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Predictive factors in aggression.

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PREDICTIVE FACTORS IN AGGRESSION

A Dissertation Presented

By

ROBERT ALAN HINES

Submitted to the Graduate School of the
University of Massachusetts in partial fulfillment
of the requirements for the degree of

DOCTOR OF PHILOSOPHY

May 1980

Psychology

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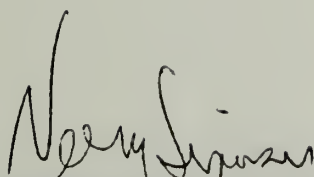
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PREDICTIVE FACTORS IN AGGRESSION

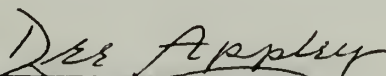
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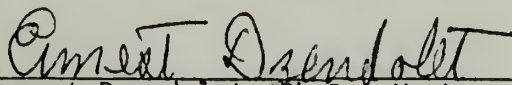
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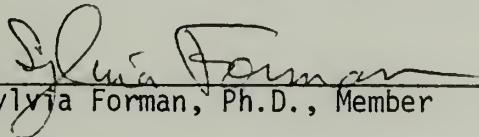
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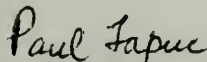
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ABSTRACT

Predictive Factors in Aggression

(May 1980)

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This study investigated the relationship between aggression assessed by three different measures and a range of variables hypothesized to be predictive of aggression. The study further established a priori five of the sixteen variables examined to be most predictive, and incorporated these into a multiple regression equation. The results showed that individual correlations generally followed predicted directions but only seven of forty-eight correlations reached statistical significance. In one case, general organicity, the results showed an association directly opposite to that which prior research would predict and this is discussed. The regression equation developed proved significant in relation to all three criterion measures but the need for further research before employing any such procedure for identifying individuals is extensively discussed, in conjunction with issues of labeling in general. It further reports on sex differences of male/female examiners significantly influencing results and discusses this finding and its implications.

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CHAPTER I

INTRODUCTION

The social sciences have in recent years begun to devote an increasing amount of attention to human aggression. That concern with this topic is not limited to the sciences is made clear by the commercial success of the many books dealing with this issue which have been published during the last two decades (e.g., Ardrey, 1967; Lorenz, 1966; Morris, 1967; and Storr, 1968). While the foregoing were aimed primarily at a lay audience, scientists have been no less prolific at communicating on the same topic to one another (e.g., Berkowitz, 1962; Carthy and Ebling, 1964; Knutson, 1971; Lefkowitz, et al., 1977; and Pasternak, 1975). Since most of the foregoing are edited volumes, the number of scientists represented by even these few references must be multiplied by the number of contributors to each volume. It is not the intent of the present author to further explore the extent of the interest in this topic, but merely to indicate that aggression has been and is, generating a good deal of research.

In reviewing the literature on this topic, one of the first problems to be faced is the ambiguity of the term "aggression". While the term has a limited and specific set of interrelated denotative meanings, it has come to have an extremely wide range of connotative meanings ascribed to it. "Aggression", as used in one report may refer to the selection of negative over positive descriptive adjectives on a checklist (e.g., Fishman, 1965), and as used in another may refer to murder

(e.g., Wright, 1954). This issue is reviewed by Tedeschi et al. (1974) who discuss at length the problems attendant on the broad-ranging use of the term, and conclude by offering a re-definition of the concept and a replacement for the term. These authors argue that the concept should be limited to overt harm-doing behaviors, and the term replaced by the phrase "coercive activity". An immediate problem with this formulation is to determine how one is then to describe overt harm-doing behaviors which are obviously intended not to coerce the victim but merely to injure him. We can easily employ such substitute terms as homicide, assault, and aggravated assault to describe and differentiate physical harm-doing behaviors which meet this criterion, we can even employ "violence" as a rubric for such behavior. The loss of the term "aggression" still leaves a void however, when we look at more subtle forms of harm-doing behavior particularly in the verbal sphere. If a person's motive is merely to demean a victim through verbal behavior, then describing his or her actions as "coercive activity" is a misnomer. The word "coercion" refers to the use of force to cause another "... to act or refrain from acting" (English and English, 1958, p. 92).

This void is also evident in those situations in which an actor, again motivated only to injure, employs an agent to conduct the directly injurious activity. Whether by inducing another to physically harm the victim, or by bringing false criminal charges and using the legal system as an agent, one can commit a variety of harm-doing behaviors which would nevertheless escape the umbrella of "coercive activity". For all its faults, the term "aggression" could embrace all of the sit-

uations covered by "coercive activity" as well as those which the newly-offered phrase excludes.

The extremely broad range of factors covered by the term aggression which makes it a problem in research, also prohibit avoiding the term completely since there is no comparable substitute. Additional terms which one finds in the literature include "violence", "hostility", and "dangerousness", often used interchangeably with aggression. Again, all of these can be viewed as subsets of aggression and are usually employed this way. Given that the term can cause problems in communication and yet has a matchless utility, the common address to this issue has been to use the term but to employ an operational definition for it. This is the format which was followed in the present study, wherein the word "aggression" refers to overt harm-doing behavior, verbal, physical or both, unless otherwise specified. By defining a given act of behavior as aggressive as herein used, an assumption of intentionality on the part of the actor is made. It is recognized that such an assumption can be made incorrectly, but for the types of behavior so described within this paper, it is highly unlikely that this has happened. If person A steps on the foot of person B one time and claims it to be accidental, the claim must be accepted no matter how suspicious one may be of his actual intent. If, however, person A repeats this behavior a second and then a third time, then his protests notwithstanding a judgement of intentionality may be fairly made.

The literature on aggression deals with its history (Graham and Gurr, 1969), its causality (Berkowitz, 1962; Lorenz, 1966), its

physiology (Bach-Y-Rita et al., 1971; Mark and Ervin, 1970; Moyer, 1971; and Papez, 1937), its treatment (Knutson, 1971; Lion, 1975), and finally its prediction (Davis, 1974; Hathaway and Monachesi, 1963; Kozol, 1975; and Scott, 1977). It is this last area which is of greatest concern to the present study. The issue of predicting human behavior is never a simple one. During the past 15 years this issue has been the target for both vigorous attack (Hunt, 1965; and Mischel, 1968) and equally vigorous defense (Bem and Bem, 1974; and Hogan et al., 1977). While the person X situation interaction has received a great deal of attention with the emphasis usually falling on the situation, the contribution of the person to this interaction cannot be ignored. With aggression, even many of those who consider the external environment to be the primary factor in producing behavior, concede that it does appear to show some stability across situations. Berkowitz (1962) considers this to be within expectations on the basis of response and stimulus generalization. At least one study has provided empirical support for this stability. Dittman and Goodrich (1961) reported that hyperaggressive boys responded with a significantly narrower range of behaviors, primarily aggressive, when compared across situations with normals.

Attempts to predict aggressive behavior may be found in the literature under a variety of headings: dangerousness (Kozol, 1975; Rubin, 1972; and Scott, 1977), institutional adjustment (Davis, 1974), aggression (Lefkowitz et al., 1977; and Malmquist, 1975) and delinquency (Hathaway and Monachesi, 1963). Most of these attempts at predicting

can be broken down into two categories based on the major method used to form conclusions: clinical judgement and the Minnesota Multiphasic Personality Inventory (MMPI, Hathaway and McKinley, 1969).

In relatively recent articles by Kozol (1975) and Rubin (1972), the major emphasis in assessing "dangerousness" has been on clinical judgement. In both cases the focus has been on individuals with a prior history of one or more acts of antisocial aggressive behavior and the problem has been how to determine whether or not these individuals continue to be at risk for such behavior. Kozol goes so far as to state "No one can predict dangerousness in an individual with no history of acting out" (Kozol, 1975, p. 8). These authors individually describe a protracted assessment period during which conclusions are formed, frequently on the basis of highly subjective clinical judgements. Both authors refer to the importance of prediction in this area yet one (Kozol) reports on how to do it, and the other (Rubin) describes why it cannot currently be done. One difficulty with which Rubin deals at length is the ambiguity of the term "dangerousness". While the major feature of the concept is on aggression, the term itself involves an interface between the mental health professions and the law. This author describes the literature in this area as "...sparse, disorganized and impressionistic" (p. 23). After a lengthy analysis of the factors which have been used to form such judgements, primarily clinical judgement and neurological diagnosis, Rubin refers to a 50-60 percent false-positive error rate and concludes that we cannot predict this type of behavior with any real accuracy.

Another study which is based on clinical judgement and evaluation is that of Malmquist (1975) who attempts to define a stereotypic pattern of behavior change in adolescents who commit or attempt to commit murder. While this author clearly describes the behaviors which he believes constitute premonitory signs, the analysis is *ex post facto* and examines an extended period of change. How one may assess these elements in advance of the act and how long it would take to do so are not spelled out. Major problems with procedures such as these, as indicated by Rubin (1975) include the length of time required to form a conclusion and the tendency to weight the error rate in favor of false-positives (in effect, to err on the side of caution in the absence of empirically-validated criteria).

The second major method used to predict aggression employs the MMPI. Davis (1974) reports on a study which was conducted with 42 "refractory" patients on a special ward in a maximum security hospital in Britain. All of the subjects were assessed on a special questionnaire developed mainly from MMPI items. This instrument was designed to measure anxiety, extroversion, psychopathic deviance, introversion, depression, tension, impulsivity, aggression, and hostility, with a lie scale incorporated. These predictor scales were compared to criterion measures of aggression, conformity, and sociability based on staff observation, rating and reporting. The subjects were also administered two psychomotor tests, the Porteus Maze Test and the Gibson Spiral Maze Test, which was also used to assess impulsivity. The results showed that individually, scales of hostility, impulsivity, extroversion, and

aggression were predictive of aggression, but at low levels. Multiple correlations among all measures led to only a slight increase in predictability in this study. While the study found that aggressive behaviors can be predicted by trait-based measures, the statistically-significant, but still low levels of prediction obtained by these measures causes the author to question the stability of behavior over time rather than the procedures used to assess the contributors to such behavior.

. Scott (1977) reports on the assessment of "dangerousness" in criminals, again with aggression the most salient concern, but with complications stemming from the legal implications of the term. The author addresses both clinical judgement and psychometric measures including the MMPI. Elevations (peaks) on scales 4 and 9 (psychopathic deviate hypomania) are reported by the author to occur in high frequency among the criminals with a history of violence. The problem with this, the usual finding in studies which attempt to differentiate normal and acting-out subjects on MMPI scales, is that peaks on these scales also occur, albeit with lower frequency, among subjects with no history of acting out. Using peaks on these scales as a predictor would, like clinical judgement, lead to a high percentage of false-positive findings.

Hathaway and Monachesi (1963) in a study which compared normal and delinquent adolescents also found the 4/9 profile to occur in high frequency among their delinquent subjects. As in the previous study, they also found this pattern to exist among enough of their normal subjects

to again raise the issue of false-positive identifications.

In a book-length report on a longitudinal study of aggression, Lefkowitz et al. (1977), describes a complex procedure by which they assessed the entire third-grade population of a county (Columbia) in New York state, during the school year 1959-1960. There were 875 children in the original sample (modal age = 8, mean IQ = $104.4 \pm .14$, average socioeconomic background = middle class). The children were assessed on intelligence, a range of self-report factors (e.g., hours spent watching TV, preference for violent over other TV programs, frequency of specialized aggressive behaviors, etc.), peer-ratings on a number of factors (e.g., aggression, social conformity, etc.), and a variety of family factors primarily assessed by interviews with the parents. These data were analyzed and reported on in an earlier publication (Eron et al., 1971). Self-report, peer-ratings, and IQ were major discriminators at this age, although other factors such as parental identification and preference for violent over non-violent TV fare also discriminated with lesser significance.

In 1970 the authors sought to reassess the subjects from the original sample and were successful with 427 of these. Measures similar to those which were used for the subjects at age eight were again administered at age nineteen, modified where necessary for age. The subjects were also assessed on the MMPI on this second occasion. A number of factors were found to relate to some extent with aggression and with psychopathology, the latter two having been found to relate significantly in the study of 19-year-olds, but we shall only discuss

those findings which have direct relevance to the present study. On the MMPI, scales 4 and 9 were again found to discriminate the high and low aggressives to a moderate degree. This discrimination became much stronger when high scale 8 (schizophrenia) scores were added to the 4/9 to produce a "psychopathology" score. With intelligence, the trend was consistently inverse in relation to aggression, but it did not reach statistical significance. It should be noted that this re-test sample contained only 27 percent of the original upper-quadrile aggressives, as opposed to 57 percent of the lower quadrile aggressives from the third-grade sample. Father's occupation proved to be inversely correlated with aggression in the 1970 (19-year-olds) sample, a direct contradiction of the third-grade findings where aggression increased with father's escalation in occupational standing. Residential mobility was positively correlated at a moderate level ($r = .27$). Finally, these authors report that aggression at age 8 was the most powerful predictor of aggression at age 19, a finding which clearly supports the stability of this type of behavior over time.

