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A COMPARISON OF THE EFFECTS OF PROJECTIVE
AND QUESTIONNAIRE INSTRUCTIONS UPON RESPONSES TO
PICTURES OF THE ROSENZWEIG PF STUDY TYPE

by

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Abstract

The purpose of this experiment was to investigate the effect of instructions upon responses to pictures of the PF Study type. It was hypothesized that when subjects are directed to respond for, and presumably to identify with, pictured characters, they would give more unfavorable responses than when questioned directly as to their own presumed behavior in the depicted situations. It was hypothesized, further, that one type of response likely to be withheld when the questioning procedure is employed is a response indicating hostility toward fellow men.

In order to test the hypotheses, 58 university students were given a set of pictures under PF Study instructions, and an alternate set administered in questionnaire fashion. For half the subjects the order of presentation of pictures, but not of instructions, was reversed. All responses were scored according to the same criteria, and subjected to statistical analysis in order that the effects of differences in instructions, pictures, and groups of subjects might be estimated.

The results of the experiment lend support to both hypotheses, the main findings being as follows:

1. When the pictures were administered under questionnaire rather than PF Study instructions, the subjects gave fewer responses indicating that blame for frustration is aggressively attributed to another person, and a greater number of responses indicating that, when frustrated, the subject takes it upon himself to try to overcome the obstacle.

2. The observed differences in frequency of these two types of response, elicited under different instructions, were sufficiently great to produce significant differences in mean scores for three of Rosenzweig's major scoring categories: Extrapunitiveness, Ego-defensiveness and Need-persistence.

These results were interpreted as reflecting differences in the effects of projective and questionnaire instructions. Questionnaire instructions, by directing the subject to indicate his own presumed behavior in hypothetical situations, tend to put the subject on the defensive. Since the subject must consciously acknowledge each response as his own, the production of two types of response is prevented: (a) a response which the subject is unwilling to acknowledge as his own, and (b) a response

which makes manifest a feeling or wish which does not normally enter the subject's awareness, that is, a response which the subject is unable to acknowledge as his own.

The main conclusions and implications of this experiment were:

1. The type of instructions used with pictures of the PF Study type may decisively affect test results.

2. One type of response which subjects sometimes withhold, when questioned directly as to their behavior in frustrating situations, is a response indicating that the subject aggressively blames another person for having frustrated his needs.

3. One type of response which is elicited more frequently by direct questioning than by the use of PF Study instructions is a response indicating that, in frustrating situations, the subject takes it upon himself to seek a solution to the problem.

4. If responses elicited under PF Study instructions be considered more valid indicators of behavior in frustrating situations, then the findings of this experiment suggest that, for some subjects, direct questioning elicits responses indicating that the subject is less frequently hostile toward fellow men, and more frequently willing to accept responsibility for overcoming obstacles, than is actually the case.

5. Since PF Study instructions do less to structure the test situation than questionnaire instructions, the results of this experiment support the hypothesis, which is basic to most theoretical discussions of projective techniques, that the revelatory power of a diagnostic technique varies inversely with the degree of structuring of the test situation.

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CHAPTER I

INTRODUCTION AND STATEMENT OF THE PROBLEM

Introduction

The hypothesis underlying the development of projective techniques is that a person's behavior will be more revealing of his personality characteristics when the test situation is ambiguous than when it is well defined, or highly "structured". This hypothesis gains theoretical support from several considerations: (1) a highly structured object, such as a chair, is, by definition, responded to in a stereotyped manner by most people, whereas less structured materials permit more individual modes of behavior; (2) in familiar situations there are conventional forms of behavior which, by guiding the individual, conceal as much as they reveal his personality; (3) if the situation is ill-defined, the subject is less likely to discern the examiner's intention in requesting a response, and is therefore less likely to be guided by a concept of "good response" than if the situation were highly structured; and (4) to the extent that the subject's responses are not guided by any concept of socially-approved or "good" response, they are determined by his own personal needs, attitudes and fantasies. In accordance with the projective hypothesis, the materials of projective tests are made

ambiguous, that is, they are so constructed as to admit of more varied interpretations than do familiar objects. Also in accordance with the hypothesis, projective test instructions are designed to provide only a minimum of guidance for the subject.

In the present study, it was proposed that the projective hypothesis be tested experimentally by comparing the effects of projective test instructions and questionnaire instructions upon responses to a set of pictures. Since the projective instructions do less to "structure" the test situation than do questionnaire instructions, it was predicted that there would be differences between the responses elicited by the two techniques. Insofar as the results of this comparison will be relevant to the projective hypothesis, it was felt that this study would have theoretical significance.

The practical importance of this investigation derives from the fact that if responses elicited by projective instructions differ from responses obtained by questionnaire instructions, then there must be factors operating to produce the differences which, if not taken into account by the clinician using the techniques, may lead to invalid interpretations. One such invalidating factor is the tendency, on the part of subjects, to censor their responses to personality tests. This is the tendency to deny expression to certain thoughts, wishes and feelings, or to allow their expression only in some distorted form. In this sense, not only responses to test situations, but any behavior may be "censored". The

problem which is encountered by the psychologist using diagnostic techniques is that of estimating the extent to which responses elicited during an interview, or testing session, have been censored. If the censorship has not been excessive, then the data obtained may be interpreted, as is commonly done, by extrapolation from the test situation to everyday situations. If, however, responses have been withheld or distorted to an extent which is not characteristic of the subject in his reactions to everyday happenings, then this must be taken into account by the examiner in his interpretation of test data. The validity of an interpretation of a test record will depend, then, upon the presumed degree of correspondence between censorship in the test situation and censorship in the everyday life of the subject. The issue is accordingly an important one. Research related to the problem as it concerns various diagnostic techniques has, however, been scanty.

In the present study, the pictures of the Rosenzweig Picture-Frustration Study (29) were administered under the conditions prescribed by its author, and under conditions approximating those of the questionnaire, or inventory, method. The projective procedure involves instructing the subject to respond for, and in some sense identify with, the cartoon-like characters in the pictures. Since the projective instructions are calculated to turn the subject's attention away from himself, they facilitate the production of responses which the subject might not be willing to acknowledge as his own, were he questioned directly. The questionnaire procedure involves

instructing the subject to indicate how he believes he would repond in the hypothetical situations depicted. By so turning the subject's attention upon himself, the questionnaire instructions encourage conscious evaluation of responses, and may prevent certain unacceptable thoughts or wishes from entering consciousness. On the basis of these considerations, it was predicted that subjects would censor their responses to a greater extent when a questionnaire technique was used than when the projective procedure was employed.

Both techniques under investigation purport to reveal the subject's characteristic ways of reacting to frustration in social situations. Insofar as the behavior being investigated is social behavior, it seemed reasonable to suppose that one type of response likely to be inhibited by subjects would be responses indicating hostility toward fellow-men. It was predicted, accordingly, that censorship would be reflected in a decrease in the number of responses of this type elicited by the questionnaire procedure.

Specific Purposes of this Experiment

The specific purpose of this experiment was to compare the effects of projective and questionnaire instructions upon responses to pictures of the PF Study type. The first question to be investigated was: If subjects are questioned about their own behavior, do they censor their responses to a greater extent than when they are

instructed to answer for, and presumably identify with, pictured characters? The second question was: When subjects censor their responses to questions, what sort of response is withheld, and what sort of response is offered?

Restating these questions in the form of hypotheses to be tested in this experiment, they become:

1. If one set of pictures is administered to a group of subjects under the projective instructions of the Rosenzweig PF Study, and an alternate set administered in questionnaire-fashion, then the sets of responses so elicited will differ to an extent not attributable solely to differences between the two sets of pictures.
2. If subjects are required to respond to a set of pictures under the conditions prescribed by the author of the PF Study, then they will offer more responses reflecting hostility toward fellow-men than when they are instructed to indicate their own presumed behavior in the hypothetical pictured situations.

CHAPTER II

REVIEW OF RELATED RESEARCH

Among the large number of personality questionnaires which have been published, it is now quite generally admitted that there are few which have much practical value in individual diagnosis. The years, as Hunt (18, p 207) says, have not treated these techniques in a kindly manner. One of their most important failings is their susceptibility to "faking" or "lying" in one way or another, as well as their susceptibility to unconscious self-deception on the part of subjects who may be consciously quite honest and sincere in their responses. The possibility of such factors having an invalidating effect upon the scores obtained has been mentioned by many writers, including Adams (1), Allport (3), Bernreuter (4), Eisenberg (6), Guilford (15), Humm (17), Kelly (19), Landis (20), McKinley (21), McQuitty (22), Meehl (23) (24), Olson (26), Rosenzweig (27) (28), Ruch (36), Vernon (38), Washburne (39), Willoughby (40) and others. One of the assumed advantages of projective methods is that they are relatively less influenced by such distorting factors, although there have been very few attempts

to justify this assumption experimentally.

