OBSESSIVE NEUROSIS AND PSYCHOPATHY:

ASPECTS OF FUNCTION, ILLUMINATED THROUGH MEANINGS OF EMOTIONAL AND PERSONAL CONCEPTS

by

I. M. Marks
M.B., Ch.B., D.P.M.

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ABSTRACT

The relationship was explored between abnormal behaviour and meanings of concepts in psychiatric patients. A semantic differential technique was used to measure meanings of emotional and personal concepts in psychiatric patients. Clinical studies suggested patients' scores on the semantic differential reflected clinically meaningful variables. A booklet containing one control and eighteen clinically important personal and emotional concepts, rated on eleven bipolar adjectival scales, was administered in standard fashion to three behaviourally contrasting groups of patients - twenty obsessive-compulsives, twenty aggressive psychopaths, and thirty controls. All patients were selected by behavioural criteria, and groups were matched for age, sex, social class, intelligence, and education. Six factor analyses of scales showed all groups to use a general evaluative factor as the dominant dimension of semantic judgment. Controls and obsessives also split off an important subsidiary evaluative (risk) factor. Evaluative judgments were the most stable in all groups on re-test over one week and seven months. Comparable results were obtained from analysis using semantic distances between profiles, and analysis of component factor scores. A control concept showed no difference between groups or sexes. On three personal concepts, controls had good self and parental images, obsessives had disturbed self but good parental images, and psychopaths had both disturbed self and parental images. Fifteen emotional concepts yielded patterns of mildly increased fear of anger-hostility concepts in psychopaths, and anxiety concepts in both obsessives and psychopaths. Psychiatrically disordered females disliked sexual function, and psychopathic females showed dislike of all concepts of affection. Results supported clinical views of psychopaths in psychiatric institutions having guilt or conscience. Clinical views not supported were those of obsessives using their symptoms to defend against aggression, and psychopaths having no conscience. A high correlation was found on evaluation between anger-hostility and fear-anxiety concepts, most markedly so in the two psychiatric groups. The patterns found indicated directions requiring further study to shed light on abnormal function of psychiatric patients.

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Tables, graphs, and scattergrams

Tables

Abbreviations used in the thesis

sd = semantic differential

e = (general) evaluative factor

p = potency factor

a = activity factor

d = danger or risk factor (subsidiary evaluative)

O = obsessives

P = psychopaths

C = controls

F = female

M = male

D score = semantic (multidimensional) distance

Preface

"If we knew the elements that constituted the human psyche and all the forces at work we could begin with a broad outline of the psyche and leave details to be filled in later. But we need no such blueprint, since we conceive the psyche as an unending effort at comprehension, an effort which can never be concluded wholly, though we are always advancing through the many methods of research. We have no basic concept in terms of which we could define man nor any theory that would wholly cover his actual, objective existence. We must, therefore, as scientists, keep an open mind for all the empirical possibilities and guard against the temptation to reduce human existence to one common denominator. We have no psychic master-plan, but we shall simply discuss a number of horizons, within which our psychic realities present themselves." p. 6.

"One of the surest ways to establish facts is to count what can be counted. But we can count ad infinitum ... The important thing is to make the whole counting operation into an instrument for some exploratory idea which will penetrate reality." p. 31.

KARL JASPERS, General Psychopathology, 1963

In this study the exploratory instrument will be the semantic differential technique. Though recently devised by psychologists, it is the clinical reality of psychiatric patients which this work will try to penetrate.

1. STATEMENT OF THE THESIS

The general thesis will be stated:

1. Differing behaviours and conceptualisation of psychiatric patients reflect each other at some point.

Following from this:

2. Personal and emotional concepts are regarded by clinicians as relevant to patients' abnormal behaviour. It is in these, therefore, that differences should be sought to sustain the general thesis.

3. Two behaviourally contrasting groups of patients are obsessive-compulsives and psychopaths, the former not usually acting impulsively, the latter doing this frequently. This behavioural contrast should sharpen the focus on conceptual contrast. A third control group is added to provide a baseline. Those three groups, being behaviourally different, should show differences in conceptualisation.

4. One aspect of conceptualisation is meaning. This is measured in an attempt to tap differences. The semantic differential (in effect, a limited association test) is used as the measuring instrument.

5. From clinical observation and theory, certain specific differences between groups are to be expected. These are listed after description of technique, as this is essential to understanding of the expectations.

6. Results should yield information on patients' abnormal function.

In this thesis, using the semantic differential, the meaning of emotional and personal concepts is studied in three behaviourally contrasting groups of patients in an attempt to shed light on their abnormal function.

2. INTRODUCTION

The theoretical springboard of this thesis is that differing behaviours and conceptual structure of psychiatric patients must at some point reflect each other. The same concept has varying meanings for various persons. With most people regarded as normal, it is generally possible to find some common ground for describing most concepts. Where conceptualisation reflects abnormal behaviour, it should be possible to discriminate on this level between normal and abnormal patients. Such discrimination might then yield further information on these patients' abnormal condition. The meaning systems used by the individual as a frame of reference in viewing the world could theoretically be mapped out to form a specific semantic geography fitting to some degree his manifest behaviour. It is the aim of this study to map out the semantic geography of some important areas of conceptual structure in psychiatric patients, and relate this where possible to their psychiatric disturbance. This attempt is simply an exploration of the field to indicate snags involved in this task, and to provide a few landmarks for further efforts of cartographers. It is assumed that normal and abnormal persons have relatively stable systems of meaning which can be tapped for this purpose. These meaning systems can be expected to reflect their past experience, and in some way to relate to present behaviour of the individual.

Obvious fields in which to look for differences between various kinds of patients are in meanings of personal and emotional concepts.

Personal concepts like MYSELF, MY FATHER, and MY MOTHER are the easiest and most universally clinically relevant ones which could be applied to a group. Concepts like 'my brother', 'my sister', 'my best friend' and so on are not as easily applied to all the individuals in a group - the examples of only children immediately spring to mind. This shows one of the weaknesses of group as opposed to individual study. The 3 emotional areas of ANGER-HOSTILITY, FEAR-ANXIETY, and LOVE-AFFECTION are generally regarded by the vast majority of psychiatrists as extremely relevant to normal and abnormal behaviour. Though they are sufficiently disparate to be treated independently, this independence is, of course, very relative, and there are many connections between these 3 feelings states at largely unknown levels: thus, the concept of ambivalence implies both love and hate at the same time. These 3 areas by no means exhaust the repertoire of emotional responses in the human - other obvious areas are: envy and jealousy; boredom; admiration and respect; disgust; contempt and despising; joy and happiness; grief and sadness. Numerous others could be added to this list.

If the thesis is correct, the more contrasting the behaviour of patients, the more contrasting their conceptualisation should be at some point. The problem is to locate this point, and when this has been found, to relate the 2 levels of difference, viz. overt behaviour and internal conceptualisation. Two strikingly contrasting groups of psychiatric patients are those with obsessive-compulsive disorders,

and psychopaths. The former are generally not impulsive, the latter act upon their impulses more than the usually accepted norms. These groups constitute good 'preparations' for testing out the general thesis. They represent clearcut polarities about the centre of normal control of impulses to action, and it was hoped thus to sharpen the focus on relations between conceptual structure and behaviour. A third group of patients was added as a control - patients without psychiatric disturbance. For this orthopaedic inpatients were suitable as they were hospitalised, like the psychiatric patients. When repeated accidents and psychiatrically disturbed patients were excluded by initial screening, these orthopaedic patients could be regarded as not psychiatrically disturbed for purposes of this study. The possibility remains that some obscure psychiatric abnormality also correlates with torn menisci, hallux valgus and prolapsed intervertebral discs, but this seems unlikely. Any control group outside hospital would have excluded control of the influence ofnhospitalisation.

Groups were selected for study rather than individuals, as we already have information on individuals' structure and theories based on these (e.g. detailed psychoanalytic study of obsessives), but there are few attempts to see if the generalisations made about groups, as extracted from these individuals, apply to the groups as a whole. Study in depth of individual obsessive patients can yield many fruitful insights into their functioning - indeed, can yield valuable information

which would be missed on an initial study of a group of obsessives - but we then need to see how far these insights are generalisable to all obsessives. Only in this way can we get a clearer picture of the nature of the obsessive process. The same point is relevant to all the categories of disturbed behaviour which are known under various diagnostic labels. The study of individuals and of groups of individuals is complementary, certainly not mutually exclusive. The more links between these the better.

A useful tool to measure meaning of concepts is the semantic differential (henceforth termed the sd), recently developed by Osgood (1957). It is a reliable tool, easily given to large numbers of patients, and readily adaptable to special needs of this kind of research. This was therefore adopted here.

THE LITERATURE:

The two psychiatric syndromes to be investigated will be considered. The object is not to cover all the literature on every aspect of the two conditions. The aim is to provide a frame of reference, selecting special issues of relevance to the thesis, these to be developed as expectations of findings, and taken up in discussion on results. Similarly, emotion, meaning and concept each has a vast literature largely irrelevant to this thesis. Only those features of these problems were selected which were considered to have a bearing on the investigation itself.

3. ASPECTS OF THE OBSESSIVE-COMPULSIVE SYNDROME

A. Clinical features:

This is one of the best-described syndromes in psychiatry. Kanner (1948) gave credit to Westphal (1878) for the first description of the condition. Though the boundaries of the syndrome vary according to the author one is reading, the central features of typical cases are generally agreed on. These have been fully detailed by many writers, and therefore will not be listed here (Janet - 1903, Freud - 1917, Lewis - 1936, 1938, 1956, Berman - 1942, Ingram - 1961, i). A useful definition is that of Schneider:

> "contents of consciousness which, when they occur, are accompanied by the experience of subjective compulsion, and which cannot be got rid of, though on quiet reflection they are recognised as senseless".

Lewis (1956) concurs in regarding the indispensable subjective component of an obsession as lying in the consciousness of the patient. To the patient it is "an act of will, which he cannot help making, to try and suppress or destroy the unwelcome intruder upon his mental integrity, but the effort is always in vain. It is like a mental calculus, a sequestrum". The intruder may be a thought, an idea, an image, or an impulse. Mostly the obsessive content is unpleasant, occasionally only meaningless - very rarely is it of pleasant character.

The following account vividly portrays the essence of compulsive fears and actions. It shows the distressing nature of

the full-blown syndrome, the subjective feeling of resistance, the fear preceding and dissipated by a compulsive act, and the generation of tension if this act is thwarted. The patient was a 25-year old married woman, one of the subjects in the pilot project run before the main study. Her illness was of 5½ years duration:

"The biggest thing I've got is this obsession which spoils everything I do. If I had the courage I'd kill myself and get rid of the whole lot - it goes on and on, day after day. The obsession governs everything I do from the minute I open my eyes in the morning until I close them at night. It governs what I can touch, and what I can't touch, where I can walk, and where I can't walk. It governs whatever I do. I can touch the ground but I can't touch shoes, can't touch hems of coats, can't use the toilet without washing my hands and arms half a dozen times - and they must be washed right up the arms. If anybody touches their shoes I can't let them touch me - because then I would feel unclean and have to wash. Basically it all started from the toilet - first human dirt, then dog's dirt - now it's especially dog's dirt. I can't bear dogs - when I go out on the street I must be careful where I walk. It's always in my mind that I might have stepped in some dirt - the fear that I might have done so.

(and if you actually get contaminated?) That's the funny thing about it - it's not all that bad. My first feeling is panic, and my first thought is that I want to die - that's what first comes into my head, but I know you can't die just by wishing it, so then I've got to wash with a special procedure which is so long drawn out it never seems to come to an end - have to wash the tap and round the tap before washing my hands. I know it's all in the mind, I know it's ridiculous, but I can't accept it. I don't know why I'm so afraid of dirt all the time, but I am.

(do you fight the feeling?) Yes, I do all the time, and usually succeed in the end after an hour or two, but the fear is still there. It frightens me because I don't know how to handle it, or what to think. Nothing in life interests me, I don't care what I look like, or what I eat. Mind you, I do get flashes where I care very much, but it lasts for just a minute, and it then disappears. I used to spend an hour washing every bit of me in the bath - washing all the time, but now I only take half an hour, and now I can go and use a public toilet if it's clean. But the fear is more outside now - watching where I can walk. Things seem to change, and the fear slides over onto something else. What the fear started off with is still there, but

it enlarges, and spreads to things I could have touched alright before. Once a long time ago I tried stopping washing for a week - but it was terrible, I got awful nightmares, and was ready to scream all the time, especially if anybody looked at me. After that I never tried stopping it again. But I can't go on like this, I want to care, I don't want to go on feeling life's useless".

French and German writers have given a wealth of names to different types of obsessive-compulsive symptoms (Kanner, 1948). These are variants on a single theme, and there seems little point in retaining this plethora of terms. The term obsession usually refers to the idea, image or thought, and the term compulsion to the impulse completed in action. Henceforth the term obsession will refer to both obsessions and compulsions.

Experimental evidence on the artificial production of compulsive behaviour is scanty - Gantt (1944) observed behaviour interpreted as compulsive in a dog who showed a generalised disturbance of behaviour. He also quotes Pavlov making similar observations on a dog in his laboratory. Some obsessive ideas have been noted temporarily in experimental subjects during sensory deprivation (Smith, 1962). Families have been described with the syndrome running through several generations - the evidence here is weighted equally for both behavioural and genetic modes of transmission (Ehrenwald, 1960). From an investigation, Rüdin (1953) concluded that genetic factors played an important part in the development of obsessive illness.

Obsessive symptoms may be associated with other clinical states - it is here that authors disagree on the boundaries of the

syndrome. A small minority of patients develop obsessive symptoms as part of a post-encephalitic process - both during and apart from oculogyric crises (Mayer-Gross, Slater and Roth, 1960). Writing in the wake of epidemic encephalitis, Schilder (1939) claimed that one-third of obsessives show organic brain damage. This is no longer seriously sustained to-day. Rarely a schizophrenic illness may start with obsessive symptoms (Bellak, 1958). Intriguing interaction between obsessive and depressive symptoms is well known, and has been succinctly described by Stengel (1945, 1948). Many obsessives show marked phobic symptoms. Further clinical variables in obsessives are described later where relevant to the discussion.

The natural history of the syndrome is becoming increasingly documented (Pollitt, 1960). Most writers recognise the syndrome as being infrequent, estimates ranging from 0.5 to 3% of all psychiatric disorders (Michaels and Porter, 1949, Pollitt - 1960, Ingram - 1961,i). The syndrome runs a variable course. Many patients recover, some remain crippled by their symptoms for the rest of their lives, while others show episodic remissions and relapses. This variability has made it difficult to evaluate therapy. Claims have been made for drugs, leucotomy and psychotherapy, none of them conclusive. Several authors give figures on prognosis for recovery after several years ranging from 40 to 55% (reviewed by Pollitt, 1960).

Character traits in patients with obsessive symptoms:

A wealth of evidence suggests that obsessive symptoms are likely to flourish in persons with particular personality characteristics,

generally called "obsessional traits". These qualities are in themselves normal and present to some degree in most healthy persons, but in this type of personality are present to an extreme degree. These features include adherence to method, order and cleanliness, fastidiousness, meticulousness, pedantry, persistence and endurance. Mayer-Gross et al (1960, p. 152), described them as showing mental 'inertia', i.e. the patient is difficult to move, but set moving in a given direction, persists in it and is then difficult to stop or deflect.

"The rapid and easy but superficial adaptability of the hysteric is not for him, and in fact we find that persons of obsessional temperament very rarely show hysterical symptoms. Swift variations of mood and energy are also foreign, and the path of the obsessional, lacking brilliance, is dull but dogged".

Fenichel (1946, p. 304) described the physical state of the compulsion neurotic as "typically a rigid one, characterized by retention and an unreadiness for flexible reaction". He felt (1946, p. 295) that "the compulsion neurotic, being afraid of his emotions, is afraid of the things that arouse emotions".

Not all patients with obsessive symptoms have this particular type of personality. Pollitt (1960), in a review of 115 cases, noted that 34% had none of these traits before onset of their obsessive symptoms. Ingram (1961, i) found these traits absent in the premorbid personality of only 16% of 77 inpatients with severe obsessive symptoms. In fact, the patient on p. 11, who gave such a beautiful description of distressing obsessive symptoms, was liable to repeated sudden temper outbursts, together with physical violence. It is a valuable rule to cherish our

exceptions, and the caution of Henderson and Batchelor (1962, p.161) seems justified: "The grouping of these particular traits together and the giving to them of the title 'obsessional' does not have a faultless theoretical basis".

Ingram (1961, ii) provides a salutary lesson on hidden assumptions behind divergent styles of psychiatric label. He compared descriptions of the 'obsessional personality' from current textbooks with those of the 'anal-erotic character' from psychoanalytic writings. The 'anal-erotic character' was first described by Freud in 1908 as a triad of "orderliness, parsimoniousness and obstinacy". Ingram showed that the term 'obsessional personality' tended to describe successful adjustment of these traits, where perseverance led to success, orderliness brought clarity and results, and insistence on checking was only sufficient to avoid errors. The term 'anal-erotic character' emphasized traits which were hampering adjustment - where orderliness and discipline had become ends in themselves, inconclusiveness and fear of error made any task endless, and in which rigidity had become a barrier to originality and invention.

Sandler and Hazari (1960) differentiated between what they termed the 'reactive-narcissistic character' and the 'true obsessional picture'. This distinction was based on results of 100 outpatient 'neurotics' (in the sense that each patient had some sort of psychological problem which had caused him to seek medical aid) filling in the Tavistock Self-Assessment Inventory. Factor analysis of 40 items (Thurstone's Centroid Method) showed the emergence of 2 separate factors.

The first contained items such as tidiness, neatness, cleanliness, orderliness, and were labelled 'reactive-narcissistic' or 'ego-syntonic', i.e. they conformed to the possessor's ideal standards for himself. The second contained items representing compulsive actions, indecision, worry, dirty thoughts, unnecessary rechecking - in fact minor degrees of obsessive symptoms.

The two types of behaviour isolated by Sandler and Hazari are remarkably like the dichotomy obsessional character/anal-erotic character noticed by Ingram. The dividing line is whether or not the items hamper the patient in his daily activities. Where they do not hinder him he does not complain, and is said to manifest a particular personality trait. Where they hamper the patient on his daily round, the item becomes an obsessive symptom. The subjective feeling of compulsion accompanies the symptom, and not the personality trait. Though often found together, the symptom and personality traits do not have a one-to-one relationship.

Bearing in mind the caveat of Henderson and Batchelor, the picture emerging in the majority of patients with obsessive symptoms is a group controlled ('rigid', 'inflexible', 'inert', 'inhibited'), in overt expression of feelings ('impulses') in most areas of function, apart from the actual compulsions they yield to.

B. Aetiology:

1. General statements.

The diversity of views will be described, as a hypothesis tested later in the study arises out of one of these.

Despite the wealth of descriptive detail of the clinical manifestations, remarkably little is known of the genesis of obsessive-compulsive symptoms. Many have speculated on the mechanisms underlying the obsessive process. The main trends will be given:

William James (1891) observed that in a normal sequence of thoughts a 'fiat' is given internally which marks the end of the given sequence. This fiat seems to be lacking in obsessives.

Strauss (1948) made disgust the central theme of the obsessive.

Von Gebsattel (1938), using a phenomenological approach, saw the compulsion syndrome as having two components: 1. the 'disturbance psychism' (Stoerungspsychismus) which generally takes a phobic form, and, in reaction to this, 2. the 'defence psychism' (abwehrpsychismus) to which the compulsive acts belong. French psychiatrists are said to emphasise the phobic, and German psychiatrists the compulsive, aspects. Von Gebsattel regards the phobic aspect as more important. However, he feels the anankastic phobia* is but a symptom of a more fundamental disturbance in the patient's relations to the world - to the thing that delivers him to the anxiety-world - but he cannot specify this more precisely. To quote him:

"only because the compulsive is threatened with the loss of his own form, of his own eidos, can the symbol of the form-destroying forces gain mastery over his imagination and determine his actions. The compulsive defends himself against the threatening effect of his own temporal impairment, but he does not know what the issue is and therefore defends himself against the threatening possibility of his own loss of form only by rejecting those objects and thoughts in which the form-destroying orientation of existence expresses itself. All individual compulsive acts can be explained on the basis of the fundamental

* From the Greek word ananke (Fate), which relates to "being tied by Fate" - i.e. to the feeling of inevitability, of the impossibility of escape, which these patients experience.

disposition of the anankastic....here presented".

Lewis (1956) also divides obsessions into primary and secondary components. An example given of the first aspect is the feeling that one is dirty. The impulse to wash is regarded as the secondary phenomenon developed in order to obtain relief from the primary disturbance.

Fenichel (1946, p.305) describes the compulsion neurotic as regressing to the anal-sadistic level of libidinal organisation, and as using the defences of reaction formation, undoing and isolation and overcathexis of concepts and words (a special case of isolation). These defences are thought to be used to ward off anal-sadistic wishes. The superego is seen to predominate, resulting in punitive and expiatory rather than gratification symptoms.

Klein (1932) opposed the psychoanalytic view that the obsessive neurotic regresses to the anal sadistic stage. She stated that the child develops obsessive symptoms and mechanisms in that period of life governed by the later anal stage. She stated that isolated obsessive traits which emerge in the first period of childhood are not organised into that whole which we regard as an obsessive neurosis until the beginning of the latency period, when the more mature ego, with its altered relationship to reality, elaborates those obsessive features which have been active since early childhood.

Russian workers have used different language in attempting to understand the obsessive process. Pavlov (1934, 1951) considered that phenomena of inertness of nervous processes form the basis of obsessions.

Certain neurotic states which he experimentally obtained on animals he considered as simple schemes, coarse models of isolated 'ill points' or foci of stagnation, inert excitations, which composed the basis of obsessions. "We have sufficient reason to believe that under the influence of various pathogenic factors of functional nature in the cortex of cerebral hemispheres, sharply isolated pathological points or even areas can develop, together with this we may expect that these experimentally obtained acts take place and are even of great importance in the pathology of man's higher nervous activity". These 'isolated ill points' could arise in various regions of the cerebral cortex of the 'obsession type', at times in the first signalling system, and at times in the second, depending on its localisation. Later he understood this idea of 'isolated ill points' as having a very relative meaning, since one can observe from animal experiments that in certain instances these local disturbances could become a source of a pathologic functional shift throughout the cerebral cortex. Various workers such as Seredina (1955) and Trunova (1955) have claimed that their experimental findings support this view.

2. Discussion on aetiology:

The abundance of views testifies to our fundamental lack of knowledge in this field.

The concept of anal-sadistic and other levels of libidinal organisation is still highly contentious and difficult to test. Explanation in terms of regression to this or other levels of this kind

is therefore not yet satisfactory. No convincing link has yet been demonstrated either between the 'isolated ill point' postulated at the neurophysiological level, and the symptom seen by the clinician. As regards phenomenological ideas, especially that of Von Gebsattel; one feels reading these that the author made painstaking attempts to understand the way in which the patient sees the world. The author describes beautifully what it must feel like to be an obsessive. This effort must indeed be made. But this description should not then be used as though it explains the origin of the feelings. One can see how the idea of the obsessive's fear of loss of form arises out of the clinical observation that the obsessive usually does not express his feelings openly, keeping them in. But this is still a far cry from the claim that "all individual compulsive acts can be explained on the basis of the fundamental disposition of the anankastic (thus) presented". Both Ellenberger (1961) and Ladee (1961) also emphasise that phenomenologists using this type of description provide understanding, but not explanation, of the states of mind of patients in such conditions. An analogy helps to put this issue in sharper relief:

A patient is given a post-hypnotic suggestion that he will write a postcard one minute after waking from the trance. One minute after arousal he writes a postcard to his father. If asked about it, the patient will give a reason for this action, as most post-hypnotic suggestions can be rationalised, however spuriously. The patient may say that he suddenly felt solicitous about his father. This would be

the 'meaning' of the action to him. An observer not told of the post-hypnotic suggestion might try to explain the action in terms of the patient's past experiences with his father, his fantasies about him, and so on. But this observer would then be simply describing pathoplastic features - not why the patient wrote a postcard at all, which is the crucial problem in this sequence of events, but why he wrote it to his father. The knowledge of a simple antecedent event - the post-hypnotic suggestion - provides far more grasp of the genesis of the action - the rest is commentary.

It is important to understand how a patient feels about his symptoms - but this may be far removed from the causative events.

Out of the many views on aetiology, one will now be examined in more detail, for from this a hypothesis is later derived and tested:

3. Aggression in the obsessive-compulsive:

Numerous writers, usually using psychoanalytic terms, regard obsessives as showing excessive hostility and aggression, against which they have to defend with their obsessions. A few quotations will show how deeply this idea is embedded in views on the nature of obsessive-compulsive activity:

Fenichel (p. 273): "overt or concealed tendencies toward cruelty, or reaction formations against them, are constant findings in compulsion neuroses. With equal constancy erotic impulses and defences against them are found in the most varied forms. This constant association of traits of cruelty and of anal-eroticism in compulsion, to which Jones first drew attention, was what convinced Freud of the close relationship of these 2 types of phenomena, and of the existence of an 'anal-sadistic' stage of libido organisation".

(p. 287): "In fighting unconscious hostilities the compulsion neurotic tends to be a gentle person in all his relationships.... However, even the fixed reaction formations are rarely successful - the mind of the compulsive patient remains occupied with a perpetual struggle between reaction formation and the still-effective original impulse."

Bergler (1942): "If any analyst who has had the necessary experience with obsessional neurotics is asked whether they are 'aggressive' he will say 'yes' and at the same time emphatically confirm the unconscious tendency of these patients to harm themselves. The usual analytic explanation of the connection between these two unconsciously determined tendencies is that these injuries, or constant unconscious guilt feelings, are a reaction against abundant aggression. Regarded genetically, the aggression is turned against the Ego under pressure of castration fears, or of the stern Super-Ego.

....it is necessary to distinguish between two forms of aggression to be found in obsessional neurotics: between the original which can only be understood genetically, and one nearer the surface, but also unconscious, which is used as a defence mechanism (against an anal-aggressive wish)."

Stengel (1945): "The prominence of aggressive-destructive tendencies, which in (obsessive patients going through a period of depression) are directed against the outer world to a much greater degree than in the typical depressions, can again be attributed to the obsessional character traits released during the depression. Among these character traits hatred, which in the obsessional neurosis often remains unconscious, is one of the most important. The depression exposes it mercilessly".

Gero (1953): (discussing a case report) "The obsessive thought is the result of the release of returning waves of sadistic impulses, but such a release is only possible when the impulse is desexualised."

Rado (1959) will be quoted at length, as he highlights the perilous paths such thought can lead to:

"Some 25 years ago, listening to the jeremiad of a torturous and self-tortured patient, the idea struck me that his obsessive attacks derived from the rage attacks of his childhood. This discovery (was) corroborated by subsequent experience.....

Obsessive behaviour is based on a predisposition which is acquired in childhood, and includes five clearly discernible factors:

1. Overstrong rage;
2. Guilty fear made stronger by retroflexion of the larger part of repressed rage;
3. Stronger-than-average residues of primordial omnipotence that make rage strong and its paradoxical retroflexion possible;
4. Relative pleasure deficiency in the area of genital orgasm with its consequent enfeeblement of genital love and affection - a deficiency that makes it imperative to control repressed rage by retroflexion;
5. Intelligent foresight leading to realistic fears.

Presumably, the acquired predisposition to obsessive behaviour is based on a genetic predisposition in which the overstrength of rage may be linked with the pleasure deficiency of sexual orgasm.

....Looking once again at the motivating system, we find rage at the bottom, in the key position; restored pride over repressed guilty fear over more strongly repressed defiant rage. Beyond a shadow of a doubt, in the etiology of obsessive behaviour the ultimate psychodynamically ascertainable factor is rage."

Stripping rhetorical vesture from these quotations it can readily be seen that, despite minor variations, writers influenced especially by psychoanalytic ideas regard the obsessive as being afraid of his own aggression more than normal, defending against it by compulsive activity. This fear and defence is treated by them as an important aetiological component in the obsessive process.

4. <u>The concept of defence:</u>

Gero (1953) regards the concept of defence as arising from the basic psychoanalytic idea of conflict - the apposition of forces. These forces reside in or emanate from what are termed id, ego or superego and the ego is said to apply defences to cope with conflicts caused by the demand of instinctual forces. Gero clarifies further:

"Defence is obviously a concept of much broader applicability than symptoms. Defensive actions may take place without necessarily causing pathological results, whereas symptoms are always pathological.

Conversely, however, defence mechanisms are essential elements in the formation of symptoms. Defences come into play to cope with external dangers, and then dialectically their very presence becomes part of the mechanism of symptom formation. Yet symptoms, like conversions, phobias, compulsive rituals or obsessive thoughts, represent more than mere mechanisms of defence.

....Generally speaking, the defensive activities of the human individual are not exhausted by inhibitory acts; there are numerous defensive activities which serve a compensatory function".

4. ASPECTS OF PSYCHOPATHY:

A vast literature exists on the subject. A tiny section only will be referred to where considered relevant to this study. Appropriate literature on delinquents will be included for the following reasons: 1. Antisocial behaviour which results in a patient being labelled delinquent is similar to that leading to the label psychopath, apart from differences naturally expected due to age differences. Whether antisocial behaviour earns the label 'delinquent' or 'psychopath' depends to a great degree on the age of the patient. One rarely hears of psychopaths below 15, or of delinquents after 21. At the transitional age both labels are frequently used interchangeably. 2. Psychopaths extremely commonly begin their careers labelled as delinquents, e.g. O'Neal et al (1962) found that of 84 'sociopathic personalities' only one had no history of antisocial behaviour in childhood. Antisocial behaviour in childhood is virtually a definition of delinquency. 3. Tacit interchange of the two labels has been used by Jenkins, Bowlby, Scott and others who make generalisations about psychopathy from studies on delinquents. Hallowed tradition never guarantees accuracy of concept, but provides a precedent for similar usage here.

This does not imply that delinquents are identical to psychopaths, but it is assumed that in one group which is an extremely common precursor of another, findings on the one are relevant to the other.

A. Development of the concept of psychopathy:

At the heart of this concept we discern the individual who repeatedly comes into conflict with society (excluding political conflict).

The concept has gradually evolved since Prichard in 1835 coined the term 'moral insanity'. This consisted of "a morbid perversion of the feelings, affections, and active powers, without any illusion or erroneous conviction impressed upon the understanding. It sometimes co-exists with an apparently unimpaired state of the intellectual facilities". With approval he quoted Esquirol as regarding the "perverted state of the moral feelings as not less essential to insanity than that of the intellectual faculties, and even as furnishing in some instances the whole manifestation of the disorder". Earlier writers tended to make moral value judgments, these diminishing in recent years. In 1891 Koch used the term 'constitutional psychopathic inferior'. The term 'inferior' illustrated the value loading in his phrase. Schneider moved further away in 1923 with his definition of psychopathic personality as those abnormal personalities who suffer from their abnormality, or cause society to suffer. Curran and Mallinson, in 1944, dissected out the 'sociopathic personality' as that group of psychopaths whose cardinal feature is asocial or antisocial behaviour. Fading moral strains in this century left ideas like the psychopath without remorse, shame, guilt, conscience or superego. Current writers like Scott (1960) suggest that these are rarely applicable. "Examples could readily be quoted of persistent serious antisocial behaviour... in which there is a high degree of anxiety and guilt, and a genuine wish for treatment". The American Psychiatric Association have recently contrasted a group of 'antisocial reaction' with 'dyssocial reaction'. 'Antisocial reaction' referred to chronically antisocial individuals who are always in trouble, don't change

with punishment, and have no loyalties or responsibility. 'Dyssocial reaction' implied persons manifesting disregard for the usual social codes as the result of having lived all their lives in an abnormal moral environment, with strong loyalties and with no significant personality deviations other than those implied by loyalty to a group in conflict with society.

Jenkins (1960), on the basis of earlier work with cases from a child guidance clinic (Hewitt and Jenkins, 1946) supported this division. He regarded antisocial reaction as a maladaptive frustration reaction, and claimed that it is specifically related to parental rejection. He claimed that this distinguished it from the adaptive dyssocial reaction, which was said to be specifically related to association with other delinquents with a lack of parental supervision. "The dyssocial reaction.... describes the professional criminal.... This is an occupational group, rather than a psychiatric diagnosis."

Scott (1960) classified psychopaths, by which he meant offenders, into four types. His first type, 'trained, but to anti-social standards', is similar to the APA 'dyssocial reaction'. He regarded as a subtle variant of this, that condition where the parent obtains a vicarious satisfaction from the misbehaviour, as described by Johnson and Szurek (1952). A second type was 'reparative behaviour', exemplified by some sexual offenders. His third type was 'the untrained offender', who had a history of difficulties from childhood. Finally, his fourth type, 'rigid fixations', where he discerned a fixed, maladaptive pattern of response. These third and fourth types are

similar to the APA's 'antisocial reaction'.

The psychopathic patients in this study were selected for their antisocial and asocial behaviour, the criteria having no reference to value judgments. They will be seen to be a group with affinity to Schneider's patients causing society to suffer, Curran and Mallinson's 'sociopath', and the APA's 'antisocial reaction'.

B. Antisocial patients in psychiatric hospitals.

The psychopathic sample in this study will later be seen to come exclusively from psychiatric hospitals. Psychopaths under psychiatric care form but a fragment of the universe of psychopathy. Bovet (1951), summarising many studies, pointed out that the psychiatrist is asked to see on the average only 10% of juvenile court cases. The other 90% were regarded as 'non-psychiatric delinquents'. It would be of interest to know how antisocial patients receiving psychiatric care differ from those that don't. One wonders if certain features are more likely than others to lead to psychiatric referral - features such as anxiety, drug addiction, suicidal attempts and temper outbursts. These are symptoms more in the domain of psychiatrists than antisocial behaviour alone.

C. Family Background of Psychopaths:

Family disorganisation in childhood years has been persistently found in many investigations on psychopaths and delinquents. Though a recurrent finding emerging from diverse studies, numerous authors have played the theme in various keys. The keys are:

a) physical separation from father, mother or both, due to death, illness,

desertion, separation, divorce, or other reason.

b) Emotional disturbance with father, mother or both, through over-protection, coldness, hostility, repudiation, neglect or lack of supervision.

Literature on delinquents:

Bowlby (1946, 1951) emphasised the role of maternal deprivation in delinquents and psychopaths. Andry (1960), using personal individual interviewing, investigated two matched groups - 80 recidivist boy thieves from a remand home, and 80 non-delinquent control boys from two adjacent schools. He concluded that delinquent boys "tend to perceive greater defects in their fathers' roles than in their mothers' roles, whereas non-delinquents tend to perceive the roles of both parents as being adequate.... The prime differentiating features between delinquents and non-delinquents, as far as parental role is concerned, is the delinquents' perception of their fathers' role as being negative". Merill (1947) studied 300 delinquents who were consecutive cases in a California juvenile court, and compared them with matched non-delinquents. She found 50.7% of delinquents and 26.7% of controls came from broken homes. Nye (1958), using a well planned and analysed questionnaire, found his data indicated that both the rejection of the parents by the child and the rejection of the child by the parents are closely related to delinquent behaviour. He thought that, except for institutionalised cases, unhappiness in a home is more significantly related to delinquency than a structurally broken home. In a detailed multidisciplinary study of 500 delinquents from two correctional schools, compared to 500 matched controls, the Gluecks (1962) concluded

that the delinquent group had "been reared to a far greater extent than the control group in homes of little understanding, stability or moral fibre, by parents usually unfit to be effective guides and protectors." They found a significantly higher proportion of delinquents to whom the father was unacceptable as a pattern for emulation. Many of these and other writers on delinquents are reviewed by Neumeyer (1961).

Literature on psychopathy:

Greenacre (1945) quoted numerous writers who pointed with varying degrees of intensity to early emotional deprivation of psychopaths and delinquents, and said her own findings verified this. The views of Jenkins have been noted (see p. 27). Though his views are applied to adult psychopaths, they are based on data from delinquents. Support for his views has been given by Hilda Lewis (1954) and others.

O'Neal et al (1962) followed up 524 children seen 30 years previously in a child guidance clinic, as well as 100 control subjects selected from school records. Their findings are detailed here, to illustrate the complexity of the problems involved. Of the clinic cases, they diagnosed 84 (20%) as 'sociopathic personality' (only 2% of the controls were so diagnosed). Examination of their childhood records showed antisocial behaviour extending to far back into childhood. Only one patient diagnosed as sociopathic personality had no record of anti-social behaviour in childhood. Almost all clinic patients experienced parental behaviour in childhood that could be interpreted as rejection. However, only four kinds of such behaviour - failure to supervise, public repudiation, desertion and non-support - significantly distinguished the

childhoods of those later diagnosed as sociopathic personality from those who developed other psychiatric illnesses. They concluded that the more important parental behaviour was neglect and abandonment. Their evidence did not show a relationship between sociopathic personality and either hostile acts against the child, or cold withdrawn behaviour by the parents. They found that generalised antisocial behaviour in the father was related to sociopathic personality in the child. However, whether or not children had actually lived with such fathers did not significantly affect their eventual rate of sociopathic personality.

D. Attitude studies:

Short et al (1962), using the semantic differential, found that members of gangs rated middle class values like "steady job" and "education" as favourably as control groups. However, they rated middle class vices like "pimp" and "hanging around street corners" more favourably than controls.

In delinquent boys in reforming institutions, Weeks (1958) noted that the following attitudes differentiated those who became recidivists from those who did not: Attitudes to family, parental authority, breaking the law, law enforcement, general authority, self-acceptance, acceptance of others, and conduct norms. However, these attitudes were not markedly changed after being in the reform institution. He concluded that favourable results of the reforming experience were not due to any basic personality changes, but rather to the boy's gaining a new conception of himself and his relation to society.

Weeks also found that 70% of the boys reported that they very often got into fights, that they really liked fighting, and were good fighters. However, there was not much relationship between aggressiveness, as revealed by this scale, and outcome.

Andry, in interviews, noted that 70% of delinquent boys felt angry when they came up against something they did not like, compared with only 12% of controls.

5. MEANING AND THE SEMANTIC DIFFERENTIAL

A. THE MEANING OF MEANING:

In the proverbial Indian tale an elephant seemed a different object to three blind men touching it - each man was able to obtain only a limited comprehension of the whole. The first, grasping a leg, asserted an elephant was a pillar, the second, feeling the tail, held it was a rope, and the third man, stroking the tusk, thought it was a sharp piece of marble. The problem of meaning presents similar difficulties - each field of knowledge handling meaning as one of its variables treats it from rather a different aspect. Many definitions of meaning are equally valid, but not necessarily equally useful, for a given discipline. They are complementary, not mutually exclusive. An oft-quoted analysis is that of Morris (1946), who distilled the problem into three facets. He regarded a sign situation as involving three elements - the sign itself, the referent, and the organism producing or reacting to the sign. The syntactic aspect considered only the relation between sign and sign. The semantic aspect concerned the relation between sign and referent. In the pragmatic aspect the relation involved all three elements - the organism, sign and referent. In effect syntactics was the study of the structure of language - the concern of the grammarian, linguist and communications engineer. These would respectively use the language of syntax, morpheme analysis and information theory to describe those aspects of meaning in which they were particularly interested. Each type of language is suited to handle a special mode of function in syntactics.

Pragmatics concerned the relation of signs to situations and

behaviours. This was also Bloomfield's (1946) concept of a linguistic form which comprised the situation in which the speaker utters it and the response which it calls forth in the hearer. It resembles Carroll's (1959) definition of "the sum total of usages of a symbol in the community". This is a type of meaning of interest to the linguist, psychologist and psychiatrist. The semantic aspects - the relation of sign to significate, are within the domain of the same workers. Again, each group of investigators, being interested in its own class of phenomena, develops its own language, overlapping neighbouring disciplines to the extent that the events they study are of similar kind. Ogden and Richards (1946) stressed the semantic aspect of meaning - the referential character of signs - "a symbol is correct when it causes a reference similar to that which it symbolizes in any suitable interpreter" . They noted the gap between signs and the things signified. Osgood's scheme of the representational mediation process was an attempt to fill this gap.

Greenberg (1963) preferred a rather more complex view of sign systems. He distinguished as "systemic" those investigations dealing with the formulation and discovery of rules, and retained the term "pragmatic" to refer to the behaviour of organisms in their use of systems. A further three aspects could then be studied in each of these two ways. With the sign as a physical object, one could distinguish between the rule specifying which physical phenomena shall be instances of a particular sign vehicle, and the behaviour itself of the sign using organism in this regard. Similarly one could distinguish between rules of sign arrangement (grammar) and actual behaviour in regard to this sign arrangement. Finally, with

semantics one could have rules of meaning on the one hand, and on the other, behaviour of organisms in regard to meaning in their use of language. For him, then, there were six facets to the study of sign systems:

	systemic	pragmatic
physical		
semantic		
grammatical		

He regarded linguistics as concerned with systemic aspects of existing sign systems (natural languages), whereas psychology and sociology (and psychiatry) consider the pragmatic aspects of these same systems.

Greenberg's arrangement allows room for sign systems without 'meaning'. One can have a system of elements with physical and grammatical, but no semantic rules. This he would term a "calculus", or "uninterpreted system", and an "interpreted system" would include rules of meaning. We can see that Greenberg would not talk about syntactical 'meaning', but about grammar. Implicit in his use of the term 'meaning', as opposed to 'sign system', is its referential aspect. The terms 'sign situation' and 'meaning' are actually often used interchangeably, e.g. Morris's triadic analysis is of three types of sign situation. Osgood, however, writes about these three sign situations as three types of meaning.

Association and meaning:

For centuries men have realised that associations of words are not random, but run in networks according to certain rules evasive of precise formulation. Noble (1952) proposed an operational measure of the meaning of a sign as the number of associations between that particular sign as stimulus and other signs as responses to that stimulus. Osgood cast

severe strictures on this view, pointing out that though meaning and association are related, they are not directly equivalent. Unfortunately the exigencies of language sometimes compress our thought into such unintended equivalences, and Osgood himself slides into the same style many times in his book "The measurement of Meaning". After initially carefully showing he is measuring only a tiny part of that universe of experience falling within the term 'meaning', and stating that the semantic differential technique is a controlled association procedure, he lapses into the shorthand of calling semantic differential scores the 'meaning' of a concept, and ~~this~~ sometimes fails to distinguish between his limited operational definition, and broader implications of the term.

Deese (1962) has developed a subtle idea of associative meaning. For him, this does not predict the tendency of words to elicit one another directly - rather associative meaning predicts the words that will occur in the verbal environment of a particular word, and assumes that words are used, subject to certain other constraints, because of the distribution of associations they possess. Thus the distribution of associations becomes a mediator determining the use of particular words. In further work he showed how form class is one influence determining types of responses (associations) to given stimuli.

Our interest in the present study is the abnormal behaviour of psychiatric patients. The type of meaning most relevant for such behaviour corresponds to the pragmatic-semantic in the classifications of both Morris and Greenberg. One can also look at the meaning of a symbol as having developed through discrimination learning in many past situations.

The common elements from all the situations in which the symbol has been used have been abstracted to form the boundaries of the symbol, but as each individual's learning experience is to some extent unique, to that extent he will have his own private meaning of a symbol, beyond that which he shares with other people. We can expect that emotional loading of certain terms for one person and not for another will be related to divergence in past learning experiences. We can therefore expect that psychiatric patients will differ in their conceptualisation in certain areas. Which areas these will be will depend upon numerous variables.

The meaning of a symbol will be closely bound up with an individual's attitude to a situation involving those elements indicated by the symbol. An attitude (Hilgard, 1957) is a readiness to respond in a particular way to a given situation over an appreciable period of time. An investigation of meanings of emotional concepts then will be to that extent also an investigation of the patient's attitudes to emotion - in fact, his feeling about it. This is a level where the generally useful division between cognition and affect is difficult to sustain.

B. THE SEMANTIC DIFFERENTIAL TECHNIQUE

Osgood proposed a theory explaining meaning as arising primarily out of associations of words (signs) with behavioural reactions. These reactions are, however, fractionated, and have been detached from the behaviour sequence originally elicited by the significate; they now occur implicitly within the nervous system. Recently Osgood suggested that there is an 'affective mediating system which is biologically determined and capable of some limited number of gross bipolar discriminations'. He formulated a two-stage mediational mechanism as the basis for this instrument, but as yet there is no direct link between this theory and the semantic differential as used in practice. He suggested that the instrument measured connotative rather than denotative aspects of meaning. These in fact correspond to affective and referential components of meaning, and it is not yet clear to what extent the semantic differential measures these components selectively.

In practice, the semantic differential grew out of studies on synesthesia, linking diverse modalities of experience and expression. One such was the demonstration across different cultures that given musical 'moods' give rise to similar associations of colour. The technique is very simple to administer, and is described in detail on p. 83 together with specimen forms.

In effect, the semantic differential is a limited association test, measuring meaning of a concept on bipolar adjectival scales (usually 7-point scales). It assumes that the meaning of a concept is "a complex

affair, a compound reaction made up of some n bipolar reaction components". When a concept is decoded by a subject a complex reaction is assumed to occur, consisting of a pattern of these alternative bipolar reactions elicited with varying intensities. When the subject encodes this semantic state against the differential his selection of directions (i.e. good vs. bad, or active vs. passive, etc.) is assumed to be co-ordinate with what reactions are elicited by the sign (concept), and that his degree of polarisation or extremeness (how far along the scales he checks) is co-ordinate with how intensely these reactions are made.

Some methods of scoring will briefly be described:

A typical semantic differential form might contain scales selected with high loadings on the three factors of evaluation, potency and activity. Let us say the patient is to rate the concept SIN on the ten scales noted on p. 42. The concept is presented to the patient with the scales thus:

SIN

good _:_:_:_:_:_:X bad

weak _:_:_:_:_:_:X strong

active_:X:_:_:_:_:_ passive

etc.

The concept to be rated is printed on the page above the ten scales. Separate concepts are rated on separate pages, using the same ten scales on each page. Patient's scores will range from 1 to 7. This yields 10 scalar scores (one score for each scale).

Various procedures are now available for comparisons between populations (of patients or concepts). Many studies use a measure of difference between profile scores, as recommended by Osgood et al (1957). In the example given above, this could be ascertained as follows: Our 10 scalar scores can yield 3 factor scores. The evaluative factor score would be the mean of its 4 constituent scalar scores (good-bad, beautiful-ugly, clean-dirty, valuable-worthless). The potency factor score would be the mean of its 3 constituent scalar scores (strong-weak, large-small, heavy-light), and the activity factor score would be the mean of scores

on active-passive, fast-slow and hot-cold. As an example:

	patient x	patient y
evaluation	6	2
potency	6	3
activity	5	2

Osgood et al. used the generalized distance formula to measure what he calls the semantic distance (D) between 2 profiles. Formula for this is $D = \sqrt{\xi (x-y)^2}$

e.g. the D between X and y in the example above is

$$D = \sqrt{(6-2)^2 + (6-3)^2 + (5-2)^2} = 5.8$$

Thus the profile (semantic or multidimensional) distance between X and y on that concept is 5.8. One could also calculate D by summing over individual scales instead of factor scores. D is a useful measure where one is interested in total semantic similarity, and not in any constituent components of the score. Studies on identification have compared similarities of meanings using D scores (e.g. Lazowick (1955) and Beitner (1962)).

However, often one is interested in different components of the profile, especially where one suspects that these may behave independently in regard to one another. Under these circumstances the D score is less valuable, as it loses all information about its constituent components. Workers then have either compared constituent scalar scores or factor scores (e.g. Arthur (1962), Eisdorfer and Altrocchi (1961), Luria (1959), Dyal (1955) in the brief review that follows).