Most of the factors involved in the studies which have been discussed to this point have been shown to have some correlation, either positive or negative, with aggression. A number of additional factors have also been found to correlate with this type of behavior in studies which have emphasized association rather than prediction. The Marlowe-Crowne Social Desirability Scale (Crowne and Marlowe, 1960) is a measure designed to assess to what extent social desirability factors will induce an individual to endorse or deny favorable and unfav-

orable attitudes in line with ideal but highly improbable attitude patterns. In a later publication (Crowne and Marlowe, 1964) the same authors review a number of studies which have investigated different aspects of the generalization of the response set from a test-taking attitude to behavior. With many behaviors the social desirability factor does appear to generalize. One pattern of behavior with which social desirability scores have been associated in at least two laboratory studies (Conn and Crowne, 1964; and Fishmann, 1965), and at least one modified field study (Hines, 1978), is aggression. In all of the just-cited studies a significant inverse relationship was found between the variables of interest.

Another factor which has frequently been associated with aggression is organicity, or some degree of brain dysfunction. Hartocollis (1968) refers to "minimal brain dysfunction" as a contributor, while others (e.g., Bach-Y-Rita et al., 1971; Mark and Ervin, 1970; and Moyer, 1971) focus on more distinct and easily diagnosed organic conditions. All of these authors suggest that while major dysfunction of temporal lobe areas is highly likely to increase aggressive behavior, the less easily diagnosed condition described by Hartocollis (1968) is a likely contributor to increased aggression.

Impulsivity or poor impulse control, is an attribute that is frequently reported to be true of aggressive people (those who consistently manifest antisocial aggressive behavior). In all of the reports cited above on organicity, impulsiveness is associated with the aggression of interest. Davis (1974), Lefkowitz et al. (1977), Lion (1975),

and Mussen and Naylor (1954), all cite impulsivity as a contributor to aggressive behavior. This factor is probably the most frequently cited concomitant of aggression.

Social class has been reported in some studies (e.g., Lefkowitz et al., 1977; Mussen and Naylor, 1954; and Rubin, 1975) to be inversely related to aggression. While there are differing perspectives on why this is true Mussen and Naylor (1954) as opposed to Lefkowitz et al. (1977), for example, a statistical association between the factors is still claimed to exist.

Alcohol abuse is another frequently reported factor in studies on aggression. Lion (1975), Mark and Ervin (1970), Mayfield (1976), Nicol et al. (1973), and Rubin (1975), are just a few of the authors who have reported a positive relationship between alcohol abuse and aggression.

While other factors such as residential mobility during childhood (Lefkowitz et al., 1977), willingness to self-disclose (Anchor et al., 1977), and maternal attitude toward aggression during childhood (Lesser, 1957; and Weatherly, 1962) have all been reported to show some association with aggression, those which we have individually discussed have usually been reported to show the strongest association. Intelligence, which has already been discussed in conjunction with Lefkowitz et al. (1977), is the one additional factor with which the present study will concern itself.

The fact that previous research has found significant correlations between these six factors: impulsivity, alcohol abuse, social desirability, social class, presence of organicity, and intelligence, often

individually, suggests the possibility of their collectively predicting or discriminating high aggressive from low aggressive individuals with some validity. The present study was designed to explore this possibility by assessing a group of randomly selected psychiatric patients on these factors and correlating the scores with criterion measures of aggression. Although data was collected on additional variables, only those cited contributed to the eventual multiple regression equation.

In assessing the predictor variables this study employed self-report to measure a range of variables, specified in the method section of this paper. A number of studies have found self-report to correlate significantly with criterion measures based on behavior (e.g., Hines, 1978; Lindzey and Tejessey, 1956; and Wallace and Sechrest, 1963) supporting the use of such measures as valid research tools.

While it was earlier indicated that intelligence was found to correlate significantly with aggression in Lefkowitz et al. (1977), 8-year-old sample, but that this variable did not reach significance with the retest of 19-year-olds, this finding was relative to total intelligence quotient (IQ). Although it did not reach significance in the retest sample, it again showed an inverse distribution with aggression. These authors argue that low IQ acts as a frustrator, and thus leads to an increased tendency toward aggressive behavior. They further suggest that perhaps over time, people learn to compensate for low IQ by avoiding situations in which it can lead to frustration. It is also possible that certain factors within IQ (aspects of intelligence) have dif-

ferential association with aggression which are overlooked when only their combined product (IQ) is examined.

The present study selected two aspects of intelligence to examine; vocabulary, both as the single subtest of the Wechsler Adult Intelligence Scale with the highest correlation to full scale score ($r = .82$, Wechsler, 1955, 1958), and because poor verbal communication skills would appear to be the most constant potential source of frustration an individual would face in daily life. The second aspect to be examined was the arithmetic ability of the individual, and this was selected due to its reported inverse relationship with impulsive and anti-social behavior (Wechsler, 1958; Tallent, 1956; Tallent, 1979).

C H A P T E R I I

METHOD

Participants

The participants were 100 male psychiatric inpatients at the Veterans Administration Medical Center, Northampton, Massachusetts. They were selected only on the basis of being admitted during the study period, April 15 to June 15, 1979, and being able and willing to complete the study measures. All male, regular psychiatric admission patients from the starting date of the study, were requested to participate until data was obtained from 100 patients. Patients who were admitted for primarily medical reasons, even if they were prior psychiatric patients, were not solicited to be in the study. In two cases, patients who were initially admitted to medical wards were transferred to psychiatric wards during the course of the study and they were then requested to participate and did so. There were 34 patients admitted during the study period who did not participate either because they were deemed unable to meaningfully participate or because they were discharged before they could be requested to be participants. Although patients were approached as soon as possible after admission, in many cases their admissions were of only one or two days. There were 28 patients who refused to participate and they were not queried as to reasons for refusing, this being their right. Sixty participants were re-admissions (three to twenty-seven prior admissions) and forty were

first admissions.

Measures

Predictor variables. Impulsivity: this variable was assessed on a dichotomized basis using the Bender Motor Gestalt Test (Bender, 1938). The test requires a subject to reproduce freehand, a series of nine designs which are displayed to him one at a time. Impulsivity was assessed on this test when an individual: a) consistently inflated the size of the designs while retaining their basic form; b) substituted dashes or circles for dots in the designs; c) superimposed one design on top of another (Bender, 1938; Hutt, 1945; Pascal and Suttell, 1951; and Tallent, 1979). To be adjudged impulsive in the present study a participant had to manifest at least two of these three characteristics.

Intelligence: this was assessed primarily by means of the Vocabulary subtest of the Wechsler Adult Intelligence Scale (WAIS), the single subtest which correlates most highly with the full scale intelligence quotient, or IQ (Wechsler, 1955, 1958). A second aspect of intelligence was also assessed independently of this, the WAIS arithmetic subtest. Both measures were scored as per the WAIS Manual (Wechsler, 1955).

Organicity: this factor was assessed by two independent measures: the Symbol-Digit Modalities Test (SDMT) (Smith, 1968), and a self-report frequency measure of the number of times (0 to 5+) an individual suffered a head injury which produced unconsciousness (see Appendix A).

The SDMT is a 90-second timed test in which the individual is required to write in the number (1 to 9) associated with each of nine symbols in a repetitive scattered-order format. Subsequent to this administration each participant was then given a second 90-second trial during which he was merely required to verbally identify the correct number for each symbol, with the examiner keeping score for him on the original test form (participants were given a blank form to work with on the second administration). Scoring was based on age and education-corrected norms developed by Centofanti (1975) and an individual had to deviate at least 1 1/2 standard deviations below his norm in order to be assessed "yes" on this dichotomized measure of organicity.

Social desirability: this was assessed by means of the Marlowe-Crowne Social Desirability Scale (MCSDS) (Crowne and Marlowe, 1960), (see Appendix B), a 33-item true/false measure with 18 answers keyed for true responses and 17 for false. An individual's score is the sum of responses in the keyed directions, with higher scores indicating greater concern with this issue.

Socioeconomic class: this was assessed by self-report based on the occupation of the father or principal support person of the household during the participant's childhood (Warner et al., 1960) (see Appendix A). This, as all of the other predictor variables assessed by self-report, was part of a multi-factor questionnaire developed for this study, and this item was scored from 1 to 5 depending on the occupation selected. With 1 equivalent to "professional", 5 equivalent to "laborer", higher scores reflected decreased socioeconomic status.

Alcohol abuse: this was assessed within the aforementioned questionnaire (see Appendix A) by means of two separate items: a forced-choice, 0-5 rated frequency of drinking item, and a similar item based on frequency of intoxicated states. A composite score was then formed by multiplying intensity by frequency with higher scores representing increasing severity of abuse.

While this defines the primary criterion variables, data was collected on a range of additional variables as follows: maternal pattern of reward for positive behavior during childhood, a variable which was included along with two others solely as a masking procedure to shield interest in the maternal attitude toward aggression during childhood; paternal pattern of reward, as above. Paternal pattern of punishment for aggressive behavior during childhood, the last of the "masking" variables (see Appendix A).

Maternal pattern of punishment for aggression during childhood, a variable which was expected to have a moderate association with aggression. This and the three preceding items were all assessed by means of a single forced-choice item on the previously mentioned questionnaire (see Appendix A), with five response choices coded 0-5.

Residential mobility during childhood, a variable which was thought to have some positive association with aggression. This variable was assessed from two separate aspects: intra-community moves and inter-community moves. Each item was based on a simple frequency 0-5+.

Willingness to self-disclose: this variable which was also thought to have some association with aggression was also assessed from two

perspectives: as a child, based on frequency of open personal discussions with each parent, and as an adult, based on the number of different people with whom the participant indicated he shared his most personal feelings. This, as all peripheral variables, was assessed by means of the study questionnaire (see Appendix A).

Criterion Variables

Historical aggression from records (HAGG): this was assessed by means of the Aggression Point Scale (APS) (see Appendix C) developed for this purpose by the author (Hines, 1978). The primary investigator reviewed six months of prior hospital records for each participant subsequent to their having completed the study measures (60 met this criterion, 13 had only one month of prior records available, and 27 had no records available on which to form a score), and using the APS assigned a point-value to each recorded incident of overt verbal or physical aggression. A participant's score on this measure was a simple sum of such points and they showed a range of 0-99 points. Participants whose scores were based on one rather than six months of prior records were coded to so indicate, but were eventually pooled with the other data when separate analyses showed this to be indicated. A "missing data" card (keypunch) was used in analyses to deal with the 27 cases without HAGG scores, thus allowing these cases to contribute data on all other variables.

Self-report of aggression (SRA): this was assessed by means of a frequency-based questionnaire developed by the author (Hines, 1978)

(see Appendix D). This measure defines 11 specific behaviors with frequency choices ranging from "never" to "frequently" and coded 0, 1, 2 or 3. A score on this measure could range from 0-33, and the actual range within the study was 0-27. Copies of all study measures are appended.

Procedure

Copies of all study measures to be completed by the participants were gathered into packets and numbered 1-100. Each measure in a given packet bore the same study number and these numbers eventually became the sole identifying characteristic of each participant. All data were recorded by study number and names were removed from all study records when the data were completed for each participant. These packets were divided into four groups of 25 each, and one group of packets was given to each of the four data collectors, the investigator and three assistants. Two of these assistants were female and one was male. All were staff employees at the psychiatric hospital in which the study was conducted, and all had some prior experience at administering psychometric measures. Packets numbered 1-25 were given to the first female assistant, 26-50 to the male assistant, 51-75 to the second female assistant and 76-100 to the investigator. As well as the data packets, each collector received a sheet of standardized instructions (see Appendix E) which defined the procedure to be followed from the first contact with potential participants, through the reading of an "information sheet (see Appendix F) which followed completion of all study measures.

This information sheet was designed to explain the nature and purpose of the study in more detail than could be provided in advance, without biasing responses and in most cases answered all questions participants had about the study.

