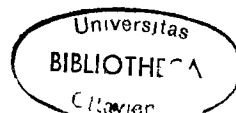


**THE HAND TEST AND PREDICTION
OF OVERT AGGRESSION**

by Melvin H. Wiener

Thesis presented to the School of
Psychology and Education of the
University of Ottawa as partial
fulfillment of the requirements
for the degree of Master of Arts
in Psychology

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CURRICULUM STUDIORUM

Melvin H. Wiener was born April 9, 1939, in Montreal, Quebec. He received the Bachelor of Arts degree from Sir George Williams University, Montreal, in 1962.

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INTRODUCTION

The infliction of pain and suffering is a complex human behavior. Sometimes it is observed as a reaction to frustration or stress. On occasion aggression is warranted and even necessary for the maintenance of personal integrity. An act of aggression, regardless of cause, mode or target, calls attention to and demands the concern of the student of human behavior.

In striving toward a more comprehensive understanding of behavior, an ever increasing number of psychometric methods have evolved. One recent addition to the science of psychological measurement is the Hand Test,¹ alleged to be a predictor of overt aggression. The potential implications of such a technique are most promising. However, as in the growth and development of all innovations, a phase of critical assessment must precede collective acceptance. The study described herein is concerned with the clinical application and practical utility of the Hand Test. The investigation is focused on one aspect of the test, namely, the Acting Out Ratio, asserted by Wagner² to be a predictor of overt aggression.

¹ B. Bricklin, A.A. Piotrowski and E.E. Wagner, The Hand Test, Springfield, Illinois, Charles C. Thomas, 1962, x-100 p.

² E.E. Wagner, The Hand Test. Manual for Administration, Scoring and Interpretation, Akron, Ohio, Mark James, 1962, iii-62 p.

In this experiment an attempt is made to elicit overt aggression in the laboratory by trying to duplicate a plausible everyday situation, but with experimental controls. Manipulated frustration, induced by means of an "accomplice", is introduced as an instigation to aggression. The relationship between the Acting Out Ratio and a measure of aggressive behavior is the problem to be tested.

Because it has been published only quite recently, general Hand Test information is given in the first part of the thesis. A description of the Acting Out Ratio is then presented. The review of the previous Hand Test studies is followed by the formulation of the hypothesis to be tested.

An account of the experimental design presents some definitions of particular importance, the selection and description of the sample, tools of the experiment, the experimental procedure itself, and finally the statistical techniques for analysis of the obtained data.

The findings of the study are thereupon presented and discussed in relation to previous Hand Test studies and the experimental procedure. Suggestions for subsequent research are then given.

CHAPTER I

DEVELOPMENT OF THE PROBLEM

The Hand Test^{1,2} is a relatively new technique and it may be that some investigators are not as yet familiar with its general format or specific construction. Thus, sections one and two of this first chapter expose to the reader information taken from the two main Hand Test sources. The Text and Manual excerpts included here were chosen so as to provide a background against which the main thesis problem is presented. The first section is devoted to general Hand Test information. Since, for the purpose of this study, one aspect of the test, the Acting Out Ratio, is of primary interest, section two of the chapter has been allotted to it. Following this is a presentation and evaluation of published Hand Test research pertaining to acting out behavior. The chapter concludes with the formulation of the hypothesis to be tested.

1 B. Bricklin, Z.A. Piotrowski and E.E. Wagner, The Hand Test, Springfield, Illinois, Charles C. Thomas, 1962, x-100 p. Hereafter referred to as Text.

2 E.E. Wagner, The Hand Test. Manual for Administration, Scoring and Interpretation, Akron, Ohio, Mark James, 1962, iii-62 p. Hereafter referred to as Manual.

1. The Hand Test.

Nine cards (each three by five inches) with drawings of human hands in different postures, comprise the stimulus material of the Hand Test. An additional card, void of any portrayals, is included in the test administration. The cards are exposed individually and the subject is instructed to relate what the hands are doing. In the Manual, the cards are referred to as "projective media" and the task describes the subject as "projecting" by telling what the hands are doing.³ No reference is made with regard to the specific nature of "projection" used in this instance. Although it is not stated as such, the author does allude to his own understanding of the concept.

The Hand Test utilizes relatively structured stimuli (pictures of hands) in relatively unstructured poses, permitting individual variations in responses yet restricting these responses to definable and classifiable categories, namely descriptions of hand actions and attitudes. It is assumed, in way of rationale, that prototypal action tendencies will be projected into pictures of hands since the hand, both ontogenetically and functionally, is crucial for interacting with and relating to the external world. In the development of the human organism the ongoing, reciprocal, feed-back relationship between the brain and the hand makes it likely that perceptions and cognitions of semi-structured pictures of hands will mirror significant perceptual-motor tendencies in the subject.⁴

3 Wagner, Op. Cit., p. 1.

4 Ibid., p. 1.

The author goes on to postulate that:

(1) human behavior is organized; (2) stimulus-specific perceptions of unstructured stimuli must, in some way, reflect higher-order behavioral tendencies; (3) responses to hands in ambiguous poses indicate these hierarchical organizations and are particularly amenable to a classification scheme which is psychologically and diagnostically useful.⁵

There is no restriction to the number of responses a subject can give. Each answer is assigned one of fifteen possible scoring symbols according to the description and examples provided in the Manual. The nomenclature of each symbol suggests the nature of the response. After a protocol has been scored, the responses are tabulated, summarized and fitted into the following four major categories:

Interpersonal responses are defined as "those involving relations with other people".⁶ Into this group are placed the Affection (Aff), Dependence (Dep), Communication (Com), Exhibition (Exh), Direction (Dir), and Aggression (Agg) scores.

Environmental responses are assumed "to represent generalized attitudes toward the impersonal world, i.e., a readiness to respond to or come to grips with the environment in a characteristic fashion".⁷ Acquisition (Acq), Active (Act), and Passive (Pas) scores are considered Environmental ones.

⁵ Wagner, Op. Cit., p. 1.

⁶ Ibid., p. 19.

⁷ Ibid., p. 21.

Maladjustive responses include Tension (Ten), Crippled (Crip), and Fear scores. These are said to

(...) represent difficulty, of which the individual is at least partially aware, in successfully carrying out various action tendencies, because of subjectively experienced inner weakness and/or external prohibition.⁸

Finally, the Withdrawal responses, Description (Des), Failure (Fail), and Bizarre (Biz), reflect "abandonment" where

(...) realistic interaction with people, objects, and ideas (is) so traumatic, difficult and non-reinforcing that meaningful, effective life roles have been partially or completely abandoned.⁹

In resume and abbreviated form the categories are as follows:

1. Interpersonal = Aff + Com + Dep + Exh + Dir + Agg
2. Environmental = Acq + Act + Pas
3. Maladjustive = Ten + Crip + Fear
4. Withdrawal = Des + Fail + Biz

In the one study found pertaining to the scoring reliability of the Hand Test,¹⁰ Wagner randomly selected one hundred protocols from the 1,020 constituting his normative sample.¹¹ Three graduate students independently scored the

⁸ Wagner, Op. Cit., p. 22.

