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PERSONALITY CHANGES AMONG SEX OFFENDERS AT SAN QUENTIN

A Thesis

Presented to

the Faculty of the Department of Psychology

College of the Pacific

In Partial Fulfillment

of the Requirements for the Degree

Master of Arts

---

by

Leon Philip Wahler

June 1953

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CHAPTER I

THE PROBLEM AND DEFINITIONS OF TERMS USED

I. THE PROBLEM

The problem is, what personality changes occur in sex offenders at San Quentin Correctional Institution between the entrance Minnesota Multiphasic Personality Inventory and the pre-parole Minnesota Multiphasic Personality Inventory.

II. DEFINITIONS OF TERMS USED

Sex offender. This applies to any person who has been convicted by due process of law in the State of California of a sex crime.

San Quentin. The term refers to San Quentin Correctional Institution located in Marin County, California.

Personality. For the purpose of this study, personality shall be defined as those traits which are measured by the Minnesota Multiphasic Personality Inventory.

Personality change. For the purpose of this study, personality change shall be defined as the difference in the scores of the nine K-corrected (see Appendix D) personality scales.

Entrance MMPI. Within three weeks of admission to the Guidance Center of the Adult Authority located at San Quentin, each inmate is given a MMPI.

Pre-parole MMPI. This is given to all inmates on the Special Calendar. The list includes murderers and habitual criminals, as well as sex offenders. It is given prior to their parole interview.

Special Calendar. This is a report compiled by the Psychiatric Department, listing the names of those inmates who are to be re-tested before their parole review.

MMPI. This is the common abbreviation used to denote the Minnesota Multiphasic Personality Inventory which was developed by S. R. Hathaway and J. R. McKinley of the University of Minnesota.

III. DEVELOPMENT OF STUDY

The purpose of this thesis is to determine what personality changes, if any, take place among sex offenders at San Quentin Correctional Institution during the period of time between the entrance Minnesota Multiphasic Personality Inventory[1] and the pre-parole review MMPI approximately one year later. The Minnesota Multiphasic Personality Inventory is used by psychologists at San Quentin, and is considered one of the better personality inventories. San Quentin Correctional Institution was selected as the site for this study for several reasons: (1) It has both a Guidance Center of the Adult Authority and the correctional institution housed at a single location; and (2) It has a large number of inmates (nearly six thousand), of which approximately 10 per cent are sex offenders. This provided the possibility of quite a large sample to study. Unfortunately for the purposes of this study, not all were sex offenders who were in for the first term, or had been given the Minnesota Multiphasic

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1 Upon admission to the Guidance Center of the Adult Authority at San Quentin, each inmate is given a MMPI. This test is administered during the first three weeks at the Center.

Personality Inventory during the required one-year interval. With the aid of Dr. Samuel Lecount and Associate Warden Robert Ecklund, permission was obtained from the Office of the Adult Authority at Sacramento to conduct this study.

CHAPTER II

REVIEW OF THE LITERATURE

I. THE GUIDANCE CENTER

The Guidance Center at San Quentin Correctional Institution is the reception center of the Department of Corrections and is the first step in the rehabilitation of inmates. A staff of specialists, including a psychiatrist, psychologist, physician, dentist, sociologist, vocational counselors, and educators, prepare case summaries. This includes an appraisal of personality and practical advice for treatment. By the autumn of 1950, more than fifteen thousand of these case reports had been prepared.

Another function of the Guidance Center is the preparation of men for their treatment programs. After these services, the inmate may be transferred to other institutions, such as Chino, Folsom, or Lancaster. The Guidance Center's case studies are used as a basis for institutional treatment and are referred to continually from the time they are completed to the release of the inmates. It contains clear and complete recommendations for institutional assignment and custodial supervision.

Of the 12,512 men received from 1945 to 1949, nearly 10 per cent were convicted of sex crimes. Of these men, only 25.8 per cent had no record of prior commitment. The general intelligence does not vary significantly from what might be a normal group. Sex offenders other than rapists constitute the higher median age, which was 36.4 years. The median age for rapists was 26.9 years of age. Sex offenders have fewer previous prison commitments. The median sentence for sex crimes is approximately forty months.

The San Quentin Psychiatric Department provides psychological psychiatric services for inmates who have been committed to the San Quentin Correctional Institution. The staff includes a psychiatrist, two psychologists, two social workers, five medical technical assistants, and attendants who are inmates of the institution. This staff works together to give diagnosis and treatment (individual therapy and group therapy). The tests used for diagnosis and treatment are personality, intelligence, vocational, and aptitude. This service was begun by Dr. David G. Schmidt approximately fifteen years ago. With the formation of the Adult Authority in 1945, it was expanded to its present size. It is continually striving to expand the service and treatment for the inmates of the

institution.

II. THE SEX OFFENDER

According to psychologists at San Quentin, the term "sex offender" applies to two groups of sex criminals--the normal and pathological criminal. The normal sex criminal is described as one who is apprehended for nonacceptable forms of normal sexual behavior. The pathological criminal has a sexual pattern that differs from normal sexual behavior. It is a drastic deviation in which the sexual impulse is misdirected and of such nature as to be harmful and detrimental to his own being and to others. This results from an abnormal sexual drive and abnormal satisfaction of the sex drive.

The sex offender has been under great public criticism in past years because of the nature of the offense. Sex offenders have often been associated with other crimes, and a number of sexual deviates have committed homicide and have kidnapped. It has been these acts, more than any others, that have brought about the severe public criticism and hatred of the sex offender.

Sexual psychopathy appears to be a form of psychopathic personality in which there is often found infantilism and a lack of control over the erotic drive.

It is considered that this includes those cases in which the sexual deviation is extreme or habitual.

Sex offenses are of a number of types, including rape, incest, sodomy, sex perversion, and others. This wide variety of offenses produces a complex situation for analysis and study. (For the purpose of this study, no distinction was made between the different sex offenses, as information to perform an adequate analysis was not available.)

Sex criminals occupy unique positions in prison life. They must be protected from the other inmates and the other inmates must be protected from them. This depends upon the direction of their sexual maladjustment--(aggressive or submissive.)[1]

Dr. Leo L. Stanley, former medical director at San Quentin, gives an account of sex offenders in his book Men At Their Worst. He states, "In every prison there are many sex perverts."[2] This presents a special problem, as the sex offenses are of many types, such as: rape, sex perversion, and lewd and lascivious conduct. They present

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[1] Dr. Leo L. Stanley, Men At Their Worst (New York: D. Appleton-Century Company, 1940), p. 200.

[2] Ibid., pp. 200-201.

problems because of their sexual maladjustment and the effect it has upon the rest of the prison population. They are, as a rule, despised and outcasts among prisoners. Those convicted of lewd and lascivious conduct are even more despised because of their offenses against children. The most hated of all sex offenders are those who have killed women or children.

Thus, it is often necessary to confine sex offenders to protect them from other inmates, as well as protect the inmates from them.

Dr. Stanley also brings out the idea that the "imprisoned man ultimately loses the need for women. If he does not see them, he forgets them."[3]

These prisoners now receive treatment and psychiatric and psychological service at San Quentin under the new system in the Guidance Center.

The MMPI and the sex offender. The MMPI is a personality inventory that contains five hundred fifty statements which cover a wide range of subject matter, both emotional and factual. These items were classified under twenty-six headings. The personality characteristics

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[3] Stanley, op. cit., p. 199.

measured by MMPI are Hs (Hypochondriasis scale), D (Depression scale), Hy (Hysteria scale), Pd (Psychopathic deviate scale), Mf (Interest scale), Pa (Paranoia scale), Sc (Schizophrenia scale), Ma (Hypomania scale), and Pt (Psychastahenia scale). There are also other scales being developed, such as the Delinquency scale by Dr. Harrison Gough. Dr. Gough comments on the development of the Inventory as follows:

> The general methodology in the development of the MMPI has been to validate empirically each scale by studying the responses of psychiatrically diagnosed groups to the separate items, and then selecting only those which show consistent differences in comparison with the responses of control samples. The clinical samples, comprising some 800 subjects, were largely drawn from patients seen at the University of Minnesota Hospitals, and were carefully selected for clarity and certainty of psychiatric diagnosis by the staff. The control sample consisted of some 700 visitors to the University Hospitals apparently giving a fairly adequate cross-section of the Minnesota population. The interpretive norms for each scale are based on this sample.[4]

The MMPI also has a well-designed method of scoring, and the profile sheets provide a method of visual interpretation of great value. The profile sheets put into one graphic form the scores of the scales of the MMPI. The T scores can be derived from raw scores by using a

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4 Harrison G. Gough, "The Minnesota Multiphasic Personality Inventory," (Mimeographed, University of California, Berkeley), pp. 2-3.

table located on the edge of the Profile sheet. These facts, along with the wide use given the MMPI, lead the investigator to believe it is a suitable test for this study.

