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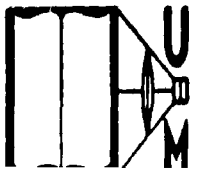

PERCEPTION OF HOMOSEXUAL WORDS IN PARANOID SCHIZOPHRENIA

By

Paul G. Daston

A Thesis

Submitted to the School of Graduate Studies of Michigan State College of Agriculture and Applied Science in partial fulfillment of the requirements for the degree of

DOCTOR OF PHILOSOPHY

Department of Psychology

1952

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AN ABSTRACT

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Approved James S. Karslake, Chmn.

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Paul G. Huston

The study was undertaken to investigate the relationship postulated in psychoanalytic theory between paranoid schizophrenia and homosexual impulses (2). The orientation for the study was derived from psychoanalytic theory and research in the area of selective perception. As a measure of selective perception, time required for correct recognition of various classes of tachistoscopically-presented words was used, previous research having indicated that stimuli pertaining to areas of individual concern are recognized more rapidly than "neutral" stimuli (1). Rapid recognition occurs presumably as a function of greater individual familiarity with stimuli relating to the areas of concern to him. It was held that motivational variables were involved in the determination of areas of individual concern, and that the interaction of motivational with perceptual variables would affect perceptually-mediated response. If homosexuality was an area of concern for paranoid individuals, words reflecting homo-

sexuality would be recognized more rapidly by paranoid individuals than by individuals less concerned by homosexuality.

Three groups of subjects were employed in the study: paranoid schizophrenics, unclassified schizophrenics, and normals. It was held that a relationship between paranoid schizophrenia and homosexuality would have been demonstrated if:

(a) paranoid schizophrenics correctly recognized words with a homosexual meaning more rapidly than did normals and unclassified schizophrenics;

(b) there were no significant differences in correct recognition times between unclassified schizophrenic and normal subjects to homosexual words;

(c) there were no significant differences in correct recognition times between paranoid schizophrenics and normals to heterosexual words or non-sexual words; and

(d) correct recognition times were independent of word length, familiarity, and affective connotation of the words used.

Words comprising the test list were chosen by a group of judges, who rated them on arousal, [illegible], and familiarity. Words of five- and six-letters were used, a pretest having indicated differential word length did not affect recognition times.

The following findings were noted, following statistical analysis of the data:

1. Affective value of the words had little effect upon time required for correct word recognition.
2. Paranoid subjects recognized homosexual words significantly faster than did the other two groups of subjects.
3. There were no statistically significant differences between unclassified schizophrenics and normals in recognition times to homosexual words.
4. Differences in recognition times to heterosexual words were not significant among the groups.
5. There were statistically significant differences between paranoid schizophrenics and normals in time required to recognize homosexual words.

These findings supported the psychoanalytic formulations, in that there was demonstrated a relationship between paranoid aspects of personality functioning and homosexuality. Whether homosexuality was the _major_ area of concern for paranoid individuals was not determined, but there were indications that homosexuality was [illegible] area of concern [illegible] paranoid individuals.

Principal conclusions were: (a) that homosexuality was of greater concern to paranoid schizophrenics than it was to either

unclassified schizophrenics or normals; and (b) the sensitivity of paranoid schizophrenic subjects to homosexual stimuli appeared to be more a function of the personality components involved than of schizophrenia.

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INTRODUCTION

The present study was undertaken to investigate the relationship postulated in psychoanalytic thoery between paranoid schizophrenia and homosexual impulses. The orientation for the study was derived from theory and research in the area of selective perception.

Perceptual Theory

Classically, the study of perception was concerned with perceptual variables in relative isolation, with little concern for their role in the adjustment of the individual. More recently, emphasis has been placed on the study of perception in interaction with other forms of psychological functioning. The effect of such personality variables as prevailing states, motives, and past learning of the individual upon perception-mediated response has become a fruitful area of research, one sometimes referred to as selective perception (9, 10, 11).

The fact that individuals appear to be selectively sensitive in their reactions to various types of environmental stimulation has been accounted for by the postulation of an interaction between perceptual variables and personality variables (9). Little has

been discovered regarding the nature of this interaction, but various experiments have tended to show that past experience and current motives influence perception, as measured by response to various stimuli (6, 8, 10, 14, 19, 20, 31, 41, 46, 48, 49, 54, 55, 58, see also 9, 60).

As one measure of selective perception, the time required for correct recognition of various tachistoscopically-presented stimuli has been used. Recognition times of individuals to "neutral" stimuli has served as a baseline with which to compare response times for other kinds of stimuli. It has been found that short recognition times characterized response to stimuli congruent with areas of concern to the individual respondent. Rapid recognition in these cases was conceivably a function of greater individual familiarity with stimuli pertaining to areas of interest to the individual or with which he was concerned. Conversely, stimuli relating to areas with which there was less individual concern, hence a lesser degree of familiarity, were found to be recognized more slowly. For example, subjects interested more in economics than in aesthetics were found to recognize tachistoscopically-presented stimuli relating to economics more rapidly than stimuli relating to aesthetics (31, 55). In other words, differing degrees of familiarity with particular areas appear to influence the time required for correct recognition of tachistoscopically-presented stimuli relating to those areas.

"Concern" implies motivation, i. e., that motivational variables are involved in the determination of areas of individual concern. According to Frenkel-Brunswik (23, 24) and Bruner (6, 7), perceptually-mediated response may be looked upon as an indicator of motivational factors; and personality-oriented research can be profitably carried out in the perceptual area.

In the field of clinical psychology, the theory of personality which is most commonly invoked to explain behavior is the psychoanalytic. This theory is deterministic and employs motivational constructs as explanatory. The problem chosen in the present study was a test of the psychoanalytic explanation of the paranoid disorders.

The Paranoid Disorders*

Description. The paranoid individual is generally described as being suspicious, evasive, and extremely sensitive to felt threat (4, 12, 33, 39). He characteristically reacts directly against the perceived source of threat, sometimes becoming destructive of life and property in the process (12, 39, 53).

In the clinical sense of the term, he is rigid, almost unshakeable in his beliefs and attitudes. The paranoid individual is generally a highly moral person who has incorporated the mores of society so completely that he cannot tolerate anti-social behavior of others. Anti-social behavior stemming from his own impulses is denied, the motives being imputed to someone else. This latter mechanism, known as projection, although not exclusive to the paranoid (43), must be evident in the clinical symptom picture for a diagnosis of paranoid disorder to be made.

The American Psychiatric Association (57) and Veterans Administration (63) use a modified version of the Kraepelinian descriptive classificatory scheme (39, 40). Three psychotic groups are recognized wherein the paranoid component is a major

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*As only male paranoid subjects were used in the present study, references are only to males.

factor: paranoia, paranoid condition, and paranoid schizophrenia. The degree of functional intactness in an individual manifesting paranoid symptomatology determines the differential diagnosis among the three.

Psychoanalytic Explanatory Theory. Throughout a century and a half of investigation, explanations of the paranoid disorders have been demonological (32), moralistic (32, 39), physiological (39, 53), biological (51), sociological (5, 12) and psychological (25, 27). None of the explanations has achieved as general prominence and acceptance as the psychological (i.e., psychoanalytic), posited by Freud (25, 26, 27).

Following his study of the Schreber case (27), he postulated that the major factor in all the paranoid disorders was a conflict over consciously unacceptable homosexuality. The paranoid individual, unconsciously desiring to be the passive recipient of sexual advances from other males, utilized the mechanisms of denial and projection to cope with these impulses, other defenses having failed. His unacceptable motives he imputed to others, especially to those males toward whom he had felt some sexual attraction (27, pp. 431-432). The various delusional systems of paranoid psychotics could all be represented as contradictions of the single proposition: I (a man) love him (a man). Through the mechanism of projection, the paranoid could distort this subject-

ively intolerable proposition so that it not only was contradicted but also represented a rationalization justifying hostility against the object of unconscious homosexual attraction (25, 27, 33).

Other psychoanalysts, while in general agreement, emphasized the nature of the passive aspect of the homosexual impulses. Fenichel (21) felt the paranoid was an anal-incorporative individual. Alexander and Menninger (3) explained the hostility and aggression manifested by the paranoid as being secondary defense reactions against the denied and rejected passive homosexual desires.

Paranoid Mechanisms and Schizophrenia. Schizophrenic and paranoid phenomena could be combined in any proportion, according to Freud (27). It was the paranoid component which was related to the homosexual impulses. For schizophrenia uncolored by paranoid mechanisms, he felt it extremely unlikely that homosexuality played an equally important etiological role (27, p. 464). As he saw it, there was less personality disintegration in paranoid schizophrenia than in non-paranoid schizophrenia, a position essentially supported by Alexander (2).

Experimental Evidence. The psychoanalytic postulation of a relationship between paranoid mechanisms and homosexuality has been

examined several ways: psychoanalytic case studies of paranoid individuals, observational studies, clinical testing, and perceptual experimentation.

In the few cases of psychoanalysis reported, evidence was favorable to the psychoanalytic postulation (1, 18). In addition, Maeder was credited by Freud (27, p. 445, foot-note) as having independently reached similar conclusions following psychotherapy with a paranoid patient. Ferenczi (22) found corroborative evidence, concluding that paranoia was perhaps nothing but disguised homosexuality (p. 157).

Observational studies were generally indicative of some relationship between paranoid mechanisms and homosexual impulses, but findings were more suggestive than decisive (3, 28, 52, see also 4, 59).

Using clinical tests, including the Blackie and Rorschach projective techniques, Aronson (4) found both paranoid and non-paranoid psychotic subjects gave a preponderance of homosexually-indicative responses to the Rorschach test, as compared with a normal control group. He concluded that the greater number of homosexually-indicative findings resulted from a loosening of ego controls rather than as a function of paranoid mechanisms.

Eriksen (19), correlating response times to a word-association test with recognition times of tachistoscopically-presented pictures, found no evidence for homosexual motives with paranoid (or other) subjects.

Orientation for the Study

According to psychoanalytic theory, homosexuality is a major area of concern for paranoid individuals, with consciously denied homosexual motives acting as determinants of behavior. Work in the area of selective perception has indicated that there is an interaction between motivational and perceptual variables, the effect of this interaction having sometimes been manifested by time required for correct recognition of various classes of tachistoscopically-presented stimuli. In perceptual experimentation, stimuli relating to areas of individual concern have been correctly recognized more rapidly than stimuli relating to areas of lesser concern.

Regardless of their willingness or ability to overtly verbalize their concern with the area of homosexuality, psychoanalytic theory holds this is an area of concern for paranoid individuals. As a function of their greater awareness of and familiarity with homosexually connotative stimuli, paranoid individuals would be expected to correctly recognize stimuli of that class more rapidly than would other individuals less concerned with the area of homosexuality.

For reasons of availability, the experimental group employing paranoid mechanisms was to be confined to paranoid schizophrenics. Hospital diagnosis plus other relevant behavioral data

were held to be appropriate in determining paranoid components in the selection of experimental subjects. Control groups were to be non-paranoid schizophrenics and normals.

Words of various classes were to be the stimulus variable, and time for correct recognition of these words, tachistoscopically-presented, was to be the measure of response. It was decided to make this essentially a reaction time experiment, with each word being presented once at each setting of the tachistoscope timer until correct verbal response occured.*

Hypotheses for the study were formulated following these considerations.

Hypotheses

It was held that a relationship between paranoid schizophrenia and homosexual impulses will have been demonstrated if:

1. Paranoid schizophrenics correctly recognize words with a homosexual meaning more rapidly than do normal control subjects, and if in doing so these differences in recognition time are independent of word length, familiarity, and affective value of the words used.

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*For the present study, the terms "reaction time" and "time for correct recognition" were synonymous.

2. Paranoid schizophrenics correctly recognize words with a homosexual meaning more rapidly than do non-paranoid, unclassified schizophrenics, and if in doing so these differences in recognition time are independent of word length, familiarity, and affective value of whatever words are used.

Hypotheses three and four were proposed in order to answer the question of whether or not homosexuality, as contrasted with heterosexuality, is unique to paranoid schizophrenics.

3. There are no significant differences between unclassified schizophrenics and normals in the readiness with which homosexual words are correctly recognized, if any possible differences in word recognition time are so controlled as to be independent of word length, familiarity, and affective connotation of the words used.

4. There are no significant differences between paranoid schizophrenics and normals in the readiness with which heterosexual words are recognized, if any differences in word recognition time that might occur are independent of word length, familiarity, and affective value of the words used.

Hypothesis five was proposed to allow comparisons in reaction times to the homosexual and heterosexual classes of words to be

made among groups of subjects from a common baseline.