⁹ Ibid., p. 23.

¹⁰ Ibid., p. 18.

¹¹ Ibid., p. 18-20.

hundred protocols using the scoring criteria of the Manual. The Pathological index ($\text{Pathological} = \sum \text{Maladjustive} + 2 \sum \text{Withdrawal}$) was chosen in establishing split-half and inter-scorer reliabilities. Wagner defends this choice by reasoning that the Pathological score "distributed itself continuously over the hundred protocols used" and that it "provided a meaningful qualitative score".¹² The Spearman-Brown split-half (odd-even) reliabilities were obtained by comparing the Pathological scores for cards I, III, V, VII, and IX to cards II, IV, VI, VIII, and X for each protocol. The Pathological reliabilities reported for the three scorers were: A, .85; B, .84; C, .85. The correlations on the Pathological score between the scorers were: A + B, .86; A+C, .96; B + C, .92.

At first glance these results appear acceptable. However, it must be pointed out that the scoring categories used to obtain these values possibly yield somewhat inflated coefficients. By using the Pathological index, the task in establishing reliability required that the judges separate the Maladjustive and the Withdrawal scores from the Interpersonal and Environmental ones. This task involves inter-category differentiation. Just by inspection of the categories one would hardly expect even the unsophisticated scorer

12 Wagner, Op. Cit., p. 18.

to mistake any one of the Pathological constituents for an Environmental or Interpersonal response. Open to question, however, is whether or not an "expert" can differentiate, with significant consistency, between intra-category scores. The importance of intra-category differentiation becomes evident when confusing a Directive for a Communication score, for example, and realizing the consequence of this when computing the Acting Out Ratio. An application of the published reliability coefficients to the test as a whole must be done with reservation until further research results are available.

Interpretation of the Hand Test is based on "projective rationale, validated against empirical data".¹³ Even though the Hand Test is still in a phase of growth and development, Wagner is able to report that, notwithstanding the bias¹⁴ of his normative sample, "differences between the various groups were consistently in the predicted directions and coincide (...) with projective expectations".¹⁵

This investigator has elected to forego inquiry into the basic tenets of test rationale. Rather it has been

13 Wagner, Op. Cit., p. 16.

14 a) Ohio residents only; b) low n's; c) groups do not include all psychological dimensions of normalcy and psychopathology.

15 Wagner, Op. Cit., p. 19.

decided to investigate an empirically testable supposition of the author.

2. The Acting Out Ratio.

Since for the most part, the Acting Out Ratio¹⁶ is the focus of this investigation, pertinent data with regard to it is presented at this time.

"Acting out" is defined by Wagner as:

(...) a subject's behaving in such a way as to bring him to the attention of others (...) as a result of overt aggressive behavior. The 'acting-out score' is not devised to predict specific motor acts, but rather a tendency to act out in an aggressive way of any kind.¹⁷

The five scores which make up the AOR all fall under the general category of Interpersonal responses. The total number of Aff, Dep, and Com scores placed in a ratio opposite the total number of Dir and Agg scores constitutes the AOR. (AOR = Aff + Dep + Com : Dir + Agg).

"Aff, Dep, and Com scores are considered 'socially positive' since they imply a degree of awareness of and concern with the rights and privileges of others."¹⁸ They "reflect action tendencies associated with social cooperation".¹⁹

¹⁶ Hereafter referred to as the AOR.

¹⁷ Bricklin, et al., Op. Cit., p. 4. (Underlining is ours).

¹⁸ Wagner, Op. Cit., p. 19.

¹⁹ Bricklin, et al., Op. Cit., p. 8.

"Dir and Agg are 'socially negative' since, in these responses, the rights of others are relatively unimportant, ignored, or attacked."²⁰ They "indicate an attitude of an unwillingness (...) to come to terms with others".²¹

The AOR, then, compares responses which supposedly reflect social responsibility and understanding to responses which indicate antisocial aggressive behavior. Wagner states that "individuals who act out aggressively can be expected to produce higher AOR scores in the direction of acting out"²² and "as Dir + Agg exceeds Aff + Dep + Com the greater the expectancy of overt, antisocial behavior".²³

3. Hand Test Research.

In all probability the Hand Test is at present the subject of many scientific studies. However, the number of published research projects investigating the Hand Test as a predictor of aggression is limited. The studies reviewed here are only those which pertain to the prediction of aggression by means of the Hand Test.

20 Wagner, Op. Cit., p. 19.

21 Bricklin, et al., Op. Cit., p. 6.

22 Wagner, Op. Cit., p. 26.

23 Ibid., p. 27.

The initial studies^{24,25} which tested the validity of the acting out score²⁶ used the method of "known" groups. The acting out score was obtained by algebraically subtracting the sum of Aff + Com + Dep + Fear responses from the sum of Dir + Agg scores.

In one of these studies²⁷ an adult acting out group was made up of fifty-nine penitentiary inmates and seventeen psychiatric hospitalized patients. The prisoners were chosen from a diagnostic classification centre while the hospital cases were selected by two independent clinicians on the basis of clinical observations and life history.

In the non-acting out group were: (i) twenty indigents, "included so as to represent a passive, relatively lower intelligence group";²⁸ (ii) thirty non-aggressive psychiatric patients with no record of acting out; and (iii) thirty-two normal, middle-class adults.

The acting out scores of each group were compared and it was found that in the acting out population, the average values of Dir + Agg tended to exceed the mean values of Aff,

24 Bricklin, et al., Op. Cit., p. 23-41.

25 Wagner, Op. Cit., p. 18-20.

26 The acting out score is an earlier version of the AOR.

27 Bricklin, et al., Op. Cit., p. 27-34.

28 Ibid., p. 25.

Dep, Com, and Fear. Seventy-nine per cent of the acting out subjects had an acting out score of one or over. In the non-acting out group, only twenty-five per cent of the subjects had an acting out score of one or over. Chi square analysis of the distribution of the acting out scores was significant beyond the .001 level of probability.