Dr. Franklyn D. Fry obtained the following scores in a study which included inmates at Pennsylvania State Penitentiary.[5] The inmates' mean scores were as follows:

Hs--55.7	Pd--72.1	Sc--61.6
D--58.5	Pa--58.6	Ma--64.8
Hy--58.2	Pt--56.9	Mf--56.5

Average age--32.6
Average schooling years-- 8.6

There was no available data on a re-test.

Arthur Burton studied the Mf (Interest scale) scores of MMPI on a group of twenty rapists, thirty-four sexual delinquents, and eighty-four other delinquents, to determine if the scale could discriminate between groups whose sexual orientation differed from hetero- to homosexuality. From his results he concluded that the reliability of scores is too low for individual use.[6]

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5 Franklyn D. Fry, "A Narrative Study of the Reaction Manifested by College Students and by State Prison Inmates in Response to the Minnesota Multiphasic Personality Inventory, the Roswick Picture Frustration Study, and the Thematic Apperception Test," Journal of Psychology, 34:27-30, July, 1952.

6 Arthur Burton, "The Use of the Mf Scale of MMPI as an aid in the Diagnosis of Sexual Inversion," Journal of Psychology, 24:161-164, December, 1947.

CHAPTER III

METHOD AND PROCEDURE

<u>Method</u>. The method used to determine the personality of the inmates was the Minnesota Multiphasic Personality Inventory profile as determined by the K-corrected raw scores. The raw mean scores of the first test, and the mean raw scores of the re-test were compared statistically by the use of T to determine the significance of the mean difference of the first test score and the re-test score for each of the nine categories.

The raw scores were graphed on a profile sheet in various colors to distinguish the difference in the group scores. The differences of the scores were analyzed to determine if the personality of the group as a whole showed any significant changes.

<u>Procedure</u>. The subjects (321 inmates) for this experiment were selected with several necessary restrictions in mind: (1) they must have been committed for a sex offense, <u>i.e.</u>, rape, lewd and lascivious conduct, sex perversion, incest, sodomy, or others; (2) they must be first offenders confined at San Quentin Correctional Institution; (3) they must have had to appear on a Special Calendar which notates their having taken the Minnesota

Multiphasic Personality Inventory before the parole review; (4) they must have taken the MMPI upon entrance to the San Quentin Guidance Center; and (5) the MMPI that they had taken were valid tests that had been corrected for the K factor.

The raw scores on each of the nine scales were evaluated by a test--re-test comparison. The mean raw scores for the nine scales were compared, and the mean differences derived. These mean raw scores were validated by the use of t and small sampling statistics. A t at the one per cent level of confidence was considered a significant validation of the value of the mean difference for each of the nine scales.

The mean raw scores were then plotted on the Standard Male Profile Sheet of the Minnesota Multiphasic Personality Inventory and the approximate T or Tc scores taken from that scale. The difference of the T or Tc scores was also computed and was assumed to be a valid or mean raw score. From this data the personality changes, as shown by the mean scores for the group, was determined.

CHAPTER IV

RESULTS AND DISCUSSION

The interpretation of the MMPI scales is based upon a norm of fifty, and in general a score of seventy or above is considered a nonconformity to the norm. The scores of this group lie above fifty on all of the nine scales and on both the first test and the re-test. The scores on the re-test tend to be lower than those of the first test. The profile of the re-test as a whole tends to fall towards the norm.

The scales which have a significant difference to the one per cent level of confidence are the Hs (Hypochondiastis scale), D (Depression scale), Hy (Hysteria scale), Pd (Psychopathic deviate scale), Mf (Interest scale), and Sc (Schizophrenia scale). Of these, only one score--the Pd (Psychopathic deviate)--deviated to the T score of seventy. This, as brought forth in the Manual, would indicate a maladjustment in that area. Based upon the declared meanings of the scores of the MMPI categories, the following analysis might be suggested.

The significantly lower score on the Hs (Hypochondriasis scale) would indicate that the group has less concern about bodily functions at the time of the re-test,

and shows a trend toward a more mature approach to adult problems with a more adequate insight. The significantly lower score on the D (Depression) scale would indicate that the group is less depressed and tends to show a higher morale of emotional type of feeling, and has a more optimistic approach to the future. The significantly lower score on the Hy (Hysteria scale) indicates that there is less similarity between the group and patients who have conversion type hysteria symptoms than there was at the time of the first test. The significantly higher score on the Pd (Psychopathic deviate) scale seems to indicate that the group tends to have less deep emotional responses, would profit to a lesser degree from experience, and has a slightly lower regard for social mores. The significantly lower score on the Mf (Interest) scale, which measures the tendency toward masculinity or femininity of interest, would indicate that the interest patterns of the group are more like those of their own sex. The direction and significance of this trend may be important when dealing with sex offenders. The significant difference found on the Sc (Schizophrenia) scale, which measures similarity of the subjects' responses to those of patients who are characterized by bizarre and unusual thoughts and behavior, would indicate that their behavior

is more concerned with reality. There is a tendency towards schizophrenia and irrational shifts in moods and behavior.

From the data presented, it is concluded by the investigator that there are significant personality changes in the areas measured by the Hs (Hypochondriasis scale), D (Depression scale), Hy (Hysteria scale), Pd (Psychopathic deviate scale), Mf (Interest scale), and Sx (Schizophrenic scale) of the MMPI. These changes tend to indicate that personality changes among sex offenders occur during a one-year period at the San Quentin Correctional Institution. However, the indications that these changes do seem to take place is of importance only in determining the directions of further study.

It is suggested by the investigator that further study in this area of personality should be undertaken. Studies using prolonged intervals and large groups would be of value.

TABLE I

THE RESULTS OF THE COMPUTATIONS
K CORRECTED RAW SCORES

Sub-scales	Test I	Test II	Difference	*t* score	per cent level
Hs	14	12.78	1.22	5.35	.1
D	22	19.50	2.5	8.70	.1
Hy	21	19.9	1.90	10.3	.1
Pd	26.9	27.5	.6	2.88	.1
Mf	25.4	24.	1.40	5.4	.1
Pa	10.6	10.75	.15	.86	Below 20.
Pt	24.	24.2	.20	.85	Below 20.
Sc	27.2	25.2	2.0	6.99	.1
Ma	19.56	19.28	.28	.49	Below 20.

TABLE II

T SCORES
CORRECTED FOR K

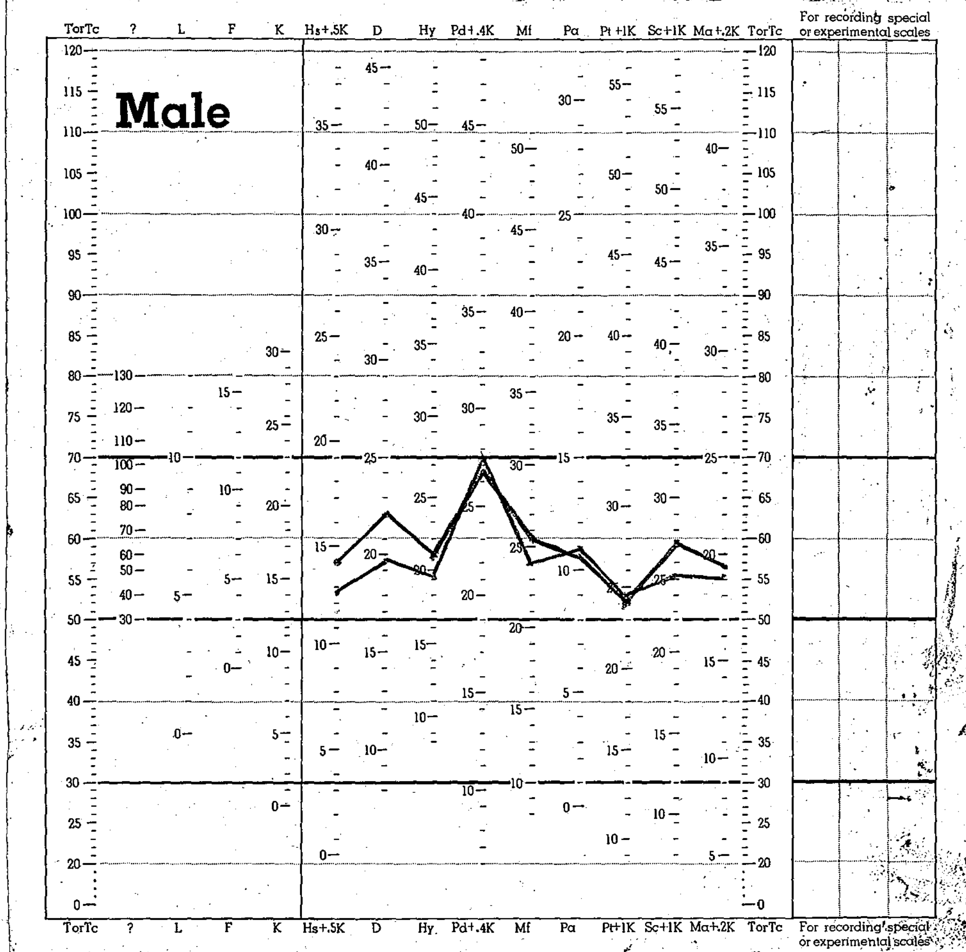
Sub-scales	Test I	Test II	Difference
Hs	57	53.5	3.5
D	63	57	5.0
Hy	58	57.5	0.5
Pd	68.5	70.	-1.5
Mf	60.25	57.	3.25
Pa	57.5	58.	-0.5
Pt	52.	52.5	-0.5
Sc	60.	55.5	4.5
Ma	56.5	55.5	1.0