A number of investigators have concluded that subjects can, and do, censor their responses to personality questionnaires. Hendrickson (16), cited by Olson (26), reported that a group of teachers earned significantly more stable, dominant, extraverted and self-sufficient scores on the Bernreuter scales when instructed to take the test as though they were applying for a position, than when under more neutral conditions. Bernreuter (4) found that college students could produce marked shifts in their Bernreuter scores in the "socially approved" direction, although he interpreted this finding as indicating the comparative unimportance of the faking tendency. His reasoning was that had the need for giving socially approved responses operated in the first administration to any appreciable extent, the effect of special instructions to take this attitude should not have been great. This reasoning seems rather tenuous, inasmuch as the occurrence of a shift merely shows that conscious and permitted faking can produce greater effects than those which may have been operating in the "naive" original testing. The insignificant correlations between naive and faked scores were also used by Bernreuter to support his view, an argument which seems very questionable in view of the probably gross skewness of the faked scores. What is clear from his investigation is that people are able to influence their Bernreuter scores to a considerable extent if they choose to, and that the average student's

notion of what is socially desirable seems to be an individual who is dominant, self-sufficient and stable.

Metfessel (25), Olson (26) and Spencer (37) have studied the effects of anonymity on responses to questionnaires and shown that the requirement of signing one's name has a definite effect on the scores. Kelly, Miles and Terman (19) demonstrated the ease with which scores on the Terman-Miles Masculinity-Femininity Test could be "faked" in either direction once the subjects had been let in on the secret of what the test measured.

Ellis (7) made a rather comprehensive review of forty-two experiments designed to establish this "faking" or "over-rating" tendency on the part of respondents to personality questionnaires, and concluded that thirty-six indicated that over-rating or lying did take place, while only six showed that it did not.

The possibility that the problem of censorship of responses may be of less significance for some types of personality test than for others seems largely to have been ignored by researchers. In order to investigate this possibility, it is necessary to compare data obtained by testing the same group of subjects by different techniques. Thus, Ellis (8) compared the use of direct phrasing of questions with the use of indirect forms of the same questions. He found that when questions were changed from the direct form, "I get angry VERY OFTEN PRETTY OFTEN etc.", to the indirect form, "Children

who often get angry are VERY QUEER PRETTY QUEER etc.", his subjects gave significantly more unfavorable responses, especially psychosomatic ones.

Fosberg (9) gave the Bernreuter test to thirty-seven subjects under standard conditions, under instructions to make good impressions, and under instructions to make bad impressions. He then gave the Rorschach Test to fifty subjects under similar conditions, and found that whereas the Bernreuter scores showed shifts in the desired directions, the Rorschach protocols were not significantly changed. In a later study, Fosberg (10) asked fifty subjects how they had gone about the task of giving "good" and "bad" personality impressions, when instructed to do so. A comparison of the list of explanations revealed that, in general, to make a "good" impression subjects tried to please the examiner, to appear to be extraverted, erudite, humorous and intelligent, and to avoid mention of sex, destruction and aggression. To appear to be "bad", subjects tried to annoy the examiner, to act stubborn, to give sexual and anti-social responses, and to be vague. Since these factors did not appear to influence the Rorschach scoring, Fosberg again concluded that subjects who were unfamiliar with the scoring system could not distort the picture of the basic personality structure which the Rorschach Test yielded.

Fosberg's study would suggest that one reason why subjects are unlikely to produce "distorted" Rorschach protocols is that the subjects are unaware of the significance which their responses have

for the examiner. Other possible explanations are: (1) the subject is less self-conscious than he is while responding to inventory tests. As Rosenzweig (32, p. 63) says, instead of taking himself as the object of observation, the subject, in cooperation with the clinician, " 'looks the other way' at some ego-neutral object" ; and (3) the Rorschach test is so far-removed from situations of everyday life that the subject is guided to a lesser extent by convention than when he is taking a personality questionnaire.

Whatever the justification, on theoretical grounds, for supposing that projective methods are less susceptible to "distorting" influences, the problem of censorship in test situations is one which deserves much experimental investigation. There is reason to believe, for example, that some projective techniques are influenced by such factors. A subject who, on the TAT, identifies with a hero involved in some relationship with a mother figure might well be guided by convention in attributing characteristics to the woman. Such a possibility has been mentioned by Rosenzweig (33). The need for research in this area, although urgent, has been largely unrecognized or ignored, as a survey of the current literature reveals.

CHAPTER III

EXPERIMENTAL MATERIALS, SUBJECTS AND DESIGN

Materials

The twenty-four pictures of the Rosenzweig Picture-Frustration Study (29) were divided arbitrarily into two sets of twelve pictures each. In an attempt to improve the (undetermined) reliabilities of the instruments being developed, eight new pictures were added to each set. These additional pictures are similar to those of the PF Study insofar as they have the following characteristics:

1. each is a cartoon-like drawing depicting two or more persons who are involved in a mildly frustrating situation of common occurrence;
2. the figure at the left of each picture is shown saying certain words which either frustrate the other individual or help describe what is frustrating him;
3. the person on the right is shown under a blank caption box;
4. facial features are omitted, and other expressions of personality, such as stature and posture, are shown

as indefinitely as possible.

The two sets of pictures, consisting of twenty drawings each, can be said to be parallel only insofar as (a) the number of "superego-blocking" situations (situations involving accusations and insults) is the same for each set, and (b) the number of male figures shown being frustrated is the same for each set, as is the number of frustrated female figures.

The new pictures were interspersed among pictures from the PF Study in the manner shown in Figure I, and bound in booklet form, as shown in Appendix I.

Responses to all the pictures were scored for both Direction of Aggression and Type of Reaction, in accordance with Rosenzweig's (31) criteria:

Under direction of aggression it is considered whether the subject turns his aggression outward upon the environment (extrapunitive), turns it inward upon himself (intropunitive), or avoids expressing it by smoothing over the situation (impunitive). Type of reaction is classified according to whether the subject appears to be blocked at the very outset of the problem (obstacle-dominance), whether he dwells on the question of who is to blame for the frustration (ego-defense), or whether he directs his attention toward a possible solution (need-persistence). (31, p. 364)

Subjects

Fifty-eight subjects were obtained, on a voluntary basis, from an elementary class in psychology at the University of British Columbia. Thirty were male students, twenty-

FIGURE I

COMPOSITION OF THE TWO SETS OF PICTURES

Picture Set I				Picture Set II			
Number		Source		Number		Source	
1		PF Study, Item 1		1		new	
2		"	" 2	2		"	
3		"	" 3	3		"	
4		"	" 4	4		"	
5		new		5		PF Study, Item 5	
6		"		6		"	" 6
7		"		7		"	" 7
8		"		8		"	" 8
9		"		9		"	" 9
10		"		10		"	" 10
11		"		11		"	" 11
12		"		12		"	" 12
13		PF Study, Item 13		13		"	" 21
14		"	" 14	14		"	" 22
15		"	" 15	15		"	" 23
16		"	" 16	16		"	" 24
17		"	" 17	17		new	
18		"	" 18	18		"	
19		"	" 19	19		"	
20		"	" 20	20		"	

eight were female students. Their ages ranged from sixteen to thirty-three years, the mean age being 20.0 years, the standard deviation, 2.76. At the time of testing, no lectures on psychometrics had been given in the course in which they were enrolled.

Design of the Experiment

In designing the experiment, several considerations had to be taken into account:

1. In order that the reliability of the experimenter's scoring might be taken into account in the interpretation of the experimental results, ten records, randomly selected, were rescored by the examiner after three weeks. A measure of agreement between the two sets of scores, based on 400 responses, could then be calculated.
2. In order to determine whether another rater would agree with the experimenter's scoring, ten records were selected at random from the protocols of all subjects, and scored by a second rater. The percentage agreement between these two sets of scores could then be calculated and used as an estimate of inter-scorer reliability.
3. The relative stimulus "card-pull" of the two sets of pictures was unknown. One set might, for example, elicit more extrapunitive responses than the other, when conditions of

administration were the same for both. The experiment was therefore designed so that the effects of this extraneous variable might be controlled. Half the subjects were given Set I under PF Study instructions, while the remaining subjects took Set II under these instructions. Similarly, half the subjects took Set I under questionnaire instructions, while the others were given Set II under these instructions.

4. In order that the effects of the main experimental variable, namely, type of test instructions, might be investigated, it was necessary that each subject respond to the pictures under two different sets of instructions. It seemed possible that the initial projective instructions might induce a set which would carry over into the second administration of pictures, and so conceal or minimize any difference in the effects of the instructions. Pictures were always to be administered first under PF Study instructions. In an attempt to remove the set which these instructions are designed to induce, before the administration of the second set of pictures a questionnaire consisting of fourteen items from the Allport AS Study (2) was given to each subject. The items chosen were considered typical of personality tests of the questionnaire type insofar as they require that the subject indicate how he believes he would behave in a variety of hypothetical situations. It seemed that, by so turning the subject's attention upon himself, the possibility of continuance of any

"projective" set might be effectively removed.

The two sets of instructions are presented in Appendix B, the Allport AS Study items in Appendix D.

5. The order of presentation of pictures might influence the responses made to them. In an attempt to control this variable, the sets of pictures were administered in one order for half the subjects and in the reverse order for the others.

6. Randomization of the subjects taking the pictures in the different orders had to be effected. This was accomplished by stacking the test materials in a random order, i.e. an order derived from a table of random numbers. Chance factors then determined which order of pictures any individual received.

The results of this randomization, so far as age and sex are concerned, were found to be as follows: (a) one group consisted of fourteen male and fifteen female students, ranging in age from seventeen to twenty-five years, with a mean age of 19.45 years and a standard deviation of 1.92; (b) the other group consisted of sixteen male and thirteen female students, ranging in age from sixteen to thirty-three years, with a mean age of 20.52 years and a standard deviation of 3.31.