It should be noted (see discussion on validity) that external criteria of validity have been found for the evaluative and the activity dimensions separately, but little work as yet has substantiated multi-dimensional distance as a valid measure of meaning similarity.

Since the sd technique was devised hundreds of investigations have utilised it in diverse ways in wideranging fields from voting habits of electors to effects of advertising techniques to changes in psychotherapy. Many of these were ably summarised by Osgood et al (1957 and 1962), since when the literature has mushroomed exponentially in the fields of

psychology, sociology, advertising, and to a limited extent in psychiatry. Most of these studies deal with problems remote from the area of the present thesis, viz. psychiatric disorder. We shall therefore have to select only work bearing on psychiatry and specific methodological points raised in the course of this research.

During this review we will note the variety of methods used in applying the semantic differential - no one method is necessarily superior to any other. This is because there is no one Semantic Differential. It is simply a versatile technique to obtain certain information in objective repeatable form. The particular method chosen largely depends upon aims of any given research project.

C. REVIEW OF PERTINENT STUDIES WITH THE SEMANTIC DIFFERENTIAL

a) Factorial structure of scales: 1. Normal subjects:

Many studies quoted by Osgood (1957 and 1962) suggest that in normal subjects over a range of linguistic groups semantic judgments are largely made over a relatively small number of dimensions. These have been characterised as evaluation - the dominant factor (represented by scales of the type good-bad, beautiful-ugly, clean-dirty, valuable-worthless), together with two smaller factors - potency (represented by scales like strong-weak, large-small, and heavy-light), and activity (scales such as active-passive, fast-slow, hot-cold). Some of the factor analyses reported are not flawless, particularly in a few instances where only unrotated loadings are given. Despite these defects, much evidence confirms especially the evaluative dimension, though the other two factors have also usually emerged, sometimes combined as a dynamism factor. However, there appears to be a strong concept-scale interaction, and under certain circumstances the evaluative dimensions may not be dominant

Studying colours, Oyama et al (1962) compared the ratings of 16 colour stimuli judged by college girls in Japan and the united States on 35 sd scales. In their scale-by-scale factor analysis the activity factor proved to be most salient in both the Japanese and American groups, with the evaluation factor taking second place. Similarly in Tucker's (1955) study, when artists judged paintings, an activity factor accounted for 46% of the variance, evaluation only taking 17%, and potency 10%, of the variance. Oyama et al also quote Ogiso and Inui (1961) as reporting similar results in a study on colour components in interior designing.

In a study of 40 personality concepts (Osgood 1962) the usual three factors

accounted for much smaller proportions of variance than usual. Semantic judgments, then, though showing certain constancies, tend to vary with differing classes of concept.

2. Psychiatric patients:

Remarkably little has been done on factorial structure of scales in psychiatric patients. Bopp (1955) compared the factorial bases of 40 schizophrenics in all diagnostic subgroups with those of 40 controls hospitalised in tubercular and fracture wards, matched for age, sex and education. Patients were given 16 concepts (unspecified, except we are told these included areas of meaning in which schizophrenics might be expected to deviate from normals). These words served as stimuli in a standard free-association test. Patients then rated both the stimulus words and their own responses against 13 sd scales (7e, 3p 3a) (also unspecified). The two groups were halved, and the 16 stimulus words originally used were analysed. Correlations over means of concepts on the scales were calculated for each group and subjected to principal components factor analysis. Each group showed similar factors accounting for similar variances (e 61%, a 21%, p 6%). The results vitiated a hypothesis that the semantic factor structure of schizophrenics would differ from normals. Unfortunately we do not know clinical details of the patients, nor the precise concepts and scales used. These are important variables, in view of the variety of conditions often subsumed under the term schizophrenia, and the well-known interaction between scales and concepts. The high variance accounted for by evaluation may partly result from initial heavy selection of evaluative scales.

Bopp went on to test the hypothesis that association processes of schizophrenics are more determined by similarity variables than by transitional variables. Using D scores she showed that distance between profiles for stimulus and response words were significantly smaller for schizophrenics than for controls, i.e. that the meaning of schizophrenic response words were more like their meanings for the stimulus words.

b) Scale-checking style - some relevant variables:

Further results of Bopp's study were that schizophrenics were less discriminating in their use of semantic differential scales, tending to use the more discriminating positions (1, 2, 4 and 5 in the notation of the present investigation) far less than controls. She also found that the schizophrenics were less reliable in their judgments than controls.

The effect of I.Q. was tested by Kerrick (1954), who gave the sd to high school students of known I.Q. Comparing the lower and upper quartiles she found that subjects of lower intelligence tended to have more polarised judgments. I.Q. was demonstrated to have an interaction effect with anxiety. Anxiety made higher I.Q. subjects less discriminating in their judgments (i.e. they used polar or midpoint judgments more frequently), but anxiety had the converse effect on lower I.Q. subjects.

Arthur (1962) found that deluded patients seldom checked the midpoint, tending to check extreme scale points, and that the opposite held for his normal subjects. His phobic patients tended to use both checking styles.

Anxiety is prominent in many psychiatric patients. Osgood et al (1957, p. 229) report a study of its effect on semantic judgments and

latency times. 40 undergraduates - 20 males and 20 females - selected 15 concepts, including areas of 'sign-specific anxiety' (E.G. PENIS TAMPAX), as well as controls (E.G. FIRE STATUE). 10 sd scales were reacted to firstly on a visual latency device, then on the visual graphic form. To augment generalized situational anxiety each female subject had a male observer (along with a female experimenter), and vice versa. Results showed that female subjects made their judgments with significantly shorter latencies for all scale positions. In another experiment 20 male undergraduates made the same 150 judgments while receiving 15 unpredictable shocks. Their latency times then became reduced to the same level as the females in the original experiment. This suggested that female subjects in the original experiment experienced more generalized anxiety than the males, and that increasing this generalized anxiety increased the speed with which scale judgments were made. The effect of sign specific anxiety was tested by comparing the latencies of concepts for the male controls. The 5 concepts yielding quickest judgments were LAKE DAD MOM FIRE STATUE (regarded a priori as non-anxiety producing), and the 5 concepts producing slowest judgments were JEW TAMPAX FINALS SWEAT NEGRO (a priori regarded as anxiety producing). It was concluded that sign specific anxiety, unlike generalized anxiety, lengthens judgment time.

If long latencies of judgment were due to response competition or ambivalence, concepts yielding long latencies should be associated with more reversals in direction of judgment than those yielding short latencies. In the above experiment the number of subjects were counted on each concept who gave one response on the latency test (e.g. NEGRO - strong) and the opposite on the graphic form (e.g. NEGRO - weak). Correlation of mean

latencies for concepts with their reversal frequencies for males showed r to be .49, and for females .48. These small but significant figures were thought to support the contention that increasing ambivalence among competing reactions may be associated with increasing judgment times.

c) Reliability and Validity of the Semantic Differential

1. Reliability:

To be useful a measuring instrument must produce consistent scores repeatedly, given the same conditions. Osgood et al (1957) produced much evidence for great consistency of scores on the semantic differential. They suggested that the conventional measure of reliability - the correlation coefficient r - was not of great use with semantic differential data as it does not take into account absolute differences between means of the two tests. In early work they found a test-retest correlation over all items of .85. In later work they preferred to measure reliability in terms of average absolute deviation in scale units. These showed average errors of measurement of the semantic differential scales to be about three-quarters of a scale unit, with evaluative scales being the most reliable - about half a scale unit. A slight increase of deviations was found after three weeks. Luria (1959) tested the reliability of neurotic and control patients, using mean absolute deviations, and again found the evaluative scales to be most reliable, potency and activity scales being less so. Neurotics and controls were equally reliable. Bopp (1955) estimated test-retest reliabilities for normal controls vs. schizophrenics, and yet again found the evaluative scales to show smallest average absolute errors.

The schizophrenic patients also showed significantly poorer reliability than controls.

Norman (1959) computed an index of what he called 'stability'. He calculated the number of scale-unit discrepancies appearing in a retest as a proportion of the maximum number possible. This was the percentage of maximum unit discrepancy (%MUD). He claimed that this was a more appropriate measure than r. Using undergraduate subjects, he found that men and women were equally consistent, and that increasing the number of constituent scales in a factor increased consistency of factor scores. He found great stability for group-mean D values. He also computed some correlation coefficients - r for evaluation (8 scales) was .79, for potency (3 scales) .77, and for activity (3 scales) .82. His report does not state the concepts on which his figures were obtained - these may well be important as stability might vary with different concepts. It is also instructive to plot his data for %MUD against r's computed for the same items - these show an excellent linear relationship, which indicates that with his data either value is an equally useful measure of stability.

Over all reliability tests naturally hangs the issue of whether change in scores reflects unreliability of the instrument itself or instability of the item measured. This is still an open question for semantic differential data.

2. Validity:

Validity is the degree to which an instrument measures what it is supposed to measure, i.e. the degree to which performance on a psychological test corresponds to performance in a life situation (Murphy, 1951 p.583).

There is disagreement on what precisely establishes the validity of an instrument. Several types of validity have been described. "Validity by definition" is a judgment on the pertinence and comprehensiveness of the operations used to define the characteristic to be measured (Stevens, 1951). This appears closely related to the concept of "face validity". An instrument may be said to have face validity (Osgood et al, 1957) to the extent that the distinctions it provides correspond with those which would be made by most observers without the aid of the instrument.

Another type of validity concerns criteria external to the instrument. Stevens (1951, p.1246) analysed the issue lucidly:

"The second type of validity concerns the agreement between evaluations of the same individuals by two nonequivalent measures, one of which is termed the criterion (dependent) variable and the other the predictor measure. The basic similarity between the statistical concepts of validity and reliability is evident in this formulation; the difference between them rests with whether the measures are nonequivalent or equivalent.

Obviously the statistical concept of validity, since it refers to a relation between a criterion measure and some other assessment, is dependent upon the particular criterion used. For each different objective or purpose a different criterion is required. The statistical validity of a measure varies them from one activity to the next. In this sense a test has no intrinsic validity; it has as many validities as there are criterion measures to be predicted".

There are many examples given by Osgood et al (1957) to support face validity of the semantic differential, where there is agreement between common sense distinctions and those provided by the instrument. Some examples are also given of agreement between external criteria and the evaluative dimension.

Another provision of an external criterion for one of the factors is given by Solarz (1963) who showed that a hand-tapping response to words

was closely connected to the activity factor as measured on the sd.

So far few external criteria have been shown to correspond to meaning as measured by multidimensional distance (D). Commenting on work unavailable to the writer, Baxter (1962) stated that Dicken was able to show significant differences in generalization between clusters of words varying in semantic profiles, but that he found anomalous differences in generalization between theoretically equivalent words within clusters. Baxter further tested the validity of multidimensional distance as an effective measure of meaning similarity by studying the amplitude of the galvanic skin response (GSR) generalizing to non-critical test words. It was hypothesized this would bear an inverse relationship to the multidimensional distance of these words from a critical word. It was also hypothesized that differences in the slopes of generalization would occur as a function of the evaluative meaning of the critical word. After testing 60 men and women in three groups of 20, Baxter found no orderly variation in response amplitude as a function of multidimensional distance. Replication of this test yielded the same result. He did find that the slopes of generalization between words interacted as a function of the evaluative meaning of the critical word. Baxter concluded that the principle of reciprocal inhibition with respect to the evaluative dimension held, but that multidimensional distance (D) failed to provide an effective measure of meaning similarity under his conditions of testing.

d) Some Applications to Psychiatric Problems

1. Personal Relevance and the semantic differential

A potentially important refinement of the technique in psychiatric research, especially in individual patients, was developed by Mitsos (1961). He demonstrated that using personally meaningful dimensions enhances the semantic differential measure. Mitsos pointed out the similarity between Kelly's personal construct analysis and the semantic differential. Kelly's personal constructs are viewed as bipolar dichotomous abstractions along which the person ascribed meaning to his world. In both techniques bipolar construing dimensions - personal constructs in Kelly's system and scales in the semantic differential - are put to quite similar use. But the techniques differ in one important area - Kelly emphasizes the personal nature of the dimensions, and therefore allows each subject to use his own constructs in the examination. With the semantic differential, however, all subjects construe the objects in question with the same set of scales determined by the examiner. Mitsos predicted that the introduction of subject oriented personal constructs within the conventional semantic differential should yield concepts more saturated with meaning, without significant change in the total semantic structure.

He tested 16 students. 7 sd scales on each of the 3 main factors were given to the students. Out of each 7 scales the subjects were asked to select the 3 they considered most personally meaningful in thinking about people. Thus from 21 scales each subject selected 9 he felt he could meaningfully use in construing people, evenly distributed among the 3 major sd factors. Each subject then used all 21 scales to rate 7 concepts (BIG BUSINESS LEADER, JUNIOR EXECUTIVE, FOREMAN, UNSKILLED LABORER, POLITICIAN, LABOR RACKETEER, COMMUNIST).

Data were analysed using Osgood's multidimensional distance formula. 3 D score matrices were computed (21 scale matrix, personal scale matrix, infrequent scale matrix), and showed marked differences in score magnitudes. Scores in the personally meaningful scale matrix were largest, being significantly greater than the distances based on all 21 scales, these again being significantly greater than those based on the infrequently selected scales. Models constructed from the 3 matrices had similar shapes, though differing greatly in size. Mitsos regarded this as evidence that the increased meaningfulness of selected concepts did not occur at the expense of distortion in the semantic field.

This work requires replication and elaboration, but indicates a valuable method for increasing sensitivity of the semantic differential in psychiatric research, where personal constructs are so often the focus of investigation. The technique, however, is cumbersome to apply to large groups, and would be easiest to apply in measuring changes in individual patients.

2. Delusions and phobias:

Using a semantic differential technique, Arthur (1962) investigated the meanings of concepts in three groups - 6 deluded patients, 4 phobic patients, and 11 normal adults. 10 sd scales were used (5e, 3p 2a) to rate 8 common concepts - LOVE, UNHAPPINESS, FEAR, GUILT, UNCERTAINTY, EXCITEMENT, MYSELF, MYSELF AS I WOULD LIKE TO BE. Delusional and phobic concepts were given to the relevant groups. Comparisons were made for each factor score separately. Within groups critical vs. common concepts showed the deluded group to have higher intensity of scores on the delusional concepts,

but that this was greatest on the potency and activity factors. In the phobic group phobic concepts showed greater intensity of scores on potency and activity factors compared with other concepts. He concluded that delusions are concepts carrying more intense meaning than non-delusional concepts. The same applied to phobic concepts in phobic patients.

3. Attitude to old age and mental illness:

Eisdorfer and Altrocchi (1961) tested the attitude of 103 undergraduate students towards old, average, neurotic and insane persons. Concepts measured were AVERAGE MAN AVERAGE WOMAN OLD MAN OLD WOMAN NEUROTIC MAN NEUROTIC WOMAN INSANE MAN INSANE WOMAN. 20 scales were used (13 e, 2p, 2a, 3 'understandability'). Mean factor scores were used in all analyses, these being subjected to analysis of variance and t tests. Results indicated that while old persons were clearly differentiated from average and the mentally ill, the direction of such differences varied greatly according to the specific attitudinal component involved. This research points to the value of subjecting different dimensions of the semantic differential to separate analysis to detect differences in various components of the total profiles.

4. Effect of leucotomy:

Only a brief inadequate report is available on use of the semantic differential with this problem - by Semans (1957). 10 concepts were rated on 15 sd scales by 15 severely ill patients before and after leucotomy. 7 patients selected for leucotomy, whose relatives refused permission for operation, served as a control group. Results (the type of analysis is unspecified) showed a significantly greater change in concept ratings when

operation intervened between testing than when ratings were repeated without intervening operation. Time spent on completing the sd was very greatly reduced following operation. Semans also found that atypical performance on the sd may be related to pathological effects of leucotomy not immediately apparent clinically. It is unfortunate that more data on technique and results are not available.

5. Studies on the self-concept:

(i) Self concept and role.

An intriguing study of role demand and self concept was conducted by Talbot et al (1961) in a psychiatric hospital organised as a therapeutic community. Two groups were tested (38 patients - mixed neurotic and psychotic, and 33 staff members) on 12 concepts selected to reflect different levels of social structure within that community, plus the concept ME. These were rated on 15 sd scales, and D scores were calculated for each group. Elementary linkage analysis was used to determine clusters in the D matrix.

Both patients and staff clearly distinguished 3 categories of social position - adult social positions, positions unique for the hospital studied, and those related to being a mental hospital patient. The self concept of staff members was most similar to ratings of usual adult positions. That of neurotic patients was closest to ratings of hospital-created positions, and the self concept of psychotic patients was most similar to a cluster including MENTAL PATIENT. The inference was drawn that the self concept of staff members was most congfuent with the role positions they were similar to. An additional finding was striking

similarity on a responsibility dimension between ratings of usual adult positions and ADULT, between hospital created positions and ADOLESCENT and CHILD, and between mental patient positions and BABY.

The study is a useful adaptation of the semantic differential to throw light on role functions in a hospital community.

(ii) Self concept in neurotics

A semantic analysis of normal and neurotic therapy groups was undertaken by Luria (1959). The three normal groups contained 94 college sophomores. The three therapy groups contained 107 patients in therapy mainly in university settings. 15 concepts were tested from two categories - significant persons (ME MY MOTHER MY FATHER MY SPOUSE CHILD MY DOCTOR) and conceptual abstractions (LOVE MY JOB MENTAL SICKNESS PEACE OF MIND FRAUD SELF-CONTROL HATRED CONFUSION SEX). 9 sd adjectival scales were selected - 3 on each factor of evaluation, potency and activity. Groups were compared on each factor score separately, using the Chi square test. Findings were that therapy Ss devalued concepts of self and of parents, whereas control Ss did not. Half the control Ss viewed the parent alike on the evaluative factor as compared with only one-fourth of the therapy Ss. Where distinction was made between the parents, the mother tended to be the more favorably rated one for both therapy and control Ss. During therapy the self concept improved, but judgments of the parent concepts did not change.

A drawback to Luria's study is insufficient clinical detail on her neurotics, which makes comparison difficult between her neurotic group and other psychiatric groups. The term neurotic is too broad without

specific behavioural selection criteria. It would have also been desirable to know if the change in self concept during therapy accompanied improvement of symptoms.

(iii) Self concept and anxiety

Dyal (1955) studied the relationship between what he termed ego-satisfaction and manifest anxiety (as rated on the Taylor Scale). 124 students were tested on 17 sd scales (9 e, 3 p, 4 a) and 3 from Cattell's personality inventory, which were considered relevant. The scale tense-relaxed was included for the same reason. Concepts rated were MY ACTUAL SELF (AS) MY IDEAL SELF (IS) MY LEAST LIKED SELF (LLS). The ratio LLS - AS/LLS - IS should approach 1.00 as AS approaches IS, i.e. as one's ego-satisfaction increases. Dyal correlated this 'ego-satisfaction index' and scores on the Taylor Scale. All scales combined yielded a small but significant correlation. However, when the scales representing various factors of the differential and the Cattell scales were analysed separately, only Cattell's scales and the activity scales were found to be significantly related to manifest anxiety. Dyal also showed that potency scales and the tense-relaxed scale mainly contributed to a difference between high and low-anxiety males in inferred identification with MY FATHER.

(iv) Self concept and identification:

Psychiatrists attach great significance to patterns of identification children show with their parents. Lazowick (1955) defined identification as the sharing of common meanings between parent and child. He used the semantic differential to measure identification between college

students and their parents. He obtained two groups of students differing in anxiety level by taking the top and bottom 10% of 418 students using the Taylor Manifest Anxiety Scale. The index of identification was the semantic distance between profiles for the following 10 concepts: MYSELF FATHER MOTHER FAMILY HUSBAND WIFE MAN WOMAN PLEASANT UNPLEASANT. Two types of identification were defined: 1. Direct identification (profile similarities between the child's concepts and parent's concepts. 2. Inferred identification (profile similarities between the child's ratings of MYSELF and of MOTHER and FATHER).

Using the measure of direct identification, low-anxiety children identified more closely with the like-sex parent than high-anxiety children. Low-anxiety men showed greater similarity to mothers as well as fathers than did low-anxiety women. The overall similarities of children with their own parents were not significantly greater than those between parents and children matched at random (except for low-anxiety males with their own mothers). Lazowick felt this might indicate a stable cultural norm determining meanings of these concepts. This would have been more acceptable had he used more specific terms like MY FATHER and MY MOTHER, rather than the more general terms MOTHER and FATHER.

The measure of inferred identification showed similar results. However, though low-anxiety men had greater similarity between MYSELF and FATHER than they had between MYSELF and MOTHER, low-anxiety women did not make the same distinction.

Lazowick's measures of identification are interesting and useful. Caution should be exercised in accepting his regard of high-anxiety subjects as 'neurotic', compared with low-anxiety subjects as 'normal'.

At least one other worker (Beitner, 1961) has used his measures. Beitner measured identification in hospitalized paranoid schizophrenics, an out-patient VA mental hygiene clinic sample of anxiety neurotics, and two control groups - hospitalized TB patients and working people. Results indicated that paranoid schizophrenics lacked identification with either parent. To a lesser extent this was also true for the neurotic groups, but the latter also showed 'confusion of identification'.

(6) Psychotherapy and dreams

Psychotherapy and dream symbolism were ingeniously studied by Moss (1953 and 1961) using a semantic differential technique with hypnosis. Two patients were studied throughout psychotherapy - in one patient therapy was successful, in the other therapy was terminated midcourse without improvement. Sd measurements on 10 clinically important concepts were taken at several points during therapy, and specific concepts related to dream material were also measured. In addition measurements were made while patients were in a hypnotic trance. D (distance) scores were used. A hypothesis that semantic distance between waking and hypnotic profiles should be smaller at the end of successful therapy than at the beginning was confirmed at the 1% level. In the unsuccessful case semantic distances were greater at the end than at the beginning of therapy. The greatest reduction in distance between waking and hypnotic ratings were in concepts judged clinically to represent conflict areas. Movement was greatest on evaluative scales.

Dream symbolism was studied in two patients treated by Moss. Latent content was obtained by training the patient to interpret his own

dream under hypnosis. The patient free-associated to the dream first in the waking, then in the hypnotic state. Ratings of the symbols as used in the dream state were then obtained from the patients immediately after emerging from the hypnotic trance. The ordinary meanings of the symbols as used in ordinary experience were found several weeks later by inserting them as concepts in general materials the patients were judging. It was assumed that waking and hypnotic ratings were equivalent to conscious and unconscious meanings respectively.

In 19 out of 21 instances where dream symbols emanated from a conflict area, the meaning of the dream symbol was semantically closer to the hypnotic (unconscious) meaning of the thing symbolized. However, in the successful case, although there was much evidence that the patient had greater anxiety during the first half of therapy than during the second half, semantic distances between the dream symbols as rated under hypnosis and then several weeks later were not significantly different during the two halves of therapy. In most instances dream state ratings were distorted toward ratings of the latent content. Also of interest was the fact that D values for dream symbols vs. latent conflict yielded similar differences when computed separately for evaluative and non-evaluative scales.

In later experiments Moss studied hypnotic symbol formation in a normal female subject. The concepts PENIS, VAGINA and INTERCOURSE were rated before and after hypnosis. During the hypnotic trance the patient was instructed to perceive first the male sex organ on a blank screen, then a picture symbolizing it as though in a dream. In the trance she then signalled the beginning and end of a dream, reporting having seen a

man's body, then a necktie with a tight knot in the end of it. She was instructed to be amnesic for the episode until a given signal, whereupon she would remember only the necktie (not its covert meaning). The patient was woken, and rated the general concept NECKTIE on the sd. At the pre-arranged signal she instantly recalled the necktie she had perceived on the screen (but not its association with the male organ). She was then asked to rate this specific necktie on the sd. She was induced into a second hypnotic trance, again told to perceive the screen and the familiar necktie, but that this time the necktie would depict the female genitalia. Again she was instructed to be amnesic for the suggestion, and woke up. She reported the necktie had changed "it had a crease down the centre of it and seemed quite curved". She rated this new necktie on the sd. Lastly during a third trance the patient was instructed to perceive a symbol for sexual intercourse and rated this on waking. Some time later the patient rated these symbols again to obtain their ordinary meaning.

As analysis of distances showed the symbols to be close to the items symbolized, and in some instances to move away in meaning when rated later out of dream context. This, however, was not a constant relationship.

The main difficulty with this work is uncertainty that symbol formation is identical in the dream and hypnotic state. Certainly physiologically the two states differ. Nevertheless, his approach is original, lends itself to manipulation, and deserves to be carried further.

6. EMOTION AND CONCEPT

A. STUDIES ON EMOTION:

One of the key problems in the study of behaviour is that of emotion - its definition, manifestations, genesis, control and measurement. All these aspects may be approached physiologically and psychologically, one field merging into the other, with no clearcut boundary. Peripherally somatic changes during various emotional states have been measured, the patterns of response for different individuals and for different emotions have been slightly elucidated, some biochemical changes both producing and resulting from emotional states have been noted, other physiological changes have been used for detecting emotional events, the pulse, galvanic skin response, respiration, corticosteroid level and numerous other measurements utilised to measure facets of emotion (Dunbar, 1954). More centrally, neurophysiologists have shown many neural and neuroendocrinal mechanisms linked with emotional ones - nearly all in animal experiments (Brady, 1960). Most measurements until recently were of rather peripheral phenomena, on distant ripples far from the centre of their origin, simply because more central ones relevant to the clinical situation have been difficult to get at. Recently those neurophysiologists working on brain mechanisms subserving emotion, e.g. on the limbic and hypothalamic systems, have approached nearer the crucial seat of emotional change from the physiological angle.

Psychologically, there has been much measurement of peripheral phenomena of reaction times to stressful events and words, judging the size of emotionally toned pictures, and variants of this theme. There has

also been extensive investigation of more central aspects of individual's emotions and their multifarious expressions by psychiatrists and psychoanalysts, the main instrument of investigation being a special form of interview. This has yielded a rich crop of data and speculation on central emotional mechanisms. Numerous statements are made of patterns of 'dealing' with anxiety, typical reactions to the experience of anger, of inability to handle feelings of affection, and of pathological behaviour resulting from failure to channelise these emotions in fashions acceptable both to the individual and to the culture he moves in. These concepts have widened our psychological horizon considerably, but there is more need for them to be ordered and organised in testable fashion. Brady stated that "the failure of psychological science to keep abreast of anatomical and physiological developments (in emotion) is clearly reflected in the obviously primitive... descriptions and definitions of emotional behaviour which characterise....research in this area". However, recently increasing work has been devoted to unravelling the features of emotional behaviour in testable fashion. Folkard (1957) reviewed some experimental work on aggression, and other workers (Berkowitz et al 1962, Clark 1962) are developing further means of exploring this field. The present investigation explores emotion at this level.

B. THE MEANING OF CONCEPT:

At this point it would be interesting to compare the views of 3 separate workers apparently approaching a problem from differing angles, one a Russian, the other two American. All 3 dress a similar idea in a different garb of language.

A.C. Luria: "Speech, or in Pavlovian terminology, second signalling links, plays a decisive part in the process of formation of new temporary links in human beings. These are the links that are incorporated into man's orienting activity, that abstract and systematize the signals acting on the organism, and inhibit its direct impulsive reactions. This process creates a new information system within which each signal presented to the subject now operates ..

The adoption of a verbal rule at once modifies the nature of all subsequent reactions. Once taken into the system of verbally formulated links, the stimulus in question becomes not a mere signal but an item of generalized information, and all subsequent reactions depend more on the system it is taken into than on its physical properties ..

The child orients himself to the given signals with the help of the rules he has verbally formulated for himself; this abstracting and generalizing function of speech mediates the stimuli acting upon the child and turns the process of elaboration of temporary connections into a complex "highest self-regulating system"."

C.E. Osgood: "Within the general framework of learning theory, the meaning of a sign was identified as a representational mediation process - representational by virtue of comprising some portion of the total behaviour elicited by the significate, and mediating because this process, as a kind of self-stimulation, serves to elicit overt behaviours, both linguistic and non-linguistic, that are appropriate to the things signified. In semantic decoding, stimulus patterns (signs as stimuli) selectively elicit representational processes as reactions; in semantic encoding, vocal, orthographic, gestural and other response patterns (signs as responses) are selectively elicited by representational processes as stimuli. Thus we have a two-stage, mediational mechanism."

W.E. Vinacke: "A concept is basically a system of learned responses the purpose of which is to organize and interpret the data provided by sense-perception. Past experience is automatically applied to present contingencies through the use of concepts. Usually concepts are associated with specific words or phrases ...

Concepts, then, are complex systems of higher-order responses in terms of which our more basic response-patterns are organised. Their chief function is:

1. To relate previous learning to current situations arising within the subject's present experience.

2. To influence and organize each other. In time concepts form a complex system which can influence the course of behaviour quite independently of sensory stimulation. A word or phrase can set

> off a train of thought which ultimately initiates behaviour - most of the activity coming through conceptual thinking."

The similarity between "representational mediation process", "second signalling system links", and "a system of learned responses" can be easily seen. All have in common the idea of something condensing aspects of past experience in a manner influencing present behaviour. This brings us back to the starting point of our thesis, which is how present abnormal behaviour and patients' concepts, those condensations of their past experience, reflect each other.

II. INVESTIGATION

7. THE CLINICAL SAMPLES

A. General features:

Three matched groups of patients were studied, each half male and half female.

1. 20 obsessive-compulsive patients (henceforth called O), defined as anybody in whom obsessive-compulsive features were their main symptoms leading to their requiring treatment. This group is comprised of patients generally not acting impulsively. No patients were included in which the obsessive-compulsive features were simply secondary accompaniments of another major set of symptoms like depressive illness, schizophrenia or organic disease.

2. 20 psychopathic patients (henceforth designated as P), defined as anybody in whom the main features leading to treatment were repeated (more than once) open aggression, violence, screaming, theft, or drug addiction (excluding alcohol). Only 2 of the 20 were included solely for drug addiction. This group comprises patients who act on their impulses excessively, and in this respect are the polarity of obsessives. No patients were included in whom the symptoms were thought to be secondary to demonstrable epilepsy or other organic changes, or in whom the aggression, violence, screaming or drug addiction were thought to be secondary to another psychiatric disorder such as schizophrenia.

No patients exhibiting mixed features of obsessives and psychopaths were included. The groups were therefore homogeneous for

the criteria described above.

3. 30 control orthopaedic patients (henceforth called C), non-psychiatrically ill, of whom only 9 were admitted as the result of an accident. All those with psychiatric disturbance, or with a history of repeated (more than one) accidents, were excluded. The influence of accident proneness will therefore have been reduced to a minimum, and cannot be expected to be markedly affecting scores in this sample.

B. MATCHING AND SELECTION OF THE SAMPLES:

The three groups were closely matched for age, sex, socio-economic status, education and intelligence. Analysis with sexes combined in each group shows that there is no significant difference between these groups in any of these respects at the 5% level (see Table 1). Separate analysis even with the sexes separated showed the groups to be comparable in all these respects (see Table 2).

All the patients were white, and spoke English as their home language. All were hospitalised, except 4 outpatients (2 O and 2 P). All were tested by the author in hospital, except 3 who were given the sd by their doctors. Participation was voluntary, so there was some self-selection as a small number of suitable patients in each group refused the sd booklet. (1 - O, 4 - P, 6 - C). Patients with an intelligence score below 85 were excluded. The fact that the psychiatric patients had had detailed histories taken, often followed by psychotherapeutic interviews, differentiated them from the controls. This contact with psychiatrists conceivably could be affecting scores, but how is speculative.

The patients were all selected by strictly behavioural criteria, and not by diagnosis of the doctors in charge. The selecting data were obtained from doctors and nurses notes, supplemented by talking to the doctors, nurses and patients. Selection was thus an active process, designed to make the groups as uniform behaviourally as possible, and controlling those respects already mentioned which might reasonably be expected to affect scoring on a test of meaning of emotional and personal concepts.

The groups are relatively small. Controlling many variables inevitably restricts sample size severely, especially in conditions as infrequent as obsessive neurosis. However, the strict control of behavioural selection criteria, and of important variables across groups which would otherwise bias scoring, allows more conclusions to be drawn from these samples than from much bigger uncontrolled populations.

The clinical features of the psychiatric patients will now be described for the groups as a whole. The individual case histories are included in the appendix (pages A-1 to A-22).

Table 1

MATCHING OF THE GROUPS: SEXES COMBINED

		Obsessive	Psychopath	Control
Age:	Mean	34	30	32.5
	S.D.	12.3	9.5	12.6
Sex:	Males	10	10	15
	Females	10	10	15
Social class:	Mean	3.9	3.9	3.7
	S.D.	1.72	2.31	1.79
Intelligence:	Mean	105	104	107
	S.D.	13.7	15.0	14.0
Education:	Mean	1.55	1.40	1.50
	S.D.	0.669	0.678	0.682

Age: Given in years.

Social class: This was scored on the Hall-Jones occupational scale for males. The scale was from 1 to 7 as follows:

1. Professionally qualified and high administrative
2. Managerial and executive
3. Inspectional, supervisory and other non-manual (higher grade)
4. Inspectional, supervisory and other non-manual (lower grade)
5. Manual - skilled
6. Manual - semi skilled
7. Manual 9 routine

Intelligence: The Mill Hill vocabulary scale was used on 68 out of the 70 patients. The other 2 were scores from other intelligence tests. All intelligence ratings were recent, or at time of testing.

Education: These were scored 1 for secondary modern schooling, 2 for Grammar School or equivalent, and 3 for university or any other higher education.

S.D. = standard deviation.

Table 2

MATCHING OF GROUPS, SEXES SEPARATED

	(Means)	Obsessional	Psychopath	Control
Age:	Female	33.3	29.5	31.7
	Male	34.6	30.1	33.7
Social class:	Female	3.8	4.0	4.1
	Male	4.1	3.9	3.7
Intelligence:	Female	103	104	107
	Male	108	104	107
Education:	Female	1.6	1.5	1.5
	Male	1.5	1.3	1.5

The matching was originally for the groups with the sexes combined. However, when the sexes were compared separately the matching still held, even though this was not part of the original design. Thus, though the groups become small when the sexes are separated, the preservation of matching renders the results more reliable than they otherwise would have been.

C. DETAILED CLINICAL FEATURES OF THE PSYCHIATRIC PATIENTS CONSTITUTING THE SAMPLES

1. Method of obtaining the histories:

As already noted, these were obtained primarily from the case notes, supplemented by talking to the doctors, nurses and patients concerned. The notes of patients from the Maudsley and Bethlem Royal Hospitals were adequately detailed (all 20 obsessives and 9 psychopaths). Those notes from an observation ward (9 psychopaths) and another psychiatric hospital (2 psychopaths) were slightly less detailed. These data provide some idea of the clinical features of the patients tested. They have the disadvantages of any information collected by many different persons in a

relatively unstructured interview designed for purposes other than the study using the data. The data on all obsessives may be regarded as adequate, and only slightly less so on half the psychopaths. In these the value was in the positive features found, the data providing a minimum baseline of description, though the incidence of violence, convictions and family disturbances in half the psychopathic sample may have been higher. Where follow up was noted this was obtained by a variety of means - mostly through postal enquiry, some through direct observation or verbal reports of their doctors.

The samples are described in detail to enable better evaluation by readers of the population tested when comparing results of this study with those of other investigations. In the account which follows the numbers in brackets indicate the patient number in the appendix. Numbers 1 to 10 are always male, 11 to 20 always female. M refers to male, F to female.

2. OBSESSIVE-COMPULSIVE GROUP

Selection criteria were the presence of obsessive or compulsive symptoms incapacitating the patient. These symptoms were resisted by the patient, recognised as being irrational and unnecessary, and were not delusions. None were included where the obsessive-compulsive features were incidental to another major psychiatric disorder such as schizophrenia, organic brain disease, or were part of a severe depressive illness which responded to antidepressive measures with resolution of the obsessive-compulsive phenomena. The obsessive-compulsive features had to dominate the picture for the patient to be included in the sample.

All were inpatients of the Maudsley and Bethlem Royal Hospitals, with the exception of 3 who were well enough to be outpatients. Only 5 had been incapacitated a year or less by their symptoms. 5 had been incapacitated from 1 to 5 years, and 10 had had their symptoms for over 5 years. 4 had had them longer than 10 years, the longest being 25 years. Many had had repeated hospital admissions for their symptoms, with a range of treatments from a galaxy of drugs to ECT to leucotomy to analysis.

Incapacitating obsessive thoughts were present in 12 (5 M, 7 F).
(nos. 2,4,6,7,10,11,12,16,17,18,19,20)

14 (7 M, 7 F) had marked compulsive actions (nos. 1,2,3,5,7,9,10,11, 13,14,15,16,17,19).

7 showed both obsessive thoughts and compulsive actions
(3 M, 4 F. nos. 2,7,10,11,16,17,19).

Compulsive washing: Excessive bodily washing was noted in 3
(all M - Nos. 2,5,7).

Excessive hand washing was present in 8 (3 M, 5 F).
(Nos. 1,7,10,11,13,14,17,19).

It is of interest that only one of these (M - No. 7) showed a mixture of both hand and general bodily washing.

Depression: This was moderate in 4 (3 M, 1 F) at the time of testing (Nos. 2,6,10,12).
Marked depression was present in 2 patients at the time of testing (1 M, 1 F - Nos. 8,11).

However, in all of these the obsessive-compulsive features predominated in the picture, despite the fact that antidepressant drugs, and ECT had to be given to several at some stage of their present or past admissions.

The most difficult problem in selection was whether depression, when present, was the main feature, rather than the obsessions. As the two syndromes of depressive illness and obsessive neurosis frequently overlap, the distinction inevitably becomes arbitrary at some point. The only two patients severely depressed when tested, had a continual background of incapacitating obsessive symptoms which continued when the mood changed. At follow up, 1 patient (No. 6) who had been moderately depressed when tested, showed subsequent resolution of both obsessive and depressed features - this was the only case which on retrospective analysis could perhaps be argued as a depressive illness with secondary obsessive features, and his history when tested did not allow one to predict this outcome.

Though the sample still stands as a relatively pure culture of obsessive neurotics, some of whom showed depressed mood as well, the question still arises as to the influence of this mood, rather than the obsessive process, on scoring. The inclusion of patients showing even depressive mood change can therefore be criticised, as this introduces a fresh variable into assessing, for example, the self concept. Nevertheless, detailed analysis within the group can help to clarify which is operating. The effect on scores is described later (see p. 155).

Previous personality: 15 of the 20 showed some obsessive traits in the previous personality (all except nos. 2, 12, 14, 16, 17). This

preponderance of obsessive traits prior to onset of illness is in keeping with the usual findings in this syndrome. Only one of the entire sample gave a history of impulsiveness and impetuosity (No. 14).

Overt aggression: Only one patient in the whole group had a history of abnormal open aggression, and that was an isolated incident (No. 8).

The previous personality and absence of abnormal open aggression confirms the usual picture of obsessives as a group being controlled in the expression of their feeling and highlights the contrast in this regard with the psychopathic sample (see below). Though the contrast was aided by prior selection omitting patients showing mixed features, very few of these were actually encountered. The polarity of the two groups with regard to acting upon feelings reflects a natural distinction between the two syndromes.

One patient showed mild Parkinsonism (M No. 4) but there was no reason to suppose this was post-encephalitic, and it was regarded as incidental to his obsessive illness.

Leucotomy: 2 of the patients (Nos. 1, 15) had a leucotomy some time before testing. A further 3 (Nos. 2,9,14) underwent leucotomy during the follow up period after testing.

Family history:

This provides a marked contrast to that of the psychopaths. Only 3 (2 M, 1 F) had one or both parents absent from home for several years before the age of 12 (Nos. 2, 4, 15). In 2 of these both parents were absent, in the third only the father. None of the homes had a

history of parental divorce or separation. Only one was illegitimate (M, No. 2). None of the patients gave a history of violence in the home.

The general picture was that of an intact, stable home, and in the 3 where the parents were absent the parental surrogate was continuously in charge of the patients, and was spoken of with affection. A few did have a history of parental unhappiness, but where this was present this was manifest in quiet fashion rather than as open quarrelling.

3. PSYCHOPATHS

Selection criteria were the presence of one or more of the following four features:

1. Physical violence of repeated nature, ranging from severe bodily assault to simple hitting of people. This was present in 10 (7 M, 3 F). (Nos. 1,2,4,6,7,9,10,14,18,20).

2. Shouting, screaming, general abusiveness of repeated nature (sufficiently disturbing to bring the patient to treatment). This was present in 9 (1 M, 8 F). Nos. 9,11,12,14,15,16,17,18,20).

3. Repeated theft, robbery, larceny or fraud. This was present in 7. (6 M, 1 F). (Nos. 1,4,5,6,8,9,13).

4. Drug addiction of at least a year's standing, not including alcoholism. This was a feature of 6 patients (2 M, 4 F). (Nos. 3,4,11,12,15,19). In only 2 of these (1 M, 1 F - No. 3,19) was this the only criterion of selection.

In retrospect this last criterion of drug addiction could be criticized as rather different in type from the other three variants of

impulsive action. Fortunately this only influences 2 of the sample. These 2 did indeed show better and less dangerous parental images than the sample average. Their inclusion thus might have diluted differences of the whole sample from the other groups, but does not affect conclusions from actual differences found.

None of the patients were considered to show these features secondary to epilepsy, other organic disease, or other psychiatric disorder such as schizophrenia. Sexual offences were not a criterion for selection.

Though 2 patients had a history of blackouts, their behaviour was not considered to be a complication of epilepsy. Similarly in a patient with auditory hallucinations these were part of her amphetamine addiction, and not of schizophrenia.

Half the sample showed at least 2 of the 4 selection criteria. The male and female halves of the sample differed to some extent in that physical violence, theft and robbery predominated in the males, whereas abusiveness, screaming and drug addiction were present more in the females.

Other features present in the sample were the following:

Alcoholism: Prolonged excessive drinking was present in 5 (4 M, 1 F) (Nos. 2,3,4,10,17).

Police charges and/or prison convictions feature in the history of 11 (7 M, 4 F) (Nos. 1,2,4,5,6,8,9,13,14,17,19).

The offences varied from assault, theft, public abuse and drunkenness, to sexual misdemeanours. Many patients had repeated convictions.

Suicidal attempts: These were made in 7, often repeatedly (2 M, 5 F). (Nos. 3,10,13,14,15,17,19).

Disturbed childhood behaviour: A history of this was found in 9, including fear of the dark, nightmares, stammering, enuresis, truancy (4 M, 5 F). (Nos. 2,4,7,9,11,13,16,18,19).

All the items so far indicate the severe general behaviour disorder in these patients, commonly with childhood antecedents.

Sexual history: 3 (2 M, 1 F) had a history of homosexuality (Nos. 4,9,15). Promiscuity was not mentioned much in the notes of the males though this could be inferred in the majority indirectly. In the females this was mentioned in 6. This probably reflects a cultural bias of the medical staff taking the history, in that promiscuity was more often a matter for comment in the females than in the males. This should be borne in mind when later assessing the results of testing love-affection concepts.

Family history: This was strikingly different from that of the obsessive compulsive group, and accords with the consistent findings of many workers. There was a very high incidence of one or both parents absent from the home for several years before the age of 12, and of illegitimacy. Absence of a parent due to war service is not included in these figures.

A history of father being absent from the home for several years before the patient was age 12, was present in 13 patients (6 M, 7 F) reasons given varying from his being unknown, to death, to desertion. (Nos. 3,4,5, 6,7,9,11,13,15,16,18,19,20).

Mother was absent from the home for several years in 9 (4 M, 5 F). The reasons given varied as with the father (Nos. 3,4,6,9,13,15,18,19,20).

All 9 of those patients with a history of a mother absent from home also had a history of a father absent from home. The greater number

of absent fathers is of interest, with reference to past emphasis on the role of maternal deprivation in the genesis of delinquent and psychopathic behaviour.

There was also a high incidence of illegitimacy or unknown parenthood, being present in 8 (5 M, 3 F). (Nos. 3,4,5,7,9,14,15,18).

3 patients (1 M, 2 F) were known to have been brought up in orphanages (Nos. 3,15,20).

3 patients (2 M, 1 F) were brought up by foster parents (Nos. 4,9,18).

Only 2 gave a history of family violence, but the histories in this regard were generally inadequate.

It will be noted that these features of broken homes were found to roughly the same degree in the male and female halves of the sample, unlike the selection criteria.

Table 3

BIRTH AND PARENTAL ABSENCE IN PSYCHIATRIC SAMPLES

	OM	PM	OF	PF	OFM	PFM
Father absent	2	6	1	7	3	13
Mother absent	2	4	0	5	2	9
Both parents absent	2	4	0	5	2	9
Illegitimacy or unknown parenthood	1	4	0	3	1	8

Table 3 shows absence of parents from the home, and illegitimacy, or unknown parenthood. O = obsessives; P = psychopaths; F = females; M = males; FM = both sexes combined.

4. Family history in the control:

Only rough but suggestive figures are available. 1 only out of 14 answering a questionnaire was separated from home before the age of 12 (due to physical handicap). None lost their mothers, and 3 lost their fathers (1 in the war) before the age of 12. This incomplete picture in the controls suggests, as in the obsessives, a relatively stable childhood environment.

8. TECHNIQUE

1. CHOICE OF CONCEPTS:

Each patient had to mark a booklet of 19 pages, one page for each concept. Each page contained 11 identical bipolar adjectival scales. At the top of each page was a separate concept to be judged on the scales. The first page had the concept "ugly" at the top. The other pages contained the concepts to be tested, in random order to avoid position effects. The booklets were administered individually by the experimenter. The majority of patients completed the booklet in 15 to 30 minutes.

The 19 concepts tested were as follows:

3 personal concepts:	MYSELF, MY FATHER, MY MOTHER
15 emotional concepts:	
Anger-hostility area:	ANNOYANCE MY FEELINGS WHEN I AM ANGRY SPITEFULNESS MY RESENTMENT OF PEOPLE DISLIKE OF A PERSON
Fear-anxiety area:	FEAR PANIC I HAVE HAD ANXIETY MY FEELINGS WHEN FRIGHTENED WORRY
Affection-love area:	LOVE LIKING OF SOMEBODY SEXUAL INTERCOURSE MY AFFECTION FOR A PERSON FONDNESS
1 control concept:	UGLY

Thus from the wide spectrum of emotional experience arbitrarily 3 bands have been selected which have usually been regarded by psychiatrist,

psychoanalysts and psychotherapists as being clinically important.

1. The anger-hostility area contains aggressive concepts - these represent what are frequently called negative feelings because they all share in common the quality of repelling, pushing away, other individuals.

2. The fear-anxiety area contains those concepts related to flight, all sharing in common a peculiarly unpleasant feeling tone experienced at some time by everybody.

3. The affection-love area contains what are frequently positive feelings as they share in common feelings usually attracting other individuals.

2. CHOICE OF SCALES:

The value of factor analysis of semantic differential scales lay in reducing a potentially large number of variables to some limited but representative number. No specific scales are perfectly representative of any semantic dimensions, therefore a small sample of scales was chosen for each dimension. The first criterion for selecting scales in this study was therefore their factorial composition. When the work was undertaken this was only available from Osgood's factor analytic studies. Scales were first selected for high loadings on the factor to be sampled. After this, the second criterion they had tonfulfil was relevance to the concepts to be judged. This was based upon judgment of clinical importance in the situations to be studied. As the evaluative dimension was likely to be an important one, this dimension was most carefully sampled, and 5 evaluative scales were chosen (tasty-distasteful, clean-dirty, good-bad, pleasant-unpleasant, kind-cruel). The other 2 main dimensions were represented by 2 scales each, potency by weak-strong and mild-intense, and

activity by passive-active and calm-excitable. After these 9 scales had been chosen, it was felt that a further dimension was of clinical importance - the element of danger and risk in the concepts to be rated. No scales could be found from Osgood's studies to represent this element adequately, so 2 special scales were added to tap it. These were harmless-harmful and safe-dangerous, and were called the danger scales. When first chosen their factorial composition was unknown, but later work has revealed this. A scale-by-scale factor analysis of the 11 scales was done on the 3 groups to study their factorial structure - this is detailed in Section 9, but some of the findings will be anticipated now in order to compare the loadings with those obtained from studies of Osgood et al (1957). Table 4A shows both sets of factor loadings of the chosen scales.

