1982

A Comparison of Multi-Dimensional Measures of Aggression

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A COMPARISON OF MULTI-DIMENSIONAL

MEASURES OF AGGRESSION

BY

JOSEPH MICHAEL GOVIA

A THESIS SUBMITTED IN PARTIAL FULFILLMENT

OF THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ARTS

IN

PSYCHOLOGY

UNIVERSITY OF RHODE ISLAND

1982

ABSTRACT

Aggression is a widely researched area of psychology. The abundance and variety of empirical investigations suggest that aggression is a generic term for a heterogeneous array of behaviors (Edmunds and Kendrick, 1980; Rosenzweig, 1977; 1978). Not surprisingly, little consensus exists on how to define aggression. Several ways have been developed to operationalize the definition of aggression. Among the more widely used paper-and-pencil measures are the Buss-Durkee Hostility Inventory (Buss and Durkee, 1957) and the Rosenzweig Picture-Frustration Study (Rosenzweig, 1944). A significant reason for the widespread use of these instruments is the multi-dimensional and multi-construct definitions of aggression they employ. Apart from this similarity, these two instruments differ in both theoretical basis and method of measurement.

The present study was designed to assess the relationship between the Buss-Durkee Hostility Inventory and the Rosenzweig Picture-Frustration Study and to evaluate interpersonal aspects of aggression. The particular interpersonal measure incorporated in this study is the FIRO-B Scales (Schutz, 1966). The FIRO-B Scales measure the interpersonal needs of inclusion, control, and affection, as they are either expressed to, or wanted from, others.

In addition, items from a multi-dimensional

assertiveness scale (Lorr and More, 1980) and items written on the basis of prior research by Cherico, Velicer, and Corriveau (Note 1) supplemented the Buss-Durkee Hostility Inventory item-pool. These items were administered to all subjects and principal component analyses were conducted on the two and seven-choice response formats.

Results indicated significant correlations between select dimensions of the alternate forms of measuring aggression. The construct of interpersonal behavior revealed limited information. Principal component analyses supported previous findings from Cherico et al. (Note 1) and additional dimensions of aggression were uncovered. Implications of these data are discussed.

ACKNOWLEDGEMENTS

While contemplating, conducting, and completing this research, I received no shortage of guidance and wisdom. I have especially prospered from the patient, yet demanding, direction of my major professor, Dr. Wayne F. Velicer, and other committee members: Drs. Stewart Cohen, Lawrence C. Grebstein, and John F. Stevenson. Along with my thesis defense chairperson, Dr. Mary Ellen Reilly, their comments and suggestions were both incisive and encouraging.

I am also indebted to several individuals who provided support in their time, encouragement, and understanding, while this project was underway. Beverly Boudreau, Nancy Carlson, Judith Lubiner, and Kevin Tobin, thank you. I particularly want to express my appreciation to Judith and Kevin for their willingness to score protocols.

Apart from those here at school, there are others who also aided me in this accomplishment. To my family, especially my mother, I want to say "thank you." Then, there is a very special person, a high school teacher - Mrs. Miriam Speight, who long ago instilled in me a vision of the future. Finally, I wish to extend hearty words of appreciation to my dear friends, Jeff and Gregg Hansen. Jeff and Gregg, your friendship and support are both encouraging and a blessing.

DEDICATION

This thesis is dedicated to the memory of a special friend, Ken Johnson. He is one of the few individuals I have known who seldom aggressed against others.

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Introduction

Aggression is a widely employed psychological construct with multiple meanings. Several books have been written on the subject, each representing a particular perspective (e.g., Bandura, 1973; Berkowitz, 1962; Dollard, Doob, Miller, Mowrer, and Sears, 1939; Lorenz, 1966; Rosenzweig, 1978). The most casual reader can scarcely ignore the lack of consensus there is on the definition of aggression among researchers and theoreticians.

