

c. Age of first steps: \_\_\_\_\_

Fearful? \_\_\_\_\_ Did he give up if he tumbled \_\_\_\_\_

d. Death and illness in the family: \_\_\_\_\_

e. Traumatic experiences: \_\_\_\_\_

f. Accidents: \_\_\_\_\_

Fire: \_\_\_\_\_

Car: \_\_\_\_\_

Water: \_\_\_\_\_

g. Nightmares: \_\_\_\_\_

h. Hypochondriacal fears: \_\_\_\_\_

i. Somatic disease: \_\_\_\_\_

j. Emuresis: \_\_\_\_\_

k. Fear of darkness: \_\_\_\_\_

l. Other fears: \_\_\_\_\_

m. Phobias: \_\_\_\_\_

n. Other neurotic traits (headbanging, thumb sucking) \_\_\_\_\_

o. First fearful experience \_\_\_\_\_

p. School phobia: \_\_\_\_\_

q. Traces of present phobias \_\_\_\_\_

3. Premorbid personality

a. Submissive, shy: \_\_\_\_\_

b. Parsimonious, obstinate, orderly: \_\_\_\_\_

c. Aggressive, morose: \_\_\_\_\_

d. Other characteristics: \_\_\_\_\_

4. Sexual history

a. Menarche: \_\_\_\_\_

b. Age of first coitus: \_\_\_\_\_

c. Number of partners: \_\_\_\_\_

d. Frigidity, impotence: \_\_\_\_\_

e. Perversions: \_\_\_\_\_

Sadomasochism: \_\_\_\_\_

f. Menopause: \_\_\_\_\_

g. Feelings of guilt: \_\_\_\_\_

5. Marriage

a. Age when married \_\_\_\_\_

b. Age of spouse \_\_\_\_\_

c. Description of spouse \_\_\_\_\_

d. Description of marriage \_\_\_\_\_

6. Employment history

7. General interests and hobbies

8. Level of participation in group activities

9. Religion and cults and degree of involvement

10. Prior illness

a. Somatic

b. Psychological

c. Psychosomatic

C. TREATMENT

1. Prior treatment                      Response

a.

b.

c.

d.

e. No. of hospital admissions: \_\_\_\_\_

f. Total time spent in hospital: \_\_\_\_\_

2. Outcome

a. Number of treatments: \_\_\_\_\_

b. Response to treatment:

-Socially adapted and symptom-free \_\_\_\_\_

-Socially adapted but still experiencing mild symptoms \_\_\_\_\_

-Poorly adapted socially but symptoms improved \_\_\_\_\_

-Symptoms worse or as severe as when first seen \_\_\_\_\_

-Obsessional symptoms replaced by other phenomena \_\_\_\_\_

3. Follow-up

a. Time elapsed since last treatment \_\_\_\_\_

b. Condition of patient:

4. Comments

ALLAN MEMORIAL INSTITUTE

Department of Psychiatry

Date

Name of Patient

Trial Number

This booklet contains a number of scales on which you are asked to rate your symptoms. In each case decide how you have been feeling, on the average, during the last week.

At the top of each page there is a question about your symptoms. Beneath this are 5 statements written one below the other. Read each statement carefully and decide which most nearly describes how you have felt in the last week then put a cross (X) on the line which runs up and down the right side of the page, opposite the appropriate statement with the normal "reading" at the bottom, the most abnormal at the top. If you think that your symptoms are somewhere between two of the statements, put the cross on the line between the points, at whatever level seems to describe them most accurately.

You are asked to rate on this scale some of the situations, events, objects and people which make you anxious. The particular fear to be rated on this page is written below.

- 
- It terrifies me so much that every moment of my life is miserable —
- It frightens me even to think of it and I always avoid it. —
- It makes me particularly uneasy to think of it and I avoid it when possible. —
- It makes me a little uneasy to think of it but I can cope with it fairly easily. —
- I am no more upset by this than the average person. —

How have your nerves been in the past week?

Absolutely terrible

Pretty bad

Not too bad

Pretty good

Absolutely all right



Do you suffer from the following: sweating, trembling or palpitations, uneasiness, apprehension or anxiety for no adequate reason? If so, how severe are these? (Do not include your phobias here - they are on separate sheets).

Very severe, hardly ever absent

Severe, and frequently present

Moderately severe and often present

Mild symptoms which occur occasionally

I do not suffer from these symptoms

How have your spirits (mood) been? Have you felt depressed, sad or unhappy?

I have never felt so utterly miserable as now

I feel very miserable and low spirited

I feel miserable

I feel a little sad or unhappy

I have no feelings of sadness

Do people, things or yourself seem in any way unreal, changed, or peculiar? If so, how intense are these feelings?

Nothing is real. I feel as if I am in a dream.

Everything seem rather unreal.

Most things seem rather unreal.

Some things seem a little unreal at times.

Everything seems as real as ever.

How confident are you that you will get better again?

I am certain that I will never be well again

I shall probably never be well again

I can't be sure, one way or the other

I am not certain, but fairly confident that I will be well

I am sure that I will be quite well

Do you have rituals which you know are silly but which you have to carry out all the same? Such as putting on your clothes in a particular and uniform manner, saying abracadabra ten times before crossing the road or counting to 4 before doing anything. If so, how regularly do you have to follow them?

I have to perform them always the same way. I feel terribly anxious if I attempt to refrain from carrying them out.

If I want, I can postpone the ritual, but nevertheless, later I have to do it.

I can refrain from carrying out my rituals though I feel uneasy.

I have to perform the rituals only when I am particularly upset or worried.

I do not have any rituals.

Do you have insistent useless thoughts which come into your mind over and over again? If so, how often do they recur and to what extent can you control them?

No matter how hard I try, the same useless thoughts occupy my mind and I cannot think of other things.

I am preoccupied with the same useless thoughts a great deal of the time.

Useless thoughts come into my mind frequently and I cannot halt them.

Useless thoughts occur occasionally but I can usually control them with effort.

I do not have such thoughts.

Do you have irrational impulses to repeat unnecessary acts or to check certain things over and over again? (For example, repeated handwashing, checking that you have turned off a switch or a tap).

These impulses are very frequent. I am unable to resist them and they prevent most of my other activities.

These impulses are fairly frequent. I cannot resist them and they often interfere with my other activities.

These impulses occur fairly often. Sometimes I can cut them short with much effort.

These impulses occur occasionally. They cause me little discomfort.

I do not have such thoughts.

Do you find that unpleasant or frightening thoughts come into your head as if you were tempted against your best judgement or moral and religious belief, to do something horrible, such as killing somebody? Does it occur that when you look at a knife you are forced to think of killing somebody close to you? Are you tempted at times to do something which would publicly embarrass you, such as shouting dirty words, singing at a concert, etc? If so, how often do they occur, and to what extent can you control them?

I always avoid the places or objects where I feel such temptations, but if I cannot, I feel terribly anxious and shrink in horror.

I have such horrifying thoughts frequently but not all the time.

These horrifying thoughts occur only when I am very angry or upset.

These bad thoughts are very infrequent and I know I can resist them.

These frightening thoughts do not occur at all.



Have there been any recent changes in such activities as eating, smoking or drinking? If so, how much change has occurred and in which activity?

(Please explain any changes at bottom of sheet).

Very much, completely changed

Moderate change

Some slight change

No change has occurred

Have there been any recent changes in bowel habits, Cleanliness, orderliness or frugality? If so, how much change has occurred and in which habit? (Please explain any changes at bottom of sheet).

Very much, completely changed

Moderate change

Some slight change

No change has occurred

Please check the appropriate answer to the following questions.

Do you consider yourself lucky?

Not at all

A little

Quite a lot

—  
—  
—

Are you hopeful about the future?