Two training sessions were conducted by the investigator for the assistants prior to the start of the study. The only scoring done by the assistants was on the two WAIS subtests which are designed for scoring at administration. All other scoring was done by the investigator, to whom each data packet was returned as soon as possible after completion. Packets were scored as received and data entered onto a master roster.

While the original intent was to have each collector gather data from 25 participants, the male assistant and the second female assistant both became unable, due to other demands on their time, to complete their full 25. For this reason, the first female assistant after completing her own 25, then completed the remaining 7 packets assigned to the second female assistant. Similarly, after completing his own assigned 25, the investigator then completed the 11 cases remaining of the 25 assigned to the male assistant. Although this mixing prohibited plans to test for potential effects due to individual data collectors, since there were 50 cases collected by males and 50 cases collected by females, tests could be and were performed to assess the effects of same vs. cross-sex data collectors.

A daily report form was supplied to the hospital admissions office and with the cooperation of the admitting physicians, a daily record

was kept for this study listing the names, ward assignments, and a prediction of whether or not that particular patient would aggress verbally or physically during the first seven days of admission. This prediction could be based on any criteria the physician chose to employ. This record listed every male patient admitted as a regular psychiatric admission during the course of the study, and was the basis for assignment of patient's names to data collectors. This procedure was done on an as-available, as-needed basis with patients being seen as soon as possible after admission, although this first contact was often to merely explain the request by reading the informed consent sheet (see Appendix G), and schedule an interview for a later time. In some cases patients were considered too disoriented to participate when first contacted and these patients were reevaluated one week later. If they then appeared sufficiently stabilized to participate, they were requested to do so within the standard format. While the average patient was interviewed within three days of admission, in a few cases that time frame was extended to a maximum of two weeks. Due to scheduling difficulties, approximately half of the sample were interviewed during evening hours. Participants were not interviewed in line with their study numbers since each collector worked independent of the others, but both the male- and female-collected halves of the sample were completed on the same day. The data collection period ran from April 15 to June 15, 1979.

Subsequent to scoring each completed data packet, the investigator then reviewed the prior records of each participant to develop a HAGG

score, then monitored the patients Kardex listing for incidents of aggression during his first 7 days in the hospital. A simple yes/no rating was then recorded for each participant.

When all of the data had been compiled on the master roster it was then coded and analyzed by means of t-tests, Pearson correlations, and multiple regression employing a standard Statistical Package for the Social Sciences format.

CHAPTER III

RESULTS

The data were initially evaluated by construction of a correlation matrix associating each predictor variable with each of the three criterion variables. These correlations appear in Table 1. While only seven of the predictor correlations reached statistical significance, the majority of the non-significant correlations were in the predicted direction. Of the six variables originally predicted to be the strongest correlates of aggression, only two failed to show a significant correlation with at least one of the criterion measures of aggression (impulsivity, intelligence, alcohol abuse, organicity, social desirability, and socioeconomic status show a significant correlation with one of the measures of aggression). Table 2 shows name-codes, and Table 3 shows means and standard deviations of continuous variables.

Although impulsivity did not reach statistical significance in relation to any of the criterion variables, the correlations with all three criterion measures were in the predicted (positive) direction. Intelligence was assessed primarily via the Vocabulary subtest of the WAIS, and demonstrated the predicted inverse relationship to aggression on two of the three measures. On one of these (Hagg) the correlation was $-.340$, $p < .003$. This variable in relation to the Self-Report of aggression produced a very small correlation ($.0749$) which did not show the predicted inverse sign. This issue will be discussed in greater detail in the Discussion section of the present paper. A second,

TABLE 1
Correlations of Each Predictor Variable To
Each Criterion Measure of Aggression

| | SRA | HAGG | AA7 |
|--------|------------|-----------|--------|
| IMP | .0932 | .2173 | .1406 |
| SDMT | -.1657 | -.0111 | -.0385 |
| ARITH | -.0082 | -.1662 | -.1358 |
| VOCAB | .0749 | -.3400 ** | -.1528 |
| SD | -.4300 *** | .0783 | -.0606 |
| HD | .3310 *** | .1242 | .1716 |
| ALC | .1950 * | -.2118 | -.0595 |
| SOEC | .1156 | .1032 | .1904 |
| MAP | -.2280 ** | .1134 | .1189 |
| PAP | -.3170 *** | .1093 | .0681 |
| MA | .1072 | .0272 | 0.0443 |
| PA | .1178 | .2760 * | .1251 |
| RM1 | -.0614 | .0200 | .0794 |
| RM2 | -.0780 | .0287 | .0821 |
| SELFD1 | -.1238 | -.0723 | .0471 |
| SELFD2 | .0575 | .0010 | -.0281 |

* = p at or less than .05

** = p at or less than .01

*** = p at or less than .001

TABLE 2
Computer Coding of Variable Names

| | |
|----------------------------------|----------|
| Impulsivity | = IMP |
| Symbol Digit Modalities Test | = SDMT |
| WAIS Arithmetic | = ARITH |
| WAIS Vocabulary | = VOCAB |
| Social Desirability | = SD |
| History of head injury | = HD |
| Alcohol abuse | = ALC |
| Socioeconomic-childhood | = SOEC |
| Maternal reward pattern | = MAP |
| Paternal reward pattern | = PAP |
| Maternal punishing of aggression | = MA |
| Paternal punishing of aggression | = PA |
| Residential Mobility incity | = RM1 |
| Residential Mobility excity | = RM2 |
| Self disclosing as child | = SELFD1 |
| Self disclosing as adult | = SELFD2 |
| Admitting doctor's prediction | = ODP |
| Data collector's prediction | = DATAP |
| Self-report of aggression | = SRA |
| Historical aggression | = HAGG |
| Actual aggression within 7 days | = AA7 |

TABLE 3
Means and Standard Deviations For All Continuous Variables

| VARIABLE | \bar{X} | STANDARD DEVIATION |
|-----------|-----------|--------------------|
| ARITH | 9.2500 | 3.4594 |
| VOCAB | 42.3200 | 14.9125 |
| SD | 16.7500 | 6.0676 |
| HD | 1.4800 | 1.7202 |
| ALC | 17.6800 | 9.2615 |
| SOEC | 2.6300 | .9498 |
| MAP | 2.7471 | .9791 |
| PAP | 2.7042 | 1.1135 |
| MA | 2.8100 | 1.4681 |
| PA | 2.7300 | 1.6809 |
| RM1 | 1.2100 | 1.8051 |
| RM2 | 1.3800 | 1.8574 |
| SELFD1 | 1.3700 | .4852 |
| SELFD2 | 1.2800 | .4513 |
| Criterion | | |
| SRA | 8.4600 | 5.8093 |
| HAGG | 21.4932 | 19.4944 |

related measure of a different aspect of intelligence was assessed via the Arithmetic subtest of the WAIS. This measure was also predicted to be inversely related to aggression and the results showed a negative relationship with each of the three criterion measures, although none of these reached statistical significance.

Organicity was the next variable expected to correlate with aggression and was assessed both by a screening measure to detect its presence (SDMT) and by a frequency measure of the history of head injuries producing unconsciousness. A majority of the sample (56 vs. 44) showed an organic pattern on this dichotomized measure, but not only did it fail to correlate significantly with any of the criterion measures, it also showed a negative relationship with each of the three measures of aggression. This unexpected finding will be discussed in greater detail later in this paper.

The second measure of organicity, the history of head injury, was a frequency measure and showed a significant correlation ($r = .331$, $p < .001$) with Self-reported aggression. The correlations of this variable to Historical and Actual aggression (during the first 7 days of hospital admission) were in the predicted (positive) direction but did not reach statistical significance.

Social desirability was assessed via the Marlowe-Crowne measure and this variable showed a significant correlation in the predicted (negative) direction with Self-reported aggression ($r = -.430$, $p < .001$). This finding is made more striking by the fact that when additional analyses were conducted to assess the possible effects of sex

of the data collector, a significant t-test ($t = 2.49$, $p < .015$) showed that subjects inflated their social desirability scores when interviewed by females. A second significant t-test was found between sex and the self-report of aggression, where subjects again inflated their scores when reporting to females. These factors might be expected to mask any relationship between self-reported aggression and social desirability, since the predicted relationship is an inverse one, but the strong statistical significance found suggests the relationship to be a powerful one. Social desirability did not prove significant in relation to either historical aggression or actual aggression within 7 days, but did show the predicted inverse relationship (negative sign on r) on two of these three criterion measures.

Alcohol abuse was measured by a composite score based on both frequency and intensity of usage. This variable showed a significant correlation with self-reported aggression ($r = .195$, $p < .05$), but showed non-significant reversed-sign correlations with both of the other criterion variables. This finding is likely in part, due to the fact that in historical aggression there were 27 cases of first admissions who had no score on this variable. These findings will be discussed in detail in the discussion section of the present paper.

Socioeconomic status during childhood was the last of the variables predicted in advance to be the most significant in predicting aggression. It was measured by a numerical rating based on the occupation of each subject's childhood head of family. The measure produced modest correlations in the predicted direction on all three criterion

measures, but none reached statistical significance.

Questions relating to both maternal and paternal reward patterns and to paternal punishment for aggressive behavior during childhood were included on a questionnaire for this study only to mask interest in maternal attitude toward aggression during childhood, which was expected to show a significant correlation with aggression. While this expected relationship did not develop, each of the "masking" variables produced a significant correlation with one of the criterion measures.

Maternal reward pattern during childhood proved to be inversely correlated with self-reported aggression ($r = -.228$, $p < .034$), but it failed to show the inverse direction in relation to the two non-significant correlations (Historical and Actual 7-day aggression). Paternal reward pattern showed this same relationship with an even greater significance level ($r = -.317$, $p < .001$). Simply put, the higher a subject reported to be the frequency of parental reward for his helpful behaviors, the lower his self-reported aggression score. As above, the inverse relationship was specific to self-reported aggression.

Both maternal and paternal attitudes toward aggression during a subject's childhood were assessed by having the subjects rate the frequency of punishment for this type of behavior by each parent independent of the other. As previously noted, the maternal variable did not reach significance on any of the criterion measures, but the paternal variable proved to be positively correlated with historical aggression ($r = .276$, $p < .018$). This variable showed a positive,

though non-significant correlation with each of the other criterion measures.

The correlations of the remaining predictor variables, Residential Mobility during childhood and willingness to self disclose did not produce any significant correlations although the first was assessed both from intra-city and inter-city (community) perspectives. Self-disclosure was assessed both from childhood and current perspectives.

As previously mentioned, t-tests were carried out to assess the question of differences due to the sex of the data collector. This procedure yielded significant t-values as follows: SDMT/sex: $t = -2.24$, $p < .027$, subjects produced more for females. Social Desirability/sex: $t = 2.49$, $p < .015$, subjects produced higher scores for females. Maternal reward pattern/sex: $t = 2.55$, $p < .013$, subjects reported a greater history of reward to females. Paternal reward pattern/sex: $t = 2.33$, $p < .023$, as above but with slightly reduced significance in comparison to reporting about their mothers. Self-report of aggression/sex: $t = 2.47$, $p < .015$, subjects reported a greater amount of aggression to females.

Intercorrelations among the criterion measures were carried out and were as follows: HAGG/SRA $r = .278$, $p < .012$; AA7/HAGG $r = .454$, $p < .001$; SRA/AA7 $r = .198$, $p < .048$; although not of great magnitude, all were statistically significant. These, and all significance tests conducted within this study were two-tailed.

Five variables, VOCAB, SD, HD, ALC, and SOEC, as variables predicted in advance to have strong relationships with aggression were

then collectively tested against each of the criterion measures via multiple regression. All but one of these variables had shown a significant correlation with one of the criterion measures (SOEC did not) as predicted. These variables were regressed by the forward method on each criterion measure independent of the others and produced these results: SRA $R^2 = .27268$, $p < .001$; HAGG $R^2 = .19834$, $p < .010$; AA7 $R^2 = .11220$, $p < .045$. With SRA, these five variables can be said to account for nearly 30 percent of the variance, and with HAGG, for approximately 20 percent. In the case of Actual 7-day aggression, although the equation employing these variables is significant at the .05 level, the percentage of variance accounted for by the variables (11 percent) suggests that this particular aggression was much more situationally determined. This suggestion will be considered at length in the discussion section of this paper.

Intercorrelations among the variables in the regression equation were calculated and VOCAB showed a negative relationship with SD $r = -.222$, $p < .027$; a positive relationship with SOEC $r = .215$, $p < .032$, and SD showed a negative relationship with ALC $r = .210$, $p < .036$. No other significant correlations were found among the regression variables.