Aggression may be more appropriately understood as a lay term than as a precise, scientific one. When the average individual speaks of another's display of aggression, he/she generally refers to some negative experience, usually physical or verbal, encountered in the process of interacting with someone. Unlike the scientist/researcher who endeavors to discern the influence of such components as intent, context of occurrence, and the like, lay individuals do not, in general, make such careful distinctions.

Innumerable complexities surface as one considers the definition and operationalization of aggression. This dilemma renders research contradictory and confusing as it becomes apparent researchers and lay individuals do not employ a similar taxonomy. An even more problematic situation arises when researchers do not agree among themselves on the specific terms or concepts associated with

research on aggression. Findings are likely to become inconsistent and difficult to assimilate.

Aggression was once designated a by-product of thwarted libidinal impulses. Shortly thereafter, aggression was thought to be generated by an internal driving mechanism - thanatos (Freud, 1959). Other definitions have focused on the role of frustration (Dollard et al., 1939; McDougall, 1926; Rosenzweig, 1978); instincts (Ardrey, 1966; Lorenz, 1966), child-rearing patterns (Sears, Maccoby, and Levin, 1957), and the role of social models (Bandura, 1971; 1973).

Considerable variation also exists in the operationalization of this construct. Aggression was studied in relation to the Rorschach Inkblot Cards, responses to the Thematic Apperception Test, and a number of objective techniques. Additionally, there is a mechanical device, the Buss Aggression Machine (BAM, Buss, 1961), which has been employed in evaluating the construct of aggression.

Researchers have differentiated between the diverse manifestations of aggression (e.g., physical versus verbal displays). Two different results of these approaches are two multi-dimensional paper-and-pencil instruments, each representative of a distinct methodological approach to personality test construction: (1) the Buss-Durkee Hostility Inventory, and (2) the Rosenzweig Picture-Frustration Study.

Both the Buss-Durkee Hostility Inventory and the Rosenzweig Picture-Frustration Study are among the most widely used measures of studying aggression. As a result,

the present study will focus on these two instruments. Additionally, these multi-dimensional measures of aggression will also be investigated with respect to the construct of interpersonal behavior, as measured by the FIRO-B Scales. The FIRO-B Scales were selected because prior research suggested they were instrumental in examining the interpersonal behavior in various contexts (e.g., behavior distinguishing between traditional versus non-traditional family models). The next section will review these instruments.

The Buss-Durkee Hostility Inventory

In Buss's view, aggression characterizes a broad array of behaviors which "... vary in topography, energy expenditure, and consequences" (Buss, 1961, p. 1). Common to all behavior that is identified as aggressive are two distinct features: (1) the delivery of noxious stimuli and (2) an interpersonal context. Buss eschewed notions of "intent" and emphasized the study of the reinforcers associated with aggressive behavior.

While evaluating the nature of sundry reinforcers of aggression, Buss differentiated between instrumental and expressive aggression. Instrumental aggression was observed to be primarily concerned with behavior that was undertaken to obtain some form of reward or goal, where the impact on another individual received little consideration. Expressive aggression, on the other hand, involved those behaviors that

led to the delivery of noxious stimuli to others. This latter formulation became the basis for development of the Buss-Durkee Hostility Inventory.

The Buss-Durkee Hostility Inventory (BD, Buss and Durkee, 1957; Buss, 1961) is an objective, 66-item, true-false inventory. It was originally constructed on the basis of the many forms and means of expressing aggression (Buss, Durkee, and Baer, 1956; Buss and Durkee, 1957). It will be contended here that despite widespread use of the BD as a measure of aggression, careful examination of the psychometric properties of this instrument reveal serious shortcomings.

In developing the BD, Buss and his colleagues enumerated three primary dimensions of construing aggression. They viewed aggression as physical (i.e., hitting someone with a fist or weapon) or verbal (i.e., using intimidating speech), on the basis of directness (i.e., actual assault) or indirectness (i.e., spreading false rumors or indirectly attacking someone through damaging his/her property). Finally, Buss and associates characterized aggression according to activity (i.e., the actual occurrence of assault) or passivity (i.e., non-violent demonstrations opposing the proliferation of nuclear power).