5. There are no significant differences between paranoid schizophrenics and normals in the readiness with which non-sexual words are recognized, if any potential differences in word recognition time are so controlled as to be independent of word length, familiarity, and affective connotation of the words used. In the event there are significant differences among the groups of subjects in times required for correct recogntion of non-sexual words, the differences are to be eliminated statistically.

In line with perceptual and psychoanalytic theory, paranoid schizophrenics should react differently to homosexual words than they do to heterosexual or non-sexual words. However, it is possible that unforeseen variables that escaped experimental control may so mask the data as to make any conclusions drawn on the basis of intragroup comparisons of dubious validity.

THE INVESTIGATION

Selection of the Stimulus Words

The identification of words as having a homosexual, heterosexual, or non-sexual connotation, and experimental control of the extraneous variables of word length, familiarity, and affective value was a major problem. To control these variables, word length equivalence was established first, as described in the following section. A preliminary list of two hundred words, all of equivalent length, was then constructed. The words in this list were classified as to familiarity, sexual meaning, and affective value by a group of judges. The judges used were a sample of normal war veterans, to assure that findings on familiarity, sexual meaning, and affectivity would characterize the subjects under investigation in this study.

Word Length. A tachistoscopic study of the recognition times for five- and six-letter words, so chosen from the Thorndike-Lorge Word Counts (61) as to match the experimentally employed five- and six-letter words for usage frequency, showed no appreciable differences between the two lists of words in recognition time. The t-value was .73. (See Appendix 1). On this

basis, five- and six-letter words were considered essentially equivalent as to length for the purposes of this study.

Sexuality. The preliminary list contained forty words which were postulated to have some homosexual meaning. These words were derived from several sources (16, 29, 34). Forty words, considered to have heterosexual meaning, were also used. Some of these came from other studies in the area (46, 61), but the majority were found through dictionary sources (64). Finally, there were one hundred and twenty words which probably were non-sexual in meaning. Of these forty were supposedly neutral, forty were pleasant, and forty were unpleasant in affective connotation. Words in the latter group were taken from Sterne (61).

Rating. The mimeographed preliminary list (See Appendix 2) was presented to a group of forty normal (i.e., non-hospitalized) white male war veterans. All words were arranged in alphabetical order and instructions were to judge them on the dimension of affectivity. Each word appeared on the left-hand side of the page, followed by a line. The extreme left end of the line was designated as "Pleasant," the right end as "Unpleasant." The area between these two extremes constituted the remainder of the affective continuum. Judges indicated, by placing a check mark on the appropriate line for each word, the emotional value it had for them. They were encouraged to respond on the basis of their first emotional reaction to all words, regardless of familiarity.

Following this, a rearranged list of the same words (See Appendix 3) was presented to these judges with instructions to classify only those words with which they were familiar as being homosexual, heterosexual, or non-sexual in meaning. Those words with which they were unfamiliar were to be omitted. A "Don't Know" category was also provided, in which they placed those words with which they had some familiarity, but about whose meanings they were unsure.

Treatment of the Data. The words in the list which had been judged on the affective dimension were scored on a twenty-point basis. A scale with twenty equal intervals was superimposed on the line following each word and a number score was derived for each word for each subject. Words rated as extremely unpleasant received a score of 20, and those rated as extremely pleasant received a score of 1.

A T-score value* (42) was assigned to each word. Following this, mean T-score values were found for each word, as well as the interquartile range of judgments (See Appendix 2). It was then possible to select those words which had been rated as

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*The T-score is a standard score which allows direct comparisons to be made between subjects, despite dissimilar means and standard deviations in the raw data.

being most pleasant, most unpleasant, and neutral in affective connotation.

The second word list was handled by summing the judgments in the various sexual categories and finding the percentage of agreement among the judges for each word (See Appendix 3). If a word was omitted as being unfamiliar or was placed in the "Don't Know" category by more than five raters, it was considered to be too obscure to have value for the study itself and was discarded. Those remaining words in the various categories were then felt to be familiar for all judges and had a definite sexual or non-sexual meaning attached to them.

As the judges used were a peer group of the population with whom the tachistoscopic procedure was to be used, it was assumed the experimental population would have rated the words in an essentially similar manner and would be familiar with the words to be presented to them. As for familiarity, it was felt that no available frequency of usage tables would give as adequate a measure as would a peer group. This writer felt, with McGinnies (47), that frequency of usage tables derived from popular periodicals, when they list socially taboo words at all, do not list them in the frequency with which they are actually used in written and spoken language.

Finally, the results of both sets of judgments were combined, and a group of thirty-six words, designated as the test list, was selected. This list was made up of those nine words in the homo-

sexual and heterosexual categories and those eighteen words in the non-sexual category most clearly differentiated by the judges on both the sexual and affective continua and is the list of words that was used as the stimulus variable in the study (See Table I).

By referring to Table I, it can be seen that the percentages of agreement were smaller and the affective ratings less clearcut for the homosexual words than was the case with words in the other two categories. For example, none of the words in either the heterosexual or non-sexual categories received less than about 90% agreement, whereas agreement for the homosexual words ranged from fifty percent to ninety-four percent. Few (if any) of the homosexual words had an exclusively homosexual meaning. Hence, the low percentages of agreement among the judges was readily understandable. Most of the heterosexual words had an exclusively heterosexual meaning, and this was reflected by higher agreement among judges. Affective ratings for the homosexual words were also less clearly differentiated as to affective value than was the case with the other two categories. The inclusion of these words in the homosexual category was dictated by practical considerations, namely, they were the only nine words on which there was fifty percent or better agreement among the raters as words having a homosexual meaning. As homosexual words were extremely important in the experiment, it was important to attempt to guess what effect this arbitrariness would have on the results. It was

TABLE I

WORDS USED AS STIMULUS VARIABLE ALONG WITH JUDGES RATINGS

Word	Affective Rating M_T	Affective Rating Q_1 - Q_3	% Agreement on Sexual Meaning
Homosexual			
Pleasant			
1. FRUIT	42.9	39 - 46	70
2. FAIRY	50.6	44 - 58	85
3. PANSY	52.0	45 - 60	50
Neutral			
4. HOMOS	55.5	51 - 60	82.9
5. BLOWN	53.6	49 - 59	71.1
6. RECTUM	56.6	53 - 61	52.5
Unpleasant			
7. SISSY	59.9	47 - 63	52.6
8. SUCKED	59.0	53 - 63	72.5
9. QUEER	60.4	58 - 63	94.9
Heterosexual			
Pleasant			
10. CARESS	40.4	35 - 43	100
11. BOSOM	42.4	38 - 45	90
12. BREAST	43.0	39 - 47	92.5
Neutral			
13. PIECE	49.1	46 - 51	97.5
14. PICKUP	49.8	46 - 52	95
15. SCREW	51.4	49 - 55	97.4
Unpleasant			
16. FUCKED	57.9	51 - 66	100
17. WHORE	60.1	57 - 64	100
18. RAPIST	62.4	61 - 66	92.5
Non-Sexual			
Pleasant			
19. JOLLY	40.1	37 - 41	90
20. ALERT	41.0	36 - 46	97.5
21. PRIZE	41.2	38 - 43	90
22. CHURCH	38.1	25 - 40	97.5
23. FAMOUS	40.0	37 - 42	92.5
24. WEALTH	41.2	38 - 44	95
Neutral			
25. CELLAR	52.1	45 - 60	90
26. TURTLE	48.8	46 - 51	100
27. TABLET	49.2	46 - 51	100
28. SWISH	50.4	46 - 52	90
29. YEAST	49.8	47 - 51	97.4
30. OUNCE	49.0	46 - 51	95
Unpleasant			
31. MURDER	61.9	61 - 66	90
32. NAUSEA	63.1	60 - 66	90
33. LYNCH	61.9	59 - 67	92.5
34. DEATH	63.3	61 - 68	97.5
35. VOMIT	63.6	62 - 67	95
36. AGONY	64.5	61 - 68	89.7

believed that this weakness in clearcut classification of words in the homosexual category would, in effect, be operating against the principal hypotheses of the study. That is, if words purportedly homosexual were familiar to the experimentally employed groups of subjects in other contexts than a homosexual one, then they should be recognized more rapidly by all groups than would be the case if they were related solely to the homosexual area of concern. It was felt that these limitations in the homosexual words would tend to reduce the size of the hypothesized differences.

In addition to the test list, a group of pretest words was needed to familiarize subjects with the equipment and experimental procedure. It was decided to use nine pretest words, following the same classification as for the words in the test list. The three affective categories and the three sexual categories were represented in the pretest list, although degree of agreement on both sexual and affective continua was lower for words in this list than for words in the test list (See Table II).

TABLE II

PRETEST WORDS IN THE VARIOUS CLASSES

Word	Affective Rating M_T	Affective Rating Q_1 - Q_3	% Agreement on Sexual Meaning
		Homosexual	
MOUTH	47.2	44 - 50	30.0
LICKED	54.2	50 - 59	47.5
BEHIND	55.1	48 - 63	25.0
		Heterosexual	
CHERRY	43.2	38 - 48	84.6
NOOKY	52.6	45 - 59	100.0
HARLOT	55.8	51 - 61	88.9
		Non-Sexual	
BACON	41.2	37 - 44	92.5
RATIO	48.7	46 - 51	100.0
MAGGOT	61.8	59 - 65	100.0

Apparatus

1. A Gerbrands modified Dodge Tachistoscope, which had a timer calibrated in hundredths of a second. Its range was from .01 to 1.0 seconds exposure time.
2. A single sheet of white bond paper, upon which was drawn a rectangle. This constituted the pre-exposure field, the rectangle serving as a fixation point. The stimulus word appeared, on exposure, to be in the area encompassed by the rectangle.
3. Thirty-six test words and nine pretest words. All were electrically typed in capital letters on white bond paper from the same ream. There was one word to the page, centered along the longer axis. The letters in each word were double-spaced.
4. Jastak-Bijou Wide Range Achievement Test, of which the Reading Ability subtest was used.

Subjects

There were three groups of subjects: twenty-five paranoid schizophrenics, twenty-five unclassified schizophrenics, and twenty-five normal controls. The two schizophrenic populations were patients at the Fort Custer Veterans Administration Hospital, whereas the controls were drawn from several sources: residents of Lansing, employees at the Fort Custer Hospital, and patients carrying a physical diagnosis at the Veterans Administration General Hospital at Saginaw. All were native-born white*, male war veterans, forty-five years of age or below. The upper age limit was set to rule out those individuals whose paranoid behavior might have physiological correlates as a function of aging (53). To further ensure that extraneous variables were minimized, any individual with marked visual or intellectual deficiency sufficient to cause undue difficulty in identifying or reporting tachistoscopically-presented words was eliminated from consideration as a subject. The identification of these variables was either from the individual's case folder or his behavior in the experimental situation.

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*Despite Freud's assertion (27, p. 445) that the dynamics underlying the paranoid disorders were invariant regardless of race, it was difficult to conjecture what he meant by the term "race." At the time Freud wrote his paper (1911), it was customary to refer to people from a given geographic area as a "race." He may well have meant that use of the term rather than its current denotation. To be sure, the writer restricted the sample to white subjects.

In addition, as it was reasoned that ability to verbalize recognition of the test words was directly dependent on reading ability, each subject had to read well enough to assure the examiner this variable was not of importance as a determinant of response. Only those who could read above a sixth-grade level on the Reading Ability Subtest of the Jastak-Bijou Wide Range Achievement Scale (38) were included in the sample.

For the different groups, there were also the following requirements:

A. Paranoid

1. Diagnosis by the hospital psychiatric staff of paranoid schizophrenia (See Appendix 4 for V. A. criteria).
2. Some evidence of projective defenses. This evidence was gathered from the individual's case folder, which includes physical, psychiatric, psychological, and social service reports, as well as interview material. Nurses notes and other pertinent data were also examined.
3. Sufficient reality contact to satisfy the examiner that he was testable. With each patient, there was a short interview before the testing began. Those whose behavior indicated poor contact were not tested.

4. No shock treatments within the preceding four months.

B. Unclassified

1. Diagnosis by the psychiatric staff as unclassified schizophrenia. (See Appendix 4 for V. A. criteria).

2. Some evidence, derived from the individual's case folder, of lack of projective defenses. Mild ideas of reference were not sufficient to warrant exclusion*, although a previous diagnosis at any time of paranoid disorder was.

3. Sufficient contact with reality to be tested.

4. No shock treatments within the four months previous to testing.

C. Normal

1. No history of emotional difficulties severe enough to have necessitated either hospitalization or psychiatric consultation. For this data, each subject had to be taken at his word, as there was no way to check the accuracy of the statements.

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*e.g., one subject felt people noticed him because of his negroid upper lip. He was in the main a self-punishing individual, as were most in the unclassified group.

