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The Effects of Examiner and Instructional Variables on Intelligence Test Performance

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THE EFFECTS OF EXAMINER AND INSTRUCTIONAL VARIABLES ON INTELLIGENCE TEST PERFORMANCE

by

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LIFE

Luke A. Shanley was born in Goshen, New York, January 17, 1943. He graduated from Florida's S.S. Seward Institute in June, 1960, and received a Bachelor of Arts in Psychology and Philosophy from the University of Scranton, Scranton, Pennsylvania, in June, 1964.

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CHAPTER I

Introduction and Literature Review

The present study has grown out of a body of research which is concerned generally with the effects of anxiety on intellectual functioning. The specific aim was to determine, by the manipulation of certain examiner (E) and instructional variables, the effects of experimentally induced stress on intelligence test performance.

One purpose of this study was to investigate the effectiveness of an instructional variable in altering the impact of experimental stress. This was accomplished specifically by testing the hypothesis suggested by Walker, Neilsen, and Nicolay (1965) that subjects (Ss) given "ambiguous" instructions following failure will perform significantly more poorly on a subsequent intellectual task than those Ss given "anchor" instructions following failure. Assessment of the effects of instructional variables has implications for research design and is an attempt to follow Sarason's (1960) urging that techniques for the experimental reduction as well as arousal of anxiety responses be developed.

The present study was also concerned, in part, with the differential effects of white and Negro Es in inducing further stress in white Ss who have already been stressed by initial failure in intellectual performance. The hypothesis tested was that the stress induced by failure will be accentuated because it is experienced in the presence of an E of another race, and that such stress will significantly alter, for the worse, the white S's performance on an intelligence test. Validation of this hypothesis would permit further generalization concerning the examiner variable in experimental settings, and also has implications for social theories of race interaction.

Reviewers of research relevant to the effects of experimenter (E) attributes on the behavior of subjects (Ss) unanimously agree on the need for a more systematic study of S and E variables (Barger, 1954; Bernstein, 1956; Dreger and Miller, 1960; Kintz, 1965; Masling, 1960; Rosenthal, 1963; Sarason, 1960; Winkel and Sarason, 1964). In his review of effects of E's sex, religion, race, status, warmth, likeability, etc., Rosenthal (1963) noted that one reason for psychologist's slowness to study themselves as researchers compared to psychologist's willingness to study themselves as clinicians may lie in a collective illusion about the E as a non-person. Despite Hammond's (1954) caution that representative design demands that both E and S populations be adequately sampled if generalizations are to be made to larger groups of E and S, none of the studies reported by Masling (1960) extensively sampled the E population, and most studies utilized only one E.

Sarason (1960) wrote that the question of E as an agent in creating a threat to S is a particularly relevant problem in the creation of experimental stress situations. That theories of anxiety should incorporate such variables as E's sex, physical characteristics, and personality attributes was suggested by Kamin and Clark (1957) and has been dramatically illustrated by the University of Rochester group (Axelrod et al, 1956; Heilizer et al, 1956). The Rochester group has consistently found significant interactions between anxiety scores, sex of S and E characteristics. For example, the latter two variables related more powerfully to anxiety of Ss than did task complexity.

The present study is concerned, in part, with the differential effects of white and Negro Es in inducing further stress in white Ss who have already been stressed by initial failure in intellectual performance. Of previous researches investigating the E race variable, most have used Negro Ss, few have used both Negro and white Ss, and fewer have been concerned only with the reactions of white Ss. Only those studies with immediate relevance will be mentioned here.

To Allport's (1954) thesis that a "foundation for group prejudice lies in the hesitant response that human beings have to strangeness," Dreger and Miller (1960) add that an American cultural pattern (that is, the virtually universal use of white characters as illustrations, at least in publications white people see) has the result that whites tend to see white as people and black as Negro. Trent (1954) found a significant difference between the influence of white and Negro Es on the test behavior of white and Negro kindergarten children with a mother identification test consisting of three pictures of women, one white, one light and one dark-skinned Negro mother. When tested by the white E, the white children preferred the white mother but shifted from a preference for light-skinned Negro mothers to a preference for dark-skinned Negro mothers when tested by the Negro E. White children tested by white Es verbalized no racial remarks, while 47.5% of the white children tested by Negro Es gave spontaneous racial remarks.