The 5 evaluative scales all have high factor loadings on Osgood's studies, and our present groups treat them similarly, though we note clean-dirty to have rather a smaller loading than the other 4 scales. All the scales also have a small but appreciable loading on a subsidiary evaluative factor (labelled danger or risk factor in most of this study). Our 5 evaluative scales are sufficiently similar to be treated as one factor.

The 2 danger scales have much higher loadings on the subsidiary evaluative factor, while retaining smaller loadings on the general evaluative factor. The 2 scales are very similar in composition, and we are well justified in treating them as one factor.

The 2 potency and 2 activity scales have good loadings in figures cited by Osgood (lower figures on these smaller dimensions are more acceptable than they would be on the main evaluative one). On our own

TABLE 4A
FACTOR LOADINGS OF THE 11 SCALES

	FACTOR LOADINGS OSGOOD ET AL (1957)	MEAN FACTOR LOADINGS ON PRESENT FACTOR ANALYSES OF 3 GROUPS		
	Evaluative (Analysis I)	General evaluative (unrotated)	General evaluative (rotated)	Subsidiary evaluative (danger or risk) (rotated)
1.Tasty-distasteful	.77	.78	.76	.25
2.Clean-dirty	.82	.68	.56	.38
3.Good-bad	.88	.86	.84	.35
4.Pleasant-unpleasant	.82	.86	.85	.36
5.Kind-cruel	.82	.85	.70	.54
10.Harmless-harmful	-	.79	.52	.77
11.Safe-dangerous	-	.81	.56	.68

			Dynamism (unrotated)	(rotated)
6.Weak-strong	.62)	(Osgood Analysis I)	.49	
	)Potency			Became
7.Mild-intense	.39)	(Solomon)	.70	
				Specific
8.Passive-active	.59)	(Osgood Analysis I)	.65	
	)Activity			Factors
9.Calm-excitable	.54)	(Tucker)	.50	

NOTE:In the psychopaths scales 10 and 11 had no loading on the subsidiary evaluative factor, being entirely general evaluative. Within each of the 3 groups the scales were used as though they were equivalent. In the psychopaths they were part of the general evaluative factor, in controls the main element of the subsidiary evaluative factor and in obsessives they were mainly the latter. As the 2 scales were equivalent within each group, they could legitimately be joined into a single score for comparisons between groups.

unrotated loadings they tend to behave together with good loadings on a dynamism factor. However, on rotation they split up into specific factors, without appreciable loading on the general or subsidiary evaluative factors. The potency and activity factor scores then are not as representative of their dimensions as the evaluative and danger factor scores are of theirs. In the definitive study we will find most differences in the evaluative and danger scales and factor scores, therefore this is not crucial, but it is possible that such potency and activity factor scores might miss some differences. Alternative methods of analysis will help clarify some of this point.

The 11 scales used were:

general evaluative: (e)	tasty-distasteful clean-dirty good-bad pleasant-unpleasant kind-cruel	(subsidiary evaluative) danger or risk: (d)	harmless-harmful safe-dangerous
potency: (p)	weak-strong mild-intense	activity: (a)	passive-active calm-excitable

3. ADMINISTRATION - INSTRUCTION SHEETS

Each scale was presented as a 7-point scale in identical fashion: e.g.

GOOD__:__:__:__:__:__:__: BAD

The following Instruction Sheets were given to the patient and if not fully understood, were further explained verbally. Instruction Sheet 1 was used initially (taken from Osgood), and was later simplified to Instruction Sheet 2. These should be read while looking at the 3 specimen

booklet pages on p. 86 . Specimen page 1 is a typical page from the booklet as seen by the patient before filling it in. Specimen pages 2 and 3 are pages from the booklet after being filled in and scored.

INSTRUCTION SHEET 1

The purpose of this study is to measure the meanings of certain things to various people by having them judge them against a series of descriptive scales. In taking this test, please make your judgments on the basis of what these things mean to you. On each page in this booklet you will find a different concept to be judged and beneath it a set of scales. You are to rate the concept on each of these scales in order.

Here is how you are to use these scales:-

If you feel that the concept at the top of the page is very closely related to one end of the scale, you should place your cross as follows:-

Fair X :___:___:___:___:___:___: Unfair

or

Fair ___:___:___:___:___:___:X : Unfair

If you feel that the concept is quite closely related to one or the other end of the scale (but not extremely), you should place your cross as follows:-

Strong ___:X :___:___:___:___:___ Weak

or

Strong ___:___:___:___:___:X :___ Weak

If the concept seems only slightly related to one side as opposed to the other side (but is not really neutral), then you should mark it as follows:-

Active ___:___:X :___:___:___:___ Passive

or

Active ___:___:___:___:X :___:___ Passive

The direction toward which you mark, of course, depends upon which of the two ends of the scale seem most characteristic of the thing you are judging.

If you consider the concept to be neutral on the scale, both sides of the scale equally associated with the concept, or if the scale is completely irrelevant, unrelated to the concept, then you should place your mark in the middle space:

Safe ___:___:___:_X_:___:___:___ Dangerous

IMPORTANT: (1) Place your marks in the middle of spaces, not on the boundaries:

___:_X_:___ ___:___ X ___

THIS NOT THIS

(2) Be sure you mark every scale for every concept - do not omit any

(3) Never put more than one mark on a single scale.

Sometimes you may feel as though you have had the same item before on the test. This will not be the case, so do not look back and forth through the items. Do not try to remember how you marked similar items earlier in the test. Make each item a separate and independent judgment. Work at fairly high speed through this test. Do not worry or puzzle over individual items. It is your first impressions, the immediate "feelings" about the items, that we want. On the other hand, please do not be careless, because we want your true impressions.

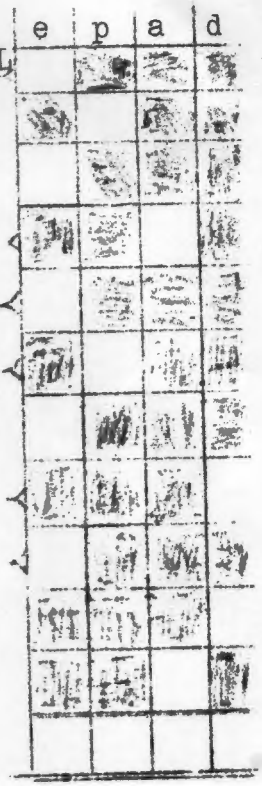
INSTRUCTION SHEET 2

Look at the concept at the top of each page in turn. Then look at each scale in turn (e.g. tasty-distasteful is one scale) to see if the concept at the top of the page has a connection in your mind in any way with one end of the scale or the other. If there is no connection, or the connection is equally strong on each side, put the cross in the middle. If there is a connection more with one side than the other, put the cross in the appropriate position (i.e. in the "extremely", "moderate" or "slight" position).

(Specimen Page 1)

MYSELF

TASTY	__:	__:	__:	__:	__:	__:	__ DISTASTEFUL
STRONG	__:	__:	__:	__:	__:	__:	__ WEAK
DIRTY	__:	__:	__:	__:	__:	__:	__ CLEAN
PASSIVE	__:	__:	__:	__:	__:	__:	__ ACTIVE
GOOD	__:	__:	__:	__:	__:	__:	__ BAD
MILD	__:	__:	__:	__:	__:	__:	__ INTENSE
EASANT	__:	__:	__:	__:	__:	__:	__ PLEASANT
RMLESS	__:	__:	__:	__:	__:	__:	__ HARMFUL
KIND	__:	__:	__:	__:	__:	__:	__ CRUEL
GEROUS	__:	__:	__:	__:	__:	__:	__ SAFE
ITABLE	__:	__:	__:	__:	__:	__:	__ CALM



(Specimen Page 1)

MYSELF

									e	p	a	d
TASTY	__	__	__	__	__	__	__	DISTASTEFUL				
STRONG	__	__	__	__	__	__	__	WEAK				
								CLEAN				

(Specimen Page 2)

LOVE

									e	p	a	d
TASTY	__	X	__	__	__	__	__	DISTASTEFUL	1			
STRONG	__	X	__	__	__	__	__	WEAK		5		
DIRTY	__	__	__	X	__	__	__	CLEAN	3			
PASSIVE	__	__	__	__	__	X	__	ACTIVE			5	
GOOD	X	__	__	__	__	__	__	BAD	0			
MILD	__	__	__	__	__	X	__	INTENSE		5		
LEASANT	__	__	__	__	__	X	__	PLEASANT	1			
ARMLESS	__	__	__	X	__	__	__	HARMFUL				3
KIND	X	__	__	__	__	__	__	CRUEL	0			1
NGEROUS	__	__	__	__	__	__	X	SAFE				0
CITABLE	__	__	__	__	__	X	__	CALM			1	1
	(total of column of scalar scores) = factor scores →								5	10	6	3

scalar scores

(Specimen Page 1)

MYSELF

									e	p	a	d
TASTY	__:	__:	__:	__:	__:	__:	__	DISTASTEFUL				
STRONG	__:	__:	__:	__:	__:	__:	__	WEAK				
[illegible]								CLEAN				

(Specimen Page 2)

LOVE

									e	p	a	d
TASTY	__:	X:	__:	__:	__:	__:	__	DISTASTEFUL	1			
STRONG	__:	X:	__:	__:	__:	__:	__	WEAK		5		
[illegible]								CLEAN	3			

(Specimen Page 3)

MY FEELINGS WHEN I AM ANGRY

									e	p	a	d
TASTY	__:	__:	__:	__:	__:	__:	X	DISTASTEFUL	6			
STRONG	X:	__:	__:	__:	__:	__:	__	WEAK		6		
DIRTY	__:	__:	__:	X:	__:	__:	__	CLEAN	3			
PASSIVE	__:	__:	__:	__:	__:	X:	__	ACTIVE			5	
GOOD	__:	__:	__:	__:	__:	X:	__	BAD	5			
MILD	__:	__:	__:	__:	__:	X:	__	INTENSE		5		
UNPLEASANT	__:	X:	__:	__:	__:	__:	__	PLEASANT	5			
HARMLESS	__:	__:	__:	__:	__:	X:	__	HARMFUL				5
KIND	__:	__:	__:	X:	__:	__:	__	CRUEL	3			
DANGEROUS	__:	__:	__:	X:	__:	__:	__	SAFE				3
EXCITABLE	__:	X:	__:	__:	__:	__:	__	CALM			5	
(Total of column of scalar scores) = factor scores →									22	11	10	8

scalar scores

Positions: good ___:___:___:___:___:___:___ bad

extreme	moderate	slight	neither or both	slight	moderate	extreme

Put only one cross on each scale, and check that all scales on every page have been marked. Do each page separately without referring to the others. Work carefully at fairly high speed - we need your true but immediate impressions.

4. METHOD OF SCORING:

Each individual scale was marked from 0 to 6, the low end of the scale representing tasty, harmless, weak, passive, etc. ends of the scales, the high end representing distasteful, harmful, strong, active, etc. ends of the scales.

On each concept 11 scalar scores were available - from these 4 factor scores were obtained by simple addition. The evaluative factor - (e) - therefore is the resultant of the addition of 5 scalar scores, the other 3 factors each the resultant of the addition of 2 scalar scores (See specimen pages 2 and 3). The midpoint of any scalar score was 3. The range of scores on each concept for evaluation was therefore 0 to 30, with a midpoint of 15. The range of scores for potency, activity and danger was 0 to 12, with a midpoint of 6. Semantic distance measures (D) between

any 2 profiles (using all 11 scales) could vary from 0 to 198 maximum. Methods of analysis in the definitive study are described before the results (p. 118).

5. PILOT PROJECT:

This was run on 8 patients - 4 obsessives and 4 others - to check the practicability of the technique. The booklets proved easy to administer and score. Slight modifications were made to the original pilot booklet, and the main study was then embarked on as described above. Stability and validity measures were taken while the main study was run.

9. DIMENSIONS OF SEMANTIC JUDGMENT USED BY THE GROUPS (Scale-by-scale factor analyses):

Little is known about the way in which different groups of psychiatric patients judge concepts on semantic differential type scales. The present study afforded an opportunity to explore this, and indicate to what extent factor scores were justified in comparisons across groups. As this problem was not the main issue in the major research project, certain shortcomings are present in the design which limit the semantic universe within which the comparisons are made. Only 11 scales and 18 concepts were used (see p.79, 83). 9 of these 11 scales were already selected from factor analytic work of Osgood et al (1957) for high loadings on factors they elicited (see p. 82). 5 of these were highly evaluative in these other studies. All the concepts were very emotional or personal, where again on a priori grounds evaluative meaning could be expected to loom large. Within these constraints it was worth comparing the groups.

A scale-by-scale principal components factor analysis of the 11 scales was performed on each group (20 obsessives, 20 psychopaths and 30 controls); this was done separately across the 15 emotional and 3 personal concepts - a total of 6 factor analyses. Each of the 3 groups thus had an analysis for the 2 types of concept - personal and emotional. An IBM 7090 computer extracted 5 factors, and performed a varimax rotation (see Kaiser, 1958) on each of the 6 factor analyses. Tables 4.a to 4.f show the unrotated loadings, and tables 5.a to 5.f show the rotated loadings.

The unrotated factor loadings show each group to be strikingly similar (with one exception) for both the emotional and personal concepts. A dominant general evaluative factor (I) accounts for nearly half the

variance on 5 of the 6 analyses. In psychopaths it accounts for 50.9% and 50.3% for personal and emotional concepts respectively. In obsessives it accounts for 44.2% and 48.8% of the variance for personal and emotional concepts respectively. In controls it accounts for 46.3% of the variance on emotional concepts, but only 36.9% on personal concepts. Correspondingly the total variance extracted by controls on personal concepts was lower (75.8%) than in the other 5 analyses (81.9% to 86.9%). This dominant evaluative factor comprises the same scales on each of the 6 analyses - scales 1 to 5 (tasty-distasteful, clean-dirty, good-bad, pleasant-unpleasant, kind-cruel) and scales 10 and 11 (harmless-harmful and safe-dangerous). These correspond to what were treated as evaluative (e) and danger (d) factors and scales in the definitive study (see p. 83).

The second factor (II) is also clearly identifiable, as a dynamism factor. Once again the lowest amount of variance is extracted by controls on the personal concepts (12.0%), compared with the other 5 analyses (15.2% to 17.5%). This factor is clearly identifiable as a dynamism factor, comprising scales 6 to 9 (weak-strong, mild-intense, passive-active, calm-excitable) in fairly consistent combination. These are a melting together of what are usually called potency and activity factors into a single dimension which we here call dynamism. This has also been found by many other workers previously (Osgood, 1962). It also corresponds to what were separately called potency (p) and activity (a) factor scores and scales in the definitive study. The next 3 factors (III to V) vary in their constituent scales in each of the 6 factor analyses, and these always account for only a small amount of the total

variance. They are not identifiable in any consistent meaningful manner. The varimax rotations modify the picture to a limited extent. The general evaluative factor (I) again remains the dominant element in all 6 analyses. In obsessives it accounts for 30.2 % and 34.0 % of the total variance in personal and emotional concepts respectively. In psychopaths it accounts for rather more - 44.3 % and 46.6 % for personal and emotional concepts respectively. In controls, it accounts for 21.7 % and 27.6 % for personal and emotional concepts respectively. As before, controls on personal concepts have the lowest variance extracted by this factor, though it remains by far the dominant factor. The main components of this general evaluative factor are similar to those found on unrotated loadings - scales 1 to 5 and 10 and 11, but we note certain differences: scales 10 and 11 (harmless-harmful and safe-dangerous) in the controls lose most of their evaluative loading, and do this to a smaller degree in the obsessives; with personal concepts in the controls, scales 1 and 2 (tasty-distasteful and clean-dirty) also lose much of their evaluative loading - scale 2 (clean-dirty) also loses a lot of its evaluative loading for emotional concepts in obsessives and controls; the components of the general evaluative factor remain unchanged on rotation in both analyses of the psychopaths.

A marked change on rotation is for the dynamism factor found on the unrotated analyses.to collapse on all 6 rotations into specific factors made up of the same 4 scales (weak-strong, mild-intense, passive-active, calm-excitable) either singly or in varying combination. One other noteworthy feature is the emergence of another factor (II) on both analyses for obsessives and controls, but not in the psychopaths. Scales 10 and 11

(harmless-harmful and safe-dangerous) are the chief representatives, though some varying contribution is given by scales 1 to 5 in differing proportions. This accounts for an appreciable proportion of the total variance - 19.7 % and 16.8 % in obsessives, and 17.6 % and 20.6 % in controls, for personal and emotional concepts respectively. It is not identifiable in either analysis of the psychopaths. This new factor could best be designated a danger or risk factor, which appears to be a subsidiary evaluative factor, in contrast to the more general evaluative factor I. It is of interest that the two main representatives of this subsidiary factor - harmless-harmful and safe-dangerous, separate out most clearly in controls, less so in obsessives, and are united completely into one general evaluative factor in the psychopaths. Furthermore, this relationship holds for analyses of both personal and emotional concepts in each group. Where scales 10 and 11 have high loadings on the risk factor, they have only small loadings on the general evaluative factor, and vice versa. The general evaluative factor accounts for most variance of all in the psychopaths (about the same amount as is taken up by this plus the risk factor in the other analyses).

No general trends distinguish the factor structure of emotional vs. personal concepts. Some shifts are seen, but none are consistent across this dimension.

The large amount of variance taken up by the general evaluative and subsidiary evaluative (risk) factors can be partly accounted for by initial sampling weighting of this type of scale. Our findings are

replicative, as we know these scales were highly evaluative in other studies. It is still important to know that our psychiatric groups use them similarly (with the differences noted). They did not, for example, use scales 6 to 9 as the dominant scales of judgment. Similarly, they did not throw up an unexpected combination like scales 3, 4, 6, 7 and 10 would have made, for example. Our choice of concepts may also have conspired to increase weight of the evaluative factor. Osgood (1962) has noted that attributes tend to unite into a single dominant factor for certain types of concept. The same scales may have yielded lower evaluative loadings for blander concepts like TABLE or ANTARCTICA. The factor analyses justify use of scales 1 to 5 in combination as an evaluative factor, and of scales 10 and 11 together as a danger factor in the definitive study.

One point requiring explanation is collapse of the dynamism factor found on unrotated loadings into several specific factors on varimax rotation. One possibility is that this is a less stable grouping of scales. More scales representing these elements would have enabled us to follow this better. This analysis gives less justification for use of potency and activity scores in the later study than it does for the evaluation and danger factors. Some of the greater instability of potency and activity factor scores which we shall find later may be due to low loadings of the constituent scales on the designated factor, though this will not account for lower stability we shall also find of the individual potency and activity scales themselves.

No clearcut explanation is available for the slightly lower variance taken up by the general evaluative factor of controls in personal

vs. emotional concepts.

The significance of the one consistent difference found between groups - that of the risk factor - is not clear. One could speculate that for psychopaths risk - an approach-avoidance dimension - plays a greater part in assessing these concepts than in obsessives (and hence risk is incorporated into the dominant evaluative dimension), and that in their turn obsessives use it more than controls, who minimise this element, treating it as subsidiary to the dominant evaluative aspect used in semantic judgment. Stretching this further - could psychopaths be seeing the world as more dangerous than controls, with obsessives in between?

The findings of Rettig and Pasamanick (1963) may be relevant to this issue. They tested ethical risk-taking behaviour in 74 male students by observing their behaviour in tracing pencil borders round a 5-pointed star on paper with their eyes closed. The students were told that the task was related to measurement of perceptual-motor skills in night flying techniques, and that they would receive 50 cents for each point of the 5 pointed star successfully traced (i.e. not crossed by the pencil). Since the task was impossible as long as the student kept his eyes closed, any 'success' by the student on the task represented deception[3] of the examiner which could lead to severe sanctions. A year after the experiment the students filled in a questionnaire of 64 items portraying a student in conflict about taking money which does not belong to him. Conditions of this conflict were varied systematically. The students were asked to predict whether or not the student would take the money. Rettig and Pasamanick found that those students who were risk takers in the earlier

experiment showed greater differentiation of ethical risk conditions than non-risk takers. They suggested that subjects who do not acquiesce to engagement in unethical risky conduct, even under supportive circumstances, are less cognisant of low and high conditions, because these conditions do not affect their behaviour. Conversely, subjects who are likely to engage in unethical conduct are more sensitive to risk conditions since these are highly relevant to their potential behaviour. They felt that heightened sensitivity to differential risk conditions on the part of risk takers is probably a function of previous direct or indirect learning.

To apply this to our findings: The psychopaths incorporated the risk element into their dominant dimension of judgment, the controls split this element off into a subsidiary dimension, whereas obsessives fell in between in this respect. This could be interpreted as meaning that psychopaths are more ready to perceive risk in situations than controls are. The psychopaths were selected in the first place for antisocial behaviour which brought sanctions in various forms against them - they were the greatest risk takers of the three groups, and as such their greatest sensitivity to the risk element in judging situations would tie up with the findings of Rettig and Pasamanick - 'heightened sensitivity to differential risk conditions on the part of risk takers is probably a function of previous direct or indirect learning'. Unfortunately for this argument, obsessives lie midway between psychopaths and controls in this respect, and obsessives can hardly be said to be greater risk-takers than can controls (if anything, the reverse). We therefore would have to explain the rather greater perception of risk by obsessives than

controls in relation to something other than actual risk-taking behaviour. All we can firmly say on available evidence is that the three groups differ somehow in their perception of risk when judging situations, and that experiments are worth while to explore what this is, and how this relates to risk-taking behaviour.

Summary of results from factor analyses:

The main findings were that a general evaluative factor is the dominant element in semantic judgment for all three groups on both types of concept. A subsidiary evaluative (also called risk or danger) factor was split off from this by obsessives and controls, but was not present in psychopaths on either type of concept. A dynamism factor present in all groups on unrotated loadings disperses into specific factors on rotation, and is not a stable or important dimension ~~in a semantic dimension~~ in semantic judgment under these conditions. The fact that psychopaths incorporate the risk element into their dominant semantic dimension of judgment is possibly related to greater perception of risk in situations.

TABLE 4

PRINCIPAL COMPONENTS FACTOR ANALYSIS OF SCALES

UNROTATED FACTOR LOADINGS

OBSESSIVES — PERSONAL CONCEPTS

	FACTOR I	II	III	IV	V	h^2
1.Tasty-distasteful	85	-21	02	00	-29	85
2.Clean-dirty	73	-35	-23	13	-34	83
3.Good-bad	88	-03	-05	11	-08	79
4.Pleasant-unpleasant	93	02	-10	10	02	88
5.Kind-cruel	81	21	-10	10	35	83
6.Weak-strong	-24	78	-39	-01	-19	85
7.Mild-intense	20	73	24	-43	-34	93
8.Passive-active	-23	55	-01	76	-03	94
9.Calm-excitable	31	13	89	15	02	92
10.Harmless-harmful	64	35	-11	-25	45	81
11.Safe-dangerous	83	20	02	00	-02	72
% of total variance	44.2	16.7	9.9	8.2	6.2	(Total 85.2)
Eigen value	4.9	1.8	1.1	0.9	0.7	

TABLE 4a (N=60)

EMOTIONAL CONCEPTS

	FACTOR I	II	III	IV	V	h^2
1.Tasty-distasteful	81	-14	03	00	-42	85
2.Clean-dirty	68	-11	11	24	51	80
3.Good-bad	91	-06	09	07	-25	89
4.Pleasant-unpleasant	89	-11	10	07	-25	88
5.Kind-cruel	91	-06	05	06	00	84
6.Weak-strong	-32	61	12	70	-13	99
7.Mild-intense	23	82	-21	-15	-01	78
8.Passive-active	10	43	85	-27	05	99
9.Calm-excitable	45	63	-36	-23	02	78
10.Harmless-harmful	85	05	-04	01	16	76
11.Safe-dangerous	84	04	-12	04	20	77
% of total variance	48.8	15.2	8.7	6.9	5.5	(Total 84.6)
Eigen value	5.4	1.7	1.0	0.7	0.6	

TABLE 4b. (N=300)

PSYCHOPATHS

	I	II	III	IV	V	h^2
1.Tasty-distasteful	84	-11	-18	23	13	82
2.Clean-dirty	77	-23	-02	-34	-23	81
3.Good-bad	91	01	-01	-02	-01	83
4.Pleasant-unpleasant	84	-17	-10	27	-13	84
5.Kind-cruel	84	06	15	10	-19	78
6.Weak-strong	-48	42	-56	-39	-27	95
7.Mild-intense	33	75	08	-16	47	93
8.Passive-active	-26	70	-18	56	-22	95
9.Calm-excitable	37	54	63	-17	-28	93
10.Harmless-harmful	85	15	-26	-12	02	83
11.Safe-dangerous	88	19	-26	-06	08	87
% of total variance	50.9	15.3	8.6	7.2	5.0	(Total 86.9)
Eigen value	5.6	1.7	0.9	0.8	0.5	

TABLE 4c. (N=60)

	I	II	III	IV	V	h^2
1.Tasty-distasteful	84	-14	-05	00	-02	73
2.Clean-dirty	70	-26	-27	14	26	71
3.Good-bad	90	-09	-06	-02	-08	82
4.Pleasant-unpleasant	92	-07	-03	06	-01	85
5.Kind-cruel	86	01	-07	16	-13	79
6.Weak-strong	-27	71	-30	53	-20	99
7.Mild-intense	28	72	-11	12	58	96
8.Passive-active	23	74	-15	-47	-31	93
9.Calm-excitable	50	49	65	20	03	96
10.Harmless-harmful	89	-03	00	-04	-07	79
11.Safe-dangerous	84	06	03	-07	-09	72
% of total variance	50.3	17.3	5.7	5.6	5.3	(Total 84.2)
Eigen value	5.5	1.9	0.6	0.6	0.6	

TABLE 4c. (N=300)

CONTROLS

	I	II	III	IV	V	h^2
1.Tasty-distasteful	61	25	-28	-33	10	64
2.Clean-dirty	52	-25	34	01	-28	52
3.Good-bad	78	-03	00	48	05	84
4.Pleasant-unpleasant	76	-01	-19	45	15	84
5.Kind-cruel	82	-12	-09	22	04	74
6.Weak-strong	-22	00	75	12	56	94
7.Mild-intense	54	38	49	-09	-33	79
8.Passive-active	-01	73	-18	01	42	75
9.Calm-excitable	56	56	17	-15	-22	73
10. Harmless-harmful	69	-29	-10	-40	25	80
11.Safe-dangerous	65	-32	11	-40	24	76
% of total variance	36.9	12.0	10.2	8.8	8.1	(Total 75.8)
Eigen value	4.0	1.3	1.1	1.0	0.9	

TABLE 4e (N=90)

	I	II	III	IV	V	h^2
1.Tasty-distasteful	81	06	-23	-12	-36	86
2.Clean-dirty	69	-22	11	16	-01	56
3.Good-bad	90	04	-14	-03	-15	85
4.Pleasant-unpleasant	91	08	-17	-04	-19	90
5.Kind-cruel	86	08	-01	-07	10	77
6.Weak-strong	-49	50	-34	-46	15	84
7.Mild-intense	04	80	-11	-06	01	66
8.Passive-active	-15	72	-20	60	00	94
9.Calm-excitable	17	65	67	-15	-17	95
10. Harmless-harmful	80	04	-08	00	44	84
11.Safe-dangerous	81	12	20	-01	35	83
% of total variance	46.3	17.5	5.9	5.9	5.2	(Total 81.9)
Eigen value	5.1	1.9	0.8	0.6	0.6	

TABLE 4f. (N=450)

TABLE 5

PRINCIPAL COMPONENTS FACTOR ANALYSIS

VARIMAX ROTATED LOADINGS

OBSESSIVES

PERSONAL CONCEPTS

	Factor I	II	III	IV	V	h^2
1.Tasty-distasteful	**86**	19	03	16	-20	85
2.Clean-dirty	**87**	06	-14	-09	-12	83
3.Good-bad	**77**	**42**	0	13	-02	79
4.Pleasant-unpleasant	**75**	**55**	0	10	0	88
5.Kind-cruel	**45**	**78**	-02	10	09	83
6.Weak-strong	-21	06	**64**	**-42**	**47**	85
7.Mild-intense	04	14	**93**	20	-02	93
8.Passive-active	-13	-05	-05	07	**95**	94
9.Calm-excitable	10	10	10	**95**	05	92
10.Harmless-harmful	16	**86**	19	01	-12	81
11.Safe-dangerous	**61**	**52**	20	18	0	72
% of total variance	30.2	19.7	12.5	11.1	10.9	(Total 85.2)
Eigen value	3.32	2.17	1.38	1.22	1.2	

TABLE 5a (N=60)

EMOTIONAL CONCEPTS

I	II	III	IV	V	h^2
91	07	07	-12	-02	85
31	**84**	-02	-03	05	80
84	37	12	-07	06	87
89	28	07	-08	05	88
76	**49**	14	-12	03	84
-20	-09	14	**96**	07	99
04	02	**85**	19	15	78
04	02	10	06	**99**	99
20	13	**85**	-03	-02	78
59	**56**	28	-14	02	76
56	**59**	29	-13	-07	77
34.0	16.8	15.3	9.5	9.3	(Total 84.6)
3.74	1.88	1.68	1.04	1.02	

TABLE 5.b (N=300)

PSYCHOPATHS

I	II	III	IV	V	h^2
84	31	-02	11	11	82
72	-03	**-46**	-24	-12	81
84	20	-16	-20	14	83
85	30	01	-04	-13	84
76	26	-02	-38	01	78
-24	**-92**	19	09	05	95
19	05	14	-25	**90**	93
-10	-18	**94**	-09	10	95
14	07	06	**-92**	25	93
86	-07	-10	-09	26	83
88	-01	-05	-06	31	87
44.3	10.8	10.8	10.8	10.1	(Total 86.9)
4.87	1.19	1.19	1.19	1.11	

TABLE 5.c (N=60)

I	II	III	IV	V	h^2
84	02	09	-15	04	73
76	-27	-15	-08	20	71
89	09	11	-13	02	82
90	02	17	-09	07	85
87	06	17	08	01	79
-22	16	07	**94**	14	99
11	24	18	14	**92**	96
11	**91**	10	16	23	93
29	11	**90**	08	19	96
85	13	18	-13	05	79
78	20	22	-11	07	72
46.6	9.5	9.5	9.3	9.2	(Total 84.2)
5.13	1.06	1.04	1.02	1.01	

TABLE 5.d (N=300)

CONTROLS

	I	II	III	IV	V	h^2
1.Tasty-distasteful	21	-54	30	31	-31	64
2.Clean-dirty	29	-22	38	-49	04	52
3.Good-bad	87	-15	22	-35	01	84
4.Pleasant-unpleasant	88	-20	09	07	-09	84
5.Kind-cruel	74	-36	20	-10	-11	74
6.Weak-strong	-09	03	0	05	96	94
7.Mild-intense	16	-09	86	-09	08	79
8.Passive-active	03	+05	14	85	06	75
9.Calm-excitable	18	-15	78	21	-13	73
10.Harmless-harmful	26	-85	06	-08	-07	80
11.Safe-dangerous	20	-81	14	-18	-09	76
% of total variance	21.7	17.6	15.6	10.6	9.8	(Total 75.8)
Eigen value	2.38	1.94	1.72	1.17	1.08	

TABLE 5.e (N=90)

	I	II	III	IV	V	h^2
90	20	-08	-03	05	86	
42	40	-46	-09	0	56	
80	42	-17	0	04	85	
85	40	-13	02	05	90	
60	61	-12	04	12	77	
-21	-17	87	12	02	84	
14	09	49	51	36	66	
-07	05	10	95	09	94	
06	09	05	15	95	95	
38	82	-07	01	-06	84	
34	80	-17	-01	22	83	
27.6	20.6	12.0	11.0	10.1	(Total 81.9)	
3.04	2.27	1.32	1.21	1.11		

TABLE 2.f (N=450)

10. STABILITY AND VALIDITY STUDIES OF THE SEMANTIC DIFFERENTIAL IN THE CLINICAL SETTING

A. STABILITY:

Despite the evidence for reliability of the semantic differential already available from other workers, it was decided to study consistency of scoring by patients under conditions of testing. We shall henceforth talk of stability of scores, as in many instances it is not clear to what extent differences from one test to the next were due to the measuring instrument or the item measured. A few measurements were taken in the manner recommended by Osgood et al (1957) viz. the amount of absolute deviation in scale units. The rest were made as correlation coefficients. Some comparisons will therefore be possible between the two types of measure, and these can then be compared with reliability reports of other investigators.

Stability was studied at intervals of one week (short term - ST) and approximately 7 months (long term - LT). Certain deficiencies are present as the definitive design was for another purpose, e.g. patient numbers were small, matching was lost for age, sex, intelligence, education and class. Conclusions can therefore only be tentative, especially for the smaller n's, and for comparing stabilities between the 3 groups. Some fluctuations in correlation figures will be due to differing n's, but certain trends will be seen to emerge. The identical booklet used in the main study was administered personally by the writer to 18 patients (7 obsessives, 4 psychopaths and 7 controls) after one week. After approximately 7 months a further set of these booklets was given, mostly by post, to 18 patients

(8 obsessives, 3 psychopaths, 7 controls). The small number of psychopaths in each instance was due to the difficulty of tracing and getting psychopaths to repeat their tests, especially in the long-term study, when some incomplete booklets had to be discarded. There was more self-selection here than in the main study as more patients refused or spoiled their booklets.

In discussion of results the usual notation is used as in the rest of the study. Emotional concepts (EC) comprise the 15 already mentioned, the 3 emotional areas (EA) each comprise 5 concepts assumed to lie in that area, and personal concepts (PC) comprise the 3 concepts previously described. Emotional areas were only analysed on short-term tests, and individual scales on long-term tests. Comparisons between short-term and long-term tests are therefore restricted to factor scores. Tables 6 and 7 show the results obtained.

RESULTS:

Short-term:

1. Using mean absolute deviation in scale units: (Table 6)

The evaluative factor scores showed the smallest deviation, averaging just over half a scale unit - an amount similar to that quoted by Osgood et al. Danger factor scores showed rather larger deviations - mostly between half and one scale unit. Potency and activity factor scores showed the largest deviations, half of these measures being more than one scale unit. This is larger than the deviations reported for these factor scores by other workers.
No shifts are detectable constantly across the three types of patient.
No consistent shifts are detected across the two types of concept rated.

2. Using correlation coefficients - r:

a. Individual factors: Evaluative scores were highly stable, danger scores stable, and potency and activity scores were unstable all round, showing wide fluctuations.

b. Emotional vs. personal concepts: Fluctuations across this dimension were in both directions to the same degree.

c. Emotional concept scores vs. emotional area scores: In all 12 comparisons emotional area scores (the total of the 5 emotional concepts in that area) are more stable than the individual emotional concept scores. This suggests that the concepts within an area tend to score together.

d. The three types of patient (small samples): No one patient type is consistently more stable than any other.

Results of the two types of measurement compared:

All the conclusions drawn from mean absolute deviations in scale units held when compared with those drawn from correlation coefficients.

In summary: the short term results show that danger and especially evaluative factor scores are stable, potency and activity scores not so; emotional and personal concepts do not differ in stabilities; emotional area scores are rather more stable than emotional concept scores; and the three patient types did not differ consistently in stability.

Long-term:

A. Factor scores:

a. Individual factors: Evaluation maintains high stability, danger fair stability, but both potency and activity are unstable.

b. Long-term vs. short-term: Potency and activity are equally unstable both times, with great fluctuations. Evaluation shows slight decrease after 7 months, and danger rather more so.

c. Emotional vs. personal concepts: Stability was slightly higher on emotional than on personal concepts on all 4 factor scores (11 out of 12 comparisons).

d. The three types of patient: All three types showed similar stability characteristics for both types of concept (except LT P PC) where the small n does not warrant conclusions). No one group consistently differed from any other in reliability.

B. Scalar scores:

a. Individual scales: On emotional concepts the most unstable scales were

TABLE 6

STABILITY OF TEST-RETEST AFTER ONE WEEK MEAN ABSOLUTE DEVIATIONS IN SCALE UNITS

	EMOTIONAL CONCEPTS			PERSONAL CONCEPTS		
	O	P	C	O	P	C
Evaluation	.54	.55	.56	.52	.88	.35
Potency	.75	1.07	.92	1.35	.88	1.05
Activity	.95	1.47	1.00	2.5	1.25	.45
Danger	.72	.89	.85	1.3	.75	.87
	n=90	60	90	n= 18	12	18

TABLE 7 A

EMOTIONAL AREAS (EA)

	O	P	C
Evaluation	98	99	96
Potency	86	^{xx}62	70
Activity	74	^{x}59	^{x}48
Danger	95	99	92
	n= 24	12	21

Test-retest (r)

After 7 days ~~months~~

All values $P < .001$ except $^{xx}P < .01$ $^{x}P < .05$

TABLE 7 B

STABILITY OF TEST-RETEST CORRELATION COEFFICIENTS

SCALE	O		P		C		O		P		C	
	ST	LT	ST	LT	ST	LT	ST	LT	ST	LT	ST	LT
1. Tasty-distasteful		87		85		74		75		-37		x40
2.Clean-dirty		79		68		62		63		-22		-24
3.Good-bad		87		83		75		86		-53		x46
4.Pleasant-unpleasant		82		82		85		73		-35		74
5.Kind-cruel		74		55		73		57		-34		76
6.Weak-strong		61		84		42		-09		-38		-30
7.Mild-intense		64		46		xx30		x44		-35		-35
8.Passive-active		62		36		43		xx58		xx79		-17
9.Calm-excitable		46		55		52		-19		x72		61
10.Harmless-harmful		65		76		76		-35		- 02		x41
11.Safe-dangerous		67		69		65		69		-46		xx48
Evaluation	92	91	94	88	93	87	93	87	97	51	84	71
Potency	62	57	46	73	56	48	-22	-14	xx67	-17	-33	-24
Activity	62	51	42	47	46	50	-14	-37	-19	-08	88	xx59
Danger	87	74	79	xx80	81	80	xx52	xx57	89	-28	66	60
n =	105	120	60	45	120	105	24	21	12	9	21	24

EMOTIONAL CONCEPTS (EC) PERSONAL CONCEPTS (PC)

All values significant at .001 level except those marked

xxP < .01
xP < .05
-P > .05 (N.S)

ST=SHORT TERM (one week)
LT=LONG TERM (7 months)

the 4 potency and activity scales (weak-strong, mild-intense, passive-active, calm-excitable). The 7 evaluative and danger scales had generally higher stability. On personal concepts, where there are only small n's, only obsessive evaluative scales are consistently stable. The rest mostly show marked fluctuations (though the evaluative and factor scores derived from them are much more stable).

b. The three patient types: These did not differ consistently.

c. Emotional vs. personal concepts: On 27 out of 33 comparisons, emotional concepts were more stable than personal.concepts.

In summary: Results after 7 months showed that evaluative and danger factor scores were stable for both types of concept, but scale scores only for emotional concepts. This stability was slightly less than after one week, while potency and activity scores were all unstable; on factor and scale scores personal concepts were slightly less stable than emotional concepts; the 3 patient types did not differ in stability.

Discussion and Conclusions:

1. Evaluative scales and factor scores are the most stable, danger the next, with potency and activity unstable. Some, but not all, of the higher evaluative factor stability may be due to its consisting of a greater number of scales. The higher stability of evaluative judgments is in accord with the findings of several other workers (see p. 46).

2. Evaluative and danger factor scores are more stable than their constituent scalar scores. This could be partly because minor shifts on scales with high factor loadings tend to cancel out within a factor, maintaining factor stability, but decreasing scalar stability. However, where scales within a factor do not have a high loading on that factor, as occurs with potency and activity, this effect is not produced, and the factor score stability is of the same order as its constituent scales.

3. Emotional area scores were stabler than emotional concept scores - An analogous situation to the last 2 points occurs in intelligence tests, e.g. on the Wechsler Intelligence Scales for Adults and for Children (the WAIS and WISC) individual subtest scores have greater instability than their total combined scores - performance and verbal - which would be the equivalent of the 2 well-constituted factor scores in the present study (evaluation and danger). The underlying mechanism producing this trend is likely to be a higher order stable tendency (which we label factor, attitude, ability, etc. depending on the field it operates in) of which the lower order changing performances (subtests, scalescores, etc.) are a partial expression.

4. After 7 months, but not after one week, emotional concepts were more stable.

5. The three types of patient showed no obvious differences in stability characteristics.

6. The most unstable scale scores (using only emotional concepts, where larger n's allow firmer conclusions to be drawn) are the 4 potency and activity scales. This is in keeping with the findings of other workers on different types of concepts. It would indicate that evaluative aspects of judgment tend to be more durable than other facets. A possible explanation could be this - it has been seen from the factor analyses of scales that the dominant element of judgment with these concepts was evaluative with the danger (risk) element as the next most important. Perhaps the higher evaluative and danger stabilities reflect a tendency for dominant elements perceived in situations to be more stable than subsidiary elements. If this were true, where the main element was the activity facet (as occurs in some colour studies), this then should be the most stable element. This could easily be tested, but is too remote from our present psychiatric interest.

B. VALIDITY

As the semantic differential was to be used in a clinical setting, it was necessary to know whether it reflected clinically meaningful variables in the patients, i.e. its validity in Murphy's sense - the degree to which performance on the semantic differential corresponds to performance in a life situation. The clinical interview is a life situation of great concern to the psychiatrist. It was therefore decided to compare the assessment by psychiatrists in interviews of patients' attitudes to emotion with patients' scores given on the semantic differential. As an interview is said to yield valuable nonverbal information helping in assessment of patients' feelings, psychiatrists made assessments separately in two ways - first using only what patients said (the 'overt' attitude), and then utilising non-verbal cues - what they thought the patients really felt (the 'implicit' attitude). Using Stevens's terminology (see p. 48) the

semantic differential was the predictor measure, and the psychiatrists assessment the criterion variable. The difference between the notions of validity and reliability rests with whether the measures are non-equivalent or equivalent. The psychiatrists' assessments of 'overt' attitude were rather closer to processes leading to patients' ratings on the semantic differential than their 'implicit' assessments. In that sense the 'overt' attitude comparison would be closer to the notion of reliability than the 'implicit' attitude. However, the process of assessment by a psychiatrist is still sufficiently disparate from the patient's scoring process to warrant being called an external criterion, and hence to provide validity.

Two validity studies were done - first with psychiatrists using single interviews only, then assessment by a psychiatrist after a series of psychotherapy interviews.

1. FIRST CLINICAL VALIDATION STUDY - Single psychiatric interviews

For fuller interpretation of findings using sd scores it is necessary to know whether the sd response reflects clinically meaningful variables in patients. It was, therefore, decided to compare assessment of patients' attitude on emotional areas of functioning as recorded by sd scores, and clinical appraisals of a patient during a single psychiatric interview.

Conditions of testing:

10 psychiatric patients with a variety of symptoms which could be subsumed under the vague general title of "neurotic" were selected to provide the sd scores, and two psychiatrists, one experienced, and the other a then inexperienced registrar, co-operated separately to do the interviewing.

A sd booklet containing six emotional concepts was given to the patient to score on 11 scales, and 6 of the 66 scales so marked were extracted for comparison with the psychiatrist's assessments of the same 6 variables. The psychiatrists interviewed each patient separately within a week of administration of the sd. They were instructed to interview the patient for up to an hour, not knowing anything about the patient beforehand, with a view to gauging the patient's feelings and attitudes to three emotional situations, as represented by the concepts:

My feelings when I am angry

Fear

My affection for a person.

The psychiatrists were asked to make the ratings on two 7-point scales:

Pleasant - unpleasant

Safe - dangerous

These ratings were to be made in two ways. Firstly, the psychiatrist was to assess the patient's <u>overtly</u> expressed attitude. Secondly, an assessment was to be made as to the <u>implicit</u> underlying attitude as judged from tone of voice, facial expression, gesture, and other cues. This would afford an idea of the importance of non-verbal cues in assessing attitude, as compared to the sd.

The correlations were then worked out between the patients' sd scores and the assessed overt and implicit attitudes judged by the two psychiatrists separately. There were thus 5 sets of scores to correlate. There were 30 readings for each of the 2 scales, making 60 readings altogether for each set of scores from a given patient.

Table 8.

Correlations - first clinical validation study (Single psychiatric interviews).

Notation:
- sd - semantic differential score of patient
- I - 1st psychiatrist's rating (S.C.)
- II - 2nd psychiatrist's rating (N.R.)
- ov - overtly expressed attitude as rated by psychiatrist
- im - implicit underlying attitude as rated by psychiatrist
- U - ratings on pleasant-unpleasant scale
- D - ratings on safe-dangerous scale.

a.	sd - I (UD ov)	.79 xxx	j.	sd - I (UD im)	.66 xxx
b.	sd - II (UD ov)	.49 xxx	k.	sd - II (UD im)	.47 xxx
c.	I - II (UD ov)	.64 xxx	l.	I - II (UD im)	.59 xxx
d.	sd - II (U ov)	.77 xxx	m.	sd - II (U im)	.63 xxx
e.	sd - II (D ov)	.32	n.	sd - II (D im)	.27
f.	sd - I (D ov)	.86 xxx	o.	sd - I (U im)	.80 xxx
g.	sd - I (D ov)	.70 xxx	p.	sd - I (D im)	.42 x
h.	I - II (U ov)	.89 xxx	q.	I - II (U im)	.75 xxx
i.	I - II (D ov)	.47 xx	r.	I - II (D im)	.43 x

s.	I ov (UD)	- I im (UD)	.87 xxx
t.	II ov (UD)	- II im (UD)	.92 xxx

xxx p = .001 level
xx p = .01 level
x p = .05 level

Results and discussion: (refer to Table 9 for the correlations obtained)

1. Both psychiatrists consistently agreed less both among themselves and with the sd on equivalent scales when using implicit views (j to r) rather than overtly expressed views (a to i).

This implies that the use of intuitive abilities introduces greater unreliability into the measure of attitude than when evaluating more direct verbal cues. This is yet another illustration of the general rule that description is usually more reliable than interpretation. Another phenomenon of the same variety is that clinical signs are more readily agreed on than the diagnostic pattern these signs form.

2. Both psychiatrists consistently agreed more with each other and with the sd on the U scale than on the D scale (compare de, fg, hi, mn, op, qr). II especially showed low correlations on the D scale. Thus there was more consistency with the U than the D scale. This might have been due to accidental discrepancy between I and II in their meanings of the D scale as used in rating the patients.

3. The first psychiatrist (see a,f,g,j,o,p) consistently agreed more with the sd than the second (and inexperienced) psychiatrist (see b,d,e, k,m,n). In 4 out of 6 instances I showed more agreement with the sd than he did with II. In the remaining 2 instances the correlations with both the sd and II were equivalent.

4. Agreement between the psychiatrists (see c,h,i,l,q,r) was not different from that between themselves and the sd.

This is evidence that the semantic differential measured the attitude of patients in the particular emotional areas given here as accurately as the psychiatrists in a single interview.