There was no attempt made to closely equate or match the groups for such factors as age, education, or reading ability. So long as a subject met the requirements of the study, he was included. Table III shows there were no differences among the groups in education or reading ability. There was a real difference in ages, however. Both the paranoid group and normal group were considerably older than the unclassified group, with the difference statistically significant beyond the .01 level of confidence. There were no differences between paranoids and normals in age.

One may question whether or not those individuals now diagnosed as unclassified schizophrenics may at a later date develop paranoid symptomatology. This was not felt to be probable, defense systems being quite different for the two groups. The paranoids were all projective, whereas the majority of unclassifieds were self-punishing. It was difficult to imagine there would be such radical shifts in modes of reaction. For purposes of this study, the age difference did not seem to be of much importance.

TABLE III

COMPARISON OF EXPERIMENTAL SUBJECTS ON AGE, EDUCATION, AND READING ABILITY

	Age		Education		Reading Ability	
	Mean	t-value	Mean	t-value	Mean	t-value
1. Normals	33.32	$t_{12} = 2.91^*$	11.04	$t_{12} = 0.4$	9.52	$t_{12} = 0.82$
2. Unclassified Schizophrenics	28.52	$t_{13} = 0.09$	11.32	$t_{13} = 0.7$	10.02	$t_{13} = 1.71$
3. Paranoid Schizophrenics	33.48	$t_{23} = 3.10^*$	11.56	$t_{23} = 0.3$	10.65	$t_{23} = 0.88$

*Significant beyond the .01 level of confidence

Procedure

Each subject was tested individually. All subjects were given a short description of the apparatus. As all were war veterans, they were told it was similar in function to the machines used for aircraft recognition in the armed forces. They were reassured regarding the confidential nature of the results. Any questions a subject asked were answered as fully as possible, provided they were not specific to the purpose of the experiment. The examiner did not begin the test until he was reasonably certain rapport was adequate.

Prior to the tachistoscopic procedure, the subject was asked to read aloud from the Wide Range Achievement Reading Ability subtest. If he read above a sixth grade level, he was allowed to go on with the experiment and given the following instructions:

> "This is an experiment in communication, or the effect of words on people. I've got a group of words here, all kinds of words, from as many different areas as I could think of. I'm going to present them to you in the machine, one at a time. We'll start at fast speeds and will slow them down until you correctly recognize the word. Once you correctly recognize it <u>exactly</u> as it appears on the paper, I'll remove it and we'll go on to the next word. Don't be afraid to guess, even if you don't see the word too clearly. You'll be surprised how often your guesses will be right.
>
> "Remember now, you have to recognize the word <u>exactly</u> as it's printed on the paper. All the words will show up in that rectangle, so look there for the word. We'll try a few practice words first, to give you the idea. If you have any questions, don't be afraid to ask them."

The subject was then shown the pretest words tachistoscopically, and any questions he had regarding procedure were answered. There was no pause between pretest and test words, the latter following immediately.

Each word was presented once at each timer setting. The timer setting for first exposure of test words was determined on the basis of a subject's response time to the pretest words. Wherever possible, the first exposure time for any of the test words was .05 seconds faster than his quickest response time to any of the pretest words. This was done to maximize the possibilities of more rapid recognition times to test words. For most of the subjects, however, the timer setting for first exposure of test words was .01 seconds.

Exposure time was lengthened in even steps of .01 seconds. If after twenty-five successive exposures to the same word, a subject was still unable to recognize it correctly, step-intervals were increased to .05 seconds. This was done primarily to reduce feelings of frustration in the subjects. When a word was correctly recognized, the setting of the timer was recorded, and the next word was presented. The procedure was the same for all words with all subjects.

Words were presented in a random order, being shuffled thoroughly between administrations. No two subjects were shown the words in the same order.

Upon conclusion of the experiment, all subjects were asked to maintain silence regarding the nature of the task. It was explained that reliable results could be obtained only if all subjects came into the situation experimentally naive. As far as could be ascertained, the examiner's request was complied with, for none of the later subjects in any group appeared to possess a greater degree of knowledge about the task than did the earlier ones.

RESULTS

There were several variables involved in the study: affective connotation and sexual meaning of the words themselves, as well as diagnostic categories of the subjects. The effect of these variables on reaction times was important, as were the interactions among them. In designing the experiment, it was felt the analysis of variance technique would provide a meaningful statistical treatment of the data. Requirements for analysis of variance are:

1. Homogeneity of variance in the experimental population;
2. Normality of distribution in the experimental population with respect to the variable considered; and
3. Independence of individual measurements.

These requirements were met.

The first requirement, homogeneity of variance, was determined by use of Bartlett's Test of Homogeneity of Variance, as suggested by Edwards (17). The derived chi-square was 0.537. With a chi-square this small, the null hypothesis could not be rejected.

Normality of distribution in the experimental population for the variables considered was assumed; and the independence of measurements was favored by random presentation of words in the list to each subject in the experiment (See Procedure, pp. 25-26).

Analysis of Variance

The statistical technique used was a modification of one found in Edwards (17, p. 295) for analysis of data involving successive trials. This particular technique was chosen for two reasons:

(a) It tended to minimize the effect of practice upon recognition times of subjects to words presented successively in the test list.

(b) This form of analysis, separating the error variance for testing groups (residual variance within groups) from the variance within individual subjects, allowed a sharper test of variance between groups of subjects to be made (See Table IV for results obtained).

Between Groups of Subjects. The table indicates there were no overall differences in word recognition times among the experimental subgroups of subjects. In terms of total sums of reaction times, all three subgroups behaved alike. The F was less than 1.

Between Words. Among the words, there were differences at the .01 level of confidence, the derived F being 9.28. This finding, that individual subjects reacted differentially to the words in the test list, was essential to the proposition that the perceptual technique used in the experiment could yield differences

TABLE IV

RESULTS OF THE ANALYSIS OF VARIANCE PERTAINING TO TIMES REQUIRED FOR CORRECT RECOGNITION OF WORDS

Source of Variance	d. f.	Mean Square	F	p
Total Variance	2699			
A. Between Subjects	74			
1. Between Groups of Subjects	2	229.4	<1	N. S
2. Residual (within) Variance	72	427.9		
B. Within Subjects	2625			
1. Between Words	35	113.0	9.28	.0
2. Between Affective Categories (Holding Subjects and Sexuality Constant)	2*	24.01	1.97	N.
3. Between Sexual Categories (Holding Subjects and Affectivity Constant)	2*	367.8	30.2	.0
C. Interaction Terms	2590			
Words x Groups**	70	14.5	1.19	N.
Affectivity x Sexuality x Groups	8*	10.9	<1	N.
Groups x Affectivity (Sexuality Held Constant)	4*	3.3	<1	N.
Affectivity x Sexuality (Groups Held Constant)	4*	256.9	21.09	.
Groups x Sexuality (Affectivity Held Constant)	4*	32.15	2.64	.
Residual (Pooled Subjects x Groups Interaction) Variance	2520	12.18		

*Degrees of freedom for these variables are from the 70 d. f. in the overall interaction term, Words x Groups.

**"Groups", where used in this table, refers to groups of subjects.

among groups of subjects. Without this finding, further examination of the data would have been superfluous.

Between Affective Categories. Affective connotation of the words did not differentiate. This finding demonstrates that individual subjects did not react differentially to the affective value of words in the list. By itself, the emotional quality of the words did not appear to be an important variable (See Table IV).

Between Sexual Categories. On this variable, there was a difference beyond the .01 level of confidence. The source of this significance lay in differential recognition times of words in each sexual category by individual subjects in the experimental population. On the basis of this finding, the significance of word recognition time differences between sexual categories for all subjects combined were computed and are presented in Table V. The resulting t-ratios demonstrate significant differences in mean word recognition time between each sexual category and every other one.

Words x Groups. The overall interaction term, Words x Groups, was not significant, the obtained F being only slightly greater than 1 (See Table IV).

Affectivity x Sexuality x Groups. The three-way interaction was not significant, the derived F being less than 1 (See Table IV).

TABLE V

t-RATIOS BETWEEN MEAN WORD RECOGNITION TIMES FOR EACH SEXUAL CATEGORY (ALL SUBJECTS COMBINED)

Comparison	Mean Word Recognition Times in Hundredths of a Second	t	p*
Homosexual	5.26		
versus Heterosexual		2.47	.02
versus Non-Sexual		4.32	.01
Heterosexual	5.73		
versus Non-Sexual		7.17	.01
Non-Sexual	4.55		

*Degrees of freedom associated with all t-tests are those of the error term (2520).

$$\sigma_{\text{Difference}} = \sqrt{(\text{Residual Variance})\ (1/n + 1/n)}\ **$$

$$\sigma_{\text{Difference for Homosexual versus Heterosexual}} = \sqrt{12.18\ (2/675)} = .19$$

$$\sigma_{\text{Difference for } \begin{matrix}\text{Homosexual or} \\ \text{Heterosexual}\end{matrix} \text{ versus Non-Sexual}} = \sqrt{12.18\ 91/675 + 1/350)} = .1645$$

**This standard error of the difference formula was found in McNemar (50, p. 224); see also Cochran and Coxe (15, p. 91).

Groups x Affectivity. The obtained F for this interaction was less than 1 (See Table IV).

Affectivity x Sexuality. The interaction between these variables was significant beyond the .01 level of confidence. In the heterosexual classification, pleasant and neutral words had the longest recognition times. In the homosexual and non-sexual classifications, pleasant and neutral words had the shortest recognition times. Response times to pleasant and neutral words in the homosexual and non-sexual classifications were not different from each other. However, with unpleasant words, those in the non-sexual and heterosexual categories had like recognition times, whereas unpleasant words in the homosexual category had a significantly longer recognition time (See Table VI).

Groups x Sexuality. The interaction term here was significant beyond the .05 level of confidence. In this interaction with both the heterosexual and non-sexual words, the two clinical populations behaved alike, having slower recognition times to these classes of words than did the normal population. On the other hand, with the homosexual words, paranoid schizophrenics and normals behaved alike, both having significantly faster recognition times to these words than did the unclassified schizophrenics (See Table VII).

From this information, it would appear that hypothesis five (stated on p. 11), that there would be no significant differences

TABLE VI

t-RATIOS BETWEEN MEAN WORD RECOGNITION TIMES OF WORDS IN THE SEXUAL AND AFFECTIVE CATEGORIES (ALL SUBJECTS COMBINED)

Words	Mean Word Recognition Times in Hundredths of a Second	t - Values	p*
Pleasant Words			
1. Homosexual	4.26	$t_{12} = 6.44$	.01
2. Heterosexual	6.38	$t_{13} = 0.772$	N. S.
3. Non-Sexual	4.48	$t_{23} = 6.667$	.01
Unpleasant Words			
1. Homosexual	6.72	$t_{12} = 6.292$	.01
2. Heterosexual	4.65	$t_{13} = 7.228$	.01
3. Non-Sexual	4.66	$t_{23} = 0.035$	N. S.
Neutral Words			
1. Homosexual	4.78	$t_{12} = 4.164$	.01
2. Heterosexual	6.15	$t_{13} = 0.982$	N. S.
3. Non-Sexual	4.50	$t_{23} = 5.789$	.01

*Degrees of freedom associated with all the t-scores are the degrees of freedom of the error term (2520).

$$\sigma \text{ Difference} = \sqrt{(\text{Residual Variance})\ (1/n + 1/n)}$$

$$\sigma \text{ Difference for Homosexual versus Heterosexual} = \sqrt{12.18\ (1/225 + 1/225)} = .329$$

$$\sigma \text{ Difference for Homosexual or Heterosexual versus Non-Sexual} = \sqrt{12.18\ (1/225 + 1/450)} = .285$$

TABLE VII

t-RATIOS BETWEEN MEAN WORD RECOGNITION TIMES OF WORDS IN DIFFERENT SEXUAL CATEGORIES FOR THE THREE EXPERIMENTAL SUBGROUPS OF SUBJECTS

Words	Mean Word Recognition Times in Hundredths of a Second	t	p*
Homosexual Words			
1. Paranoid	4.95	$t_{12} = 2.462$	.02
2. Unclassified	5.76	$t_{13} = 0.395$	N. S.
3. Normal	5.08	$t_{23} = 2.067$	.05
Heterosexual Words			
1. Paranoid	5.88	$t_{12} = 1.094$	N. S.
2. Unclassified	6.24	$t_{13} = 2.492$	.02
3. Normal	5.06	$t_{23} = 3.587$	.01
Non-Sexual Words			
1. Paranoid	4.90	$t_{12} = 0.304$	N. S.
2. Unclassified	4.80	$t_{13} = 3.344$	.01
3. Normal	3.80	$t_{23} = 3.039$	.01

*Degrees of freedom associated with all t-scores are those of the error term (2520).

$$\sigma \text{ Difference} = \sqrt{(\text{Residual Variance})\ (1/n + 1/n)}$$

$$\sigma \text{ Difference} = \sqrt{12.18\ (1/225 + 1/225)} = .329$$

among the groups in their reactions to non-sexual words, was not substantiated (See Table VII).