Two other less pertinent findings in the initial studies are worth noting because they involve the acting out score. First, the hypothesis that reading problem children, who are supposedly passive-aggressive, would consequently obtain lower acting out scores than normal playground children, was substantiated at the .01 level of significance.²⁹ But the "data strongly suggest that the acting out score is significantly affected by age" and that "further systematic work is needed to determine more precise norms for varying ages".³⁰

Secondly, the results of preliminary investigations differentiating recidivist and non-recidivist groups are also reported.³¹ The mean acting out score of thirty-seven recidivists was 1.95, while an equal number of non-recidivists had an average acting out score of .89. This difference is

29 Bricklin, et al., Op. Cit., p. 34-36.

30 Ibid., p. 36.

31 Ibid., p. 37-41.

statistically significant ($t = 2.00$, $p < .05$). A positive relationship was also found between acting out scores and degree of interpersonal violence involved in the crimes for which the various inmates were committed. Rapists had the highest acting out scores, followed in descending order by armed robbery, grand larceny, and then crimes of a less aggressive nature.³²

In a more recent study, Wagner and Medvedeff³³ attempted to differentiate non-aggressive from aggressive schizophrenics on the basis of Hand Test indicators. The acting out and withdrawal scores were the two categories used. An acting out score of one or over was considered to be at least indicative of aggressive predispositions. A Withdrawal score of one or over was generally considered to counter-indicate aggression, since

(...) descriptions, bizarre percepts and failures were postulated to represent a withdrawal from reality contact -- a relinquishment of meaningful life roles -- and hence a dampening of behavioral tendencies, aggressive or otherwise.³⁴

³² Bricklin, et al., Op. Cit., p. 40-41.

³³ E.E. Wagner and Eugene Medvedeff, "Differentiation of Aggressive Behavior of Institutionalized Schizophrenics with the Hand Test", Journal of Projective Techniques, Vol. 27, No. 1, 1963, p. 111-113.

³⁴ Ibid., p. 111-113.

Ward records of undifferentiated schizophrenics were divided into an aggressive and non-aggressive group by attending psychiatrist and ward nurses. The chi square technique was used to test the relationship of the acting out and Withdrawal scores to group membership. Phi values were also computed. The acting out score was significant beyond the .01 level of probability, yielding a phi value of .33. The withdrawal score was significant beyond the .001 level of probability, yielding a phi value of .43.

The results of the study claimed to support the hypothesis that

(...) the probability of the occurrence of overtly aggressive behavior (i) increases as the dominant and aggressive interpersonal attitudes outweigh attitudes reflecting friendly and co-operative interpersonal attitudes, and (ii) decreases in accordance with attitudes reflecting withdrawal and estrangement from reality, as ascertained from projective responses to the Hand Test.³⁵

4. Statement of Hypothesis.

Unconditional acceptance of the studies just reported is not reasonable. The results would seem less promising interpreted in the light of factors which are now pointed out.

A similarity in all Hand Test studies is the methodological procedure which involves differentiation among "known" groups. With predictable repetition, the

³⁵ Wagner and Medvedeff, Op. Cit., p. 111-113.

experimenters used samples divided into two mutually exclusive categories, i.e., normals and schizophrenics;³⁶ schizophrenics and neurotics;³⁷ sexually adjusted and sexually maladjusted;³⁸ et cetera. The Hand Test was then administered and almost invariably favorable results in differentiating the groups were obtained. But because the findings were derived from "known" groups their weight could be questioned. To illustrate, it would be redundant to point out that a group of known aggressors possesses greater propensities for aggression than do the members of a group known to be more "socialized". Thus in any sample of behavior where aggression was involved (including responses on a projective technique), the former group would tend to be more aggressive.

A second negative factor is one of some consequence, but which in appearance seems nothing more than a matter of semantics. Direction of prediction, and the reversal of same, is the source of difficulty leading to false

36 E.E. Wagner, "The Use of Drawings of Hands as a Projective Medium for Differentiating Normals and Schizophrenics", Journal of Clinical Psychology, Vol. 17, No. 3, 1961, p.279-280.

37 -----, "The Use of Drawings of Hands as a Projective Medium for Differentiating Neurotics and Schizophrenics", Journal of Clinical Psychology, Vol. 17, No. 2, 1962, p. 208-209.

38 -----, "Hand Test Content Indicators of Overt Psychosexual Maladjustment in Neurotic Males", Journal of Projective Techniques, Vol. 27, No. 3, 1963, p. 357-358.

conclusions. In validating the test and in the studies that followed, the experimenters selected "known" groups and then recorded their behavior on the Hand Test. In one example, they selected a group of known aggressors and a group of non-aggressors. An analysis of the obtained protocols revealed a significant difference in the number of aggressive indicators. From this one might only conclude that known aggressors give a significantly greater number of aggressive indicators (on the Hand Test) than those in a group of more "socialized" persons. Prediction of actual aggressive behavior from the responses has not been validated by the above method.

The AOR remains unvalidated as a predictor of behavior. The objective of the present study is to investigate the AOR as a predictor of overt aggression. The hypothesis to be tested, presented in the null form, is that there is no significant relationship between the AOR on the Hand Test and indices of overt aggression induced by manipulated frustration. The justification for "manipulated frustration" stems from the nature of the dependent variable (i.e., aggression) as evoked in the laboratory and is supported and specified in the chapter to follow, where the hypothesis is also restated in expanded form.

Aggression, the dependent variable of this study, is a most complex behavior. A vast body of research has

investigated aggression within a psychological framework. However, the Hand Test, and more specifically the AOR, is the single focus of this investigation. Therefore no review of the pertinent literature is attempted here except to draw the reader's attention to (i) the recent monograph by Buss³⁹ and (ii) the relevant sections in the next two chapters where the meaning of aggression as used in this study is presented and discussed.

³⁹ A.H. Buss, The Psychology of Aggression, New York and London, John Wiley & Sons, 1961, x-307 p.

CHAPTER II

EXPERIMENTAL DESIGN

Chapter two presents the procedures involved in conducting the experiment to test the hypothesis proposed in the preceding chapter. To begin, three significant terms in the hypothesis are defined within the context of the study. The selection and description of the sample is then reported. In the section that follows, the tools of the experiment are described. The experimental procedure is presented in the fourth section of the chapter along with an examination of this procedure, making specific reference to the concepts of motivation, frustration and aggression. Finally, the statistical methods used in the analysis of the obtained data are explained.

1. Definition of Terms.

The hypothesis formulated at the conclusion of the previous chapter states that there is no significant relationship between the AOR on the Hand Test and indices of overt aggression induced by manipulated frustration. A consideration of the terms in the hypothesis begins with the AOR, which is defined by Wagner as the total number of Aff, Dep and Com scores placed in a ratio opposite the total number of Dir and Agg

scores.¹ A more specific and detailed consideration of the AOR was presented in the second section of chapter one.