Winslow and Brainerd (1950) reported significant differences in the responses of whites and Negroes to the Rosenzweig P-F Test, but did not systematically vary E color. With the white Ss, extrapunitive responses were more frequent if the frustrating agent in the test was a Negro than if he were white. Rankin and Campbell (1955) report a highly significant differential on the GSR of white Ss to two Es, with the greater response being made to the Negro E. These authors anticipated their critic (Rosenthal, 1963) by noting that an interpretation of these results as a differential response to race alone was, although highly likely, nonetheless arbitrarily made. Since the two Es differed along dimensions other than skin color, e.g. height, weight, age, the experiment - to be definitive for an interpretation in terms of race - would have to be run with a sampling of a number of different white and Negro Es.

One early study will serve to illustrate the negative findings of the effects of skin color of the E upon the behavior of his Ss. Canady (1936), using both Negro and white Es in giving intelligence tests to Negro and white Ss who had not been stressed by initial failure, did not find any reliable effect of E's skin color on Ss test performance. The present study tested the hypothesis that: the stress induced by initial failure will be accentuated because it is experienced in the presence of an E of another race, and that such stress will significantly alter, for the worse, the white S's performance on an intelligence test.

A second purpose of this study was to investigate the effectiveness of an instructional variable in reducing the impact of experimental stress. Mandler and Sarason (1952) note that among important variables for further research is the specific instruction given. That is, does the test situation, per se, produce the differences between high and low anxious groups, or is this difference a function of specific instructions given by the E? Finding that high anxious Ss respond more positively to instructional reassurance in an experimental situation than do low anxious Ss, Sarason (1960) encouraged the development of techniques for the extinction rather than the arousal of anxiety responses. Sarason et al (1952) found that while non-ego-involving instructions have no differential effect on high anxious and low anxious groups, ego-involving instructions do promote anxiety reactions of Ss who are prone to such tendencies in a testing situation. Citing inconsistent relationships found in reports of correlations between measures of general anxiety such as MAS (Taylor, 1956, 1959), and intellectual measures, Sarason (1960) suggests that indices of specific anxieties such as test anxiety may prove more valuable for specific purposes than more general indices like the MAS. Several investigators have also suggested that stress must be introduced into any situation before anxiety will affect performance on complex tasks (Sarason, 1960; Spence, 1963; Taylor, 1959). Walker et al (1965) tested the hypothesis that for college students, the personality variable of anxiety is negatively related to intelligence test performance under stress conditions, provided that such conditions are directly associated with the testing instrument. These investigators, finding that only one of three experimental groups significantly confirmed the negative relationships between anxiety and intelligence expected under stress, suggested that an explanation be found in differential instructions. Apparently, "ambiguous" instructions increased the stress induced by failure, while "anchor" instructions lessened the impact of stress. The present study tested the hypothesis that Ss given "ambiguous" instructions following failure will perform significantly more poorly on a subsequent intellectual task than those Ss given anchor instructions following failure.

In summary, this study tested two hypotheses: (1) the stress induced by initial failure will be accentuated because it is experienced in the presence of an E of another race, and that such stress will significantly alter, for the worse, the white S's performance on an intelligence test; and, (2) Ss given "ambiguous" instructions following failure will perform significantly more poorly on a subsequent intellectual task than those Ss given "anchor" instructions following failure.

CHAPTER II

Method

Subjects. The Ss were 120 males enrolled in introductory psychology sections at Loyola University. Ss were randomly assigned to one of four male Es, two of whom were Negro and two of whom were white. Each E administered an experimental and a control condition, the independent variable being differential instructions.