Mean School Attainment . . . . 10th grade

Mean Age . . . . 36 years

TABLE III

PROFILE



(1) Red--Test I

(2) Blue--Re-test

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CHAPTER V

SUMMARY

A group of thirty-two sex offenders at San Quentin Correctional Institution, who were first offenders and had been tested upon their entrance to the Guidance Center, were selected for study to determine possible personality changes that might be expected to occur during a one-year period at San Quentin. The MMPI was used for the measurement of personality. By the difference between the first test and the re-test approximately one year later, the differences were computed for each of nine scales. These differences were validated by using statistical methods. The profile from the first test and the re-test were plotted on a single profile sheet for diagnostic comparison.

The scores on the Hs (Hypochondriasis), D (Depression), Hy (Hysteria), Pd (Psychopathic deviate), Mf (Interest), and Sc (Schizophrenia) scales were significant to the one per cent level of confidence. It was concluded from these differences that personality changes do take place among sex offenders during a one-year period in San Quentin Correctional Institution. (No hypothesis was put forth to account for these changes.)

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APPENDIX A

THE MINNESOTA MULTIPHASIC PERSONALITY INVENTORY

The Minnesota Multiphasic Personality Inventory is a psychometric instrument designed ultimately to provide, in a single test, scores on all the more important phases of personality. The point of view determining the importance of a trait in this case is that of the clinical or personnel worker who wishes to assay those traits that are commonly characteristic of disabling psychological abnormality. The instrument itself comprises 550 statements, each printed in simple language on a separate card, covering a wide range of subject matter--from the physical condition to the morale and social attitudes of the individual being tested.

The subject is asked to sort all the cards into three categories indicated by guide cards, True, False, and Cannot Say. The numbers of cards thus sorted are tabulated on a simplified record sheet that provides the basic record to be scored by any one of the various keys. The time required for administration varies widely but is rarely longer than 90 minutes and is commonly as short as 30 minutes. Very little instruction and no supervision are required.

As a matter of convenience in handling and in avoiding duplication the items were arbitrarily classified under 26 headings, though it was not necessarily assumed that an item was properly classified merely because it had been placed in a given category. The arrangement was as follows:

1. General health (9 items)
2. General neurologic (19 items)
3. Cranial nerves (11 items)
4. Motility and coordination (6 items)
5. Sensibility (5 items)
6. Vasomotor, trophic, speech, secretory (10 items)
7. Cardiorespiratory system (5 items)
8. Gastrointestinal system (11 items)
9. Genitourinary system (5 items)
10. Habits (19 items)
11. Family and marital (26 items)
12. Occupational (18 items)
13. Educational (12 items)

14. Sexual attitudes (16 items)
15. Religious attitudes (19 items)
16. Political attitudes--law and order (46 items)
17. Social attitudes (72 items)
18. Affect, depressive (32 items)
19. Affect, manic (24 items)
20. Obsessive and compulsive states (15 items)
21. Delusions, hallucinations, illusions, ideas of reference (31 items)
22. Phobias (29 items)
23. Sadistic masochistic trends (7 items)
24. Morale (33 items)
25. Items primarily related to masculinity--femininity (55 items)
26. Items to indicate whether the individual is trying to place himself in an improbably acceptable light (15 items)

The personality characteristics now in available form for scoring are hypochondriasis, depression, hysteria, psychopathic personality, masculinity-femininity, paranoia, psychasthenia, schizophrenia, and hypomania. Others are in the course of development. Although the scales are named according to the abnormal manifestation of the symptomatic complex, they have all been shown to have meaning within the normal range. In the presentation of the results the usual procedure is to translate the raw score of the measured trait into a standard score (the T score) and plot it on a profile chart. This procedure permits analysis of the relative strengths of the various phases, the pattern of which is often more important than the presence of any one phase to an abnormal degree.

The basic concept assumes that among the 550 items there are some items that, when grouped, form numerous potential scales; those now available are merely the groups most easily derived. As it has been developed, however, the whole procedure permits the introduction of each new scale as it is derived without additional equipment other than a new scoring key and standards. Furthermore, since all the older record blanks can be scored on a new key, the clinician can immediately compare the scores on new scales with his clinical experience simply by a sampling of old records.

It is possible to separate from the 550 items those that do not occur in any scale so far derived. This will leave a group of somewhat fewer items that can be administered as a test in a shorter time. However, the shortened test is not recommended at present for two reasons: First, new scales are still being developed, and these will use some of the discarded items; second, the whole set of items forms a good research source that may be focused on the special problems of any new group or on any new application of the Inventory.

The fact that older records may be scored on any new key that may be derived makes it possible to present with each key standardization data on the same groups of normals and abnormals that have been used for earlier keys. The general normative data are derived from a sample of about 700 individuals representing a cross section of the Minnesota population as obtained from visitors to the University Hospitals. The sampling is fairly adequate for the ages 16 to 55 and for both sexes. In addition to these data on normal individuals, data are available on 250 precollege and college students who as a group represent a reasonably good cross section of college entrance applicants. Data on several special groups, such as WPA workers and epileptic and tuberculous patients, are also available.

The scales are being developed by contrasting the normal groups with carefully studied clinical cases of which over 800 are now available from the neuropsychiatric division of the University Hospitals. The details of scale derivation are too variable and extensive for brief description, but several new methods have been employed. The chief criterion of excellence has been the valid prediction of clinical cases against the neuropsychiatric staff diagnosis, rather than statistical measures of reliability and validity. Nevertheless the reliability coefficients of scales so far developed in final form range between .71 and 183. These correlations were obtained by testing and re-testing a group of 40 normals at intervals of a week or less up to several years.

A detailed discussion of the interrelationship of the scales will be published when the present revisions are completed. The scale intercorrelations, which vary

widely, will be difficult to interpret until more data are available on the dynamic interrelationships of the different clinical syndromes.

A high score on a scale has been found to predict positively the corresponding final clinical diagnosis or estimate in more than 60 per cent of new psychiatric admissions. This percentage is derived from differentiation among clinic cases, which is considerably more difficult than differentiation of abnormal from normal groups. Even in cases in which a high score is not followed by a corresponding diagnosis, the pressure of the trait to an abnormal degree in the symtomatic picture will nearly always be noted.

The Inventory as a whole was designed partly to lessen the conflict between the psychiatrist's conception of the abnormal personality and that of psychologists and other professional workers who must deal with abnormality among more nearly normal persons. Many of the words in common usage, for example, apply to personality traits not easily carried over to the abnormal and not having clear-cut abnormal implications. The commonly used terms _introversion-extroversion_, _neuroticism_, and _inferiority_ are examples of concepts rarely having specific value in practical psychiatry. The Inventory was also devised in the hope that it might be nearly universal in both its interpretation and its applicability to individual cases. It is for this reason that we have provided checks upon the validity of the answers given by each subject, so that scores may be interpreted with a fair degree of confidence even if they are obtained from individuals with very poor school experience, low mentality, or incapacity due to psychological illness.