Not at all

A little

Quite a lot

—  
—  
—

Do you expect to realize your ambitions in the next year

in five years

in ten years

never

—  
—  
—  
—

ALLAN MEMORIAL INSTITUTE

DEPARTMENT OF PSYCHIATRY

SOCIAL ADJUSTMENT RATINGS - OBSESSIVES

Please do not write on this form. Use answer sheet.

4

Please complete this form immediately after your interview with the relatives (or patient). In each case consider only those limitations which result from neurotic symptoms.

Each point on each scale is defined in the booklet, please read these definitions carefully and then decide which statement most closely describes the patient. Put a cross (X) on the appropriate scale at the corresponding point or at the appropriate place between two points.

Work adjustment should be rated on the appropriate scale (housewives or general).

ADJUSTMENT AT WORK

1. Satisfactory Adjustment: Able to work steadily and efficiently with no limitation of the kind of work which is undertaken.
2. Mild Impairment: Symptoms interfering with work in minor ways, e.g. minor interference by the tendency to doubt, to check and recheck, by persistent senseless thoughts or by rituals.
3. Moderate Impairment: The above symptoms interfering with work in definite ways are, e.g. work is slowed down by frequent interference by any of the above mentioned, of recurrent meaningless thoughts, constant checking or rituals.
4. Marked Impairment: The above symptoms interfering with work to a marked degree, e.g., in spite of spending more time on work, going to work earlier and leaving later, the efficacy of work decreases considerably, the patient is worried about the slowness of his work or demoted.
5. Severe Impairment: Unable to work because of neurosis.

WORK ADJUSTMENT FOR HOUSEWIVES

1. Satisfactory Adjustment: Able to perform all household duties efficiently without additional help.
2. Mild Impairment: Symptoms interfering with household duties in minor ways, e.g., too frequent cleaning, checking and rechecking, no time is left for social activities.
3. Moderate Impairment: Symptoms interfering with household duties in definite ways, e.g., part of household duties is left unattended since obsessive cleanliness takes all her time.
4. Marked Impairment: Symptoms interfering with household duties to a marked degree, e.g., unable to perform most household tasks alone, e.g., endless washing of dishes, prevents her to do anything else.
5. Severe Impairment: Incapable of managing the household, another person takes responsibility for this and patient takes no part or only a very small part.

ADJUSTMENT FOR LEISURE ACITIVITIES (INCLUDING HOLIDAYS)

1. Satisfactory Adjustment: Able to enjoy leisure and leisure activities, not limited by neurotic difficulties.
2. Mild Impairment: Symptoms interfering with leisure activities in minor ways, e.g., some restriction of the places which the patient can visit, e.g., has to perform some rituals in certain public places, e.g., restuarants, in bathrooms.
3. Moderate Impairment: Symptoms interfering with leisure activities in definite ways, e.g., definite restriction of the places which the patient can visit for fear of being compelled to do her rituals, she rather avoids such places.
4. Marked Impairment: Symptoms interfering with leisure activities to a marked degree, e.g., able to visit only one or two places, for fear to be compelled to perform her rituals, for fear of contamination, etc.
5. Severe Impairment: Has given up all leisure activities including holidays because of neurotic symptoms.

SEXUAL ADJUSTMENT

1. Satisfactory Adjustment: No interference with sexual adjustment from neurotic symptoms, e.g., adequate performance in men, satisfaction usually or always in women, no deviant sexual practices, positive attitude towards sexual relations.
2. Mild Impairment: Neurotic symptoms interfering with sexual adjustment in minor ways, e.g., performance variable in men, fairly often unsatisfying in women, no deviant sexual practices or fantasies, variable attitude towards sexual relations (often no inclination, or occasional active dislike).
3. Moderate Impairment: Symptoms interfering with sexual adjustment in definite ways, e.g., performance often inadequate in men, often unsatisfying in women, or very occasional deviant practices, or occasional fantasies of these, or attitude to sexual relations usually indifferent or negative.
4. Marked Impairment: Symptoms interfering with sexual adjustment to a marked degree, e.g., performance rarely adequate in men, or rarely satisfying in women, or frequent deviant sexual practices or fairly frequent fantasies of these, or attitude to sexual relations one of active dislike.
5. Severe Impairment: Heterosexual practices abandoned, or if present, accompanied by frequent deviant practices.



SOCIAL ADJUSTMENT (FAMILY)

1. Satisfactory Adjustment: No evidence of disturbance in relations with family, usual feelings to other family members are positive.
2. Mild Impairment: Usual feelings to family members are positive, but occasional minor nagging, quarrels or friction or occasional expressed hostility. Minor worry about family disapproval of rituals of obsessive orderliness.
3. Moderate Impairment: On the whole, feelings towards other family members are positive, but frequent nagging or quarrels or friction and hostilities are expressed by the patient. Strong disapproval of ritual is expressed by the family.
4. Marked Impairment: Feelings towards other family members are usually negative, but patient is still living with the family. Frequent quarrels and friction, with much hostility expressed by the patient. Family continuously upset by patient's rituals and threatens patient.
5. Severe Impairment: The patient is unable to live with his family because of the direct consequences of his neurotic symptoms.

SOCIAL ADJUSTMENT (OTHER THAN FAMILY)

1. Satisfactory Adjustment: No apparent disturbances in the patient's relationships with people outside his immediate family.
2. Mild Impairment: Able to make and maintain smooth and satisfactory relationships with only mild and occasional difficulties.
3. Moderate Impairment: Able to make and maintain adequate relations with people most of the time, but neurotic difficulties prevent normal relationships with a few specific people.
4. Marked Impairment: Able to make and maintain only a few adequate relationships because of neurotic symptoms.
5. Severe Impairment: Unable to make or maintain any adequate relationships.

EXPRESSED SELF-SATISFACTION

1. Satisfactory Adjustment: The patient appears completely satisfied with his life situation, social effectiveness and personality.
2. Mild Impairment: On the whole, the patient appears to be satisfied with his adjustment, but occasionally expresses dissatisfaction about minor aspects of his life situation, social effectiveness or personality.
3. Moderate Impairment: The patient expresses frequent dissatisfaction about minor aspects of his situation, social effectiveness or personality, or occasionally expresses dissatisfaction about major aspects of these.
4. Marked Impairment: The patient expresses frequent dissatisfaction about major aspects of his life situation, personality or social effectiveness.
5. Severe Impairment: The patient appears totally dissatisfied with his life situation, social effectiveness and personality.

**GENERAL INFORMATION SHEET**  
(Please answer all questions)

Today's Date \_\_\_\_\_

1. Your name: \_\_\_\_\_  
                                     LAST                                    FIRST                                    MIDDLE
2. Your address: \_\_\_\_\_
3. Your Phone number: (Home) \_\_\_\_\_ (Work) \_\_\_\_\_
4. Your date of birth: \_\_\_\_\_
5. If married, how many children do you have?   BOYS \_\_\_\_\_ GIRLS \_\_\_\_\_
6. If married, for how long: \_\_\_\_\_
7. Your present age? \_\_\_\_\_
8. Please indicate: **HOW MANY YEARS ATTENDED**
- |                         |                 |                     |
|-------------------------|-----------------|---------------------|
| Elementary school _____ | Completed _____ | Not completed _____ |
| High school _____       | Completed _____ | Not completed _____ |
| University _____        | Completed _____ | Not completed _____ |
| Trade school _____      | Completed _____ | Not completed _____ |
| Other: _____            |                 |                     |
9. What is your occupation? \_\_\_\_\_

10. Were you born in Canada? YES \_\_\_\_\_ NO \_\_\_\_\_
11. If not, in what country were you born? \_\_\_\_\_
12. If you follow a religion, please indicate which one?
- |                     |                         |
|---------------------|-------------------------|
| JUDAISM _____       | ROMAN CATHOLICISM _____ |
| PROTESTANTISM _____ | OTHER _____             |
13. How many brothers do you have \_\_\_\_\_
14. How many sisters do you have \_\_\_\_\_
15. In which family position were you born:

1st. \_\_\_\_\_ 2nd \_\_\_\_\_ 3rd. \_\_\_\_\_ 4th. \_\_\_\_\_ 5th. \_\_\_\_\_

Other \_\_\_\_\_

16. If your mother or father is deceased, please indicate:

FATHER: _____	NO _____	DATE: _____	Your age at time _____
MOTHER: _____	NO _____	DATE: _____	Your age at time _____

**Appendix E**

**Analysis of variance tables**

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Table E1

ANALYSIS OF VARIANCE

Psychiatrist's rating of ruminations of obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	176.7935	176.7935	147.993	0.0000
WITHIN GROUPS	271	323.7396	1.1946		
TOTAL	272	500.5330			

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Table E2

ANALYSIS OF VARIANCE

Psychiatrist's rating of rituals of obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	84.5540	84.5540	84.499	0.0000
WITHIN GROUPS	172	172.1117	1.0006		
TOTAL	173	256.6655			

Table E3 •

ANALYSIS OF VARIANCE

Psychiatrist's rating of horrific temptations of obsessive  
and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	15.4608	15.4608	12.266	0.0006
WITHIN GROUPS	175	220.5721	1.2604		
TOTAL	176	236.0329			



Table E4

ANALYSIS OF VARIANCE

Psychiatrist's rating of pervading doubt of obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	79.0917	79.0917	53.495	0.0000
WITHIN GROUPS	167	246.9072	1.4785		
TOTAL	168	325.9988			

Table E5

ANALYSIS OF VARIANCE

Self rating of ruminations by obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	33.7512	33.7512	20.550	0.0000
WITHIN GROUPS	227	372.8239	1.6424		
TOTAL	228	406.5750			

Table E6

ANALYSIS OF VARIANCE

Self rating of rituals by obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	23.2062	23.2062	8.643	0.0038
WITHIN GROUPS	139	373.2138	2.6850		
TOTAL	140	396.4199			

Table E7

ANALYSIS OF VARIANCE

Self rating of horrific temptations by obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	0.0273	0.0273	0.016	0.8984
WITHIN GROUPS	133	221.8532	1.6681		
TOTAL	134	221.8805			

Table E8

ANALYSIS OF VARIANCE

Self rating of compulsions by obsessive and phobic patients

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SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	122.1222	<del>122.1222</del>	96.082	0.0000
WITHIN GROUPS	234	297.4185	1.2710		
TOTAL	235	419.5405			

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Table E9

ANALYSIS OF VARIANCE

Leyton Obsessional Inventory Symptomatology score  
of obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	988.5229	988.5227	10.558	0.0015
WITHIN GROUPS	116	10861.2612	93.6316		
TOTAL	117	11849.7813			

Table E10

ANALYSIS OF VARIANCE

Leyton Obsessional Inventory Resistance score  
of obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	4503.3782	4503.3750	14.227	0.0003
WITHIN GROUPS	110	34818.8909	316.5352		
TOTAL	111	39322.2656			

Table E11

ANALYSIS OF VARIANCE

Leyton Obsessional Inventory Interference score  
of obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	6802.3709	6802.3672	16.049	0.0001
WITHIN GROUPS	110	46624.2629	423.8569		
TOTAL	111	53426.6328			



Table E12

ANALYSIS OF VARIANCE

Psychiatrist's rating of ruminations of obsessive, agoraphobic  
and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	181.7957	90.8978	76.999	0.0000
WITHIN GROUPS	270	318.7377	1.1805		
TOTAL	272	500.5332			

Table E13

## ANALYSIS OF VARIANCE

Psychiatrist's rating of rituals of obsessive, agoraphobic  
and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	85.6099	42.8049	42.791	0.0000
WITHIN GROUPS	171	171.0558	1.0003		
TOTAL	173	256.6655			

Table E14

## ANALYSIS OF VARIANCE

Psychiatrist's rating of horrific temptations of obsessive,  
agoraphobic and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	19.1358	9.5679	7.676	0.0006
WITHIN GROUPS	174	216.8972	1.2465		
TOTAL	176	236.0330			

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Table E15

## ANALYSIS OF VARIANCE

Psychiatrist's rating of pervading doubt of obsessive,  
agoraphobic and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	80.7054	40.3527	27.308	0.0000
WITHIN GROUPS	166	245.2936	1.4777		
TOTAL	168	325.9988			

Table E16

ANALYSIS OF VARIANCE

Self rating of ruminations by obsessive, agoraphobic  
and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	45.3325	22.6662	14.180	0.0000
WITHIN GROUPS	226	361.2427	1.5984		
TOTAL	228	406.5752			

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Table E17

ANALYSIS OF VARIANCE

Self rating of rituals by obsessive, agoraphobic and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	24.6694	12.3347	4.579	0.0119
WITHIN GROUPS	138	371.7506	2.6938		
TOTAL	140	396.4199			

Table E18

ANALYSIS OF VARIANCE

Self rating of horrific temptations by obsessive, agoraphobic  
and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	2.7887	1.3943	0.840	0.4340
WITHIN GROUPS	132	219.0919	1.6598		
TOTAL	134	221.8805			

Table E19

ANALYSIS OF VARIANCE

Self rating of compulsions by obsessive, agoraphobic  
and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	122.2178	61.1089	47.889	0.0000
WITHIN GROUPS	233	297.3231	1.2761		
TOTAL	235	419.5408			



Table E20

ANALYSIS OF VARIANCE

Leyton Obsessional Inventory Symptomatology score of obsessive,  
agoraphobic and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	1034.7225	517.3611	5.501	0.0052
WITHIN GROUPS	115	10815.0596	94.0440		
TOTAL	117	11849.7813			

Table E21

ANALYSIS OF VARIANCE

Leyton Obsessional Inventory Resistance score of obsessive,  
agoraphobic and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	5033.0953	2516.5476	8.000	0.0006
WITHIN GROUPS	109	34289.1743	314.5793		
TOTAL	111	39322.2695			

Table E22

ANALYSIS OF VARIANCE

Leyton Obsessional Inventory Interference score of obsessive,  
agoraphobic and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	7052.2657	3526.1328	8.288	0.0004
WITHIN GROUPS	109	46374.3672	425.4529		
TOTAL	111	53426.6328			

Table E23

ANALYSIS OF VARIANCE

Psychiatrist's rating of agoraphobia in obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	60.4482	60.4482	31.989	0.0000
WITHIN GROUPS	165	311.7903	1.8896		
TOTAL	166	372.2383			

Table E24

ANALYSIS OF VARIANCE

Psychiatrist's rating of social phobia in obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	1.2410	1.2410	0.755	0.3863
WITHIN GROUPS	147	241.5636	1.6433		
TOTAL	148	242.8045			

Table E25

ANALYSIS OF VARIANCE

Psychiatrist's rating of specific phobia in obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	40.1232	40.1232	19.421	0.0000
WITHIN GROUPS	149	307.8229	2.0659		
TOTAL	150	347.9460			

Table E26

ANALYSIS OF VARIANCE

Psychiatrist's rating of obsessive phobia in obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	57.7560	57.7560	28.325	0.0000
WITHIN GROUPS	142	289.5488	2.0391		
TOTAL	143	347.3047			

Table E27

## ANALYSIS OF VARIANCE

Psychiatrist's rating of patient-designated main phobia  
in obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	4.7077	4.7077	6.599	0.0111
WITHIN GROUPS	163	116.2854	0.7134		
TOTAL	164	120.9931			