Anxiety and Intelligence Measures. Anxiety was measured by the Taylor MAS and the subtests M, O, P, of the Nicolay-Walker PRS. These tests had been administered as part of a regular classroom exercise by Es other than Es in this experiment. Performance on the object assembly (OA) of the WAIS was used as the criterion for intelligence and was the only task the Ss were expected to perform.

Procedure. All Ss were tested individually in soundproof booths. Each S was asked to cooperate in taking part of an intelligence test and told that the E was attempting to establish norms for college students. The S was then presented with an impossible object assembly task, consisting of randomly selected pieces from the WISC OA, and instructed, "If these pieces are put together correctly they will make something. Go ahead and put them together as quickly as you can." Ss were given 60 seconds and then told "Time is up." All Ss, of course, "failed" the task, and it was assumed that this experience was stressful for them. Next, Ss in each of the four experimental conditions were given the "ambiguous" instructions: Put this together as quickly as you can." Ss in each of the four control groups were given the "anchor" instructions: "That first one was the hardest, the next ones will be easier." They were then showed the OA manikin. Following that, the standardized procedure for the WAIS OA was followed for all groups. During testing, the E answered any questions in an unstructural manner, and did not otherwise enter into discussion with the S during the testing. When testing was completed, the E read to S: "What I have just given you is only one part of an intelligence test, and as such it only measures one very limited aspect of your total intellectual functioning. We are interested in your reactions to this approach. When data are analyzed, the results will be discussed in your psychology class, and we will then be able to explain more completely what it is that we were looking for, and what we have found." The E then thanked S for his cooperation and time, and escorted him to an adjacent testing booth were S completed an information sheet which consisted of questions concerning his subjective reactions to the testing situation.

Chapter III

Results

Table 1 presents the means and standard deviations for the eight experimental groups on each of the variables. Random assignment of Ss to the different experimental conditions was effective in yielding groups whose mean differences on the anxiety tests were not significantly different.

An analysis by inspection of the scatter plots of each of the experiment's eight subgroups' performance on the intelligence measures as a function of each of the five anxiety measures has been made. Based on this inspection, the following analyses were conducted. Pearson rs (McNemar, 1962) were computed to determine the degree of correlation of each of the anxiety scores (M.O.P.T of the Nicolay-Walker Personal Reaction Schedule, and the Taylor Manifest Anxiety Scale) with each of three criterion measures of intellectual functioning (Time for Manikin, Total Time for Object Assembly, and Total Score for Object Assembly). Table 2 gives the Pearson rs which were computed separately for each of the experiment's eight conditions: N_1E, N_1C, N_2E, N_2C, W_1E, W_1C, W_2E, W_2C (where N= Negro E, W= white E; 1, 2= Number of E within Race; E= Experimental group Instruction; and C= Control group Instruction. Thus, N_1E represents Negro Examiner #1, Experimental Group Instruction; N_1C= Negro Examiner #1 Control Group Instruction; W_2C= White Examiner #2, Control Group Instruction, etc.). Several of the Pearson product moment correlation coefficients supported the predicted interaction between anxiety, as measured by the Personal Reaction Schedule and the Manifest Anxiety Scale, and test performance. However, the number of Pearson rs which reached significance was not as great as had been expected. Since analyses of variance indicated that the introduction of the instructional variable (Anchor versus Ambiguous instructions) had not yielded the expected significant differences in intelligence test performance, each Examiner's Control (Ambiguous Instructions) and Experimental (Anchor Instruction) groups were combined and Pearson rs were computed for each Examiner with N of 30, disregarding the instructional variable. Table 3 gives the Pearson rs for this second grouping, few of which supported the predicted interaction between anxiety and intelligence test performance.