In the following section of this Manual two types of scales are described: Final scales that have been published, such as Hs, D, and Pt, have been well reviewed, and stable statistics are available for them. In contrast, the other scales, marked _preliminary_, are not yet in final form. Such preliminary scales are clinically useful but for the present should be interpreted cautiously. It is for this second group, as well as for completely new scales, that supplementary data and tables will be printed from time to time.

DESCRIPTION OF THE SCALES

THE QUESTION SCORE (?)

The Question score is a validating score consisting simply of the total number of items put in the Cannot Say category; the size of this score affects the significance of the other scores. Large Question scores invalidate all others. A 'borderline' Question score probably means that the subject's actual score, if he had not used the Cannot Say category at all, would deviate farther from the average than his observed score indicates. In its own right the Question score is an indicator of personality factors, but no specific clinical material on it has been analyzed. High score have often been observed to occur in psychasthenic and retarded depression patients.

THE LIE SCORE (L)

The L score is also a validating score that affords a measure of the degree to which the subject may be attempting to falsify his scores by always choosing the response that places him in the most acceptable light socially. A high L score does not entirely invalidate the other scores but indicates that the true values are probably higher than those actually obtained. In many cases the L score may be of interest in its own right as a measure of a special personality trend.

THE VALIDITY SCORE (F)

The F score is not a personality scale but serves as a check on the validity of the whole record. If the F score is high, the other scales are likely to be invalid either because the subject was careless or unable to comprehend the items, or because someone made extensive errors in entering the items on the record sheet. A low F score is a reliable indication that the subject's responses were really rational and relatively pertinent. For further interpretive points see the general section below.

THE HYPOCHONDRIASIS SCALE (Hs)

The Hs scale is a measure of amount of abnormal concern about bodily functions. It is an improved revision of the original hypochondriasis scale, H-Ch. Persons with high Hs scores are unduly worried over their health. They frequently complain of pains and disorders which are difficult to identify and for which no clear organic basis can be found. It is characteristic of the hypochondriac that he is immature in his approach to adult problems, tending to fail to respond with adequate insight.

Hypochondriacal complaints differ from hysterical complaints of bodily malfunction in that the hypochondriac is often more vague in describing his complaints and in that he does not show such clear evidence of having got out of an unacceptable situation by virtue of his symptoms as does the hysteric. The hypochondriac more frequently has a long history of exaggeration of physical complaints and of seeking sympathy.

With psychological treatment a high score may often be improved, but the basic personality is unlikely to change radically. Common organic sickness does not raise a person's score appreciably, for the scale detects a difference between the organically sick person and the hypochondriac.

THE DEPRESSION SCALE (D)

The D scale measures the depth of the clinically recognized symptom or symptom complex, depression. The depression may be the chief disability of the subject or it may accompany, or be a result of, other personality problems. A high D score indicates poor morale of the emotional type with a feeling of uselessness and inability to assume a normal optimism with regard to the future. In certain cases the depression may be well hidden from casual observation. This is the so-called 'smiling depression.' The depressive undercurrent is revealed in such cases by the subject's specific discourse and his outlook on the future.

Often such persons insist their attitude is the only realistic one, since death is inevitable and time passes. Though his may be true, the average person is--possibly erroneously--not so deeply concerned with the grim realities of life. A high score further suggests a characteristic personality background in that the person who reacts to stress with depression is characterized by lack of self-confidence, tendency to worry, narrowness of interests, and introversion. This scale, together with the Hs and Hy scales will identify the greater proportion of those persons not under medical care who are commonly called neurotic, as well as individuals so abnormal as to need psychiatric attention.

Some high-scoring persons will change rather rapidly in response to improved environment or to pep talks and psychotherapy, but such individuals will be likely to remain subject to other attacks. The greater number, on the other hand, will not respond readily to treatment, but their scores will slowly tend to approach the normal level with the mere passage of time.

THE HYSTERIA SCALE (Hy)

The Hy scale (preliminary) measures the degree to which the subject is like patients who have developed conversion-type hysteria symptoms. Such symptoms may be general systemic complaints or more specific complaints such as paralyses, contractures, (writer's cramp), gastric or intestinal complaints, or cardiac symptoms. Subjects with high Hy scores are also especially liable to episodic attacks of weakness, fainting, or even epileptiform convulsions. Definite symptoms may never appear in a person with a high score, but under stress he is likely to become overtly hysterical and solve the problems confronting him by the development of symptoms. We have found that this preliminary scale fails to identify a small number of very uncomplicated conversion hysterias which may be quite obvious clinically and with a single or very few conversion symptoms.

The hysterical cases are more immature psychologically than any other group. Although their symptoms can

often be 'miraculously' alleviated by some conversion of faith or by appropriate therapy, there is always the likelihood that the problem will reappear if the stress continues or recurs. As in the case of hypochondriasis, the subject with a high Hy score may have real physical pathology, either as a primary result of concurrent disease, such as diabetes or cancer, or as a secondary result of the longtime presence of the psychological symptoms. For instance, constant fears are a frequent background for the development of demonstrable ulcers of the stomach. This interrelationship is particularly important to the physician who undertakes therapy for the individual.

THE PSYCHOPATHIC DEVIATE SCALE (Pd)

The Pd scale measures the similarity of the subject to a group of persons whose main difficulty lies in their absence of deep emotional response, their inability to profit from experience, and their disregard of social mores. Although sometimes dangerous to themselves or others, these persons are commonly likable and intelligent. Except by the use of an objective instrument of this sort, their trend toward the abnormal is frequently not detected until they are in serious trouble. They may often go on behaving like perfectly normal people for several years between one outbreak and another. Their most frequent digressions from the social mores are lying, stealing, alcohol or drug addiction, and sexual immorality. They may have short periods of true psychopathic excitement or depression following the discovery of a series of their asocial or antisocial deeds. They differ from some criminal types in their inability to profit from experience and in that they seem to commit asocial acts with little thought of possible gain to themselves or of avoiding discovery.

No therapy is especially effective in improving persons with high Pd scores, but time and careful, intelligent guidance may lead to an adequate adaptation. Institutionalization of the more severe cases is probably no more than a means of protecting society and the defender. Some active professional persons have high Pd scores, but their breaks, if any, are either disregarded by others or effectively

concealed.

THE INTEREST SCALE (Mf)

This scale (preliminary) measures the tendency toward masculinity or femininity of interest pattern; separate T tables are provided for the two sexes. In either case a high score indicates a deviation of the basic interest pattern in the direction of the opposite sex. Theitems were originally selected by a comparison of the two sexes. Some were inspired by Terman and Miles, and others are original.

Every item finally chosen for this scale indicated a trend in the direction of femininity on the part of male sexual inverts. Males with very high Mf scores have frequently been found to be either overt or repressed sexual inverts. However, homosexual abnormality <u>must not be assumed</u> on the basis of a high score without confirmatory evidence. Among females high scores cannot yet be safely assumed to have similar clinical significance, and the interpretation must be limited to measurement of the general trait.

The Mf score is often important in vocational choice. Generally speaking, it is well to match a subject vocationally with work that is appropriate to his Mf level.

THE PARANOIA SCALE (Pa)

The preliminary Pa scale was derived by contrasting normal persons with a group of clinic patients who were characterized by suspiciousness, over-sensitivity, and delusions of persecution, with or without expansive egotism. The diagnoses were usually paranoia, paranois state, or paranoid schizophrenia. Here again, however, we have observed a few very paranoid persons who have successfully avoided betraying themselves in the items of this scale.

Persons with an excess amount of paranoid suspiciousness are common and in many situations are not especially handicapped. It is difficult and dangerous to institutionalize or otherwise protect society from

the borderline paranoiac because he appears so normal when he is on guard and he is so quick to become litigious or otherwise to take action vengefully against anyone who attempts to control him.

It should be needless to add that persons receiving very high scores on this scale must be handled with special appreciation of these implications. Although valid scores of 80 and above on this scale are nearly always significant of disabling abnormality, the range from 70 to 80 must also be checked by clinical judgment.

THE PSYCHASTHENIA SCALE (Pt)

The Pt scale measures the similarity of the subject to psychiatric patients who are troubled by phobias or compulsive behavior. The compulsive behavior may be either explicit, as expressed by excessive hand washing, vacillation, or other ineffectual activity, or implicit, as in the inability to escape useless thinking or obsessive ideas. The phobias include all types of unreasonable fear of things or situations as well as overreaction to more reasonable stimuli.