5. Each psychiatrist showed a high agreement between what he regarded as expressed and implicit attitude (s, t).

This is of interest as the psychiatrists had all the advantages of a face-to-face interview, and this is where non verbal cues might be expected to yield information about concealed feelings lying behind expressed attitudes. Possibly these 10 patients did not have much to conceal, and clinical judgment conceivably may have yielded very different results where deception or repression played a large part.

Psychiatric interviews are often said to confer a better idea of underlying feelings of a patient than impersonal techniques of enquiry. Well designed impersonal questionnaires and scales can judge only a small number of variables accurately, whereas a general clinical appraisal assesses a vast number of variables, though less accurately. This relates to the recurrent disputes of laboratory tests vs. clinical judgment. It would seem that the two techniques are complementary, and not mutually exclusive (Meehl, 1954). The laboratory test can confer accuracy where clinical judgment indicates this is needed.

It can easily be seen that a technique like the semantic differential enables many measurements of a given limited kind to be obtained rapidly in form suitable for statistical treatment. To obtain the same amount of accurate information of this type through interviews would have required an army of psychiatrists employed for a very long time.

Conclusions:

The semantic differential measured the attitude of patients to these three emotional concepts as accurately as psychiatrists in a single psychiatric interview. It accorded more with the views openly expressed by patients during interview, rather than those imputed to them by psychiatrists intuitively using all the cues obtained in a face-to-face interview. As the two psychiatrists differed more amongst themselves as well in their intuitive ratings, it cannot be said that a single psychiatric interview gives a better evaluation of implicit attitude than the semantic differential. Differences between what were regarded as overt and implicit attitude were small.

2. SECOND VALIDATION STUDY - psychotherapy interviews:

In the light of the findings that patients' semantic differential scores correlated highly with the patient's attitude ratings made by psychiatrists in a first psychiatric interview, the obvious question that sprang to mind was whether deeper, more complex series of interviews such as those of psychotherapy would create greater disparity between the psychiatrist's ideas about the patient, and the patient's scores on the semantic differential. To provide at least a partial answer to this problem another study was done, on a patient who had had long-term psychotherapy.

Description of conditions of testing:

The patient was a 23-year old girl, severely handicapped by long-standing compulsive handwashing (Case No. O-13 in the Appendix). At the

time of the present test she had had two years psychotherapy as an in-patient, with an experienced analyst, two hours weekly, including many sessions under lysergic acid. Her clinical course fluctuated, and her compulsive handwashing was severe at the time of testing. The psychiatrist felt that he understood the patient well enough to be able to judge her attitude on important emotional and personal concepts.

4 concepts - MYSELF, MY FATHER, MY MOTHER, SEXUAL INTERCOURSE - were rated on the usual 11 scales used in the main study (see p. 83). The ratings were made by the patient (henceforth called "actual") and separately on the same day by her psychiatrist. The psychiatrist rated the patient in two ways - he gave a rating of what he considered the patient would express overtly (henceforth called "assessed overt") and another rating of what he considered to be the underlying motivated implicit feelings of the patient (henceforth called "assessed implicit"), thus taking into account the processes usually referred to as reaction formation and repression. One week after this a 4th rating was obtained, namely the psychiatrist's own attitude on these four concepts (henceforth called "rater's own"), to check the effect of his personal feelings on the predictions he made about the patient.

Thus on each concept four ratings were obtained:

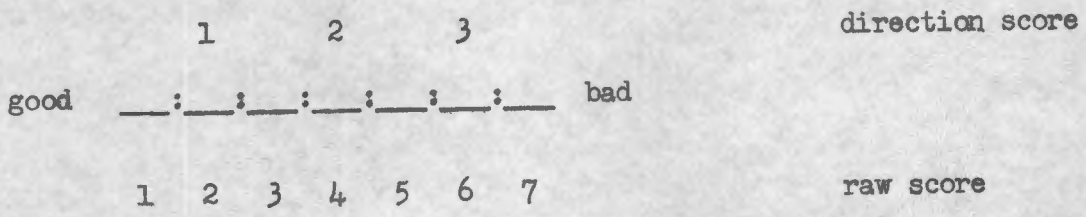
A. Rater's own score on the sd (psychiatrist's personal attitude)

B. Assessed overt (psychiatrist's assessment of the freely expressed attitude of the patient).

C. Assessed implicit (psychiatrist's assessment of the patient's underlying feelings).

D. Patient's actual score on the sd.

Each rating produced altogether 44 scalar raw scores, each scale being scored from 1 to 7. 16 factor scores were extracted as described on page 87 . A third method of treatment of the data was used to eliminate any differences due to the patient and the psychiatrist having possible different tendencies to use extreme or inner positions on the scales. This method was to give a simple direction score from 1 to 3. This produced 44 direction scores for every rating.



Results and discussion:

1. There is very little difference between comparisons on raw scores and on direction scores. Thus there is no general tendency for the psychiatrist and the patient to use the extreme or inner positions of the scale differently.

2. The correlations of the psychiatrist's assessments with the patient's actual scores are highly significant, using all three methods of scoring, both for overt and implicit assessments (B::D, C:D). The implicit assessments correlate only slightly less highly than the overt ones. This is in keeping with the validation findings in single psychiatric interviews (see p. 109).

Table 8.9

Correlations: Second clinical validation study

(psychotherapy interviews)

		Factor scores (n = 16)	Scalar raw scores (n = 44)	Scalar direction scores (n = 44)
Assessed overt : actual	B:D	xxx .76 (.90) [1]	xx .42	xxx .46
Assessed implicit : actual	C:D	xxx .72	x .32	x .31
Assessed overt : Assessed implicit	B:C	xxx .97		
Assessed overt : rater's own	B:A	.12		
Assessed implicit : rater's own	C:A	.25		
Actual : rater's own	D:A	.05		

xxx = $p < .001$

xx = $p < .01$

x = $p < .05$

1 This was the correlation when 1 disparate pair of ratings was left out (evaluative scores on MY MOTHER). The therapist at the time of rating knew the patient was ambivalent toward her mother, and in an unstable state ready to shift her attitude. In fact, shortly after the rating was done the patient shifted to overt hostility to her mother, confirming the therapist's rating of her attitude. The correlation of .90 is obtained when the evaluative score on this concept was left out. This illustrates one caution in interpreting attitudes from scores on the sd. The sd gives only one reading at a time, and in a time of flux of attitude several readings will be necessary to detect shifts, whether in an individual or in a group.

3. The comparisons on factor scores yield slightly higher significance levels than those on raw scores or direction scores. This suggests what is already assumed by the use of factors, namely, that the factors provide a rather more stable measure of meaning and attitude than simple scales.

4. There is very close agreement between what the psychiatrist considered to be overt and implicit attitude of the patient (B:C). This is also in keeping with the validation findings in single psychiatric interviews though the agreement here is closer.

The very close agreement here is of interest. One might submit that after two years psychotherapy the repeated production of subconscious material into consciousness in interviews has resulted in an approximation between the inner repressed and the outer expressed psychic life. This is by general consensus regarded as one of the main aims of psychotherapy, and theoretically occurs as the patient improves. However, it should be noted that in this patient, despite the fact that on these important concepts, central in any analytic theory, there was this close approximation between what were regarded as her implicit and overt attitudes, her symptoms were as bad as ever. One might counter this by arguing that the four concepts rated, important as they are, are not concerned with her particular symptoms. This may be so.

5. The correlations of the psychiatrist's own scores with both the assessed scores and the patient's actual scores (B:A, C:A, D:A) are well within chance limits. The fact that the correlations are lowest between rater's own and patient's actual scores (D:A), slightly higher for rater's

own and assessed overt (B:A), and yet a bit higher for rater's own and assessed implicit (C:A) could be construed as very slight evidence of the psychiatrist's personal feelings influencing his assessments of the patient. However, what influence there is is very small, and the evidence even for this is tenuous. To test this more fully one needs more data on personal scores of several psychiatrists each assessing a number of patients' attitudes.

6. As noted in the footnote to Table 8, one measure of the semantic differential is an index of the state of affairs at one point in time. In a state of flux repeated measurements will be necessary to follow shifts of attitude and meaning.

Conclusions from this study:

In a patient who had long-term psychotherapy, her semantic differential scores provided a good index of her attitude on clinically important concepts, according well with the picture her psychotherapist had of her in this respect. This provides further evidence of the value of the semantic differential in measuring clinically meaningful areas of emotional function in psychiatric patients. There was very close agreement between what were regarded as implicit and overt attitudes of the patient. There was no significant trend for the psychiatrist's personal attitudes to influence his judgment of the attitudes of the patient. Psychiatrist and patient showed no general tendency to use positions on scales differently.

Note on the use of the terms attitude and meaning (see also p.37):
Attitude here is used to denote the individual's readiness to respond in

a particular manner to a particular situation over a stable period of time. Meaning is used here in the operational sense of a special response to concepts as marked on certain scales. This special response measured as the meaning of a concept is taken to represent part of the individual's more general tendency of response to the situation denoted by that concept, i.e. his attitude. Meaning here is an index fragment of attitude.

In Summary:

Both validation studies showed agreement between patients' semantic differential scores and assessment by psychiatrists of their attitudes on emotional and personal concepts. It was concluded that the semantic differential tapped clinically meaningful variables, and was applicable to certain clinical problems where meaning and attitude are relevant variables.

SECTION 11.

A. EXPECTATION OF RESULTS & PREDICTIONS

The following results were expected to follow from clinical observation and theory:

1. Personal concepts:

i. Obsessives would have poorer self-images than controls, but good and safe parental images, perhaps better than controls in view of the frequent assertion that obsessives idealise their parents. Potency and activity scores were regarded as unpredictable.

ii. Psychopath self-images could be better or worse than controls. Better if the idea of the guiltless, conscienceless, amoral psychopath applied, worse if the idea did not hold. Objective evidence for parental disturbance in psychopaths suggested that, provided the psychopaths learned the same view of their parents subjectively, their parental concepts should be worse (and perhaps more dangerous) than controls. Potency and activity scores were regarded as unpredictable.

2. Emotional concepts:

a. Anger-hostility area:

The following hypothesis was derived from views previously quoted on aggression in the obsessive:

The obsessive patient is excessively afraid of his aggression (defends against it), more than controls or psychopaths.

The psychopath was expected to be polar in score from the obsessive, as it was conjectured that overt aggressiveness might reflect less fear of one's aggression, rather than less control. Less fear of their aggression would accord with views of psychopaths as lacking conscience, guilt and morality.

It seemed reasonable to predict as a consequence that meanings of anger-hostility concepts would show the following trend:

factor	P	C	O
e	bad	worse	worst
d	dangerous	more dangerous	most dangerous
a and p	?	?	? most p & a

These predictions were made <u>before</u> the patients were tested.

Two experienced analysts of different institutes, who understood the workings of the sd, agreed with these predictions on evaluation and danger.

b. <u>Fear-anxiety area</u>
c. <u>Love-affection area</u>

It was not felt possible from observation or theory to predict scores in these two areas. They were included for exploration as they indicate emotional functions of great importance in psychiatric patients.

B. METHOD OF ANALYSIS OF THE DATA:

Method of analysis of the data thus obtained was determined by the aim of this thesis, which was to examine patterns of meaning in psychiatric groups and relate this to their behaviour where possible. From clinical data and theory certain patterns were expected, and it was hoped to explore others.

1. Expectations on the three personal concepts affected mainly evaluative scales. One important hypothesis on obsessives and aggression specifically involved evaluative and danger scales. However, no firm expectations or predictions could be made a priori on the potency and activity scales. For these reasons it was essential to compare groups on each of the four types of scales separately, as grouping the scales together into a single score as would occur with a profile D measure (either across scales or factors) would lose all information about its components. The four types of scales were therefore analysed separately through comparison of each factor score on each concept between groups. This was done using analysis of variance and t tests (see p. A-35 and A-36).

2. A second type of analysis was made - of differences in concept profiles among groups. This was done by obtaining semantic distances (D scores - see p. 40) between group mean profiles across all scales on each concept. Distances were calculated across individual scales rather than across factor scores, as using factor scores would have involved making the same assumptions about their validity as factors as were made in the first type of analysis using factor scores separately.

This would have replicated any distortion present in the first type of analysis.

Distances between group means of the sexes in each of the three groups on each concept were calculated, and where marked changes were found, distances between the sexes across the groups were calculated separately.

Distances between concept profiles among groups were also calculated on three of the concepts - MYSELF, MY FATHER, MY MOTHER, treating the sexes separately.

3. Another method was also used to study differences in concept profiles among groups. Actual profiles of group mean scale scores were plotted graphically on 7 concepts, comparing sexes within groups, sexes across groups, and groups with sexes combined (done for MYSELF MY FATHER MY MOTHER SEXUAL INTERCOURSE MY FEELINGS WHEN I AM ANGRY ANXIETY, and the control concept UGLY). This illustrated differences found by the two first methods of analysis, and checked whether any had been missed on these concepts.

4. Scattergrams for four concepts (MYSELF MY FATHER MY MOTHER SEXUAL INTERCOURSE) were plotted for each individual's score on two scales, to provide a further check on part of the analyses.

5. Intercorrelations among the 18 concepts were obtained by 12 18 x 18 matrices constructed for each factor score in each group. A further possible method of analysis - 3 18 x 18 D matrices between concepts for each group separately, was not undertaken. Differences

obtained from the two types of analysis had already been found to be comparable.

C. RESULTS:

Profile distance scores and factor score comparisons are available for all concepts. 7 graphs show comparisons of profiles in terms of scale scores. 4 scattergrams show distribution of individual scores on 2 scales for 4 concepts. For all analyses the terms 'better', 'poor' or 'worse' refer to general shifts on evaluative scales. Other appropriate terms will be used to apply to shifts on other scales, e.g. safer, more dangerous, etc. Figures in brackets are significance levels

Control concept UGLY:

Profile distances show all three groups to score similarly both for sexes separated and combined. Sexes within groups score similarly.

Graph 7 of scale means shows the same similarities between sexes and groups, with no marked differences.

1. PERSONAL CONCEPTS:

a. General:

Profile distances show very large differences between both psychiatric groups and controls on the self concept, and between psychopaths only and controls on parental concepts. This divided the groups into three types according to profiles.

Using factor score comparisons, again the three groups of patients fell into three clearly defined groups according to their scores on these three concepts. Details of profile components they differed on become clear:

1. Controls: Good self and good parental concepts.

2. Obsessives: Poor self and good parental concepts.

3. Psychopaths: Poor self and poor parental concepts.

The differences were large, significant mostly to the .001 level, and were internally consistent. Thus - all except one of the differences were found in evaluative and danger scales, not potency or activity scales. The exception was for obsessives to rate themselves as less potent than the controls (.01).

b. Parental concepts:

Obsessive profiles are close to control profiles (except that obsessive males rate MY FATHER as less active). En passant one notes that controls showed slightly better scores than the obsessives, but this shift was not significant. This is mentioned in view of the common contention that obsessives tend to idealize parental figures - if this were true the opposite would have been expected.

Psychopath profiles are markedly distant from control profiles. Graphs 1 and 2 show these to be mostly on evaluative and danger scales, for both sexes combined, and separately. Separate analysis of factor scores show these differences to involve specific components of the profiles, viz. evaluative and danger scales, mainly at the .001 level.

MY FATHER on e P was higher than O or C (.001, .001)

on d P was slightly higher than O or C (.05, .1).

MY MOTHER on e P was higher than O or C (.001, .001).

on d P was higher than O or C (.001, .001).

From all these data we conclude that psychopaths rate their parents as worse (i.e. as more dirty, unpleasant, bad, distasteful, etc.) and more dangerous, than the other two groups.

The graphs show a slight trend for all groups to rate MY MOTHER as better evaluatively than MY FATHER. There is no obvious trend in any category to rate the parental figure as better according to the category "same sex parent" or "opposite sex parent".

Profile distances between the sexes show obsessive females to rate MY FATHER slightly better, safer, milder, calmer and more passive than their male counterparts. On MY MOTHER females show slightly stronger and more active profiles.

Psychopath sexes are slightly separated for MY MOTHER - females rate this as worse, more dangerous, but stronger and more active, than their male counterparts.

Control sexes are closer in their profiles of parental concepts than the psychiatric sexes were.

Obsessives showed moderately greater discrepancy between parental profiles than the other groups. They also showed generally greater discrepancy between self and parental profiles than did the other two groups.

c. Self concept (MYSELF):

Profile distances show obsessives to be moderately and psychopaths markedly distant from controls, this analysis holding in both sexes. Scale mean profiles on Graph 3 show this again. The biggest separation for both groups is on evaluative and danger scales (worse and more dangerous than controls). Obsessives also rate themselves as weaker.

This picture is confirmed on analysis of factor scores. Only controls had a consistently good self rating. O had a relatively worse self-rating than C on e (.01), and a less potent score on p (.01). P showed the worst self rating of all, differing from C by .001, and also rated themselves as more dangerous than O or C (.01, .001).

All the above evidence indicates that psychopaths have the poorest and most dangerous self image, obsessives a relatively poor and weak self image, though not a dangerous one, and the controls are the only group to see themselves as both good and safe.

Profile distances and scale means both show no obvious separation between the sexes in each group.

The three personal concepts yielded the largest differences between the groups, and serves as a pointer for the most useful direction of further study. One wonders about the relationship of these differences in personal concepts to the marked behavioural differences of the three groups - the same applies to the results of the emotional concept analysis which follows. One of the reasons behind the selection of these highly contrasting groups was to try to study the relationship of conceptual emotional and personal structure to the inhibition, acting upon or normal control of one's feelings and impulses. This will be discussed.

2. THE 15 EMOTIONAL CONCEPTS:

Differences were not quite as clearcut as in the personal concepts, but certain patterns were discerned.

a. ANGER-HOSTILITY AREA:

1. Anger-hostility area score (the total of the 5 concepts in the area):
Profile distances did not show much separation of the groups or of the sexes within the groups.

Factor scores reveal some shifts in components of profiles. O did not differ significantly from C in any respect, but overall scores for P were higher on p, a and d than for C (.01, .01, .05), and higher on a and d than for O (.1, .01). Page A-28 shows this to be on all six constituent scales.

2. ANNOYANCE:

Profile distances did not show much separation of the groups, or of sexes within the groups.

Factor scores showed P and O to rate this more potent than C (.01, .001). Page A-29 shows this to occur on both constituent scales.

3. MY FEELINGS WHEN I AM ANGRY:

Profile distances show P to differ markedly from C, both for sexes separated and combined.

Graph 4 shows this separation to occur in all evaluative and danger scales (worse and more dangerous) and on activity scales as well.

Factor scores confirmed that P rated anger as worse and more dangerous than O or C (.001, .001). The shift on activity scales was at .1 level of significance.

Profile distances also show slight separation between the sexes in controls. Graph 4 shows this to be on all scales except passive-active and calm-excitable.

4. SPITEFULNESS:

With sexes combined profile distances amongst the groups were small. With sexes apart both P sexes were slightly separated from C.

Factor scores showed the separation of P to be on p and a scales (.1). They also show up O as rating spitefulness as more active than C (.05). Page A-29 shows this to be on both constituent scales.

Profile distances show slight separation between sexes in psychopaths and obsessives - this is variable across scales (page A-29).

5. MY RESENTMENT OF PEOPLE:

Profile distances show P to be slightly distant from C.

Factor scores show this separation of P to be due to their rating resentment as more potent, active and dangerous than C (.01, .05, .05). Page A-30 shows this to be on all six constituent scales.
O also rated resentment as more potent than C (.05). Page A-30 shows this to be on both constituent scales.

Profile distances show no marked separation between sexes in each group.

6. DISLIKE OF A PERSON:

Profile distances between groups show no marked separation with sexes combined or apart.

Factor scores show some differences in the profile components. P rated dislike more active and dangerous than O (.01, .05), and more active than C (.001). All scales of the factors show this difference.

Profile distances show slight separation of sexes in O and P. Page A-30 shows this to be mainly on evaluative and danger scales for both groups, and weak-strong for P.

The general trend from all analyses in the anger-hostility area is for psychopaths to rate hostile feelings as more potent, active and dangerous than controls (with anger specifically as worse). O showed a slight tendency to rate hostile feelings as more potent and active than controls, but did not differ significantly at any point from controls on evaluative and danger scales.

There was also some divergence of the psychiatric sexes in both groups. Components responsible for this divergence were - obsessive females had slightly worse, weaker and more dangerous scores than obsessive males; psychopathic males had slightly worse and more dangerous scores than psychopathic females.

b. FEAR-ANXIETY AREA:

1. Fear-anxiety area score (the total of the 5 concepts in the area):

Profile distances show no marked separation between any of the groups or between sexes within those groups.

Factor score comparisons showed O to rate higher than C on all 4 factors (.05). Only on p and d did P rate higher than C (.1, .05). Page A-28 shows all constituent scales of the factors to be involved.

2. FEAR:

Profile distances for sexes combined are very small between groups. Analysis separating the sexes reveals a slight increase in distance between P females and C females. Page A-31 shows this to be on all except activity scales.

Factor score comparisons for sexes combined show no significant differences.

Profile distances between sexes shows slight divergence among the psychopaths. Page A-31 shows this to be over all scales.

3. PANIC I HAVE HAD:

Profile distances between groups shows slight separation between O and C.

Factor scores showed O to rate panic as worse, more potent and dangerous than C (.05). P also rated panic as more dangerous than C (.05). Page A-31 shows all constituent scales of the factors to be involved.

Profile distances between sexes within each group showed no marked differences.

4. ANXIETY:

Profile distances between groups with sexes combined showed slightly increased distance between O and C. With sexes separated only O males showed this separation from C males, and P males were also shown to have a marked increase in distance from C males. Graph 5 shows nearly all scales to be involved in this shift.

Factor scores show that O rated anxiety as worse, more potent, active and dangerous than C (.01, .1, .05, .05). P regarded anxiety as worse and more dangerous than C (.05).

Profile distances between sexes in each group show divergence among the psychopaths and controls. Graph 5 shows most of the scales to be involved.

5. MY FEELINGS WHEN FRIGHTENED:

Profile distances between groups with sexes combined show no marked increases.

Factor scores showed O and P to rate fright as more dangerous than C (.05, .001). Page A-32 shows both constituent scales to be involved.

Profile distances between sexes in each group show no marked divergence.

6. WORRY:

Profile distances between groups with sexes combined show no marked increases.

Factor scores showed that O scored worry as more potent and active than C (.05, .01). P rated worry as more active than C (.05). Page A-32 shows all constituent scales of the factors to be involved.

General trends in the fear-anxiety area then are for some divergence between obsessives and controls, this being on all types of scale, with obsessives rating fear-anxiety as slightly worse, more dangerous, potent and active. Psychopaths showed the same divergence, but to a lesser degree.

Profile distances between sexes in the area were slightly increased in the psychopaths.

c. LOVE-AFFECTION AREA:

Profile distances between groups with sexes combined are all small both on each individual concept in this area, and on the combined area profile. Factor scores also show no significant differences at any point between groups as a whole. However, inspection of profiles and factor scores according to sex showed important differences between the psychopath sexes throughout the area, and between the obsessive sexes on sexualnintercourse.

The data were therefore all analysed with sexes apart. It should be noted that thereby the size of the compared groups became small, but that the matching of the groups was still maintained (see Table 2).

FEMALES:

1. Love-affection area score: (the total of the 5 concepts in the area)

Profile distances were slightly increased between P and C.

Factor scores showed components responsible. P rated love generally as much worse and more dangerous than C (.001, .001) and than O (.05, .01). O also rated love as rather worse than C (.05), scoring midway between P and C. Page A-28 shows all the constituent scales of the factors to participate in this shift.

2. LOVE:

Profile distances were slightly increased between P and C.

Factor scores showed P to rate love as worse than C (.05). O rated love as worse than C (.05). Page A-33 shows all constituent scales of the factors to be involved.

3. LIKING:

Profile distances were moderately increased between P and C.

Factor scores showed P regarded liking as worse and more dangerous than C (.05, .05). (Trends here are only suggestive as the F scores for the sample as a whole were only .1, .2).

4. SEXUAL INTERCOURSE:

Profile distances here were very large between P and C, and slightly increased between O and C.

Factor scores show up components responsible. P rated sexual intercourse as far worse and more dangerous than C (.001, .05). (F for the whole sample on d only .2). O rated sexual intercourse as worse than C (.05).

For the sexes compared with one another P females were higher than P males on evaluative and danger scales (.001, .01). O females were higher than O males on e (.05). The differences were consistently greatest between P and C.

Graph 6 clearly shows all constituent scales of factors concerned to participate in the shift, and also the separation of O and P on the 4 potency and activity scales.

5. MY AFFECTION FOR A PERSON:

Profile distances were moderately increased between P and C.

Factor scores show that P regarded affection as worse and more dangerous than C (.05, .01). (F only .2).

6. FONDNESS:

Profile distances did not show much separation between the groups.

Factor scores showed some differences present between P and C on the e and d scales in the same direction as with the other concepts in the area, but t reached only .1.

MALES:

1. Love-affection area scores (the total of the 5 concepts in the area):

Profile distances between groups were not much increased.

On factor scores the groups scored similarly, except on p O had a higher score than C (.05). Page A-28 shows both constituent scales to be involved.

2. LOVE:

Profile distances showed no great separation between the groups.

Factor scores show O to rate love as slightly worse than P (.05).

3. LIKING OF SOMEBODY:

Profile distances showed slight separation between O and C. Page A-33 shows this to be variable across types of scales.

On factor scores O rated liking as more potent than P or C (.05, .05).

4. SEXUAL INTERCOURSE:

Profile distances showed no great separation between groups.

Factor scores showed P to rate sexual intercourse as slightly better than C (.05). Page A-33 shows this to be due mainly to be the tasty-distasteful and kind-cruel scales.

5. MY AFFECTION FOR A PERSON:

Profile distances showed no great separation between groups.

On factor scores P rated affection as less potent than O (.05, but F only .2), and less active than O or C (.02, .05).

6. FONDNESS:

Profile distances showed slightly increased separation of O from C. Page A-34 shows this to be on both potency scales and tasty-distasteful.

On factor scores O rated fondness as more potent than C (.01).

Summary of findings in Love-affection area

Groups compared with sexes combined showed no great separation of profiles. Similarly, factor scores showed no significant differences between groups. Inspection showed this to mask opposing sex trends in important instances. Re-analysis with sexes separated produced the following picture:

Control sexes shared similar attitudes. Psychopath sexes diverged strikingly, their profiles being distant from one another, most strikingly so on sexual intercourse. Factor and scale scores showed this to be most marked on evaluative and danger scales, P females rating love-affection concepts, especially sexual intercourse, as bad and dangerous, differing highly significantly from control females. Psychopath males, by contrast, showed rather better ratings of love and sexual intercourse than other male groups, but differences were small. Obsessive sexes diverged in their profiles mainly on sexual intercourse on all scales. Evaluatively, obsessive females scored midway between control and psychopath females in this regard. Obsessive females rated sexual intercourse and love as slightly worse than controls. In other respects obsessive females were similar to control females. Obsessive males tended to score mostly like control males.

Table 10. Semantic distances (D scores) between profiles

Scores on the following page are from 0 to a possible maximum of 198. Increased distances are underlined. The higher the score, the more dissimilar are the two profiles compared.

O.v.P., O.v.C., P.v.C. indicate the pair of groups whose distance from one another is being represented.

TABLE 10

CONCEPT PROFILE DISTANCES (D SCORES)
BETWEEN GROUPS AND SEXES

	BETWEEN GROUPS SEXES COMBINED			BETWEEN GROUPS SEXES APART			BETWEEN SEXES IN EACH GROUP		
	O v P	O v C	P vC	OvP	O v C	P v C	O	P	C
Ugly	12.8	11.9	13.0	F. 11.5 M. 17.3	12.2 16.2	12.7 14.1	11.2	13.0	8.8
Myself	30.2	36.3	46.4	F. 31.6 M. 27.2	39.1 35.5	50.3 43.5	20.7	16.4	14.6
My Father	35.2	17.1	43.9	F. 51.9 M. 16.4	22.5 24.0	50.7 30.6	38.3	18.0	24.0
My Mother	33.2	20.1	47.2	F. 47.9 M. 33.2	24.1 28.6	60.1 38.1	35.8	28.8	16.6
Annoyance	12.9	21.2	16.9		-		15.1	12.5	15.1
My feelings when I am angry	30.0	10.2	34.1	F. 32.1 M. 35.9	17.8 12.2	41.0 32.0	17.3	22.4	27.8
Spitefulness	15.1	12.2	19.9	F. 27.6 M. 24.1	21.5 22.0	25.5 27.8	27.8	29.0	19.7
Dislike of a person	25.2	14.0	23.7	F. 25.2 M. 35.6	14.0 24.3	23.7 24.1	28.3	29.7	8.1
My resentment of people	19.6	19.5	29.2		-		19.6	18.2	12.4
Anger-Hostility Area	15.7	8.6	19.0		-		18.0	15.4	12.4
Fear	7.2	9.0	9.1	F. 18.7 M. 11.9	10.1 12.5	30.0 19.3	14.1	28.2	16.2
Panic I have had	13.0	25.0	20.1		-		19.7	19.9	12.8
Anxiety	10.2	29.7	23.6	F. 23.7 M. 18.7	19.8 38.5	18.6 48.2	10.6	32.0	26.5
My feelings when I am frightened	11.5	21.4	22.3		-		21.1	22.1	11.9
Worry	11.2	24.2	17.5		-		17.1	14.9	14.1
Fear-anxiety area	7.1	19.0	16.0		-		11.5	21.2	11.7
Love	17.2	16.8	15.4	F. 22.2 M. 26.3	20.2 16.5	28.3 23.7	16.6	27.9	18.8
Liking of somebody	16.5	20.6	18.5	F. 22.1 M. 28.5	23.9 28.6	34.1 16.4	21.8	30.1	17.5
Sexual Intercourse	12.4	16.8	15.4	F. 31.1 M. 25.3	29.7 21.4	53.5 23.8	37.3	71.0	15.8
My affection for a person	16.3	15.8	17.5	F. 24.2 M. 29.9	17.9 22.1	34.2 18.5	20.1	28.1	15.7
Tenderness	18.4	14.4	14.6	F. 30.4 M. 16.1	13.5 25.2	21.9 13.9	22.6	26.4	14.5
Love-affection Area	9.7	10.6	12.1	F. 20.5 M. 18.5	12.6 18.5	28.4 13.3	22.5	33.9	9.2

TABLE

CONCEPT PROFILE DISTANCES (D SCORES)
BETWEEN CONCEPTS, SEXES APART

	FEMALES			MALES		
	O	P	C	O	P	C
Myself: My father	60.1	31.3	27.8	38.9	40.7	27.6
Myself: My mother	59.2	29.9	36.3	60.6	37.6	37.3
My mother: My father	41.5	11.2	21.2	35.4	18.4	23.2

5. GRAPHS OF MEAN SCALE SCORE PROFILES

The next seven graphs show the mean scale score profiles for each group with sexes separated and combined.

Graph (i) is always comparison between females of the three groups.

" (ii) is always comparison between males of the three groups.

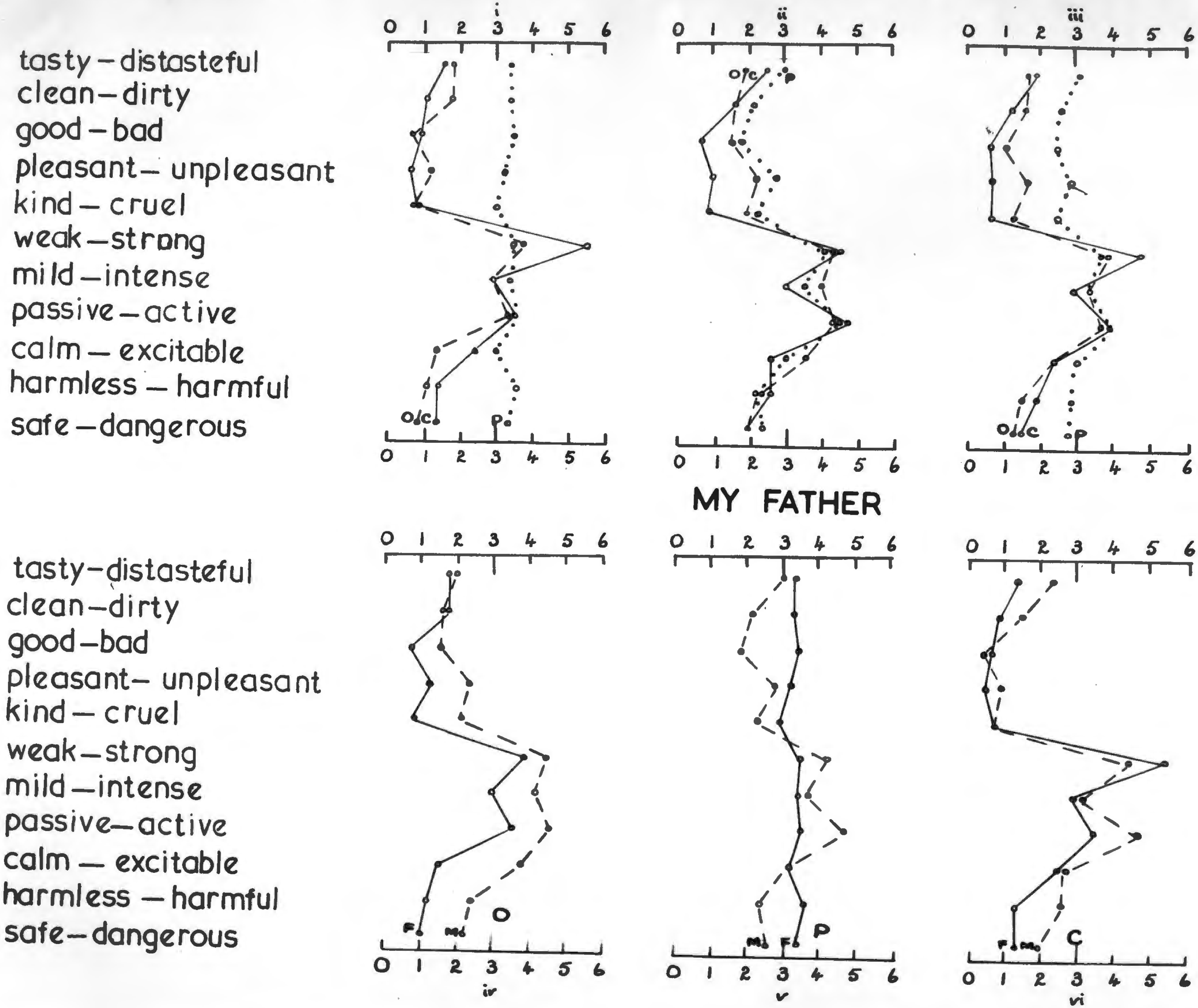
" (iii) is always comparison between the three groups with their sexes combined.

" (iv) is always comparison of profiles between the sexes in the obsessives

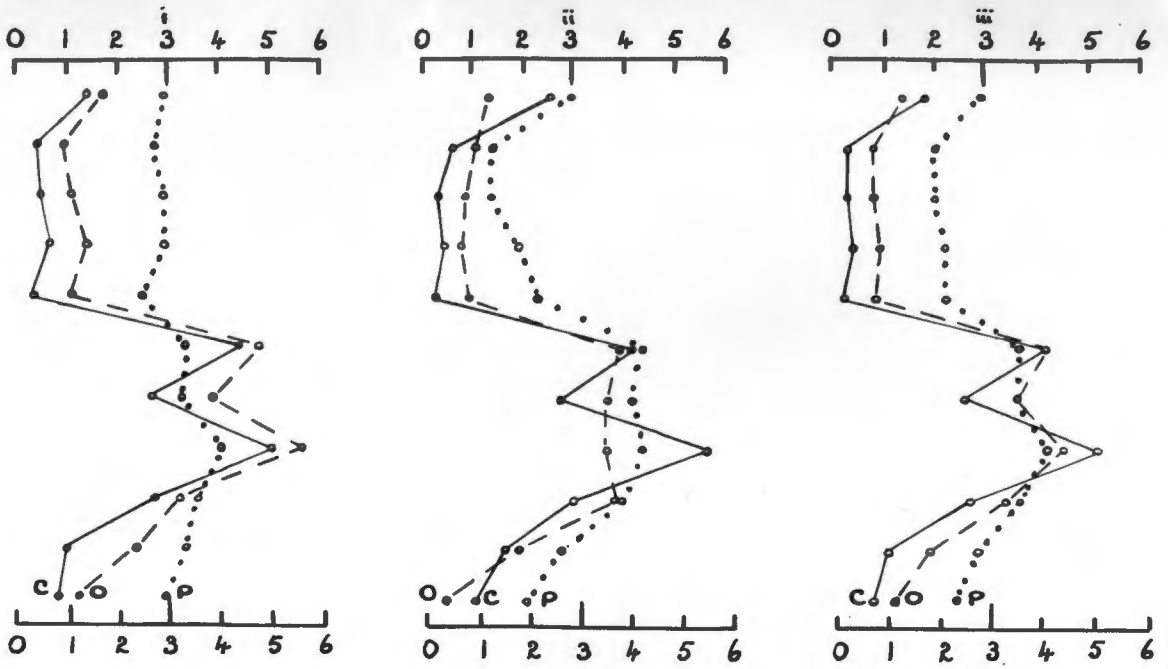
" (v) is always comparison of profiles between the sexes in the psychopaths

" (vi) is always comparison of profiles between the sexes in the controls

Semantic distances between any two profiles can be read off from Table 10, p. 129.

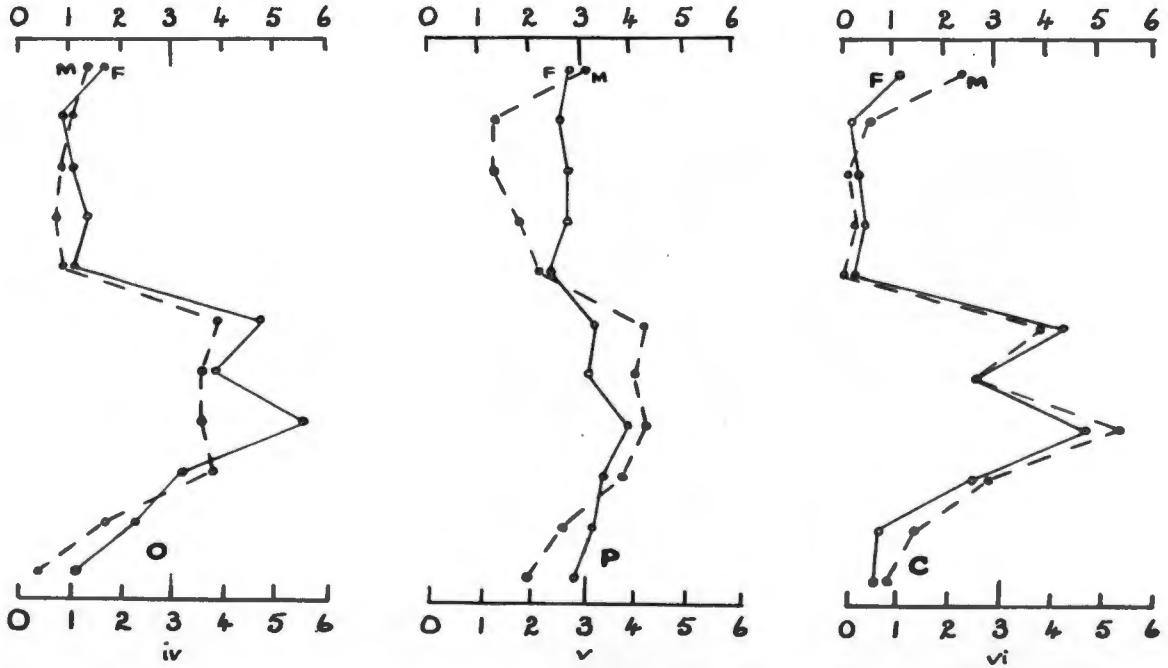

MY FATHER
tasty–distasteful
clean–dirty
good–bad
pleasant–unpleasant
kind–cruel
weak–strong
mild–intense
passive–active
calm–excitable
harmless–harmful
safe–dangerous
0 1 2 3 4 5 6
i
ii
iii
iv
v
vi
O/C
P
O
C
F
Mo

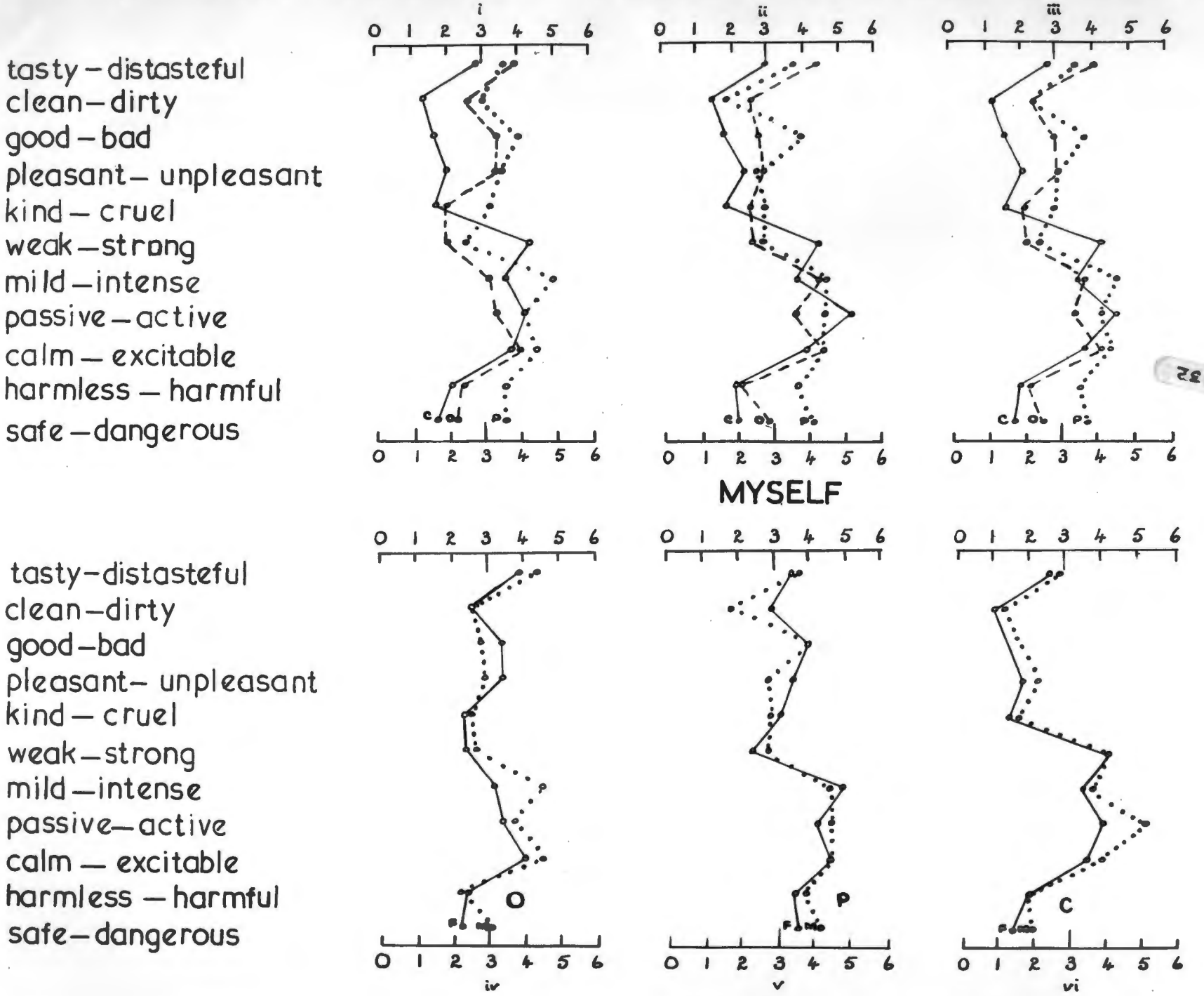
tasty – distasteful
clean – dirty
good – bad
pleasant – unpleasant
kind – cruel
weak – strong
mild – intense
passive – active
calm – excitable
harmless – harmful
safe – dangerous



MY MOTHER

tasty – distasteful
clean – dirty
good – bad
pleasant – unpleasant
kind – cruel
weak – strong
mild – intense
passive – active
calm – excitable
harmless – harmful
safe – dangerous