Two analyses of variance were conducted: one for Ss' Time for Manikin; and one for Ss' Total Score on Object Assembly. Analysis of variance for a 2x2 nested design was used to analyze the data on both of these criterion measures of intelligence test performance (Edwards, 1964). Table 4 presents the summary of the analyses of variance for Race, Instructions, Race x Instructions, Examiner within Race, and Instructions x Examiner within Race with Ss scores on Time for Manikin. Inspection of Table 4 reveals that none of the Fs reached the required level of significance. None of the groups under the various conditions of Examiner, and Race, and Instructions manifested significant differences in scores on the criterion of Time for Manikin. Table 5 presents the summary of the analysis of variance for Race, Instructions, Race x Instructions, Examiner within Race, and Instructions x Examiner within Race for Total Score on Object Assembly. None of the Fs reached the required level of significance. None of the groups under the various conditions of Examiner, and Race, and Instructions manifested significant differences in the second criterion of intelligence test performance, Total Score for Object Assembly.

Table 6 presents the summary of analysis done on Ss post-test questionnaire data. Ss had been asked to record whether or not they felt anxious during the testing procedure. For the final analysis, Ss were divided into groups according to Experimental (Anchor Instructions) and Control (Ambiguous Instruction) conditions. In evaluating the difference between two proportions based on two independent samples (McNemar, 1962) it was found that the difference between the proportion of those under the Ambiguous Instruction who noted having experienced anxiety (54 out of 60 Ss; $P_1 = .90$) and the proportion of those under the Anchor Instructions who noted having experienced anxiety (48 out of 60 Ss; p_2=.80), failed to reach the z of 1.64 required for significance at the .05 level for a one tail test. For a second evaluation of the difference between two proportions based on two independent samples, Ss were divided according to whether they had had a Negro or white E. The difference between the proportion of Ss having a Negro E and recording having experienced anxiety (54 out of 60 Ss; p_1=.90) and the proportion of Ss having a white E and recording having experienced anxiety during testing (48 out of 60 Ss; p_2=.80) failed to reach the z of 1.64 required for significance at the .05 level for a one tail test.

Table 1

Means And Standard Deviations For All Variables

		Manikin Time		Manikin Score		Total Time		Total Score	
E	Condit.	M	SD	M	SD	M	SD	M	SD
Negro #1	Exper.	16.1	6.3	6.7	.79	225.5	73.1	32.5	5.7
	Control	15.1	3.9	6.5	.81	227.1	110.6	32.6	6.3
	Comb.	15.6	5.2	6.6	.80	226.3	93.8	32.5	6.0
Negro #2	Exper.	14.4	2.3	6.3	1.00	185.2	68.1	33.9	5.3
	Control	14.0	4.3	6.6	.95	197.1	84.0	32.3	5.7
	Comb.	14.2	3.4	6.4	.99	191.1	76.9	33.1	5.6
White #1	Exper.	14.9	5.8	6.8	.77	238.6	64.7	31.1	5.5
	Control	15.5	6.2	6.6	.88	239.9	107.6	31.8	5.1
	Comb.	15.2	6.0	6.7	.83	239.3	88.8	31.5	5.3
White #2	Exper.	13.5	3.1	6.8	.62	176.3	56.1	35.8	4.1
	Control	14.5	3.9	6.8	.75	230.3	70.9	31.8	5.4
	Comb.	14.0	3.6	6.8	.69	203.3	69.4	33.8	5.2

Table 1 (cont.)