The last results to be reported on from this study are those of the predictions made both by the admitting physician at the time of admission (ODP) and those made by the data collectors after completing the assessment interview with each subject (DATAP). The correlation of ODP/SRA was not significant, but ODP/HAGG was $r = .385$, $p < .005$,

and ODP/AA7 was $r = .386$, $p < .001$. DATAP was significant ($p < .001$) relative to all three criterion measures producing SRA $r = .319$, HAGG $r = .455$, AA7 $r = .404$. These unexpectedly high correlations for "clinical judgement" will be discussed at length in the Discussion section of this paper.

CHAPTER IV

DISCUSSION

The major focus of the present study has been to explore the hypothesis that there are certain attributes which an individual brings to the person situation interaction which can render him or her more or less likely to aggress, given a common situation. A range of variables were described as having shown some association with aggression in previous research, and out of these five variables were selected as having the greatest potential for prediction. Impulsivity, organicity, intelligence, alcohol abuse and socioeconomic status during childhood were the variables predicted in advance to have this potential. We shall discuss these variables in order, before pursuing the issue of their collective predictability.

Impulsivity in the present study failed to show statistical significance with any of the three criterion measures of aggression. This was a totally unexpected finding, since this particular characteristic is probably the single most-frequently cited concomitant of aggression. During the conduct of the present study it became apparent that there were limitations in the method that was selected to assess impulsivity. There were participants in the study, who, both by clinical observation and by history, were obviously impulsive when angry, but who controlled this tendency when not emotionally aroused. These individuals were not identified by the Bender Gestalt Test characteristics used in this study to diagnose impulsivity (dashes or circles in place of dots,

grossly inflated representations, superimposition of one design on top of another) (Bender, 1938; Hutt, 1945; Pascal and Suttell, 1951).

During the course of the study it became apparent that at least one additional characteristic should have been included in the foregoing list: severely reducing the size of the designs while maintaining good form and neatness. This tendency, which might be described as an over-control, was evidenced by a number of participants known to the author from other circumstances, to have frequently behaved in an impulsive manner when emotionally aroused. This tendency was particularly evident in non-psychotic participants in the present study and suggests a partial explanation for the failure of impulsivity to show a significant correlation with aggression. This problem is similar in nature to that reported by Davis (1974) who did detect a significant relationship between impulsivity and violent behavior but at a much lower magnitude than expected. This author employed the Gibson Spiral Maze Test to assess impulsivity and eventually called into question its validity for this purpose. It may well be the case that as in the present study, "overcontrolled impulsives" were not detected and thus diluted the relationship.

In the present study there was a second problem concerning this variable, and to a lesser extent the alcohol abuse variable as well. During the latter third of the data collection period a large number of alcoholics in their late 50's or 60's were admitted and became participants in this study. Many of these individuals were diagnosed as impulsive by the study measures, but evidenced very low aggression

scores. The self-report of aggression was specific to behaviors during the immediately-preceding 12 months. The historical aggression score was based on the most recent six months of hospitalization, and the actual aggression score was of course based on current behavior. Many of these men would on interview, report a great deal of aggressive behavior in their earlier background but due to aging and other physical limitations (e.g., chronic intoxication to the point of severely limited motor functions), would evidence very little recent or current aggression. The incorporation of these individuals into the study is likely to have contributed to the low correlations found between impulsivity and aggression in this study.

Intelligence was the next factor predicted to show a strong correlation with aggression and was assessed via the Vocabulary subtest of the WAIS. As the results show, the expected relationship only evidenced itself in a statistically significant manner in relation to historical aggression. The expected inverse relationship did obtain to a lesser extent in relation to actual 7-day aggression, but in relation to self-reported aggression the small correlation failed even to show the negative sign. This unexpected finding may have been due in part, to the differences found on this measure (SRA) to relate to the sex of the data collector. The tendency of the all male participants to inflate their SRA scores contributed to the variability of this measure. Where the relationship was significant, it was with moderately high magnitude ($r = -.3400$, $p < .003$) and it associated with an historical or "other-determined" measure of aggression.

Organicity in this study was assessed both by the Symbol-Digits Modalities Test (Smith, 1968) and by a frequency count of specific head injuries. The results concerning the SDMT not only failed to reach significance in the expected positive direction, but showed a non-significant negative correlation on all three measures. This is a particularly striking finding in view of the frequently cited organicity factor in many studies of hyperaggressive behavior. In fact, more than a few authors have argued for organic factors as the prime causal force in repetitive violent behavior (e.g., Bach-Y-Rita et al., 1971; Mark and Ervin, 1970; Moyer, 1972). The SDMT is a screening measure which is supposed to detect organic deficits throughout the brain (Centofanti, 1975; Smith, 1968; and Smith, 1979). This measure cannot specify, even by lobe or hemisphere, the locus of a deficit it detects. The findings of the present study do not support the contention that any organic deficit will lead to an increase in aggressive behavior, but do suggest that deficits with traumatic etiologies may be likely to contribute to such behavior, in that the history of head injury produced a highly significant correlation ($r = .331$, $p < .001$) with SRA.

A majority of the participants in the present study (56 to 44) were determined to have some organic deficit by the SDMT. This is consistent with previous research findings concerning psychiatric populations. It has been found among children (Graham and Rutter, 1968), adolescents (Hertzog and Birch, 1968), and adults (Rochford et al., 1970; and Small, 1973) that psychiatric populations evidence a much

higher degree of organic impairment than do non-psychiatric populations. It is not possible at the present time to form definitive conclusions as to why this is the case. While it is conceivable that some functional psychotic states may develop as a function of organic impairments which limit an individual's ability to organize his world, it is equally possible that biochemical changes occur as a function of psychosis which eventuate in disparate organic degradation.

A separate aspect of intelligence which was assessed in the present study was arithmetic ability. It was hypothesized that the careful ordering and sequencing of tasks required by arithmetic would be a style much less likely to occur among aggressive as opposed to non-aggressive individuals. This of course stems from the assumption that much aggressive behavior is of an impulsive nature as opposed to being the end product of a careful reasoning process. While the results of the present study did not clearly confirm such an assumption, it is one which has received considerable support in previous research. The present results showed the expected inverse relationship between arithmetic and aggression across all three measures, but it did not reach statistical significance on any of these measures. Tallent (1956) found arithmetic ability to be inversely correlated with impulsiveness at a high level ($p < .01$). His measures of impulsivity had considerable overlap with aggressive acting-out behaviors and one might have expected the results of the present study to have also detected a significant relationship. One major difference between the present study and that of Tallent (1956) was the population sampled.

The Tallent study cited employed ninth-grade boys from a city school system as subjects, while the participants in the present study were adult psychiatric patients. There are some indications in the literature that overall intelligence is a good predictor of aggression in children, but becomes less effective with increasing age (Huesmann, 1979; Lefkowitz et al., 1977). Since the present study found vocabulary to have some predictive association with aggression, but arithmetic to show much greater variability, perhaps there are differential aspects of intelligence whose predictive efficacy will differentially vary over time. Lefkowitz et al. (1977), have reported only on a generalized full-scale measure which provides no information on individual components of intellectual process. It may well be that the loss of predictability over time (age) is a function of mixing scores from such diverse attributes as vocabulary and arithmetic. This is an issue for further research.

Social desirability (SD) was expected to be a potent predictor of aggression in the present study but the findings on this variable were mixed. The anticipated negative correlation proved out in relation to two of the three criterion measures, but was only significant on one (SRA, $r = -.430$, $p < .001$). The measure on which it failed to show the negative sign on r was historical aggression. The historical measure in the present study was limited to the extent that 27 of the 100 cases in the sample were first admissions for whom no score could be assigned on this measure. To assess the contribution this factor may have played to the results would be conjectural, but it is mentioned as a

fact in relation to the study. In retrospect the study could have been tightened by making the six months of prior records a prerequisite to being part of the study.

The SRA/SD correlation was of particular interest in that, as mentioned in the Results section of this paper, there was a strong sex difference (based on sex of the data collector) on both of these variables. On both SD and SRA, participants significantly increased their scores when reporting to females. Since an inverse relationship was predicted between the variables, this unidirectional effect could well have cancelled out the expected relationship. That the inverse relationship evidenced itself in spite of this, suggests that the true relationship between these variables is indeed a strong one.

Alcohol abuse is a variable that is frequently associated with aggression in the literature (e.g., Mayfield, 1976; and Nicol et al., 1973) but in the present study confirmed the expected relationship on only one criterion measure, SRA ($p < .05$). On both HAGG and AA7 this variable showed a non-significant, reversed-sign correlation, a totally unexpected finding. One possible explanation for this is that during the latter part of the study, an influx of older (50's and 60's) alcoholics were admitted as first admissions, thus providing no HAGG score whatever. There were 27 cases who had no score on HAGG and of these 19 cases had alcohol scores above the mean for the entire sample (17.68) and 14 of these 19 cases exhibited the maximum score on this variable (25). These cases thus contributed heavily to the overall alcohol score of the sample, yet made no contribution to the overall

HAGG score. The fact that SRA, to which these cases also contributed scores showed a positive correlation with alcohol suggests that had HAGG scores been available for these cases the expected relationship might well have been evidenced.

The failure of alcohol to positively correlate with AA7 is more difficult to understand. One possible explanation, consistent with the literature, is that most of the aggression manifested by alcohol abusers takes place during their active drinking. When sober, many of these individuals display a withdrawn, non-assertive pattern unless severely provoked. Since only a small percentage of the alcohol abusers in this study were admitted in an actively intoxicated state (most intoxicated persons are referred to a detoxification center by admissions personnel), this factor may explain the negative sign of the non-significant correlation found between these variables.

The socioeconomic status of the family of origin was the last major variable considered in this study. It was felt that this variable could encompass a number of characteristics of the learning environment of an individual and should thus show a changing relationship with aggression as one progresses from low to high. While the correlations between this variable and the three criterion measures were all in the expected direction, they were all of modest magnitude and none reached statistical significance. Clearly, socioeconomic status is not a good individual predictor within the population sampled. This measure does however, have some predictive validity in conjunction with other variables as will be discussed when we turn to the multiple regression

findings. It would appear from these results that socioeconomic status, while reflecting the stereotypic characteristics which we associate with greater or lesser tendencies toward aggression cannot override the individual differences which exist within it.

As mentioned in the Results section of this paper, questions were asked of the participants concerning the reward patterns of their parents during childhood. These questions, although inserted as "masks" for a separate variable (maternal attitude toward aggression) which was expected to show some association with criterion measures, were analyzed out of general curiosity. The significant relationship found between both maternal and paternal reward patterns and SRA were unexpected but not inexplicable. Individuals whose experiences lead to a belief that positive behaviors produce positive results are less likely to engage in negative behaviors than individuals who have not established such a belief. The fact that this relationship did not manifest itself in relation to HAGG must again take note of the 27 cases without HAGG scores. The mean of these 27 cases on the maternal reward variable was only slightly lower than the mean for the entire sample (2.67 vs. 2.75), but on the paternal reward variable the mean of the 27 cases was 1.82 compared to a grand mean on this variable of 2.70. Five of the 27 cases reported a zero score for the frequency of paternal reward, and five more had no score, indicating no father or father-figure was present during their childhood. The extreme difference in the means of the entire sample and of the 27 cases without HAGG scores again suggests that had such scores been available they would likely have

tended to confirm the relationship found with SRA.

The maternal attitude toward aggression variable did not reach significance in relation to any of the criterion measures. One possible explanation for this is that the method selected to assess it may not only have failed to reach it, but may even have tapped into a different factor altogether, a punishment response. It was initially assumed that a positive or indifferent attitude toward aggression by the mother could be assessed on the basis of the frequency with which she punished such behavior. This method was chosen in the belief that it would produce more accurate responses than by directly querying the participants on their mother's attitude toward aggression. It was assumed that the latter format would induce a defensive attitude on the part of the participants who might be loathe to make so distinctly negative a judgement on their mother's behavior. What was not considered at the time was the fact that a history of punishment, particularly of violent punishment, can itself make a contribution to one's own aggressive behavior. The literature on patterns of child-abuse for example shows the typical abusing parent to have themselves been victims of the "battered child syndrome" (Green, 1975). While this variable did not reach significance in relation to maternal punishment, it is of note that the expected direction of the relationship was negative and it came out positive on two of the three criterion measures.