Overt aggression, as it pertains to the present study, is defined as a response that delivers a noxious stimulus to another organism. This definition is one proposed and supported by Buss.² Specifically, overt aggression is operationally defined as the number of electric shocks given in response to frustration. The apparatus used to deliver the noxious stimulus is described in section three of this chapter.

Manipulated frustration is defined as the laboratory condition which interferes with goal-oriented behavior. More precisely, the operations used to elicit aggression in this experiment are classified as frustrating distractors, which are "stimuli that interfere with instrumental activity (goal-oriented behavior) by diverting the subject's attention from the task at hand".³ "There appear to be no laboratory data on the effect of distractors on subsequent aggression but casual observation of everyday situations indicates that distractors may lead to aggression."⁴

1 E.E. Wagner, The Hand Test. Manual for Administration, Scoring and Interpretation, Akron, Ohio, Mark James, 1962, p. 7.

2 A.H. Buss, The Psychology of Aggression, New York and London, John Wiley & Sons, 1961, p. 1.

3 Ibid., p. 18.

4 Ibid., p. 18.

With the above in mind, the hypothesis would then read as follows: There is no significant relationship between an AOR on the Hand Test and the number of electric shocks delivered to an organism in response to stimuli that interfered with goal-oriented behavior by diverting an individual's attention from a meaningful task.

2. The Sample.

The present experiment investigates the Hand Test as a predictor of aggression. In this sense, the study is concerned with the practical utility of the test. In reviewing the Hand Test studies done thus far, it was pointed out that in each case the method of "known" groups was used and it was implied that the method is inadequate. In choosing a population for this study, a group of "unknown" subjects was selected. It was felt that in this way, actual clinical conditions were approximated more closely than by the method of "known" groups.

Selection and Description.- "The term incidental sample is applied to those samples that are taken because they are the most available."⁵ The sample used in this experiment is an incidental one, drawn from a population of summer school students at the School of Psychology and

⁵ J.P. Guilford, Fundamental Statistics in Psychology and Education, New York, Toronto, London, McGraw-Hill Book Co., Inc., 1956, p. 159.

Education, University of Ottawa. Participation in the experiment was on a volunteer basis. During regular lecture hours, classes were informed of a study which was to be conducted at the school. Information with regard to its nature was given verbally according to the following

"Suggested Briefing for Subjects":

The present research is concerned with learning and memory. As you probably know, learning and memory are influenced by such variables as I.Q. and personality factors. We are going to measure some of these variables and then investigate capacities for learning and memory. All data are strictly confidential.

The prime purpose of the study is to compare the learning ability of individuals who have had psychological training and background with those whose major preoccupation is the field of education. In other words, Psychology students will be competing with Education students and vice versa.

It should be noted that the students were led to believe that the study had to do with learning and memory, when in fact it had to do with aggression and its prediction. The experimental procedure made it mandatory that the subjects be misinformed. The necessity for such measures is fully explained in the section given to the experimental design.

A group of thirty-three English-speaking male Psychology and Education students made up the sampling pool from which eight individuals had to be eliminated. Because the study had to do with overt aggression, it was decided not to include volunteers who were members of the

clergy. This decision (arrived at before the experiment began) was based on the belief that formal religious training influences propensities to aggress. One Psychology student had to be eliminated because he became aware of the true nature of the study. His knowledge of previous similar studies made the discovery possible.

There were twenty-five individuals in the final sample. The average age of the subjects was 31.3 with a standard deviation of 5.8 and a range of 21 to 52. Twenty-two reported Education as their major field of study, while the remaining three gave Psychology as their area of training.

In resumé, the sample used in this experiment was a group of twenty-five English-speaking males with an average age of 31.3. The subjects were graduate students at the School of Psychology and Education during the 1964 summer school session, alike with regard to education by the fact that each was enrolled in the same graduate school. It is assumed that each had to satisfy basic and similar prerequisites for them to have been accepted by the school.

3. Tools of the Experiment.

In this experiment an attempt was made to elicit aggression in the laboratory by trying to duplicate a plausible everyday situation, but with experimental

controls. This section of the chapter gives an account of the laboratory tools and conditions used in the study.

The experiment took place in two adjoining and connecting offices on the ground floor in the School of Psychology and Education. Each room opens onto a common corridor and both are joined by a door between them. During the experiment movement from one room to another was always via the connecting door. When not in use for experimentation one room is a private office (hereafter referred to as the office); the other is a permanent laboratory (hereafter referred to as the laboratory). The rooms are equipped with a two-way intercommunication system.

Manipulated frustration was used in an attempt to elicit overt aggression in the form of noxious stimuli transmitted by one organism to another. The mode of aggression was the delivery of an electric shock by means of a shock apparatus,⁶ constructed with a control panel in the office and terminal electrodes in the next room. A switch on the control panel, pressed forward or back from a neutral position, regulated the flow of electrical current. To administer a shock, the switch was pressed forward from the OFF position, thus directing a current to the end electrodes in the next room. If no shock was to be given the switch

⁶ Constructed by Mr. T. Mousseau of Mousseau Scientific Instruments.

was moved toward the operator. In this latter instance a signal light in the laboratory indicated that no shock was to be delivered. Electronic data⁷ pertinent to the apparatus is given below:

Input voltage	= 1.5
Peak voltage	= 1200
Peak current	= 11 microamperes (11×10^{-6} amp)
Duration of discharge	= 150 microseconds

Manipulated frustration was brought into the experiment under controlled conditions by the use of an "accomplice" (hereafter referred to as the Partner), introduced to the subjects as another volunteer. That is to say, the subjects were told that the Partner's participation was similar to their own. The Partner, a thirty-three year old male, is a graduate student at the School of Psychology and Education.

Three tests were used in the experiment: (i) the Hand Test described in chapter one; (ii) the Personnel Test (Form F),⁸ an adaptation of an Otis Intelligence Test; and (iii) two lists of words, one always used for the Partner (see Appendix 2) and the other for the subjects (see

7 Prepared by Mr. T. Mousseau.

8 E.F. Wonderlic, Personnel Test Form F, P.O. Box 7, Northfield, Illinois. Adaptation of Otis Self Administering Tests of Mental Ability: Higher Examination, 1922, World Book Company. Hereafter referred to as the Personal Test.

Appendix 1). Each list contained twenty-two words. The words were selected from the latter half of the WAIS⁹ and Wechsler-Bellevue¹⁰ vocabulary subtests respectively. In preparing the subject's list, forty-four words were pooled and an attempt was made to choose those words which seemed more likely to elicit a reasonable answer of any kind. The experimenter's subjective evaluation was the criterion for this choice.