Means And Standard Deviations For All Variables

		Motor		Object		Personal		Total		MAS	
E	Cond.	M	SD	M	SD	M	SD	M	SD	M	SD
	Exp.	10.1	3.9	7.8	3.1	8.6	3.4	26.5	8.5	11.7	5.1
N1	Cont.	10.3	4.9	8.3	5.5	9.2	4.2	27.7	12.9	13.1	8.8
	Comb.	10.2	4.5	8.0	4.5	8.9	3.8	27.1	10.9	12.4	7.2
	Exp.	10.4	3.9	7.6	2.8	9.3	3.5	27.3	7.9	14.5	7.6
N2	Cont.	9.4	5.4	9.0	3.5	8.5	3.5	27.0	11.4	15.2	10.5
	Comb.	9.9	4.8	8.3	3.3	8.9	3.5	27.2	9.8	14.9	9.2
	Exp.	9.8	5.2	8.5	4.6	10.1	4.9	28.4	11.9	16.0	9.6
W1	Cont.	10.6	4.1	9.7	3.9	10.4	4.8	30.7	11.6	15.5	8.6
	Comb.	10.2	4.7	9.1	4.3	10.3	4.9	29.5	11.8	15.7	9.1
	Exp.	11.5	5.7	10.6	4.3	12.5	6.0	34.5	14.7	19.3	12.5
W2	Cont.	8.2	3.4	8.7	2.6	10.2	3.6	27.1	7.8	13.5	7.0
	Comb.	9.8	5.0	9.7	3.7	11.3	5.1	30.8	12.4	16.4	10.5

Table 2

Correlations of Time for Manikin, Score for Manikin, Total Time for Object Assembly, and Total Score for Object Assembly with Scores on Taylor MAS and with M.O.P.T. of Nicolay-Walker PRS*

Examiner		M	O	P	T	MAS
N_1E Negro E̲s1	Manikin Time	.37	.62 c	.28	.51 a	.48 a
Exper. Cond.	Manikin Score	-.16	-.60 c	-.17	-.36	-.41
	Total Time	.19	.16	-.13	.10	.19
	Total Score	-.19	-.28	.02	-.18	-.11
N_1E Negro E̲ 1	Manikin Time	.49 a	.19	.12	.31	.09
Cont. Cond.	Manikin Score	-.43	-.15	-.16	-.28	-.11
	Total Time	.29	.03	.23	.19	.10
	Total Score	-.38	-.25	-.36	-.37	-.29

*df=13
a=p $<$ .05
b=p $<$ .025
c=p $<$ .01
d=p $<$ .005

Table 2 (cont.)

Correlations of Time for Manikin, Score for Manikin, Total Time for Object Assembly, and Total Score for Object Assembly with Scores on Taylor MAS and with M.O.P.T. of Nicolay-Walker PRS*

Examiner		M	O	P	T	MAS
N_2E	Manikin Time	.36	.20	.16	.32	.39
Negro #2 E	Manikin Score	-.23	.14	.03	-.05	-.19
Exper. Cond.	Total Time	-.44	-.06	.09	.24	.44 a
	Total Score	-.40	.06	-.11	-.23	-.41
N_2C	Manikin Time	-.60	-.46	-.27	-.52	-.45
Negro E #2	Manikin Score	.57	.48	.24	.50	.41
Cont. Cond.	Total Time	-.21	-.23	-.18	-.23	-.07
	Total Score	.25	.14	.04	.18	.05

*df=13
a=$p < .05$
b=$p < .025$
c=$p < .01$
d=$p < .001$

Table 2 (cont.)

Correlations of Time for Manikin, Score for Manikin, Total Time for Object Assembly, and Total Score for Object Assembly with Scores on Taylor MAS and with M.O.P.T. of Nicolay-Walker PRS*

Examiner		M	O	P	T	MAS
W_1E White E #1 Exper. Cond.	Manikin Time	-.26	-.51	-.48	-.50	-.21
	Manikin Score	.27	.50	.56	.54	.34
	Total Time	-.22	-.43	-.47 a	-.45	-.09
	Total Score	.15	.53	.63	.52	.21
W_1C White E #1 Cont. Cond.	Manikin Time	.05	-.29	-.26	-.19	-.19
	Manikin Score	-.16	.17	.16	.07	.11
	Total Time	.39	.46 a	.48 a	.49 a	.30
	Total Score	-.40	-.41	-.43	-.46 a	-.27

*df=13
a=$p < .05$
b=$p < .025$
c=$p < .01$
d=$p < .005$

Table 2 (cont.)