7. It was considered important that all subjects be fully aware of the phrasing of each set of instructions. The tests were therefore administered individually, with a demonstration of

the first item of the first test as described by Rosenzweig (29).

In brief: the experiment was so designed as to permit the two sets of pictures to be given to the two experimental groups in two orders of presentation and under two sets of instructions, without any bias as to the arrangement of the subjects, the groups, or the orders.

CHAPTER IV

RELIABILITY OF THE SCORING

Intra-examiner Reliability

In order that the consistency of the experimenter's scoring might be estimated, ten records, randomly selected, were rescored by him after three weeks. Table I presents the results of a comparison of the two sets of scores. The examiner disagreed with his original scoring on 28 items, or 7 per cent of the responses rescored. The disagreement was considerably higher for the new items (9.5%) than for items from the Rosenzweig PF Study (5.5%).

Since each response actually received two scores, one for Direction of Aggression and one for Type of Reaction, separate measures of disagreement were calculated. Table I shows that the examiner disagreed with his original scoring, as to Direction of Aggression, in 3% of the cases, as to Type of Reaction, in 4% of the cases, and as to the unscorability of the response, in 1% of the cases.

The values for percentage agreement obtained by comparing 400 original scores with scores assigned after a 3-week

TABLE I

COMPARISON OF SCORING OF 400 RESPONSES BY THE
EXPERIMENTER AFTER 3 WEEKS WITH ORIGINAL SCORING

A. Total Disagreements		
Items Disagreed Upon	Number of Disagreements	Percentage Disagreement
PF Study Items	13	5.5
New Items	15	9.5
All Items	28	7
B. Disagreements Involving One Scoring Dimension Only		
Type of Disagreement	Number of Disagreements	Percentage Disagreement
Disagreement as to Direction of Aggression	12	3
Disagreement as to Type of Reaction	17	4
Disagreement as to Unscorability	4	1

interval were considered sufficiently high to make further rescoring unnecessary. Since the records of responses were scored in a random sequence, it can be assumed that discrepancies in scoring due to the examiner's inconsistent application of the scoring criteria have cancelled out, i.e. did not appreciably distort the means.

Inter-examiner Reliability

In order that an estimate of scorer agreement might be obtained, ten records were scored by a second examiner, and his scores compared with those assigned by the experimenter. Table II shows that the two scorers disagreed on 69 items, or 17% of the responses scored. The disagreement was lower for PF Study items (15%) than for the new items (21%). The former figure agrees with that reported by Clarke (5, p. 369), who calculated the percent agreement between two examiners who scored 100 normal PF Study records.

Since disagreements commonly involved only one of the two scoring dimensions, separate measures of agreement were calculated for Direction of Aggression and Type of Reaction. Table II shows that the two scorers disagreed, as to Direction of Aggression, in 8.5% of the cases, as to Type of Reaction in 9.5% of the cases, and as to the unscorability of the response in 2% of the cases.

TABLE II

COMPARISON OF EXPERIMENTER'S SCORING WITH
SCORING BY A SECOND EXAMINER FOR 400 ITEMS

A. Total Disagreements		
Items Disagreed Upon	Number of Disagreements	Percentage Disagreement
PF Study Items	35.5	15
New Items	33.5	21
All Items	69	17
B. Disagreements Involving One Scoring Dimension Only		
Type of Disagreement	Number of Disagreements	Percentage Disagreement
Disagreement as to Direction of Aggression	35	8.5
Disagreement as to Type of Reaction	38	9.5
Disagreement as to Unscorability	8	2

Although the values reported in Table II suggest that subjective factors played a part in the scoring of responses, perhaps the agreement, rather than the disagreement, should be stressed. It would seem that the criteria for placing responses in one or another scoring category were sufficiently well defined to reduce differences in interpretation by different scorers to a small figure.

CHAPTER V

THE DATA AND THEIR TREATMENT

The basic data on the mean scores and variability obtained by fifty-eight university students under two conditions of picture administration are presented in Table III.

From Table III it would appear that, for both groups of subjects: (a) higher Extrapunitive scores were obtained when the pictures were administered under PF Study instructions than when they were administered in questionnaire fashion; (b) higher Ego-defensive scores were obtained when PF Study instructions rather than questionnaire instructions were used; and (c) Picture Set I elicited more Impunitive and Need-persistent responses, and less Intropunitive and Obstacle-dominant responses, than did Set II, regardless of the conditions of administration. The data suggest, too, that the group of subjects receiving pictures in the order I, II differs from the other group with respect to Extrapunitiveness and Ego-defensiveness. The question is: Are these differences statistically significant?

Since three main variables were operating in this

TABLE III

MEAN SCORES AND STANDARD DEVIATIONS FOR 58
UNIVERSITY STUDENTS RESPONDING TO TWO SETS OF PICTURES
UNDER TWO CONDITIONS OF ADMINISTRATION

Order of Presentation of Pictures	Mean Score and Standard Deviation			
	PF Study Instructions		Questionnaire Instructions	
	M	S D	M	S D
Extrapunitiveness				
I II	8.19	2.64	8.10	2.25
II I	10.06	2.42	8.26	2.38
Intropunitiveness				
I II	5.35	1.64	6.84	2.00
II I	5.49	1.90	5.13	1.62
Impunitiveness				
I II	6.46	2.06	5.06	1.69
II I	4.44	1.78	6.61	1.76
Obstacle-dominance				
I II	3.26	1.76	4.73	2.13
II I	4.45	0.72	2.96	1.40
Ego-defensiveness				
I II	10.32	1.73	8.99	1.62
II I	10.91	1.83	9.80	1.99
Need-persistence				
I II	6.42	1.98	6.28	1.73
II I	4.63	1.67	7.24	2.15

experiment, namely, instructions, pictures and groups, the analysis of variance technique seemed to be the most practical method of treating the data of Table III. The application of this technique to the 2 by 2 Latin Square design has been described by Grant (14), and the analysis of the data proceeded in the manner which he describes.

The Problems Treated

Problem 1. Were the subjects' mean scores significantly affected by the form of instructions?

Table IV presents the analysis of variance applied to the data of Table III. It shows significant F-values for three scoring factors: Extrapunitiveness (4.78), Ego-defensiveness (16.51) and Need-persistence (26.21). It may therefore be stated, with respect to Extrapunitiveness, that there are less than five chances in a hundred that a difference as large as the observed difference for "instructions" would be caused by chance factors. Regarding Ego-defensiveness and Need-persistence, it may be stated that there is considerably less than one chance in a hundred that a difference as large as the observed difference for "instructions" would accidentally occur.

Another way of interpreting the three significant F-values is to say, with respect to each of the scoring factors

TABLE IV

ANALYSIS OF VARIANCE OF SCORES FOR 58
UNIVERSITY STUDENTS RESPONDING TO TWO SETS OF PICTURES
UNDER TWO CONDITIONS OF ADMINISTRATION

Source of Variation	df	Sum of Squares	Mean Square	F	Level of Confidence
Extrapunitiveness					
Order	1	29.91	29.91	5.54	.01
Pictures	1	21.29	21.29	3.94	low
Instructions	1	25.79	25.79	4.78	.05
Ss within order	56	380.83	6.80	1.26	low
Error	56	302.52	5.40		
Total	115	760.34			
Intropunitiveness					
Order	1	17.77	17.77	5.35	.01
Pictures	1	24.77	24.77	7.46	.01
Instructions	1	9.16	9.16	2.76	low
Ss within order	56	189.46	3.38	1.02	low
Error	56	186.12	3.32		
Total	115	427.28			
Impunitiveness					
Order	1	1.57	1.57	0.54	low
Pictures	1	91.63	91.63	31.27	.01
Instructions	1	4.29	4.29	1.46	low
Ss within order	56	223.87	4.00	1.37	low
Error	56	164.62	2.93		
Total	115	485.98			

TABLE IV (CONTINUED)

Source of Variation	df	Sum of Squares	Mean Square	F	Level of Confidence
Obstacle-dominance					
Order	1	2.46	2.46	1.59	low
Pictures	1	63.31	63.31	40.85	.01
Instructions	1	0.00	0.00	0.00	low
Ss within order	56	207.12	3.70	2.39	low
Error	56	86.73	1.55		
Total	115	359.63			
Ego-defensiveness					
Order	1	14.00	14.00	5.36	.01
Pictures	1	0.36	0.36	0.13	low
Instructions	1	43.09	43.09	16.51	.01
Ss within order	56	229.00	4.09	1.57	low
Error	56	146.37	2.61		
Total	115	432.83			
Need-persistence					
Order	1	4.92	4.92	2.89	low
Pictures	1	54.76	54.76	32.21	.01
Instructions	1	44.57	44.57	26.21	.01
Ss within order	56	319.13	5.70	3.35	low
Error	56	95.35	1.70		
Total	115	518.73			

represented, that, with the influence of pictures and groups eliminated, the mean scores for PF Study instructions are significantly different from the means for questionnaire instructions. This assertion can be made with greater confidence for Ego-defensiveness and Need-persistence than for Extrapunitiveness.