Intragroup comparisons (See Table VIII) showed that paranoid schizophrenics reacted differently to heterosexual words than they did to either homosexual or non-sexual words. Both unclassified schizophrenics and normals reacted differently to both homosexual and heterosexual words than they did to non-sexual words. All of the above differences were statistically significant.

However, because of disturbing factors (e.g., word structure) other than the relevant variables experimentally controlled in this study, the intragroup findings are not particularly conclusive.

It had been planned to use reaction times to non-sexual words as a common baseline from which to make comparisons among the groups of subjects to homosexual and heterosexual classes of words. That significant differences were found among groups necessitated the use of the analysis of covariance technique.

TABLE VIII

t-RATIOS WITHIN MEAN RECOGNITION TIMES OF WORDS IN DIFFERENT SEXUAL CATEGORIES FOR THE THREE EXPERIMENTAL SUBGROUPS OF SUBJECTS

Groups	Mean	t - Values	p*
Paranoid Group			
1. Homosexual Words	4.95	$t_{12} = 2.83$	.01
2. Heterosexual Words	5.88	$t_{13} = 0.017$	N. S.
3. Non-Sexual Words	4.90	$t_{23} = 3.44$	.01
Unclassified Group			
1. Homosexual Words	5.76	$t_{12} = 1.46$	N. S.
2. Heterosexual Words	6.24	$t_{13} = 3.37$	.01
3. Non-Sexual Words	4.80	$t_{23} = 5.05$	.01
Normal Group			
1. Homosexual Words	5.08	$t_{12} = 0.006$	N. S.
2. Heterosexual Words	5.06	$t_{13} = 4.50$	.01
3. Non-Sexual Words	3.80	$t_{23} = 4.42$	.01

*Degrees of freedom for these are associated with degrees of freedom for the error term (2520).

$$\sigma_{\text{Difference for Homosexual versus Heterosexual}} = \sqrt{12.18\ (1/225 + 1/225)} = .329$$

$$\sigma_{\text{Difference for Sexual versus Non-Sexual}} = \sqrt{12.18\ (1/225 + 1/450)} = .285$$

Considerations Leading to Analysis of Covariance

Many experimenters in the area of selective perception had used subjects' recognition times to neutral words as a baseline from which to examine reactions to other classes of words (31, 46, 55). The analysis of variance showed there were significant differences in recognition times between experimental subgroups to these non-sexual words (See Table VII). It seems likely that unknown uncontrolled variables affected different groups of subjects differently in terms of their word recognition times. (One possible explanation for this disparity may be lack of concentrative ability on the part of the clinical populations. It is common knowledge that the concentrative attention span of psychotics is limited, and this factor may have operated generally to increase their reaction times to all classes of words.) It was necessary, therefore, to transform the data statistically in such a way as to equate the experimental subgroups for recognition times to non-sexual words. Analysis of covariance, following McNemar (50), appeared to be a method of considerable promise for eliminating the effect of these uncontrolled variables upon differential word recognition times.

It was decided, first, to use recognition times to non-sexual neutral words as the common baseline from which to examine reactions of each experimental subgroup to heterosexual and homosexual

words, second, to examine differences in reaction to homosexual words holding recognition times for heterosexual words constant. The data were then transformed by use of the derived regression coefficients.

Three separate analyses of covariance were done, the first comparing experimental subgroups on reaction times to heterosexual words, the second comparing experimental subgroups on reaction times to homosexual words with recognition times for non-sexual neutral words held constant. In the third analysis, reaction times for all groups to heterosexual words were held constant, and experimental subgroups were then compared on reaction times to homosexual words.

Analyses of Covariance

The results of the first analysis, with heterosexual words, are found in Table IX. The derived F with untransformed data was not significant, nor did it attain significance with the covariance transformation (1.67). This lack of significance indicated there were no real differences among the experimental subgroups in their reactions to heterosexual words, when groups were equated for reactions to non-sexual neutral words. By this analysis, supported by previous evidence of independence of word length and affectivity, hypothesis four was supported.

The second analysis of covariance, with homosexual words, provided definite evidence supporting hypotheses one, two, and three of this study. The results of this comparison, supported

TABLE IX

ANALYSIS OF COVARIANCE BETWEEN NON-SEXUAL NEUTRAL WORDS AND HETEROSEXUAL WORDS

		Total	Within	Between
1.	Sums of Products	51,866.12	50,685.52	1,180.60
2.	Sums of Squares: X*	97,574.48	96,096.48	1,478.00
3.	Sums of Squares: Y**	32,169.95	31,037.92	1,132.03
4.	d. f.	74	72	2
5.	Correlation	.926	.928	.913
5a.	d. f. for r	73	71	1
6.	bxy value	1.612	1.633	1.043
7.	Adjusted Σx^2	13,953.27 minus	13,326.26 equals	627.01
8.	d. f.	73	71	2

*X - Heterosexual

**Y - Non-Sexual

Analysis of variance:

Between variance X = 1,478.00/2 = 739.00
Within variance X = 96,096.48/72 = 1,334.67
F = .554 (N. S.)

Analysis of covariance based on Adjusted Σx^2:

Between groups variance = 627.01/2 = 313.505
Within groups variance = 13,326.26/71 = 187.694
F = 313.505/187.694 = 1.67 (N.S.)

by previous evidence of independence of word length and affectivity, indicated that, with corrections made for differential reactions to non-sexual neutral words, there was a statistically significant difference among the experimental subgroups in their reaction times to homosexual words (See Table X). The derived F with untransformed data was not significant; but with the covariance transformation, the F became 4.984, significant at the .01 level of confidence.

The means of reaction times were then adjusted, following McNemar (50, pp. 328-329), and the standard error of the difference was calculated (50, p. 224, p. 245). Following this, t-tests were applied to determine the sources of the difference implied in the F-ratio (See Table XI).

These comparisons demonstrated that the paranoid group differed considerably from the normal group. They reacted more rapidly to homosexual words, the difference being significant at the .01 level of confidence. When the two clinical groups were compared, the difference was significant at the .05 level, with paranoids reacting faster than unclassifieds. The last comparison, normals versus unclassified, was well below statistical significance (See Table XI).

These findings with reference to differences in recognition times for homosexual words when subgroups were equated for time required to recognize non-sexual neutral words were further examined by the third analysis of covariance holding recognition

TABLE X

ANALYSIS OF COVARIANCE BETWEEN NON-SEXUAL NEUTRAL WORDS AND HOMOSEXUAL WORDS

		Total	Within	Between
1.	Sum of Products	40,154.69	39,911.24	243.45
2.	Sum of Squares: X*	66,136.99	65,365.28	771.71
3.	Sum of Squares: Y**	32,169.95	31,037.92	1,132.03
4.	d. f.	74	72	2
5.	Correlation	.870	.886	.260
5a.	d. f. for r	73	71	1
6.	bxy value	1.2482	1.2859	.2151
7.	Adjusted Σx^2	16,015.71 minus	14,043.96 equals	1,971.75
8.	d. f.	73	71	2

*X - Homosexual
**Y - Non-Sexual

Analysis of Variance:

Between variance X = 771.71/2 = 385.86
Within variance X = 65,365.28/72 = 907.85
F = .425 (N. S.)

Analysis of covariance based on Adjusted Σx^2:

Between groups variance = 1,971.75/2 = 985.875
Within groups variance = 14,043.96/71 = 197.802
F = 985.875/197.802 = 4.984 (.01 level)

TABLE XI

t-TESTS FOR SIGNIFICANCE OF DIFFERENCES BETWEEN MEANS OF TOTAL RECOGNITION TIMES FOR ALL HOMOSEXUAL WORDS FOLLOWING ANALYSIS OF COVARIANCE TRANSFORMATION

Subjects	Adjusted Mean for Total in Hundredths of a Second	t	d.f.	p
Paranoid	40.30			
versus Normal		3.10	71	.01
versus Unclassified		2.21	71	.05
Normal	52.65			
versus Unclassified		.90	71	N. S.
Unclassified	49.08			

$$\sigma \text{ Difference}^{*} = \sqrt{(\text{Residual Variance})\ (1/n + 1/n)}$$

$$\sigma \text{ Difference} = \sqrt{197.802\ (1/25 + 1/25)}$$

$$\sigma \text{ Difference} = 3.98$$

*A correction factor is added to the formula for computing standard error of the difference following analysis of covariance by Cochran and Coxe (15). There was no appreciable difference between standard error of the difference computed with the formula used and standard error of the difference computed with the more rigorous formula.

times to heterosexual words constant.

In this case, the derived F-ratio (2.10) was not significant, although it was indicative of a trend. When the means of reaction times for the groups of subjects were adjusted, it was found that the trend was in the direction predicted in the first three hypotheses.

Comparative word recognition times following all three analyses of covariance are summarized in Table XII. Sexuality appeared to influence reaction times of paranoid subjects, but words of a homosexual meaning were recognized more quickly by them than were the heterosexual words.

It would appear then, from the results of these analyses of covariance, that the first, second, third and fourth hypotheses were supported.

Cla:

	Paranoid	Norma[illegible]	[illegible]ified
Homosexual, holding non-sexual neutral words constant	40.30	52.65	49.08
Heterosexual, holding non-sexual neutral words constant	47.55	54.46	52.65
Homosexual, holding heterosexual words constant	43.46	50.35	48.23

TABLE XII

ADJUSTED MEANS OF TOTAL RECOGNITION TIMES IN HUNDREDTHS OF A SECOND FOR ALL HOMOSEXUAL AND HETEROSEXUAL WORDS FOLLOWING ANALYSIS OF COVARIANCE TRANSFORMATION

Class of Words	Subjects		
	Paranoid	Normal	Unclassified
Homosexual, holding non-sexual neutral words constant	40.30	52.65	49.08
Heterosexual, holding non-sexual neutral words constant	47.55	54.46	52.65
Homosexual, holding heterosexual words constant	43.46	50.35	48.23

DISCUSSION OF THE RESULTS

This study was undertaken to investigate the relationship postulated by psychoanalytic theory, between paranoid schizophrenia and homosexual impulses. It was held that a relationship between paranoid schizophrenia and homosexual impulses would have been demonstrated providing the following occurred: if paranoid schizophrenics correctly recognized words with a homosexual meaning more rapidly than did normal control subjects (Hypothesis one) and more rapidly than did non-paranoid, unclassified schizophrenics (Hypothesis two). Furthermore, if there were no significant differences between normals and unclassified schizophrenics in recognition times to homosexual words (Hypothesis three); and if there were no significant differences among paranoid schizophrenic and normal groups in correct recognition times to heterosexual words (Hypothesis four), heteroseuxality as a factor in paranoia would be ruled out. Finally, if homosexuality were held to be the only factor in paranoia (or any paranoid component in schizophrenia) then (in addition to Hypothesis four) there should be no significant differences between paranoid schizophrenics and normals in the times required to recognize non-sexual words (Hypothesis five).

An important condition was that word recognition times were to be independent of word length, affective connotation, and familiarity of the words used. The effect of these factors, insofar as they could be explored, proved to be minimal. In a pretest, differential word length was found to have no effect (See Appendix 1), nor did affective connotation (See Table IV). Finally, a group of peers had rated the words for familiarity (See Appendix 3), and the assumption was made that the experimental population would have rated them similarly.

When the covariance transformations were made, it was found that the paranoid schizophrenics had significantly faster recognition times to homosexual words than did either the unclassified schizophrenics or normals. There were no significant differences between normal and unclassified groups in recognition times to homosexual words. These findings supported hypotheses one, two and three. The first three hypotheses also received support following the covariance transformations made using reaction times to heterosexual words as a baseline. Although sexuality appeared to be an area of concern for paranoid individuals, homosexuality was an area of greater concern.

It is interesting to note that on the basis of intragroup comparisons paranoid schizophrenics seemed to respond more slowly to heterosexual words than they did to non-sexual words, and that response times for homosexual words did not differ significantly

from the times they required to recognize non-sexual words. Conclusions drawn on this basis are somewhat at variance with those drawn when the experimental subgroups have been equated for their recognition times to either heterosexual or non-sexual words by means of the covariance transformations.

Because of the experimental design, and the probability of uncontrolled variables masking the intragroup behavior, together with the fact that analysis of covariance as applied in this study as a technique for minimizing the effect of uncontrolled variables, the intragroup comparisons are of more academic interest than scientific rigor.