GRAPH 3 page 109

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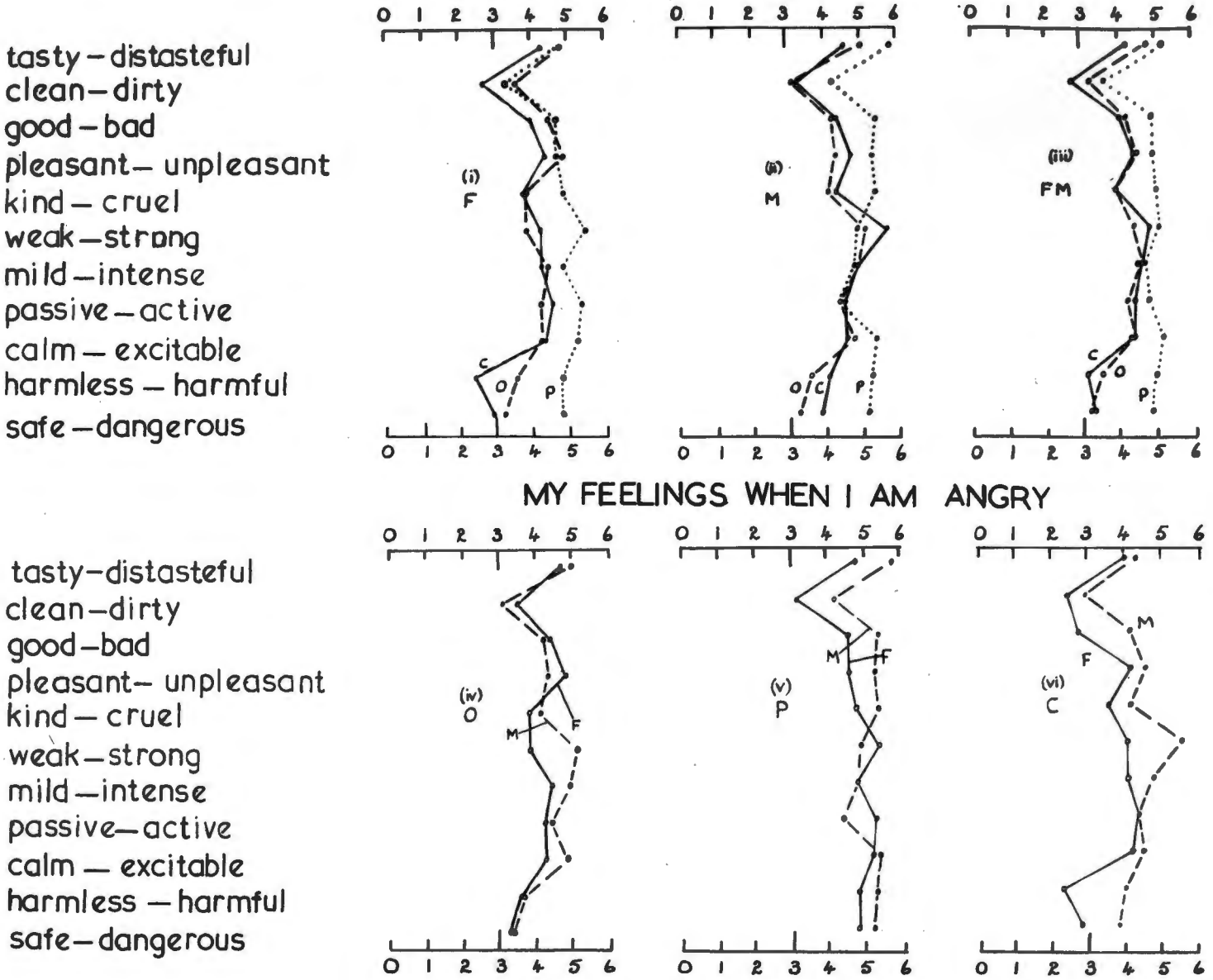
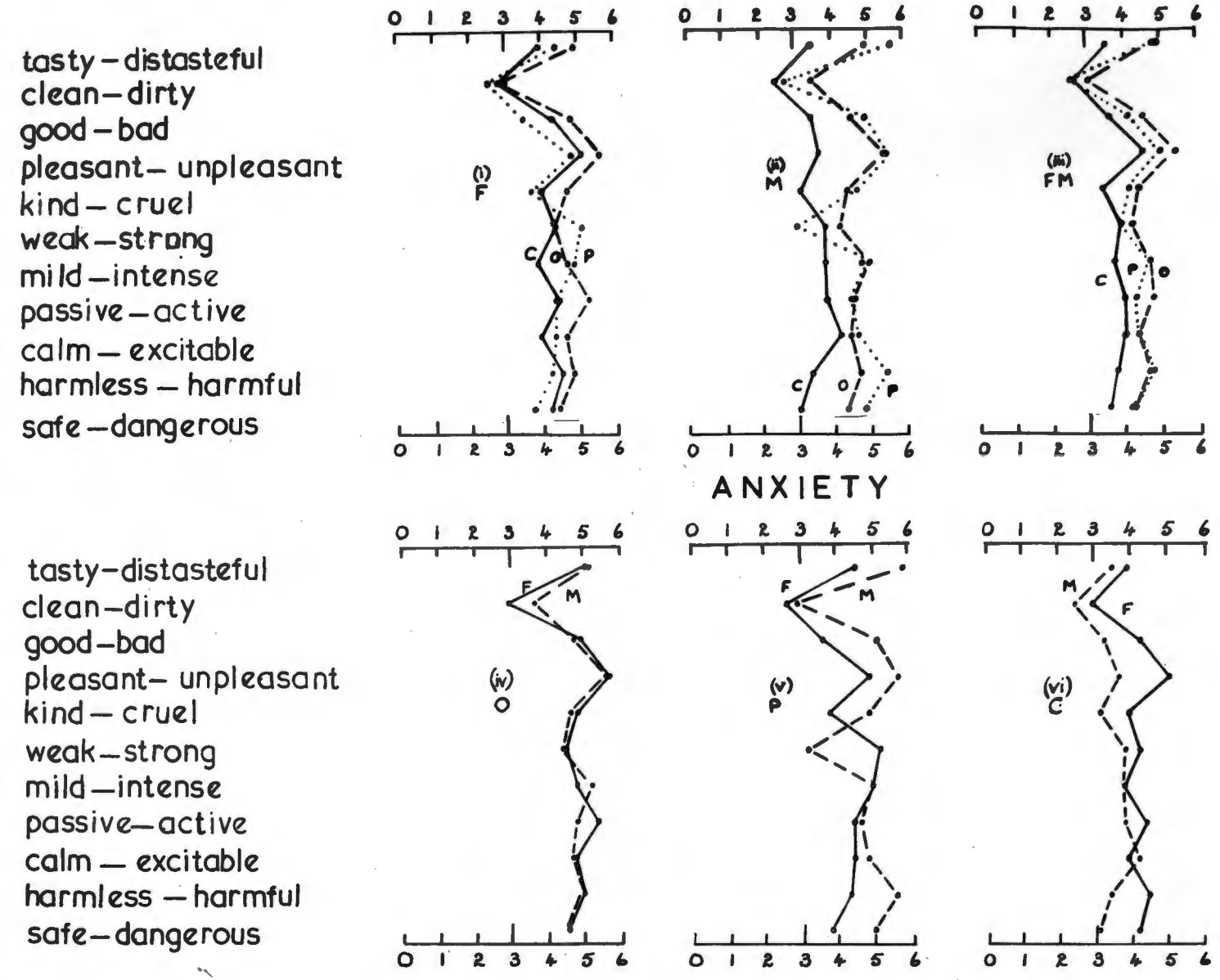
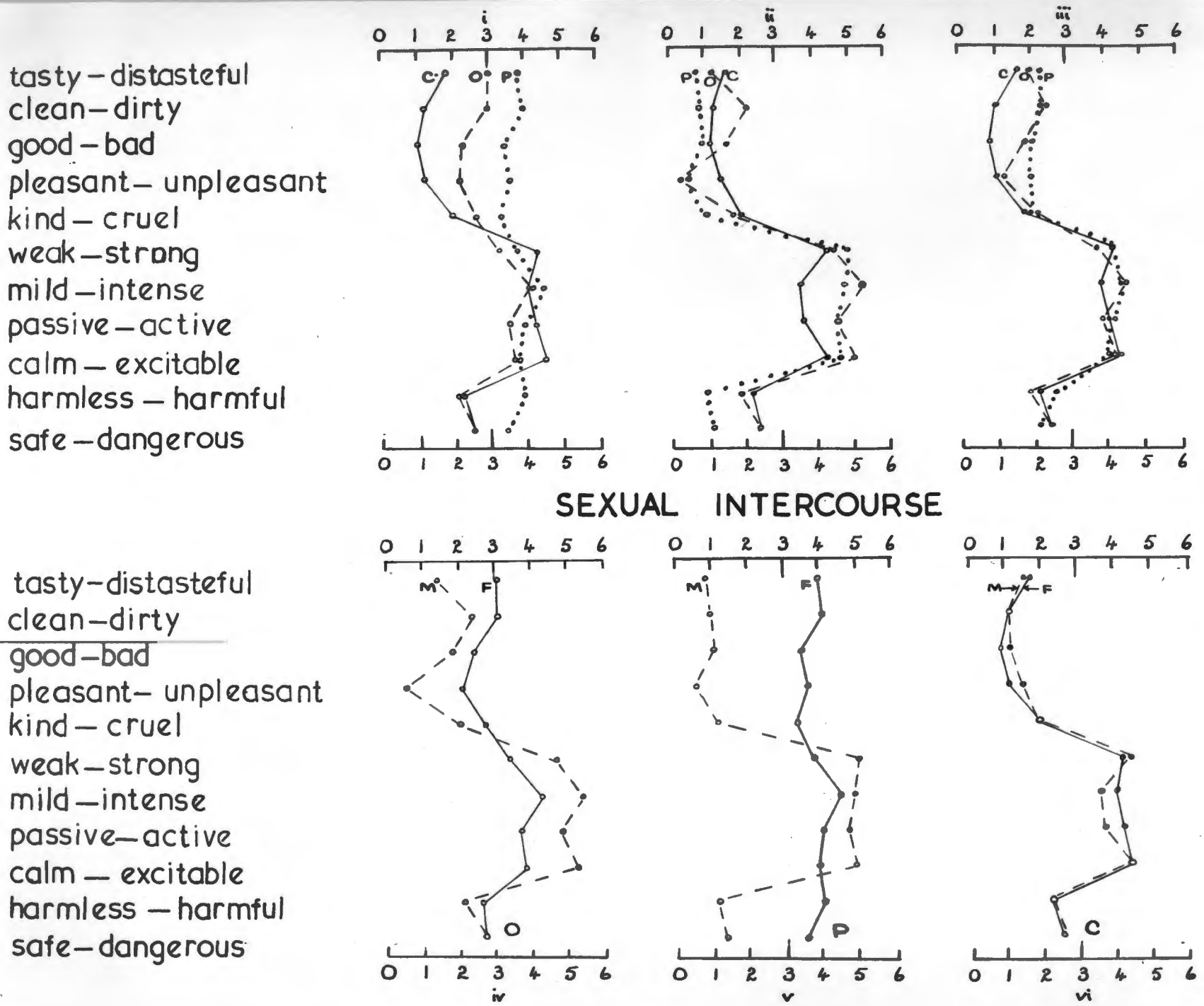


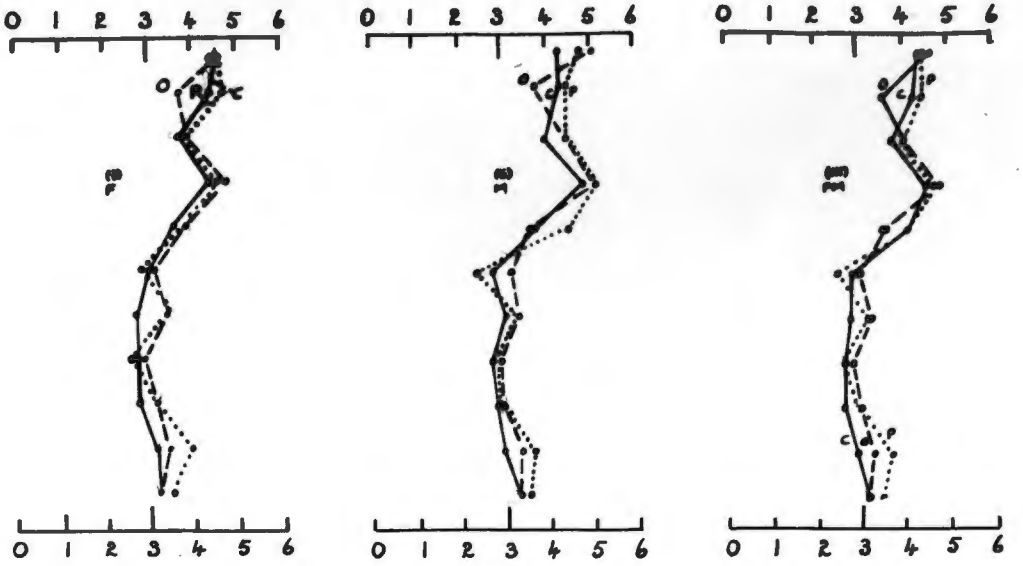
Graph 4 page 133



Graph 5 page 134

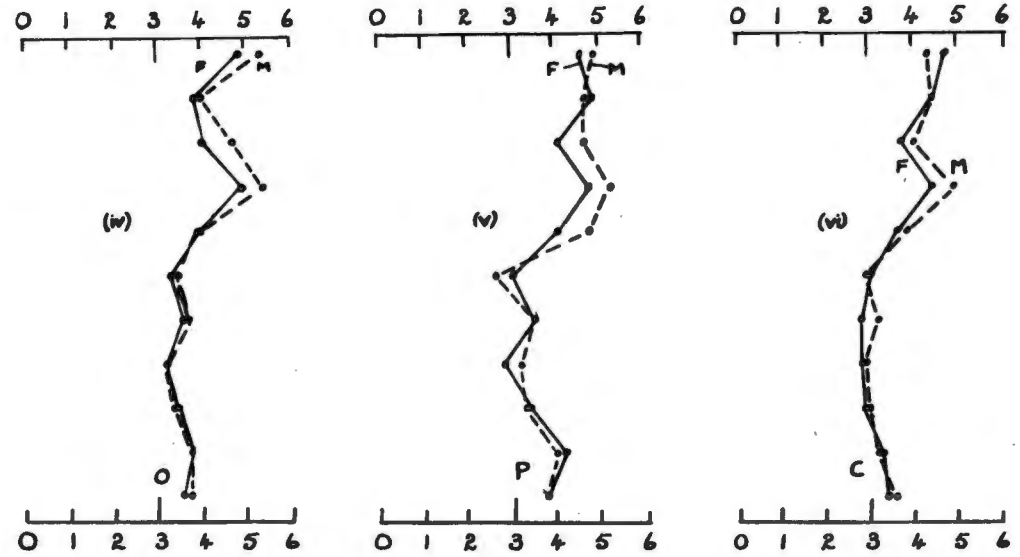

tasty – distasteful
clean – dirty
good – bad
pleasant – unpleasant
kind – cruel
weak – strong
mild – intense
passive – active
calm – excitable
harmless – harmful
safe – dangerous
i
ii
iii
C
O
P
SEXUAL INTERCOURSE
M
F
iv
v
vi

tasty – distasteful
clean – dirty
good – bad
pleasant – unpleasant
kind – cruel
weak – strong
mild – intense
passive – active
calm – excitable
harmless – harmful
safe – dangerous



UGLY

tasty – distasteful
clean – dirty
good – bad
pleasant – unpleasant
kind – cruel
weak – strong
mild – intense
passive – active
calm – excitable
harmless – harmful
safe – dangerous



Graph 7 page 136

6. TABLES OF FACTOR SCORE COMPARISONS

The next six tables refer to comparisons between groups on each concept on each factor score, using analysis of variance and t tests. Where the group is printed in heavy type, it is significantly higher in score than the group it is joined to by a line. The t significance levels are written below the line joining the two differing groups, with the actual t score in brackets. The t ratio for the three groups is on the right, with its significance level next to it.

f	factor	PSYCHOPATH P	OBSESSIVE O	CONTROL C	F	Sign level
MY FATHER						
	e	P .001(5.53)	o	.001(6.35) c	21.10	.001
	p	p	o	c		
	a	p	o	c		
	d	P .05(2.23)	o	.1(1.90) c	2.7	.1
		MY FATHER				
MY MOTHER	e	P .001(3.45)	o	.001(4.70) c	10.30	.001
	p	p	o	c		
	a	p	o	c		
	d	P .01(3.02)	o	.001(4.00) c	8.51	.001
		MY MOTHER				
MYSELF	e	P .001(4.32)	O	.01(3.14) c	9.69	.001
	p	p	o	.01(2.69) C	3.64	.05
	a	p	o	c		
	d	P .01(3.29)	o	.001(4.86) c	12.10	.001
		MYSELF				

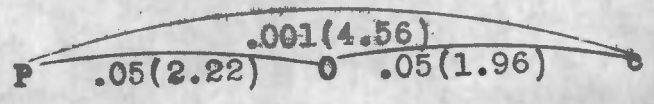
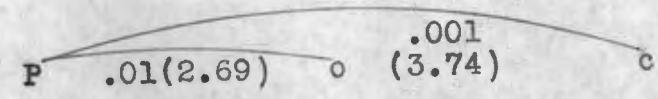
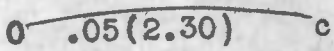
Where group is in heavy type, it is significantly higher than at least one of the 2 other groups. The t significance levels are written below the line joining the 2 differing groups, with the actual t score in brackets. The F ratio for the 3 groups is on the right, with its significance level next to it.

TABLE II

PERSONAL CONCEPTS

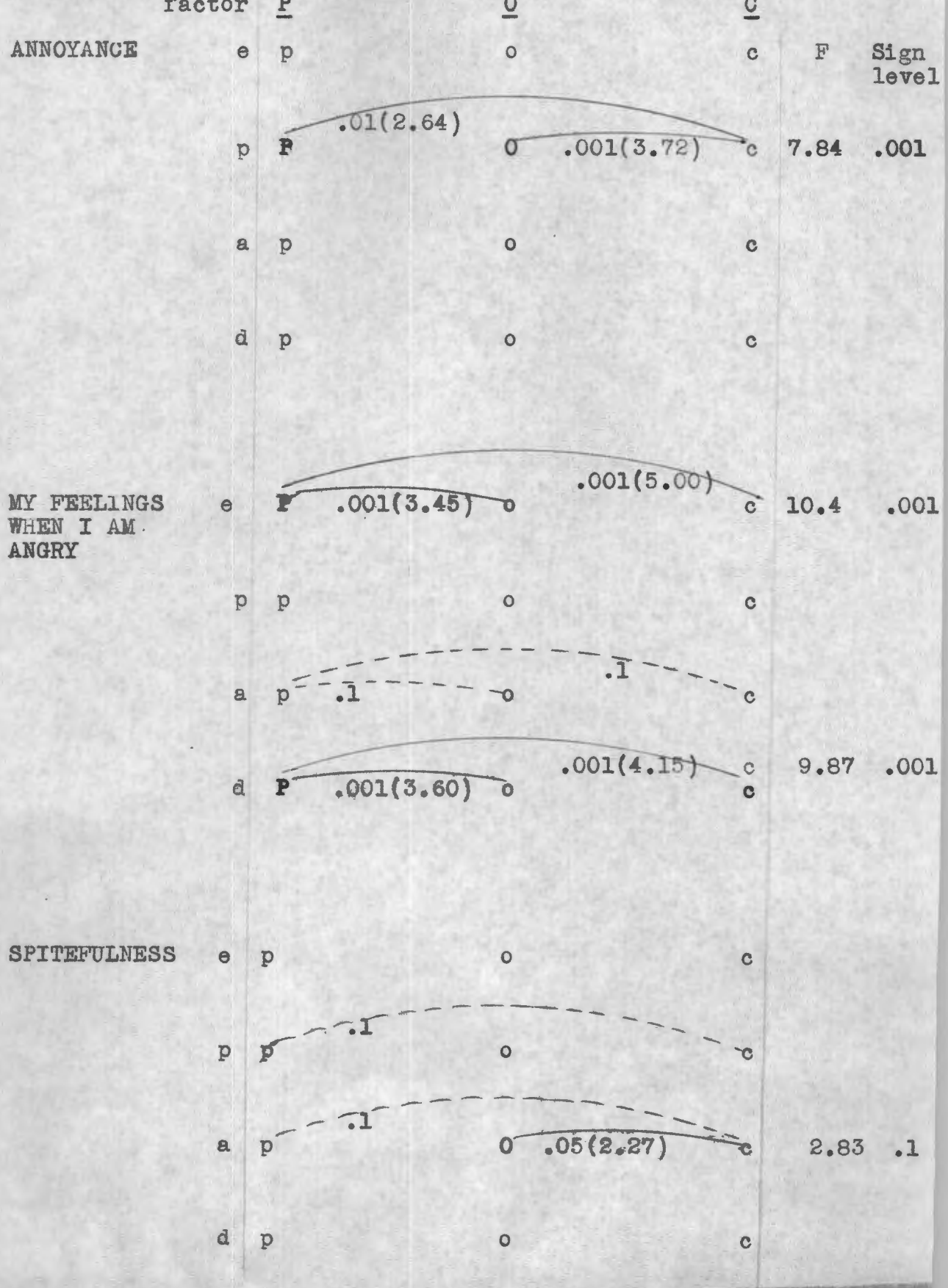
Significant differences
(see also Graphs 1/3)

factor	P	O	C	F	Sign level
TOTAL ANGER-HOSTILITY AREA					
e	p	o	c		
p	P .01(2.62)	o	c	3.49	.05
a	P .1	o .01 (3.06)	c	4.67	.05
d	P .01 (2.67)	o .05 (2.27)	c	4.06	.05
TOTAL FEAR-ANXIETY AREA					
e	p	o .05 (2.39)	c	2.94	.1
p	p .1	o .05 (2.31)	c	3.02	.02
a	p	o .05 (2.51)	c	3.33	.05
d	P .05(2.43)	o .05 (2.23)	c	3.85	.05
TOTAL LOVE-AFFECTION AREA (Males&females)					
e	p	o	c		
p	p	o	c		
a	p	o	c		
d	p	p	c		

TOTAL LOVE-AFFECTION AREA (FEMALES)	e		10.41	.001
	p	p o c		
	a	p o c		
	d		7.43	.01
TOTAL LOVE-AFFECTION AREA (MALES)	e	p o c		
	p	p 	2.66	.1
	a	p o c		
	d	p o c		

TABLE

THE 3 EMOTIONAL AREA SCORES
significant difference
(see Table 7 for key)

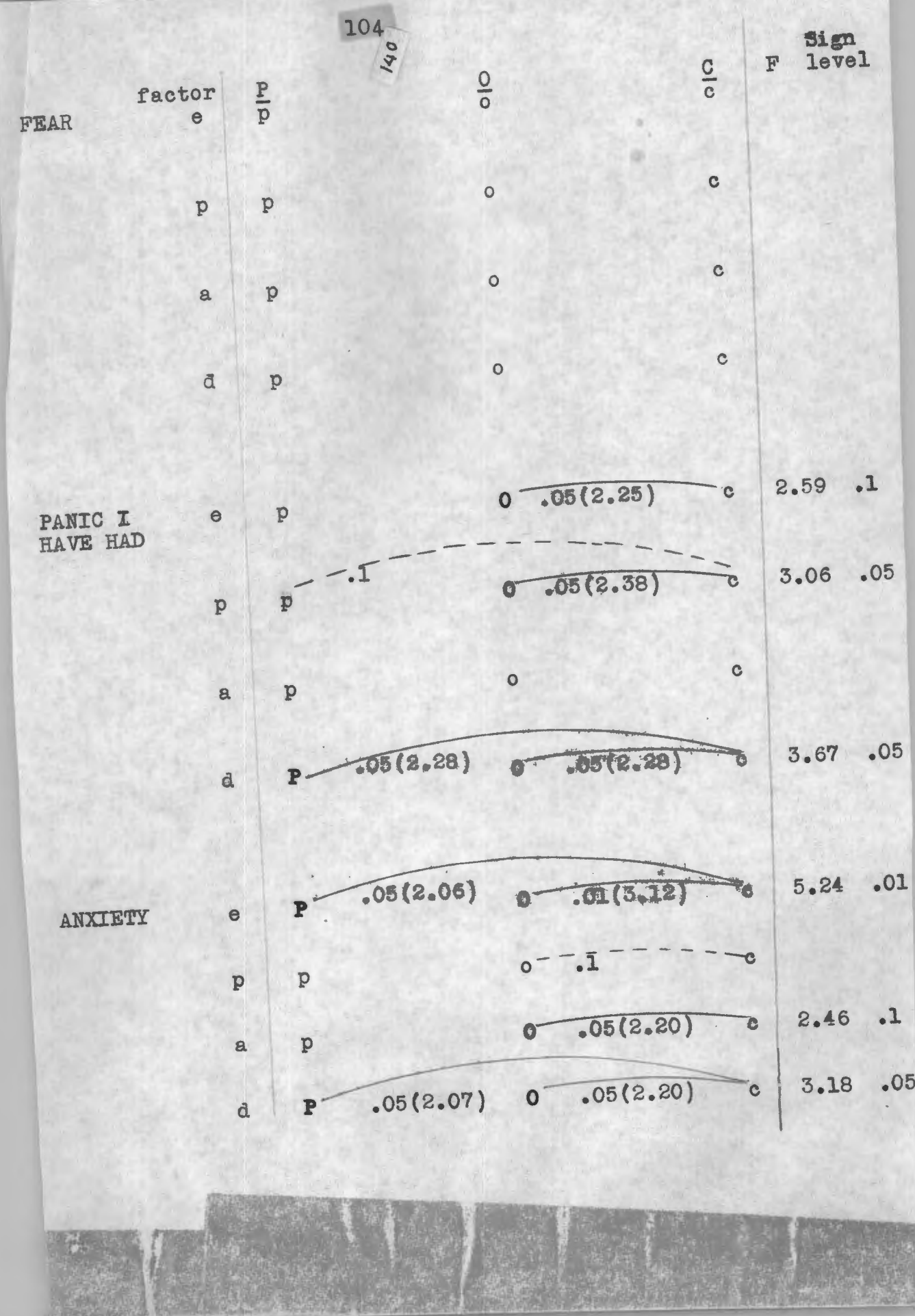

factor
P
O
C
ANNOYANCE
e p o c F Sign level
.01(2.64)
p P O .001(3.72) c 7.84 .001
a p o c
d p o c
.001(5.00)
MY FEELINGS WHEN I AM ANGRY
e P .001(3.45) o c 10.4 .001
p p o c
.1
a p .1 o c
.001(4.15) c
d P .001(3.60) o c 9.87 .001
SPITEFULNESS
e p o c
.1
p p o c
.1
a p 0 .05(2.27) c 2.83 .1
d p o c

MY RESENTMENT OF PEOPLE	e	p		o		c	F	Sig level
	p	P	.01(2.66)	O	.05(2.41)	c	4.61	.05
	a	P	.05(2.89)	o		c	4.29	.05
	d	P	.05(2.52)	o	.05(2.57)	c	4.27	.05
DISLIKE OF A PERSON	e	p		o		c		
	p	p	.1	o	.1	c		
	a	P	.01(3.37)	o	.001(3.45)	c	7.4	.01
	d	P	.05(2.26)	o		c	2.49	.1

TABLE 13

ANGER-HOSTILITY AREA
(see key to table 11)

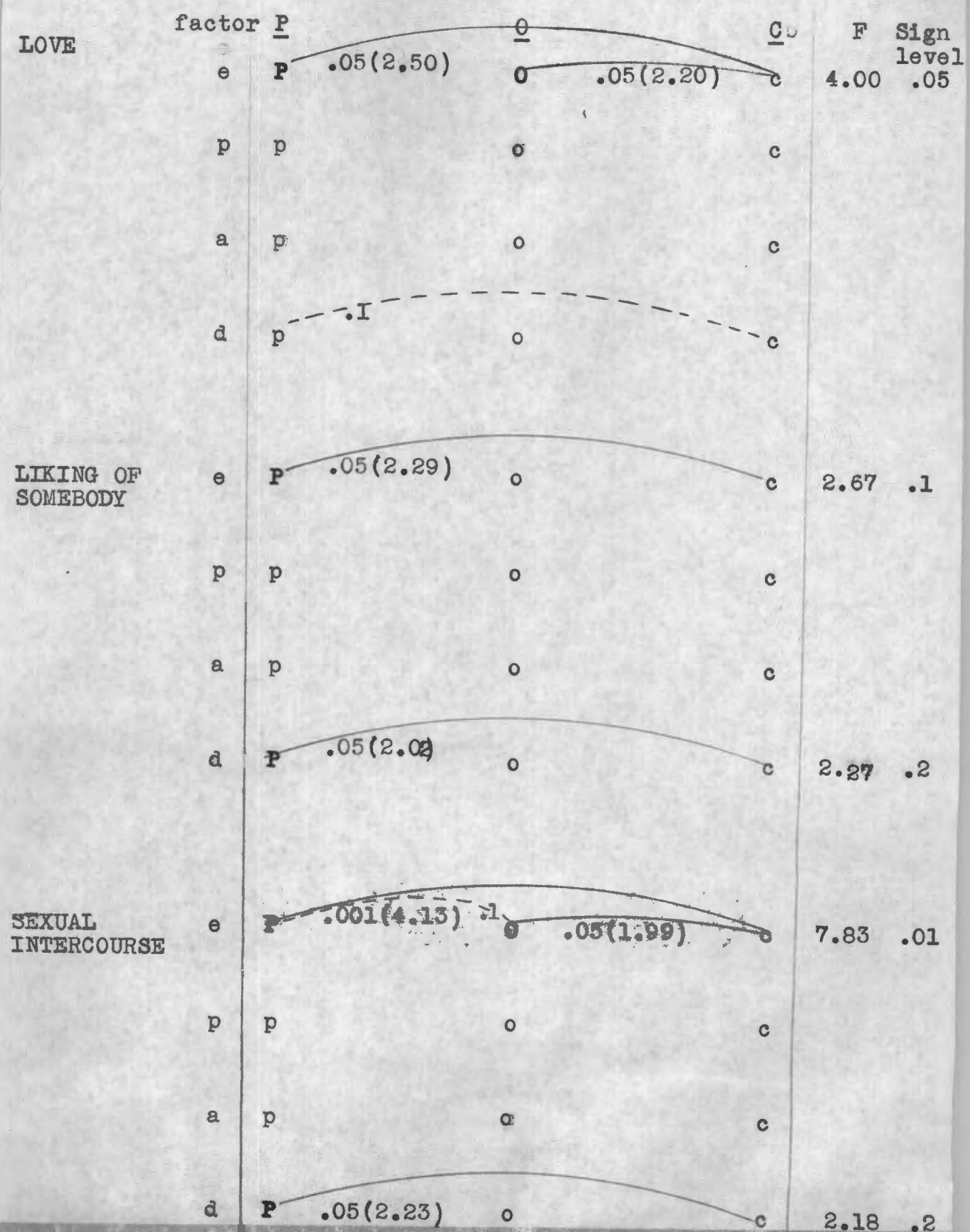
140


factor
P/p
O/o
C/c
F
Sign level
FEAR
e
p p
o
c
a p
o
c
d p
o
c
PANIC I HAVE HAD
e p
0 .05(2.25) c
2.59 .1
p p
.1
0 .05(2.38) c
3.06 .05
a p
o
c
d P
.05(2.28)
0 .05(2.28) c
3.67 .05
ANXIETY
e P
.05(2.06)
0 .01(3.12) c
5.24 .01
p p
o .1 c
a p
0 .05(2.20) c
2.46 .1
d P
.05(2.07) 0 .05(2.20) c
3.18 .05

MY FEELINGS WHEN FRIGHTENED	e	p .1	o	c		
	p	p	o	c		
	a	p	o	c		
	d	P .001(3.74)	O .05(2.50)	c	7.45	.01
WORRY	e	p	o	c		
	p	p	O .05(2.40)	c	2.85	.1
	a	P .05(2.30)	O .01(2.61)	c	4.33	.05
	d	p	o	c		

TABLE 14
FEAR-ANXIETY AREA:
(see key to table 11)

FEMALES


factor P O C F Sign level
LOVE
e P .05(2.50) O .05(2.20) C 4.00 .05
p p o c
a p o c
d p .1 o c
LIKING OF SOMEBODY
e P .05(2.29) o c 2.67 .1
p p o c
a p o c
d P .05(2.02) o c 2.27 .2
SEXUAL INTERCOURSE
e P .001(4.13) O .05(1.99) C 7.83 .01
p p o c
a p o c
d P .05(2.23) o c 2.18 .2

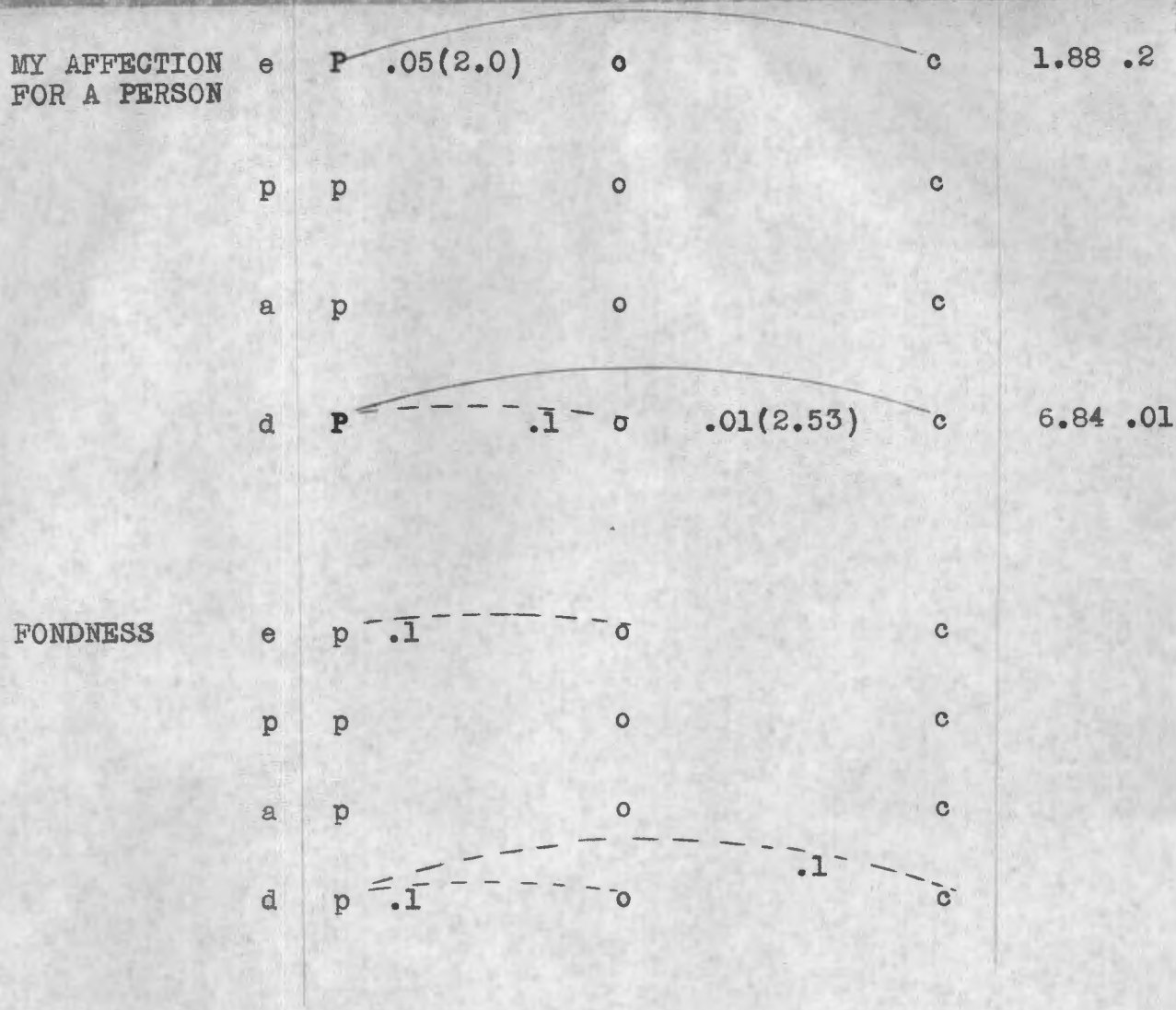
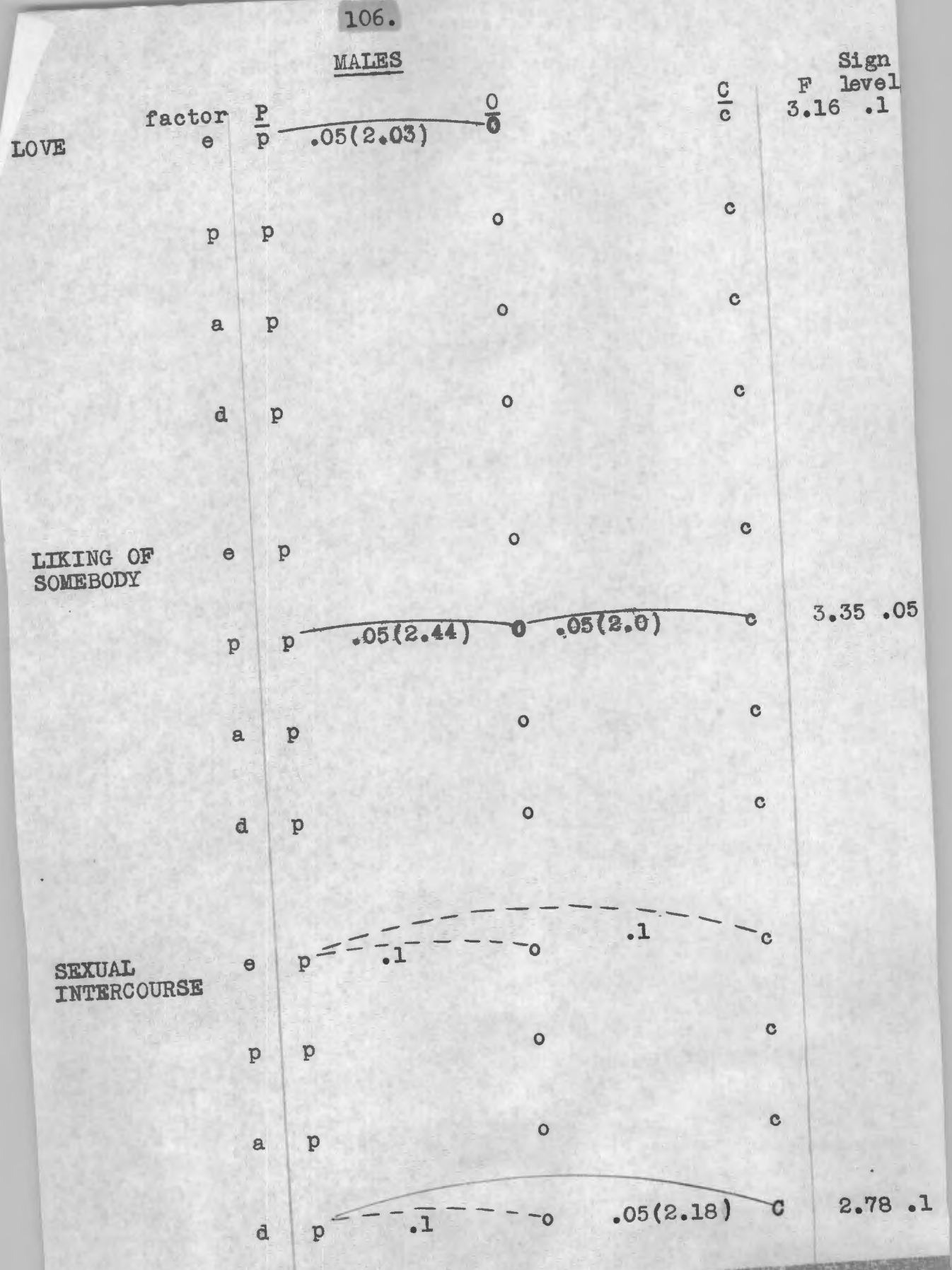


TABLE 15
LOVE-AFFECTION ARKA: FEMALES
(see key to table 7)
(see also graph 4)

MALES


factor
LOVE
e
p
a
d
P/p
O/o
C/c
.05(2.03)
Sign
F level
3.16 .1
LIKING OF SOMEBODY
.05(2.44)
.05(2.0)
3.35 .05
SEXUAL INTERCOURSE
.1
.1
.05(2.18)
2.78 .1

MY AFFECTION FOR A PERSON	e	p	o	c		
	p	p	.05(2.02) o	c	2.10	.2
	a	p	.02(2.67) o	.05(1.97) c	3.78	.05
	d	p	o	c		
FONDNESS	e	p	o	c		
	p	p	o	.01(2.72) c	3.64	.05
	a	p	o	c		
	d	p	o	c		

TABLE (16)
LOVE-AFFECTION AREA: MALES
(see key to table 7)
(see also graph 4)

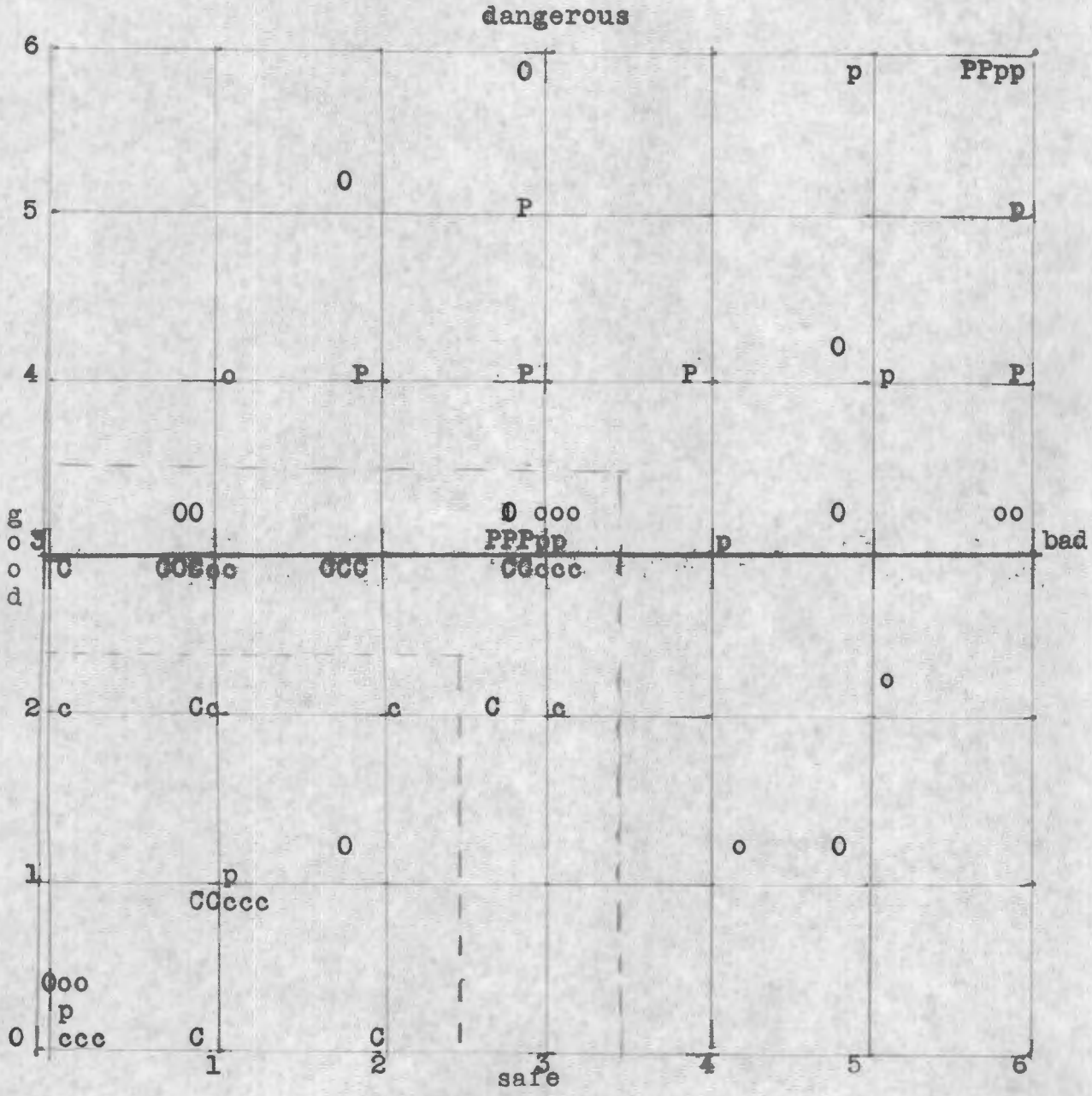
11

7. SCATTERGRAMS

These are scores of each individual patient plotted on two scales (good-bad and safe-dangerous) for four concepts (MYSELF, MY FATHER, MY MOTHER, SEXUAL INTERCOURSE) to show the distribution corresponds with that obtained more simply from factor scores. In these the area on the lower left marks the boundary of scores on both the good and safe side (0, 1 and 2). Scores which are both favourable and safe therefore cluster to the lower left. Key is as follows:

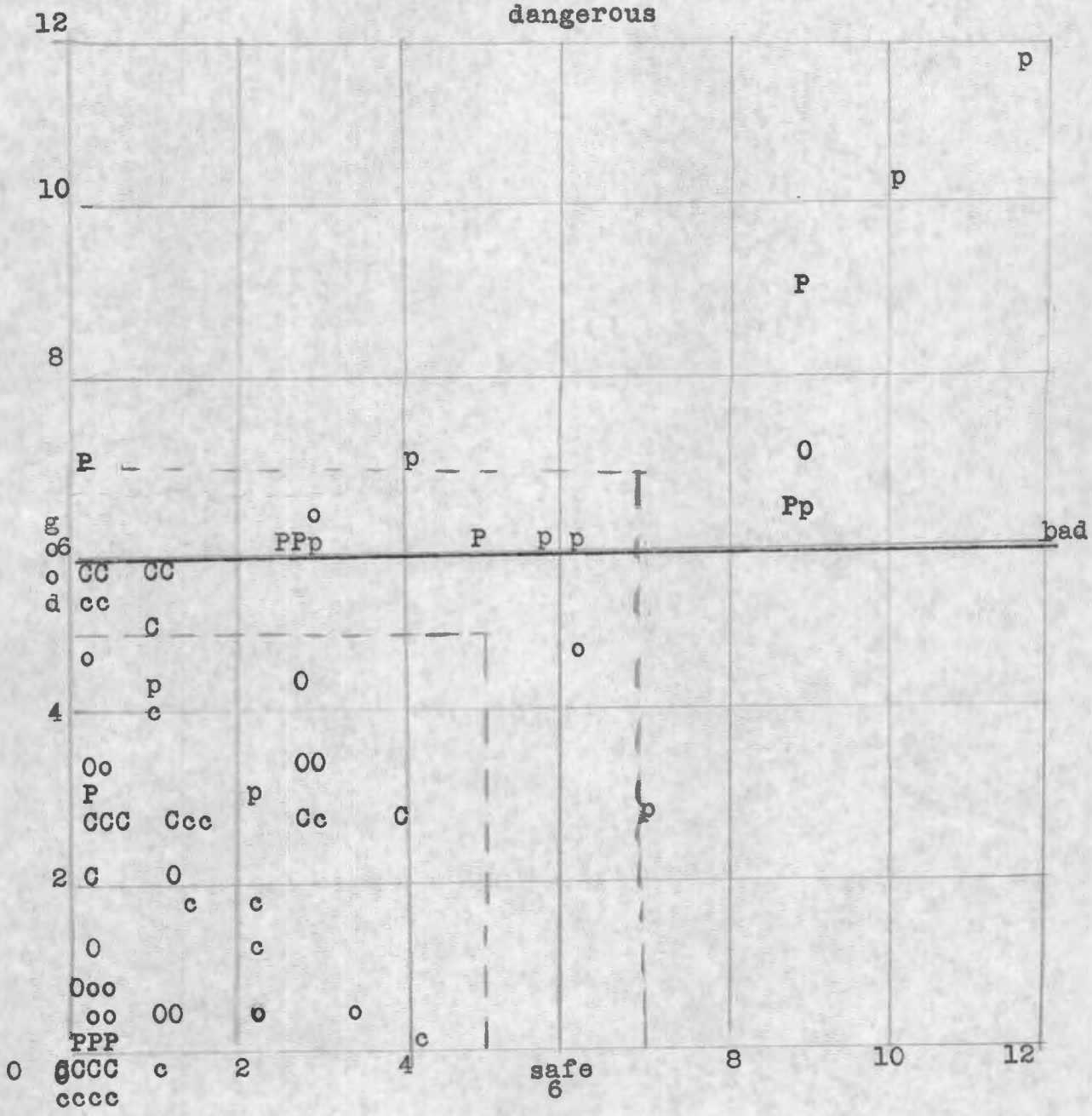
O obsessive male	C control male
o obsessive female	c control female
P psychopath male	
p psychopath female	

Scattergram 1 (MYSELF) shows that not a single control patient marked this beyond the neutral point as bad or dangerous. By contrast, 10 out of 20 obsessives and 13 out of 20 psychopaths rated myself as either bad or dangerous. Scattergram 2 shows the combined parent score on these two scales. Again, not a single control patient had a score beyond the neutral point, only 1 obsessive scored beyond this, whereas 8 psychopaths did so. The other scattergrams show similar features corresponding to results from profile distances and factor scores. Obsessives show a shift up and right mainly on MYSELF. (With obsessive females also showing this on SEXUAL INTERCOURSE). Psychopaths show a shift up and right on all these concepts, except on SEXUAL INTERCOURSE, where the shift is due to the females.