Many persons show phobias or compulsive behavior without being greatly incapacitated. Such minor phobias as fear of snakes or spiders and such compulsions as being forced to count objects seen in arrays or always to return and check a locked door are rarely disabling. Frequently a psychasthenic tendency may be manifested merely in a mild depression, excessive worry, lack of confidence, or inability to concentrate.

Pt is correlated to a negligible degree with the other scales, except for the preliminary Sc scale. There is an understandable tendency for depression to accompany abnormally high scores. The basic personality pattern of the psychasthenic individual is relatively difficult to change, but insight and relief from general stress may lead to good adjustment. As in the Pa scale the valid T scores above 80 are likely to represent disabling abnormality, but the range of 70 to 80 should be checked by clinical judgement since with a favorable environment or with other compensatory factors the subject may not be markedly handicapped.

THE SCHIZOPHRENIA SCALE (Sc)

The Sc (preliminary) scale measures the similarity of the subject's responses to those patients who are characterized by bizarre and unusual thoughts or behavior. There is a splitting of the subjective life of the schizophrenic person from reality so that the observer cannot follow rationally the shifts in mood or behavior.

The Sc scale distinguishes about 60 per cent of observed cases diagnosed as schizophrenia. It does not identify some paranoid types of schizophrenia, which, however, usually score high on Pa, and certain other cases which are characterized by relatively pure schizoid behavior. It is probable that one or two additional scales will be necessary to identify the latter cases, but this is not surprising in the light of the frequently expressed psychiatric opinion that schizophrenia is not a clinic entity but a group of rather heterogeneous conditions.

Most profiles with a high Sc score will show several other high points, and further clinical sorting will need to be carried out by subjective study of the case. Exceptional to other scale intercorrelations, the correlation of Sc with Pt for normal cases is .84. Both experience and the fact that this correlation drops to .75 on abnormal cases leads us to feel that, at least for the present, there is value in using both scales. Clinical experience shows that about twice as many cases diagnosed as schizophrenia obtain above borderline Sc scores as obtain such scores on Pt. An appreciable number of clinic cases not diagnosed as schizophrenia score high on the scale. These cases are nearly always characterized by complicated symptomatic patterns. The clinician should be very hesitant to apply the diagnostic term schizophrenia because of its bad implications.

THE HYPOMANIA SCALE (Ma)

The Ma scale measures the personality factor characteristic of persons with marked overproductivity in thought and action. The word hypomania refers to a lesser state of mania. Although the real manic patient is the lay person's prototype for the 'insane,'

the hypomanic person seems just slightly off normal. Some of the scale items are mere accentuations of normal responses. A principal difficulty in the development of the scale was the differentiation of clinically hypomanic patients from normal persons who are merely ambitious, vigorous, and full of plans.

The hypomanic patient has usually gotten into trouble because of undertaking too many things. He is active and enthusiastic. Contrary to common expectations he may also be somewhat depressed at times. His activities may interfere with other people through his attempts to reform social practice, his enthusiastic stirring up of projects in which he then may lose interest, or his disregard of social conventions. In the latter connection he may get into trouble with the law. A fair percentage of patients diagnosed psychopathic personality (see Pd) are better called hypomanic.

This scale clearly identifies about 60 per cent of diagnosed cases and yields a score in the 60-70 range for the remainder. For scores about 70 the problem of normality hinges more upon the direction of the overactivity rather than upon the absolute score. Even extreme cases tend to get better with time, but the condition tends to reappear periodically.[1]

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[1] Starke R. Hathaway, and J. Charnley McKinley, "The Minnesota Multiphasic Inventory," (New York: The Psychological Corporation, 1943), pp. 2-6.

SCORING THE INVENTORY

The scoring of the various scales in the Inventory is likewise very simple. It is best to obtain the validating scores first. The Question score is simply the total number of question marks. The L items are the last 15 items in the Inventory. To obtain the raw L score one merely counts the red X's among the items J41 to J55 inclusive.

For the F score, the transparent scoring template marked F is used. The 64 items are printed on the template in proper position with an X so arranged that when the template is placed over the record sheet and the anchor points aligned, the X's will fall beside the recorded items of the scale. To obtain the raw score, count one point for every item having <u>a red X on the record sheet beside an X on the key.</u> The question marks are never counted. The raw score is thus the sum of the number of agreements between the key and the record. It should be entered in the proper space on the righthand margin of the record sheet.

The raw scores for the remaining scales are obtained from the appropriate keys in the manner just described for the F score, except that some keys contain zeros in addition to X's. <u>When a blank cell on the record sheet corresponds to a zero on the key,</u> score point of one also for the agreement. All raw scores should then be transferred to the lower set of lines beneath the profile chart. Finally, the T scores, or standard score equivalents, should be determined from the T tables * * * and the T values likewise recorded on the profile chart.

The T scores for each scale are in reality (with the special exception of the Question score, L, and F) standard scores in which the mean of the normative group is assigned a value of 50 and the standard deviation adjusted to 10. On the profile chart the heavier lines at 30 and 70 represent values two standard deviations below and above the mean, respectively. When only one end of a scale has been identified as abnormal in a clinically recognized sense, the scale is always oriented so that the larger T scores--That is, those above 50--represent the abnormal direction.

Experience has indicated that 70 is a borderline score, although useful interpretation will always depend upon the clinician's experience with a given group.

GENERAL INTERPRETATION OF THE RESULTS

THE VALIDATING SCORES

The evaluation of a profile begins with the problem of whether or not the responses of the subject will yield a valid set of scores. At present three checks on this point are provided--?, F, and L. The raw Question score is the number of items classified as Cannot say. Both abnormal and normal persons frequently score as low as zero, though rarely higher than 60. The median value is approximately 30. It has not been possible to establish clearly the effect of large Question scores on the scale values, but their general tendency is to move high deviate scores toward the mean. Since the items most often questioned make up varying percentages of the total items on the scores for the different scales will of course vary from one to another.

To simplify interpretation, the T scores given in Table II for the Question score have been arbitrarily assigned on the basis of experience and percentile tables rather than on the usual statistical basis. Question scores above the borderline T score of 70 should be taken as a sign of invalidity, and some allowance should be made in the range of 60-70.

The F score is derived from a group of 64 items that have been very infrequently answered in the scored direction by normal persons. All the items are answered in the infrequent direction less than 10 per cent of the time by normals, and the percentage is but little higher for miscellaneous abnormal subjects. Very few of the items are intercorrelated to a significant extent; therefore these items as a group do not form a scale in the usual sense but merely indicate whether or not the subject has made many responses that are avoided by most persons. In fact, if the items are examined it will be seen that a high score could not indicate any known pattern of symptoms.

F scores will validly be somewhat high for certain persons. These are most often of two types: First, some persons who are highly individual and independent may honestly make infrequent responses to items making up the F score. For example, they may admit to disliking children and not believing their mother was a good woman. Second, a number of rather badly neurotic or psychotic subjects obtain high F scores validly. These persons are betrayed by their very high scores on other scales; a short talk with a subject will quickly reveal his multitude of unusual complaints if he belongs to this group. When in doubt, it is best to be very cautious in accepting a profile with a high F score.

The model raw score on F is 3, but since, as was true of the Question score, it is not possible to assign T scores in the usual manner, Table IV has been made up on the basis of experience. Scores above 70 indicate the whole record to be invalid, except in the special cases mentioned above. This invalidity may be a result of clerical errors in recording or of carelessness or poor comprehension on the part of the subject. A clerical error that occasionally occurs is the reversal of the <u>True</u> and <u>False</u> packs. Scores from 60 to 70 are increasingly open to suspicion. An average score of from 50 to 60 is a reliable sign that item comprehension and clerical work have been satisfactory and that the subject is similar to persons in general.

The L, or Lie, score is made up of 15 items modeled after those used by Harshorne, May, and Shuttleworth to detect the person who is lying in the sense of trying to place himself in a highly conventional and socially acceptable light. The items are all stated in a way that tends to make even the most socialized subject who answers honestly confess to deviations from what is usually considered socially desirable conduct. For example, the item 'Once in a while I put off until tomorrow what I ought to do today' is answered as false by less than 7 per cent of normal persons, although if they did <u>not</u> procrastinate they would possess a highly commendable quality.

Again no statistical T scores can be obtained with the L score because of the extremely skewed distribution of raw scores, but scores based on

experience and percentiles are given in Table III. A score above 70 does not invalidate a record but indicates a need for cautious interpretation. The fact that a high L score is likely to accompany a high Hy score does not invalidate the Hy finding because the hysterical subject frequently seems to believe himself to be more immune to psychological frailties than does the average person.