Buss (1961) also distinguished aggression from hostility. The primary reason: hostility is more appropriately understood in the context of an enduring attitude (i.e., resentment or suspicion) rather than actual

behavior. Buss suggested hostility and aggression are not dependent on one another, though they may arise contiguously. He stated that "... the hostile person is not necessarily aggressive and the aggressive person is not necessarily hostile (Buss, 1961, p. 4). The origin of hostility in Buss's view is less conspicuous because it is unlike the acquisition of aggressive behaviors. Hostility is less subject to the laws of reinforcement, as in the case of overt aggression. Buss further indicated that it was perhaps more useful to construe hostility as a conditioned anger response.

The BD underwent two revisions. The initial instrument consisted of 105 items, with 85 male and 74 female college students comprising the normative group. Items were written and selected on the basis of several criteria: low social desirability, the frequency of response endorsement, and statistical considerations. An analysis was performed on the first administration in which the biserial correlation coefficient was calculated. Inclusion of items was predicated on a .40 correlation or greater.

The second version of the BD consisted of 94 items, again with a sample of 62 male and 58 female. Final analyses yielded 75 items, 66 associated with aggression and hostility and 9 for guilt. The hostility scales are comprised of five aggressive-type response scales and two additional ones associated with hostile attitudes. The BD scales are the following: (a) assault - physical violence, (b) indirect hostility - gossip or temper tantrums, (c) negativism -

obdurance or recalcitrance, (d) resentment - envy or bitterness, (e) suspicion- distrust or paranoia, and (f) verbal hostility - threats and abusive language. The scale measuring guilt is seldom employed and will not be discussed further.

Items for each scale were generated by referring to specific subclasses of hostility or aggression (e.g., Resentment or Verbal Aggression). They took into consideration that the number of situations in which aggressive behavior occurred was limited. Defensiveness was minimized by employing common idioms and providing situations where aggression seemed to be a reasonable response. Finally, items were scaled for social desirability in the manner used by Edwards (1953).

A comparison of the individual BD scales yielded significant results. Inter-scale correlations demonstrated generally low values, with only two values greater than .50 in the male sample (Buss, 1961). Buss suggested the low inter-scale correlations indicated that the scales were relatively independent of one another.

Thurstone's centroid method was also employed in a factor analysis involving the eight scales (Bendig, 1961) and two factors resulted from a rotation to simple structure. The first one characterized an emotional or attitudinal component of hostility; both men and women loaded similarly on the Resentment and Suspicion scales (r 's of approximately .59, .66 and .57, .54, respectively). The second factor, a

"motor component," loaded high on these scales for each sex: Assault, Indirect Hostility, Irritability, and Verbal Hostility (r's of .54, .40, .57, .63, and .61, .48, .47, .49, respectively).

Test/retest reliability for the BD was based on a five-week interval. The range of correlation coefficients for the subscales was .46 - .78, while the correlation for the total score was approximately .82. The moderate scale values were attributed to the limited number of items and the stringent criteria for item selection. Buss suggested that this dilemma could be remedied with more items and a lower cut-off point for item retention.

Norms have been reported for the BD (Buss, 1961) based on samples of psychiatric patients and college students. Four different studies representing different regions of the United States observed that scores on the inventory fluctuated very little from region-to-region. Where individuals were free to respond anonymously, they scored higher than individuals who identified themselves. College students and hospital patients differed in their responses, with the latter group scoring higher on resentment and suspicion and low on verbal hostility (Buss, 1961, p. 178).

Considerable research has been generated on the validity of the BD. However, some difficulty is observed when the criterion is assaultiveness (Edmunds and Kendrick, 1980, p. 180). In general, validity studies have been concerned with behavioral measures, personality trait

ratings, sex differences, and somatic correlates of aggression. Some of the behavioral measures employed have been primarily concerned with the delivery of shock.