The results based on the covariance transformations also showed that there were no statistically significant differences among the groups of subjects in recognition times to heterosexual words. This finding supported hypothesis four.

Within the limitations of this study, the data demonstrated a relationship between paranoid schizophrenia and homosexuality in that there were differential recognition times following the analysis of covariance transformations for words of a homosexual character between the paranoid schizophrenic, unclassified schizophrenic, and normal subjects. Furthermore, the finding that paranoid schizophrenics correctly recognized homosexual words more rapidly than did unclassified schizophrenics, coupled with the finding that unclassified schizophrenics did

not differ from normals in recognition times for homosexual words, indicated that the sensitivity to homosexual stimuli was more a function of the paranoid components involved than of schizophrenia itself.

Homosexuality appeared to be more an area of concern for paranoid schizophrenics than for either unclassified schizophrenic or normal subjects. Regardless of their willingness or ability to overtly verbalize their concern with homosexuality, the greater sensitivity of paranoid subjects to homosexual words indicated they had more familiarity with these words. Had it been possible to employ more words with an exclusively homosexual denotation, rather than words with other meanings in addition to homosexual, greater sensitivity of paranoid subjects to homosexual stimuli may well have been more clearly demonstrated. Despite the limiting factor, there was fairly clearcut evidence that the paranoid components involved in schizophrenia were related to homosexuality.

The major theorists in the field of selective perception have proposed the perceptual principles of Resonance, Vigilance, and Defense to account conceptually for the interaction between perceptual and motivational variables. Using time required for correct recognition of tachistoscopically-presented stimuli as their measure, they found that stimuli congruent with individual interests were recognized most rapidly, the response being called "resonant;" stimuli pertaining to areas of individual conflict

were also recognized rapidly, the response in this case being identified as "vigilant;" and stimuli inimical with individual interests were recognized most slowly, the response being called a "defensive" one. Comparisons were made from a baseline of "neutral" words (9, 10).

In the present study, it was held that motivational factors are involved in the determination of areas of concern, with no attempt made to identify reaction times except as indicators of areas of concern. The experiment was designed to test psychoanalytic theory. However, it is interesting to speculate as to the motive of the rapid recognition of homosexual words by paranoid subjects. As the psychoanalytic school has postulated that homosexual motives are a major source of conflict for paranoid individuals, the reaction times of paranoid individuals in the study to homosexual words may have been indicative of the operation of perceptual Vigilance.

Whether homosexuality is a major area of concern for paranoid individuals and whether it alone is causative of behavior diagnosed as paranoid could not be determined from the present findings. There was a relationship demonstrated between paranoid mechanisms and homosexuality, and it would appear reasonable to infer that homosexuality, as an area of concern, is involved in the determination of paranoid personality components. However, there may well be other areas of concern that serve to differentiate paranoid

from other individuals. This is implied by the fact that there were differential recognition times for non-sexual words between the paranoid schizophrenic and normal subjects, as well as the indications that sexuality itself is an area of concern for paranoid individuals. How, and to what degree, homosexuality or other areas of concern are related to paranoid aspects of personality functioning is a possible subject for further studies.

Although this study was based primarily on theoretical considerations, the fact that reactions to various classes of words served to differentiate among groups may be of diagnostic significance. The perceptual technique not only differentiated the normal group from the paranoid schizophrenic group, but it also differentiated the latter from the unclassified schizophrenic group. A further study is planned, with refinements in technique based upon the present findings. In this proposed study diagnosis of paranoid schizophrenic, unclassified schizophrenic, or normal would be predicted from perceptually-mediated responses of individuals. If predictions can be made successfully at the individual level with these groups, the technique could be further investigated with other clinical populations. The hope would be that it might prove of value as a diagnostic aid in clinical practice.

As was done in the present study with paranoid mechanisms, other aspects of the psychoanalytic theory of personality could possibly be interrelated with perceptual theory and subjected to experimental test. Evidence from these studies would have value in testing other psychoanalytic postulations.

Comparison of Results with Those of Other Studies

The relationship postulated by psychoanalytic theory between paranoid mechanisms and homosexuality has been investigated in several ways. There are major methodological differences between the present study and the majority of other studies reviewed by this writer. These differences make comparison difficult.

Nevertheless, the findings in many observational studies with paranoid schizophrenics (3, 28, see also 4, 59) were suggestive of a relationship between the two factors, as were the present findings.

The conclusions in this study did not coincide with those of Aronson (4), who felt it was the psychosis itself, rather than its paranoid components, which was involved in preoccupation with homosexuality. He based his conclusions primarily on the results obtained from the Blackie and Rorschach tests, using a "sign" approach with the latter. He found that both paranoid and non-paranoid psychotics differed significantly from normals in the number of homosexual "signs" inferred from their responses. Comparing the psychotic groups, he found that paranoids gave more homosexually-indicative responses than did non-paranoids, but the difference was not significant. As there is still much to be learned about "signs" in projective testing, it may be that Aronson's data might, upon re-examination with more knowledge, necessitate different conclusions.

In his study, Eriksen (19) found evidence favoring the concept of perceptual Defense associated with aggressive and succorant needs, none with homosexual needs. Using a clinical population, he correlated time required to elicit responses to a word-association test with time required for correct recognition of tachistoscopically-presented drawings. The same findings emerged from a later study by Eriksen and Lazarus (20), in which responses to the word-association test were correlated with recognition of various areas on the Rorschach inkblots the authors had designated as homosexual. The authors concluded the lack of an apparent relationship for homosexual needs may well have been due to experimental artifacts (20, p. 307).

In summary, the findings in the present study did not coincide with findings in other studies reported in this section, with the exception of observational studies.

It is felt that the test of the psychoanalytic postulation was more direct in the present study than was the case in the other experimental studies cited, which may account for the differences in results. Because of this more direct approach, with fewer variables extraneous to the psychoanalytic proposition to be considered, it is felt that the results of the present study are somewhat more indicative than were those of the other studies.

SUMMARY AND CONCLUSIONS

The present study was undertaken to investigate the relationship postulated in psychoanalytic theory between paranoid schizophrenia and homosexual impulses. The orientation for the study was derived from psychoanalytic theory and research in the area of selective perception. As a measure of selective perception, time required for correct recognition of various classes of tachistoscopically-presented words was used, previous research having indicated that stimuli pertaining to areas of individual concern are recognized more rapidly than "neutral" stimuli. Rapid recognition occurs persumably as a function of greater individual familiarity with stimuli relating to the areas of concern to him. It was held that motivational variables were involved in the determination of areas of individual concern, and that the interaction of motivational with perceptual variables would affect perceptually-mediated response. If homosexuality was an area of concern for paranoid individuals, words reflecting homosexuality would be recognized more rapidly by paranoid individuals than by individuals less concerned by homosexuality.

Three groups of subjects were employed in the study: paranoid schizophrenics, unclassified schizophrenics, and normals.

It was held that a relationship between paranoid schizophrenia and homosexuality would have been demonstrated if:

(a) paranoid schizophrenics correctly recognized words with a homosexual meaning more rapidly than did normals and unclassified schizophrenics;

(b) there were no significant differences in correct recognition times between unclassified schizophrenic and normal subjects to homosexual words;

(c) there were no significant differences in correct recognition times between paranoid schizophrenics and normals to heterosexual words or non-sexual words; and

(d) correct recognition times were independent of word length, familiarity, and affective connotation of the words used.

Words comprising the test list were chosen by a group of judges, who rated them on affectivity, sexuality, and familiarity. Words of five- and six-letters were used, a pretest having indicated differential word length did not affect recognition times.

The following findings were noted, following statistical analysis of the data:

1. Affective value of the words had little effect upon time required for correct word recognition.

2. Paranoid subjects recognized homosexual words significantly faster than did the other two groups of subjects.
3. There were no statistically significant differences between unclassified schizophrenics and normals in recognition times to homosexual words.
4. Differences in recognition times to heterosexual words were not significant among the groups.
5. There were statistically significant differences between paranoid schizophrenics and normals in time required to recognize non-sexual words.

These findings supported the psychoanalytic postulation, in that there was demonstrated a relationship between paranoid aspects of personality functioning and homosexuality. Whether homosexuality was the major area of concern for paranoid individuals was not determined, but there were indications that homosexuality was not the sole area of concern for paranoid individuals.

Principal conclusions were: (a) that homosexuality was of greater concern to paranoid schizophrenics than it was to either unclassified schizophrenics or normals; and (b) the sensitivity of paranoid schizophrenic subjects to homosexual stimuli appeared to be more a function of the paranoid components involved than of schizophrenia.

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APPENDIX 1

List of Five- and Six-Letter Words Equated for Frequency of Usage According to Thorndike-Lorge Word Counts. (62)

A. 100 or More in a Million

Five-Letter	Six-Letter
UNTIL	ALWAYS*
ABOUT	BEFORE
EVERY	BRANCH
CLOCK	CORNER
GIVEN	DINNER
BLACK*	DURING

B. 50 in a Million

Five-Letter	Six-Letter
BROOK	WORKER
FIFTH*	STRING
EVENT	REPEAT*
SCALE	POCKET
PLANE	MANAGE
DOZEN	COUNTY

C. 1 in a Million

Five-Letter	Six-Letter
MOLAR	ICEBOX
OUTDO	INSTEP
SEIZE*	KNOTTY*
RAGGY	VESPER
SULLY	FEELER
ADAGE	BOUGHT

*Used as pretest words to familiarize subjects with procedure.

Results of Significance Test with Ten Subjects:

$M_5 = 28.4$ $\sigma_5 = 5.06$ $\sigma_M = 1.35$

$M_6 = 27.2$ $\sigma_6 = 3.08$ $\sigma_M = .82$

$\sigma_{dM} = 1.58$

$D_M = 1.2$

$t = 1.2/1.58 = .76$ (Not Significant)

APPENDIX 2

T-Score Totals, Means, and Interquartile Range for Forty Judges on the Affective Dimension

Last School Grade Completed: _____

STRUCTIONS:

Here is a list of words, each followed by a line. The line represents scale on which you indicate how you feel about each word. One end of the ne stands for "pleasant" (P); the other stands for "unpleasant" (U).

Considering each word (and line) separately, please indicate, by a check rk (✓) somewhere along that line, the extent to which you feel the word is pleasant or an unpleasant one.

WORD	P	TOTAL T-SCORE	MEAN T-SCORE	INTERQUARTILE RANGE Q_1 - Q_3	U
ACORN		1793	44.8	40 - 48	
ADDLE		1605	40.1	35 - 44	
ADULT		1681	42.0	35 - 48	
AFFAIR		1918	48.0	40 - 52	
AGONY		2580	64.5	61 - 68	
ALERT		1638	41.0	36 - 46	
ANGEL		1462	36.6	34 - 41	
AUNTIE		1899	47.5	40 - 53	
BACON		1644	41.2	37 - 44	
BARREL		1981	49.5	45 - 52	
BEAST		2254	56.4	50 - 64	
BEHIND		2203	55.1	48 - 63	
BELLE		1690	42.2	36 - 47	
BENDER		2148	53.7	48 - 59	
BIRTH		1759	44.0	40 - 48	
BITCH		2466	61.6	59 - 65	
BLOW		2144	53.6	49 - 59	
BODICE		1887	47.2	42 - 51	
BOSOM		1697	42.4	38 - 45	
BOYISH		2003	50.1	45 - 57	

WORD	P	TOTAL T-SCORE	MEAN T-SCORE	INTERQUARTILE RANGE Q_1 - Q_3	U
BRAWN		1866	46.6	42 - 50	
BREAD		1694	42.4	39 - 46	
BREAST		1719	43.0	39 - 47	
BRIDAL		1522	38.0	36 - 40	
BROWN		1899	47.5	43 - 51	
BUGGER		2349	58.7	53 - 63	
BUXOM		1902	47.6	41 - 52	
CARESS		1614	40.4	35 - 43	
CASKET		2531	63.3	62 - 68	
CELLAR		2084	52.1	45 - 60	
CHARM		1645	41.1	37 - 43	
CHERRY		1730	43.2	38 - 48	
CHURCH		1523	38.1	35 - 40	
COITUS		1990	49.8	41 - 53	
CRAZY		2380	59.5	54 - 64	
CRISP		1773	44.3	40 - 48	
CRUISE		1646	41.2	38 - 43	
DADDY		1580	39.5	35 - 41	
DEATH		2533	63.3	61 - 68	
DECIDE		1886	47.2	43 - 50	
DEVIL		2289	57.2	51 - 62	
DIRTY		2418	60.4	59 - 64	
DISMAL		2421	60.5	56 - 64	
DITCH		2181	54.5	50 - 59	
DRAPE		2041	51.0	47 - 58	
DRUNK		2239	56.0	49 - 62	
EARLY		1802	45.0	40 - 49	