The foregoing tests of the validity of the record will not often be found to indicate complete invalidity. Apparently the rather simple wording of the items and the method of sorting the cards lead the subject to answer carefully. The number of invalid records is dependent upon the group being studied, but among routine cases it will rarely run higher than 5 per cent. Since a common indication of invalidity is a high Question score, if the administrator urges the subject to move items out of the Cannot say category, the frequency of invalid scores can be decreased.

THE PROFILES

The authors strongly recommend that an accredited neuropsychiatrist, psychologist, or other person trained in the field of abnormal mental conditions should act either as consultant or as the person with direct responsibility in interpretation. Many persons with deviate scores who are relatively normal at the time of testing would benefit from some psychological aid, and in all cases the evaluation of deviate scores against the individual's environment is not subject to direct measurement but should be done clinically.

Our clinical experience over several years has indicated some points regarding the interpretation of the profiles that may be of value, although they are not as yet backed by extensive findings. It must be remembered that at present the scales do not include measures of all qualities of personality that may become abnormal and that some of the scales are in preliminary form. The preliminary scales should be interpreted more cautiously than the final scales until our published data or revised keys have appeared. As newer scales are developed, covering phases of

personality not yet included, they will be made available and will fit the established patterns.

Most abnormal subjects score above 70 on one or more of the present scales. The majority of clearly abnormal persons score above 70 on two or more scales. Whether this fact indicates a true presence in these cases of several components or merely some more incidental correlation is not yet clear. Certainly the common tendency for D to correlate highly with other scales is likely to be a valid evidence of a depression with the other abnormality as a validly separate factor. It is not always certain, however, in which direction casual interrelationships may be operating. For example, a given person might be depressed because he is hyponchondriacal or his bodily concern may mount as a result of his depression. Clinical judgment must decide these relationships.

The varying significance of a high score for the different scales must always be emphasized. For example, Hs, D, and Hy are frequently high together. Such are nearly always incapacitated to an important extent if all these scores are above 70. On the other hand, as has been stressed in the discussions of the separate scales, some scales may be high without disabling symptoms. Clearly normal persons do not often score above 70, but if environmental pressure is small or if other personality factors are favorable, a person may score over 70 and yet escape need for special attention. Nearly 5 per cent of our population spends some time in a mental hospital. Others, fully as abnormal and possibly a larger percentage, never offer themselves for treatment.

When looking at the average profile it is best to note the two or three highest points rather than overemphasize slight differences between several high points. The diagnosis may not always agree with the most extreme of several deviate points. This is a corrolary to what has been said above. A person may be abnormal in several ways, but his clinical diagnosis is dependent upon that particular combination of abnormality and environment that has led to the psychiatric study. This point is analogous to similar practice in organic medicine. When a patient with chronic heart disease enters the hospital for repair of a rupture, he is

diagnosed and treated primarily as a surgical case, although it is essential for the clinician to identify and evaluate the heart condition which may be basically more serious.

Occasionally, when most of the profile chart shows T scores of 50 or below, with a single point reaching to above 60, it is safe to interpret this point as if it had reached above 70. This is especially true of Pd. Profiles below 50 at all points except Pd or Pd and Mf together are often indicative of abnormality, even though these two scores are only in the 60-70 range.

Profiles with high Pd and D scores should be regarded as belonging to the psychopathic personality group rather than to the depressive group. When an individual with a high Pd score is in trouble because of his behavior, his D score is usually high also. One should also remember the similarity, often observed clinically, between manic and certain psychopathic personality patients.

The Mf scale has a separate table for each sex. Both tables are so arranged that the high scores indicate trends toward the characteristic interests of the opposite sex. Clinical experience has indicated that true sexual inverts nearly always score high but that a few persons who seem to be sexually normal also score high. Some patients have been observed to have the obsessive idea that they are homosexual in make-up, although the clinical impression has been that they really belong with the psychneurotic group and merely exhibit the abnormal sexual sumptoms as a derivative of the more general psychoneurosis. Other persons who have had homosexual experiences do not score high on the Mf scale but do so on Pd. These individuals are apparently psychopaths in whom sexual offenses derive from the general lack of inhibition that is characteristic of other persons with high Pd scores. The above generalizations are much more definitely established at present for males than for females.[2]

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[2] <u>Ibid</u>., pp. 8-9.

APPENDIX B

THE K SCALE AND ITS USE

* * * K is the name given to a new scale which the authors have developed over a period of years on the basis of continued statistical analyses of new clinical groups and new normal groups of subjects who have taken the Minnesota Multiphasic Personality Inventory.

K is essentially a <u>correction factor</u> which has been found to be of value in sharpening the <u>discriminatory power</u> of the clinical variables now measured by the Minnesota Multiphasic Inventory.

K is not known to have much clinical significance in itself. Its use with the Minnesota Multiphasic Personality Inventory does not add another variable in the clinical profile. Its effect is only to accentuate the validity of five of the nine existing clinical scales and to make normals appear more normal.

K acts as a suppressor variable. If it is to be given any concrete, statistical meaning, it might be classed as a variable of 'attitude toward personality test items,' although the attitude probably is more generalized than that. . . .

A subject's score on the K factor is probably quite variable according to the influences operating upon him at the time of answering the inventory. His particular motivation with respect to his desire to make a good or bad record at the time will affect his K score. Persons who are motivated toward getting 'good' scores (defensiveness) will tend toward higher scores on K, and those desiring 'poor' scores (plus-getting) will obtain lower values. It should not be considered necessarily that these variations are made consciously. Often the attitude develops from motivational sources not recognized by the testee.

There is some relation between high K and high L scores on the one hand, and between low K and high F scores on the other. L and F, however, each contributes separate and valid variance; possibly they are more naive expressions of the K factor.

The correction of clinical scales by the use of K will increase the proportion of clinically diagnosed cases scoring above the 90th percentile of normals (on the appropriate scale) by 5 to 20 per cent over the proportion so 'caught' by the uncorrected scales. In some cases the K factor decreased intercorrelation of scales, in others it increased them.

In one experiment . . . the use of K slightly <u>decreased</u> validity. This was exceptional and possibly related to the fact that the subjects had an average age below 20 or that they were in a correctional institution.

General Instructions

Whether the individual (card set) or the group form (booklet) is used, the inventory is scored as usual, and the raw scores recorded in their proper places on the profile. In addition the scoring key for the K scale is also used, and the K raw score is recorded in the space provided. (Users of the test who have a stock of old-style profiles should write in K scores as conveniently as possible. A sample of the new profile is provided with this manual.)

Five scales, it has been shown, have increased validity when corrected with K. It has also been shown that differing amounts of K are optimum for increasing the validity. These K fractions are given in Table I. (Hy and D have items already incorporated that perform the suppressor function.)

TABLE I

Hs + .5 K
Pd + .4 K
Pt + 1.0 K
Sc + 1.0 K
Ma + .2 K

It is necessary, therefore, that these proportions of K be added to the raw scores for these five scales, thus yielding a <u>corrected</u> raw score for each of these variables. Similarly, new standard scores have had to be constructed for these five variables. The revised T tables are given in this manual.

TABLE II

FOR DETERMINING FRACTIONAL AMOUNTS OF K
AND THE T SCORE VALUES OF K ITSELF

T score of K	Raw K	Fractions of Raw K .5 K	.4 K	.2 K
83	30	15	12	6
81	29	15	12	6
79	28	14	11	6
77	27	14	11	5
75	26	13	10	5
74	25	13	10	5
72	24	12	10	5
70	23	12	9	5
68	22	11	9	4
66	21	11	8	4
64	20	10	8	4
62	19	10	8	4
61	18	9	7	4
59	17	9	7	3
57	16	8	6	3
55	15	8	6	3
53	14	7	6	3
51	13	7	5	3
49	12	6	5	2
48	11	6	4	2
46	10	5	4	2
44	9	5	4	2
42	8	4	3	2
40	7	4	3	1
38	6	3	2	1
36	5	3	2	1
35	4	2	2	1
33	3	2	2	1
31	2	1	1	0
29	1	1	1	0
27	0	0	0	0