Leibowitz (1968) compared self-report instruments (i.e., the BD) and behavioral measures of aggression (i.e., the BAM). He observed that these approaches were unrelated and indicated it was unlikely that responses on a self-report measure, a role-playing sequence, and the BAM represented a continuum of behavioral directedness. Buss, Fisher, and Simmon (1962) evaluated scores on the BD in relation to ratings made by psychologists and psychiatrists, as well as those made by relatives of psychiatric patients. The results suggested there was little consistency among the ratings of personality and aggressiveness and hostility when performed by the hospital staff and relatives.

Knott (1970) noted that total scores on the BD could differentiate among high-hostile and low-hostile subjects on the number and intensity of shocks they administered to confederates. However, in a similar procedure, Lippetz and Ossorio (1967) observed that their results were insignificant. Edmunds and Kendrick (1980, p. 59) indicated the disparity existed because the former study applied "painful" shock while the latter did not.

Still other investigations were concerned with scores on other paper-and-pencil inventories, such as a depression measure (Becker and Lesiak, 1977), cultural variations in the expression of aggression (Haas, 1966), dogmatism (Heyman,

1977), and the need for approval (Young, 1976). Miller, Soilka, and Pratt (1960) were unable to distinguish between violent and non-violent paranoid schizophrenics. However, Renson, Adams, and Tinklenberg (1978) did so with chronic alcohol abusers.

Additional research on the construct validity of the BD appears to be much less problematic. Ford and Sempert (1962) observed that the BD was highly correlated with the Siegel Manifest Hostility Scale (Siegel, 1956). Geen and George (1969) also observed that the number of aggressive associations was significantly related to scores on the BD. Simpson and Craig (1967) employed neutral words and homonyms to discern the relationship between scores on the BD and the number of aggressive associations to homonyms. High numbers of aggressive associations were more frequent in aggressive individuals than non-aggressive ones.

In several studies conducted on the BD, investigators have also administered the Marlowe-Crowne Social Desirability Scale (MCSDS, Crowne and Marlowe, 1960). Geen and George (1969) administered the MCSDS along with the BD to determine which participants in their study inhibited aggressive associations to aggressive cues. These authors detected a significant negative correlation ($r = -.53$, $p < .01$) between the total score on the BD scales and the MCSDS. Heyman (1977) also employed the MCSDS, and his results also reveal a significant negative correlation ($-.44$). Suggested in these findings was the notion that the need for approval, as

characterized by a tendency to provide socially desirable responses, was highly negatively correlated with scores on aggressiveness.

Leibowitz (1968) noted the MCSDS was minimally correlated with the BAM ($-.10$), while the BD scales yielded much higher significant negative correlations (from $-.47$ to $-.68$). Apparently social desirability was less paramount with respect to inflicting pain or injury on someone, as operationalized by scores on the BAM, than was one's total score on the BD. Leibowitz further commented on the disparity between the social desirability value he obtained and the one reported by Buss ($r = -.27$); Buss, 1957) and suggested the discrepancy may be due to either measurement techniques or the manner in which social desirability was conceptualized. Young (1976) employed a MANOVA procedure to detect if scores on the MCSDS predicted scores on the BD. The results suggested that high aggressors were distinguishable from low aggressors.

Sex differences on BD scores appear to be well established (Buss and Durkee, 1957; Buss, 1961; and Sarason, 1961). Males tend to score higher on dimensions of overt aggressiveness or hostility.

Finally, though the construct of aggression is an important one, the BD does not appear to be a promising measure of the construct. The data summarized above suggest that the BD, in its present format, may be of limited usefulness. Perhaps improved psychometric properties can

change this.

The Rosenzweig Picture-Frustration Study

Rosenzweig's perspective on aggression differs substantially from Buss and others (e.g., Dollard et al., 1939). He postulated that aggression was not necessarily related to hostility and that frustration was not always an antecedent of aggression, since some forms of aggression or hostility occur irrespective of the presence of frustration. In his view, frustration simply defined a "problem situation." Rosenzweig further indicated that a more comprehensive perspective on aggression conceives of such behavior as assertive action. Hence, behavior may be assertive in either a constructive or a destructive manner. As will be evident in the foregoing, the differentiation between constructive and destructive forms of behavior is a core aspect of the Rosenzweig Picture-Frustration Study.