Correlations of Time for Manikin, Score for Manikin, Total Time for Object Assembly, and Total Score for Object Assembly with Scores on Taylor MAS and with M.O.P.T. of Nicolay-Walker PRS*

Examiner		M	O	P	T	MAS
W_2E White E #2 Exper. Cond.	Manikin Time	-.32	-.29	-.12	.26	-.14
	Manikin Score	.30	.31	.11	.25	.15
	Total Time	.26	.06	-.21	-.17	-.18
	Total Score	.28	.12	.17	.22	.17
W_2C White E #2 Cont. Cond.	Manikin Time	.32	-.23	.05	.09	.04
	Manikin Score	-.17	.45	.06	.11	.13
	Total Time	.36	-.04	.05	.17	.08
	Total Score	-.34	.07	-.11	-.17	-.06

*df=13
a=$p < .05$
b=$p < .025$
c=$p < .01$
d=$p < .005$

Table 3

Correlations of Time for Manikin, Score for Manikin, Total Time for Object Assembly, and Total Score for Object Assembly with Scores on Taylor MAS and with M.O.P.T. of Nicolay-Walker PRS*

Examiner		M	O	P	T	MAS
	Manikin Time	.39 b	.34 a	.19	.37 b	.24
Negro #1	Manikin Score	-.31 a	-.31 a	-.17	-.31 a	-.22
	Total Time	.25	.06	.10	.16	.12
	Total Score	-.30	-.25	-.20	-.29	-.22

*df=28
a=$p < .05$
b=$p < .025$
c=$p < .01$
d=$p < .005$

Table 3 (cont.)

Correlations of Time for Manikin, Score for Manikin, Total Time for Object Assembly, and Total Score for Object Assembly with Scores on Taylor MAS and with M.O.P.T. of Nicolay-Walker PRS*

Examiner		M	O	P	T	MAS
	Manikin Time	-.32	-.27	-.11	-.29	-.22
Negro #2	Manikin Score	.20	.34	.12	.25	.15
	Total Time	.02	-.14	-.07	-.06	-.12
	Total Score	.01	.07	-.02	.02	-.14

*df=28
a=$p < .05$
b=$p < .025$
c=$p < .01$
d=$p < .005$

Table 3 (cont.)

Correlations of Time for Manikin, Score for Manikin, Total Time for Object Assembly, and Total Score for Object Assembly with Scores on Taylor MAS and with M.O.P.T. of Nicolay-Walker PRS*

Examiner		M	O	P	T	MAS
	Manikin Time	-.11	-.40	-.36	-.34	-.20
White E #1	Manikin Score	.06	.32	.34	.28	.23
	Total Time	.12	.09	.12	.13	.13
	Total Score	-.07	.12	.12	.07	-.01

df=28
a=p $<$ .05
b=p $<$ .025
c=p $<$ .01
d=p $<$ .005

Table 3 (cont.)

Correlations of Time for Manikin, Score for Manikin, Total Time for Object Assembly, and Total Score for Object Assembly with Scores Taylor MAS and with M.O.P.T. of Nicolay-Walker PRS*

Examiner		M	O	P	T	MAS
	Manikin Time	-.08	-.27	-.07	-.14	-.09
White E #2	Manikin Score	.11	.35	.09	.19	.14
	Total Time	-.12	-.09	-.17	-.14	-.17
	Total Score	.14	.18	.13	.16	.17

df=28
a=p $\leq$ .05
b=p $\leq$ .025
c=p $\leq$ .01
d=p $\leq$ .005

Table 4

Analysis of Variance for Race, Instructions, Race x Instructions, Examiner within Race, and Instructions x Examiner within Race on Time for Manikin

Source	df	MS	F
Race	1	2.7	.3300
Instructions	1	.02	.0011
Race x Instructions	1	14.71	.8109
Examiner within Race	2	8.18	.3462
Instructions x Examiner within Race	2	18.14	.6812
Within Group	112	23.63	
Total	119	22.83	