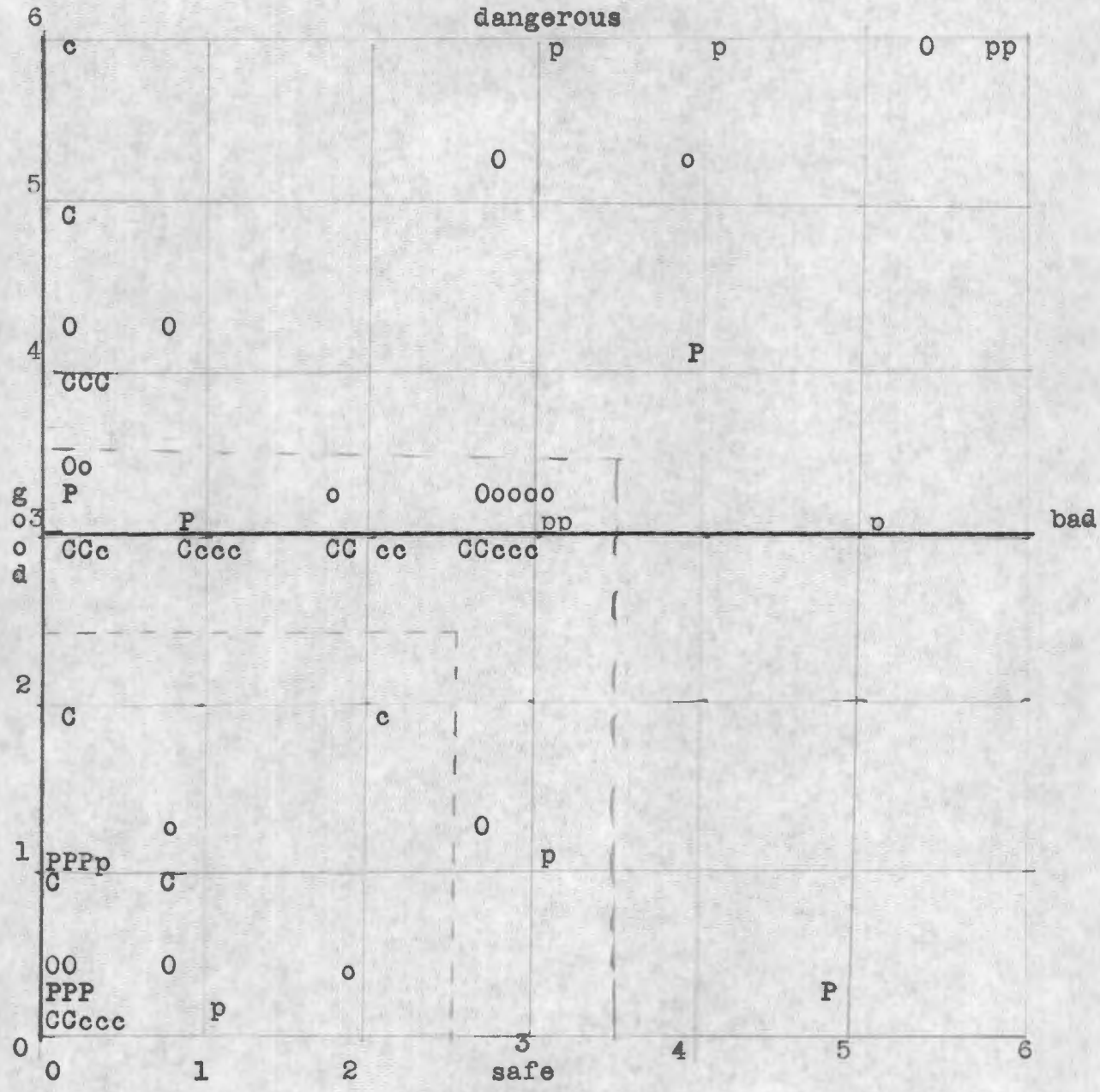
Scattergram 1

MYSELF



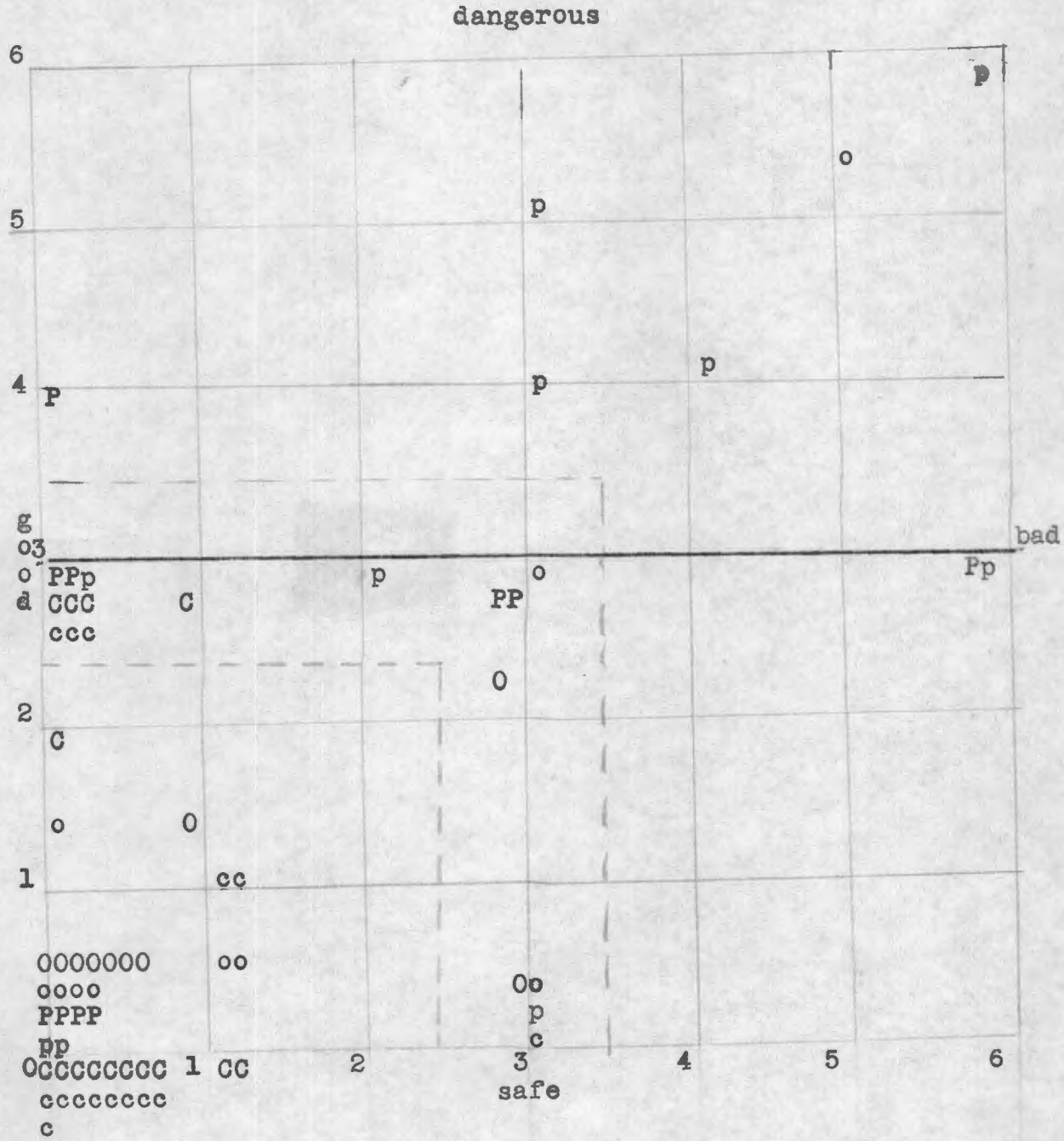
Scattergram 2

COMBINED PARENTS (MY MOTHER & MY FATHER)



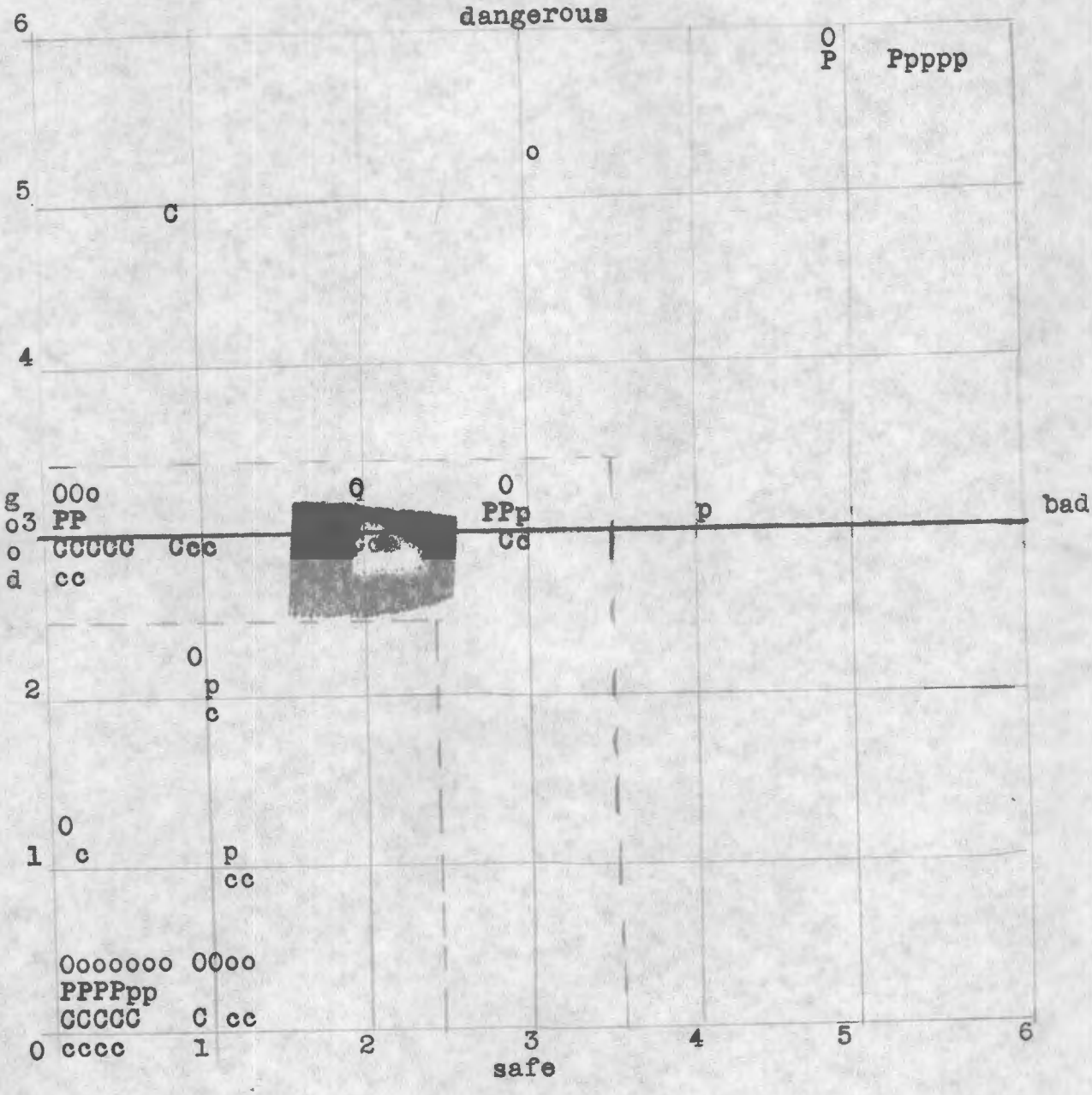
Scattergram 3

SEXUAL INTERCOURSE



MY MOTHER

Scattergram 4



MY FATHER

Scattergram 5

8. RELATIONSHIP BETWEEN ANGER-HOSTILITY AND FEAR-ANXIETY CONCEPTS:

Out of 12 18 x 18 intercorrelations matrices between concepts (one for each group on each factor between all concepts except UGLY) some additional material was obtained suggesting certain relationships between emotional concepts among the groups. Out of the mass of data only brief extracts of the most constant findings are shown.

Table 17.a shows intercorrelations between the total emotional area scores on each factor. These show clear and highly significant correlations between anger and fear scores on evaluation and danger on all three groups, though on controls these are smaller for evaluation, and only suggestive on danger scales. There was a much smaller and less significant inverse correlation between fear and love on evaluation in psychopaths, and evaluation and danger in controls. Anger-love only showed this inverse relationship on evaluation in psychopaths.

The correspondence between individual anger-hostility and fear-anxiety concepts is shown in Table 17.b for evaluation and danger scores only. The Table shows the number of correlations significant (beyond the .01 level) between individual concepts within and between the three emotional areas (each containing 5 concepts). The figures are standardised to show the number of significant correlations found out of a possible maximum of 50.

Of the three areas love was the least homogeneous (fewest significant intercorrelations). Between the emotional areas much the closest were anger and fear, and this was much more evident on evaluation than on danger scores. Obsessives have the most (closest) connections,

TABLE 17 b

Number of significant correlations ($P < .01$) between individual concepts within and between the 3 emotional areas. Only evaluation and danger scores represented. Figures are standardised for number of significant correlations found out of a maximum possible total of 50 on each figure.

		eval.	danger
Within anger area	O	40	40
	P	25	15
	C	30	25
Within fear area	O	50	10
	P	30	5
	C	25	20
Within love area	O	20	20
	P	0	5
	C	20	15
* Between anger and fear areas	O	40	10
	P	34	4
	C	22	6
Between anger and love areas	O	0	0
	P	12	0
	C	0	0
Between fear and love areas	O	0	2
	P	4	2
	C	10	2

TABLE 17 a
INTERCORRELATIONS BETWEEN THE 3 EMOTIONAL AREA SCORES

xxx $P < .001$
xx $P < .01$
x $P < .05$

	O				P				C			
	e	p	a	d	e	p	a	d	e	p	a	d
Anger-fear	xxx 80	-05	36	xxx 69	xxx 90	xx 56	xxx 70	xxx 67	xxx 62	25	xx 47	x 37
Anger-love	-36	25	50	x 21	xx -56	17	-03	-28	-13	12	32	-06
Fear-love	-02	37	43	13	xx -58	17	-26	-29	xx -48	40	xx 55	xx 47

next come the psychopaths, and the ~~psychopaths~~ controls show these features to a smaller degree. The defect in this analysis is that we do not know which particular concepts were mainly responsible for the significant correlations. Ideally factor analysis of the data is required to show the structure more clearly, but this unfortunately was not feasible.

In summary, the main finding here is a significant correlation between evaluative ratings on agger-hostility and fear-anxiety concepts. This was most prominent in the two psychiatric groups, and rather less so in controls.

It is difficult to know what underlying influence produces this relationship. As it is not found between other types of concepts, it must be related to something specific in anger and fear concepts, and not to more general influences such as scale checking style across concepts. The finding does suggest that there is some common element in these patients' experience of anger and fear. Could this be that patients who get very anxious if threatened are those who get very angry if frustrated, and conversely patients with more muted reactions show these in the two corresponding situations? Without further evidence we can only speculate, but any explanation would have to account for less emphasis of this feature in controls.

9. SUMMARY OF RESULTS:

The foregoing analyses show agreement in the great majority of instances between analysis comparing actual concept profiles (using semantic distance measures), analysis using factor score comparisons

(analysis of variance and t tests), concept profiles of scale means and scattergrams. Where differences were found on one method of analysis, this was mostly confirmed on the others. This is not entirely unexpected, as we know from the factor analyses that the two main dimensions of semantic judgment used by our groups (which were also the most interesting from the viewpoint of prior expectations and predictions) - viz. evaluative and danger facets of meaning - were well sampled by scales representative of those facets, and the derived factor scores representing those dimensions were correspondingly valid. The other two factor scores - potency and activity - were not as representative of their dimensions, and missed occasional differences between groups in their component scales. Their constituent scales were also the least stable, quite apart from their factorial loading, and were less important for testing expectations and predictions. Actual concept profile distances (D measures) usefully indicated which concepts were dissimilar between groups, but did not indicate which components were responsible for dissimilarity.

MAIN CHARACTERISTICS FOR EACH GROUP

Divergence will refer to increased semantic distance between profiles. Terms good, bad, better, worse, will refer to evaluative components of total profiles. Terms weak, potent, safe, dangerous, etc. will refer to their respective components of total profiles.

The control concept UGLY showed no noteworthy divergence between groups or sexes.

OBSESSIVES:

Personal concepts:
- Self profile divergent from controls.
- Self profile very distant from same group's parental profiles.
- Moderate divergence between sexes on parental profiles.
- Discordance between parental profiles.
- Self concept not good, is weak.
- Fairly good parental concepts (not as good as controls).

Emotional concepts:

Anger-hostility area:
- Slight divergence between sexes on profiles
- No divergence from controls on profiles
- Mostly same as controls. Few concepts more potent and active than controls.

Fear-anxiety area:
- No divergence between sexes on profiles.
- Slight divergence from controls on profiles.
- Worse, more potent, active and dangerous than controls.

Love-affection area:
- Moderate divergence between sexes on sexual intercourse.
- Males: Slight divergence from controls.
- Females: Same as controls, except profiles divergent on sexual intercourse and love (worse).

PSYCHOPATHS:

Personal concepts:
- No divergence between sexes on profiles.
- Very marked divergence from controls on self and parental concepts.
- Self concept not good or safe.
- Parental concepts not good or safe.

Emotional concepts:

Anger-hostility area:
- Profiles slightly divergent from controls.
- More potent, active and dangerous than controls, anger worse than controls.

Fear-anxiety area:
- Profiles show slight divergence on specific concepts, in one sex, from controls.
- More dangerous than controls.
- Few concepts more potent, active and worse.

Love-affection area: Moderate divergence of profiles between sexes on all concepts, strikingly on sexual intercourse.
Males: Same as controls.
Females: Marked divergence of profiles from controls.
Worse and more dangerous than controls (including sexual intercourse).

CONTROLS:

Personal concepts: 146 No divergence between sexes on profiles.
Good, potent, active and safe self and parental concepts.

Emotional concepts:

Anger-hostility area: Slight separation of sex profiles on anger.
Bad, potent, active and dangerous, but not as much as with psychopaths.

Fear-anxiety area: Slight separation of sex profiles on anxiety.
Bad, potent, active and dangerous, but not as much as obsessives or psychopaths.

Love-affection area: No divergence of profiles between sexes.
Males and females: All concepts good, safe, potent and active.

III. DISCUSSION

12. DISCUSSION OF RESULTS

It is assumed that the patients did not wilfully put down responses they did not feel - that they were not trying to deceive. This is a big assumption, though the ~~reliability~~ stability and validity data, together with the consistent patterning of responses, tend to support this assumption.

A. PERSONAL CONCEPTS:

a. THE SELF-CONCEPT (MYSELF)

Findings were that psychopaths have the most divergent profile from controls (poorest and most dangerous self-image), obsessives diverged moderately in their profiles (relatively poor self-image, though not a dangerous one), and the controls are the only groups to see themselves as both good and safe. A trend was also for obsessives to regard themselves as less potent than other groups. What could be producing this picture?

a) Depressive mood:

More detailed analysis shows that the average e raw scores for MYSELF was 9 for controls, 12 for non-depressed obsessives, and 20 for depressed obsessives. The one patient who showed remission of obsessions and depression together, had an e score of 23 when ill, and 16 when recovered. In the psychopaths clinical assessment of depressive mood was more difficult, but those 2 who were moderately depressed when tested showed the highest scores in the sample.

We can conclude that depressive mood is associated with lowered

self-esteem, but note that even so scores were higher for the non-depressed samples when compared with the controls. We thus confirm what is clinically observed in depressed mood states, but are left with the fact that this does not explain all the difference. The simplified formula that psychiatrically disordered people have poorer self concepts than controls still holds, and has to be explained.

b) General illness:

The controls were hospitalised, and not functioning adequately in society, but mostly for short periods only. By contrast, the psychiatric patients were generally far more inadequate in fulfilling their social role over a long period of time. As so much of one's self esteem is dependent upon meeting one's social role, chronic illness could be the explanation here, rather than psychiatric illness. This could be tested by contrasting groups of acute and chronic orthopaedic patients.

c) General psychiatric disorder:

Z, Luria (1959), using the semantic differential, found that a group of "neurotic therapy" patients had a poorer self image than a control group, and that with therapy this self-image improved. Gordon et al (1962), summarising some research in this field, pointed out that there was much evidence suggesting a direct association between attitudes of acceptance toward oneself and attitudes of acceptance to others (Sheerer, 1949). It has been shown that both types of acceptance increase in the course of psychotherapy (Suinn, 1961), that acceptance of self is related directly to sociability, high sociometric popularity, scholastic performance

independent of aptitude, and social participation (Turner and Vanderlippe, 1958). And most relevant here, acceptance of self was related inversely to measures of maladjustment, anxious insecurity and nervous tension (Smith, 1958). This latter, together with the findings of Z. Luria and the present study, supports the idea that psychiatric disorder is associated with a lowering of self-esteem. To some extent this may reflect society's disapproval of such disorder, which psychiatric patients then feel.

Leucotomy: Two of the obsessive patients had had a leucotomy an appreciable time before testing, with continuance of their symptoms. We know Seman (p. 52) claimed that in psychotic patients some concept ratings on semantic differential scales were altered by leucotomy, but no details were made available of type of patient, concept, scale or direction of alteration, so we cannot apply her findings here. Scores of our two leucotomised patients showed no important deviations from patterns of scores in the rest of the obsessive group.

d) Discussion:

Nothing is more striking than the change in attitude to themselves of severely depressed patients before and after their depression. Especially in those patients where the change is seen after ECT (Electro-convulsive therapy), the change in self-concept probably reflects other physiological changes in themselves, rather than any change in their environment. It is likely that complex processes operate on patient's attitude to themselves, from (i) unknown physiological factors (as

exemplified in severe depressives responding to drugs or ECT); to (ii) long-term psychological factors (the patient who has never felt loved, compared with a secure person from an affectionate background - the concept of introjection of parental attitudes might be useful at this point), to (iv) general cultural factors (as in patients aware of general disapproval of psychiatric disorder).

To apply this discussion to the groups tested here. Probably operating to lower self-esteem were:

1. In the obsessives: i. depressive mood, ii. the fact of psychiatric disorder, iii. unknown. Their lower potency ratings might be reflecting their well known inability to act effectively when hamstrung by symptoms.

2. In the psychopaths: i. depressive mood is probably less important than in the obsessives, ii. Psychiatric disorder is probably very important, in view of the condemnation these patients receive from society for their antisocial behaviour, iii. poor home backgrounds with deserting parents and general lack of affection in early years are likely to play a large part. This may well help to produce their disturbed behaviour which further lowers self-esteem. Parental influences are discussed elsewhere (see p. 162).

The findings of a poor self concept in obsessives are in accord with clinical observations that they are commonly self-denigrating. The similar findings in psychopaths supports those clinicians who stress that psychopaths are guilty and unhappy about their actions (Scott, 1960). It certainly is against those views of the psychopath as an amoral person

with no guilt, shame, conscience or superego (Cleckley, 1955), though antisocial persons who do not reach psychiatric institutions may have produced a different picture.

b. PARENTAL CONCEPTS:

Findings were that psychopaths showed marked divergence of both parental profiles from controls, and rather less so from obsessives (worse and more dangerous than both other groups). The obsessives rated parents as slightly (but not significantly) worse than controls.

1. Obsessives:

i. Z. Luria, also using the sd, found her neurotic therapy group (see p. 54) to have poorer parental images than controls, and these images did not change with therapy. Unfortunately, 'neurotic' is a wide-ranging term comprising many entities. This might explain why the present obsessive group, which would fall under the heading 'neurotic', showed little difference from controls in parental images. At this point we note the limited usefulness of studies on groups as vaguely defined as 'neurotic'. More can be inferred from examination of a clinically homogeneous, strictly defined sample, the composition of which is made known.

ii. One commonly hears the opinion that obsessives tend to idealize their parents. Contrary to this opinion, we find here that, if anything, they slightly undervalue their parents (though not significantly). This is mentioned as one objection to the semantic differential findings in anger-hostility concepts could be that reaction formation may distort scores

toward controls. Idealization is one type of reaction formation, and of that there certainly is none on parental concepts. If anything, the opposite holds.

2. Psychopaths:

i. The findings on parental concepts refine our knowledge of psychopaths as follows: The studies on delinquents included not only data on physical separation and attitudes of parents, but also evidence on attitudes of delinquents themselves to parents. But the studies on adult psychopaths refer to physical separation of parents and emotional problems in their childhood. They do not refer to adult attitudes of psychopaths to their parents. Reliable data on this last point are scanty, and this study therefore fills a gap in this respect as follows: Data on family history in our sample (p. 77) inform us that the psychopaths had disturbed parental relationships (absence of parents) when the patients were children. Our present data on parental profiles and component scores show that the psychopaths now have abnormal parental concepts (relatively bad and dangerous), i.e. not only is psychopathy associated with family disturbance when the patients were children, but also these psychopaths, having become adults, remain scarred by this experience in that the parental concepts they presumably learned in the past (introjected) remain poor in the present.

ii. The abnormal (poor) parental concepts in our present sample of psychopaths are quite understandable, knowing their family background. In summary, prolonged absence before the age of 12 was found for mothers

in 45%, for fathers in 65%, for both parents in 45%. The births of 40% were illegitimate or unknown. The effect of these features on evaluative scores in psychopaths is shown in Table 18 . Higher scores are worse. We should remember that matching disappeared for comparisons within the group, and these are only tentative figures.

TABLE 18

EFFECT OF PARENTAL STATUS ON PERSONAL CONCEPTS IN PSYCHOPATHS.
(Mean raw evaluative scores)

Higher scores are nearer bad,unpleasant etc.ends of scales.

		MYSELF	MY FATHER	MY MOTHER
Illegitimate	n=8	19.6 t=2.89	14.5 N.S	13.0 N.S
Legitimate	n=12	13.6 P .01	13.9	9.8
Father absent	n=13	16.5 N.S	12.2 N.S	13.2 t=3.00
Father present	n= 7	15.1	14.6	7.0 P .01
Both parents absent	n= 9	19.3 t=3.72	9.9 N.S	13.6 N.S
One or both parents present	n=11	13.3 P .01	14.0	9.6

N.S = Not significant

Illegitimacy significantly raised scores on the self concept, i.e. illegitimate (or parents unknown) psychopaths had lowered self-esteem. Illegitimacy did not significantly affect parental concepts in this sample. Absence of fathers did not significantly affect the self or paternal concept, but significantly raised scores on MY MOTHER, i.e. where fathers were absent the psychopathic children had poorer esteem for their mothers, not themselves or their fathers. This could be interpreted in several

ways, e.g. that the mothers were abnormal in some way, predisposing for their spouses to leave them, or that the mothers were only capable of transient relationships, or that because their spouses were absent they were handicapped in some way which affected their behaviour. We cannot choose between these or other alternatives, or indeed even accept the finding as firmly established yet. The last point emerging from the table is that absence of both parents significantly raised scores on MYSELF, i.e. was associated with lowered self-esteem, but did not affect parental concepts significantly.

In summary, patients with a history of absent parents during childhood, or with illegitimacy or unknown parentage, had a lowered self and maternal esteem. Scanty as these data are, they indicate some connection between the distorted family background and disturbed personal concepts, though the mechanism may be an indirect one.

The findings accord with literature previously quoted showing that disturbed families of some kind are common findings in psychopaths. All this supports the massive evidence of abnormality in the parent-child interaction in a large proportion of psychopaths. Precisely what this abnormality is, and the role this plays in the genesis of psychopathy, is still unclear.

3. Possible implications of findings on family background:

Somehow poor family relationships are tied up with psychopathic behaviour. In what framework can we formulate this? Most writers agree that the genesis of psychopathy is multicausal, operating at many levels, the family background meshing in with these. External environments of

certain types interact with particular internal environments within the child itself - the old chestnut of nurture mingling with nature, of soil and seed. A timely restatement of this point has been made by Eiduson et al (1962). Biological studies make it quite evident that environment can no longer be defined only as something outside the organism which affects or becomes part of the organism by internalization. Environment must include intra-organismic factors as well, for the nature-nurture interaction is so meshed and interdependent even on the prenatal level that it becomes impossible to determine what is heredity and what is environment. Study of prenatal development has shown that development is a long process of continuous changes, starting with a given genetic array acting in a given environment. The first interaction product then constitutes the background (or the environment) for the next step of interaction with the environment - the changed stage on which a second subsequent behavioural segment is acted out.

The Gluecks handled the position by indicating that their many separate findings, independently arrived at, integrate into a dynamic pattern which is neither exclusively biological nor exclusively socio-cultural, but which derives from an interplay of certain somatic, temperamental, psychological and social influences, as follows:

Delinquents as a group were found to be distinguishable from the non-delinquents - 1. physically, in being essentially mesomorphic in constitution (solid, closely knit, muscular); 2. temperamentally, in being restlessly energetic, impulsive, extroverted, aggressive and destructive; 3. in attitude, by being hostile, defiant, resentful,

suspicious, stubborn, socially assertive, adventurous, unconventional, non-submissive to authority; 4. psychologically, in tending to direct and concrete, rather than symbolic, intellectual expression; 5. socio-culturally, as mentioned previously, in being reared much more in homes of little understanding, affection or stability. The Gluecks felt that while in individual cases the stresses contributed by any one of the above pressure areas may adequately account for persistence in delinquency, in general the probability depends on the interplay of conditions and forces from all these areas. They felt that tendencies towards uninhibited energy-expression are deeply anchored in soma and psyche and in the malformations of character during the first few years of life.

Writers using psychoanalytic ideas often visualise psychopaths as having poorly introjected parental images with deficient superego formation. Another writer, Blackman (1960), implied that lack of relevant adult figures to identify with produced social isolation, and suggested this was an important variable in character structure of the psychopath. Nye on the basis of his data, suggested that identification with the parent by the child (indirect control) is associated with low delinquency, and that need satisfaction through parental behaviour is likewise related to low delinquency. He stated that if we limited consideration to delinquent behaviour that is not compulsive or does not represent conformity to delinquent subculture, the following proposition appears defensible; "the more efficient the provision that is made for meeting adolescent needs in institutionalized behaviour patterns, the less need there is for control of any other type. The more effective are the

mechanisms of indirect internalized control the less need for direct control." While the above is true in degree, some minimum of each type appears to be necessary: i.e. 'normal' individuals no matter how well their needs are met through institutionalised behaviour patterns, require other controls to prevent them from taking some 'deviant' short cuts to their goals.

Until we have reliable means of describing both external and internal environments of patients, our knowledge of the pathological series of interactions will remain hazy.

Champney (1941) succinctly stated a useful approach, supported by experimental evidence, to describe part of the external environment, namely, parental behaviour: "A given parent behaves towards a given child in certain ways which tend a) to be consistent from situation to situation and tend b) to differentiate him from other parents. Such consistently repeated situations are for the child learning situations in which social habits are formed, developed and generalised into the habit systems which at length constitute his adult personality."

What about the internal environment in the child? Stella Chess and co-workers (1960) are exploring a reliable method of describing primary reaction characteristics of the child which are persistent, and continue to be characteristic of the individual during the first two years with a reliability significant to the .01 level. From these they found several patterns of reactivity resulting in a limited number of individual types which appear to have prognostic value for the development of ego functions. They showed (Thomas et al, 1961) that with certain events,

such as weaning and toilet training, the parent can guide and modify the approach in accordance with the reactions of the individual child so that the disturbance is kept to a minimum. With the birth of a younger sibling, where the parent does not have this degree of control over the situation, the possibility of disturbance is much greater. The influence of the child's primary reaction pattern is more obvious in the marked variability of response of different children to this event.

Tools are thus being forged which might in time provide precise answers to the link between poor family background and psychopathy.

C. General:

PERSONAL CONCEPTS AS A WHOLE:

Our overall picture was summarized as follows:

1. Controls: Good self and good parental concepts
2. Obsessives: Poor self and good parental concepts
3. Psychopaths: Poor self and poor parental concepts

Are these natural features of the groups, typical of obsessive neurosis and psychopathy? Could this be developed as an additional diagnostic point? As yet there is insufficient evidence for this. It is always tempting to make too much of one's data, and these findings will have to be repeated on further samples. We have seen that multiple events influence these concepts, and can understand how some have combined to produce this pattern of response. But we need to know far more about the self-image of obsessives during different mood states, about those

obsessives who did have a good self-image, and about the small minority of psychopaths with both good self and parental concepts.

(i) Identification:

Osgood distinguished between imitation and identification. Imitation refers to similarities of overt behaviours between model and subject, but identification refers to similarities of meanings. With this analysis it is not necessary that the overt behaviour of a child identifying with a parent be similar to that of the parent, merely that his ways of perceiving people and situations be similar. Psychoanalysts would talk of this as internalization of the parent figure.

The work of Lazowick (1955) and others on this topic was summarised by Osgood as follows: Using normal American college students, it was found that young men identified more with their fathers than their mothers, saw their fathers as nearer the ideal, and identified more with both parents, than neurotic students. However, normal women students differed in identifying equally with both parents, and distinctions between them and neurotic women were blurred. They showed no greater 'semantic harmony' with their parents than neurotic women. It was not clear if this was a function of high intelligence, 'professional' women, or of male dominance in the culture.

In the present study, of the three groups, the obsessive self profiles were furthest removed (greatest semantic distances) from parental profiles, the psychopaths and controls being equivalent. This does not mean that the obsessives necessarily identified less - a more detailed study would be necessary to establish this.

B. EMOTIONAL CONCEPTS

a. ANGER-HOSTILITY AREA:

RESULTS IN THE ANGER-HOSTILITY AREA:

In this area, obsessive profiles were similar to controls, but psychopaths diverged from controls. On the evaluative and danger factors, psychopaths behaved as obsessives were expected to, and the small differences between obsessives and controls were not significant - unlike predictions from the hypothesis of obsessives defending against their aggression. In fact, it is surprising that psychopaths, the most overtly aggressive group, rated concepts in this area as worst and most dangerous. If the concept of fear of one's aggressive impulses has any meaning, it is the psychopaths par excellence who showed this, not the obsessives.

On potency and activity factors, psychopaths, and to a lesser extent obsessives, did rate higher than controls. It would suggest that both groups, especially psychopaths, experienced angry feelings more intensely than controls. Analysts would probably agree with this as regards obsessives. However, the potency and activity factors were peripheral to the testing of the hypothesis in question. The most important predictions - those on evaluative and danger factors - were not fulfilled.

A. DISCUSSION ON OBSESSIVES:

(i) Is this study a worthwhile test of the hypothesis?

It might be argued that the obsessives did not fulfil expectations due to reaction formation. Whatever their impulses, as a group obsessives are not usually openly aggressive. One could say that as they have not had angry experiences often, they have not learned to regard anger as excessively dangerous or bad. However, if a constant source of anxiety is these aggressive impulses, and they expend energy constantly defending against them, then as a group they should have an exaggerated dislike of them, and this we do not find in this study.

The argument may run that the fear and defence is unconscious. The clinical validation studies showed that the sd taps implicit (a variety of unconscious) attitude less well than overt attitude, but to the same degree as psychiatrists. Osgood quotes a patient undergoing psychotherapy in whom the semantic differential reflected violent self-criticism which only emerged openly a month later in psychotherapy. In other words, it showed up latent (unconscious) feelings. Presumably it could yet be maintained that if the latency had been greater (i.e. greater repression) the semantic differential would not have picked it up, and that this has happened in the obsessive group here.

It might be argued that this test is not directly relevant to the analytic universe of discourse. However, the analytic theory quoted on p. 21 drew heavily on statements of the attitude of patients, and this study measured attitude at an emotional level. Correspondence should therefore be expected between theory and the findings of this study.

The role of ambivalence:

Has ambivalence affected scores of obsessives in this area? Fenichel (1946, p. 278) stated that "like bisexuality, ambivalence is a characteristic of increased anal eroticism". He uses the term "in the sense that elements of ...love and hate are contained in it ")p. 38). Ambivalence is a term used originally by Bleuler to describe a "failure to unify: a simultaneous positive and negative affect in relation to the same object" (cited by Jaspers, 1963, p.343). Osgood et al used the term to describe competition between two responses, which is a more general elaboration of the same theme. How could ambivalence, if present, affect scores, in particular in this area? The responses on semantic differential scales are thought to be the results of competing (ambivalent) responses. Only scanty experimental data are available showing the effect of increased ambivalence on scoring. On p.45 slight evidence was given for the idea that increased strength among competing reactions increased latency judgment times. The evidence was from increased frequencies of reversed scores, not midpoint scores. If there was increased ambivalence in the obsessives, their reversal frequencies of scores would have been higher. This should have decreased stability (both in mean absolute deviations and in correlation coefficients). Our stability studies have shown no evidence that obsessives were any more unstable than controls.

Arthur's (1962) phobic patients used both extreme and midpoint scores. Kerrick's (1954) students reacted contrastingly on anxiety according to whether they had high or low I.Q.'s. There is no evidence available that increasing ambivalence produces more midpoint (neutral)

scores, or that it obscures differences between groups. Assuming that obsessives are more ambivalent than psychopaths or controls (for which there is little hard evidence on the concepts tested), and that this would have tended to produce neutral scores, we would then expect obsessives to have scored nearer the midpoint than controls. This they did not do - in fact, the reverse applied on the few scales where they significantly differed from controls. On those they scored more extremely. Similarly, on concepts other than anger-hostility, obsessives frequently differed by being more extreme in score, as in the fear-anxiety concepts. Though indirect, internal evidence makes it rather unlikely that ambivalence (in the sense of increased competition between opposing responses) has obscured differences from controls. What has been said about the obsessives also largely applies to the psychopaths in later discussion.

The value of disconfirming [x] a hypothesis lies in its incentive for us to look at the problem afresh. We shall now attempt a broader perspective of the issue in question.

(ii) Alternatives to disconfirmed hypothesis

1. Clinical observations:

It is wise at this stage to go back to the bedrock of clinical observations from which theory and hypothesis started. Are there alternative viewpoints?

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[x] Disconfirm, an unusual term, is used as being midway between 'refuted' and 'was not confirmed'. 'Refuted' is too strong a term here, and 'was not confirmed' would suggest the hypothesis was tentative and never yet accepted. As the hypothesis was in widespread use and acceptance, a stronger term was necessary. The term disconfirm was adopted from Farrell (1951) in his discussion on the scientific testing of psychoanalytic findings and theory.

a. Factors influencing compulsive symptoms:

Evidence has already been brought (p. 12) for the influence of

1) animal experiments
2) sensory deprivation experiments
3) post-encephalitic states
4) schizophrenia

5. depression:
   i. Depressive syndromes may be accompanied by the sudden appearance of obsessive symptoms which disappear when the depression clears up.
   ii. In a patient with pre-existing obsessive symptoms these are commonly worsened during the time the patient is depressed.
   iii. Rarely, pre-existing obsessive symptoms clear up as the depression occurs.

6. anxiety:
   i. Obsessives commonly show persistent anxiety.
   ii. Any general increase in anxiety causes an increase in obsessions.
   iii. Prevention of an obsessive from completing a given compulsive task results in intense anxiety and irritation, dispelled rapidly once the task is allowed to be completed. It is this observation which has probably led to the frequent division of the compulsive act into primary and secondary components.

7. aggression:
   i. Not infrequently the onset of obsessive symptoms occurs simultaneously with cessation of the expression of overt aggression. Quarrelling, if present before, usually diminishes or disappears as obsessions appear.
   ii. If an obsessive patient is annoyed, and finds himself unable to express this, this often aggravates his symptoms.
   iii. Most obsessive patients act out their aggressive (and other) feelings much less than other people, though infrequently one does meet with true obsessive patients who are overtly aggressive.

iv. In those obsessive patients whose feelings remain largely unexpressed (thecgreat majority) - if they become able to display open rage, their obsessive symptoms diminish, and may disappear, temporarily. It was the author's clinical observation of this occurrence which first generated interest in the topic, which eventually led to the entire study. On this point we may quote Kennedy (1960) discussing abreaction, of which open rage is one form of expression:

"In the case of obsessional states, a great deal of the psychotherapy that has been given has probably been wasted, for the long-term results are now known to be poor. The fallacy in treating obsessional states has been the belief that if psychopathological material of great interest and richness keeps appearing at the interviews, with strong abreaction, the patient will necessarily benefit. A common sequence in cases of obsession is that the appearance of symbol rich material, often elicited with suspicious ease, is followed by great relief for a week or two. Patient and therapist then seek in vain to produce the same effect once more."

These observations show that under certain conditions there is a reciprocal relationship between obsessions and the ability to express open aggression. They helped to form the oversimplified view that one of the main functions of obsessive symptoms was to act as a defence against aggressive impulses striving to emerge. The idea is naive because frequently we can observe other reciprocal relationships between sets of clinical symptoms, and invocation of the concept of defence to explain this reciprocity will be seen to be inadequate. Thus:

B. <u>Reciprocal and other relationships observed by the clinician:</u>

1. <u>Depression and aggression:</u>

i. Patients recovering from depression may exhibit a phase of 'psychical loosening-up' during which they express their feelings more freely than during the nadir of illness or the peak of recovery. This expression of feeling may include that of open aggression.

ii. It is a common observation that in persons engaged at authority figures, where free expression of anger is dangerous and therefore inhibited, this is often followed by depression. If in these cases anger is vented openly elsewhere, the depression disappears.

2. Depression and phobias:

i. Depressions may appear simultaneously with the emergence of phobic and other anxiety symptoms de novo.

ii. During depression, there may be intensification of pre-existing phobic and other anxiety symptoms.

In both these contingencies, as the depression clears, so the phobias may improve. They are parallel, not reciprocal, events.

3. Phobias and aggression:

i. Phobias may appear at the same time as previously expressed aggression ceases.

ii. Overtly expressed rage may be associated with remarkable diminution of phobias.

4. Conversion hysteria and anxiety:

i. It is a common observation that in patients with, say, conversion paralysis of a hand - if suddenly through post-hypnotic suggestion this paralysis is removed, frequently intense anxiety results, which on occasion has led to suicide.

ii. By contrast, the presence of conversion paralysis classically is accompanied by absence of anxiety - 'belle indifférence'.

Discussion of clinical observations A and B:

It would be logical to regard not only obsessions but also depressions and phobias as defences against aggression, and all these and conversion hysteria as defences against anxiety. The rationale would be that these phenomena show reciprocity - if the one appears the other disappears, given certain contexts. The serum calcium varies inversely with the serum phosphorus. It is not useful to describe this as the calcium defending against the phosphorus - one notes this reciprocal relationship, and then enquires after variables affecting this reciprocity.

Similarly with reciprocal relationships seen by the psychiatrist. Inverse responses and reactions are noted daily - to call these defences against anxiety or aggression subtly changes the position by introducing hypostasis. 'An inverse relationship' requires further explanation. 'Defence against aggression' does not - defence itself becomes a force, an explanatory concept, thus lulling the senses into the calm of false explanation. It prevents further questions being asked. This type of formulation does not easily accommodate all the available information; it is strained by present disconfirmation of a hypothesis which such a view generated. Perhaps another formulation can better accommodate the facts available.

2. Reformulation of clinical observations A and B

1. Overt expression of anger is often seen to be associated with relief of obsessions, phobias and depression.

2. Anxiety, and also the provocation of anger which is felt but not expressed, is associated with the aggravation of these same symptoms.

It is as though we have two differing states of the organism, in each state the symptoms behaving reciprocally with regard to the open expression of aggression, each state forming an equilibrium. We could represent these two states diagrammatically:

State 1 - released ("abreactive") — open aggression - decreased symptoms

State 2 - inhibited ("repressed") — unexpressed aggression - increased symptoms

The two sets of events seem to fluctuate together. Change the state and we change both sets of events. A common factor seems to underlie both events, rather than each influencing the other directly. State 1 could be termed the released state, as we have the open display of feeling (not only aggression - with open rage many other feelings are expressed as well, and the patient experiences a sense of freedom). State 2 could be termed the inhibited state (as not only rage but many other feelings such as joy are now not expressed, and the patient experiences a sense of having to control his feelings). We can see that there is a similarity between State 1 and abreaction, and between State 2 and repression. Different terms are given simply to avoid the implication (tied to terms like abreaction and repression) that aggression directly controls symptoms. It is in this inhibited state that the obsessive looks tense and pent-up with feeling, an appearance which is often interpreted as controlled aggression.

The possibility exists that the change in state actually produces the change in symptoms through the intermediate mechanism of aggression. One could say that the expression of open rage often has a non-specific modifying influence on several different kinds of symptoms (obsessions, phobias and depression). Conversely, inability to express rage has the opposite effect. We remember at the same time that the ability to express rage is dependent itself upon another anterior mechanism. The generally short-lived effects of abreaction may be because it employs this non-specific mechanism whereby open hostility or other overt expressions of feeling modify a wide variety of symptoms, without affecting the underlying mechanism. To be more durable the more anterior mechanism controlling the switch between the two different types of feeling states might have to be changed.

The fact that occasional obsessive neuroses can be found co-existing with aggressive outbursts suggests that the tie up between inhibition of aggression and obsessive symptoms is an indirect one, and that inhibition of feelings is not essential to the development of this syndrome.

We can now summarise the position we have reached. The relationship of aggression to obsessions may well be peripheral, and not central to the development of an obsessive process. Aggression may be one of many subsidiary factors influencing the symptom once it has developed. Many other factors, e.g. depression and anxiety, also aggravate obsessive symptoms. In addition, other symptoms such as phobias and depression have the same relationship with aggression. To make one

of these factors the keystone in the genesis of these symptoms is a mistake in emphasis. The pathogenesis of obsessive-compulsive symptoms should be looked for in other directions.

Possibilities for further exploration:

From this changed standpoint where do we proceed? Two questions arise:

A. How do these differing states of anger come to be associated reciprocally with these symptoms? (What are the underlying mechanisms connecting them?)

B. How does the state of the organism during open rage differ from that in which anger is not (cannot or will not be) expressed?

Recent experimental work provides glimmerings of the paths we may tread in pursuit of answers to these. Of relevance to question B, there are now biochemical features distinguishing the state of open anger from unexpressed (repressed) anger. These are:

i. Open anger tends to be associated with a generalised discharge of noradrenaline from the sympathetic nerve endings.

ii. Anxiety (with which is associated unexpressed anger) tends to be associated with a local discharge of adrenaline from the adrenal medulla. (Forsham, 1959).

Of relevance to question A - the escape avoidance response in animals is the paradigm to phobias. One obvious experiment necessary is to induce sham rage reactions in suitable animals by electrode implants in the hypothalamus, amygdala and orbital cortex. The effect of these rage reactions on the escape avoidance response could then be studied.

The conditioned avoidance response is greatly diminished after a hippocampal after-discharge (Maclean, 1958). Maclean actually suggested a possible reciprocal innervation with respect to emotional feeling states, quoting neuropsychological evidence in support of this idea.

It is naturally desirable to study these effects further. At the more psychological-psychiatric level - it is now possible to make a functional analysis of the simultaneous fluctuations of different sets of clinical symptoms, including obsessive ones. Thus, using Shapiro's Personal Questionnaire technique, it was shown (Shapiro et al, 1963) in a phobic patient that phobic and depressive symptoms fluctuated relatively independently. Techniques of this kind can help us to trace out more accurately the interactions of different sorts of symptoms. An obvious case for research could be an obsessive patient with aggressive and depressive symptoms as well. We need to follow quantitatively the course over time of the three sets of symptoms. Only by accurately plotting the clinical features in many such patients, including their fluctuations with treatment variables, can we hope to obtain an objective body of data on how each symptom modifies the other, and what the essential features of each syndrome are.

iii. SUMMARY OF DISCUSSION ON OBSESSIVES AND ANGER-HOSTILITY AREA:

A hypothesis about obsessions and aggression was tested and disconfirmed. This led to formulation of the problem in wider terms, using clinical observations of similar type in many psychiatric states. The relationship of obsessions to aggression was redefined. Relevant experimental data in related problems were briefly discussed, and suggestions made of potential avenues worth exploring further.

B. PSYCHOPATHS AND RESULTS IN THE ANGER-HOSTILITY AREA:

Profiles of the psychopaths diverged slightly from controls. It is interesting that the psychopaths tested did not have an antisocial view of aggression in the sense of regarding it as better. If anything, they regarded it as worse. They also rated it as more potent, active and dangerous. This is a group acting out its aggressive impulses more than other groups, bringing its members into conflict around them. This is in keeping with the higher potency, activity and danger scores. We have also seen (p.32) that most boy delinquents in one study reported that they felt angry when they came up against something they did not like, unlike control boys. However, boys in another study reported that they enjoyed fighting. At first sight this would appear to be contradictory. The contradiction disappears if we distinguish the open motor activity of fighting from subjective feelings of hostility, recognising that the former can be used as an effective means of shedding the latter.