WORD	P TOTAL T-SCORE	MEAN T-SCORE	INTERQUARTILE RANGE Q_1 - Q_3	U
ENJOY	1497	37.4	36 - 40	
EVERY	1874	46.8	43 - 50	
EXCEL	1626	40.6	37 - 43	
FABLE	1829	45.7	42 - 49	
FAGGOT	2174	54.4	50 - 58	
FAIRY	2022	50.6	44 - 58	
FAMILY	1491	37.3	34 - 41	
FAMOUS	1600	40.0	37 - 42	
FANNY	2015	50.4	46 - 54	
FIEND	2352	58.8	34 - 64	
FILTHY	2585	64.6	63 - 67	
FLIRT	2069	51.5	45 - 56	
FRIED	1752	43.8	38 - 48	
FROLIC	1664	41.6	38 - 44	
FRUIT	1716	42.9	39 - 46	
HICKED	2316	57.9	51 - 66	
GARDEN	1672	41.8	38 - 44	
GAUDY	2201	55.0	50 - 60	
GENTLE	1626	40.6	36 - 43	
GIVING	1624	40.6	37 - 44	
GODLY	1565	39.1	35 - 42	
GUESS	2167	54.2	51 - 58	
HAIRY	2174	54.4	49 - 59	
HAPPY	1464	36.6	34 - 39	
HARLOT	2230	55.8	51 - 61	
HEALTH	1610	37.8	35 - 40	
HEAVEN	1512	37.8	34 - 44	

WORD	P	TOTAL T-SCORE	MEAN T-SCORE	INTERQUARTILE RANGE Q_1 - Q_3	U
HEIGHT		1887	47.2	45 - 50	
HOMOS		2221	55.5	51 - 60	
HORNY		2264	56.6	51 - 63	
HUMPED		2291	57.3	53 - 61	
HUSSY		2282	57.0	53 - 62	
IDEAL		1607	40.2	37 - 42	
IMAGE		1815	45.4	42 - 49	
INCEST		2259	56.5	50 - 63	
INJECT		2112	52.8	50 - 56	
INSANE		2400	60.0	57 - 64	
INTEND		1926	48.1	45 - 51	
INVERT		2091	52.3	49 - 55	
JACKET		1837	45.9	43 - 50	
JOCKER		2108	52.7	50 - 57	
JOLLY		1604	40.1	37 - 41	
KNEEL		1921	48.0	45 - 51	
LAYING		1942	48.6	44 - 51	
LESSON		1913	47.8	45 - 50	
LICKED		2166	54.2	50 - 59	
LYNCH		2477	61.9	59 - 67	
MADAM		1990	49.8	45 - 54	
MAGGOT		2472	61.8	59 - 65	
MANGLE		2451	61.3	59 - 64	
MANIAC		2500	62.5	59 - 66	
MANLY		1772	44.3	39 - 49	
MANURE		2310	57.8	53 - 63	

WORD	P	TOTAL T-SCORE	MEAN T-SCORE	INTERQUARTILE RANGE Q_1 - Q_3	U
MAPLE		1739	43.5	40 - 48	
MARKET		1819	45.5	43 - 48	
MONEY		1664	41.6	38 - 44	
MORBID		2380	59.5	57 - 63	
MOTIVE		1926	48.2	46 - 51	
MOULDY		2382	59.6	57 - 61	
MOUTH		1890	47.2	44 - 50	
MOVIES		1735	43.4	40 - 46	
MURDER		2476	61.9	61 - 66	
MUSIC		1529	38.2	36 - 41	
NANCY		2019	50.5	49 - 52	
NAUSEA		2525	63.1	60 - 66	
NEPHEW		1792	44.8	41 - 48	
NERVE		1852	46.3	42 - 50	
NIGGER		2463	61.6	53 - 66	
NIPPLE		1926	48.2	42 - 51	
NOOKY		2102	52.6	45 - 59	
NOTCH		2031	50.8	50 - 52	
OASIS		1812	45.3	43 - 49	
ORGAN		1836	45.9	41 - 50	
OUNCE		1961	49.0	46 - 51	
OVARY		2036	50.9	49 - 51	
PANIC		2272	56.8	53 - 61	
PANSY		2078	52.0	45 - 60	
PARROT		1944	48.6	45 - 51	
PENIS		2119	53.0	49 - 57	

WORD	TOTAL T-SCORE	MEAN T-SCORE	INTERQUARTILE RANGE Q_1 - Q_3
PEOPLE	1755	43.9	41 - 45
PICKUP	1992	49.8	46 - 52
PIECE	1963	49.1	46 - 51
POGER	2103	52.6	50 - 54
PRAISE	1641	41.0	39 - 43
PRATT	2078	52.0	51 - 56
PRINCE	1767	44.2	41 - 47
PRIZE	1647	41.2	38 - 43
PUPIL	1795	44.9	41 - 49
PUSSY	2131	53.3	49 - 57
PUTRID	2464	61.6	57 - 66
QUAIL	1934	48.4	45 - 51
QUAINT	1905	47.6	45 - 51
QUEEN	1698	42.4	40 - 45
QUEST	1888	47.2	43 - 50
QUIFF	2066	51.7	51 - 61
RABBLE	2252	56.3	53 - 60
RAPIST	2494	62.4	61 - 66
RATIO	1947	48.7	46 - 51
RECTUM	2265	56.6	53 - 61
REPAIR	1901	47.5	45 - 51
RINSE	1921	48.0	46 - 51
ROBUST	1821	45.5	42 - 48
SAINT	1682	42.0	38 - 44
SALARY	1653	41.3	38 - 45
SCREW	2057	51.4	49 - 55
QUEER	2416	60.4	58 - 63

WORD	P	TOTAL T-SCORE	MEAN T-SCORE	INTERQUARTILE RANGE Q_1 - Q_3	U
SECURE		1826	45.6	43 - 49	
SEDUCE		2049	51.2	46 - 56	
SERGE		2000	50.0	48 - 51	
SHAME		2268	56.7	53 - 59	
SISSY		2394	59.9	57 - 63	
SISTER		1747	43.7	41 - 47	
SLAVE		2357	58.9	56 - 62	
SLOPPY		2374	59.4	57 - 62	
SMOKE		1905	47.6	43 - 51	
SNATCH		2223	55.6	52 - 59	
SNOOP		2331	58.3	54 - 63	
SPORT		1717	42.9	40 - 44	
STAMP		1902	47.6	44 - 51	
STRONG		1730	43.2	41 - 44	
STUPID		2384	59.6	59 - 63	
SUCKED		2359	59.0	53 - 63	
SWISH		2016	50.4	46 - 52	
TABLET		1970	49.2	46 - 51	
TAILED		2127	53.2	51 - 55	
THANKS		1688	42.2	40 - 45	
TOILET		2086	52.2	49 - 55	
TONGUE		1967	49.2	46 - 51	
TOPIC		1945	48.6	46 - 51	
TRASH		2305	57.6	53 - 61	
TRIPE		2353	58.8	55 - 61	

WORD	P	TOTAL T-SCORE	MEAN T-SCORE	INTERQUARTILE RANGE Q_1 - Q_3	U
TURTLE		1953	48.8	46 - 51	
TWIST		2013	50.3	49 - 51	
TYPHUS		2328	58.2	55 - 62	
UNCLE		1773	44.3	41 - 48	
UNITED		1702	42.6	40 - 45	
URINE		2312	57.8	55 - 61	
VAGINA		2159	54.0	52 - 58	
VENOM		2341	58.3	54 - 63	
VERMIN		2428	60.7	58 - 64	
VIRGIN		1804	45.1	41 - 50	
VOMIT		2544	63.6	62 - 67	
VOYAGE		1718	43.0	41 - 44	
WAGON		1840	46.0	43 - 50	
WALLOW		2193	54.8	52 - 59	
WEALTH		1649	41.2	38 - 44	
WITCH		2178	54.4	51 - 59	
WHORE		2403	60.1	57 - 64	
WILLIE		2061	51.5	49 - 54	
WINTER		1709	42.7	39 - 45	
WRATH		2106	52.6	45 - 62	
WRITHE		2375	59.4	53 - 63	
YEAST		1992	49.8	47 - 51	

APPENDIX 3

Judges Ratings on a Sexual Meaning Basis (N = 40)

e:_____ Last School Grade Completed:_____

INSTRUCTIONS:

Here is another list of words. Please classify them according to meaning. For each word, indicate by a check in the appropriate column whether you think it has homosexual, heterosexual or non-sexual meaning.

Classify only those words with which you are familiar.

If you are familiar with a word, but don't know its meaning, check the 'Don't Know" column.

To classify a word as Homosexual, it must imply to you sexual practices between persons of the same sex. The word can either describe the activities or the kind of persons who take part in this type of activity.

To classify a word as Heterosexual, it must imply to you sexual practices between persons of opposite sex. The word can either describe the activities or the kind of persons who take part in this type of activity.

To classify a word as Non-sexual, it must imply neither homosexuality nor heterosexuality. It must have no sexual meaning attached to it at all.

WORD	HOMOSEXUAL	HETEROSEXUAL	NON-SEXUAL	DON'T KNOW
BACON	1	2	37 (92.5%)	0
BOSOM	0	36 (90%)	4	0
CASKET	0	0	40 (100%)	0
DEATH	0	1	39 (97.5%)	0
EVERY	0	1	38 (95%)	1
FLIRT	0	37 (92.5%)	3	0
GUNZEL	1	1	2	31
HUSSY	1	32 (82.1%)	6	0
JOLLY	1	3	36 (90%)	0
MANLY	4	18 (45%)	18 (45%)	0
MURDER	1	3	36 (90%)	0
OASIS	0	4	36 (90%)	0

*When the total of judgments is less than 40, it indicates an omission, presumably because of idosyncratic familiarity.

WORD	HOMOSEXUAL	HETEROSEXUAL	NON-SEXUAL	DON'T KNOW
PIECE	0	39 (97.5%)	1	0
QUAINT	7	2	31 (72.5%)	0
RINSE	1	5	32 (84.2%)	0
SISTER	2	14	22 (57.9%)	0
SUCKED	29 (72.5%)	8	3	0
TURTLE	0	0	38 (100%)	2
VOMIT	2	0	38 (95%)	0
WRITHE	0	12	25 (67.8%)	2
AUNTIE	1	9	29 (74.4%)	1
BODICE	0	25 (67.8%)	12	2
CARESS	0	40 (100%)	0	0
DADDY	2	16	22 (55%)	0
ENJOY	0	24 (61.5%)	15	0
FILTHY	18 (46.2%)	7	14	1
GODLY	0	6	32 (84.2%)	1
HUMPED	0	24 (60%)	16	0
JOCKEY	4	3	13	16
MANIAC	8	4	26 (68.4%)	2
MOVIES	0	15	25 (62.5%)	0
NOTCH	0	7	27 (79.4%)	5
PICKUP	0	38 (95%)	2	0
QUAIL	0	27 (69.2%)	12	1
REPAIR	0	1	39 (97.5%)	0
SISSY	20 (52.6%)	2	16	2
STUPID	2	0	38 (95%)	0
TRIBE	1	4	31 (86.1%)	4

WORD	HOMOSEXUAL	HETEROSEXUAL	NON-SEXUAL	DON'T KNOW
VIRGIN	1	29 (72.5%)	10	0
WREATH	0	0	40 (100%)	0
ANGEL	0	9	31 (77.5%)	0
BLOWN	27 (71.1%)	1	10	2
BUXOM	0	34 (85%)	6	0
CRUISE	0	6	34 (85%)	0
EARLY	0	4	34 (89.5%)	2
FIEND	10	9	19 (50%)	2
GIVING	0	14	25 (64.1%)	1
HORNY	4	31 (79.4%)	4	1
JACKET	0	3	37 (92.5%)	0
MANGLE	1	0	38 (97.4%)	1
MOUTH	12	11	17 (42.5%)	0
NOOKY	0	40 (100%)	0	0
PEOPLE	0	14	26 (65%)	0
PUTRID	0	0	38 (100%)	2
RECTUM	21 (52.5%)	1	18	0
SHAME	12	3	24 (61.9%)	1
STRONG	0	9	30 (77%)	1
TRASH	3	8	29 (72.5%)	0
VERMIN	0	1	38 (97.4%)	1
WINNER	0	5	35 (87.5%)	0
ALERT	0	1	39 (97.5%)	0
BITCH	0	35 (87.5%)	5	0
BUGGER	7	2	22	9
CRISP	0	1	38 (97.4%)	1