The effects of punishment during childhood on adult aggression were even more striking in relation to the paternal pattern. Here, the correlations were all positive and with HAGG reached the .02 level of

significance. This finding is consistent with many research findings in the literature (e.g., Bandura, 1969; Berkowitz, 1962; and Green, 1975), and supports the argument offered earlier in explanation of the inverse relationship found between SRA and parental reward patterns. The power of the relationship between aggression and punishment suggests that it may well have overridden the relationship between maternal attitude toward aggression and its later expression which the author intended to assess. It may well be that such a relationship does exist and could have been demonstrated had another method been selected to assess it.

Residential mobility during childhood was another variable that previous literature had suggested would show some correlation with aggression. Although the present study divided this variable into two aspects: moves within a single community, and moves from one community to another, neither reached significance in relation to any of the three criterion measures. No combined analysis was done on this variable since the raw data indicated that the vast majority of participants responded in one category or the other. The few cases which reported moves in both categories were in all but one case, single moves in each. The failure of this variable to show significance suggests that the assumed disruption of moving may be less stressful for some than for others. Or, given that the stress is an absolute that it may be differentially responded to. In any cases, these data do not support the notion that a positive relationship exists between residential mobility and aggression.

Willingness to self-disclose was the last of the predictor variables assessed, and produced non-significant, mixed-direction results. Of the six correlations obtained (three for childhood, three for adult) half showed the expected negative sign and half failed to do so. These results suggest that while there may be some association between this variable and aggression, the relationship is neither powerful nor clear. Since this variable was assessed via three items out of a fifteen item questionnaire, it may well be that a more detailed assessment of this specific variable could produce results with greater clarity, but it is again suggested that the contribution of this variable at its best, is likely to be of little import out of the context of modifying variables.

The findings relating to differences due to the sex of the interviewer, while providing support to the issue of response sets (Cronbach, 1946; Crowne and Marlowe, 1964; and Edwards, 1953), also suggests the existence of what might be seen as a subset of social desirability: meeting the perceived social expectations of females. On the one task (SDMT) which called for relatively simple mechanical production, the all male participants produced significantly more ($p < .027$) for female than for male collectors. On social desirability, assumed by the response set proponents to be a measure of how one stands in relation to social indices in general, the participants in this study produced significantly higher scores ($p < .015$) for female interviewers. While sex differences have been reported (Crowne and Marlowe, 1964) for males and females in terms of the scores each produces, differences based on

cross-sex administration are, to the author's knowledge, a previously unreported finding.

Participants in the present study reported a more positive reward pattern by their parents (during their childhood) when they reported to females. While their reports were significantly different for both parents, it is of note that the reports on mother's reward pattern was even more significantly increased (over reports to males) than for fathers ($p < .013$ vs. $p < .023$). This increasing of the positive when reporting about one's parents can certainly be seen as consistent with an overall tendency toward the socially desirable. The previously discussed results of increased task production and higher SD scores to females is also consistent at least with stereotypes of the socially desirable: man the strong and capable must give to woman the weak and dependent; man must always present his best face to woman. While such stereotypes have diminished to some extent in contemporary society, they encompass a range of attitudes which are still reflected in the behavior of many males.

Although a lengthy discourse on sex-role stereotypes is outside the scope of the present paper, lest the foregoing remarks be misinterpreted due to lack of context, let it be stated firmly that the author does not imply an endorsement of such attitudes by discussing them. As cartoonists continue to remind us, many men will consciously pull in their abdomens when, while standing on a beach they are passed by an attractive female. It has been the author's experience that many male patients, whose usual language is quite colorful, will blush and apologize should they inadvertently use an obscenity in the presence of a

female staff member. Behavior such as this continues to manifest itself within our changing society suggesting that "putting on the best face for women", however fraudulent, is still for at least a part of our culture, a more. While "man the breadwinner" is certainly a rapidly changing social value, large numbers of American men still consider the support of the family to be their absolute responsibility, quite likely because this issue is tied into their need to see themselves as the absolute authority within the family. Men continue to bring gifts to women whose attention and favors they seek, and while not unidirectional, the present author would venture the opinion that the preponderance of gifts exchanged are from man to woman. Again, it is quite likely that a power theme underlies this societal value, but to pursue this further would be to digress from the central issue: there are long-standing, if implicit, social norms consistent with the results so far discussed concerning the sex-of-collector analyses.

The final comparison to prove significant within the just-mentioned analyses provides support to the arguments offered: SRA/sex proved to be highly significant ($p < .015$) with participants inflating their aggression scores when reporting to females. While this might initially be viewed as inconsistent with "putting on the best face", aggression in general being seen as negative, it must be remembered it is not always negative within our society, and certainly not within our history. Man the hunter could not have fed his family without being aggressive enough to pursue and kill the quarry, and often to defend the kill against other predators both within and outside his own

species. While the adaptive qualities associated with such capacities have under the vast majority of circumstances, long since passed from the social scene, a social value for required aggression remains.

What is deemed required is something that will vary both with the situation, and with the individual(s) making the judgement. This is an issue to be pursued again when we move to a discussion of labeling in a later section of this paper. For the present, the discussion will confine itself to conditions under which aggression may be deemed, by an actor and/or by an observer, to be required. Defending oneself or one's property from attack or theft will usually be deemed required both by the actor, and in most cases the observers (the latter term is used to define both actual observers and those who make their judgments ex post factor, i.e., the authorities). The one category of situations most likely to win consensus on the requirement issue is however, when a close female relative is attacked in the presence of a male who responds with physical aggression in defense of such a relative. While aggression stemming from self-defense or the defense of one's property will often be deemed required, this decision is usually reached only after careful scrutiny of the options which existed within the situation. Aggression displayed in the face of an attack upon a female relative is likely to be deemed required simply by establishing that such an attack actually occurred, even though other possible options might have existed for the actor. Looking at the reverse of this situation, where the actor failed to use aggression to defend his relative but perhaps ran off to seek help, the likelihood is extremely

strong that the man in this case would be scorned and vilified, and not least by the female relative whom he abandoned by leaving the scene. The foregoing is intended to merely sketch an evidentiary defense for the conclusion offered earlier: that aggression is not always viewed as negative within our society. A more extensive discussion of this issue is considered neither necessary (since living within our society provides ample evidence for this conclusion to any who seek it), nor appropriate at this time.

Since aggression is not always seen as negative it follows that it holds, at least for some men and women within our society, positive social valence for the capacity to be aggressive when this is deemed required. This being the case males who are invested in sex-role stereotypes would be likely to consider their capacity for aggression to be a socially desirable attribute to present to women. This presentation of the "tough guy" picture is in perfect accord with the "macho" image which many men portray, at least partly out of the belief that this is what women "really" want from them all protestations to the contrary notwithstanding. While these findings are explicable in terms of still-prevalent social attitudes, their powerful showing in relation to such apparently straightforward variables as the history of parental reward, for example, is striking and noteworthy for psychological research in general.

The present study began with the premise that while individual variables might correlate with aggression, their collective predictive ability should be much greater than that of any one of them alone. The

multiple regression procedures which were employed herein were designed to test that premise, and produced results which strongly supported it. While most of the predictor variables showed significance in relation to one of the criterion measures, none of them individually, proved to be significant across all three criteria. These same variables taken in concert, did just that. Intelligence, specific organicity, social desirability, alcohol abuse and socioeconomic status were the variables in the derived equation, which accounted for nearly 30 percent of the variance in relation to SRA, nearly 20 percent in relation to HAGG, and 11 percent in relation to AA7.

The variability in the use of the term aggression and its behavioral referents was discussed at length in the introduction of the present paper. For a small number of variables to account for the percentages of the variance cited above (specifically, SRA $R^2 = .27268$; HAGG $R^2 = .19834$; AA7 $R^2 = .11220$) in relation to such a variable is indicative of the need for further research in this line. While the variables tested have provided support to the sponsoring hypothesis of this study, the amount of variance accounted for, even if the equation can show continued support in research with other samples, is not yet sufficient for practical purposes. Although most research in the area of predicting human behavior comes out of the personality field, the present study employs only one variable (SD) which is distinctly out of this model. The remaining variables relate to specific experiences and behaviors of the responding individuals. Within the personality literature accounting for 30 percent of the variance is usually a

high-level result. The present study is concerned with the development of a methodology for more accurately identifying aggressive individuals, a process which must inevitably result in the assignment of a (primarily) negative label to them.

Assigning labels to people has long been known to have an effect on their later lives. Rosenthal and Jacobson (1968) demonstrated the profound effects that attaching a positive label to a child could have on that child's progress within a classroom. The evidence for positive labeling clearly implicated negative labels as potential affectors of one's future. Carol and Repucci (1978) found that professionals both in the educational and mental health spheres, made far-reaching decisions based on the meanings they attached to specific labels assigned to children. Hanna (1978) found that simply bearing the label "problem drinker", in relation to any other diagnosis which might also be carried, would both negatively and significantly affect the treatment recommendations made in a mental health center. It would appear obvious that bearing a negative label can have profound consequences on an individual within our society.

While an impressive body of theory has developed and sponsored considerable research around the issues of labeling (see for example Wodarski, 1979), the discussion in the present paper will confine itself to issues concerning labels associated with aggression. The labels "aggressive", "violent", and "dangerous" are all highly-charged words within our society, usually escalating in terms of impact in the order herein listed. A non-assertive person may well perceive

and label reasonably assertive behavior on the part of another as "aggressive". The social consequences of this will depend on the context of the situation in which it occurs. Labels which remain with an individual are ordinarily those which are applied from upper to lower levels within a social hierarchy, from the more powerful to the less powerful, within a given situation. Since norms are defined by the powerful, it follows that deviations from these norms are also likely to be determined by them, in conjunction with their own values. Discontinuity can and does exist relative to values across socioeconomic lines, i.e., similar classes of events may have very different impacts across such lines and thus the stresses on maintaining such values may differ. An individual who is denied an increase in his \$25,000 annual salary may consider it very unfair, but is likely to be much less stressed to respond to this event with violence than is the individual who is denied an increase in his \$3000 annual welfare benefit. Without considering the ethical questions of earned versus donated income, it is obvious that in the latter case the consequences of not getting an increase are likely to be far more extreme and address themselves directly to more primitive issues of survival.

Going beyond the data of the present study, it can be speculated that the more basic the needs which are perceived to have been denied, the more basic will be the response to such denial. An individual whose material and social assets are minimal will of necessity place a high value on those which he or she does possess.

It is the author's opinion that a poor person may fight with and

be killed by, a robber over \$2, a sum which a more affluent person would be more likely to surrender without hesitation. Just as material possessions may attain a high valence, and one which varies in terms of the specific objects across socioeconomic lines, so too may aspects of self acquire greater import among those who have little else. Personal dignity for example, may on the average, be viewed very differently by an upper-middle class person and a person of similar sex, age, and marital status from a poor working (blue-collar) class background. Should the former be deprived of his employment he is likely to have savings, social contacts, and other status-providing activities to help him deal with the assault on his dignity which being an unemployed provider may bring. The latter person is likely to have been living from paycheck to paycheck and to be totally destitute in its absence. His working contacts are usually from his own level and are not likely to be in a position to influence his getting a job with their employers. His social status is likely to obtain strictly from his role as provider to his family rather than through community and volunteer activities for which he would have little time, even if such activities were common within his neighborhood, an unlikely happenstance. The impact on dignity may thus be much greater when a sense of dignity is about all one has.

Records are kept by people who have greater power, within the context in which the records are kept, than those upon whom the records are based. While an attorney may have considerable power within his own sphere for example, his power is much less than that of the clerk

at the Registry of Motor Vehicles, in terms of the records kept at that particular facility. As an example, see *L.J. Ostric vs. Commonwealth of Massachusetts, Registry of Motor Vehicles*, a case in which an attorney attempted to renew his driver's license and was told by a Registry clerk that he had to provide his Social Security number which would henceforth become his driver's license number. He refused to do so, citing the legal opinion that this number was issued solely for identification within the Social Security system. The clerk simply refused to renew his license, and after a long and involved legal battle, the attorney lost. The clerk labeled him "uncooperative" and on that recorded basis he was denied a license until such time as he complied with what the labeling institution considered cooperation. The intake worker at a mental health facility may have similar power to label an individual to his or her detriment and while here again the relative power and status positions of the intake worker and the client outside of the situation at hand are generally irrelevant, they will also generally follow the line of a middle-class intake worker and a working class client. The wealthy and powerful do not present themselves for treatment at walk-in clinics.