Since the results of the analysis suggest that the form of instructions affected the subjects' mean scores for Extrapunitiveness, Ego-defensiveness and Need-persistence, each of these scoring categories will be considered in greater detail:

(a) Extrapunitiveness: Extrapunitive responses are of three types:

i. obstacle-dominant extrapunitiveness (the presence of the frustrating obstacle is insistently pointed out), scored E';

ii. ego-defensive extrapunitiveness (blame, hostility, etc. are turned against some person or thing in the environment), scored E; and

iii. need-persistent extrapunitiveness (a solution for the frustrating situation is emphatically expected of someone else), scored e.

The question which arises is: which of these types of extrapunitive response was most affected by the form of

the instructions? Table V shows that, when the pictures were administered under questionnaire instructions rather than PF Study instructions, the subjects gave fewer E' responses, fewer E responses, and a greater number of e responses. When these differences were tested by the analysis of variance technique, only one, that for ego-defensive extrapunitiveness, proved to be statistically significant (level of confidence = .01).¹

(b) Ego-defensiveness: Ego-defensive responses are also of three types:

i. ego-defensive extrapunitiveness (defined above), scored E;

ii. ego-defensive intropunitiveness (blame, censure, etc. are directed by the subject upon himself), scored I; and

iii. ego-defensive impunitiveness (blame for the frustration is evaded altogether, the situation being regarded as unavoidable; the frustrating individual is absolved), scored M.

The question is: Which of these types of ego-defensive response was most affected by the form of instructions?

1. The analysis of variance for the nine minor scoring categories E', E, e, I', I, i, M', M and m is presented in Appendix E. The F-values for "instructions" are contained in Table V.

TABLE V

FREQUENCIES OF RESPONSES OF 58 UNIVERSITY
STUDENTS TO PICTURES ADMINISTERED UNDER TWO CONDITIONS,
CLASSIFIED ACCORDING TO NINE SCORING CATEGORIES

Scoring Category	Number of Responses		Difference in Number of Responses	F ¹	Level of Significance
	PF Study Instructions	Questionnaire Instructions			
E'	111	95	-16	1.87	low
E	330	276	-54	8.97	.01
e	92	102	+10	-	low
I'	50	58	+ 8	-	low
I	142	121	-21	3.18	low
i	121	170	+49	11.47	.01
M'	60	68	+ 8	-	low
M	147	147	0	-	low
m	107	123	+ 6	1.51	low
	<hr/> 1160	<hr/> 1160			

1. The analysis by which these F-values are derived is presented in Appendix E.

Table V shows that, when the pictures were administered under questionnaire rather than PF Study instructions, the subjects gave fewer E responses and fewer I responses, while the frequency of M responses did not show any change. An analysis of the variance of I scores showed that the obtained difference in frequency of these responses was probably spurious (Appendix E). The change in frequency of ego-defensive extrapunitive (E) responses, then, seems to have produced the observed difference in Ego-defensive scores as well as the above-noted difference in Extrapunitive scores.

(c) Need-persistence: The three types of need-persistent response are:

i. need-persistent extrapunitiveness (a solution for the frustrating situation is emphatically expected of someone else), scored e;

ii. need-persistent intropunitiveness (amends are offered by the subject, usually from a sense of guilt, to solve the problem), scored i; and

iii. need-persistent impunitiveness (expression is given to the hope that time will bring about a solution of the problem; patience and conformity), scored m.

The question here is: Which of these types of need-persistent response was most affected by the form of instructions? Table V shows that, when the pictures were

administered under questionnaire rather than PF Study instructions, the subjects gave more e responses, more i responses, and more m responses. Of these differences, however, only the difference in frequency of i responses was significant statistically, reaching the .01 level of confidence (Appendix E).

In summary: the observed differences in mean scores for Extrapunitiveness, Ego-defensiveness and Need-persistence apparently reflect differences in frequency of two types of response: ego-defensive extrapunitiveness (E) and need-persistent intro-punitiveness (i).

Problem 2. Were the subjects' mean scores significantly affected by differences between the sets of pictures?

Table IV indicates that differences in pictures effected significant differences in mean scores for four scoring factors: Intro-punitiveness, Impunitiveness, Obstacle-dominance and Need-persistence. Each of the four F-values was statistically significant at the .01 level of confidence.

Problem 3a. Did the order of presentation of pictures produce significant differences in scores?

Problem 3b. Did the two groups of subjects differ sufficiently to produce differences in their mean scores?

Although the combined effects of these two

variables may be investigated, the design of the experiment does not permit a separation of the variance due to each. The F-values for "order", in Table IV, accordingly represent the resultant effect of order of presentation of pictures and differences between groups of subjects. They are statistically significant for Extrapunitiveness, Intropunitiveness and Ego-defensiveness.

It may be stated that, with the influence of pictures and instructions eliminated, the mean score for the group of subjects receiving pictures in the order I, II differs significantly from the mean score for the group taking the pictures in the reverse order, for three scoring factors.

Resume of the Findings

1. When the pictures were administered under questionnaire rather than PF Study instructions, the subjects gave fewer ego-defensive extrapunitive responses (scored E) and a greater number of need-persistent intropunitive responses (scored i). The observed differences are both statistically significant at the .01 level of confidence.
2. The differences in frequencies of E and i responses, due to instructions, were sufficiently great to produce statistically significant changes in three major scoring categories:

Extrapunitiveness (significant at .05), Ego-defensiveness (significant at .01), and Need-persistence (significant at .01).

3. Differences between the two sets of pictures produced significant differences in mean scores, for four major scoring categories.

4. Even with the influence of pictures and instructions eliminated, the mean score for the group of subjects receiving pictures in the order I, II differs significantly from the mean score for the group taking the pictures in the reverse order, for three major scoring factors.

CHAPTER VI

DISCUSSION OF THE RESULTS

Since statistically significant differences were found for instructions, pictures and orders of presentation of pictures, it may now be asked why they occurred and what they mean. Because the main independent variable in this experiment was the difference between the two sets of instructions used, differences attributable to it will be dealt with more extensively than the other observed differences.

Interpretation of the Instruction Differences

It was found that the subjects of this experiment gave significantly fewer E responses, and a significantly greater number of i responses, when the pictures were administered under questionnaire rather than PF Study instructions. The differences in frequency of these responses may be attributable mainly to (1) temporal position of instructions and / or (2) differences in instructions.

The subjects responded first to pictures under PF Study instructions, then to pictures under questionnaire

instructions. It is logically possible, therefore, that the temporal position of the task, rather than differences in instructions, was the principal factor influencing the responses. There seems little reason, however, for believing this to be the case. Clinicians have found that, when a patient is given continued testing by projective techniques, there is a tendency for his defenses to "break down" toward the end of the testing session, facilitating the production of responses of an unfavorable nature. Frank (11, p. 58) refers to this phenomenon as the "cathartic" function of projective techniques. Had such a factor been operating in the present experiment, however, it could not account for the observed differences in responses because it would have resulted in the production of less acceptable rather than more acceptable types of response. Fatigue, although it frequently operates temporally in psychological experiments, cannot readily be held responsible for the observed differences in this study.

Since there is little reason to believe that the difference in temporal position of the instructions was responsible for the observed differences in responses, these would seem to be attributable to differences in instructions. PF Study instructions, then, seem to facilitate the production of responses indicating hostility toward fellow men, or more specifically, responses in which the person aggressively blames

someone else for having frustrated his needs.¹ Questionnaire instructions, on the other hand, seem to encourage subjects to give more responses indicating that, in the face of frustrating circumstances, the subject takes it upon himself to find a way of removing the obstacle. A comparison of the two types of instructions will aid in the interpretation of these results.

PF Study instructions direct the subject to respond for the pictured characters, and to write down the first reply that comes to mind. Insofar as the subject responds in the manner intended, there is little opportunity for him to censor his responses. Responses which might have been withheld, had he been questioned directly, are given, since (a) his attention is turned away from himself to the test materials, and (b) he gives first associations rather than carefully evaluated responses.

Questionnaire instructions, on the other hand,

1. The writer has omitted "or thing" from Rosenzweig's definition of ego-defensive extrapunitive, as given on page 28, above. Responses indicating that blame is aggressively attributed to "things" in the environment were very rarely given to the pictures used in this study. In a few cases, aggression was directed at institutions or rules. For example: when rules forbid that more than two books be taken from the library (picture 6, Set II) the frustrated person may direct aggression at the library.

by directing the subject to indicate his own presumed behavior in hypothetical situations, tend to put the subject on the defensive. Since the subject must consciously acknowledge each response as his own, the production of two types of response is prevented: (a) a response which the subject is unwilling to acknowledge as his own, and (b) a response which makes manifest a feeling or wish which does not normally enter the subject's awareness, that is, a response which the subject is unable to acknowledge as his own.

It may be asked why only one of the three extrapunitive scores showed a significant change, since all three types of extrapunitiveness involve hostility. The answer seems to be that, since the total number of responses to a set of pictures remains constant, a lowered frequency of one type of response implies an increased frequency of the other types of response. If, for example, response A is more likely to be inhibited than response B, and B is more likely to be inhibited than C, then the A score (based on the frequency of A responses) will be lowered, and the C score will be raised, whereas the B score may remain constant. This reasoning shows that it is possible for only two scores to show significant changes: the score representing the most likely to be inhibited response, and the score representing the most favored response. Applying these considerations to the results of the present experiment,

it is possible to account for the fact that only two scores were significantly affected by the form of instructions.