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Table E28

## ANALYSIS OF VARIANCE

Self rating of patient-designated main phobia  
by obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	0.7287	0.7287	0.709	0.4004
WITHIN GROUPS	259	266.0279	1.0271		
TOTAL	260	266.7566			

Table E29

ANALYSIS OF VARIANCE

Fear Survey Schedule III total score (72 items)  
of obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	221.6502	221.6502	0.081	0.7756
WITHIN GROUPS	316	860769.2500	2723.9531		
TOTAL	317	860990.8750			

Table E30

ANALYSIS OF VARIANCE

Mean score on fears of death and tissue damage (18 FSS-III items),  
of obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	0.0041	0.0041	0.006	0.9361
WITHIN GROUPS	315	201.0659	0.6383		
TOTAL	316	201.0700			

Table E31

## ANALYSIS OF VARIANCE

Mean score on social fears (17 FSS-III items)  
of obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	0.5639	0.5639	0.831	0.3627
WITHIN GROUPS	315	213.7421	0.6785		
TOTAL	316	214.3060			

Table E32

ANALYSIS OF VARIANCE

Mean score on other classical fears (16 FSS-III items)  
of obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	3.8796	3.8796	5.210	0.0231
WITHIN GROUPS	315	234.5627	0.7446		
TOTAL	316	238.4423			

Table E33

ANALYSIS OF VARIANCE

Mean score on miscellaneous fears (8 FSS-III items)  
of obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	5.0592	5.0592	7.130	0.0080
WITHIN GROUPS	315	223.5258	0.7096		
TOTAL	316	228.5850			

Table E34

ANALYSIS OF VARIANCE

Mean score on animal fears (9 FSS-III items)  
of obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	2.5327	2.5327	3.642	0.0572
WITHIN GROUPS	315	219.0576	0.6954		
TOTAL	316	221.5903			

Table E35

## ANALYSIS OF VARIANCE

Mean score on noise fears (4 FSS-III items)  
of obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	0.8354	0.8354	1.095	0.2961
WITHIN GROUPS	315	240.2401	0.7627		
TOTAL	316	241.0754			

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Table E36

ANALYSIS OF VARIANCE

Total score on fears of "contamination" and "hurting others"  
(FSS-III items #26,41,42,47) of obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	50.8627	50.8627	3.214	0.0740
WITHIN GROUPS	314	4969.8618	15.8276		
TOTAL	315	5020.7227			

Table E37

ANALYSIS OF VARIANCE

Psychiatrist's rating of agoraphobia in obsessive,  
agoraphobic and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	214.9075	107.4538	112.008	0.0
WITHIN GROUPS	164	157.3313	0.9593		
TOTAL	166	372.2388			

Table E38

## ANALYSIS OF VARIANCE

Psychiatrist's rating of social phobia in obsessive,  
agoraphobic and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	5.0580	2.5290	1.553	0.2151
WITHIN GROUPS	146	237.7465	1.6284		
TOTAL	148	242.8045			

Table E39

ANALYSIS OF VARIANCE

Psychiatrist's rating of specific phobia in obsessive,  
agoraphobic and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	68.8395	34.4197	18.252	0.0000
WITHIN GROUPS	148	279.1067	1.8859		
TOTAL	150	347.9460			

Table E40

ANALYSIS OF VARIANCE

Psychiatrist's rating of obsessive phobia in obsessive,  
agoraphobic and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	57.7592	28.8796	14.063	0.0000
WITHIN GROUPS	141	289.5456	2.0535		
TOTAL	143	347.3047			

Table E41

ANALYSIS OF VARIANCE

Psychiatrist's rating of patient-designated main phobia in  
obsessive, agoraphobic and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	4.8203	2.4101	3.361	0.0371
WITHIN GROUPS	162	116.1729	0.7171		
TOTAL	164	120.9931			

Table E42

ANALYSIS OF VARIANCE

Self rating of patient-designated main phobia by  
obsessive, agoraphobic and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	1.2555	0.6278	0.610	0.5441
WITHIN GROUPS	258	265.5012	1.0291		
TOTAL	260	266.7566			

Table E43

ANALYSIS OF VARIANCE

Fear Survey Schedule III total score (72 items) of obsessive,  
agoraphobic and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	62775.6455	31387.8203	12.387	0.0000
WITHIN GROUPS	315	798216.2500	2534.0198		
TOTAL	317	860991.8750			



Table E44

ANALYSIS OF VARIANCE

Mean score on fears of death and tissue damage (18 FSS-III items)  
of obsessive, agoraphobic and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	11.7662	5.8831	9.758	0.0001
WITHIN GROUPS	314	189.3035	0.6029		
TOTAL	316	201.0697			

Table E45

ANALYSIS OF VARIANCE

Mean score on social fears (17 FSS-III items) of obsessive,  
agoraphobic and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	5.4155	2.7078	4.070	0.0180
WITHIN GROUPS	314	208.8901	0.6653		
TOTAL	316	214.3056			

Table E46

## ANALYSIS OF VARIANCE

Mean score on other classical fears (16 FSS-III items) of obsessive,  
agoraphobic and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	39.4067	19.7034	31.084	0.0000
WITHIN GROUPS	314	199.0359	0.6339		
TOTAL	316	238.4426			

Table E47

ANALYSIS OF VARIANCE

Mean score on miscellaneous fears (8 FSS-III items) of obsessive,  
agoraphobic and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	15.0565	7.5283	11.071	0.0000
WITHIN GROUPS	314	213.5284	0.6800		
TOTAL	316	228.5849			

Table E48

ANALYSIS OF VARIANCE

Mean score on animal fears (9 FSS-III items) of obsessive,  
agoraphobic and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	3.4082	1.7041	2.452	0.0877
WITHIN GROUPS	314	218.1821	0.6948		
TOTAL	316	221.5903			

Table E49

ANALYSIS OF VARIANCE

Mean score on noise fears (4 FSS-III items) of obsessive,  
agoraphobic and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	5.2502	2.6251	3.495	0.0315
WITHIN GROUPS	314	235.8255	0.7510		
TOTAL	316	241.0757			

Table E50

ANALYSIS OF VARIANCE

Mean score on fears of "contamination" and "hurting others"  
(FSS-III items #26,41,42,47) of obsessive, agoraphobic  
and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	257.1444	128.5722	8.448	0.0003
WITHIN GROUPS	313	4763.5820	15.2191		
TOTAL	315	5020.7227			

Table E51

ANALYSIS OF VARIANCE

Psychiatrist's rating of anxiety of obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	580.8410	580.8408	8.359	0.0042
WITHIN GROUPS	252	17511.3320	69.4894		
TOTAL	253	18092.1719			



Table E52

ANALYSIS OF VARIANCE

Self rating of "nervousness" by obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	18.1697	18.1697	18.651	0.0000
WITHIN GROUPS	271	264.0045	0.9742		
TOTAL	272	282.1741			

Table E53

ANALYSIS OF VARIANCE

Self rating of anxiety symptoms by obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	2.8576	2.8576	1.839	0.1762
WITHIN GROUPS	271	421.0817	1.5538		
TOTAL	272	423.9392			

Table E54

ANALYSIS OF VARIANCE

Anxiety Scale Questionnaire sten score of obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	29.5149	29.5149	5.034	0.0255
WITHIN GROUPS	318	1864.5024	5.8632		
TOTAL	319	1894.0171			

Table E55

ANALYSIS OF VARIANCE

Anxiety Scale Questionnaire overt anxiety score  
of obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	47.6431	47.6431	0.999	0.3182
WITHIN GROUPS	315	15016.4531	47.6713		
TOTAL	316	15064.0938			