The way in which certain estimates of experimental reliability were arrived at for the tools just considered is discussed in section five of this chapter.

4. Experimental Procedure.

Prior to the experiment, and as previously stated, the volunteers had been informed of a study which had to do with learning and memory. They were told that Education students would be competing with Psychology students and vice versa. Time and place of testing was the only other advance information given to the volunteers.

9 David Wechsler, Manual for the Wechsler Adult Intelligence Scale, New York, The Psychological Corporation, 1955, vi-110 p. Herein referred to as the WAIS.

10 -----, The Measurement of Adult Intelligence, Baltimore, The Williams and Wilkins Co., 1944, x-258 p. Herein referred to as the Wechsler-Bellevue.

The subjects were tested individually. They came to the testing session by way of a common corridor and were ushered into the office by the Experimenter. The Partner was seated at a desk completing an information blank. What follows is an account of the controlled laboratory situation which was adhered to as closely as possible for testing each subject.

Experimenter to Subject: This is Mr. Gallagher (introducing Partner). You may have met in class or in the library. He is taking the same set of tests as yourself. The testing session has been prepared so that both of you can be tested at the same time. Mr. Gallagher is in Psychology so that in a sense you are competing with him.¹¹ While he is completing the information blank, which you can do later, we can get started in the next room. (Experimenter and Subject go into laboratory.)

Experimenter to Subject: As you know, this study is concerned with learning and memory and that we are comparing Psychology and Education students. Your performance will be judged and evaluated against Mr. Gallagher's performance.

To start with I have here a number of cards on which pictures of hands have been drawn, and I want you to tell me what it looks like the hands are doing. (Hand Test administration.)

Experimenter to Subject: The next task is as follows. I want to see if you know the meaning of some words. I'll call them out one at a time and I want you to define or describe them as well as you can. If you are not sure of a word then guess. Any answer in your own words is better than nothing at all. You will not be penalized for guessing. There is one other matter which must be explained. Would you please come this way. (Experimenter and Subject return to office.)

¹¹ Students in Psychology were told that Mr. Gallagher (i.e., Partner) was an Education student.

Experimenter to Partner: Mr. Gallagher, if you are finished would you please listen for a moment. Mr. _____ is going to define a list of words one at a time. When he gives a response I want you to evaluate his answer. If you think his answer is adequate press this switch toward yourself and a light will flash in the other room. If you think his answer is unsatisfactory then press the switch away from you. This will conduct a mild electrical current to his finger. In this way you can let him know how you think he is doing. (Partner and Subject are instructed in the use of the shock apparatus.)

Experimenter to Partner and Subject: For scoring purposes I am only interested in your responses. Whatever Mr. Gallagher does with the shock apparatus only affects the laws of learning with regard to positive and negative reward.¹² This may also be a clue as to how you may be doing and perhaps stimulate you to try harder. On the other hand it may upset you. Some people are annoyed by such things. You (Subject) will operate the light and the shock when Mr. Gallagher does his vocabulary test.

The intercommunication system was turned on and all three went into the laboratory. The Partner watched as the Subject was seated and had the two end electrodes attached to the forefinger of each hand. The Partner was then directed back to the control panel of the shock apparatus and the door was closed. In the laboratory a microphone was placed on the table in front of the Subject and he was shown the light that signals acceptable responses. In order to test the working condition of the intercommunication system, and also for demonstration purposes, the Experimenter asked the Partner to use the apparatus and indicate an

¹² This "reasonably" sounding statement was made only to offer some believable justification for the evaluation by shock.

acceptable response, i.e., how positive assessment is indicated by the light signal. The "vocabulary test" was then administered to the Subject. Each word was read out separately and the Subject's answer was recorded by the Experimenter. After each answer the Partner "evaluated" the response and only then was the next word given. During the administration of the twenty-two word list, the Partner shocked the Subject on two words only. The same two words, subjectively evaluated by the Experimenter as the most difficult ones, elicited shocks, regardless of the response given by the Subject (see Appendix 1). Upon completion of the "vocabulary test", the Subject was disengaged from the electrodes and was asked to remain seated. The door connecting the two rooms was opened, and the Partner was called into the laboratory and seated next to the Subject.

Partner to Subject: My, you really did well, you certainly know your stuff. You nearly had a perfect score.
(Partner offers Subject a cigarette.)

The Experimenter distributed the Personnel Test and followed usual administration procedure. He then occupied himself at a separate desk but was still able to observe the progress of the Subject. Once the Subject had completed the test except for the last page, the Experimenter quietly left the room, closing the door behind him. At this point, then, the Experimenter was in the office while the Subject and Partner were alone in the laboratory. The

Partner used the Experimenter's departure as the signal to "finish" the Personnel Test within approximately one minute, which was always before the Subject had finished. It was at this point in the experimental procedure that the manipulated frustration began. (As the Partner finished, he turned to the Subject.)

Partner to Subject: Well, I'm finished. (Partner then lights up a cigarette and blows clouds of smoke in the general direction of the Subject. Partner then seats himself on the table and looks over the shoulder of the Subject and acts as if comparing answers.) My goodness, those aren't too difficult.

As the intercommunication system was still on, the Experimenter returned to the laboratory when the Partner completed his "act" and while the Subject was still completing the Personnel Test.

Experimenter to Partner and Subject: Time! Put down your pencils, please.

Experimenter to Partner: Now it's your turn to do the vocabulary test. Please sit here. (The Subject watches as the electrodes are attached to the Partner.) Mr. _____ will provide his evaluation from the other room just as you did. Both of you should remember that for scoring I am only interested in Mr. Gallagher's responses.

The Subject was then escorted into the office and again briefed on the operation of the shock apparatus. The Experimenter then returned to the laboratory closing the door behind him. Now the Subject was alone in the office while the Experimenter and Partner were in the laboratory. After the electrodes were removed from the Partner, his

"vocabulary test" was administered. The Subject listened to the Partner's answers and evaluated each response individually.

A fact unknown to the Subject was that the Partner made use of a prearranged set of answers prepared according to the norms of the WAIS and the Wechsler-Bellevue (see Appendix 2). In the WAIS, the samples are scored 2, 1, or 0 and in the Wechsler-Bellevue they are scored 1, 1/2, or 0. Answers in the Partner's "script", taken from the WAIS were prototypes of one-point responses, while those from the Wechsler-Bellevue were of the half-credit type. According to the above norms, the Partner's answers were neither good enough for full credit nor poor enough not to receive any points at all. The intended purpose of this method was to use responses of a non-exact, but relevant nature so that, in some instances a response may have been acceptable, while on the other hand, the same answer might have been rejected as unsatisfactory.