WORD	HOMOSEXUAL	HETEROSEXUAL	NON-SEXUAL	DON'T KNOW
SNOOP	4	1	32 (86.5%)	3
TOILET	2	4	33 (84.6%)	1
URINE	2	4	33 (84.6%)	1
WENCH	0	36 (90%)	4	0
ADULT	0	21 (53.9%)	18	1
BELLE	0	31 (77.5%)	9	0
BREAST	0	37 (92.5%)	3	0
CHURCH	0	1	39 (97.5%)	0
DISMAL	1	0	37 (97.4%)	2
FAIRY	34 (85%)	0	6	0
FUCKED	0	40 (100%)	0	0
HEALTH	0	8	32 (80%)	0
INJECT	0	25 (64.1%)	14	0
LICKED	19 (47.5%)	6	15	0
MONEY	0	4	36 (90%)	0
NYMPHO	1	2	37 (92.5%)	0
PANIC	2	2	36 (90%)	0
PRINCE	3	3	34 (85%)	0
QUIFF	2	19	9	7
SCREW	0	38 (97.4%)	1	1
SNATCH	0	37 (92.5%)	3	0
THANKS	0	1	39 (97.5%)	0
UNITED	0	19	21 (52.5%)	0
WEALTH	1	1	38 (95%)	0
ADORE	1	27 (69.2%)	11	1
BEHIND	10	6	24 (60%)	0
VOYAGE	0	4	36 (90%)	0

WORD	HOMOSEXUAL	HETEROSEXUAL	NON-SEXUAL	DON'T KNOW
MOTIVE	0	4	34 (89.5%)	1
NIGGER	0	5	34 (87.2%)	1
PARROT	1	1	36 (94.7%)	2
PUPIL	1	3	36 (90%)	0
RAPIST	2	37 (92.5%)	1	0
SEDUCE	0	40 (100%)	0	0
SPORT	2	13	25 (67.5%)	0
TONGUE	13	8	19 (47.5%)	0
VAGINA	1	33 (84.6%)	5	1
WHORE	0	40 (100%)	0	0
AFFAIR	0	32 (82.1%)	7	1
BENDER	0	6	33 (84.6%)	1
BRIDAL	0	29 (72.5%)	11	0
COITUS	1	33 (89.2%)	3	3
DITCH	1	2	36 (92.3%)	1
FAMILY	0	21 (52.5%)	19	0
GARLIC	0	3	37 (92.5%)	0
HEAVEN	0	3	37 (92.5%)	0
INSANE	4	1	35 (87.5%)	0
LYNCH	1	2	37 (92.5%)	0
MORBID	2	0	35 (94.6%)	2
NERVE	0	3	36 (92.3%)	1
FANCY	20 (50%)	1	19	0
PRIDE	0	4	36 (90%)	0
RABBLE	0	3	37 (92.5%)	0
SECURE	0	2	38 (95%)	0

WORD	HOMOSEXUAL	HETEROSEXUAL	NON-SEXUAL	DON'T KNOW
BREAD	0	8	32 (80%)	0
CHERRY	0	33 (84.6%)	6	1
DIRTY	9	5	25 (64.1%)	1
FAGGOT	2	0	23	14
FRUIT	28 (70%)	0	12	0
HARLOT	0	32 (88.9%)	4	4
INCEST	2	19 (54.3%)	14	4
LESSON	0	2	38 (95%)	0
MARKET	0	2	37 (94.9%)	1
NAUSEA	3	1	36 (90%)	0
OVARY	0	33 (82.5%)	7	0
PRATT	4	7	24 (68.6%)	4
QUEST	1	8	29 (76.3%)	1
SALARY	0	2	36 (94.7%)	0
SMOKE	1	3	36 (90%)	0
TAILED	1	9	29 (74.4%)	0
UNCLE	1	5	34 (85%)	0
WALLOW	2	5	32 (82.1%)	1
ACORN	0	2	37 (94.9%)	1
BEAST	1	12	26 (66.7%)	1
BRAVE	1	7	31 (79.4%)	0
CHARM	1	23 (57.5%)	16	0
DEVIL	1	7	31 (79.4%)	1
EAGLE	0	1	37 (97.4%)	1
FROLIC	1	13	26 (65%)	0
HAPPY	0	8	31 (79.4%)	0
TWIST	2	4	34 (85%)	0

WORD	HOMOSEXUAL	HETEROSEXUAL	NON-SEXUAL	DON'T KNOW
IMAGE	0	4	34 (89.5%)	1
LAYING	0	37 (94.9%)	2	1
MAPLE	0	3	37 (92.5%)	0
NANCE	0	4	16	15
OUNCE	0	2	38 (95%)	0
PRAISE	0	5	35 (87.5%)	0
QUEER	37 (94.9%)	0	2	0
SAINT	1	5	32 (84.2%)	2
SLOPPY	0	4	36 (90%)	0
TABLET	0	0	40 (100%)	0
TYPHUS	0	0	40 (100%)	0
WAGON	0	1	39 (97.5%)	0
YEAST	0	1	38 (97.4%)	1
BARREL	3	2	34 (87.2%)	1
BOYISH	6	4	30 (75%)	0
CELLAR	0	4	36 (90%)	0
DECIDE	0	0	39 (100%)	1
EXCEL	0	2	38 (95%)	0
FREED	0	3	37 (92.5%)	0
HAIRY	1	12	26 (66.7%)	1
IDEAL	0	7	33 (82.5%)	0
KNEEL	6	5	28 (71.8%)	1
MANURE	0	0	40 (100%)	0
MUSIC	0	6	34 (85%)	0
ORGAN	2	13	25 (62.5%)	0
POGER	1	0	15	20
[illegible]	0	22 (56.4%)	17	1
ROBUST	1	10	29 (72.5%)	0
SLAVE	0	6	34 (85%)	0
WISH	3	1	36 (90%)	0

WORD	HOMOSEXUAL	HETEROSEXUAL	NON-SEXUAL	DON'T KNOW
DRUNK	0	6	33 (84.6%)	1
FANNY	7	20 (52.6%)	11	2
GENTLE	2	12	26 (65%)	0
HOMOS	29 (82.9%)	1	5	4
INVERT	7	1	28 (77.8%)	3
MAGGOT	0	0	38 (100%)	2
MOULDY	0	1	37 (97.4%)	2
NIPPLE	0	34 (85%)	6	0
PENIS	3	33 (84.6%)	3	1
PUSSY	1	37 (92.5%)	2	0
RATIO	0	0	34	1
SERGE	1	4	33 (86.8%)	2
STAMP	0	0	40 (100%)	0
TOPIC	0	1	39 (97.5%)	0
VENOM	0	1	38 (97.4%)	1
WILLIE	5	2	29 (80.5%)	3
AGONY	0	4	35 (89.7%)	1
BIRTH	0	32 (80%)	8	0
BROWN	5	1	33 (84.6%)	0
CRAZY	3	0	37 (92.5%)	0
DRAPE	1	6	33 (82.5%)	0
FAMOUS	0	3	37 (92.5%)	0
GAUDY	0	6	32 (84.2%)	2
HEIGHT	0	3	36 (92.3%)	1
INTEND	0	4	36 (90%)	0
MADAM	0	31 (79.4%)	8	1

ORD	HOMOSEXUAL	HETEROSEXUAL	NON-SEXUAL	DON'T KNOW
RUNK	0	6	33 (84.6%)	1
NNY	7	20 (52.6%)	11	2
ENTLE	2	12	26 (65%)	0
OMOS	28 (82.9%)	1	5	4
NVERT	7	1	28 (77.8%)	3
AGGOT	0	0	38 (100%)	2
OULDY	0	1	37 (97.4%)	2
IPPLE	0	34 (85%)	6	0
ENIS	3	33 (84.6%)	3	1
USSY	1	37 (92.5%)	2	0
ATIO	0	0	34	1
ERGE	1	4	33 (86.8%)	2
TAMP	0	0	40 (100%)	0
OPIC	0	1	39 (97.5%)	0
TTOM	0	1	38 (97.4%)	1
ILLIE	5	2	29 (80.5%)	3
GONY	0	4	35 (89.7%)	1
BIRTH	0	32 (80%)	8	0
ROWN	5	1	33 (84.6%)	0
RAZY	3	0	37 (92.5%)	0
RAPE	1	6	33 (82.5%)	0
AMOUS	0	3	37 (92.5%)	0
GAUDY	0	6	32 (84.2%)	2
EIGHT	0	3	36 (92.3%)	1
INTLND	0	4	36 (90%)	0
ADAM	0	31 (79.4%)	8	1

APPENDIX 4

Veterans Administration Descriptive Criteria for Diagnosis (V.A. TB 10A - 78, p. 10)

"Schizophrenic reaction, paranoid type.

This type of reaction is characterized by schizophrenic unrealistic thinking, with mental content composed chiefly of delusions of persecution; occasionally of grandeur, hallucinations, a fairly constant attitude of hostility and aggression, and ideas of reference. It is also characterized by unpredictable behavior. Excessive religiosity may be present and there may be no delusions of persecution. Instead there may be an expansive and productive delusional system of omnipotence, genius, or special ability. The systematized hypochondriacal states are included in this group."

"Schizophrenic reaction, unclassified.

The acute group of this reaction includes cases exhibiting a wide variety of schizophrenic symptomatology, such as confusion of thinking and turmoil of emotion; manifested by perplexity, ideas of reference, fear and dream states, and dissociative phenomena. These symptoms appear precipitously, often without apparent precipitating stress, but exhibiting historical evidence of prodromal symptoms. Very often it is accompanied by a pronounced affective coloring of either excitement or depression. The symptoms often clear in a matter of weeks, although there is a tendency for them to recur. The chronic schizophrenics exhibit a mixed symptomatology, and when the reaction cannot be cleared in any of the four Kraepelinian types, it should be placed in this group."

Time Required in Hundredths of a Second for Corre

SUBJECTS	HOMOSEXUAL WORDS*									HETEROSEXUAL WORDS*						Un
	Pleasant			Neutral			Unpleasant			Pleasant			Neutral			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
A	4	4	2	6	5	2	2	4	3	3	4	2	2	3	4	2
B	4	3	2	26	6	3	3	7	2	6	4	5	6	4	3	3
C	2	4	5	6	4	4	3	5	2	4	7	3	3	4	3	4
D	4	5	4	8	5	5	4	8	6	7	4	4	4	4	7	3
E	5	4	4	21	6	7	5	5	5	12	10	8	6	6	4	9
F	2	3	3	4	4	7	2	2	4	3	8	3	5	4	2	4
G	2	2	2	4	2	3	2	3	3	3	2	2	3	3	2	2
H	2	2	3	3	3	2	3	2	2	5	3	2	2	2	2	3
I	2	2	2	3	3	3	2	2	1	4	4	2	2	3	3	2
J	5	6	7	9	7	9	7	6	6	5	8	13	4	6	4	6
K	6	6	4	26	8	6	8	5	10	22	13	3	5	5	6	9
L	4	2	1	4	2	4	2	4	3	3	2	6	2	2	2	4
M	3	2	3	5	5	5	2	2	3	3	6	4	3	4	2	3
N	6	5	3	6	7	6	4	3	6	6	7	8	4	3	6	5
O	3	4	3	5	14	4	3	3	3	5	6	5	5	7	4	3
P	3	3	4	11	7	4	4	5	4	12	5	5	7	3	8	6
Q	5	12	7	10	19	8	5	22	7	17	35	11	6	17	15	18
R	2	2	3	7	4	4	1	2	4	8	13	4	3	9	2	4
S	3	2	3	11	4	5	7	7	3	2	4	7	3	12	6	9
T	3	4	3	3	4	4	4	3	2	5	5	5	5	6	3	4
U	3	2	3	5	4	3	3	3	4	3	3	3	3	4	3	3
V	3	2	3	4	2	3	2	4	3	4	4	3	3	3	3	3
W	4	11	24	11	25	8	6	15	7	10	10	4	14	10	12	19
X	1	2	1	1	2	2	3	2	1	3	1	3	1	1	1	2
Y	7	7	8	13	9	9	7	8	5	8	8	10	7	7	7	9
SUMS	88	101	107	212	161	120	94	132	99	163	176	125	108	131	114	139

ognition of Test Words with Paranoid Schizophrenic Subjects (N = 25)