Table E56

ANALYSIS OF VARIANCE

Anxiety Scale Questionnaire covert anxiety score  
of obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	348.1366	348.1365	6.036	0.0146
WITHIN GROUPS	315	18168.9375	57.6792		
TOTAL	316	18517.0703			

Table E57

ANALYSIS OF VARIANCE

Psychiatrist's rating of anxiety of obsessive, agoraphobic  
and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	1641.7418	820.8708	12.525	0.0000
WITHIN GROUPS	251	16450.5039	65.5399		
TOTAL	253	18092.2422			

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Table E58

ANALYSIS OF VARIANCE

Self rating of "nervousness" by obsessive, agoraphobic  
and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	23.0742	11.5371	12.022	0.0000
WITHIN GROUPS	270	259.1003	0.9596		
TOTAL	272	282.1743			

Table E59

ANALYSIS OF VARIANCE

Self rating of anxiety symptoms by obsessive, agoraphobic and  
other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	7.0149	3.5074	2.271	0.1051
WITHIN GROUPS	270	416.9246	1.5442		
TOTAL	272	423.9395			



Table E60

ANALYSIS OF VARIANCE

Anxiety Scale Questionnaire sten score of obsessive, agoraphobic  
and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	77.7915	38.8957	6.789	0.0013
WITHIN GROUPS	317	1816.2344	5.7294		
TOTAL	319	1894.0259			

Table E61

ANALYSIS OF VARIANCE

Anxiety Scale Questionnaire overt anxiety score of obsessive,  
agoraphobic and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	456.2522	228.1261	4.904	0.0080
WITHIN GROUPS	314	14607.9419	46.5221		
TOTAL	316	15064.1914			

Table E62

ANALYSIS OF VARIANCE

Anxiety Scale Questionnaire covert anxiety score of obsessive,  
agoraphobic and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	1225.2823	612.6411	11.125	0.0000
WITHIN GROUPS	314	17291.8970	55.0697		
TOTAL	316	18517.1758			

Table E63

ANALYSIS OF VARIANCE

Psychiatrist's rating of depression of obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	412.6161	412.6160	11.248	0.0009
WITHIN GROUPS	254	9317.9219	36.6847		
TOTAL	255	9730.5352			

Table E64

ANALYSIS OF VARIANCE

Self rating of depression by obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	10.9179	10.9179	6.977	0.0087
WITHIN GROUPS	269	420.9179	1.5647		
TOTAL	270	431.8357			

Table E65

ANALYSIS OF VARIANCE

Psychiatrist's rating of depression of obsessive, agoraphobic  
and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	527.4190	263.7095	7.250	0.0009
WITHIN GROUPS	253	9203.1331	36.3760		
TOTAL	255	9730.5508			

Table E66

ANALYSIS OF VARIANCE

Self rating of depression by obsessive, agoraphobic  
and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	18.5927	9.2963	6.029	0.0027
WITHIN GROUPS	268	413.2433	1.5420		
TOTAL	270	431.8359			

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Table E67

ANALYSIS OF VARIANCE

Self rating of social adjustment by obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	591.0629	591.0627	6.878	0.0093
WITHIN GROUPS	252	21655.5000	85.9345		
TOTAL	253	22246.5625			



Table E68

ANALYSIS OF VARIANCE

Self rating of social adjustment by obsessive, agoraphobic and  
other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	1645.3787	822.6892	10.023	0.0001
WITHIN GROUPS	251	20601.2993	82.0769		
TOTAL	253	22246.6758			

Table E69

ANALYSIS OF VARIANCE

Age of onset of disorder of obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	1.7121	1.7121	0.013	0.9079
WITHIN GROUPS	240	30668.4180	127.7851		
TOTAL	241	30670.1289			

Table E70

ANALYSIS OF VARIANCE

Age of first symptom of obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	647.2588	647.2585	5.164	0.0238
WITHIN GROUPS	282	35344.4063	125.3348		
TOTAL	283	35991.6641			

Table E71

ANALYSIS OF VARIANCE

Age of onset of disorder of obsessive, agoraphobic  
and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	1219.2044	609.6021	4.947	0.0078
WITHIN GROUPS	239	29451.0134	123.2260		
TOTAL	241	30670.2148			

Table E72

ANALYSIS OF VARIANCE

Age of first symptom of obsessive, agoraphobic and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	4554.1573	2277.0786	20.353	0.0000
WITHIN GROUPS	281	31437.6016	111.8776		
TOTAL	283	35991.7578			

Table E73

ANALYSIS OF VARIANCE

Delay in seeking help of obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB..
BETWEEN GROUPS	1	2310.7385	2310.7383	22.169	0.0000
WITHIN GROUPS	163	16990.3320	104.2352		
TOTAL	164	19301.0703			

Table E74

ANALYSIS OF VARIANCE

Delay in seeking help of obsessive, agoraphobic and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	4150.7258	2075.3628	22.191	0.0000
WITHIN GROUPS	162	15150.3632	93.5208		
TOTAL	164	19301.0859			

Table E75

ANALYSIS OF VARIANCE

Leyton Obsessional Inventory Trait score of obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	40.8587	40.8587	2.378	0.1257
WITHIN GROUPS	116	1992.7258	17.1787		
TOTAL	117	2033.5845			



Table E76

ANALYSIS OF VARIANCE

Leyton Obsessional Inventory Trait score of obsessive,  
agoraphobic and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	69.4600	34.7300	2.033	0.1356
WITHIN GROUPS	115	1964.1259	17.0793		
TOTAL	117	2033.5857			

Table E77

ANALYSIS OF VARIANCE

Maudsley Personality Inventory Neuroticism score  
of obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	2485.6069	2485.6069	24.188	0.0000
WITHIN GROUPS	204	20963.0117	102.7599		
TOTAL	205	23448.6172			

Table E78

## ANALYSIS OF VARIANCE

Maudsley Personality Inventory Extraversion score  
of obsessive and phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	1	614.1294	614.1294	6.308	0.0128
WITHIN GROUPS	204	19861.5039	97.3603		
TOTAL	205	20475.6328			

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Table E79

ANALYSIS OF VARIANCE

Maudsley Personality Inventory Neuroticism score of  
obsessive, agoraphobic and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	3277.2170	1638.6084	16.490	0.0000
WITHIN GROUPS	203	20171.4695	99.3668		
TOTAL	205	23448.6836			

Table E80

ANALYSIS OF VARIANCE

Maudsley Personality Inventory Extraversion score of  
obsessive, agoraphobic and other phobic patients

SOURCE	D.F.	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB.
BETWEEN GROUPS	2	762.0935	381.0466	3.924	0.0213
WITHIN GROUPS	203	19713.6069	97.1114		
TOTAL	205	20475.6992			

**Appendix F**

**Self-described main phobias of obsessive  
and phobic patients**

Self-described main phobias of obsessive patients

"Urinating in public (washrooms)"

"Death"

"Hitting someone with my car"

"Writing in public"

"None"

"Sight of glass"

"Harming my family"

"Feces"

"Harming others"

"Urinating in public washrooms"

"Loneliness"

"Being unreal"

"Travelling far from home"

"My face being small"

"Stuttering" (fear of)

"Fear of being the only person in the world"

"Having made mistakes in my past employment"

"Homosexual attack" (stems from the obsession that he looks like a homosexual)

"Falling when walking"

"Leaving my home alone"

"Fear of being away from my husband"

"Going on trips"

"Leaving a stop street or red light; perfectionistic people; driving at speed of 40 mph on highway or 20 mph in city; the saying, 'Time is money'"

"Heart attack"

"Undressing in public"

"Brewer's yeast & fuzz on my nose"

"Losing something (throw thing away)"

"A social advance with respect to a peer female"

"Darkness (also imaginary things)"

"Coughing"

"Left-sidedness"

"Meeting people"

"My nose"

"Sidewalks" (has to check sidewalks)

"Being at a party alone"

"Driving in a car"

"Losing things"

"Choking my son"

"An accident"

"Dirt"

"Social encounter possibly leading to sexual encounter"

"Going outside"

"When I gave birth to my last child it was created inside me the fear that my child was born blind. This fear still exists in me sometime so strange that I am ready to cry. Sometimes I lay down crying. I don't fear only for myself but for other people. I don't dare to look at myself in the mirror because I think that my eyes have changed. The people is not the same as before."