From this the idea emerges that these psychopaths dislike hostility at least as much as controls, and that it is not linked with pleasure. These seem to regard aggressive feelings as powerful and explosive, which is in keeping with their mode of behaviour. This ties up with the finding that they have a poor self-image, and suggests that their antisocial behaviour is not due to lack of guilt or superego, as used to be held. It suggests that failure to inhibit their actions is due to other factors, unrelated to antisocial attitudes to aggression. These psychopaths do seem to be guilty - why then does guilt fail to inhibit their impulses?

At any moment in time we could visualise the tendency to action as a balance between impulses to action and restraining forces, of which guilt, or its anticipation, is an important part. (En passant, we can see similarity here to what Freud had in mind with id, ego and superego constructs). If one could set up the pseudo-equation

$$\text{tendency to action} = \frac{\text{strength of impulse}}{\text{guilt}}$$

then, as guilt seems to be present in the sample tested in this study, therefore abnormally strong impulses might be contributing to increased acting out. Slight support is lent to this by the higher scores of this group on potency and activity.

Intense guilt may be present about past actions, yet co-existing with the desire to act again in precisely the same manner. This was vividly illustrated in the following patient, a 59-year old man just out of prison for murder, with a past history of robbery, assault, alcoholism and 5 illegitimate children. He was severely depressed, with suicidal feelings. Within two minutes he said the following:

"I have a rotten, dirty past. That's what's getting me - guilt. I feel low, all bad inside - I killed a guy once in a fight. I've let women down, my pal, my mother..... If I saw that prison doctor again I would kill him - he didn't treat me properly."

In this man we see a clear juxtaposition of desires to act, despite the presence of severe guilt about such actions. This would suggest that yet further factors enter into the pseudo-equation just set up.

Guilt may be about actions contrary to our conscience (contrary to the moral validity of our ideas), the actions being in accordance with another yardstick - that of legitimacy (see p. 193).

Some workers (cited by Folkard, 1957) have suggested that anti-social actions are largely frustration responses. The classical work of Miller et al (reviewed in 1941) linked frustration and aggression, stating the relationship in testable form, and providing experimental evidence in support. Intensive work since then has shown this to be but a fragment of the total field controlling aggression.

b. DISCUSSION OF RESULTS IN FEAR-ANXIETY AREA:

The overall picture was for obsessives to diverge slightly from controls, with psychopaths in between. Obsessives rated fear-anxiety concepts as worse, more potent and dangerous than controls, with psychopaths showing this to a lesser degree in evaluation, activity and danger. As a whole, psychopath profiles were closer to obsessives than controls.

A. Obsessives:

The picture certainly accords with the panic and anxiety so often seen clinically in obsessives. The fluctuation of anxiety with other symptoms in obsessives has already been dealt with.

B. Psychopaths:

That psychopath profiles are rather closer to obsessives than to controls in this area is of interest. Our expectations beforehand for psychopaths were that if they had no guilt or conscience about their actions,

their self concepts would have been the same or better than controls (evaluatively), and that their ratings of anger-hostility would be less bad and dangerous than controls (with hindsight the same expectation should have been made about anxiety concepts on those assumptions). The opposite was expected if they had guilt and conscience about their actions. We have seen from our results that the psychopaths had relatively poor self concepts and poor parental concepts. They differed from controls in rating anger-hostility as rather more potent, active and dangerous, with anger specifically worse, than controls. Now we find that they rate anxiety as rather worse than controls though not as much as obsessives. The results have therefore gone against all expectations based on the assumption that they are guiltless and conscienceless, and supported those expectations based on the assumption that they do have guilt about their actions. Results in the fear-anxiety area again go against the old idea of the amoral psychopath with no experience of anxiety or guilt, and support recent writers (see p. 26) who stress that psychopaths frequently experience guilt about their actions. A rating of anxiety and panic as worse and more dangerous than controls implies a greater experience of anxiety in those terms. The high incidence in this sample of suicidal attempts and earlier childhood disturbances is in keeping with this view.

A consistent picture has been pieced together of the bulk of this sample of psychopaths as fearing their aggression and anxiety at least as much as controls. Explanation for their aggressive and other antisocial behaviour is therefore better sought not in terms of

formulations such as lack of anxiety or lack of fear of their impulses, but rather in terms of normal or greater fear of their impulses, together with lack of control of what they fear. The emphasis should be on why they lack control, which could be due to many causes, of which increased strength of impulses is but one possibility. The old concept of lack of superego is too discrepant with present findings. The important rider is added that antisocial persons who never reach psychiatric institutions may fit the old idea better.

We have already discussed the high correlations between scores on anger-hostility and fear-anxiety concepts.

c. DISCUSSION OF FINDINGS IN LOVE AFFECTION AREA:

Findings were that with sexes combined no important profile or component differences were found. Profiles were markedly divergent between the sexes throughout the area in psychopaths, and on sexual intercourse in obsessives, but control sexes shared similar profiles. Across groups males showed no important differences. Females across groups showed marked differences in total profiles and specific components - psychopath females rated most love-affection concepts as worse and more dangerous, especially sexual intercourse, whereas obsessive females showed similar changes only on sexual intercourse and love.

In general terms, psychopath females dislike (rate as worse) all ideas of affection, including sexual intercourse, whereas obsessive females tended to dislike mainly sexual intercourse, and not other affection concepts.

i): Influential factors: Possible elements producing this picture:

1. Psychiatric disorder: The formula psychiatrically ill females don't like sexual intercourse would hold in this area. One could suggest that in females, more than in males, sexual adjustment is affected by disturbance in other spheres of personality functioning. Why this might be so is not certain. An interesting point is the relationship between trend of scores and promiscuity. In the psychopath females 6 out of 10 gave a history of promiscuity, yet of these 6, 4 showed this dislike of sexual intercourse. We can probably infer that in these their promiscuity by itself was not a pleasure seeking activity, but resulted from other needs or conditions. One is reminded of commonplace observations that often coquettish patients shy clear of actual sexual relations, and many promiscuous patients are frigid. Patients seeking affection and security from men may use sexual behaviour as a means to that end.

2. Subcultural influences: Psychopath females generalise their scoring trend to all concepts in the area. Difference in attitude from their male counterparts may be the result of differing sexual roles within a psychopathic subculture. One could postulate that in a setting where transient shifting relationships are the rule, females suffer more, as they are the ones to incur the greater odium from the surrounding population, and are often left literally holding the baby. This kind of relationship, however, is easier for a male, and is tolerated more readily by the mores of our culture. When detailing the clinical samples we remarked that in the clinical notes promiscuity was more often a matter causing special comment in females than in males. Even to-day,

illegitimacy and promiscuity is frowned upon far more in females, who therefore in these circumstances might find it harder to obtain satisfaction from activities with which feelings in the area under discussion are connected.

3. General sex trend in scoring: As this is the only area where large differences were found consistently between the sexes, this probably reflects a changed attitude to these particular concepts, rather than a sex trend in general scoring.

In summary of the discussion:

Differences amongst male groups were not sufficiently large to merit comment. Differences amongst female groups : Possible factors were:

1. Obsessives: i. Psychiatric disorder.
2. Psychopaths: i. Psychiatric disorder.
   ii. Subcultural influences.

13. VISTAS

A. THE RELATIONSHIP OF MEANING TO OVERT MOLAR BEHAVIOUR

Ultimately the value of any psychiatric or psychological tool lies in its ability to describe and predict overt molar behaviour. A problem in applying the results of this investigation is the relationship of the patient's meaning of a given concept as measured by the semantic differential, and his actual behaviour in the situation itself which is referred to by that concept. What is the relationship between regarding anger as a bad thing, and one's tendency to shout at somebody who annoys one? One suspects that this relationship is very complex, the resultant of many interesting variables, only one of which is the meaning of the given emotional concept. There are numerous facets to be considered. To take a practical example:

A man A standing in a bus queue is pushed back brusquely by an intruding stranger B who insults him simultaneously. Whether A swallows his pride and maintains a fearful silence, an angry silence, or speaks firmly to B, or shouts at him, or actually pushes him out of the queue again, depends upon some of the following points: the relative physical sizes of A and B; their dress and social mien; the kind of stereotype A has of B on sight which springs from his past experience of men of similar appearance in the past; his experience in situations in the past where he has been thwarted and insulted; his general attitude on the free expression of feeling; his particular mood that day; his usual gap between thought and action (i.e. is he impulsive and given to react rapidly without prior consideration of its import, or does he

ponder long on the possible consequences first) - this itself being a complex variable; and last but not least, whether the bus is already coming and whether he is in a hurry to catch it. One can see that the semantic differential provides an indirect correlate of behaviour, being one of a whole series of variables determining action or inaction at a given moment. It may be a more accurate indicator of tendencies to react over a long period of time.

We need to know far more about the development in children of concepts like "good" and "bad" things, and how attractive or repellent attributes come to be attached to these and other evaluative concepts. This would enable us to relate more accurately knowledge of the semantic concepts of an individual to the prediction of his behaviour. Then, knowing the landmarks of his semantic map, of his conceptual geography, will be a better guide to his actions.

B. MEANING AND SYMPTOMS

One of the criticisms levelled at the phenomenological statements on aetiology of obsessions (see p.20) was that they confused understanding with explanation, that the meaning of a symptom to a patient need not necessarily be connected with the cause of that symptom. The present study deals with a facet of meaning of certain situations denoted by concepts, and it may be argued that this is also far removed from the prime movers operating in those situations. This is an important problem - the difficulty is deciding when meaning is closely connected with explanation and when it is not. The meaning of a symptom to a

patient is closely connected with his understanding of it. At this point it is worth looking at Jaspers's (1963) differentiation between understanding and explanation. Understanding (Verstehen) is the natural acceptance of the development of one psychic state out of another as logical or comprehensible. Explanation (Erklären), however, relates to each other certain frequently recurring, tangible, observable facts so that rules can be established. In fact understanding does proceed according to rules as well, but rules which are less explicit in the explanation. One does not understand and accept as a natural development that which is completely out of keeping with related situations in the past. Anybody who has felt lost and bewildered in a strange country with differing language, gestures and customs will realise how much of this understanding of daily situations and feelings in others depends in fact upon a host of tacit assumptions based on past experience. Much that now appears as immediate intuitive perception (understanding in Jaspers's sense) is the finished product of many years of learning.

Understanding is subjective in the sense of being more dependent on the state of mind of the understander. Explanation depends less on this state of mind, and more on the ability of the explainer to demonstrate to others the recurring related facts. Ultimately, of course, acceptance of this explanation again depends upon the understanding by others of these rules. Much heated dispute often centres precisely upon which set of rules is acceptable as explanation, and which is not, and it is here par excellence that we can see hidden predispositions at work. One needs merely to open a few books on psychiatry at random to see that

the same set of recurring facts is interpreted very differently according to the weltanschaung of the observer, e.g. a family history of neurotic disorder will be regarded by some as evidence for genetic transmission, by others of the importance of environmental transmission of behaviour. Jaspers himself realises that at times one cannot differentiate one process from the other, where both may obtain - for these situations he suggests use of the term Comprehension (Begreifen). The distinction between understanding and explanation remains useful even though it is more blurred than he generally acknowledges. Using more recent terminology, we might say that the meeting point of understanding and explanation is as follows: Explanation consists of the demonstration of intersubjectively reliable and understandable rules.

No claim is made that meaning as measured in this project is directly connected with the cause of patients' symptoms. It may or may not be, and criteria are obscure for determining which is correct. One wonders if a related problem is the question of when and where change is effected by psychotherapy, e.g. A paranoid schizophrenic may dislike a man whom he feels resembles his father, whom he hates. He may develop the delusion that the man is trying to poison him. No amount of interpretation or discussion will shake this conviction, though phenothiazine administration may diminish it. The schizophrenic patient may discuss his dislike and fear of being poisoned ad infinitum, with no change in his feelings, despite understanding that the disliked man resembles his father. The symptom in this case is impervious to understanding. On the other hand, a patient suffering from an anxiety state may also

dislike a man. Phenothiazines will not alter this. In this case, discovering a resemblance to the patient's hated father, and discussing this following an interpretation by a psychotherapist, may well diminish this patient's hatred of that man, together with anxiety associated therewith. By understanding the meaning of his dislike of the man, the patient comes close to the causes of his dislike and anxiety and its elimination. The same phenomenon - dislike of a man - can be the expression of causes operating at very different though inter-related levels, each being susceptible to different types of treatment. We are reminded here of our discussion on the self concept, which can be altered by phenomena ranging from physiological (as in severe depressive illnesses) to psychological (as after rebuke by a parent). In this study our present knowledge is yet insufficient for appraisal of how the meanings of feelings to patients are related to their mainsprings of symptoms. Persistence of obsessive symptoms after prolonged 'working through' of their meaning in psychotherapy is sometimes regarded as indicative of 'resistance' on the part of the patient. It could also indicate that the obsessive symptoms are the result of forces which are untouched by the psychotherapeutic process in the same sense as schizophrenic delusions are, and that effective therapy will have to proceed at another level.

Part of the puzzle here may result from confusing levels of causes, this being especially difficult when we simply do not know at what point aetiological factors are operating. Common statements made about the mode of action of psychotherapy are of the type that the patient has to gain 'insight' into his symptoms before he can be relieved. If

the patient appears to have understanding of the meaning of his symptoms in the same sense as his psychotherapist, he is said to have 'insight'. (This is reminiscent of Lewis's definition (1934) - 'a correct attitude to a morbid change in oneself' - the criterion for correctness residing ultimately in the observer, as it does in the psychotherapist). If the patient has 'insight' which has not been accompanied by relief of symptoms, this insight is labelled as 'intellectual' or 'partial'. If the insight is accompanied by relief of symptoms, it is labelled as 'emotional insight' or 'full insight'. But in fact we are here deceived by semantic fallacies, arguments by definition, and not from observation. This brings us no nearer to solving the differences between those types of understanding which herald relief of symptoms, and those that do not affect the symptoms at all. No further contribution is made to this problem by the present investigation, but awareness of it might lead to better answers in the future.

C. USE OF THE SEMANTIC DIFFERENTIAL IN PSYCHIATRIC PATIENTS

Many variables have already been dealt with in the brief survey of applications of the semantic differential to psychiatric problems. There we noted the influence of intelligence, anxiety, delusions and phobias on scale checking style, of schizophrenia on factorial structure of scales. The role of ambivalence was detailed later. Ways of increasing personal relevance of scales for patients were described, and techniques discussed of studying some problems in psychotherapy and dreams. In none of these have there been any final answers.

We might wonder to what extent "convention" affects scoring on the sd, obscuring differences due to psychiatric variables. This is an important and difficult point. Where groups differ in scores, if their social convention is similar, the scores must be reflecting other differences. In the present study the groups were of equivalent social and educational status. But what about those scores where the groups did not differ? Aren't we missing differences through "conventional" responses? Possibly. We note here that both clinical validation studies showed that the sd had i. in single interviews, as good a correlation with psychiatrist's estimates of patients' implicit feelings as 2 psychiatrists had amongst themselves and ii. after a series of psychotherapy interviews, a high correlation with the psychiatrist's ratings of the patient's implicit feelings. Implicit feelings are those derived from the patient's inner feelings, and not simply his lip-service to convention.

The ideas of Cloward and Ohlin (1960) are of interest on this problem. They distinguish between the 'legitimacy of social rules', which may be questioned by members of a socially disadvantaged population quite apart from their 'moral validity'. They assert, for example, that gang members no longer accord legitimacy to middle-class norms because of barriers standing in the way of their access to the opportunities which the norms imply. Gordon et al (1962), using semantic differential scales as the tool of measurement, found that gang delinquent boys favour middle class values much the same as do non-delinquents. They suggested that the sd responses on certain social concepts had an 'in-principle' quality. These semantic differential responses need not directly reflect their behaviour in the situations

denoted by the concepts rated (i.e. moral validity need not imply legitimacy).

We can trace a link from 'moral validity' to the idea of conscience or superego. Conscience is that little voice inside which tells us what ought to be done, even if we don't necessarily act as that small voice bids us to. In other words, particular actions may have moral validity (conscience tells us they are the actions we should do) though we may not regard them as legitimate, and therefore may act differently. To paraphrase the findings of Gordon et al - Their gang delinquents had a 'conscience', which did not, however, guide their actions. These delinquents may have given different patterns of scores on the concepts used in this study, compared to the present sample of psychopaths. Their delinquents were functioning well in their immediate environment, though coming into conflict with the larger society outside their gang. They fall into Jenkins' (1960) group of adaptive dyssocial reaction, which "describes the professional criminal... an occupational group, rather than a psychiatric diagnosis". The suggestion of an 'in-principle' quality of semantic differential responses related only to certain social concepts. The concepts tested in this study were not social, but highly personal and emotional, and conventional responses are less likely on such concepts. Sharp differences obtained according to clinical groupings are likely to relate to clinical variables, and not to cultural or conventional ones. This is especially so here where the three groups were drawn from the same cultural background - all white, English speaking, with the same distribution of occupational status,

education, intelligence, age and sex. As the three groups do not differ in these respects, differences between them must relate to other circumstances, of which the most likely are the distinctive clinical features for which they were initially selected. This was the purpose behind matching the groups at the outset.

Overall cultural influences must have determined some of the patterns of response running through all groups, and would be important in comparing their profiles as a whole with other cultural groups. The influence of cultural factors on semantic differential responses is a fascinating problem, and it is with regret that we are restrained from entering this field by our overriding clinical interest in psychiatric problems.

The possibility still remains that scores are distorted by influences other than the psychiatric disorder itself. Thus the mere fact that psychiatric patients have had detailed personal histories taken by psychiatrists may be influencing their responses compared to controls who have not had such contact.

The level of latency or consciousness at which semantic differential responses are made has been discussed on p. 169 .

There is marked individual variability in manner of use of the semantic differential. Typical problems for individuals in the course of this research would be the following, which, trivial though they may appear at first sight, could relate to individual personality variables of some importance. Thus - an obsessive handwasher may rate "myself" on a clean-dirty scale as clean because he washes frequently, or dirty

because he has to wash. He may rate "my feelings when I am angry" on a good-bad scale as good because he has once experienced relief from his symptoms when once he openly expressed his anger, or because he feels he is so well controlled there is nothing wrong with it, or he may rate it as bad because it makes his obsessions worse when he gets angry and cannot express it. A patient may be able to use the sd to express her feelings where she couldn't tell them in so many words, e.g. one female patient in marking "my mother" said:"It's easier to put crosses on paper than to talk about it", and yielded important information about her hostility to her mother which was not obtained, though suspected, in interviews. Or again, a patient may malinger and mark the scales dishonestly or neutrally. One patient rating "myself" gave all neutral scores and was agitated while marking it, filling it in extremely rapidly without thinking. From the intensity with which many patients reacted while filling in the sd, there can be no doubt that an important and meaningful train of events was being stirred up in them which was ultimately reflected in their markings of the semantic differential. This individual variability ran across groups as far as could be judged, but requires further elucidation, especially in studies of individual psychiatric patients.

Methods of future application of the semantic differential technique in psychiatric work will largely be determined by the specific questions to be answered, and no clear guide is available, though problems of factor structure, stability and likely fruitful areas are indicated to a limited extent by this and other work. Factors to be sampled, relevant scales and concepts will always depend on particular problems. We have

seen that so far evaluative judgments have played the dominant role, and have been the most stable, while other scales such as potency have been relatively unstable and more difficult to interpret results from. The situation may change in a different field. It is also not unlikely that much better techniques of measuring facets of meaning will be available in the future.

As in much research, we see that for every answer we get, a hydra head of further questions springs up. A pinpoint of light intensifies the darkness beyond.

CONCLUSIONS

1. As used in this study, patients' scores on the semantic differential reflected clinically meaningful variables.

2. For all groups, with personal and emotional concepts a general evaluative factor was the most dominant element in semantic judgments. Unlike psychopaths, controls and obsessives also split off a subsidiary evaluative (danger or risk) factor. This might indicate differential perception of risk between the groups.

3. Evaluative judgments were the most stable under testing conditions.

4. Three behaviourally contrasting groups of patients - obsessives, psychopaths, and controls - had demonstrably different patterns of meaning on personal and emotional concepts.

5. The patterns of meaning shed light on abnormal function of these patients, as follows:

   (i) Personal concepts were sharpest discriminators between groups. Obsessives had a disturbed self concept, psychopaths both disturbed self and parental concepts. These related to clinical variables, and suggested areas of malfunction.

   (ii) Emotional concepts yielded patterns of mildly increased fear of anger-hostility concepts in psychopaths, and anxiety concepts in both obsessives and psychopaths. Psychiatrically disordered females disliked sexual function, and psychopathic females showed dislike of all concepts of affection. Results supported clinical views of psychopaths in psychiatric institutions having guilt or conscience. Clinical views not supported were those of obsessives using their symptoms to defend against aggression, and psychopaths having no conscience.

6. Patterns found pointed to directions requiring further study. Their relationship to abnormal behaviour was complex, suggesting meaning is one of many intervening variables between conceptualisation and abnormal behaviour.

SUMMARY

1. The theoretical springboard of this work was that differing behaviours and conceptualisation of psychiatric patients reflect each other at some point. Meanings of concepts used by the patient as a frame of reference in viewing the world could theoretically be mapped out to form a specific semantic geography, fitting to some degree his manifest behaviour. It was the aim of this study to explore this geography in psychiatric patients, and to relate the resulting landmarks to their abnormal behaviour. Two behaviourally contrasting groups were selected to facilitate this - obsessive-compulsives and psychopaths. A third group was added as a control without psychiatric disturbance. Clinically relevant personal and emotional concepts were selected, and the semantic differential was adopted as the tool to measure their meaning.

2. Special aspects of the two clinical syndromes studies were reviewed, with emphasis on points specially relevant to the thesis. Clinical features of the obsessive-compulsive syndrome were outlined. Character traits associated with obsessive symptoms were reviewed to show the majority of obsessive patients are unduly controlled in overt expression of feelings in general. Views on aetiology were quoted from various standpoints, showing widespread disagreement about causation. These were discussed. Deriving from one of them, the literature on aggression in obsessives was quoted, showing the frequent opinion that obsessives are more afraid of their own aggression than 'normals', defending against this by compulsive activity. The concept of defence was enlarged. The last two items were pertinent to a hypothesis set up and tested later in the thesis.

3. Development of the concept of psychopathy was summarised. Relevant literature on delinquents was also included, and reasons for this noted. The markedly disturbed family background of psychopaths was shown in the literature, together with the plethora of views on which particular disorder of family background was present. Attitude studies on delinquents were noted.

4. Varying implications of meaning for disparate disciplines were discussed, to delimit the area in which the present project operated: the relationship between abnormal behaviour and meaning. Notions of associative meaning were given; the semantic differential is a controlled association procedure. The semantic differential technique was described, and methods of scoring detailed.

Psychiatrically relevant applications of the method were reviewed. Relative constancies of factorial dimensions of semantic judgment in many studies were noted, showing the evaluative dimension usually to predominate, subject to a concept-scale interaction. Scale-checking style was influenced by many variables. In reliability studies, evaluative scales were generally found to be the most stable. The technique had face validity, and external criteria validating component dimensions were noted, but scanty criteria as yet corroborated multidimensional measures of meaning similarity. A method was described of increasing personal relevance of scales to patients, and studies noted on delusions, attitude to mental illness, effect of leucotomy, changes in the self-concept, and psychotherapy and dream symbolism. The varying aims of investigators largely determined differing ways of using the technique.

5. A bird's eye view of research on emotion suggested increasing work has recently been devoted to central features, compared with past emphasis on peripheral aspects. Several formulations on concept revealed the common thread of a process condensing aspects of past experience in a manner influencing present behaviour.

6. The clinical samples were described. There were three groups of in-patients: twenty patients with predominating obsessive-compulsive symptoms; twenty psychopaths, selection criteria being repeated physical violence, shouting, screaming, theft, robbery, or drug addiction; thirty control orthopaedic in-patients, excluding those with more than one accident, or psychiatric disturbance. Each group was matched with the other two groups for age, social class, intelligence, and education, showing no difference at the 5% level in these respects. Each group was equally divided into males and females. When each group was halved by sex, matching of means was maintained.

Clinical details of the psychiatric samples were surveyed. Obsessives had frequent mixed obsessions and compulsions, fairly frequent depressive mood, and very frequent obsessive traits in their previous personality. A pronounced feature was stability of parental background in the obsessive group (and in controls, but evidence was incomplete here), but prolonged absence of one or both parents, especially fathers, during the childhood of many of the psychopaths. The psychopaths had a frequent history of suicide attempts, alcoholism, and childhood behaviour disturbance.

Psychopath males tended to show more violence, theft, and robbery, and psychopath females more abuseiveness, screaming, and drug addiction.

7. Technique of investigation with the semantic differential in this project was described in detail. There were eighteen clinically relevant concepts tested - three personal concepts (MYSELF, MY FATHER, MY MOTHER), and fifteen emotional concepts - five to each of three emotional areas (ANGER-HOSTILITY, FEAR-ANXIETY, LOVE-AFFECTION), with one control concept, UGLY. These were each rated on the same eleven bipolar adjectival scales (7-point). The scales satisfied the criteria, first of high factor loadings on previous studies and secondly, that of clinical relevance. They covered four dimensions - evaluation (five scales), danger (two scales), potency (two scales), and activity (two scales). Factor analyses of the present groups showed evaluation and danger scales to be representative samples of the main semantic dimensions in these three groups, but potency and activity scales were inferior samples of their secondary dimensions.

In administration, each concept occupied a page. A booklet of these pages was given individually in standardised fashion to each patient, who completed it usually in 15 to 30 minutes. After scoring, four factor scores and eleven scalar scores were extracted for each concept. A preliminary pilot project was run; this showed the technique to be easily worked for both patient and experimenter.

8. Dimensions of semantic judgment used by the three groups were explored by six factor analyses of the scales; each group was analysed separately across the three personal and fifteen emotional concepts. Principal components factor analyses were done with varimax orthogonal rotations. All groups had much the greatest variance accounted for by a general evaluative factor, largely comprised of the five initially selected evaluative scales. A dynamism factor apparently present on unrotated loadings disappeared into specific factors on rotation. Obsessives split off a subsidiary evaluative (danger or risk) factor, mostly comprised of the two initially selected danger scales. Controls also split off the same item, to the greatest degree. Psychopaths did not split off this factor at all, uniting the danger scales instead into a single dominant general evaluative factor. This was interpreted as differential perception of risk among the three

groups when judging situations (? psychopaths perceiving most risk), and was discussed in terms of possible risk-taking behaviour.

9. Stability of semantic differential scores on test-retest were studied after one week (short-term) and seven months (long-term). Short-term study used both mean absolute deviation in scale units and correlation coefficients. Both methods showed evaluative scales to be stable, danger scales to be slightly less stable, and potency and activity scales to be unstable. Personal versus emotional concepts, and the three types of patient, did not obviously differ in stability. Long-term study used only correlation coefficients. Evaluative factor scores were highly stable, danger factor scores stable, and potency and activity factor scores unstable. Constituent scales showed changes in the same direction. Scores on emotional concepts were more stable than on personal concepts. The three groups showed similar stabilities (small samples). Possible reasons for greatest stability of evaluative scales were discussed.

Two clinical validation studies were done. Meaning was treated as an index fragment of attitude. Patients' scores on the semantic differential were treated as the predictor variable, and psychiatrists' assessments of their attitudes as the criterion variable. The first study used single independent psychiatric interviews by two psychiatrists, and showed that psychiatrists agreed as much with patients' scores on the sd as between themselves on their ratings of the patients' 'overt' and 'implicit' attitudes to emotional concepts. Agreement all round was lowered on 'implicit' attitudes. The second study used a series of psychotherapy interviews by one psychotherapist. High agreement was shown between psychotherapist's rating of attitude and that actually given by the patient on sd. The agreement was again higher on psychiatrist's rating of 'overt' than 'implicit' attitude, but remained highly significant even with the latter. In both studies therefore, the sd reflected 'overt' attitudes rather better than 'implicit' attitudes, but psychiatrists showed close correspondence between what they regarded as 'overt' and 'implicit'. Results suggested that patients' scores on semantic differential scales reflected clinically meaningful variables.

10. From clinical observation and theory, certain results were expected and predicted on evaluative and danger scores. Results were analysed in several ways. Semantic distances between profiles

were calculated across scales between groups on each concept, and between personal concepts in each group. In order to test expectations and specific predictions, factor scores on each concept were compared between groups. Scale mean profiles were plotted as graphs on seven concepts, showing differences between groups and sexes. To show distribution of individual patients' scores on two scales, scattergrams were drawn on four concepts. Results from the different methods of agreement were mostly in agreement. These were:

(divergence refers to increased semantic distance between profiles, poor and worse = devalued, ~~worse~~, safe, potent, etc. refer to other specific component shifts)

Personal concepts: Controls: no divergence of profiles between sexes: good and safe self and parental concepts.

Obsessives: divergence of parental profiles between sexes, and of self from parental profiles: divergence of self from control profiles: poor and weak self, but good and safe parental concepts.

Psychopaths: Divergence of self+parental profiles from controls.

Emotional concepts:

Anger-hostility area:

Obsessives: profiles similar to controls, but slightly more potent and active.

Psychopaths: profiles slightly divergent from controls: more potent, active, and dangerous.

Fear-anxiety area:

Obsessives: slight divergence of profiles from controls: rather worse, more potent, active and dangerous.

Psychopaths: like obsessives, but less so.

Love-affection area:

Controls: no divergence of profiles between sexes.

Obsessives:
Males: as for controls.
Females: profiles divergent from controls (worse) on sexual intercourse.

Psychopaths:
Males: as for controls.
Females: profiles divergent from controls (worse and more dangerous) in the whole area.

Control concept UGLY:

No increased distance between groups or sexes.

Results generally patterned consistently and meaningfully. A high correlation was found on evaluation between anger-hostility and fear-anxiety concepts, most pronounced in the two psychiatric groups, rather less on controls. This was interpreted in terms of some unknown underlying common element of experience in the two feeling states.

11. Results were then discussed. In personal concepts, the self-concept was thought to be poor (devalued) in obsessives, partly due to depressive mood, partly to other features of their psychiatric disturbance. In psychopaths, their poor self-concept was thought to be less due to depressive mood, more to disapproval and conflict which their behaviour caused around them. Their disturbed family background was thought to be possibly operative here, and to be largely operative in producing their disturbed parental concepts. Implications of this disturbance were entered into. The three personal concepts yielded the most clear-cut picture differentiating the three groups, but it was felt that knowledge was as yet insufficient to designate this as characteristic for each group. The problem of identification was discussed.

In the anger-hostility area, results did not confirm a hypothesis that obsessives fear and defend against their aggressive feelings more than controls or psychopaths. Reasons for this were detailed. The influence of ambivalence on scores was discussed. Factors influencing compulsive activity indicated that obsessions fluctuated reciprocally with many variables, including aggression. Similar reciprocal relationships of psychiatric symptoms were pointed out. The concept of obsessions as a defence against aggression was felt to be inadequate. Aggression was thought to have a peripheral relationship to obsessions, and not to be central in the development of an obsessive process. Further possibilities were sketched for exploration of the problem. Results in the psychopaths supported expectations based on the assumption that psychopaths experienced guilt and dislike of their aggression, and did not support expectations assuming psychopaths were devoid of conscience. Trends suggested their aggression was not controlled for reasons other than lack of guilt.

Results in the fear-anxiety area confirmed clinical observation of anxiety in obsessives. Similar but less marked results in the psychopaths again tended to support the view that this psychopathic sample did have experience of guilt. It was noted that psychopaths outside psychiatric institutions might have produced a different pattern.

In the love-affection area, divergence of profiles between the sexes, especially amongst psychopaths, was noted. It was suggested that psychiatrically-ill females might show diminished sexual enjoyment earlier than males (as obsessive females showed this divergence mainly on sexual intercourse). As psychopathic females showed this divergence on all concepts in this area, it was thought possible that differential sexual roles in a particular sub-culture might be playing a part.

12. Meaning,as measured in this project, was noted to be but one of many intervening variables between conceptualisation and abnormal behaviour. Problems of interpreting patients' meanings of symptoms were outlined, differentiating between understanding and explanation. The influence of conventional attitudes on scoring social concepts was discussed. Some social concepts could have 'moral validity' but not 'legitimacy'. Concepts in this project were not social. Individual patients exhibited variability of response in their manner of use of the semantic differential. Shape and method of further investigations of psychiatric problems with the semantic differential would largely depend upon particular aims of the investigator.

APPENDIX

DETAILED CASE HISTORIES

Note: M.H. = Mill Hill Vocabulary Scale

OBSESSIVES:

O-1. Male. Aged 44. Father was 83, a retired lieutenant-colonel. Mother died of cardiac failure in 1959, aged 79. She had been a submissive, gentle, person. The patient was an only child.

As a child the patient was healthy but shy. He went to school from 9 to 18, first to prep., then to public school. From 18 to 20 he was at Sandhurst. He joined the Permanent Army, rising to the rank of Major, from which he retired due to his symptoms in 1959. He married at 25. Sexual intercourse was satisfactory, but he had several extramarital affairs. These caused marital crises. He had 5 children. He had always been a meticulous, diligent, routine dominated person, of cheerful disposition. Past illnesses included paratyphoid fever, spirochaetal jaundice, amoebic dysentery, malaria, and an appendicectomy.

Since his late teens the patient had numerous counting rituals, and a tendency to itemize operations. These caused slowness of his actions, and at times he showed anxiety and depression. He developed excessive handwashing. He had psychiatric hospitalization at the ages of 29, 37, (then receiving 6 ECT's), 37-42 (as an outpatient). He then had psychotherapy for a year, and, in 1961, a partial leucotomy. He also was treated with lysergic acid. His symptoms continued unabated, with minor fluctuations. M.H. was 126 plus.

O-2. Male. Aged 35. Father unknown. Mother unmarried, 57, retired insurance clerk, said to be a gentle, generous person. Maternal grandmother was a chronic alcoholic, recently with senile dementia. Patient was brought up in a comfortable middle-class home, by his grandparents, thinking that his mother was his sister. The final realisation in later childhood of his true birth and mother was painful.

His first two years he had a foster mother. In childhood he showed nailbiting and had repeated bad dreams,

requiring nightly reassurance. He went to school from 5 - 14. On leaving school, he worked in turn as a radio engineer, porter and then salesman. Sexually he had various fetishes, masochistic practices and transvestite tendencies, though he also managed satisfactory sexual intercourse. He was single. Amongst his peers he was friendly and popular. He had a past history of rheumatic fever at the age of 11.

For the last 17 years he had severe obsessional ruminations and compulsions. These included rechecking, tics with head shaking, and rituals concerning personal hygiene - personal washing took an hour, though there was no specific excess handwashing. Some of his rituals also concerned sexual deviations. In early 1961, he had an episode of marked depression, but he was not depressed at the time of testing. In 1952 he was an inpatient for 10 months in a mental hospital, and treated with insulin. In the Maudsley he was obese, hypertensive, co-operative and rather restless and anxious. M.H. was 95. He was subjected to bimedial leucotomy in early 1962. At follow up in September 1962, he was managing to work outside his home, overall much improved, though he still had rituals, thorough washing of his body, and odd obsessive thoughts.

O-3. Male. Aged 21. Father 66, a stock exchange clerk, who had a fear of heights and indigestion. Said to be reserved. Mother aged 67, an ex-clerk, who worried a lot. The patient was the youngest of 3 siblings, the other two being normal.

The patient was enuretic until 4, and sucked his thumb till 7. He was at a private school from 8 - 11, then a secondary modern school from 11 to 15. There he didn't do well, and was bullied. Thereafter, he worked as a printing apprentice. He had no experience of sex. He was a shy, reserved, quiet person, quiet in manner, neat and tidy, and uncomfortable with girls. He had a past history of recurrent ear infections from 8 to 10, an operation for undescended testis at 11, and he broke his arm at 15. From the age of 8 to 15 his mother took him monthly to hospital for phobic symptoms. Thereafter, there was a phase of hypochondriasis for a year, this subsiding when his compulsions began.

For the past 4 years he had had diffuse compulsive symptoms. When dressing he had to examine his shirt label minutely, and perform certain other touching rituals. During many other activities he had to touch various objects in a certain order, and became angry if prevented. His rituals hampered him at work, forcing him to give up work a year previously. He had been an inpatient on account of these in 1960. M.H. 89. At follow up in September, 1962, he had

improved only slightly, managing to work outside home, but still having checking rituals, and some obsessive thoughts as well.

O-4. Male. Aged 44. Father died when patient was very young, and his mother died in childbirth. He was brought up by a maternal aunt who was kind and loving. He had no sibs.

He still lived in the same house he was brought up in. As a child he was afraid of umbrellas and the dark. He went to school from 6 - 14 - a secondary modern equivalent. He worked from 14 - 28, taking 3 jobs as a clock repairer. During the war he was a conscientious objector. He married another patient from the Maudsley Hospital. He used to be cheerful, always was meticulous, and was religious, a member of a sect of the Baptist church.

For the last 5 years he had persistent obsessive ruminations of a religious nature. These thoughts interfered with his concentration. He feared that he might become unclean, feared uncleaness if he touched menstruating women. He was preoccupied with the thought "Is masturbation sinful?" He also had spells of occasional anxiety and depression. Not depressed at time of testing. He had 2 bouts of 10 ECT's, and treatment with chlorpromazine. He had been in an Observation Ward in 1958 for 6 months, and a Day Hospital patient from 1958-9. At the Maudsley recently he was noted to have a fixed immobile facies and a Parkinsonian gait. He wondered what fornication meant. M.H. was 104. At follow up in September, 1962, he had had another psychiatric inpatient session at another hospital earlier in 1962, and was still getting obsessive ideas.

O-5 Male. Aged 34. Father was 71, a healthy commercial traveller, successful, critical with the family, and not close to the patient. Mother was 67, tidy, obsessive about the house, and close to patient. The patient was the youngest of 4 sibs. The eldest of the sibs died mentally defective following meningitis.

The patient's early childhood was normal, with no neurotic traits. He went to Grammar School from 11 to 17. Thereafter he worked as a commercial traveller, of late in his father's firm. He was discharged from the Army on psychiatric grounds. He was single, and had infrequent sexual intercourse. He was always friendly, fussy and rigid.

For the last 19 years, since the age of 14, he had numerous obsessive symptoms. He took a long time washing and dressing, was preoccupied with cleanliness and his personal appearance. He checked that doors were locked, put cigarettes out. He had to write perfectly formed letters, and took so long writing reports for his firm that he had no time for social activities, taking work home with him. Infrequently he felt a bit depressed. He had 3 years Jungian analysis from age 25 - 28, with no effect. M.H. was 111. At follow up in September, 1962, he still had excessive hand and bodywashing, showed excessive checking, and felt rather apathetic and depressed.

O-6. Male. Aged 50. Father died in 1957 with senile dementia. He had been a furnishings buyer. Mother died in 1958, aged 79, of heart trouble. The patient was the eldest of 6 sibs.

His early years were uneventful. He went to a Grammar School. Thereafter, he worked as a district representative of a gas board. From 28 to 34 he served in the RAF as a fitter of air frames. He married a laundry packer at 25, and they had one daughter of 13. He considered marriage wonderful. He was usually a good mixer, but was always a careful checker, punctual, with recurring thoughts. He had a herniorrhaphy in 1941.

In 1941 after herniorrhaphy he had some repetitive thoughts, together with some depression, and he was admitted to a mental hospital. In 1957 he had a recurrence of repetitive thoughts, together with anxiety, and received group treatment. In 1959 again he had repetitive thoughts with nonsense words like "murder" and "suicide", resisted with anxiety. He was scared that he would grab people round the neck, especially his wife. He was anxious, depressed, and sleeping poorly. He had 6 months group treatment at this time. The thoughts fluctuated, and in recent months had increased in severity. He was increasingly worried, and rather depressed. M.H. was 115. At follow up in September, 1962, he was very much improved, felt well, had almost no obsessive thoughts, and was working well outside the home.

O-7. Male. Aged 23. Father was 55, a textile worker who got on well with the patient. Mother was 53, a housewife, who was strict, religious and hypercritical. The patient was the elder of 2 sibs, a third having died at 2 years. An uncle was a chronic schizophrenic. The family lived in Ireland, and got on well together.

The patient had a normal early life, and went from 5 - 19 to a secondary school. Thereafter he spent a year in a seminary for monks, but was found unsuitable. Then he had numerous short jobs such as a porter. He masturbated, but had not had sexual intercourse. He had congenital nystagmus, and a head injury at 14. He was a religious Roman Catholic, had always liked routine, and had but few friends.

For the last 6 months he had been obsessively clean, with excessive handwashing, and throwing away any clothes which had become dirty. He purposely bought clothes that were too large for him. He divided money into two types - "clean" and "dirty". In hospital he was anxious, ruminated a lot, showed washing rituals. M.H. was 89.

O-8. Male. Aged 56. Father was a chargehand in a plastics factory, was reserved, and had once been admitted to a mental hospital. Mother was 56, possessive, and nervous. The patient was the eldest of 4 sibs. One maternal uncle and one paternal aunt had nervous breakdowns with hospital admissions.

His early years were normal, though he had always been timid and shy. He was at school from 5 to 14, latterly in a secondary modern school. Thereafter he was a maintenance fitter. Puberty was at 14, there was one homosexual episode, and thereafter he had normal sexual intercourse. His wife was the same age, and the marriage was happy. They had one daughter aged 2 years. He had always been slow, perfectionistic, conscientious, and neat. He was always methodical, and a checker.

Before admission for 9 years he had compulsive thoughts and constant checking. For one year he had compulsive thoughts of harming people, together with sexual ideas. He was also depressed, and admitted to the Maudsley for 6 months at the beginning of 1961. ECT helped the depression slightly, but the compulsive thoughts continued. He had one violent outburst of smashing things which led to his admission, but this was an isolated incident. M.H. 97. When admitted he was anxious, tense, had constant obsessive ruminations and checking compulsions. He was also markedly depressed at time of testing. At follow up in September, 1962, he was still unable to work. His depression was improved, but his obsessions continued, together with touching rituals, and a great fear of cutting off his baby's head with an axe.

O-9. Male. Aged 19. Father was 49, a University graduate, and under-secretary to a government ministry. He was a precise, obsessive man, unhappily married. Mother was 49, a University graduate, highly intelligent and precise. The patient was the eldest of 3 sibs. At home the father was hostile in argument against mother.

The patient's early years were normal. At 8 he was noted to be very slow in action, and an "introverted schizoid child". He was perfectionistic and meticulous from his earliest years. He went to a school of Grammar School standard, but because of his illness the only work he had done was gardening. He masturbated.

For at least the last 5 years he had severe obsessive symptoms. He took 3 hours to undress while sitting in a chair, due to his rituals-pacing, touching, repeating. From 8 to 11 he received psychotherapy from a Jungian analyst. He had also had lysergic acid and Diandrone. On admission he was small, tense, withdrawn, shy, slow and spent much time in his compulsive activities. M.H. 120. He had a leucotomy in 1962.

O-10. Male. Aged 41. Father died 1957 of carcinoma of the oesophagus. He was said, by his weak personality, to have dominated his family. Mother was 63 when she died in 1949 of a stroke. The patient loved her. He was the 4th of 5 sibs, and was greatly supported by a highly successful brother.

He had a normal childhood. He went to an elementary school, then a continuation school until 14. Then he began to work in the office of an Estate Agent. He was married with children, and had normal sexual relations. He was sociable, and had always been an excessive checker. In 1949 he had ECT.

He had excessive handwashing for many years before admission. For the previous 5 years he had intruding obsessive thoughts, such as wishing that others would have cancer. He also had compulsive doubting. These prevented him from working adequately, and led to his admission. He was neat and tidy. M.H. 119. At follow up in September, 1962, after his discharge from the Bethlem, he had to be admitted again to another mental hospital for his symptoms.

O-11. Female. Aged 25. Father was a hotel porter aged 54. He was a quiet, strict, conscientious man. Mother was even-tempered, disliked quarrelling, and got on well with the patient. The patient was the younger of 2 sibs.

As a child she was nervous, and from the age of 2 was afraid of eating. She was quiet. She was at school from 4 - 16 - secondary mo. ern, and was popular there. Thereafter she worked as a telephonist, and became a housewife after marriage. Husband was a metal polisher. Sexual relations were unsatisfactory. She married at 20, husband 8 years older. They had one child, who had temper tantrums, In the past the patient had a pilonidal sinus, and toxaemia of pregnancy. She had been an obsessive checker for many years.

For many years the patient had obsessive symptoms, with handwashing, fears of hurting people, and unwelcome sexual thoughts. She would check gas taps, lights, locks, and cigarette stubs. Recently she had also become depressed and cried. On admission she was depressed and cried. M.H. was 93. At follow up in September, 1962, she was able to work at home, but not feeling too well. She continued to have rituals, and mild depression.

O_12. Female. Aged 37. Father diedin 1957 at 69. He had a good relationship with the patient. Mother was 63. Patient felt hostile to her but could not express this openly. (When filling out the sd booklet she said "It's easier to put crosses on paper than to talk about it") She was the elder of 2 sibs.

Her early childhood was normal. She had diphtheria at 9. She was at school from 5 to 16, matriculating at a Grammar School. Then she became first a librarian, then a rent collector. She worked until admission. Menarche was at 14. She disliked sexual intercourse. She had been married for 10 years to a senior salesman. She had many friends, and had high moral standards. She was a Baptist.

For the past year she had obsessive thoughts about masturbation and guilt concerned with it. She feared she couldn't have children due to this. She was fairly neat, and had no compulsive actions. She was co-operative, and some time after admission became depressed, but was not so at time of testing. M.H. 116.

O-13. Female. Age 23. Father was 59, a farmer, close to the patient. Mother was 60, nervous, secretive, and less affectionate, dying one month after the patient's admission. She was the younger of 2 sibs.

Her early years were spent in Wales. She went to school from 4 to 18, finishing at a Grammar School. Then for 6 months she worked as a general nurse, then did a correspondence course in journalism. Menarche was at 13. At 7 she had been sexually assaulted, and for 18 months at the age of about 13 had had incestuous relationships with her brother. She had had a squint of her right eye corrected 4 years previously. She had always had strong obsessive traits, being precise, orderly, meticulous and a checker. She was close to her family.

On the background of obsessive traits, for the last 6 years she had had excessive compulsive handwashing, aggravated by touching or seeing dogs, or by touching letters from her father. Complicated sequences of events would determine which objects in her environment were contaminated, and rituals devolved round these. She had 2 years psychotherapy with a Jungian analyst, including many sessions with Sernyl and lysergic acid. At follow up in September, 1962, she still had markedly troublesome compulsive handwashing.

O-14. Female. Aged 26. Father 72, secretary in Diplomatic Corps. Calm and placid individual. Mother 65, a ballet dancer and actress, who had rows with the patient recently. The patient was an only child.

The patient was born in Peru, and moved round many countries as her father changed diplomatic posts. She went first to boarding school, then had a governess, then went to finishing school, and finally to Art School. Thereafter, she worked as a shorthand typist, lady-in-waiting and secretary. Menarche was at 14, and she had no sexual experience. She was usually very untidy, impulsive, impetuous, and lost her temper easily. As an infant she was operated on for pyloric stenosis.

For the last 4 years she had had compulsive handwashing, fear of contamination from the lavatory, and of treading on unpleasant things out of doors. She had had hypnosis, ECT, drugs, and several hospital admissions. On admission to the Bethlem she was frank, outspoken, and spent long periods washing her hands, getting irritated if interrupted in this procedure. M.H. was 113. She had Sernyl administered with no effect, and was subjected to leucotomy in early 1962. At follow up in September, 1962, she was moderately improved, spending far less time washing her hands, and feeling much better.