Given a middle-class intake worker and a lower-working class client presenting for treatment, we can then hypothesize how a label might be applied based on different assumed valences on dignity and different attitudes on what constitutes a violation of this. Again, it must be remembered that the middle-class person's sense of dignity is much more likely to be buttressed by other indications of self-worth

such as material possessions and status defined and defining attributes. Perhaps the intake worker has been inundated with clients prior to the arrival of the current client and is trying to catch up on some paperwork relating to the earlier clients. He or she might thus request the client who approaches to be seated a moment, in his or her eyes a perfectly reasonable request. The client, who has already suffered affronts to his dignity from the circumstances which have brought him in to seek help, who is likely to have negative self-feelings over needing help and asking for help with mental problems, may well perceive this as an affront to his already fragile sense of personal dignity. If we add to this the likelihood that the client is male and the worker female, we have additional elements impinging on the client's response. As we discussed in an earlier section of this paper, many working class males believe that the potential for aggression is an attribute which women value in men. In accord with the sex-role stereotypes from which such a belief is derived is usually a corollary assumption that in the "natural order of things" (origin and validity unquestioned) males should be dominant over females. The client, perceiving his dignity to be under assault, may well seek to restore his sense of dignity by launching a verbal tirade, in his eyes a justified response to the provocation he perceives in the situation. It should also be noted that he is likely to be a product of a sub-cultural milieu in which aggression is usually a more acceptable and more efficacious problem solving mode of behavior than it is in a middle-class milieu.

Continuing this speculation, the intake worker, who perceives no provocation, no intended slight on the client's dignity and who holds a much different attitude on aggression to that of the client, may well label him "violent", deeming his outburst to be completely unprovoked and inappropriate. The label will thus be entered on the client's records and will in all likelihood remain there indefinitely. Rubin (1972) reports on research with 17 men who had been labeled "dangerous" and who had been followed by this label for up to 40 years, in almost every case in the absence of any evidence to corroborate the accuracy of the label. In a few of these cases there had been conviction for a violent crime many years before, but in most of them there only accusations of criminal behavior, in a few cases even the behaviors of which they were accused did not constitute violence. All but a few of these men had been incarcerated for many years without having been involved in, or even accused of, any violent behavior. Both Shaw (1969) and Wodarski (1979) have addressed themselves to these issues in terms of how such labels are assigned and how they tend to remain even when, as in the above cited cases, there is considerable evidence to contradict the validity of the labels. Both of the just-cited authors also take the position, supported by the present author, that the proper address to the problems of labeling is to make the labeling process more accurate, since such labels do serve a necessary purpose within our society.

Beyond the fact that they can serve a purpose, such as providing greater security for the violent over the non-violent in a prison or

mental hospital, it must also be noted that labels will continue to be applied in the absence of empirically-derived criteria, they will simply be applied on the basis of the subjective criteria of the person in a position to assign a label to any kind of permanent record. Rubin (1972) suggests a false-positive rate of 50-60 percent in the labeling of dangerousness by clinical judgement. While an equation which explains 20-30 percent of the variance relative to measures of aggression with direct behavioral referents would certainly produce a much lower false-positive error rate than those cited by Rubin, it does not yet have the predictive power to warrant its use as a labeling device. The potential consequences of being labeled aggressive have already been discussed and they clearly indicate the need to be very confident about the validity of this label before applying it. Because of the feared consequences of failing to so identify an individual who later commits a violent act, many people in positions which allow or demand that they make such a determination on another individual, err on the side of caution; the caution being concerned with the consequences which may ensue for themselves, rather than the consequences for the labeled person. This is a factor in addition to those previously discussed which must also be considered in relation to "clinical judgement" methods of labeling. These factors are certainly implicated in the high false-positive error rate cited by Rubin (1972) for clinical judgement, and suggest strongly the need for a more accurate method of labeling in this area.

The procedures being currently reported on offer some promise for

the possibility of developing a more accurate labeling method, but only in the sense of direction for further research. A problem inherent in the use of empirically-derived methodologies is that once they come into use, their acceptance often goes beyond their established validity. A label attached by clinical judgement, though long-lasting, may occasionally be challenged as "someone's opinion". A label attached by an empirically-derived method is likely to be given greater credence and must therefore meet a greater standard of accuracy. While an absolute standard remains to be set, it is the opinion of the present writer that explaining 30 percent accurate labeling in this area, there is an associated need to determine what changes in an individual will alter the validity of the label.

Of the five variables in the regression equation used in the present study only one, socioeconomic status during childhood, is beyond the realm of change. While the concept of intelligence quotient (IQ) has often been argued to represent an absolute measure of intellectual ability, sufficient variability over time, circumstance and even examiner has been found with IQ to render this a very questionable premise. The present study looked at two aspects of intelligence, but focused on only one of these: vocabulary. In a general sense, IQ has been argued (Lefkowitz et al., 1977) to inversely associate with aggression through low IQ acting as a frustrator to daily living. While this appears to be a reasonable premise the specific association of vocabulary and aggression found in the present study leads the author to speculate that an additional factor exists relating low vocabulary and

aggression: reduced alternative coping skills in provocational situations. The verbally facile can often "talk their way out of it" when involved in a provocational situation, those with lesser verbal skills may move to direct aggression less out of choice than because they have no alternative strategies. Given the IQ itself is not absolutely stable it follows that its sub-elements, such as vocabulary, should be even more amenable to change. Improvement in an aggressive individual's vocabulary skills could potentially alter his aggressive potential from two perspectives: first, the individual would now be less likely to misinterpret verbalizations in terms of hearing threat or insult where none is intended, and second, the individual would have increased coping skills to deal with situations in which provocation actually exists.

Social desirability, the second of the variables in the equation derived in the present study is also a factor which can be altered by therapeutic intervention, and like vocabulary, changes in this dimension can be measured to provide an index of change over time. To be sure, an individual could easily become aware of the direction of change sought, and merely conform his responses to align with this, as opposed to changing the underlying attitudes which the measure seeks to assess. This does not refute the premise that the attitudes can be subtle rather than blatant and occur within the context of a broader spectrum program for change.

The history of head injury producing unconsciousness, which was the next variable contained in the equation, might at first glance

appear to be unchangeable and thus contradict the earlier statement positing socioeconomic status during childhood to be the only unchangeable variable in the equation, however its effects may be changed. The argument offered earlier in this paper to explain the contradictions between the two measures of organicity which were used in the present study is again germane. The organicity which positively correlated with aggression in the present study was that which had a traumatic etiology, a causal factor likely to produce more severe damage than the kinds of disparate deficits detected by the SDMT. Specific physical damage may well be susceptible to treatment. Doing a full neurological and neuropsychological workup on such individuals might well detect seizure activity which would be amenable to medication, very possibly altering the relationship of the organic condition to aggression.

Alcohol abuse was the next variable in the equation and both the fact that it can be altered and that changes in such patterns can be measured is well established within the literature (see for example, Kissen and Begleiter, 1977). The high failure rate for treatment programs designed to deal with this problem show clearly that such patterns are resistant to change (Bourne and Fox, 1973), but nevertheless are not beyond the possibility of change. This again is a factor relating to aggression which can be changed and for which an index of change can be established.

Finally we come to socioeconomic status during childhood, an historical factor which in and of itself cannot be changed. It should be remembered that this is also the one factor within the equation

which did not in the present study, independently correlate with significance to any of the criterion measures. It did associate in the predicted direction with all three of these measures however, suggesting that while a trend exists between low socioeconomic status and aggression, there are moderating variables which can alter the propensity of the factor away from a linear relationship with aggression. This suggests that it is the attitudes developed within and about such a background which are important to aggression, rather than the background itself. Attitudes are well within the purview of therapeutic change, and are also amenable, with some admitted difficulty, of being assessed over time to provide an index of change.

To summarize the discussion to this point, an equation has been developed which shows some efficacy at discriminating aggressive from non-aggressive individuals (in relative, not absolute terms). This equation has been suggested to provide direction for a line of research aimed at the development of a more accurate method of labeling aggressive and so dangerous, people primarily for treatment purposes. It has been further suggested that the elements of this equation can provide an index for change to aid in determining when such a label no longer applies, and should be removed. We will next move to discussing intercorrelations among the predictor variables.

Only those variables which were included in the regression equation were examined for intercorrelations. The only surprising finding here was that of a significant ($p < .027$) inverse relationship between VOCAB and SD. On the surface it would appear logical that the more

intelligent and better educated one is, the more one should be expected to be attuned to social values. The measure employed to assess social desirability (Marlowe-Crowne Social Desirability Scale, Marlowe and Crowne, 1960) employs idealized social perspectives which are highly unlikely to be exhibited in normal behavior. It follows that the more intelligent one is, the more able one will be to discriminate the idealized from the realistic. The inverse relationship found may reflect not a reduced concern with social values among the higher scorers on VOCAB, but only their greater powers of discrimination. The published norms for this measure (Crowne and Marlowe, 1964) support this explanation in that the means for college students are consistently lower than those of other groups, such as prisoners, psychiatric inpatients, etc. It is of note that the mean of the present sample on this variable is within decimals of matching the published mean of a group of V.A. hospital inpatients (present $\bar{X} = 16.75$, norm $\bar{X} = 16.48$). Not surprisingly, VOCAB showed a significant positive correlation with SOEC ($p < .032$) reflecting both the increased education and greater value placed on verbal skills which are likely to occur as one moves up the socioeconomic spectrum. Again, it was not surprising that SD showed a significant negative relationship with ALC ($p < .036$) since on the average, there is a diminution of social values as one becomes more involved in an alcoholic lifestyle. This finding suggests that at least one approach to the earlier discussion of changing attitudes reflected in SD scores by subtle means might simply be to change the alcohol abuse pattern, though this in itself is far from simple.

Some discussion of the Actual Aggression within 7 days (AA7) must be made, since in the Results section it was suggested that this particular aggression seemed to be more situationally-determined in the present study than either of the other criterion measures. While AA7 correlated significantly with both HAGG and SRA ($p < .001$, and $p < .048$, respectively), it was also the criterion measure for which the developed equation explained the least amount of the variance (11 percent). The majority of the participants who were scored "yes" on this dichotomized measure exhibited aggression in the office of the Admitting Physician. In an earlier section of this Discussion, it was indicated that for many males, as were all the participants in the present study, asking for help with a mental problem is a stressful situation which impinges on their sense of dignity. Many of the participants who exhibited aggressive behavior at the time of admission had an additional stress: they were brought in by relatives, as opposed to having made the decision to seek treatment entirely on their own. The forms of aggression exhibited were usually verbal, but in two cases physical, attacks on these relatives, or verbal attacks on the Admitting Physician. The physician who admitted the majority of participants in this study (61 out of 100) was a woman who is the full-time Officer of the Day, Monday through Friday. The earlier discussion also made reference to the potential for this very situation to increase the feelings of powerlessness on the part of the sex-role stereotyped male, and to thus increase the likelihood of an aggressive response. The fact that most of the aggression related to this measure took place at the time

of admission is also important for the last aspect of the present results which we will next examine.

The prediction of the Admitting Physician (ODP) proved significant in relation to two of the three criterion measures: HAGG and AA7. It is of note that the stronger of these correlations was that of AA7 ($p < .001$ vs. $p < .005$). Significance levels such as these would initially appear to call into question, if not invalidate the claim of Rubin (1972) that clinical judgement decisions in this area have a false-positive error rate of 50-60 percent. It is important therefore to examine the circumstances under which clinical judgement predictions were made in this study and the information available to the individuals making these predictions. As has been stated earlier, the majority of "yes" scores on the AA7 measure were based on behaviors which took place in the presence of the person who made the ODP prediction. The task of this person was then to predict an event which had already taken place in their presence, obviously requiring no prediction at all. This prediction, unlike that of the data collectors (to be discussed separately) was based solely on the premise that the patient would or would not exhibit verbal or physical aggression during the first seven days of his admission. Had the instructions to the Admitting physicians been to exclude events which took place within the context of the actual admission, one can speculate that the ODP prediction would still have been weighted by the observation of these events. In that case the false-positive error rate would have been much in accord with Rubin's (1972) figures, since in only two cases did participants

who exhibited aggression during admission exhibit further aggression during the seven day monitoring period.