"Driving"

"Dead people"

"Seeing my face in mirror"

"Children"

"The 'Devil'"

"Injury & death"



"Other people hearing me swallow"  
"Seminal fluid"  
"Cleaning stove, 'Vanish', etc."  
"Going to the hairdresser"  
"Damnation"  
"Being alone"  
"Dying" (has a horrific temptation to jump under Metro)  
"Driving my car" (Ruminates when driving the car that he may have hit somebody; goes back and checks)  
"Going on a bridge"  
"Inability to breathe" (when obsessive thought, about not being able to breathe, occurs)  
"Of becoming mentally ill"  
"To drive a car alone"  
"Dirt"  
"Failure"  
"People (contact)"  
"Nosebleeds"  
"Driving in car"  
"Death"  
"None"  
"Dead people"  
"Funeral home"  
"Contamination by dirt or germs"  
"Spreading germs; causing harm to others by my actions or lack of action"  
"Being in a crowded place in the audience"  
"Contact with cancer patients - direct or indirect"  
"Crowds"

"Being at a party"

"Germs in the basement"

"Death"

"Noise"

"Choking (dying)"

"Animals"

"What if I dropped something out of my pocket?"

"Fear of snakes and other crawling animals"

"I fear that I will accidently hurt someone, especially someone who is already fragile (a very old person or a young person)"

"Being judged and/or criticised"

"Unsanitary things"

"Dysmorphobia"

"Fear of being unable to urinate in washrooms other than my own"

"Invalid, blind or crippled people" (must wash her hands if she thinks about this)

"Contamination" (washes her hands up to elbow if touched or if she touches anything)

"Elevators"

"No phobia"

"Death" (Ruminates about death of parents & husband has to check if mother is still alive)

"Try to do everything the right way"

"Crowded department store"

"Lint & dust" (Ruminates that lint may have got on his nose or hands, has to wipe off nose several times ritualistically)

"Not succeeding"

"Dymorphophobia" (Ruminates about his 'swollen lips'; gazes in the mirror for hours)

"My testicles will fall off"

"Germs, dirt" (Handwasher)

"Harming other people" (Horrific temptation to hit people)

"That I look ugly" (Pervasive doubt, ruminations about appearance, ritualistic mirror gazing & hair combing)

"Germs; fear of getting disease and transmitting it to others, especially syphilis because of seriousness and complexity of diagnosis and treatment, i.e., blood test positive only after a certain period of time" (Rumination about catching infection, disease, compulsive handwashing)

"Violence"

"Going into unreality"

"Stairs"

"Meeting new people"

"Sugar" (must wash her hands if she touches anything that may contain sugar)

"Dying" (Rumination)

"Shaking hands" (contamination)

"Death"

"Fear of making an effort of any kind"

"Fear of writing reports"

"Fear of the Quebec Situation (fear of losing my job because I'm not bilingual)"

"When someone wants to beat me up"

"Speaking in public"

"Taking my wig off in front of anyone"

"Dead bodies (animals or people)"

"Being alone with one person in case I start imagining after I have left them that I've harmed them"

"Something bad happening to my son"

"Coughing by other person"

"Fear of dying"

"Meeting people"

"Riding in a car"

"No phobia"

"Agoraphobia"

"Being alone"

"No fear"

Self-described main phobias of phobic patients

"My own death"

"Bees"

"Being alone at home"

"Developing an incurable disease & suffering"

"Social occasions"

"Going into an unfamiliar barbershop"

"Heights"

"Airplane"

"Airplane"

"Airplane"

"Driving car alone"

"Crowds"

"Barbershops"

"Eating in public places"

"Receiving injections"

"Eating in a crowded restaurant"

"Eating with people"

"Speaking in public"

"Death"

"Going to a party alone"

"Being with people"

"Crowded buses"

"Being alone in a car 30 miles away from the city"

"Sexual contact"

"Being in the office on the 19th floor"

"Being in a crowded enclosed place"

"Crowds of people"

"Vic Tanney's (spa)"

"Being alone"

"Being alone in a small room"

"Stage fright"

"Airplane"

"Enclosed places"

"Snakes"

"Cats"

"Eating with people"

"When father & mother die & when I die"

"Les douleurs" (the pains)

"Being alone in the house"

"Attractive man"

"Spiders (on or near me or above)"

"Dogs"

"Cats"

"Driving in the car"

"Dogs"

"Snake"

"Cats"

"Ghosts of dead people"

"Crowds"

"Being in a small locked room"

"Any association with people - friends, family or strangers"

"Enclosed places"

"Wetting pants (involuntary urination)"

"Heights"

"Crowds"

"Restaurants"

"Dogs"

"Making telephone calls"

"Thunder & lightning storms"

"Losing control of my bowels in public"

"Dogs"

"Dogs, cats"

"Dolls"

"Cancer"

"Spider"

"Enclosed places"

Insects"

"Fire"

"Dogs"

"Being watched working"

"Urinating in public washrooms"

"To spend the night alone"

"Driving an auto"

"Speaking in public"

"Being evaluated for public performance"

"When I meet a new acquaintance and he or she gets close to me"

"Writing in front of people"

"Being watched working by an authority"

"Public speaking - speaking to a group"

"Being in a new social situation"

"Breast cancer"

"Blushing"

"Snakes"

"Bridges"

"To see an epileptic seizure"

"Snakes"

"Frogs & toads"

"Bee in the kitchen"

"Being at a stag or a party and talking to 'superior' people"

"Serving customers"

"Driving a car"

"Dogs"

"Being addressed in a group"

"Drinking coffee in public (hands tremble)"

"Fatal disease"

"To give a presentation on one of my clients"

"Receiving an injection"

"Being sexually assaulted by a man on the street"

"Seated at a dinner party"

"Attendance at speech or concert - formal - doors closed"

"Public speaking (more than 5 people)"

"Airplane"

"New York City"

"Crowded closed place alone"

"Snakes"

"Dogs"

"Meeting new people"

"Crowds"

"Being sick to stomach"

"Speak in front of an audience"

"Airplane"

"Going to work"

"Afraid that I will wet my pants"

"Spiders"

"Illness"

"Going out alone" \*

"Fear of losing my mind" \*

"Going out alone" \*

"Crowded place" \*

"Going on the street alone" \*

"Going out" \*

"Being alone" \*

"Being alone" \*

"Fear of dying" \*

"Fear of being alone in an emergency, because of my weakness" \*

"Leave the house" \*

"Crowded places" \*

"Crowds" \*



"Driving car alone on long trips" \*

"The fear of driving around alone in my car from Point A to Point B (street fear & fear of dying)" \*

"Riding a bus" \*

"Fear of being alone" \*

"Crowded stores" \*

"Being in daughter's house alone" \*

"Being in crowded places" \*

"Leaving my home alone" \*

"Going out alone" \*

"Going on a bus alone" \*

"Leaving home alone" \*

"To fall sick and no one will be around at this time" \*

"Going out alone" \*

"agoraphobique, sortir seule - entrer dans une foule" (agoraphobic, to go out alone - to go into a crowd) \*