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APPENDIX C

Hs

TEST I		TEST II	
X	X^2	X	X^2
19	361	12	144
17	289	10	100
16	256	9	81
18	324	13	169
18	324	19	361
10	100	17	289
6	36	11	121
22	484	10	100
8	64	12	144
9	81	10	100
12	144	12	144
9	81	9	81
10	100	18	324
14	196	16	256
18	324	15	225
12	144	15	225
7	49	14	196
9	81	9	81
26	676	25	625
12	144	10	100
12	144	13	169
15	225	20	400
14	196	8	64
10	100	10	100
9	81	9	81
27	729	11	121
20	400	12	144
8	64	11	121
15	225	13	169
25	625	18	324
9	81	10	100
12	144	8	64
448	7271	409	5723

D

TEST I		TEST II	
X	X^2	X	X^2
20	400	15	225
31	961	24	576
24	576	20	400
28	784	22	484
24	576	19	361
19	361	26	676
14	196	13	169
18	324	13	169
13	169	17	289
14	196	11	121
22	484	22	484
13	196	10	100
21	441	19	361
25	625	21	441
34	1156	35	1225
17	289	19	361
15	225	18	256
18	324	20	400
29	841	28	784
15	225	16	256
25	625	20	400
28	784	31	961
17	289	12	144
21	441	19	361
27	729	15	225
44	1936	24	576
23	529	25	625
22	484	21	441
15	225	13	169
17	289	15	225
20	400	19	361
32	1024	23	529
705	17104	625	13155

Hy

TEST I		TEST II	
X	X^2	X	X^2
19	361	21	441
21	441	22	484
28	784	23	529
24	576	23	529
10	100	20	400
19	361	15	225
23	529	26	676
18	324	18	324
24	576	24	576
23	529	25	625
20	400	15	225
18	324	18	324
19	361	17	289
38	1444	21	441
26	676	22	484
21	441	16	256
26	676	19	361
17	289	22	484
25	625	24	576
21	441	21	441
23	529	23	529
14	196	19	361
27	729	23	529
16	256	23	529
14	196	16	256
27	729	23	529
16	256	23	529
14	196	16	256
17	289	6	36
13	169	17	289
17	289	19	361
18	324	16	256
17	289	19	361
25	625	18	324
31	961	26	676
672	15110	637	13197

Pd

TEST I		TEST II	
X	X^2	X	X^2
26	676	29	841
27	729	31	961
32	1024	31	961
31	961	30	900
20	400	27	729
30	900	31	961
24	576	30	900
25	625	29	841
22	484	23	529
39	1521	40	1600
31	961	28	784
23	529	23	529
37	1369	32	1024
35	1225	32	1024
27	729	27	729
28	784	25	625
26	676	24	576
29	841	26	676
21	441	21	441
28	784	28	784
24	576	20	400
29	841	31	961
32	961	27	749
19	361	27	729
23	529	26	676
26	676	31	961
26	676	28	784
22	484	24	576
24	576	21	441
24	576	24	576
26	676	31	961
24	576	23	529
860	23743	880	24738

Mf

TEST I		TEST II	
X	X^2	X	X^2
20	400	9	81
28	784	21	441
27	729	27	729
27	729	30	900
24	576	20	400
23	529	20	400
23	529	25	625
30	900	22	484
20	400	20	400
22	484	19	361
29	841	28	784
35	1225	34	1156
16	256	22	484
23	529	24	576
35	1225	35	1225
21	441	22	484
26	676	26	676
16	256	20	400
21	441	21	441
22	484	23	529
32	1024	28	784
35	1225	35	1225
34	1156	34	1156
25	625	20	400
23	529	20	400
34	1156	32	1024
20	400	19	361
21	441	21	441
22	484	26	676
34	1156	29	841
19	361	17	289
24	576	19	361
811	21567	768	19534

Pa

TEST I		TEST II	
X	X^2	X	X^2
18	324	19	361
14	196	7	49
8	64	7	49
15	225	17	289
13	169	18	324
7	49	17	289
8	64	9	81
9	81	11	121
5	25	11	121
6	36	6	36
19	361	13	169
15	225	13	169
9	81	10	100
7	49	13	169
11	121	5	25
12	144	13	169
13	169	9	81
11	121	11	121
8	64	10	100
9	81	4	16
7	49	9	81
17	289	20	400
7	49	4	16
8	64	11	121
16	256	6	36
9	81	13	169
11	121	12	144
5	25	7	49
12	144	9	81
15	225	14	196
7	49	10	100
10	100	6	36
341	4101	344	4268

Pt

TEST I		TEST II	
X	X^2	X	X^2
18	324	24	576
19	361	29	841
40	1600	33	1089
23	529	28	784
22	484	28	784
25	625	24	576
26	676	30	900
26	676	20	400
23	529	26	676
17	289	38	1444
7	49	19	361
8	64	21	441
29	841	20	400
46	2116	22	484
25	625	20	400
21	441	24	576
34	1156	24	576
27	749	21	441
28	784	30	900
22	484	20	400
27	729	36	1296
17	289	20	400
25	625	26	676
18	324	27	729
21	441	21	441
35	1225	23	529
30	900	20	400
18	324	24	576
25	625	23	529
15	225	14	196
20	400	23	529
32	1024	16	256
769	20513	774	19606

Sc

TEST I		TEST II	
X	X^2	X	X^2
22	484	21	441
38	1444	20	400
36	1296	21	441
33	1089	22	484
32	1024	31	961
22	484	23	529
21	441	28	784
28	784	36	1296
19	361	25	625
23	529	25	625
23	529	20	400
28	784	26	676
21	441	28	784
38	1444	26	676
40	1600	26	676
25	625	31	961
18	324	32	1024
21	441	20	400
27	729	28	784
27	729	21	441
19	361	27	729
39	1521	43	1849
24	576	23	529
25	625	24	576
28	784	21	441
48	2304	21	441
21	441	19	361
19	361	22	484
20	400	15	225
22	484	25	625
23	529	25	625
39	1521	34	1156
869	25489	809	21449

Ma

TEST I		TEST II	
X	X^2	X	X^2
18	324	23	529
18	324	20	400
22	484	22	484
22	484	20	400
21	441	18	324
19	361	21	441
24	576	22	484
19	361	19	361
18	324	17	289
24	576	24	576
23	529	22	484
19	361	18	324
25	625	21	441
17	289	18	324
14	196	14	196
21	441	24	576
15	225	16	256
23	529	15	225
18	324	13	169
20	400	18	324
21	441	17	289
23	529	26	676
15	225	16	256
24	576	26	676
15	225	9	81
24	576	27	729
18	324	16	256
20	400	21	441
20	400	19	361
4	16	14	196
21	441	19	324
626	12768	617	12421

AGE	SCHOOL
23	5
43	8
34	7
22	9
26	6
46	9
40	7
23	10
30	8
26	9
39	9
35	10
30	12
63	11
38	7
23	8
20	8
39	12
23	12
26	7
20	12
23	12
26	7
20	12
40	7
21	11
56	8
42	12
39	11
50	9
29	10
41	11
45	12
28	9
56	14
1185	331

Average Mean Age = 37

Mean grade = 10

APPENDIX D

Test	1. Age 23 Grade 9 I	II	2. Age 56 Grade 14 I	II	3. Age 23 Grade 8 I	II
Hs	9	10	12	8	10	18
D	22	21	15	13	21	19
Hy	17	19	18	16	19	21
Pd	26	31	24	23	26	29
Mf	19	17	24	19	16	22
Pa	7	10	10	6	9	10
Pt	20	23	32	16	18	24
Sc	19	22	20	15	21	28
Ma	4	14	21	18	18	23

Test	4. Age 20 Grade 8 I	II	5. Age 39 Grade 12 I	II	6. Age 23 Grade 12 I	II
Hs	14	16	18	15	12	15
D	25	21	34	35	17	19
Hy	21	22	28	23	24	23
Pd	27	31	32	31	31	30
Mf	23	24	35	35	21	22
Pa	7	13	11	5	12	13
Pt	19	29	40	33	23	28
Sc	38	26	40	26	25	31
Ma	18	20	22	22	22	20

Test	7. Age 26 Grade 7 I	II	8. Age 20 Grade 12 I	II	9. Age 40 Grade 7 I	II
Hs	7	14	9	9	26	25
D	15	18	18	20	29	28
Hy	10	20	19	15	23	26
Pd	20	27	30	31	24	30
Mf	26	26	16	20	21	21
Pa	13	9	11	11	8	10
Pt	22	28	25	24	26	30
Sc	18	32	21	20	27	28
Ma	21	18	19	21	24	22

10. Age 21, Grade 11

Test	I	II
Hs	12	10
D	15	16
Hy	18	18
Pd	25	29
Mf	22	23
Pa	9	4
Pt	26	20
Sc	27	21
Ma	19	19