The second ODP prediction to prove significant was HAGG, the historical aggression measure. Out of the total sample of 100, 60 of the participants in the present study were repeat, usually multiple repeat, admissions. There were an additional 13 cases who, though first admissions, had evidence of historical aggression contained in their records, usually in the form of statements by the relatives who brought them in for admission. All of this information was presented to the Admitting Physician at the time the patient was seen for admission and so impacted the prediction. There were only 27 cases of first admissions for whom no prior history was available to the Admitting Physician making the prediction. In this case the import of the analysis is that the prediction of future behavior which was called for, was extremely weighted by the past behavior of the participants upon whom the prediction was based. This is in direct accord with Rubin's (1972) argument that clinical judgement of an individual's propensity for behaving in a particular manner in the future is largely a function of how the individual has behaved in the past. While the measures (predictive) of the present study have been compared to criterion measures based on past behavior, they have not been based on prior knowledge of such behavior. The significance of ODP to HAGG is for this reason far less important than is the significance of the predictive equation developed herein to the same criterion.

The predictions of the data collectors in the present study (DATAP)

proved significant across all three criterion measures. While this result was not an expected one, subsequent examination suggests that it should have been. Unlike ODP, the instructions under which DATAP was derived required the collectors to merely decide whether a given participant was or was not, an aggressive person. The criteria for this judgement was left to the individual data collectors and they recorded their decision subsequent to completing the interview with a given participant. The collectors thus had at their disposal for use in forming their decisions the following information: prior knowledge of the participant often including having read his hospital record in conjunction with their duties as staff personnel. This would of course have taken place during prior hospitalizations. The collectors also had the sample of behavior exhibited during the course of the interview itself as available information. Finally, the collectors, although not formally scoring the measure, had completed the SRA based on the participant's own frequency report of specified aggressive behaviors. These judgements were still however, subject to a false-positive error rate of some magnitude if one examines the raw data on which the correlations were formed. There were 32 cases in which a "yes" prediction was made in DATAP, out of the total sample of 100. In relation to AA7, 15 of these 32 "yeses" associated with participants who did not exhibit aggression during the first seven days of their hospitalization, false positive identifications.

Using the means of SRA ($\bar{X} = 8.46$) and HAGG ($\bar{X} = 21.49$) to divide the sample into upper and lower distributions on these measures and then

comparing the 32 cases scored "yes" by DATAP, discloses 15 false-positives on SRA and 11 false-positives on HAGG. The next question to be addressed is why, given this obviously high false-positive error rate, did the correlations turn out significant. It is suggested that the false-positive and false-negative errors may have cancelled one another out, leaving a small number of accurate associations among the 100 cases to form the basis of the eventual correlation. It should be noted that in line with the earlier discussion of possible consequences which may ensue for the mental health professional who makes a judgment that an individual is not, or is no longer, dangerous, did not prevail for the data collectors in this study. There were no consequences to press for a conservative (in the sense of not missing a "real" aggressive), and this would be expected to produce a more balanced error rate.

In summary, vocabulary, head trauma, alcohol abuse, and social desirability have all individually shown significant associations with aggression. Indications for further research with these individual variables would involve developing a greater degree of specificity of the deficits resultant from a history of head trauma, thus a full neuropsychological workup would be done where the history indicated it. Employing the results of such a workup, deficits could be divided into categories and the individual categories tested against criterion measures of aggression to more accurately assess the potential contribution of organicity to aggression. The measurement of alcohol abuse appears to have been a reasonable one, but the comparison with aggres-

sion ran into problems due to the criterion measure of historical aggression. If the design had required each participant to have available a minimum of 6 months of prior records, there would have been no missing scores on this variable. Further research would certainly adjust the design to include this control.

Social desirability is a second variable which would benefit from the alteration mentioned above. While this variable was strongly affected by the cross-sex-interviewer format, it also was being compared to a criterion measure (HAGG) in which 27 of the 100 cases were missing scores. Further research with this variable might profit from having same-sex-interviewers and the aforementioned design change.

Socioeconomic status in relation to aggression evidenced considerable variability, suggesting differential responses to generally similar experiences. Further research might benefit from an attempt to assess the attitudes developed as a function of differing socioeconomic backgrounds. By quantifying, to the extent possible, the individual response to stereotypic experiences, it may be possible to tease out the aspects of background which most significantly contribute to an increased potential for aggression.

Collectively, the five variables contained in the regression equation fulfilled the prediction of the study that these variables would, when taken together, prove more predictive than any of them taken alone. While individual variables met or surpassed the significance levels of the regression equation, none of them individually proved significant across all criterion measures. The multiple regression did prove sig-

nificant across all criterion measures and can thus be argued to have greater predictive validity than any of its individual components. Further research with the equation would incorporate the recommendations made for the individual variables, prior to testing the equation against additional samples.

Rather than simply providing a mechanism for labeling, the pursuit of the research directions discussed in the present study offer an even greater potential import. By more accurately identifying the sources of stress an individual is experiencing and some of the reasons he or she is so stressed, we are provided with an increased opportunity to help such an individual reduce that stress. The main purpose of diagnostic labeling should be to provide direction for treatment. Within this context the research direction of the present study has both value and meaning. The findings of the present study relative to sex-of-interviewer issues suggest that while women can certainly have a moderating effect on the expression of aggression by males in a psychiatric hospital, they can also, simply by virtue of their sex, have their presence increase the potential for aggression. By being aware of this potential and the reasons for it, women in such a setting can both reduce this potential and enhance their own abilities to moderate the expression of aggression.

Through openly addressing such issues as the false belief which some men have that women really want men to exhibit at least a strong capacity for aggression, and the difficulty which some men may have in dealing with a woman in a position of authority, such issues can be

brought into discussion. By verbalizing them, these issues may be brought more toward the rational sphere of intellect, and away from the exclusive sphere of emotionality and reactivity. In general, the present results suggest that much aggressive behavior can be viewed as a function of reduced or limited coping skills on the part of the aggressive individual. Both male and female treatment personnel can increase the efficacy of their interventions in this area by assisting clients to see and to learn, alternative coping strategies. By more accurately identifying the potential sources of stress to the clients, these alternative strategies can be pointed out in advance of potential aggressive behavior and we may eventually find a markedly reduced need for labeling individuals as aggressive.

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APPENDIX A

Background Information Survey

- 1) Have you ever suffered a head injury which produced unconsciousness?
(if "yes", ask lettered sequence) Yes _____ No _____

1a) Which of the following choices is closest to the number of times this has happened? aa) once ab) twice ac) three times ad) four times ae) 5 or more times

- 2) Do you drink alcoholic beverages? Yes _____ No _____
(if patient states that he has quit, assess frequency and intensity on the basis of "When you were drinking").

2a) Which of the following is closest to how often you drink (or drank) any amount? aa) once a month ab) twice a month ac) once a week ad) 2 or 3 times a week ae) daily or almost daily

2b) When you drink (or drank) do (did) you get drunk, high, or feeling good? (a sum of all or any of those states).
ba) once a month bb) twice a month bc) once a week
bd) 2 or 3 times weekly be) daily or almost daily

- 3) Out of the following choices, which is closest to the kind of work done by your father (or person who was the primary support of the household) during your childhood? a) Unskilled e.g., (laborer, truck driver, factory worker, etc.) b) Semi-skilled (e.g., machine operator, stock clerk, sales clerk, etc.) c) Skilled (e.g., all major trades, industrial and construction which require apprenticeship or other extended training, and also policeman, fireman, postal worker, etc.) d) Semi-professional (e.g., nurse, salesman (autos, insurance, industrial), school teacher, "white collar" occupations which require less than a doctorate or its equivalent) e) Professional (e.g., physician, psychologist, lawyer, chemist, engineer, college professor, etc.)

If patient's response does not clearly fit a specific category record it here _____, and these responses will be categorized via the Strong Vocational Interest Manual.

- 4) Have you ever used any drug other than alcohol to get high?
Yes _____ No _____ (if "yes" proceed to lettered sequence).

4a) Of these choices, which is closest to the number of times you have done this? aa) 1 or 2 times ab) 3 or 4 times
ac) 5 to 9 times ad) 10 to 19 times ae) 20 or more times

APPENDIX A (CONTINUED)

- 5) During your childhood, which of the following choices is closest to your mother's typical response to your helpful behaviors (toward anyone)? a) always rewarded b) often rewarded c) sometimes rewarded d) seldom rewarded e) never rewarded
- 6) During your childhood, which of the following choices is closest to your father's typical response to these same behaviors? a) always rewarded b) often rewarded c) sometimes rewarded d) seldom rewarded e) never rewarded
- 7) During your childhood, which of the following choices is closest to your mother's typical response to your aggressive or fighting behaviors (toward anyone)? a) always punished b) often punished c) sometimes punished d) seldom punished e) never punished
- 8) During your childhood, which of the following choices is closest to your father's typical response to these same behaviors? a) always punished b) often punished c) sometimes punished d) seldom punished e) never punished
- 9) During your childhood, did your family move its place of residence from one city, town, or community to another? Yes _____ No _____ (if "yes" ask lettered sequence).
- 9a) Did this happen aa) once ab) twice ac) 3 times ad) 4 or 5 times ae) more than 5 times
- 10) During your childhood, did your family move its place of residence within a single community or neighborhood? Yes _____ No _____ (if "yes" ask lettered sequence).
- 10a) Did this happen aa) once ab) twice ac) 3 times ad) 4 or 5 times ae) more than 5 times
- 11) During your childhood, which of the following is closest to the typical form of your conversations with your mother?
- a) always talked openly about my most personal issues.
b) often talked openly about my most personal issues.
c) sometimes talked openly about my most personal issues.
d) seldom talked openly about my most personal issues.
e) never talked openly about my most personal issues.
- 12) During your childhood, which of the following is closest to the typical form of your conversations with your father?
- a) always talked openly about my most personal issues.

APPENDIX A (CONTINUED)

12) (continuation)

- b) often talked openly about my most personal issues.
- c) sometimes talked openly about my most personal issues.
- d) seldom talked openly about my most personal issues.
- e) never talked openly about my most personal issues.

12) As an adult, which of the following people is the one with whom you have been the closest? a) mother b) father c) wife
d) other relative e) friend

14) (Using the person selected in answering the preceding question.) Which of these choices is closest to the typical form of your conversations with _____?

- a) always talked openly about my most personal issues.
- b) often talked openly about my most personal issues.
- c) sometimes talked openly about my most personal issues.
- d) seldom talked openly about my most personal issues.
- e) never talked openly about my most personal issues.

15) As an adult, which of the following is closest to the number of different people, but discounting professionals (doctors, lawyers, therapists), with whom you have talked openly about your most personal issues? a) none b) one c) two d) 3 to 5 e) 6 or more

APPENDIX B

MC-SD

Listed below are a number of statements concerning personal attitudes and traits. Read each item and decide whether the statement is true or false as it pertains to you personally.

- 1) Before voting I thoroughly investigate the qualifications of all of the candidates.

True _____ False _____

- 2) I never hesitate to go out of my way to help someone in trouble.

True _____ False _____

- 3) It is sometimes hard for me to go on with my work if I am not encouraged.

True _____ False _____

- 4) I have never intensely disliked anyone.

True _____ False _____

- 5) On occasion I have had doubts about my ability to succeed in life.

True _____ False _____

- 6) I sometimes feel resentful when I don't get my own way.

True _____ False _____

- 7) I am always careful about my manner of dress.

True _____ False _____

- 8) My table manners at home are as good as when I eat out in a restaurant.

True _____ False _____

- 9) If I could get into a movie without paying and be sure I was not seen, I would probably do it.

True _____ False _____

APPENDIX B (CONTINUED)

- 10) On a few occasions I have given up doing something because I thought too little of my ability.
True _____ False _____
- 11) I like to gossip at times.
True _____ False _____
- 12) There have been times when I felt like rebelling against people in authority even though I knew they were right.
True _____ False _____
- 13) No matter who I'm talking to, I'm always a good listener.
True _____ False _____
- 14) I can remember "playing sick" to get out of something.
True _____ False _____
- 15) There have been occasions when I took advantage of someone.
True _____ False _____
- 16) I'm always willing to admit it when I make a mistake.
True _____ False _____
- 17) I always try to practice what I preach.
True _____ False _____
- 18) I don't find it particularly difficult to get along with loud-mouthed, obnoxious people.
True _____ False _____
- 19) I sometimes try to get even, rather than forgive and forget.
True _____ False _____
- 20) When I don't know something, I don't mind at all admitting it.
True _____ False _____

APPENDIX B (CONTINUED)

- 21) I am always courteous, even to people who are disagreeable.
True _____ False _____
- 22) At times I have really insisted on having things my own way.
True _____ False _____
- 23) There have been occasions when I felt like smashing things.
True _____ False _____
- 24) I would never think of letting someone else be punished for my wrongdoings.
True _____ False _____
- 25) I never resent being asked to return a favor.
True _____ False _____
- 26) I have never been irked when people expressed ideas very different from my own.
True _____ False _____
- 27) I never make a long trip without checking the safety of my car.
True _____ False _____
- 28) There have been times when I was quite jealous of the good fortune of others.
True _____ False _____
- 29) I have almost never felt the urge to tell someone off.
True _____ False _____
- 30) I am sometimes irritated by people who ask favors of me.
True _____ False _____
- 31) I have never felt that I was punished without cause.
True _____ False _____

APPENDIX B (CONTINUED)

- 32) I sometimes think when people have a misfortune they only got what they deserved.