"Metro (subway)" \*

"Agoraphobia" \*

"Not knowing where my parents are" \*

"Being with strange people" \*

"Crowds" \*

"Going to a party" \*

"Shopping" \*

"Being left without my car" \*

"Death" \*

"Being alone at home" \*

"Fear of travel and going into unknown situations" \*

"Agoraphobia" \*

"Fear of writing while being watched" \*

"Taking elevators; going to Mass; going to a meeting; going shopping; going for lunch (cafeteria, restaurant); being confined to a specific place; being forced to do something; when only given a certain time to perform a special work)" \*

"Etre tout seule" (To be all alone) \*

"Alone in a department store" \*

"Going to a department store alone" \*

"Leaving home alone" \*

"Crowds" \*

"Going out alone" \*

"Going out alone" \*

"Cross the street" \*

"Going out alone" \*

"Going out" \*

"Walking alone outside" \*

"Going outside alone" \*

"Going on subway alone" \*

"Going in crowded places" \*

"Being in a department store with husband" \*

"Crowds" \*

"Going out alone" \*

"Buses and Metro" \*

\* Agoraphobic patient

'of those obsessive, agoraphobic and other phobic patients for whom it constituted a precipitating factor')>Appendix G

Descriptions of "other crisis" in the lives of those obsessive, agoraphobic and other phobic patients for whom it constituted a precipitating factor, as noted by psychiatrist in the Psychiatric Questionnaire (4e "Circumstances of onset of present illness: known cause")

"Other crisis" precipitating onset in obsessive patients

Sight of dead cat.

Ingestion of morning glory seeds.

Discharged from seminary at 13 because he was the only male child.

Bad LSD trip.

Husband was away for whole week.

Was driving on the bridge; suddenly a jam developed; had an attack of anxiety.

Broke off with girlfriend.

Had a bad (acid) trip.

~~Patient was on a weight-reducing diet. Started to panic on the street.~~

Nosebleed.

Brother had a nervous breakdown.

Neighbour was dying from cancer, could not refuse to talk to her. She came close to her face. Feared cancer since her father died of cancer 13 years earlier (she was 33).

Went to live in Toronto; felt lonely.

Immigration problems, parents were persecuted in Uganda.

Boyfriend did not want to marry her.

Move to Los Angeles; was not accepted; was different in dress, etc. Sudden change in school system, life style.

When she was six she had chicken pox and could not resist picking at her face. This began her ritualistic face picking.

When she was a nurse in the OR on one occasion when she was getting ready for surgery one of the residents pointed out that the boy who required surgery had had positive liver tests. Then she thought that hepatitis is very frequently transmitted by contaminated needles and inadvertently her hand or a cut on her hand may have been infected through the needle.

Birth of his little sister.

Mother had a hysterectomy; father had a strangulated hernia; sister had an appendectomy; brother was hospitalized.

Broken a love relationship.

Had a urethral operation; had seizure beforehand.

Parents moved (with him) to Montreal.

Left Hungary and came to Vancouver

"Other crisis" precipitating onset in agoraphobic patients

Loss of friend returning to England.

Found out about her true origins: grandmother adopted her; a "sister" was her real mother. Father unknown

Was in love with somebody and was rejected.

Father was paralyzed after a stroke.

Witnessed the aftermath of a fatal motorcycle accident.

Son has M.B.D.

"Other crisis" precipitating onset in other phobic patients

Blackmailed by female employee with whom he had had an affair.

Boyfriend went away and patient felt he didn't like her anymore.

Marriage? Married in April; became sick in June. Felt insecure alone at home, husband was working.

Mother had breast removed; older son had pneumonia.

Parents house burned down; saw her stepfather badly burned in hospital.

Masturbation guilt. Parents were very religious; strongly prohibitive. Masturbated with other children.

Saw another girl at school have an epileptic seizure; was terrified.

Mother was hospitalized with schizophrenia; children were moved to "Children's Aid".

Husband had serious heart attack.

**Appendix H**

**Circumstances of exacerbation classified  
as "Other crisis" or "Other", as noted  
by the psychiatrist in the Psychiatric  
Questionnaire (5d "Exacerbation connected with:")**

Circumstances of exacerbation classified as "Other crisis" or "Other" in obsessive patients

Car accident.

When she started new drug.

Moving out of house; being responsible for herself or baby.

"Again new decision appeared: to write another book; at age 19 to decide to go to university, at age 24 in army to decide what division of army to choose.

Hospitalization.

Changes in medication.

Heartbroken over love affairs.

Dirt.

Circumstances of exacerbation classified as "Other crisis" or "Other" in agoraphobic patients

Some types of pills.

Lost her lover.

Had an argument with a female companion.

Moving into new house at age 30.

Friend who looked after her left for new job.

Stopped taking "the pill".

When her psychiatrist became neurotic.

Frustration, failure in her profession (writing).

Becoming overtired.

Patient passed out on the street and after wouldn't go out alone.

Staying in a faraway country home of a friend, far from doctors, hospitals.

Sitting in the church and had a horrific temptation.

Circumstances of exacerbation classified as "Other crisis" or "Other" in other phobic patients



Reading news items about death.

Was cheated in a deal by her own family.

Being sent alone to a construction site and staying alone in a motel.

Social events.

Bankruptcy.

Patient went on holidays - away from home.

Taking french lessons (which he hates) in the building where he was phobic 7 years ago.

He was sentenced to 3 months in Bordeaux jail; was alone in the prison cell. Had one little window on the door.

Trip to Lake Erie with 2 other couples - friends of her & husband.

Bumpy flights.

Starting to work after a motorcar accident from which she had convalesced for a year.

Fatigue, lack of sleep and eating.

Younsters older and less under her control.

Wife was sick.

Lost her lover?

Appendix I

Other characteristics of the premorbid personalities of the patients  
as noted by the psychiatrist in the Psychiatric Questionnaire  
in the Psychiatric Questionnaire

("Premorbid personality: Other characteristics", p.7, 3d)

"Other characteristics" of the premorbid personalities of obsessive patients

Few friends, though wanting to have.

Worried, achievement-oriented, ambitious, hard working (about age 12).

She says she was sparkling.

Depressed.

Hesitant. Tried to be proud.

Rather happy, immature, whimsical.

Very sensitive; had deep feeling, fighting his sensitivities at times.

Difficulty in expressing himself. Procrastinator.

Very outgoing; "I needed people".

Friendly, popular, very active.

Never depressed, optimistic, happy, sociable, lots of friends.

Hard driving, active, ambitious, restless, feeling of guilt if idle.

Sociable, outgoing.

Easy going, many friends, very ambitious, perfectionistic. Won prizes, scholarship.

Easy to get along with, "tried hard to get people to like me".

Easily bored, insecure, has only one friend.

Hysterical personality.

Concerned about good looks.

Social anxiety.

A worrier.

Very friendly, active, easy going.

Lonely.

Friendly, ambitious.

A loner.

Liked to control; feared dependence. Did not want to be like mother who was

very emotional.

Very hardheaded, impatient, irritable, distrustful.

Very dead.

Liked people, sports, was not worried or anxious.

Happy, jovial.

Scared of fights, overattachment to toys.

Self-centered, talked to himself, day dreaming, heard his own thoughts.

Not outgoing.

Friendly, gregarious, wanting to be liked, inadequate because of his physical disability.

~~Submissive, obstinate & morose.~~

Outgoing, good mixer.

Happy go lucky.

Passive-aggressive.

Moody, got along with people, sociable.

A little bit of a dreamer.

Nervous.

Friendly, on the giving side.

Self-conscious, dependent, obsessive.

Adventurous, temper tantrums, challenging parents, friendly.

Very good memory, cranky, demanding.

Friendly, extrovert, not capable to mate.

Outgoing, friendly.

Became a comedian, had stage fright, extrovert.

Artistically talented, sociable, extrovert.

Self-conscious.

Worried about her looks, intelligence; was belligerent; then she was frantic.