In brief: The findings of this experiment suggest that when subjects are required to respond to pictures under PF Study instructions, they censor responses to a lesser extent than is the case when pictures are administered in questionnaire-fashion. If responses elicited under PF Study instructions be considered more valid indicators of actual behavior in frustrating situations, then it may be stated that, for some subjects, direct questioning elicits responses indicating that the subject is less frequently hostile toward fellow men, and more frequently willing to accept responsibility for overcoming obstacles, than is actually the case.

Interpretation of the Pictures Differences

The obtained mean score differences for the two sets of pictures are explicable in terms of differences between the "card pull" of the two sets. Although it is conceivable that two sets of pictures could be so constructed as to be "parallel" with respect to the frequencies of the various types of response elicited, it was not deemed necessary to do so in the present study since this factor was controlled by the experimental design.

Interpretation of the Order of Presentation of Pictures
Differences

It was found, by statistical analysis, that the mean score for the group of subjects receiving pictures in the order I, II differed from the mean score for the group taking the pictures in the reverse order, for three major scoring factors. Although it is logically possible that the observed differences are attributable mainly to the difference in order of presentation of pictures, it seems more likely that, despite attempts at randomization, subjects in one group differed from those in the other group with respect to the three characteristics being measured. This interpretation seems particularly plausible in view of the small number of subjects in each group.

CHAPTER VII

SUMMARY AND CONCLUSIONS

The purpose of this experiment was to investigate the effect of instructions upon responses to pictures of the PF Study type. It was hypothesized that when subjects are directed to respond for, and presumably to identify with, the pictured characters, there is less censoring of responses than when subjects are questioned as to their own presumed behavior in the depicted situations. It was hypothesized, further, that one type of response likely to be withheld when the questioning procedure is employed is a response indicating hostility toward fellow men.

In order to test the hypotheses, 58 university students were given a set of pictures under PF Study instructions, and an alternate set administered in questionnaire fashion. For half the subjects, the order of presentation of pictures, but not of instructions, was reversed. All responses were scored according to the same criteria, and subjected to statistical analysis in order that the effects of differences in

instructions, pictures and groups of subjects might be estimated.

The results of the experiment lend support to both hypotheses, the main findings being as follows:

1. When the pictures were administered under questionnaire rather than PF Study instructions, the subjects gave fewer responses indicating that blame for frustration is aggressively attributed to another person, and a greater number of responses indicating that, when frustrated, the subject takes it upon himself to try to overcome the obstacle.

2. The observed differences in frequency of E and i responses, elicited under different instructions, were sufficiently great to produce significant differences in mean scores for three major scoring categories: Extrapunitiveness, Ego-defensiveness and Need-persistence.

Before drawing the main implications of this experiment, it should be emphasized that variables other than the main experimental variable were found to have been operating in the experiment. Therefore, although it was possible, by the application of statistical techniques, to consider the effects of each in isolation from the others, the findings are not as conclusive as would be the case, had these

extraneous variables not been working to produce statistically significant effects. Keeping these considerations in mind, then, the major implications of this experiment are:

1. The type of instructions used with pictures of the PF Study type may decisively affect test results.

2. One type of response which subjects sometimes withhold, when questioned directly as to their behavior in frustrating situations, is a response indicating that the subject aggressively blames another person for having frustrated his needs.

3. One type of response which is elicited more frequently by direct questioning than by the use of PF Study instructions is a response indicating that, in frustrating situations, the subject takes it upon himself to seek a solution to the problem.

4. If responses elicited under PF Study instructions be considered more valid indicators of behavior in frustrating situations, then the findings of this experiment suggest that, for some subjects, direct questioning elicits responses indicating that the subject is less frequently hostile toward fellow men, and more frequently willing to accept responsibility for overcoming obstacles, than is actually the case. It would seem that subjects who tend to censor

their responses, when questioned directly about their behavior in hypothetical situations, do so to a lesser extent when they are required to answer for pictured characters.

5. Since PF Study instructions do less to structure the test situation than questionnaire instructions, the results of this experiment support the hypothesis, which is basic to most theoretical discussions of projective techniques, that the revelatory power of a diagnostic technique varies inversely with the degree of structuring of the test situation.

CHAPTER VIII

IMPLICATIONS FOR FUTURE RESEARCH

The conclusions and implications of the present study should be taken as tentative, and as requiring for their final confirmation further experimentation. Since several variables were found to have operated in the experiment, it is possible that there were interactive effects among them which have gone undetected. It is suggested, therefore, that the experiment be repeated (a) with larger groups of subjects, and (b) using a design which permits control of the temporal position of test instructions. If, by such a procedure, these variables could be effectively controlled, then any observed differences could be attributed to the main independent variable with more justification than was possible in the present study.

The present study has provided some support for the commonly held assumption that responses are censored to a lesser extent when projective rather than questionnaire methods are employed. However, even if this assumption be correct, the question remains as to the possible invalidating effects of

censorship upon the interpretation of data obtained by the Picture-association and other projective methods. It is suggested that this problem be investigated by comparing findings from these techniques with observational data. Findings from the Rosenzweig PF Test, for example, might be compared with data obtained by observing the behavior of subjects in a number of frustrating situations.

The problem of censorship of responses is must be subjected to much more experimental investigation before personality tests can be expected to be fully satisfactory diagnostic instruments.

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APPENDIX A

THE SETS OF PICTURES

PICTURE SET 1

Name _____

Age _____ Birthday _____

Address _____

Education _____

Institution _____

Present date _____

ROSENZWEIG P-F STUDY**(Revised Form for Adults)****Instructions**

In each of the pictures in this leaflet two people are shown talking to each other. The words said by one person are always given. Imagine what the other person in the picture would answer and write in the blank box the very first reply that comes into your mind. Avoid being humorous. Work as fast as you can.

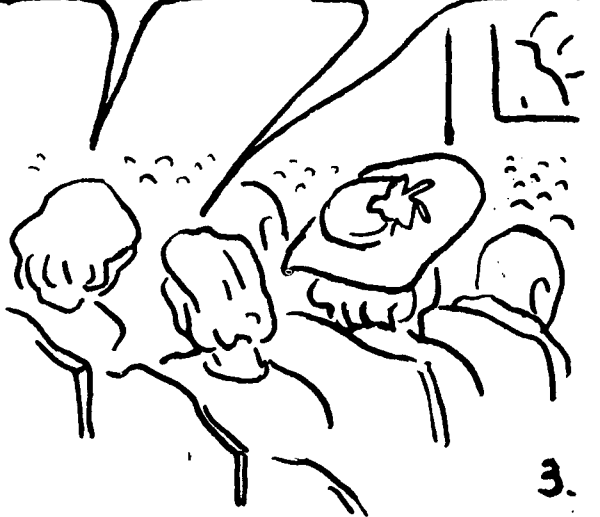
I'm very sorry
we splashed
your clothing
just now
though we tried
hard to avoid
the puddle.



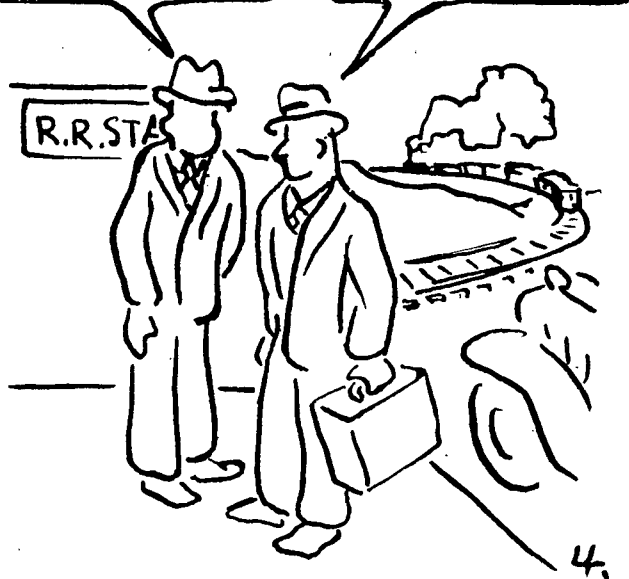
How awful!
That was my
mother's
favorite vase
you just
broke.



You can't
see
a thing.



It's a shame
my car had to
break down and
make you miss
your train.



I know you've
been over twice
to fix my
radio, but
there's still
too much static

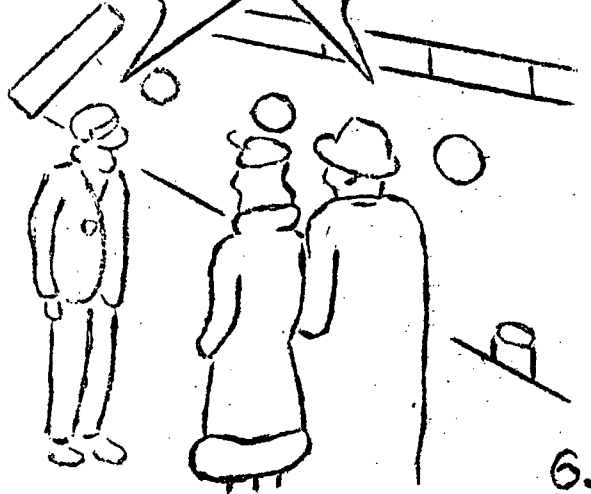


RADIO
SHOP



5.

You can't go
on board to
see your
friends off
without a
special pass.



6.

You cheated
and you
know it!