nt	NON-SEXUAL WORDS*																		SUMS
	Pleasant						Neutral						Unpleasant						
.8	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	
5	2	3	3	2	3	2	11	5	3	2	3	4	2	3	2	2	2	3	117
3	2	2	6	2	3	5	4	4	4	5	2	4	4	4	3	2	2	3	156
8	3	3	3	4	4	6	4	6	4	6	3	11	3	8	6	2	4	3	171
3	7	5	4	4	4	4	3	5	5	4	4	4	4	4	5	4	4	3	166
8	3	5	6	4	3	9	8	7	9	7	10	4	6	4	5	5	4	6	238
3	3	2	5	3	3	5	4	3	3	5	2	2	3	5	3	3	3	5	128
2	2	3	4	3	2	2	3	2	2	3	2	3	3	6	3	2	2	3	98
2	2	2	2	2	3	4	2	2	2	3	2	2	2	2	2	2	2	3	88
2	2	3	2	2	4	2	2	2	2	2	2	2	1	9	3	2	2	4	92
.1	5	6	6	4	7	8	9	5	4	8	5	6	4	7	6	5	6	5	241
.0	5	4	5	5	4	5	7	5	5	4	7	7	5	4	5	4	3	6	252
4	3	2	3	2	3	2	2	2	2	3	2	3	3	3	3	3	2	3	98
3	2	2	4	3	7	7	2	2	2	2	6	4	2	2	2	2	3	5	123
6	4	4	4	3	5	4	4	4	3	6	4	4	4	3	3	4	4	3	165
6	3	4	6	4	5	5	7	4	3	3	3	6	3	3	3	4	6	3	165
2	2	3	5	6	4	10	8	3	3	4	3	4	3	3	4	2	2	4	169
8	6	6	6	6	5	35	13	7	7	30	11	28	6	12	5	6	7	16	448
6	2	6	6	8	5	9	4	3	1	3	3	10	3	3	1	2	2	3	161
8	2	6	3	4	7	6	6	4	9	4	3	6	7	3	2	4	7	8	191
4	3	3	4	4	4	5	4	3	3	4	3	4	3	4	3	5	3	4	137
4	4	2	3	2	3	4	3	3	2	4	3	3	3	2	3	2	2	3	110
4	3	3	2	2	2	3	3	3	2	3	2	5	2	2	3	3	3	2	106
9	40	7	10	8	10	28	55	15	10	13	8	19	11	7	19	12	50	60	671
1	1	1	2	1	1	1	1	1	5	1	1	2	1	1	1	1	1	1	54
10	7	6	8	11	12	5	8	6	6	10	9	9	7	11	10	11	8	9	300
52	118	93	112	99	113	176	177	106	101	139	103	156	95	116	105	94	135	168	4646

Time Required in Hundredtns of a Second for Correct Rec

SUBJECTS	HOMOSEXUAL WORDS*									HETEROSEXUAL WORDS*								
	Pleasant			Neutral			Unpleasant			Pleasant			Neutral				Unpleas	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	1
A	3	2	4	4	4	4	5	4	6	5	2	4	4	3	4	5	2	
B	4	4	4	10	4	5	3	5	2	7	4	3	4	4	6	6	11	
C	4	5	6	6	5	5	7	5	5	11	15	8	6	6	4	6	4	
D	13	20	12	25	22	13	13	17	11	17	25	17	13	15	14	18	50	1
E	2	4	4	5	4	7	5	5	4	12	8	4	3	3	4	7	5	
F	4	4	8	9	9	12	4	3	4	10	5	9	8	5	6	6	6	
G	11	8	7	7	10	10	5	18	12	5	15	7	5	12	11	7	5	
H	3	2	3	4	3	4	2	3	3	7	3	6	2	2	4	3	5	
I	4	3	3	7	5	13	3	4	6	8	7	4	3	4	5	2	3	
J	4	5	3	6	3	8	3	11	8	8	8	7	7	4	5	10	7	
K	4	7	5	5	6	6	5	5	4	7	9	6	4	4	5	7	6	
L	7	5	5	10	6	8	3	5	4	5	5	4	6	5	6	4	6	
M	1	2	1	2	1	2	1	3	2	1	2	1	2	1	2	1	2	
N	3	2	3	4	4	3	3	3	6	3	2	3	2	2	6	3	2	
O	8	6	3	8	9	6	7	4	9	8	18	2	7	3	3	10	8	
P	8	6	6	14	8	5	6	7	10	13	14	15	6	6	7	9	7	2
Q	2	2	2	3	4	3	4	4	2	4	9	3	3	2	3	5	3	
R	3	2	10	11	5	14	2	10	6	7	45	4	5	2	4	12	15	
S	3	3	3	4	4	5	3	2	4	2	2	2	2	3	3	3	3	
T	4	3	3	5	8	3	3	4	4	5	7	2	2	4	2	3	4	
U	4	4	4	5	6	4	6	4	4	3	3	5	3	5	4	5	5	
V	14	6	5	23	9	12	10	8	11	14	7	5	10	5	6	5	24	
W	5	4	4	8	6	5	4	5	6	6	4	5	3	4	5	6	6	
X	9	7	7	11	9	6	5	17	5	9	10	6	9	4	6	5	4	
Y	1	1	1	2	5	5	2	1	1	8	2	1	2	2	4	4	2	
SUMS	128	117	116	198	159	168	114	157	139	185	231	133	121	110	129	152	195	1

*See Table I (p. 17) which contains list of words

ion of Test Words with Unclassified Schizophrenic Subjects (N = 25)

NON-SEXUAL WORDS*																		
Pleasant						Neutral						Unpleasant						SUMS
19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	
2	3	3	3	2	4	3	3	3	3	4	4	5	15	2	1	2	2	132
4	4	3	4	5	6	6	5	4	3	4	17	3	3	3	3	4	6	178
3	4	5	4	5	5	4	4	5	4	6	3	3	7	4	4	3	3	191
11	11	11	9	15	11	15	12	12	19	10	13	12	15	14	9	14	16	556
6	3	3	4	3	4	3	5	2	5	3	5	3	10	3	3	4	3	163
3	9	3	4	22	7	3	6	4	12	4	16	8	6	7	3	14	5	257
13	6	6	6	9	8	10	7	4	6	9	9	8	6	9	5	5	12	302
3	4	3	3	3	4	2	3	4	3	2	7	2	5	2	5	2	9	129
3	6	2	5	6	13	4	4	3	3	4	8	4	10	5	3	3	4	179
4	6	7	5	6	9	5	6	4	5	4	6	6	10	5	4	2	6	215
3	5	6	4	3	3	5	5	5	5	3	4	4	4	4	6	3	5	178
4	5	6	3	6	7	4	6	5	6	3	7	3	16	6	5	5	7	208
1	1	1	2	1	2	1	1	1	2	2	1	1	1	1	1	1	1	50
1	1	2	2	2	3	2	2	2	2	2	2	2	3	1	2	2	2	91
1	1	3	2	4	1	3	3	5	3	3	8	5	6	3	3	5	2	186
4	4	4	4	4	4	4	7	5	5	5	18	7	26	6	5	6	16	306
1	1	3	2	2	4	2	1	2	3	2	2	2	5	2	1	2	2	99
20	2	4	4	3	6	4	4	11	4	3	14	4	4	4	5	2	5	268
3	3	3	3	3	3	3	2	2	2	3	2	2	3	3	3	2	3	102
3	2	2	2	3	5	3	2	3	3	3	2	3	3	2	3	3	3	119
3	4	4	3	4	5	4	3	4	4	4	4	4	5	3	3	3	3	144
4	5	5	3	8	27	5	5	5	8	15	5	5	5	6	4	7	3	305
5	4	6	6	5	6	5	4	4	5	3	4	4	7	5	3	4	6	176
4	3	5	5	5	6	10	12	4	5	5	22	6	5	3	4	5	8	250
1	2	2	3	1	3	3	1	1	4	2	3	1	2	2	1	1	2	80
0	99	102	95	130	156	113	113	104	124	113	186	107	181	105	89	104	133	4864

Time Required in Hundredths of a Second for Correct R

SUBJECTS	HOMOSEXUAL WORDS*									HETEROSEXUAL WORDS*							
	Pleasant			Neutral			Unpleasant			Pleasant			Neutral			Unple	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
A	1	2	2	13	2	4	3	2	2	7	2	2	1	2	4	3	2
B	2	3	1	6	3	2	6	3	2	10	4	1	3	3	4	1	2
C	2	2	1	4	1	2	1	3	1	2	2	1	1	1	2	4	1
D	1	1	1	2	5	2	1	2	1	2	1	1	1	1	2	1	1
E	3	2	3	5	2	2	1	3	8	2	1	2	4	4	3	2	2
F	1	1	2	2	3	2	2	1	1	3	1	1	1	2	1	3	2
G	2	2	4	4	7	1	3	2	2	15	2	2	3	2	2	2	2
H	17	17	14	23	16	21	19	17	12	20	27	17	16	11	14	20	22
I	8	5	7	8	12	7	6	9	5	8	7	2	5	10	5	8	11
J	8	9	6	9	11	9	13	6	7	19	18	5	6	6	13	8	7
K	16	9	10	21	11	19	11	11	14	12	13	10	9	12	14	11	19
L	5	8	8	7	9	17	6	8	7	12	6	3	4	7	4	10	9
M	2	3	2	5	2	3	2	3	2	2	2	2	1	3	1	2	3
N	2	5	3	6	4	3	2	3	4	7	2	2	4	4	2	3	3
O	7	5	6	30	6	3	10	4	7	9	6	6	3	4	6	5	5
P	2	1	2	2	2	2	2	1	2	1	2	1	1	1	1	2	1
Q	1	1	2	4	3	3	1	2	2	2	3	3	3	1	2	3	2
R	1	1	3	4	3	4	2	3	2	4	2	1	1	4	3	1	2
S	4	3	5	6	3	8	2	2	2	5	5	2	3	9	7	10	5
T	1	2	2	2	2	2	1	3	3	2	3	2	2	1	3	1	3
U	2	6	2	11	4	5	6	3	2	12	6	1	2	4	4	2	3
V	6	10	8	19	7	12	20	5	12	12	9	4	12	2	20	4	15
W	1	3	2	7	9	1	2	4	3	17	9	4	11	11	3	3	6
X	3	1	4	7	2	5	2	3	1	4	7	2	1	1	3	2	2
Y	3	2	5	8	4	7	2	3	2	12	4	2	3	1	1	2	3
SUMS	101	104	106	216	133	146	126	106	106	201	144	79	101	107	124	113	133

*See Table I (p. 17) contains list of words

tion of Test Words with Normal Subjects (N = 25)

NON-SEXUAL WORDS*																		SUMS
Pleasant						Neutral						Unpleasant						
19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	
1	2	2	2	2	3	2	3	1	1	1	1	1	2	2	1	1	1	84
1	3	3	3	2	1	3	3	2	3	2	3	1	5	2	1	2	4	102
2	1	1	1	2	1	2	1	2	1	1	1	1	1	2	2	1	1	57
1	1	1	1	1	2	1	1	2	2	1	1	1	1	1	1	3	2	61
2	2	2	1	1	3	3	2	3	5	1	1	1	2	1	1	2	1	86
1	1	1	1	1	3	1	1	1	1	1	1	1	1	1	2	1	1	54
1	2	5	2	3	2	1	3	2	2	2	3	2	1	1	2	3	1	100
11	18	13	14	25	24	12	15	14	12	12	20	13	17	15	14	9	28	604
4	3	8	5	3	14	10	5	6	10	3	8	2	4	4	4	4	9	235
3	6	3	5	7	10	7	5	4	5	5	8	7	35	6	2	7	28	330
8	18	10	13	15	22	10	13	16	9	8	12	15	12	9	10	16	10	465
3	7	3	5	4	12	5	4	4	10	5	7	5	15	4	3	4	6	244
2	1	2	2	2	3	2	1	2	2	1	2	2	2	2	1	3	3	78
2	1	2	2	4	2	2	2	4	3	2	2	1	3	2	2	2	4	103
2	3	5	4	8	6	6	3	4	4	4	6	4	7	4	2	3	5	207
1	2	3	1	1	1	2	1	1	2	1	1	1	1	1	1	1	2	51
1	1	2	1	1	2	3	1	2	2	2	2	1	3	1	1	1	1	69
2	1	2	4	1	3	2	1	2	1	1	3	2	2	2	1	2	2	78
2	4	4	4	7	4	9	4	2	5	4	3	3	5	2	2	4	3	157
1	1	2	1	1	2	1	1	1	2	2	1	1	6	2	1	1	1	66
2	1	4	5	1	2	2	3	2	2	2	2	2	4	4	2	3	3	124
2	4	5	2	4	8	11	7	2	10	3	6	4	14	5	2	2	3	290
1	1	2	1	3	2	3	5	6	5	1	2	3	5	2	3	2	1	147
1	2	2	2	2	3	3	2	3	2	4	3	1	7	6	1	2	4	102
1	1	1	2	3	1	4	3	2	3	2	2	1	4	1	1	4	5	107
58	87	85	85	104	136	107	90	90	104	71	101	76	159	82	63	83	129	3991