Friendly, happy (information is unreliable?).

Sensitive, fears rejection because of his skin.

Easy going, very determined, self disciplined, check a lot.

Athletic build, open face, sincere, pleasant, friendly.

Like to control, imaginative, many friends

Sensitive, kind, fairly honest.

Comical, quite demanding.

Rather sloppy, immature, whimsical.

Quiet, introverted.

On the quiet side, good sense of humour, easily embarrassed.

Bad temperered, irritable, frequently in a rage, friendly.

Speaks very fast, awkward, lonely, worried.

Unable to look some people in the eyes.

Very outgoing, many friends, responsible.

Jealous, not introverted.

Friendly but moody, tended to get depressed

Dissatisfied, unhappy, only a slave.

Friendly, religious.

Hostile, afraid of blushing, fearful.

Meticulous.

Aggressive & bossy.

Easy going; anxiety prone.

Liked to be praised; had some, but no close, friends.

Grandeur feeling.

Artistically talented, socially extroverted.

Obsessive, very systematic, orderly, meticulous, perfectionistic, also, deep inside, very angry, at times, hostile

"Other characteristics" of the premorbid personality of agoraphobic patients

Cheerfully singing ("Wake up at 5 am to sing with Nadia"). Called "Smiley" at work.

Many friends; liked entertainments, shows.

Quiet, shy.

Friendly, gay, many friends.

Sociable.

Lonely, felt unloved, but full with love; friendly but people thought she was snobbish.

Moderately dependent, hysterical personality.

Happy go lucky, healthy, friendly, easy to make friends.

Shy, dependent, obsessional person.

Extrovert.

Shy, quiet.

Very dependent, manipulative, demanding.

Always quiet. Had few friends and stuck to them. Socially outgoing.

Felt lonely - even in crowd - felt different - shy, self-conscious - did well at school. Affected by deprivation (maternal). Feelings of inferiority - conscientious. But free to wander.

Was always anxious, afraid of fights; if seeing aggression she became blue; almost fainted.

Nervous, "keyed up", cyclothymic.

Very active, friendly, loved to work.

Timid, shy, very quiet, not tough enough, afraid to talk in public.

Outgoing until 12-13 when became ill with a generalized infection ("lots of pus"). Thereafter, fearful & unsure.

Friendly, more extraverted.

Loved dancing, carried company but did not like company.

Obsessional & dependent woman. Some hysterical features as well.

She was always friendly.

Outgoing, duty bound, responsible, rigid.

Conscientious, hard working, parsimonious, obsessive.

Worrier, anxious, introvert, obsessive.

Outgoing, friendly, self-confident.

Friendly, worried, unassertive..

Dependent & moderately hysterical personality.

Happy, popular, many friends & social activities.

Friendly, not overtly anxious.

A recluse. Stayed on her own. Stuck with one girlfriend throughout her young life. Shy and reluctant to mix with crowds.

Introvert.

Vivacious, independent, popular. In an accident would become panicky.

Liked people, parties, dancing, a little bit anxious, used to perspire.

Sociable, ambitious, aggressive.

Sociable, outgoing, liked to dance.

Sociable, had many friends.

Quiet, nervous, no ambition.

Friendly, extroverted.

Quiet, dull, lonely.

Outgoing, friendly, responsible, easygoing.

Shy, timid, feeling inferior, afraid to make the first step.

Obsessive, high-strung, timid, withdrawn.

Mildly obsessional.

Tomboy. In trouble to get attention. Never too much fun; everything she did was an effort.

Schizoid and anxious.

Always anxious and isolated.

Anxious, fearful.

Shy, timid, afraid to meet people, perfectionistic.

Very passive, quiet, schizoid sort of person.

Nervous, high strung.

Prone to daydreaming; overrich imagination.

Markedly obsessive personality.



Other characteristics of the premorbid personality of other phobic patients

At times shy but pleasant intelligent young woman. Still rather unsure in social situations.

Has a temper, warm, popular, extravert.

Never without worries. Liked to mix with people. Easily upset.

Had a tendency to be fearful of women. Psychiatrist for 3 years. ECT X 6 one year ago.

Hesitant, timid.

Insecure, anxious, friendly.

Nervous unsure boy who couldn't compete.

"Brat", tomboy, outgoing, was told she would have to get married.

Vivacious, fond of entertainments, likes people, extraverted.

Patient is ambitious. Avoids fights & areas of conflict - verbal and physical. Needs approval and if not given, gets depressed. Very moody and temperamental. If depressed, approval alone will help. Feels compelled to do a perfect job in everything. Feels guilty when he doesn't succeed.

Somewhat dependent individual.

Quiet, "solitary", "not gay" - sad all the time.

Always withdrawn, quiet. Was not particularly timid, learned to ride a horse by herself.

Happy go lucky, lonesome, easily pleased, always on the go, perfectionistic.

Mildly hysterical.

Shy, obstinate & aggressive.

Was always exciteable, if invited to a party she could not sleep the previous day. Shy, liked dances, was vain, self-conscious.

Active & outgoing. Lots of friends.

A simple-minded, harmless, timid, childish man. Dislikes washing and shaving. Tires easily and likes to relax..

Anxious, tense person who always wanted to do well to please parents. Needs to see results of her work. Patient schedules her time always - dividing what must be done and pleasurable things. Has always feared being rejected and found inadequate.

Introvert.

Shy, anxious, responds in a friendly marriage.

Very dependent, puts emphasis on being a gentleman, controlling himself.

Submissive, shy, dominated by mother, obsessive concern about appearance.

Sociable, friendly.

Reasonably friendly, extravert.

Friendly, not popular, emotional, sensitive.

Was always a worrier (children, finances), loved meeting people; loved to go out.

Rebellious, irresponsible.

Obsessive-compulsive; some hysterical elements.

Extrovert, vivacious, high strung, ambitious, good sense of humour, likes people.

Emotional, highly strung, tense, serious, hard working.

Sociable, introvert, many friends.

Takes life too seriously; overanalytical; "embarrassed by my body; never accepted what I was".

Reserved, few friends, introvert.

Lazy, sincere, proudly, a worrier.

Competent; not as assertive as his friends.

Friendly, loyal, curious, persistent.

Impulsive, impatient, restless, friendly.

Outgoing, strong, independent, friendly, cheerful.

Lazy, opportunistic, open, outgoing, introspective.

Sweet looking girl.

Passive aggressive, honest, sincere, warm.

Quiet, intense, hard working, obedient, serious.

Easily led, otherwise stubborn. Can't fight, would stop in the middle of a fight, extremely self-conscious, very tolerant, sometimes ashamed.

Very quiet, insignificant, introvert.

Introvert, honest, sensitive, hard working, excellent student.

Shy, had friend, introvert.

Punctual, dependable, generous, friendly.

Cheerful, generous; under it lonely, angry & sad.

Moderately obsessional, a few hysterical traits.

Passive-aggressive personality.

Gregarious, probably slightly hypomanic.

Lacked security especially with women.

As being nervous, high strung, a good worrier; always found cause to worry.  
Responsible type.

Very dependent, anxious, with rapidly changing mood.

Morose; speaks little, looks aggressive.

Lack of self confidence; dependent on others.

Would like to be friendly, but fearful.

Was a friendly outgoing person. Brought up in parents' hotel.

Much too proper, perfectionistic, guilt-ridden. Liked people.

Very insecure, overly religious, oversensitive, introverted, but not unfriendly.

Friendly, outgoing.

Ambitious, high-driving person.

Emotional person, affectionate with boyfriend; has a temper and she can get angry at mother; easily led.

An extravert.

Child-like, very anxious, restless person.

Patient is a dependent person with some definite histrionic features.  
Decompensated obsessional traits.

Meticulous, orderly, systematic, perfectionistic.

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