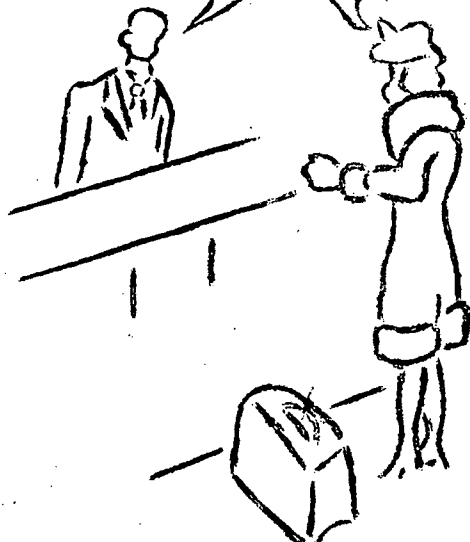
7.

I know it's a
cold day, but
hot meals are
served only
between 12
and 2 o'clock



8.

Your reservation seems to have been cancelled, and there isn't an available room in the hotel.



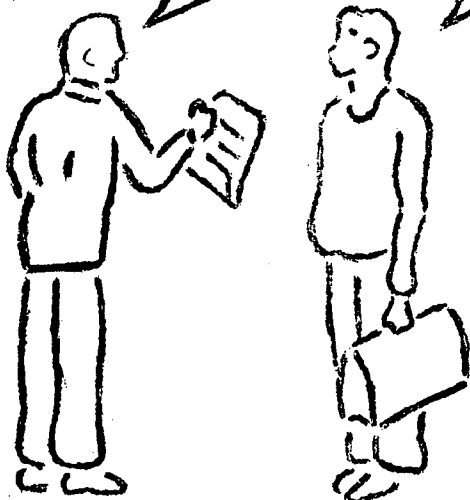
9.

Pretty tight with your money, aren't you.



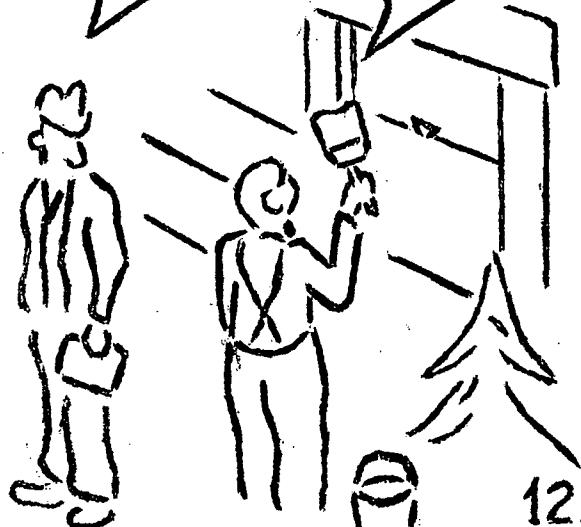
10.

Here are the lecture-notes you lent me... I'm sorry the rain made the ink run.



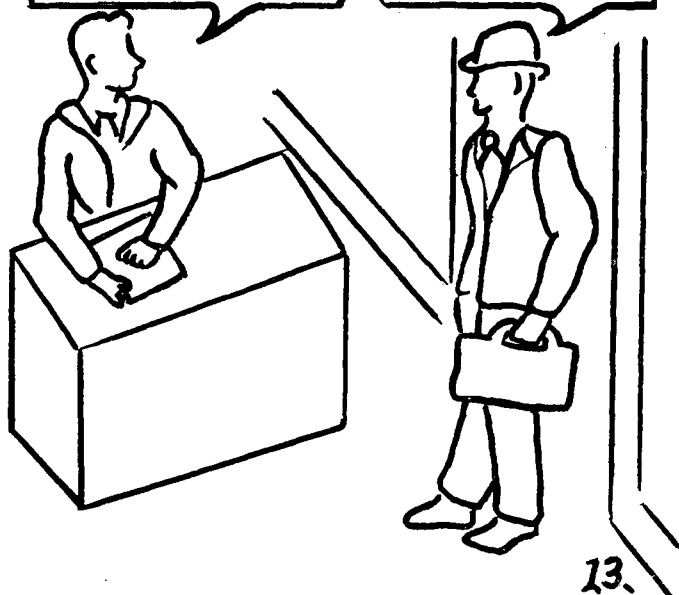
11.

It would look better if you painted it green.



12.

I can't see you
this morning
even though we
made the
arrangement
yesterday.



13.

She should
have been here
10 minutes
ago.



14.

Too bad,
partner. We'd
have won after
your swell
playing if I
hadn't made
that stupid
mistake.



15.

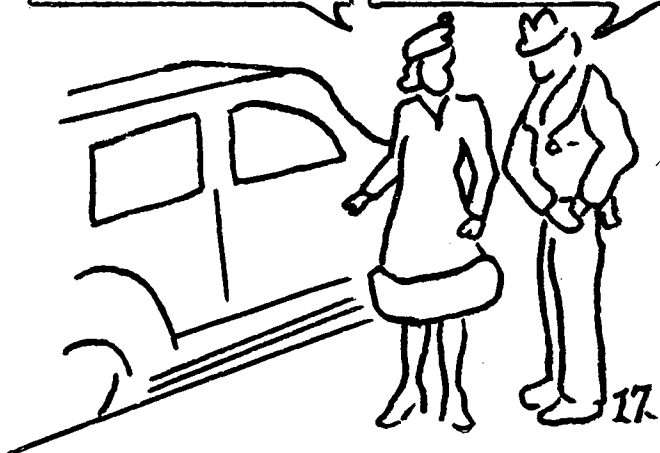
You had no
right to try
and pass me.



16.

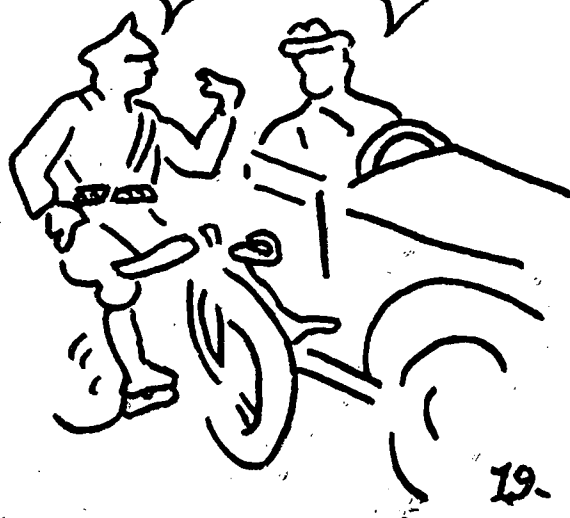
This is a fine
time to have
lost the keys!

I'm sorry--
we just sold
the last one.



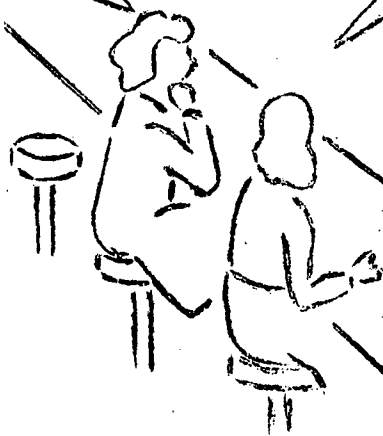
Where do you
think you're
going, passing
that schoolhouse
at 60 miles an
hour!

I wonder why
she didn't
invite us?



PICTURE SET II

We've been here
five minutes
now, and she
still hasn't
come to take
our order.



1.

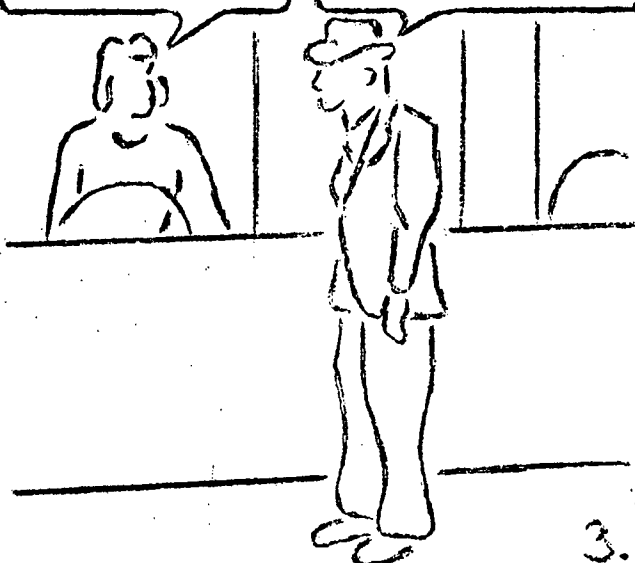
You would lose
the tickets! ..
and they are
sold out now.

BOX OFFICE



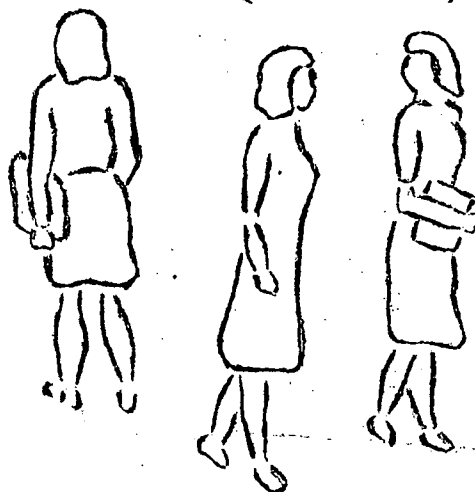
2.