By using a hidden signal light which flashed each time a shock was given, the Experimenter and Partner kept an independent count of the number of shocks given by each Subject. Upon completion of this second "vocabulary test" the Subject was called into the laboratory and informed that the test session had ended. At this point, the true

nature of the experiment was revealed to the Subject, and his cooperation was sought in not divulging the information.

In this experiment the independent and dependent variables respectively, were: i) AOR's computed from the obtained Hand Test protocols; ii) number of shocks given by each individual in the sample.

To recapitulate, the laboratory episode tried to simulate a believable situation, but with the experimental controls. It was based on assumptions which appear reasonable and justified by the literature whenever possible.

Examination of the experimental procedure begins with the factor of motivation. Allison and Hunt¹³ found that frustration of strongly motivated behavior led to a higher probability of being angry (which supposedly is related to the probability of behavioral aggression) than frustration of weakly motivated behavior. In this study the following procedures were used in attempting to assure adequate motivation of the volunteers. They were told that (a) their intelligence would be measured; (b) they would be in competition with another volunteer; and (c) Psychology students would be compared to Education students. Personal involvement, competition, and desire to maintain one's

¹³ J. Allison and D.E. Hunt, "Social Desirability and Expression of Aggression Under Varying Conditions of Frustration", Journal of Consulting Psychology, Vol. 23, 1959, p. 528-532.

intellectual image (especially at the graduate level) were assumed to be strong motivating factors. Furthermore, just by volunteering, the subjects demonstrated a degree of motivation.

The notion of frustration is now considered. First,

(...) when one person blocks another's ongoing behavior, the frustration may be arbitrary (related to the whimsy or petulance of the frustrator) or non-arbitrary (justifiable in terms of conditions beyond control).¹⁴

Pastore¹⁵ found that significantly more aggressive responses were made following arbitrary frustrations than following non-arbitrary frustrations. Allison and Hunt,¹⁶ Cohen,¹⁷ Kregarman and Worchel¹⁸ Bernstein and Worchel,¹⁹ all support the above findings.

¹⁴ Buss, Op. Cit., p. 23.

¹⁵ N. Pastore, "The Role of Arbitrariness in the Frustration-Aggression Hypothesis", Journal of Abnormal and Social Psychology, Vol. 47, 1952, p. 728-731. As found in Buss, Op. Cit., p. 23.

¹⁶ Allison and Hunt, Op. Cit., p. 528-532.

¹⁷ A.R. Cohen, "Social Norms, Arbitrariness of Frustration and Status of the Agent in Frustration in the Frustration-Aggression Hypothesis", Journal of Abnormal and Social Psychology, Vol. 51, No. 2, 1955, p. 222-226.

¹⁸ J.S. Kregarman and Phillip Worchel, "Arbitrariness of Frustration and Aggression", Journal of Abnormal and Social Psychology, Vol. 63, No. 1, 1961, p. 183-187.

¹⁹ E. Bernstein and P. Worchel, "Arbitrariness of Frustration and Its Consequences for Aggression in a Social Situation", Journal of Personality, Vol. 30, 1962, p. 528-540.

Secondly, Haner and Brown²⁰ reasoned that the closer an individual is to a goal, the stronger will be his tendency to reach the goal, and therefore blocking a response when it is close to the goal should be more frustrating than blocking it far from the goal.

In this study, completion of the Personnel Test was established as the goal objective. The first instance where the Subject was possibly frustrated occurred because the Partner "finished" the Personnel Test before him. The Partner's subsequent distracting behavior was intended to frustrate the Subject by being arbitrary and unreasonable, and came at a time when the Subject was approaching the end of the test. By not allowing the Subject to finish the test, an additional frustration may have been imposed.

Finally, in consideration of the dependent variable, aggression, it seems reasonable to assume that delivering an electric shock to an organism is direct physical aggression. Overt expression of anger and the Partner's "pain" may have reinforced the Subject's aggressive drive which, furthermore, was sanctioned by the experiment.

20 C.F. Haner and P.A. Brown, "Clarification of the Instigation to Action Concept in the Frustration-Aggression Hypothesis", Journal of Abnormal and Social Psychology, Vol. 51, 1955, p. 204-206. As found in Buss, Op. Cit., p. 21.

5. Statistical Treatment of the Data.

The experiment provided two sets of data for statistical analysis. The first set consisted of various estimates of experimental reliability while the second pertained to the relationship of the independent and dependent variables.

The following operations were applied to the first set:

a) Each Hand Test protocol was scored three times. The first two corrections, done by the experimenter, were separated by a one-month interval. A third scoring was carried out independently by a qualified Hand Test examiner.²¹ Spearman's rank difference coefficient of correlation was used to establish scoring reliability according to the following formula:²²

$$p = 1 - \frac{6 \sum D^2}{N(N^2 - 1)}$$

Intra-judge reliability was estimated by correlating the AOR in each set of scores obtained in the experimenter's two corrections. For this purpose the AOR's were reduced to single indices by subtracting the $\sum$ of Dir and Agg scores from the $\sum$ of Aff, Dep, and Com scores.²³

²¹ A graduate psychology student whose M.A. research topic involved use and scoring of the Hand Test.

²² J.P. Guilford, Fundamental Statistics in Psychology and Education, New York, Toronto, London, McGraw-Hill Book Co., 1956, xii-565 p.

²³ As recommended by Wagner, Op. Cit., p. 26.

A similar procedure was used to ascertain the reliability of inter-judge scoring. This time the scores obtained in the experimenter's second correction were correlated with those of the independent examiner. Again, for the purpose of correlation, the AOR's were transposed into single numbers.

b) Apart from the above, and due to an oversight, no experimental retest reliability of the independent variable was procured. However, the composition of the experimental sample described in this chapter possesses features which are common to a group of "normal" adults reported in Wagner's normative studies.²⁴ A crude reliability estimate of the independent variable was obtained by comparing mean Hand Test scores of each group.

c) Obtaining retest reliability of the dependent variable was precluded by the nature of the study. A measure of "internal consistency", however, was attempted by comparing the number of shocks given by the first thirteen subjects to those given by the last twelve. The chi square technique was used according to the following formula:²⁵

$$\chi^2 = \frac{N(ad - bc)^2}{(a + b)(a + c)(b + d)(c + d)}$$

²⁴ Wagner, Op. Cit., p. 18.

²⁵ Guilford, Op. Cit., p. 236.

d) The Partner's age in relation to the age of each Subject may have influenced the dependent variable. Therefore, the chi square technique was used to test the relationship of the Subject's age to the number of shocks given.