O-15. Female. Aged 58. Father died in 1911 at 55, when patient was 7½. He had been a GPO clerk, and was fond of and kind to the patient. Mother died in 1951 at the age of 84. She was Turkish, and had tended to dominate and spoil the patient. The patient was the youngest of 7 siblings.

The patient had been a nervous, timid, self-conscious child. She went to school from 5 to 16 - latterly a secondary school. She worked as a clerk and telephonist until 1957, when her symptoms forced her to give up her work. Her menarche had been at 16, and her menopause at 46, in 1950. Despite a few liaisons she had no sexual experience. She had many friends, though always timid, nervy, meticulous, careful and conscientious. At 25 she had pleurisy, and other operations - an appendicectomy and an ovarian cystectomy.

In 1951 she was depressed for some time after her mother's death. The following 2 years she developed unwelcome sexual and hostile thoughts towards an older sister. She had a weekly lay analysis. She developed panics and fears of travelling. From 1956 onwards she had constant compulsive symptoms. She checked many items constantly while dressing or washing, and had to execute certain tapping, washing, hoarding and eating operations. She was afraid of hurting others, and had intrusive sexual thoughts. She panicked on trains. In 1958 she was admitted to a mental hospital for 6 months, and later that year had a bimedial leucotomy at the Maudsley with short-term relief. From 1960-1 she was a Day Hospital patient. Since then she had a second leucotomy in August, 1961. Though she worked for a while after this, her compulsions continued unchanged. Rituals delayed her rising, and her toilet was lengthy. M.H. was 96. At follow up in September 1962 she had ceased working, and felt disappointed generally.

O-16. Female. Aged 14. Father was 46, a building foreman. He was anxious and rather obsessive in his habits, and closer to the patient than mother. Mother, 47, was asthmatic, anxious, quick-tempered, doing part-time work, and didn't feel close to the patient. The patient was the elder of 2 sibs.

The patient's early years were normal. She went to a Grammar School, and was an excellent worker. Her menarche was at 12.

At the age of 10 and 13 she had 2 episodes similar to the present illness which cleared up after a few months. For the last 10 months she had crippling religious preoccupations. She had to repetitively read and re-read the Bible, then ruminate on what she had read. She had many inhibitory taboos preventing her from completing certain actions such as walking or drinking. All her actions were slowed, and her schoolwork suffered. On admission she was reticent about her symptoms, and had fears of doing certain actions. WISC score was 125. She was discharged in March 1952 much improved, with but few compulsions.

0-17. Female. Aged 36. Father died of pneumonia at 38, when patient was 10. He had been a furrier, and a kindly man. Mother was 65, and continued father's business. She was gentle, very close to the patient, treating her like a young child. The patient was an only child. They were financially comfortable until recently.

The patient had always been fastidious, and a poor social mixer. She went to school from 5 to 17, first to a kindergarten, then a private school, then a Grammar School, and finally to a haberdasher's school. Thereafter she worked as a secretary. Her menarche was at 13, she rarely went out with men, and had no sexual experience. She had some female friends, used to play sports until 25, but ceased being vigorous 3 years earlier.

For the last 6 months the patient had felt exhausted, and had difficulty in doing her work. She developed excessive handwashing, door and tap checking, and the screwing of bottletops. She cleaned things incessantly. This was all superimposed on a background which had been present for many years of excess washing, and marked fears of pins, glass and needles. M.H.98.

0-18. Female. Aged 37. Father died in 1959 at 76 of carcinoma. He had been an obsessive checker of doorlocks, and gastaps for 26 years. Mother died in 1960 of bronchopneumonia. She was the younger of 2 sibs. A third sib, her uniovular twin, had died at 6½.

The patient was born in London. Her early years were unremarkable, but she had diptheria at 6. She went to a primary school until 12, then went on a scholarship to a technical school. Thereafter she held many jobs - machine embroider,

demonstrator and others. Her husband was a constable in the C.I.D. Her menarche had been at 13, and sexual relations in marriage were normal. She had met her husband as a penfriend, and was happily married, with 3 children. She had always been a bit of a worrier, and was very punctual.

For the last 2½ years she had increasing preoccupation with another girl's "cruelty" to her son. She had the desire to do things right, and wondered if she had done things right. This occupied her mind perpetually - the thoughts were resisted. Recently she had also been agitated and depressed. On admission she was initially depressed, and very hostile about her father. This cleared, and she was tested when improved, not depressed, as an outpatient. M.H. was 93. At follow up in September, 1962, she felt much better, was working well at home, and had but few unwelcome thoughts about people.

O-19. Female. Aged 55. Father died in 1949 of pulmonary embolism, at 68. He was an anxious, nervous and rather depressed person. Mother was 78, of suspicious nature, and used to have rows with father. The patient was the youngest of 4 sibs. Her home life had been unhappy.

The patient had been shy and nervous as a child. She went to school from 5 to 14. Thereafter she worked as a shop assistant, in a confectioner's shop, and took in lodgers. She married a telephone inspector, but had not had sexual relations for many years. They had 2 children. At 21 she had an appendicectomy. She had always been nervous, shy, reticent, worrying, tense, and perfectionistic.

After her father's death in 1949 she had been depressed and reticent for a period. Since 1956 she had increasing compulsive handwashing, felt that her periods made her filthy, would defile other people, and this made her unable to prepare meals. She also was depressed varyingly at times. She developed severe panics. She would repeatedly fill and empty a kettle and other containers, couldn't touch things, and had fears that her son would get harmed. She had 2 hospital admissions for these in 1960, during which she received Imipramine and ECT. M.H. was 89. During her present admission she had obsessive ideas, and some feelings of guilt.

O-20. Female. Aged 22. Father, 51, was a musician and linguist. He was a reserved, placid, person. Mother, 47, was neat and tidy, and worked as a theatre usherette. The patient was the elder of 2 siblings. The home was of middle class standards, and for a few years the family lived in Italy.

The patient was born in Bournemouth. She used to sleepwalk at age of 8-9. Her convent schooling was interrupted due to frequent family trips to Italy. She was at school from 8 - 19. Thereafter she had several jobs, in travel agencies, a paint factory, and secretarial work. From many of these jobs she was dismissed. Menarche was at 13 - she was disgusted by sex, and had experience only of minimal sex play. She had always found difficulty in making friends. She was a very tidy person, and a practising Roman Catholic.

From the age of 12 she repeatedly tidied her possessions. From 17 she felt gestures of hers would harm others. Recently she had repeated doubts that she might harm someone, or might indulge in homosexual activity. M.H. was 94. At follow up in September, 1962, she managed to work outside her home, but still checked excessively and was troubled by obsessive thoughts.

PSYCHOPATHS:

P-1. Male. Aged 36. Father died in 1955 of senile decay. He was a small shopkeeper, a kind man with good relations with the patient. Mother died in 1938 (patient then 12), and was on good terms with him. The patient was the 8th of 10 sibs.

He was born in Ireland, but lived in London most of his life. He went to school from 8 to 14, did quite well, but didn't mix socially. He was in the army from 18 to 21. He had many short jobs such as painter and interior decorator. His first marriage in 1949 lasted only 2 weeks, and in 1959 he married a night club hostess after a divorce in 1956. He had always been a lone bird, driting from place to place with no friends, and always feeling an outsider.

His first contact with the law was at 16, when he stole a brooch. Since then he rarely had been out of prison more than 6 months. He stole repeatedly, and frequently was agressive and violent. He had 5 mental hospital admissions. He took Preludin for a time, and also was arrested for taking petrol without payment. He was 4 years in Dartmoor, 3 months in Wormwood Scrubs, and then again in Dartmoor prison. M.H. was 88.

P_2. Male. Aged 23. Father was 49. Mother was often violent, and had promiscuous sexual intercourse in front of the children. The patient was the 4th of 5 sibs. The home was unhappy, with a lot of violence.

The patient was born in Cheshire. As a child he was frightened of the dark. He had very little schooling, and thereafter had numerous labouring jobs. He married 6 weeks before admission, and was then thrown out by his mother-in-law for being aggressive with his wife. Since 19 the patient had had several brief episodes of unconsciousness.

He was repeatedly aggressive to people, attacking them on sudden impulse, especially when drunk. He drank 13 pints of beer daily. He was irritable, often hit people, and for this had had repeated mental hospital admissions. EEG on admission showed non-specific abnormality, but no epileptic features. M.H. was 85.

P_3. Male. Aged 45. Father died of cerebral haemorrhage aged 74. Mother unknown. Parents were unmarried. There were 3 sibs, nil known about them.

The patient was brought up in an orphanage. He had several jobs, including quartermaster in the navy, RAF photographer, and swimming instructor. He married in 1948, had twin children, and had been separated twice from his wife.

The patient had had 10 admissions to an observation ward with repeated suicidal attempts, including jumping off a railway bridge, a long history of barbiturate addiction, and in addition, alcoholism. M.H. was 89.

P_4. Male. Aged 26. Parents unknown. The patient had had several sets of foster parents.

The patient was born in Dulwich. As a child he had nightmares and bedwetting. He was at school until 15, being

an average scholar. He was discharged from the army at 19, being labelled a psychopath. He had many jobs of differing varieties, getting fed up easily with them.

The patient had numerous convictions for house-breaking, for taking and driving, for larceny, and for assault. Since 1954 he had also been a seconal addict, and in addition had had bouts of alcoholism. He had 4 previous mental hospital admissions. M.H. was 103.

P-5. Male. Aged 17. Father, unknown to the patient, was an American Serviceman. He regarded as his father an Army Captain, who died in 1959, having been a passive, easygoing person. Mother was a forceful, domineering person with a labile temperament, now living on a widow's pension. The patient had one younger sib.

The patient was born in India in 1944, but spent most of his life in England. Until 13 he went to Prep school, then to a public school, from which he ran away at 14. His parents had marital difficulties at the time. At school he was repeatedly defiant. He then changed to a secondary modern school, where he stole a rifle, and failed his GCE. He enjoyed sexual intercourse.

He arranged a visit with a German family, where he developed an interest in Nazi ideas, and other organizations concerned with violence and authoritarianism. He began selling drugs (heroin) secretly, and stole cars, which led to his admission to hospital. There he was defiant, and had to be segregated from other patients. He said he would kill if it was an order. M.H. was 126 plus.

P-6. Male. Aged 32. The patient never met his father, who was a professional musician. His mother, 65, was the retired manageress of a millinery shop. His maternal grandmother looked after him till he was 17, dying in 1947 in her 70's.

Early details of his childhood were unknown. He went to school from 5 to 14, being an average scholar. Thereafter he had some optical training, became in turn a salesman, laundry driver, janitor, and had many other jobs. In 1944-7 he was a stoker in the navy, being discharged as psychoneurotic. He had both homosexual and heterosexual experience, having regular sexual intercourse.

The patient had a history of repeated offences for stealing motor cars, larceny, unlawful wounding indecent

assault of a boy of 8. He often became angry, and hit people. He had been previously admitted to the Bellevue Hospital in New York with anxiety. M.H. on testing was 95.

P-7. Male. Aged 30. Father was unknown. Mother was 52, a housekeeper who remarried when the patient was 7. She had not seen the patient for the last 8 years, and had not had a good relationship with him. Stepfather was a factory general manager, hardworking and fair to the patient. There was one half-sib. The patient had cut all family ties in recent years.

He was born in New Zealand, was illegitimate, and in his early years moved around with mother from place to place until aged 7. He was enuretic until 7. At 6-7 he spent some time in a Salvation Army Home, being thrashed regularly there. He went to school from 5 to 15, often changing when his parents moved. He was bullied, but excelled in art. Thereafter he took up window dressing. In September, 1960, he became a student at a Printing School, to train as a commercial artist. Puberty was at 12, and later sexual intercourse was satisfactory. He married in 1959. At the age of 8 he had a head injury with unconsciousness for which he was treated at home.

The patient had long been moody, and received 4 months inpatient treatment in a mental hospital in 1954 for depression. For many years he had had repeated outbursts of violence, breaking gates, hitting walls, shouting at, insulting, and hitting his wife. These would be associated with tension. He was admitted for one of these episodes to an observation ward. On admission he was distrustful of people. E.E.G. was normal. M.H. was 103.

P-8. Male. Aged 39. Father was an agricultural engineer who died in 1943 at 53 (patient was then 19). Mother was 72. He was an only child.

Nil known of his early years. He went to school from 5 to 9, first to a local, then to a boarding school, and finally to a public school. Thereafter he became an engineering apprentice in his family's business (manufacturing agricultural equipment). He had homosexual activities.

In 1948 he spent 6 months in prison for theft. Later he overspent his income persistently, obtained credit fraudulently, and was committed for treatment subsequent to this. M.H. was 126 plus.

P-9. Male. Aged 17. Parents were unknown. Patient was adopted by a father who deserted his adoptive mother at 3½ and never returned. Adoptive mother was 60, overpossessive and authoritarian, enjoying a private income. There was one elder sib.

Details of early childhood were unknown. The patient was at school from 5 to 15, and failed the 11 plus exam. He showed homosexual behaviour.

For several years the patient had severe temper outbursts against his mother. He would attack her, scream loudly, and repeatedly stole from her handbag, and outside property. He lied about all these activites, denying their occurrence. M.H. was 108.

P-10. Male. Aged 36. Father was 76, a wool machinist in Dublin, who drank a lot. Mother was 77, a good mother. The patient was the 6th of 8 sibs.

The patient was born in Ireland. After schooling he went to America and was expelled from college for impregnating a girl there. Thereafter he had many ääbouring jobs. He married at 23, and had 3 children. He had repeated rows with his wife, who had an affair. He liked to be clean and tidy.

The patient had drunk heavily since 25. He had always been liable to temper outburst, and had a history of being frequently physically and verbally aggressive, as well as of self-injury. He made several suicidal attempts. M.H. was 98.

P-11. Female. Aged 39. Father had been an alcoholic ship's doctor, who separated from her mother when she was 4. Mother was 63, had rejected the patient since her early years, and was phobic. The patient was the younger of 2 sibs.

The patient was born as a breech delivery, and was an unhappy, frightened child. She was at school from 5 to 18, first at a boarding school, then a naval school, where she was head girl for the last 2 years. At 23 she obtained a

general medical degree, and shortly after a postgraduate diploma as well. She had numerous posts as a houseman in different hospitals. Menarche was at 14, and she was heterosexually promiscuous. Her first husband died in 1952 she remarried, to a doctor, and then obtained a divorce.

She first saw a psychiatrist at 20 (1943) when unhappy. In 1955 she began persistent taking of drugs, especially amphetamine. She had numerous mental hospital admissions, and 2 to the Maudsley in 1957 and 1958. She received psychotherapy, and deep insulin coma elsewhere. She repeatedly became aggressive to nurses and others, had several drinking bouts. While on drugs she had auditory hallucinations. M.H. was 118.

P-12. Female. Aged 23. Father was 53, a doctor in Australia. He was a restless, ambitious, person. Mother was 53, an impulsive person who remarried. Stepfather was 53, a retail businessman. The patient was the younger of 2 sibs. The home was prosperous, but personal relationships were strained.

The patient went to school from 5 to 12, then to a boarding school until 18, where she was top of her form. Thereafter she became a nurse, then shop assistant, then a waitress. Menarche was at 15. In recent years she had become heterosexually promiscuous. She used to be a busy, intelligent, intense personality, with few friends, and active against authority.

For the previous 2 years the patient had changed her personality, suddenly becoming promiscuous, becoming a dexedrine addict, shouting and swearing, and being generally verbally aggressive. In the ward she was tense, smoked excessively, and was aggressive to nurses, shouting at them. M.H. was 95.

P-13. Female. Aged 17. The family was a chronic social problem family, repeatedly requiring assistance, with the father dead. They lived in poverty.

The patient's early years were disturbed chronically by the family disturbances. After schooling she worked as a waitress, and as a travelling saleswoman. Sexually she was promiscuous. Her marriage lasted only a few weeks.

From her earliest years she had been delinquent. She truanted from school, indulged in petty thieving, and was

promiscuous from 13. At 15 she had an illegitimate child. She showed marked liability of mood, with frequent suicidal feelings and attempts. She tried to gas herself and her baby, later to strangle herself. Her present admission was after taking 200 codeine tablets, after a quarrel. M.H. was 100.

P-14. Female. Aged 44. Father was a farm labourer, a heavy drinker, who was violent and ill treated the children. He didn't see them after the patient was 11. Mother was not married to father, having run away with him when she was 16. The patient had had 2 sibs, one dying in childhood, the other, a prostitute, being killed in the war. The family moved from farm to farm, the children begging for food.

The patient's early years were in abject surroundings. At 5 she was given to gypsies, then was moved into several homes, and her parents were imprisoned for neglect of the children. The patient then went into a Barnardo's Home until 15, and at school was top of her class. Thereafter she had numerous jobs, mostly in drawing offices. She had been engaged at 20. In the past she had been heterosexually promiscuous, though frigid. She had a history of a few grand mal seizures, of jaundice, peptic ulcer, and hysterectomy for menorrhagia.

She had always been aggressive at the slightest criticism. For many years she had repeated aggressive outburst, smashing windows, smashing a doctor's car, slashing her wrists and body and for some time was a drug addict. She was one night in Holloway Gaol, and had 3 previous admissions to the Maudsley. Recently she began stuttering. M.H. was 125.

P-15. Female. Aged 35. The parents of the patient were unknown. She was born in Liverpool, and was brought up first in an approved school, then in a convent. Thereafter she became a Nursing cadet, then worked in the air force. She held semi-trained posts throughout her life. Recently she helped a mistress in an institution catering for various perversions. At 17 she had meningitis, later pneumonia, and had also had a duodenal ulcer, endometriosis and a thyroidectomy. She had homosexual relationships with different women.

The patient had made many suicidal attempts with drugs, for which she had 2 previous mental hospital admissions. For several years she was a Drinamyl addict, a heroin addict, and forged prescriptions to obtain these. She helped to look after prostitutes. Recently she had become depressed, and put her head in a gas oven. She no longer took drugs. In the ward she was repeatedly aggressive, smashing windows when she felt tense, shouting at patients, and spoke quite freely of herself to staff and patients. M.H. was 95.

P-16. Female. Aged 31. Father died in 1951 aged 68. He had been conductor of an orchestra, and had rarely seen the patient since she was 2. Mother was 61, and had remarried. She led an unsettled life, was jealous of the patient, and since the patient was 4 only saw her on holidays. Mother had been apsychiatric inpatient for depression.

The patient was born in Buenos Aires. When her parents separated at 2 she was brought to England. She was a boarder in 8 schools between 3 and 15. Twice she was expelled for stealing and gambling. She was awarded a County grant, on which she spent 2 years in an Art school. Thereafter she held many jobs, as probationer nurse, cleaner, barmaid, hospital receptionist, and others. Menarche was at 11. She had brief homosexual contact at 16. She was married at 33 to an Admiralty draughtsman, who died 2 years later of a brain tumour. She was heterosexually promiscuous, and had had 11 self-induced abortions. She had always been gregarious, preferring male friends, with intellectual and aesthetic interests. She was amiable.

She had been in a mental hospital for a week in 1960 for depression. Recently she had been depressed, with a few suicidal thoughts. In the ward, when she was due to be discharged, she had repeated screaming outbursts, slammed doors, swore, subsiding when she was allowed to remain. She was argumentative. M.H. was 115. Not depressed at time of testing.

P-17. Female. Aged 33. Father had been poor: a publican, then a factory worker. Mother died in 1949 of 'heart trouble'. The patient was an only child. Paternal grandfather died in an asylum.

The patient was born in Edinburgh. She went to 3 schools, including a secondary modern one. She had various jobs as a hotel waitress, chambermaid, shop assistant. Her husband was a labourer. She disliked sexual intercourse.

The patient had long been histrionic in behaviour. She made several suicidal attempts, claimed falsely that she had murdered her child. She had often been truculent and aggressive, had daily fights with her husband, and had been apprehended by the police many times for drunkeness, and shouting of abuse. For some years she had visual hallucinations. She put her daughter in the care of foster parents. She had 2 previous mental hospital admissions, for lying on the floor and being abusive. M.H. was 93.

P-18. Female. Aged 15. Patient's mother had had 8 illegitimate births, including the patient, and had been admitted to a mental hospital. Patient was adopted at 9 months. Adoptive father, 50, was a baker who recently became a medical student, a placid and studious person. Adoptive mother, 44, was a tense, anxious, rejecting person.

The patient had always been very unhappy and aggressive, with frequent temper tantrums. She went to the equivalent of a secondary modern school.

Since the age of 3½ she had been a difficult, troublesome and disobedient child, stealing, aggressive to her parents, bullying other girls. She was unruly, unsanitary, didn't wash, and micturated on the carpet. She swore. In the ward she dominated other girls. M.H. was 106.

P-19. Female. Aged 38. Her parents were divorced when she was 10, and she stayed with her grandmother until 18. Paternal grandfather died after 20 years in a mental hospital.

As a child the patient was afraid of the dark, and stammered until she was 16. She went to school until 14, and was an average scholar. Thereafter she did laundry and hotel work. Menarche was at 14. In 1945 she married an Indian. She subsequently cohabited with 2 other men. She had 3 children. At 8 she had had a mastoidectomy.

For the previous year the patient had taken an excess of drugs, including Drinamyl and Preludin, as many as she could get hold of, often up to 50 tablets daily. She made repeated suicidal attempts, and her recent admission was for one of these. M.H. was 86.

P-20. Female. Aged 20. Father was Greek, and disappeared early in the patient's life. Her mother died at 18 months.

Until she was 16 the patient was brought up in various orphanages, being moved quite frequently. She went to a secondary modern school. Thereafter she worked in many factories and nurseries. She would initially get on well in her job, then become repeatedly aggressive and assertive with people and feel unwanted.

In addition to her aggression at work she would occasionally become violent, and in the ward had episodes of shouting and violence. General I.Q was 106.

MEAN FACTOR SCORES (Pages A23-A25)

Note: 1. Figures are shown 10 times greater to eliminate decimals. Only 1 decimal point is given as more would create a spurious impression of accuracy not justified by the size of samples.

2. Scores are on 0-6 scale, not 1-7 as is usual in sd reports.

3. Directions of scoring:

e = evaluation = mean score of 5 scales:

tasty-distasteful
clean-dirty
good-bad
pleasant-unpleasant
kind-cruel

p = potency = mean score of 2 scales:

weak-strong
mild-intense

a = activity = mean score of 2 scales:

passive-active
calm-excitable

d = danger = mean score of 2 scales:

harmless-harmful
safe-dangerous

A score of 0 for each factor represents very tasty, clean, etc for e, and - very weak, mild, harmless, etc for p,a & d

A score of 6 for each factor represents very distasteful, dirty, etc. for e; very strong, intense, harmful etc for p, a & d.

The midpoint score is 3 for each factor

4 O = obsessive (n=20, sexes combined n=10 sexes separate
P = psychopath (n=20, " " n=10 " "
C = control (n=30, " " n=15 " "

Table a.1.

MEAN FACTOR SCORES - SEXES COMBINED

(see key on p. A-22)

	O				P				C			
	e	p	a	d	e	p	a	d	e	p	a	d
Annoyance	41	41	42	36	43	38	39	40	44	29	37	41
My feelings when I am angry	42	46	44	34	48	50	51	50	40	48	45	33
Spitefulness	49	31	44	45	48	36	43	48	48	28	37	45
My resentment of people	40	43	35	30	42	44	41	41	38	33	31	30
Dislike of a person	44	38	34	29	43	46	45	40	40	38	35	34
TOTAL ANGER-HOSTILITY AREA	43	39	40	35	45	43	44	44	42	35	37	37
Fear	46	36	41	46	43	37	40	48	44	32	39	46
Panic I have had	48	49	47	50	46	47	46	50	42	41	44	41
Anxiety	46	46	48	47	43	45	46	47	37	40	42	39
My feelings when frightened	44	45	47	42	45	44	43	46	40	42	41	35
Worry	48	49	47	49	45	44	46	47	43	40	37	46
TOTAL FEAR-ANXIETY AREA	46	45	47	47	45	43	44	47	41	39	41	41
Love	13	49	39	20	10	52	44	22	09	46	41	20
Liking of somebody	13	48	36	18	16	43	31	22	12	42	35	12
Sexual intercourse [1]	21	44	43	24	22	46	44	25	14	43	45	24
My affection for a person	13	49	38	15	15	43	33	19	11	45	37	14
Fondness	11	46	37	13	15	43	31	20	15	41	33	15
TOTAL AFFECTION-LOVE AREA	14	47	39	18	15	45	36	21	12	43	38	17
Myself	29	29	39	24	32	36	44	38	19	40	43	19
My father	15	37	32	15	27	36	36	29	10	39	33	18
My mother	09	39	40	13	22	36	38	26	06	34	40	10

1 See p A-26 footnote

Table a.2.

MEAN FACTOR SCORES - FEMALES

(See p. A - 22 for key)

	O				P				C			
	e	p	a	d	e	p	a	d	e	p	a	d
Annoyance	42	38	41	38	41	38	37	39	43	28	36	41
My feelings when I am angry	42	41	42	34	44	51	53	48	38	42	43	27
Spitefulness	49	27	42	51	45	36	37	46	49	29	38	41
My resentment of people	40	38	33	33	40	41	42	43	37	31	33	28
Dislike of a person	46	36	34	36	39	50	47	36	39	39	36	31
TOTAL ANGER-HOSTILITY AREA	44	36	38	38	42	43	43	42	41	34	37	33
Fear	47	38	40	47	40	42	40	44	46	34	40	47
Panic I have had	51	53	46	51	44	49	46	46	44	43	43	40
Anxiety	46	46	50	47	38	50	44	41	41	41	42	45
My feelings when frightened	44	49	52	44	42	48	41	44	41	43	43	33
Worry	48	51	50	51	43	46	45	48	44	43	40	47
TOTAL FEAR-ANXIETY AREA	47	47	49	48	41	47	43	44	43	41	42	42
Love	15	46	38	21	16	51	41	29	08	46	35	19
Liking of somebody	14	43	33	19	19	50	33	24	10	44	35	11
Sexual intercourse	26	38	37	25	36	42	40	38	16	41	41	24
My affection for a person	12	46	33	14	18	45	37	25	08	45	37	11
Fondness	10	39	37	14	19	42	30	27	14	42	32	15
TOTAL AFFECTION-LOVE AREA	16	42	35	19	22	46	36	28	11	44	36	16
Myself	29	24	37	22	33	36	43	36	17	39	39	18
My father	12	33	24	09	31	34	33	34	08	41	30	13
My mother	10	42	43	16	26	32	37	30	05	35	37	08

MEAN FACTOR SCORES - MALES

(See p A - 22 for key)

	O				P				C			
	e	p	a	d	e	p	a	d	e	p	a	d
Annoyance	40	44	42	34	44	38	40	41	45	30	38	42
My feelings when I am angry	41	50	46	35	52	49	49	53	42	53	45	40
Spitefulness	49	35	45	38	52	36	49	51	48	28	35	49
My resentment of people	39	48	37	27	44	46	41	40	39	35	30	33
Dislike of a person	42	40	34	23	46	42	43	44	41	37	33	37
TOTAL ANGER-HOSTILITY AREA	42	43	41	31	48	42	45	45	43	37	36	40
Fear	44	33	42	46	47	32	41	52	43	30	38	46
Panic I have had	46	45	48	49	47	44	47	53	41	38	44	41
Anxiety	46	47	47	48	48	40	47	53	33	39	41	33
My feelings when frightened	44	42	42	41	48	41	45	48	40	40	39	36
Worry	47	47	45	46	47	43	48	45	43	36	35	45
TOTAL FEAR-ANXIETY AREA	46	43	45	46	48	40	45	50	40	37	40	40
Love	12	51	41	20	04	54	48	16	10	46	46	21
Liking of somebody	13	53	40	18	12	37	30	20	15	40	35	14
Sexual intercourse	15	50	50	23	07	50	48	12	13	45	48	24
My affection for a person	13	52	42	15	12	41	28	12	14	45	38	15
Fondness	11	52	36	13	11	45	32	14	15	39	33	16
TOTAL AFFECTION-LOVE AREA	13	51	42	18	09	45	37	15	13	42	40	18
Myself	29	35	41	26	31	36	45	40	20	40	47	20
My father	18	42	41	21	23	38	39	23	12	38	36	23
My mother	08	37	36	10	18	41	39	23	07	33	42	12

MEAN SCALE SCORES FOR EACH CONCEPT

NOTES FOR USE OF TABLES

Mean scores of each group for each concept (multiplied by 10 to eliminate decimals).

Only 1 decimal point is given, as further decimal points would convey a spurious impression of accuracy not justified by the numbers of the samples.

The "area" scores are the mean of the 5 concepts in that "area".

Scoring is on a 7-point scale, marked 0 - 6, in the direction the scale is printed, e.g. in the scale:

tasty-distasteful 0 = very tasty, 6 = very distasteful)
clean-dirty 0 = very clean, 6 = very dirty)etc.

the midpoint score is 3.

(Note: most studies using the semantic differential are 1 - 7 notation. This should be borne in mind in any comparison of these scores with those from other studies.)

O = obsessives
P = psychopath
C = control
F = female
M = male
FM = female and male

‡ numbers: O FM n = 20
P FM n = 20
C FM n = 30

OF OM PF PM n = 10
CF CM n = 15

‡ except OF and O FM for "SEXUAL INTERCOURSE", where n = 9 and 19 respectively, as, for reasons beyond control of the author, 1 patient was not allowed to rate this concept.

Scores under column marked JENKINS are those of similar concepts for American students as found by J.J. Jenkins etal. (1958). The actual concept rated by the students is at the top of the column.

Table a.4. A - 27

MEAN SCALE SCORES

(See key on p A26)

MYSELF

	O		P		C		O	P	C	JENKINS "ME"
	F	M	F	M	F	M	FM	FM	FM	
tasty-distasteful	38	43	35	36	27	29	41	26	28	
clean-dirty	24	24	28	17	11	13	24	23	12	
good-bad	33	27	39	39	15	17	30	39	16	15
pleasant-unpleasant	33	28	34	27	19	23	31	31	21	
kind-cruel	18	24	31	28	15	17	21	30	16	11
weak-strong	19	25	23	27	43	43	22	25	43	36
mild-intense	31	44	49	45	35	37	38	47	36	
passive-active	33	36	41	45	41	53	35	43	47	41
calm-excitable	40	45	45	45	37	40	43	45	38	29
harmless-harmful	23	21	35	37	20	20	22	36	20	
safe-dangerous	22	30	36	42	16	21	26	39	18	

MY FATHER — JENKIN'S "FATHER"

tasty-distasteful	16	18	31	29	14	24	17	31	19	
clean-dirty	16	15	26	20	09	15	16	26	12	
good-bad	05	14	25	17	07	05	10	25	06	13
pleasant-unpleasant	11	22	29	27	05	09	17	29	07	
kind-cruel	06	19	25	21	07	08	13	25	07	17
weak-strong	37	43	38	41	53	45	40	38	49	44
mild-intense	28	40	34	35	29	31	34	34	30	
passive-active	34	44	40	46	35	47	39	40	41	44
calm-excitable	13	36	31	30	24	26	25	31	25	29
harmless-harmful	10	22	29	22	13	26	16	29	20	
safe-dangerous	08	20	29	24	13	19	14	29	16	

MY MOTHER — JENKIN'S "MOTHER"

tasty-distasteful	15	12	27	30	12	24	14	29	18	
clean-dirty	07	09	25	12	02	05	08	19	03	07
good-bad	09	07	27	12	03	02	08	18	03	
pleasant-unpleasant	12	06	27	17	05	03	09	22	04	
kind-cruel	09	07	23	21	02	01	08	22	02	05
weak-strong	46	38	32	42	44	40	42	37	42	
mild-intense	37	35	31	40	25	26	36	36	26	
passive-active	55	35	39	42	49	55	45	41	52	38
calm-excitable	31	37	34	38	26	29	34	36	27	26
harmless-harmful	22	16	32	26	08	15	19	29	11	
safe-dangerous	10	03	28	19	07	09	12	24	08	

Table a.5.

MEAN SCALE SCORES
(see key on p A26)

	O F	O M	P F	P M	C F	C M	O FM	P FM	C FM
AREA ANGER-HOSTILITY									
tasty-distasteful	46	51	45	52	46	44	49	48	46
clean-dirty	34	30	34	38	29	34	32	36	31
good-bad	48	44	43	51	44	45	46	47	44
pleasant-unpleasant	50	47	45	52	47	48	49	49	47
kind-cruel	43	39	43	46	41	42	41	44	41
weak-strong	33	41	43	39	31	35	37	41	34
mild-intense	38	45	44	46	36	38	42	45	37
passive-active	37	41	44	43	39	37	39	44	38
calm-excitable	39	40	42	44	36	36	40	43	36
harmless-harmful	39	32	43	46	34	43	36	45	38
safe-dangerous	38	30	41	45	33	37	34	43	35
AREA FEAR-ANXIETY									
tasty-distasteful	50	52	44	52	47	45	51	49	45
clean-dirty	33	32	28	32	30	29	33	30	30
good-bad	51	47	43	52	46	40	50	47	43
pleasant-unpleasant	57	53	50	54	52	47	55	53	51
kind-cruel	45	44	41	46	50	49	45	44	50
weak-strong	42	34	43	31	38	32	38	37	35
mild-intense	52	50	50	49	44	41	51	50	42
passive-active	45	43	43	43	42	38	44	43	40
calm-excitable	50	47	43	48	42	42	49	45	42
harmless-harmful	50	48	45	53	43	41	48	49	42
safe-dangerous	46	43	44	50	41	39	45	47	40
AREA LOVE-AFFECTION									
tasty-distasteful	20	11	23	13	16	20	16	19	18
clean-dirty	21	19	21	12	14	17	20	17	16
good-bad	10	10	20	09	08	07	10	14	08
pleasant-unpleasant	12	12	20	07	07	07	12	14	07
kind-cruel	14	11	20	07	11	14	13	14	12
weak-strong	44	50	46	48	50	46	47	47	48
mild-intense	41	53	46	42	39	40	47	44	40
passive-active	38	41	39	42	40	43	40	41	41
calm-excitable	33	42	33	32	33	37	38	33	35
harmless-harmful	18	18	27	14	16	18	18	20	17
safe-dangerous	19	17	29	15	16	18	18	22	17

Table a.6.

MEAN SCALE SCORES
(see key on p A26)

ANNOYANCE

	O		P		C		O	P	C	JENKINS ANGER
	F	M	F	M	F	M	FM	FM	FM	
tasty-distasteful	44	47	40	50	49	43	46	45	46	
clean-dirty	29	27	36	38	30	41	28	37	36	
good-bad	44	44	42	42	43	49	44	42	46	
pleasant-unpleasant	53	46	49	51	49	50	50	50	49	
kind-cruel	42	36	39	41	43	43	39	40	43	
weak-strong	34	40	31	30	21	24	37	31	23	
mild-intense	42	48	45	45	35	36	45	45	35	
passive-active	38	42	37	37	35	35	40	37	35	
calm-excitable	40	41	37	42	37	41	41	40	39	
harmless-harmful	39	34	39	40	41	44	37	40	43	
safe-dangerous	37	33	38	42	40	40	35	40	40	

MY FEELINGS WHEN I AM ANGRY

tasty-distasteful	47	50	48	58	42	45	49	53	43	
clean-dirty	35	31	32	42	26	31	33	37	28	
good-bad	44	42	46	54	39	43	43	50	41	46
pleasant-unpleasant	48	43	46	53	43	47	46	50x	45	
kind-cruel	38	41	48	54	37	43	40	51	40	52
weak-strong	38	51	54	49	42	57	45	52	49	35
mild-intense	44	49	48	48	42	49	47	48	46	
passive-active	42	44	53	44	45	45	43	49	45	55
calm-excitable	42	48	52	54	43	46	45	53	44	
harmless-harmful	35	36	48	53	24	41	36	51	32	
safe-dangerous	32	33	48	52	29	39	33	50	34	

SPITEFULNESS

tasty-distasteful	48	58	44	54	53	49	53	49	51
clean-dirty	37	36	35	47	30	38	37	41	34
good-bad	57	51	49	56	55	47	54	53	51
pleasant-unpleasant	52	52	47	51	55	51	52	49	53
kind-curel	52	47	48	50	53	52	50	49	52
weak-strong	18	26	36	29	20	18	22	33	19
mild-intense	35	41	35	43	38	37	38	39	38
passive-active	42	46	38	51	43	36	44	45	39
calm-excitable	42	44	36	40	33	35	43	38	34
harmless-harmful	51	42	45	50	46	51	47	48	49
safe-dangerous	51	34	46	51	35	47	43	49	41

Table a.7.

MEAN SCALE SCORES
(see key PA26)

	MY RESENTMENT OF PEOPLE								
	O		P		C		O	P	C
	F	M	F	M	F	M	FM	FM	FM
tasty-distasteful	43	48	48	45	41	43	46	47	42
clean-dirty	32	27	34	32	29	30	30	33	29
good-bad	42	39	40	49	38	43	41	45	40
pleasant-unpleasant	46	46	41	52	43	45	46	47	44
kind-cruel	39	37	39	43	34	34	38	41	34
weak-strong	41	48	40	42	31	35	45	41	33
mild-intense	34	47	42	50	31	34	41	46	33
passive-active	31	37	45	39	35	34	34	42	34
calm-excitable	35	37	39	42	31	25	36	41	28
harmless-harmful	33	26	45	40	28	35	30	43	31
safe-dangerous	32	28	40	39	28	31	30	40	29
	DISLIKE OF A PERSON								
tasty-distasteful	46	53	43	53	47	47	50	48	47
clean-dirty	35	28	31	30	30	29	32	31	29
good-bad	53	42	38	53	43	44	48	46	43
pleasant-unpleasant	52	49	42	55	43	47	51	49	45
kind-cruel	44	36	41	40	35	37	40	41	36
weak-strong	35	39	52	39	42	39	37	46	41
mild-intense	36	41	47	44	35	35	39	46	35
passive-active	33	37	45	44	39	35	35	45	37
calm-excitable	34	31	48	41	34	31	33	45	33
harmless-harmful	35	22	36	48	30	43	28	42	36
safe-dangerous	37	23	35	39	32	31	30	37	31

Table a.8.

MEAN SCALE SCORES
(Key on p A26)

	FEAR									JENKINS FEAR
	O		P		C		O	P	C	
	F	M	F	M	F	M	FM	FM	FM	
tasty-distasteful	50	51	44	55	49	50	51	50	49	
clean-dirty	40	30	29	33	33	32	35	31	33	
good-bad	49	45	37	48	51	37	47	43	44	44
pleasant-unpleasant	53	51	49	54	53	51	52	52	52	
kind-cruel	45	44	40	45	45	43	45	43	44	50
weak-strong	32	25	38	24	29	25	28	31	27	26
mild-intense	44	41	45	40	39	35	43	43	37	
passive-active	36	38	39	33	39	37	37	36	38	41
calm-excitable	43	46	39	49	41	39	45	44	40	53
harmless-harmful	49	47	44	52	50	46	48	48	48	
safe-dangerous	44	45	43	51	45	45	45	47	45	
	PANIC I HAVE HAD									
tasty-distasteful	54	51	47	51	50	47	53	48	48	
clean-dirty	38	32	31	30	31	30	35	31	30	
good-bad	57	50	44	54	48	43	54	49	45	
pleasant-unpleasant	59	52	51	53	52	47	56	52	50	
kind-cruel	46	44	46	51	37	37	45	48	37	
weak-strong	48	34	45	33	39	32	41	39	36	
mild-intense	58	55	53	55	47	45	57	54	46	
passive-active	39	42	47	45	42	41	41	46	41	
calm-excitable	53	54	45	48	45	47	54	47	46	
harmless-harmful	51	52	45	54	42	39	52	50	41	
safe-dangerous	50	45	47	52	37	43	48	50	40	
	ANXIETY									
tasty-distasteful	49	50	44	57	39	35	50	51	37	
clean-dirty	28	35	25	28	30	25	32	27	28	
good-bad	48	46	35	50	43	33	47	43	38	
pleasant-unpleasant	56	55	48	56	51	37	56	52	47	
kind-cruel	47	45	37	48	40	32	46	43	36	
weak-strong	44	43	51	31	43	39	44	41	41	
mild-intense	47	51	49	49	39	39	49	49	39	
passive-active	53	47	44	46	45	39	50	45	42	
calm-excitable	47	46	44	48	40	43	45	46	42	
harmless-harmful	49	49	43	56	46	35	49	50	40	
safe-dangerous	45	45	38	50	43	32	45	44	38	

Table a.9.

MEAN SCALE SCORES
(See key on p A26)

MY FEELINGS WHEN FRIGHTENED

	O		P		C		O	P	C	JENKINS "AFRAID"
	F	M	F	M	F	M	FM	FM	FM	
tasty-distasteful	47	52	42	53	46	43	50	48	44	
clean-dirty	29	29	28	36	27	29	29	32	28	
good-bad	46	45	46	54	41	41	46	50	41	45
pleasant-unpleasant	57	55	52	54	52	49	56	53	51	47
kind-cruel	40	41	42	43	37	36	41	43	37	
weak-strong	42	29	42	32	38	35	36	37	36	14
mild-intense	55	50	53	50	49	45	53	52	47	
passive-active	51	39	39	43	42	36	45	41	39	39
calm-excitable	53	48	43	46	45	43	51	45	44	53
harmless-harmful	48	43	40	50	28	35	46	45	32	
safe-dangerous	43	38	47	46	34	36	41	47	35	

WORRY

tasty-distasteful	50	55	44	51	49	49	53	48	49
clean-dirty	30	35	28	33	29	29	33	31	29
good-bad	56	51	51	52	47	47	54	52	47
pleasant-unpleasant	58	53	52	55	53	52	56	54	53
kind-cruel	48	47	40	43	39	37	48	42	38
weak-strong	46	40	41	33	42	31	43	37	36
mild-intense	56	54	51	52	45	41	55	52	43
passive-active	48	47	48	47	43	37	48	48	40
calm-excitable	52	42	42	48	37	35	47	45	36
harmless-harmful	55	49	52	51	49	49	52	52	48
safe-dangerous	47	43	44	49	45	41	45	47	43

Table a.10. MEAN SCALE SCORES
(See key p A26)

LOVE

	O		P		C		O	P	C
	F	M	F	M	F	M	FM	FM	FM
tasty-distasteful	19	11	16	04	13	14	15	10	13
clean-dirty	20	15	12	07	08	13	18	10	11
good-bad	08	07	11	05	04	03	08	08	04
pleasant-unpleasant	12	13	19	03	05	05	13	11	05
kind-cruel	14	12	22	01	09	13	13	12	11
weak-strong	49	51	56	58	53	47	50	57	50
mild-intense	43	51	46	52	39	45	47	49	42
passive-active	40	36	46	52	36	47	38	49	41
calm-excitable	35	46	36	43	35	46	41	40	41
harmless-harmful	23	20	26	15	15	21	22	21	18
safe-dangerous	18	20	32	16	23	22	19	24	23

LIKING OF SOMEBODY

tasty-distasteful	20	12	19	22	15	25	16	21	20
clean-dirty	16	18	25	16	15	21	17	21	18
good-bad	06	10	18	10	08	08	08	14	08
pleasant-unpleasant	15	15	15	06	02	06	15	11	04
kind-cruel	11	09	19	08	10	13	10	14	11
weak-strong	45	51	50	43	55	45	48	47	50
mild-intense	40	54	51	30	34	35	47	41	35
passive-active	35	38	37	37	43	40	37	37	41
calm-excitable	31	41	28	23	27	31	36	26	29
harmless-harmful	17	20	22	18	11	14	19	20	13
safe-dangerous	21	15	25	21	10	13	18	23	12

SEXUAL INTERCOURSE

										JENKINS "SEX"
tasty-distasteful	30	13	39	08	17	19	21	24	18	
clean-dirty	30	23	40	09	13	11	26	25	12	
good-bad	23	17	34	10	12	08	20	22	10	06
pleasant-unpleasant	22	04	36	05	15	08	13	21	12	
kind-cruel	26	19	33	11	20	20	23	22	20	18
weak-strong	33	46	38	50	45	43	40	44	44	41
mild-intense	42	54	45	49	37	46	48	47	41	
passive-active	36	47	40	47	38	47	42	44	43	51
calm-excitable	38	52	39	48	45	48	45	44	46	47
harmless-harmful	23	20	40	11	23	23	21	28	23	
safe-dangerous	26	26	35	13	26	25	26	24	26	

Table a.11.

MEAN SCALE SCORES
(See key on pA26)

MY AFFECTION FOR A PERSON

	O		P		C		O	P	C
	F	M	F	M	F	M	FM	FM	FM
tasty-distasteful	15	12	21	14	16	21	14	18	19
clean-dirty	21	20	18	17	11	19	21	18	15
good-bad	06	10	18	10	04	08	08	14	06
pleasant-unpleasant	08	15	16	10	03	05	12	13	04
kind-cruel	10	09	17	09	05	14	10	13	10
weak-strong	47	50	47	45	52	49	49	46	50
mild-intense	45	53	43	36	39	41	49	40	40
passive-active	36	40	39	33	43	41	38	36	42
calm-excitable	30	44	35	23	32	34	37	29	33
harmless-harmful	14	19	24	12	15	15	17	18	15
safe-dangerous	14	11	26	12	07	15	13	19	11

FONDNESS

tasty-distasteful	15	08	22	17	19	21	12	20	20
clean-dirty	20	19	24	18	21	21	20	21	21
good-bad	05	08	17	08	12	10	07	13	11
pleasant-unpleasant	05	12	14	09	09	11	09	12	10
kind-cruel	07	07	16	05	10	10	07	11	10
weak-strong	44	52	40	45	46	45	48	43	45
mild-intense	34	52	44	44	39	33	43	44	36
passive-active	42	43	35	41	38	41	43	38	39
calm-excitable	32	29	25	23	26	25	31	24	26
harmless-harmful	13	11	25	14	16	15	12	20	16
safe-dangerous	14	14	28	13	13	16	14	21	15

Statistical notes

1. Note on the use of analysis of variance and t-tests:

Recent workers (e.g. Eisdorfer & Altrocchi (1961), and Gordon et al. (1962)) have used parametric statistics in analysis of semantic differential data. Reasons are as follows (see Maxwell, 1958). Both the t-test and the F-ratio test for comparing a number of means are what have been christened 'robust tests'. That is, they are (i) remarkably insensitive to non-normality in the parent populations, and (ii) where the samples are of equal size, the tests are not sensitive to inequalities of variance among the populations sampled. The differences in sample sizes in the present series were not great.

2. FORMULAE:

Product moment correlation coefficient (r)

$$r = \frac{\Sigma xy}{\sqrt{\Sigma x^2 . \Sigma y^2}}$$ where

$$\Sigma x^2 = \Sigma X^2 - \frac{(\Sigma X)^2}{n}$$

$$\Sigma y^2 = \Sigma Y^2 - \frac{(\Sigma Y)^2}{n}$$

$$\Sigma xy = \Sigma XY - \frac{\Sigma X . \Sigma Y}{n}$$

analysis of variance

$$F = \frac{\beta/2}{\alpha - \beta/67}$$ where

α = total S.S. = $\Sigma X^2 - C.T.$

$$\beta = \frac{(\Sigma X)^2}{20} + \frac{(\Sigma Y)^2}{20} + \frac{(\Sigma Z)^2}{30} - C.T.$$

$$C.T. = \frac{(\text{total of all scores})^2}{70}$$

$$t = \frac{\bar{X} - \bar{Y}}{\sqrt{s^2(\frac{1}{n_1} + \frac{1}{n_2})}}$$ with d.f. = 67

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