I can't cash
your cheque
without better
proof of your
identity.



3.

I wonder why
she didn't
say hello
to us.



4.

This is the third time I've had to bring back this brand new watch which I bought only a week ago-- it always stops as soon as I get home.



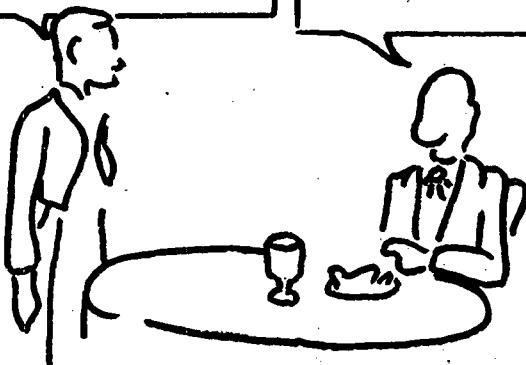
5.

The library rules permit you to take only two books at a time.



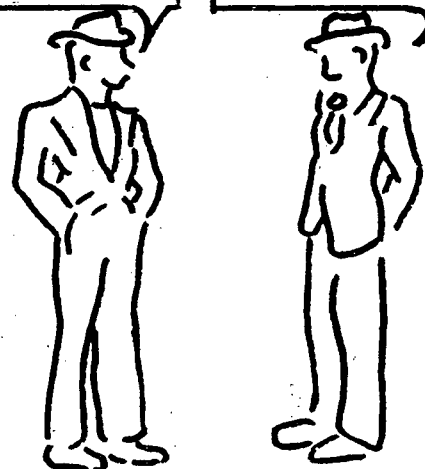
6.

Aren't you being a little too fussy?

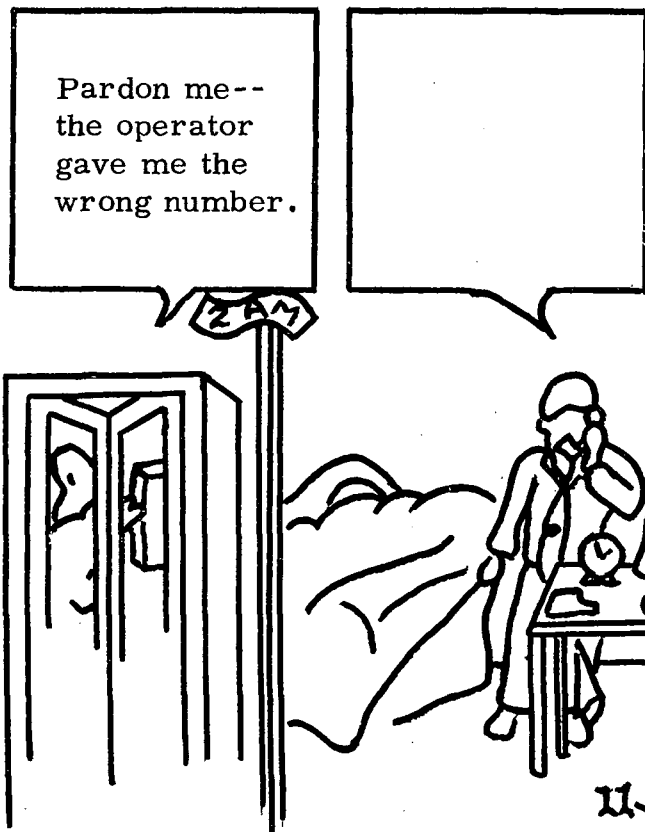
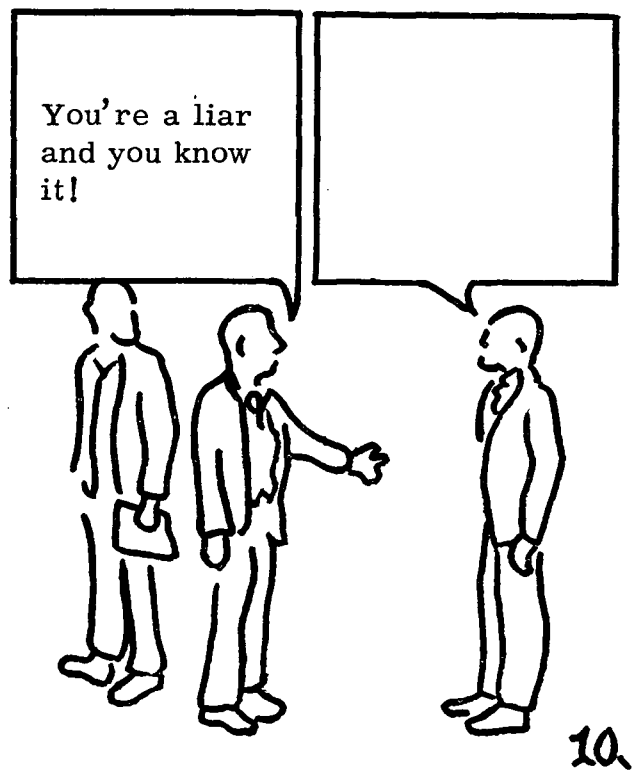


7.

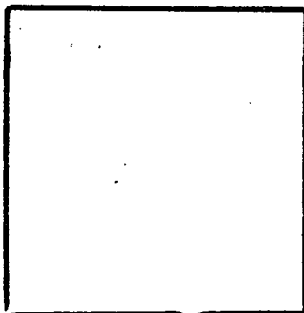
Your girl friend invited me to the dance tonight-- she said you weren't going.



8.

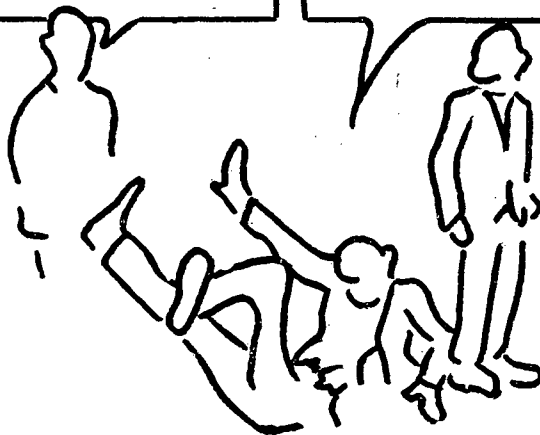


The woman about whom you are saying those mean things was in an accident yesterday and is now in the hospital.



21.

Did you hurt yourself?



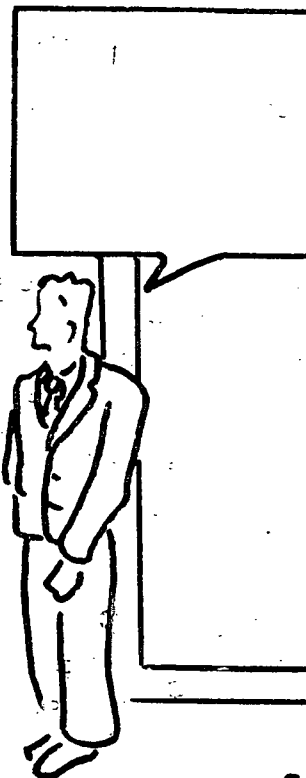
22.

It's Auntie. She wants us to wait awhile until she can get here to give us her blessing again.



23.

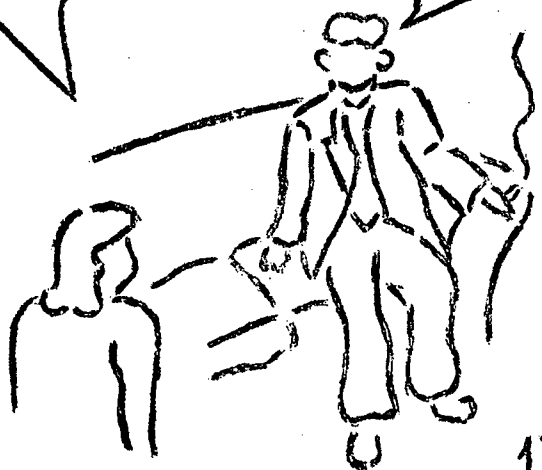
Here's your newspaper I borrowed-- I'm sorry the baby tore it.



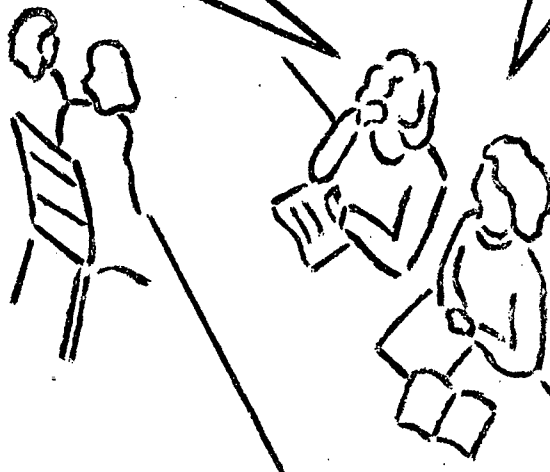
24.

Oh, dear! ..
your cigarette
ash has burned
a hole in our
new chester-
field.

It's hard to
study while
other people
are talking.