Table 5

Analysis of Variance for Race, Instructions, Race x Instructions, Examiner within Race, and Instructions x Examiner within Race for Total Score on Object Assembly

Source	df	MS	F
Race	1	1.19	.0165
Instructions	1	45.64	1.0365
Race x Instructions	1	5.64	.1281
Examiner within Race	2	72.09	2.3223
Instructions x Examiner within Race	2	44.02	1.4180
Within group	112	31.64	
Total	119	31.61	

Table 6

Significance of Differences Between Independent Proportions For Subjective Anxiety Based on S Groups Divided According to Ambiguous Instruction Versus Anchor Instructions And Negro E Versus White E

Varied Conditions	p_1	p_2	z
Instructions			
Ambiguous	.90		
Anchor		.80	
			1.53
Examiner			
Negro	.90		
White		.80	
			1.53

one-tailed test
.05 level of significance $z \geq 1.64$

CHAPTER IV

Discussion

Analysis of the data did not reveal significant differences between the groups for either E's race or the instructional variable. The fact that the F which most approached significance (in the analysis of variance for Total Score on the Object Assembly) was for the effect of "Examiner within Race" ($F = 2.32$) suggests the operation of E attributes other than race or particular instruction given. Such an interpretation, at least for the variable of E race, would be in accord with that of Dreger and Miller (1960) who report differences between Es of the same race which are as great or greater than differences between Es of different races. While it appears plausible that examiner attributes other than race or instruction given were most important in determining Ss responses, it would be hazardous to generalize to larger groups of E from the presently restricted sampling of N=2 within race (Hammond, 1954; Masling, 1960).

Sampling a white college population, Rankin and Campbell (1955) found a higher differential GSR to a Negro E than to the white E, but critics (Masling, 1960; Trent, 1954) point out that there was no conclusive proof that the difference was a function of skin color, since the two Es differed along other pertinent dimensions. Significantly different reactions to Negro and white Es by Negro and white Ss have been reported

(Athey et al, 1960; Katz et al, 1964; Katz et al, 1965; Rice, 1964; Trent, 1954; Williams, 1964; Winslow and Brainerd, 1950), but these studies, for one reason or another, are not directly comparable to the present research. Trent (1954) found that white kindergarten children shifted from a preference for light- to dark-skinned Negro mother pictures when tested by a Negro E. Other researchers (Campbell, 1959; Williams, 1964) however, have noted that E's status, as well as E's race, can have an effect in determining Ss' responses. It is very likely that an adult Negro E had more "status effect" in determining reactions of white kindergarten children than did adult Negro Es testing college Ss within their own age range as was the case in the present research. Supporting this interpretation are the results of the analysis of S's post test data which parallel the objective test results in failing to yield significant differences for Examiner Race groups. The proportion of white Ss recorded as having felt anxious while being tested by a Negro E was not significantly greater than the proportion of white Ss who reported having felt anxious while being tested by a white E.

Another important dimension along which the present research and Trent's (1954) differ is that the subject matter of the latter experiment itself was racial in nature. It seems likely that a Negro E will have more of an effect in influencing S's response to a racial picture choice than he will in an intelligence test where performance has no ostensible connection with the race of E. Athey et al (1960) found a significantly different response to interviewers belonging to different ethnic groups, but again, their Ss were responding to questionnaires which directly involved racial issues. Thus, while several studies reveal significant differences in white Ss response to Negro and white Es, the subject matter has been, in most of these researches, racial in nature, and there is little evidence to suggest a similar effect due to E race in intelligence test research. Rice and White (1964) found that their Ss, white southern college students, revealed prejudice by significantly more competitive than cooperative game behavior against a hypothetical Negro peer as compared with their treatment of a hypothetical white peer. There is the possibility that in the present study, white Ss, experiencing anxiety due to initial failure, perceived themselves in a competitive situation with the Negro examiner who appeared more like a peer than an authority figure, and thus, they tended to overcompensate successfully for the experienced anxiety. It has long been argued and demonstrated in research (Katz, 1964; Katz, 1965; Dreger and Miller, 1960) that Negro Ss perform intellectual tasks less efficiently when the E is white rather than Negro, but there is little evidence to support the contention that white Ss will react similarly to Negro Es when the roles are reversed.