True _____ False _____

- 33) I have never deliberately said something that hurt someone's feelings.

True _____ False _____

APPENDIX C

Aggression Point Scale
(For Use With Patient's Hospital Records To
Develop Historical Aggression Score.)

Each category shall define a type of report and shall have a specific point value associated with it. A patient's score shall be the sum of all points accumulated during a review of his records over the past year.

- 1) A specific report of an unarmed fight or assault including one or more punches or kicks to an adversary = 5 points. Five more points will be added for each additional adversary actually struck by the patient in the same incident.
- 2) A specifically described incident of a fight or assault taking place outside of the hospital involving one adversary/victim (e.g., "Patient returned from weekend pass by relatives due to an assault on wife. Wife states that patient became verbally abusive over minor incident and just kept screaming and getting madder until he suddenly slapped her 2 or 3 times. Wife screamed and began to cry, patient became contrite and tearful." This incident would be scored as 5 points, since the actual assault would encompass the less severe verbal aggression which preceded it.
- 3) A general report that the patient has frequently gotten into fights:

| | |
|------------------------|-------------|
| During last six months | = 10 points |
| During last two years | = 15 points |
| Over 3-5 years | = 20 points |
| For more than 5 years | = 25 points |
- 4) A general report that patient has been physically assaultive toward one or more members of his household:

| | |
|------------------------|-------------|
| During last six months | = 10 points |
| During last two years | = 15 points |
| Over 3-5 years | = 20 points |
| For more than 5 years | = 25 points |
- 5) A specific report of an incident of verbal abuse toward staff or other patient(s) = 3 points.
- 6) A general report that the patient is verbally abusive (insulting, threatening, etc.) toward others = 5 points.

APPENDIX C (CONTINUED)

- 7) A specific incident report of the patient engaging in physical aggression toward objects (e.g., breaking windows, kicking furniture, throwing objects at walls, windows or floors, etc.) = 4 points.
- 8) A general report that the patient engages in the above type of behavior which refers to or implies more than one such incident = 6 points per such notation.
- 9) A specific report of the patient using or attempting to use a weapon to injure someone ("weapon" shall be any object not a part of the patient's body with the exception of shoes and attached prosthetic devices) = 10 points.
- 10) A general report that a patient has used or attempted to use a weapon to injure someone which refers to or implies more than one such incident = 20 points per such notation.

Specific incident reports which refer to aggressive behavior but are not readily classifiable under the preceding categories will be scored individually on the basis of the perceived intent of the patient as implied in the description of the incident (e.g., a report that patient had "attempted to strangle" another patient would be scored 10; a report that a patient had "put his hands on the throat of another patient and then removed them without further incident" would be scored from 0-5 points, based on the report writer's judgement of the patient's intentions concerning the incident. A report that a patient had "grabbed another, wrestled him to the floor and attempted to gouge out an eye", bite off an ear", or perform some other harm-doing behavior which did not include [or was not restricted to] a punch or a kick but as in the above two instances would exceed a blow or kick in severity, would be scored 8 points [more than a punch, but less than an attempted

APPENDIX C (CONTINUED)

murder]. A report that a patient had thrown/wrestled another to the floor without further harm-doing behavior would be less severe than a blow or kick and would be scored 4 points). Every attempt will be made to avoid duplication of scored items within a given patient's record.

APPENDIX D

Self-Report of Aggression

Please read each item carefully and rate how you feel it applies to your behavior during the past year. This information will not become a part of your hospital records and will not be used against you in any way. The information is being collected as part of a research program which is seeking to learn, among other things, how accurately people rate themselves on these behaviors when compared with how other people may have rated them. Please make an "X" on the line opposite the rating which you choose for each item.

- | | |
|------------------------------------|-------------------------------------|
| 1) I get into fights | Never _____ Rarely _____ |
| | Fairly often _____ Frequently _____ |
| 2) I insult someone | Never _____ Rarely _____ |
| | Fairly often _____ Frequently _____ |
| 3) I yell at someone | Never _____ Rarely _____ |
| | Fairly often _____ Frequently _____ |
| 4) I swear at someone | Never _____ Rarely _____ |
| | Fairly often _____ Frequently _____ |
| 5) I hit someone | Never _____ Rarely _____ |
| | Fairly often _____ Frequently _____ |
| 6) I pick a fight with someone | Never _____ Rarely _____ |
| | Fairly often _____ Frequently _____ |
| 7) I punch something | Never _____ Rarely _____ |
| | Fairly often _____ Frequently _____ |
| 8) I talk about hitting someone | Never _____ Rarely _____ |
| | Fairly often _____ Frequently _____ |
| 9) I threaten someone | Never _____ Rarely _____ |
| | Fairly often _____ Frequently _____ |

APPENDIX D (CONTINUED)

10) I kick something

Never _____ Rarely _____

Fairly often _____ Frequently _____

11) I smash something to
pieces

Never _____ Rarely _____

Fairly often _____ Frequently _____

APPENDIX E
Standardized Instructions

General

Instructions for the initial meeting and arranging of time and place at which to make the formal request to participate will of necessity vary depending on ward placement, patient's schedule, and patient's attitude when first contacted, etc., and so will be left flexible with the stipulation that no questions concerning the purpose of the interview you are seeking will be answered until the interview is actually held. Such questions will be deferred with the statement "I'm talking to a number of people about a project and I'll read you something which explains it all, when we have time to talk".

Once the time and space issues have been resolved and you are actually meeting with the patient, please begin with this statement: "We are conducting a research project for which we would like your help. I'll read you something which explains it all and you can decide if you want to be involved". If, after you have read the Informed Consent Sheet to the patient he agrees to participate, proceed to administering the measures as detailed below. If the patient refuses at this point, ask if he would mind telling you why he will not participate. Judgment must be used here to avoid pressuring the patient, but if his refusal is due to misunderstanding or other easily correctible factors try to resolve these and the patient may then decide to be involved. If the patient still does not wish to participate, answer any reason-

APPENDIX E (CONTINUED)

able questions he may ask about the study, thank him for his time and depart. Once you have responded to specific questions about the details of the project, the patient is no longer eligible for the study even if he changes his mind and asks to be involved.

Administration Procedures

When a patient verbally agrees to participate, have him sign the Informed Consent Sheet and the V.A. form 10-1086, then proceed as follows:

Bender Motor Gestalt Test. This is the first measure to be completed and you should begin by saying "I am going to give you a pencil and a blank sheet of paper (do so) and then I am going to show you some cards. There are nine cards and each one has a design on it. I will show them to you one at a time and I would like you to copy each design onto the sheet of paper I gave you. You can continue to look at each card while you are drawing the design, and I would like you to make your copies look as much like the card-designs as you can (if the patient makes a comment to the effect that he cannot draw or is a poor artist, say "That's OK, just do the best you can"). I would like you to copy all nine designs on the sheet of paper you have. Any questions? Good, let's go on". Present card A by placing it face up on a flat surface in front of the patient. Ask the patient to tell you when he is through and use this as the signal to present the next card

APPENDIX E (CONTINUED)

in the same manner, removing the previous one. Present cards in the numbered sequence (one to eight) until all have been copied, then say "That's fine" and remove the paper from in front of the patient. Mark the paper with the same study number as the packet you are using with him and proceed to the next measure.

Symbol-Digit Modalities Test. Place the form face up in front of the patient and say "I would like you to look at the top of this page, where it says 'Key'. You will notice that there are nine numbered boxes at the bottom of the Key, and a different symbol for each number at the top of the Key. Now down here we have a number of boxes with symbols at the top but blank boxes at the bottom. What I would like you to do, when I say 'start', is to begin filling in the blank boxes with the number which goes with each symbol, just as its shown in the Key. Do you have any questions? (if "yes", answer) Fine, now I would like you to work as fast as you can, but do not skip any boxes and do not begin until I say 'start'". Time the patient for 90 seconds and then say "stop". Remove the form, recover the pencil and proceed to the next measure.

Social Desirability (MC-SD). Read the heading to the patient substituting the phrase "listen to" for the word "read" in the heading. Then say: "On some of these items you may feel that it is sometimes true, but not always true. In that case I would like you to decide whether it is true or false about you most of the time, and answer on that

APPENDIX E (CONTINUED)

basis. On some others you may feel that it is partly true and partly false, and I would like you to decide whether it is mostly true, or mostly false, and answer on that basis" (this instruction can be repeated during the administration, if needed). Read each item to the patient and place an "X" in the chosen answer space. When all items have been read and responded to, move on to the next measure.

WAIS arithmetic. Administer and score as per manual instructions.

WAIS vocabulary. As above.

Background survey. Begin by stating "I would like to read you some questions and ask you to choose one of the answers which go with them. These questions cover a number of different issues which we are looking at, and there are about 15 of them". Read each item in turn and circle the letter-designation of the answer chosen. You may repeat the answer-choices as often as is necessary to allow the patient to select one. When completed, proceed to the final measure.

Self-report of aggression. Begin by saying "This is the last one, and it asks about some particular behaviors. I will give you a pencil and you can read the instructions and fill it in yourself. If you have any questions, just ask". If the patient asks questions beyond the scope of how to complete the measure, say "As soon as you fill this out I will read you something which should answer all your questions". If the patient asks questions which relate to completing the form, repeat

APPENDIX E (CONTINUED)

or paraphrase the instructions which form the heading on the measure. When this form is completed, take it from the patient and read him the information sheet. If the patient has further questions of a reasonable nature, respond to them as openly as you can, except that under no circumstances should you give any information about any other patient who may be in the study. Thank the patient for his help and cooperation and depart.

APPENDIX F

Information Statement
(To be read aloud to each patient who contributes data.)

The study we are conducting is an attempt to determine whether or not the tests and forms we are using can predict which people have a strong tendency to behave aggressively and which have less tendency to behave that way. Most people will display some aggressive behavior in certain situations, but people vary in the number of situations in which they display this form of behavior. We have looked at previous research and found indications that certain attitudes, characteristics, and experiences are associated with displaying aggression in many situations, and we have devised a group of measures to assess these factors all at once, to see if in fact they can identify those people who according to our measures are more aggressive. Our measures of aggression are the self-report form you filled out, which measures how aggressive you say you are, and hospital charts and records which will tell us something about how aggressive others see you as being. All of the forms we collect will be scored by one person and the scores will be added in with those from 99 other patients. No one but this investigator will know what your personal scores were and he is interested only in the grouped scores from a number of people, and not in individual scores at all. All of the information you have provided will be kept confidential and will never be used against you in any way.

If you have any further questions please ask the person who is reading this statement to you, and he or she will try to answer them. Thank you for your help and cooperation.

APPENDIX G

Informed Consent Sheet

You are being asked to assist in a research project currently being conducted at this facility. All male patients who are admitted during the study period are being asked to participate, until we have data from 100 patients. The general purpose of the study is to compare information from some structured forms and tasks, to behavior. The complete facts regarding this study will be explained to you at the end of this session whether you choose to participate or not. If you agree to assist in this, you will be asked to answer some questions regarding background, attitudes and behavior, and to complete two short paper-and-pencil tasks. The total time for this should take no more than one hour, and this is all we are asking of you. Hospital records will be reviewed to supplement data collected from patients. The information you provide will not become part of your hospital records, will be kept confidential, and will be used only for purposes of this study. The information you provide will be added in with information from other patients since the purpose of the study is to compare information about groups of people and not about individuals. You are being asked to do this strictly on a voluntary basis and you may refuse to participate if you so choose. There are no rewards for participation nor penalties for refusal.

If, after having the above facts read to you, you agree to assist, please sign this sheet at the bottom, and also sign the V.A. form

APPENDIX G (CONTINUED)

10-1086, which is also an agreement to participate, and is required by V.A. regulations.

Date: _____

Signed: _____