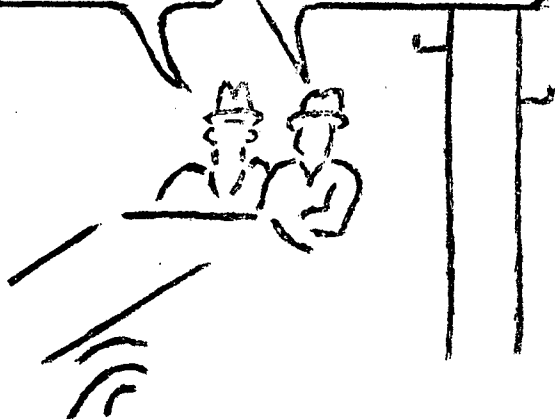
17.



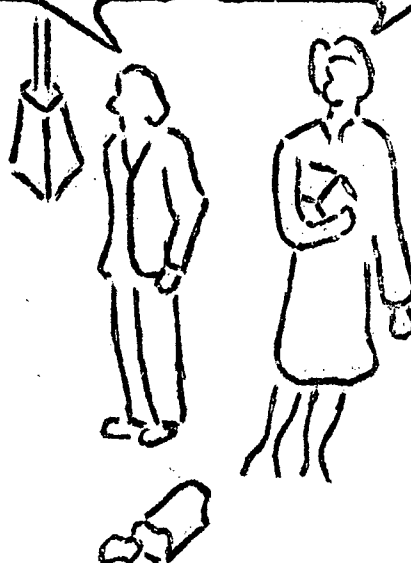
18.

The way you
drive, this
car won't
last long!

I'm sorry I
knocked those
parcels out
of your arm.



19.



20.

APPENDIX B

THE INSTRUCTIONS

INSTRUCTIONS FROM THE
ROSENZWEIG PF STUDY

In each of the pictures in this leaflet two people are shown talking to each other. The words said by one person are always given. Imagine what the other person in the picture would answer and write in the blank box the very first reply that comes into your mind. Avoid being humorous. Work as fast as you can.

QUESTIONNAIRE TYPE INSTRUCTIONS

Many of the pictures in this leaflet will remind you of your own actual experiences. Write in the blank box in each picture the answer which represents your usual reaction. Do this spontaneously and truthfully. If the situation has not been experienced, endeavor to feel yourself into it and respond on the basis of what you believe your reaction would be. Avoid being humorous.

APPENDIX C

SCORING FORM

SET I

No.	O-D	E-D	N-P
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

SET II

No.	O-D	E-D	N-P
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			
11			
12			
13			
14			
15			
16			
17			
18			
19			
20			

	O-D	E-D	N-P	F	%
E					
I					
M					
L					
%					

	O-D	E-D	N-P	F	%
E					
I					
M					
F					
%					

APPENDIX D

ALLPORT AS STUDY ITEMS

Name _____ Score _____

Age _____

A-S REACTION STUDY

Directions: Most of these situations will represent to you your own actual experiences. Reply to the questions spontaneously and truthfully by checking the answer which most nearly represents your usual reaction. If a situation has not been experienced, endeavor to feel yourself into it and respond on the basis of what you believe your reaction would be.

1. At church, a lecture, or an entertainment, if you arrive after the program has commenced and find that there are people standing, but also that there are front seats available which might be secured without "piggishness" or discourtesy, but with considerable conspicuousness, do you take the seats?

habitually _____

occasionally _____

never _____

2. a) At a reception or tea do you seek to meet the important person present?

usually _____

occasionally _____

never _____

- b) Do you feel reluctant to meet him?

yes, usually _____

sometimes _____

no _____

3. A salesman takes manifest trouble to show you a quantity of merchandise; you are not entirely suited; do you find it difficult to say "No"?

yes, as a rule _____

sometimes _____

no _____

4. a) A professor or lecturer asks any one in the audience, say of 20 or more people, to volunteer an idea to start discussion. You have what appears to be a good idea, do you speak out?

habitually _____

occasionally _____

rarely _____

never _____

- b) Do you feel self-conscious when you speak under such circumstances?

very _____

moderately _____

not at all _____

5. You have heard indirectly that an acquaintance has been spreading rumors about you which, though not likely to be serious in consequence, are nevertheless unjustified and distinctly uncomplimentary. The acquaintance is an equal of yours in every way. Do you usually

"have it out" with the person _____

let it pass without any feeling _____

take revenge indirectly _____

feel disturbed but let it pass _____

6. Someone tries to push ahead of you in line. You have been waiting for some time, and can't wait much longer. Suppose the intruder is the same sex as yourself, do you usually

remonstrate with the intruder _____

"look daggers" at the intruder or make
clearly audible comments to your
neighbor _____

decide not to wait, and go away _____

do nothing _____

7. Do you feel self-conscious in the presence of superiors in the academic or business world?

markedly _____

somewhat _____

not at all _____

8. Some possession of yours is being worked upon at a repair shop. You call for it at the time appointed, but the repair man informs you that he has "only just begun work on it". Is your customary reaction

to upbraid him _____

to express dissatisfaction mildly _____

to smother your feelings entirely _____

9. You are at a mixed party where about half the people are friends of yours. The affair becomes very dull, and something should be done to enliven it. You have an idea. Do you usually

take the initiative in carrying it out _____

pass it on to another to put into execution _____

say nothing about it _____

10. Have you crossed the street to avoid meeting some person?

frequently _____

occasionally _____

never _____

11. If you hold an opinion the reverse of that which the lecturer has expressed in class, do you usually volunteer your opinion

in class _____

after class _____

not at all _____

12. When an accident or fire occurs where many people are present besides yourself do you usually

take an active part in assisting _____

take the part of a spectator _____

leave the scene at once _____

APPENDIX E

ANALYSIS OF VARIANCE FOR NINE MINOR SCORING CATEGORIES

ANALYSIS OF VARIANCE OF SCORES FOR 58
UNIVERSITY STUDENTS RESPONDING TO TWO SETS OF PICTURES
UNDER TWO CONDITIONS OF ADMINISTRATION, GROUPED
ACCORDING TO NINE SCORING CATEGORIES

Source of Variation	df	Sum of Squares	Mean Square	F	Level of Confidence
Obstacle-dominant Extrapunitiveness (E')					
Order	1	0.17	0.17	-	low
Pictures	1	0.95	0.95	-	low
Instructions	1	2.23	2.23	1.87	low
Ss within order	56	105.10	1.88	1.58	low
Error	56	66.55	1.19		
Total	115	175.00			
Ego-defensive Extrapunitiveness (E)					
Order	1	41.76	41.76	14.91	.01
Pictures	1	15.50	15.50	5.53	.05
Instructions	1	25.14	25.14	8.97	.01
Ss within order	56	322.84	5.76	2.06	low
Error	56	157.07	2.80		
Total	115	562.31			
Need-persistent Extrapunitiveness (e)					
Order	1	0.02	0.02	-	low
Pictures	1	0.03	0.03	-	low
Instructions	1	0.88	0.88	-	low
Ss within order	56	67.66	1.21	1.21	low
Error	56	56.11	1.00		
Total	115	124.70			

ANALYSIS OF VARIANCE FOR NINE MINOR SCORING CATEGORIES
(CONTINUED)

Source of Variation	df	Sum of Squares	Mean Square	F	Level of Confidence
Obstacle-dominant Intropunitiveness (I')					
Order	1	1.46	1.46	2.39	low
Pictures	1	20.53	20.53	33.66	.01
Instructions	1	0.55	0.55	-	low
Ss within order	56	46.03	0.82	1.34	low
Error	56	34.44	0.61		
Total	115	103.01			
Ego-defensive Intropunitiveness (I)					
Order	1	4.60	4.60	3.67	low
Pictures	1	10.98	10.98	8.76	.01
Instructions	1	3.98	3.98	3.18	low
Ss within order	56	80.99	1.45	1.16	low
Error	56	70.16	1.25		
Total	115	170.71			
Need-persistent Intropunitiveness (i)					
Order	1	2.21	2.21	1.26	low
Pictures	1	9.05	9.05	5.14	.05
Instructions	1	20.19	20.19	11.47	.01
Ss within order	56	154.20	2.75	1.56	low
Error	56	98.58	1.76		
Total	115	284.23			

ANALYSIS OF VARIANCE FOR NINE MINOR SCORING CATEGORIES
(CONTINUED)

Source of Variation	df	Sum of Squares	Mean Square	F	Level of Confidence
Obstacle-dominant Impunitiveness (M')					
Order	1	0.00	0.00	-	low
Pictures	1	6.19	6.19	8.60	.01
Instructions	1	0.50	0.50	-	low
Ss within order	56	50.01	0.89	1.24	low
Error	56	40.07	0.72		
Total	115	96.77			
Ego-defensive Impunitiveness (M)					
Order	1	0.00	0.00	-	low
Pictures	1	0.54	0.54	-	low
Instructions	1	0.00	0.00	-	low
Ss within order	56	102.15	1.82	1.27	low
Error	56	80.31	1.43		
Total	115	183.00			
Need-persistent Impunitiveness (m)					
Order	1	1.37	1.37	0.99	low
Pictures	1	128.31	128.31	92.31	.01
Instructions	1	2.10	2.10	1.51	low
Ss within order	56	93.64	1.67	1.20	low
Error	56	77.98	1.39		
Total	115	303.40			