In order to test the experimental hypothesis, the chi square technique was used to determine the relationship of the AOR's to the number of electric shocks delivered. Again, as recommended by Wagner,²⁶ the AOR's were converted to single numbers by algebraically subtracting $\sum$ Aff, Com and Dep scores from $\sum$ Dir and Agg scores.

²⁶ Wagner, Op. Cit., p. 26.

CHAPTER III

PRESENTATION AND DISCUSSION OF RESULTS

This chapter consists of three sections. It opens with the presentation and interpretation of the obtained experimental reliability coefficients and the result of testing the hypothesis. Further analysis of the data follows in the second section. The chapter concludes with a discussion of the results pertaining to: (i) the negative findings in relation to earlier Hand Test studies; (ii) errors in the experimental design; and (iii) considerations of a more general nature.

1. Presentation of Results.

As indicated at the end of the previous chapter, the experimenter scored the Hand Test protocols twice, with a one-month interval between corrections. AOR's were computed, reduced to single numbers and the correlation of the two sets of scores yielded a Spearman rho of .99. Similarly, the experimenter's second set of AOR's was correlated with those of the independent examiner. The resultant reliability coefficient was .93. Thus both intra- and inter-judge scoring reliabilities were satisfactory.

Table I summarizes the variables compared in seeking a rough approximation of reliability of the independent variable. Because Wagner's data¹ were available only in summary form and standard deviations of scores are not reported, tests of significant differences were not possible except for the age factor which yielded a $t = 1.33$ (i.e., no significant age difference).

A comparison of the number of shocks given by the first thirteen subjects to those of the remaining twelve, by means of the chi square technique, yielded a value of .337 which was not significant at the .05 level. This finding was interpreted as one indication of "internal consistency" of the dependent variable (i.e., the experimental procedure was presumably consistent for testing both the first and second half of the sample).

In testing the relationship of the Subject's age to the number of shocks each gave, a chi square of .34 was obtained. A coefficient of 5.99 was needed for significance at $P = .05$.

The contingency table used to test the experimental hypothesis is presented on page thirty-eight. The resultant chi square of 1.07 failed to meet significance even at

¹ E.E. Wagner, The Hand Test, Manual for Administration, Scoring and Interpretation, Akron, Ohio, Mark James, 1962, p. 18 and 20.

Table I.-

Experimental Sample Compared to Wagner's Group of Normal Adults^a on N, Age, Dir and Agg Scores and Aff, Dep and Com Scores.

Variable	Experimental Sample	"Normal" Adults
N male	25	50
female		50
Age	M=31.3 σ = 8.8	M=34.1 σ =11.6
Dir + Agg scores	M= 3.0	M= 2.7
Aff, Dep and Com scores	M= 2.5	M= 2.7

a Wagner, Op. Cit., p. 18 and 20.

Table II.-

Contingency Table for Computation of Chi Squares between AOR
and Number of Shocks Bisected at the Median Scores.

	AOR's		Totals
	0-11	12-16	
5-15	7	4	11
Number of Shocks			
0-4	6	8	14
Totals	13	12	25

$P = .05$. Consequently the null hypothesis could not be rejected and thus the study did not confirm the AOR as a predictor of aggressive behavior.

2. Further Analysis of Data.

It was just reported that this study did not substantiate the AOR as a predictor of overt aggression. To test the hypothesis, the independent variable had been reduced to a single index. In this way each score in the AOR had equal weight. Although this was in keeping with Wagner's recommendation,² its justification could be questioned on the grounds that the scores may not contribute equally in the prediction of aggression. To explore the possibility of differential weighing, each component of the AOR was individually correlated with the dependent variable. The obtained Pearson r 's were: (i) Agg, $-.37$; (ii) Dir, $.015$; (iii) Aff, $.117$; (iv) Dep, $.119$; (v) Com, $.087$. Using the three highest coefficients only, an "index of aggression" was then devised by giving the Agg score a weight of four; the Aff and Dep scores each a weight of one. The "index", derived by the following formula:

$$4 \text{ Agg} - (\text{Aff} + \text{Dep})$$

was then correlated with the dependent variable and yielded a chi square of 3.38 . Although the result was not

2 Wagner, Op. Cit., p. 26.

significant, it suggested that weighing (in this instance at least) does increase the predictive value of the Hand Test.

3. Discussion.

The experimental hypothesis tested in this study failed to meet significance even at $P = .05$ and consequently the AOR was not confirmed as a predictor of behavior. Furthermore, an inspection of Table II suggested an inverse rather than direct relationship between the dependent and independent variables. This finding is contrary to Wagner's contention that as the AOR increases in the direction of acting out so increases the probability of aggressive behavior.

Relating the Agg scores alone to the dependent variable yielded a Pearson r of $-.37$ (a coefficient of $.39$ was needed for significance at $P = .05$), which also suggested the possibility that projected aggression on the Hand Test counterindicates behavioral aggression.

An explanation of the discrepancy between these findings and those of Wagner, who reports positive results, might be based on the following determinants:³

a) Wagner has only investigated the differentiation of "known" groups on the Hand Test whereas this experiment

³ This list of possible reasons is by no means all inclusive and/or exhaustive.

tested the AOR as a predictor of behavior from Hand Test responses. A common denominator, needed in order to compare results, is lacking because of the different approach in each research.

b) In some studies the acting out score was reported to be significant in differentiating "known" groups. If, however, we can assume that aggression, for example, is normally distributed in the population, selection by the method of "known" groups might have come from the extremes of the distribution whereas the sample of the present study might have clustered around the mean. One could argue that it is easier to differentiate extremes than samples from the middle range, which again raises the question about meaningful comparisons between Wagner's results and those found in this study.

c) Wagner states that the AOR in "normals" can be expected to be numerically balanced, or that the "socialized" scores will outweigh the aggressive ones. If by inspection of the variables in Table I on page thirty-seven, it could be said that the experimental group and Wagner's normative sample are not markedly different, then the inverse experimental results may indicate that for "normal" populations the AOR (in its present form) does not apply.

d) The AOR, as Wagner uses it in research, gives equal weight to its five component scores. As previously

reported, even crude estimates of differential weights did seem to improve its predictive ability, which suggests that further refinements of the present ratio might be useful.

The experimental results may have been a function of errors in the experimental design, open to criticism on at least the five counts presented below:

- a) The independent and dependent variables lacked adequate indices of experimental stability.
- b) The sample was low in number.
- c) Experimental measurement of the dependent variable was crude (i.e., the shock apparatus operated on an all-or-none principle which defeated the possibility of measuring variations in aggressive intensity).
- d) The sample, although "unknown", was relatively homogeneous with regard to age, intelligence, education, et cetera, and thus generalization from the sample must be restricted.
- e) Selection of words and construction of the "vocabulary tests" were based only on the subjective evaluation of the experimenter.