11. Age 56, Grade 8

Test	I	II
Hs	12	13
D	25	20
Hy	24	24
Pd	22	23
Mf	32	28
Pa	7	9
Pt	23	26
Sc	19	27
Ma	18	17

12. Age 42, Grade 12

Test	I	II
Hs	15	20
D	28	31
Hy	23	25
Pd	39	40
Mf	35	35
Pa	17	20
Pt	30	38
Sc	39	43
Ma	24	24

13. Age 39, Grade 11

Test	I	II
Hs	14	8
D	17	12
Hy	20	15
Pd	31	28
Mf	34	34
Pa	7	4
Pt	23	19
Sc	24	23
Ma	23	22

14. Age 50, Grade 9

Test	I	II
Hs	10	10
D	21	19
Hy	18	18
Pd	23	23
Mf	25	20
Pa	8	11
Pt	29	21
Sc	25	24
Ma	19	18

15. Age 29, Grade 10

Test	I	II
Hs	9	9
D	27	15
Hy	19	17
Pd	37	32
Mf	23	20
Pa	16	6
Pt	29	20
Sc	28	21
Ma	25	21

16. Age 41, Grade 11

Test	I	II
Hs	27	11
D	44	24
Hy	38	21
Pd	35	32
Mf	34	32
Pa	19	13
Pt	46	22
Sc	48	21
Ma	17	18

17. Age 45, Grade 12

Test	I	II
Hs	20	12
D	23	25
Hy	26	22
Pd	27	27
Mf	20	19
Pa	11	12
Pt	25	20
Sc	21	19
Ma	14	14

18. Age 27, Grade 5

Test	I	II
Hs	19	12
D	20	15
Hy	21	16
Pd	28	25
Mf	20	9
Pa	18	19
Pt	21	24
Sc	22	21
Ma	21	24

19. Age 43
Grade 8

Test	I	II
Hs	17	10
D	31	24
Hy	26	19
Pd	26	24
Mf	28	21
Pa	14	7
Pt	34	24
Sc	38	20
Ma	15	16

20. Age 34
Grade 7

Test	I	II
Hs	16	9
D	24	20
Hy	17	22
Pd	29	26
Mf	27	28
Pa	8	7
Pt	27	21
Sc	36	21
Ma	23	15

21. Age 22
Grade 9

Test	I	II
Hs	18	13
D	28	22
Hy	25	24
Pd	21	21
Mf	27	30
Pa	15	17
Pt	28	30
Sc	21	22
Ma	18	13

22. Age 26
Grade 6

Test	I	II
Hs	18	19
D	24	19
Hy	21	21
Pd	28	28
Mf	24	20
Pa	13	18
Pt	22	20
Sc	22	23
Ma	20	18

23. Age 46
Grade 0

Test	I	II
Hs	10	17
D	19	26
Hy	23	23
Pd	24	20
Mf	23	20
Pa	7	17
Pt	27	36
Sc	32	31
Ma	21	17

24. Age 40
Grade 7

Test	I	II
Hs	6	11
D	14	13
Hy	14	19
Pd	29	31
Mf	23	25
Pa	8	9
Pt	17	20
Sc	21	28
Ma	21	23

25. Age 23
Grade 10

Test	I	II
Hs	22	10
D	18	13
Hy	27	23
Pd	32	27
Mf	30	22
Pa	9	11
Pt	25	26
Sc	28	36
Ma	23	26

26. Age 30
Grade 8

Test	I	II
Hs	8	12
D	13	17
Hy	16	23
Pd	19	27
Mf	20	20
Pa	5	11
Pt	18	27
Sc	19	25
Ma	15	16

27. Age 26
Grade 9

Test	I	II
Hs	9	10
D	14	11
Hy	14	16
Pd	23	26
Mf	22	19
Pa	6	6
Pt	21	21
Sc	23	25
Ma	24	26

28. Age 39 Grade 9

Test	I	II
Hs	12	12
D	22	22
Hy	17	6
Pd	26	31
Mf	29	28
Pa	19	13
Pt	35	23
Sc	23	20
Ma	15	9

29. Age 35 Grade 10

Test	I	II
Hs	9	9
D	13	10
Hy	13	17
Pd	26	28
Mf	35	34
Pa	15	13
Pt	30	20
Sc	28	26
Ma	24	27

30. Age 30 Grade 12

Test	I	II
Hs	8	11
D	17	15
Hy	17	19
Pd	22	24
Mf	21	21
Pa	5	7
Pt	18	24
Sc	22	25
Ma	18	16

31. Age 63 Grade 11

Test	I	II
Hs	15	13
D	20	19
Hy	25	18
Pd	24	21
Mf	22	26
Pa	12	9
Pt	25	23
Sc	23	25
Ma	20	21

32. Age 38 Grade 7

Test	I	II
Hs	25	18
D	32	23
Hy	31	26
Pd	24	24
Mf	34	29
Pa	15	14
Pt	36	26
Sc	39	34
Ma	20	19

	Mean Scores		Mean Difference
Test	I	II	
Hs	14.00	12.78	1.22
D	22.00	19.50	2.50
Hy	21.00	19.9	1.9
Pd	26.90	27.5	.6
Mf	25.40	24.	1.4
Pa	10.6	10.75	.15
Pt	24.00	24.2	.2
Sc	27.2	25.2	2.0
Ma	19.56	19.28	.28

$$N = \frac{EX}{N}$$

$$* = 1\sqrt{\frac{EX^2}{N} - M^2}$$

$$*M = \frac{*}{N-1}$$

$$*MS = 1\sqrt{*M_1^2 + *M_2^2}$$

$$T = \frac{M^1 - M^2}{*MS}$$

$$* = 0$$

I. Hs

	Test I	Test II
N =	32	32
M =	14	12.78
* =	5.64	4.12
*M =	.182	.134

% level - .01
T - 5.35
*MS - .228
$M^1 - M^2$ - 1.22

II. D

	Test I	Test II
N =	32	32
M =	22	19.5
* =	7.09	5.6
*M =	.228	.179

% level - .01
T - 8.70
*MS - .289
$M^1 - M^2$ - 2.5

III. <u>Hy</u>

	Test I	Test II
N =	32	32
M =	21	19.9
* =	5.75	4.13
*M=	.180	.130

% level - .01
T - 10.3
*MS - .184
$M^1 - M^2$ = 1.9

IV. <u>Pd</u>

	Test I	Test II
N =	32	32
M =	26.9	27.5
* =	4.48	4.59
*M=	.145	.148

% level - .01
T - 2.88
*MX - .208
$M^1 - M^2$ = .6

V. <u>Mf</u>

	Test I	Test II
N =	32	32
M =	25.4	24
* =	5.93	5.85
*M=	.185	.183

% level - .01
T - 5.4
*MS - .26
$M^1 - M^2$ = 1.4

VI. <u>Pa</u>

	Test I	Test II
N =	32	32
M =	10.60	10.75
* =	4.	3.88
*M=	.125	.121

% level - Below 20%
T - .86
*MS - .175
$M^1 - M^2$ = .15

VII. <u>Pt</u>

	Test I	Test II
N =	32	32
M =	24	24.2
* =	8.	5.30
*M=	.258	.171

VIII. <u>Sc</u>

	Test I	Test II
N =	32	32
M =	27.2	25.2
* =	6.86	6.10
*M=	.222	.19

VII. (continued)

% level - Below 20%
T - .845
*MS - .308
$M^1 - M^2$ = .2

VIII. (continued)

% level - .01
T - 6.99
*MS - .286
$M^1 - M^2$ = 2.0

IX. Ma

	Test I	Test II
N =	32	32
M =	19.56	19.28
* =	4	4
*M=	.125	.125

% level - Below 20%
T - .49
*MS - .57
$M^1 - M^2$ = .28

NUMBER KEY TO TESTED SEX OFFENDERS

1.	17845
2.	16121
3.	15940
4.	15610
5.	16966
6.	14356
7.	17063
8.	16824
9.	14009
10.	18951
11.	16461
12.	14574
13.	16499
14.	16551
15.	17551
16.	16496
17.	16664
18.	16049
19.	16096
20.	18066
21.	16504
22.	18013
23.	19140
24.	16585
25.	17851
26.	16210
27.	16245
28.	17840
29.	14573
30.	14238
31.	14240
32.	16814

DATA REFERENCE

The raw scores of the individual subjects used in this study are on file at San Quentin Correctional Institution, Marin County, California. Anyone desiring this information should contact Assistant Warden Robert Ecklund at the San Quentin Guidance Center.