That no consistent and significant differences were found in objective test results or subjective report data between the groups for the instructional variable might be explained, at least in part, by individual examiner differences already discussed. Noting that the problem of variance among Es in the manner in which instructions are communicated cannot be overemphasized, Sarason (1960) wrote that "even when quite explicit instructions are administered to S, there remains the problem of the administrator of these instructions." The additional fact that so few of the correlations computed between Object Assembly criteria and anxiety measures came out significantly in the predicted direction, raises another question basic to the discussion of the present experiment; namely, the sensitivity of the WAIS OA as an anxiety indicator. It has been proposed that if an E wishes to determine whether or not a S has been anxious during intelligence testing, E might do better to simply ask him rather than to rely on certain traditional WAIS subtest indicators (Walker and Spence, 1964). This suggestion reflects the reservations of many who have researched WAIS subtests individually and in patterns for diagnostic cues of anxiety (Gilhooly, 1950; Guertin et al, 1956; Guertin et al, 1962; Lewinski, 1945; Matarazzo, 1955; Matarazzo et al, 1954; Moldawsky and Moldawsky, 1952). For example, Warner (1950) found, in contradiction to traditional assertions by Rapaport (1945), Mayman et al (1951) and Wechsler (1958), that OA was higher with anxiety neurotics than with normal controls. Siegman (1956) reported that none of the individual WAIS subtests correlated significantly with the MAS. Rashkis and Welsh (1946) found that OA was one of the signs showing the least discriminatory value among Wechsler anxiety indicators.

In summary, included among suggestions for improvement in the design of the present experiment would be: a substantial increase in the N of Es as well as N of Ss; increase in status distance between S and E, and utilization of an intellectual task which is more sensitive to the effects of anxiety, possibly paired associate learning.

CHAPTER V

Summary

The present study was intended to determine, by the manipulation of certain examiner (E) and instructional variables, the effects of experimentally induced stress on intelligence test performance. The specific hypotheses were: (1) Stress induced by initial failure will be accentuated becamse it is experienced in the presence of an E of another race, and that such stress will significantly alter, for the worse, the white S's performance on an intelligence test; and, (2) Ss given "ambiguous" instructions following failure will perform significantly more poorly on a subsequent intellectual task than those Ss given "anchor" instructions following failure. A concurrent hypothesis predicted negative correlations between the personality variable of anxiety (as measured by standardized anxiety questionnaires) and intelligence test performance under stress conditions directly associated with the testing instrument.

Eight groups of undergraduate Ss (N=120) were administered the WAIS Object Assembly (OA) subtest and two anxiety questionnaires. The administration of OA was preceded by an impossible task for all subjects. Each of the four Es (two Negro and two white) administered "ambiguous" instructions following initial failure to his experimental group (N=15), an "anchor" instruction to his control group (N=15). The predicted significant and

differentiating effects due to the variables of E race, instructions, and their interactions were not found. That is, neither hypothesis "1" nor hypothesis "2" were confirmed. Partial support, however, was found for the concurrent hypothesis of negative correlation between WAIS OA scores and anxiety scores.

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APPROVAL SHEET

The thesis submitted by Luke A. Shanley has been read and approved by the director of the thesis. Furthermore, the final copies have been examined by the director and the signature which appears below verifies the fact that any necessary changes have been incorporated, and that the thesis is now given final approval with reference to content and form.

The thesis is therefore accepted in partial fulfillment of the requirements for the degree of Master of Arts.

Dec 21, 1967
Date

Ronald E. Walker
Signature of Adviser