Studies in the future could improve upon these and other weaknesses of the design components.

Notwithstanding errors in procedure, an additional complexity might have confounded the results of this study, namely, the Frustration-Aggression hypothesis. However,

(...) a tremendous body of research has explored a wide range of conditions under which frustrating stimulators could elicit aggressive response patterns only to find quite an imperfect correspondence between them.⁴

Furthermore, "confirmed in questionnaire studies but not in the laboratory",⁵ it appears as if "the Frustration-Aggression hypothesis developed by the famed 'Yale Group' now appears to have been more fruitful than exact".⁶

Because the relevant variables of the Frustration-Aggression sequence are extremely complex, and because some findings in the literature are in opposition, an explanation of the results in this context would probably be irresolute and will not be attempted. Suffice to say that one could question whether the subjects had in fact been frustrated, whether they aggressed, and if so, how was this aggression expressed.

In concluding this chapter, three theoretically oriented opinions which can be used to explain the experimental result are given.

a) Sampling fluctuation.- Here the explanation would be that the results represent chance finding, that on

⁴ Perry London and David Rosenhan, "Personality Dynamics", in Paul R. Farnsworth, Ed., Annual Review of Psychology, Vol. 15, 1964, Palo Alto, California, Annual Reviews Inc., p. 458.

⁵ A.H. Buss, The Psychology of Aggression, New York and London, John Wiley & Sons, 1961, p. 23.

⁶ London and Rosenhan, Op. Cit., p. 458.

replication there would be changes in the direction of the found relationship, and that the obtained coefficient would decrease in size.

b) Aggressivity versus temporary anger.- Under this heading the lack of the expected correlation would be explained by the lack of communality between what was measured by the AOR and the number of shocks delivered. This line of argument would consider the AOR as an indicator of enduring, aggressive personality trends and the delivery of shocks as expressive of temporary and experimentally induced behavior.

c) Aggression as a fixed quantity.- An explanation of the results is suggested by the "drainage" hypothesis which assumes that an individual possesses a given "amount" of aggressivity. By venting it in one situation, a diminishing of subsequent aggression might occur. Thus, in this study, expressing aggression on the Hand Test could have reduced the "shock delivery potential" of an individual, and hence the inverse AOR-Shock relationship.

The possibly interdependent suppositions expressed above require and suggest further research.

SUMMARY AND CONCLUSIONS

In this study the null hypothesis was upheld because no significant relationship was found between the AOR and indices of overt aggression.

To test the experimental hypothesis, an attempt was made to elicit aggression in the laboratory by simulating a plausible everyday situation, but with experimental controls. Manipulated frustration, induced and controlled by means of an "accomplice" was introduced as the instigation to aggression. By administering electric shocks to the "accomplice" measures of aggression were obtained. The number of shocks given by each subject was correlated to AOR's obtained prior to the laboratory episode.

An analysis of the obtained data revealed no significant relationship between the independent and dependent variables. In conclusion, this study did not support the AOR as a predictor of aggressive indices. Moreover, analysis of the data suggested an inverse rather than direct relationship between projected and overt aggression.

If further research is conducted to test the effectiveness of the AOR it is suggested that the investigation:

- a) revise the AOR by differential weighing;
- b) improve the simulated laboratory episode;
or,
- c) predict aggression in a natural rather than
laboratory setting,
(e.g. screen psychiatric aids for example,
and after a one-year interval test the
relationship between obtained AOR's and
measures of their actual aggression on the
ward).

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Buss, A.H., The Psychology of Aggression, New York and London, John Wiley & Sons, 1961, x-307 p.

A recent survey of the literature on aggression, anger and hostility. Chapter three, dealing with the study of aggression in the laboratory, is of particular value.

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A succinct informative introduction to the Hand Test. Contains practical data for administration, scoring and interpretation. Recommended as a useful Hand Test reference.

APPENDIX 1

"VOCABULARY TEST" ADMINISTERED TO SUBJECTS

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"VOCABULARY TEST" ADMINISTERED TO SUBJECTS

CONSUME

TERMINATE

OBSTRUCT

REMORSE

SANCTUARY

MATCHLESS

RELUCTANT

CALAMITY

FORTITUDE

TRANQUIL

EDIFICE

ESPIONAGE

TANGIBLE

PERIMETER

AUDACIOUS

OMINOUS

TIRADE

AMANUENSIS*

PROSELYTE*

IMPALE

ASEPTIC

FLOUT

* Words on which subjects received shock.

APPENDIX 2

PARTNER'S PREARRANGED ANSWERS TO
"VOCABULARY TEST"

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PARTNER'S PREARRANGED ANSWERS TO "VOCABULARY TEST"

NITROGLYCERINE: a medicine, or used in ammunition

STANZA: a line or a phrase - a few lines make a
thought

MICROSCOPE: an instrument to see germs with

VESPER: twilight or evening

BELFRY: a tower

RECEDE: to quit

AFFLICTION: a disease or deformation

PEWTER: a metal - pottery made of metal

BALLAST: a weight

CATACOMB: a cave

SPANGLER: a gleaming object or ornament

COMPASSION: sorrow, concern

IMMINENT: likely or probable

MANTIS: a bug

HARAKIRI: self-strangulation used by the Japanese

CHattel: a horse or a slave

DILATORY: to dilate

ENCUMBER: to take on - to press down

PLAGIARIZE: to steal or copy

MOIETY: a quantity

TRAVESTY: to move around - journey

TRADUCE: to harm a person's character

APPENDIX 3

ABSTRACT OF

The Hand Test and Prediction of
Overt Aggression

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ABSTRACT OF

The Hand Test and Prediction of Overt Aggression¹

The Acting Out Ratio of the Hand Test, asserted to be a predictor of overt aggression, was investigated in this study. The experimental hypothesis tested the relationship between the AOR and indices of overt aggression.

A group of twenty-five English-speaking Psychology and Education students, similar in age, education and intelligence, were individually exposed to a laboratory situation in which manipulated frustration was introduced by an "accomplice". By administering electric shocks to the "accomplice" measures of aggression were obtained. The number of shocks given by each subject was correlated to the AOR's obtained prior to the laboratory episode and an analysis of the data revealed no significant relationship. Moreover, the data suggested an inverse rather than direct correlation. It was concluded that this study did not support the AOR as a predictor of aggressive behavior.

¹ Melvin H. Wiener, Master's thesis presented to the School of Psychology and Education of the University of Ottawa, Ontario, March 1965, vii-51 p.

Revision of the AOR, improvement of the laboratory episode or investigation of naturally occurring aggression are suggested for future Hand Test studies.