The Rosenzweig Picture-Frustration Study (PF Study, Rosenzweig, 1945) differs methodologically from the BD. It is a semi-projective technique (Frank, 1939) conceptually linked to both the "Word Association Test... and the Thematic Apperception Test" (Rosenzweig, 1978). Megargee and Menzies (1971, p. 149) characterized the PF Study as one of the many completion strategies, another being sentence completion forms.

In order to fully appreciate the development of the PF Study, one must review an earlier treatise of Rosenzweig's

(1944) concerned with the role of frustration in the psychological-biological defense of organisms. Rosenzweig reasoned that there were three levels of defense: cellular or immunological; autonomic or emergency; and, cortical or ego-defensive. Each level of defense was believed related to the frustration encountered by organisms, with some forms of frustration more relevant to physiological than psycho-social needs.

Rosenzweig further differentiated between two predominant types of frustration - primary and secondary. Primary frustration was characterized by the presence of a particular need-state of an organism wherein tension and subjective discomfort were present. Secondary frustration was concerned with the obstacles or impediments which precluded an organism from satiating a primary need.

Once frustrations were encountered, whether primary or secondary, Rosenzweig indicated individuals experienced them as either active or passive. Active obstacles were thought to be pernicious to the well-being of the organism; the safety of the organism was compromised. Passive obstructions delimited one's opportunity to satisfy or fulfill a need.

Rosenzweig also suggested that frustration was experienced either internally or externally. For example, an external frustration might be getting caught in rush-hour traffic, while an internal one might be the need for sustenance. These four postulates - activity versus passivity and internal versus external - preceded the

conceptualization of both directions of and types of reactions to aggression an individual might display and became a foundation upon which the PF Study was constructed. This perspective differs from the one espoused by Buss, who conceptualized aggression on the basis of noxious stimuli and sources of reinforcement.

The PF Study is an instrument which requires that respondents be administered a booklet containing 24 cartoon-like drawings. Each protocol portrays a diversity of every day interpersonal situations where one of the characters is either the source of frustration or a vehicle through which a frustrating episode is conveyed. They are designed uniformly with a prompting statement always on the left side of the cartoon. The caption on the right side is blank.

Subjects give their immediate response to the information contained in the stem by writing in the blank space. Facial features are omitted to facilitate the projective aspect of the cartoons. Each frustrating event was arranged so that "...[I]n some cases the situation is ego-blocking; some obstruction, personal or impersonal, impedes, disappoints, deprives, or otherwise directly thwarts the pictured person. In the other cases, super-ego blocking is portrayed: the individual is accused, insulted, or otherwise incriminated by another person" (Rosenzweig, 1978, p. 8).

According to Rosenzweig, the PF Study was based on the following constructs of aggression: (a) Direction of

aggression - There are three distinct ways in which aggression is manifested - Extrapunitively, Impunitively, and Intropunitively, and (b) Types of aggression - Obstacle Dominance, Need-Persistence, and Ego-Defense (also known as Etho-Defense, in order to be applicable to generalization across diverse animal species) are included within this category. These concepts are defined in the following:

Direction of aggression: (a) Extrapunitive aggression refers to the propensity of individuals to overtly express and display their reactions to frustrations as existing outside of themselves. Responsibility or blame is attributed to an external source; (b) Intropunitive expressions are quite the opposite. Individuals internalize blame or feel remorse for their misfortunes; (c) Impunitive aggression is concerned with the tendency in individuals to disregard blame or responsibility in a frustrating situation.

Types of aggression: (a) Obstacle-Dominance refers to the degree to which frustrating events are perceived as barriers. Attention is given to the manner in which one copes with frustration; (b) Need-Persistence is concerned with constructive solutions to experienced frustrations; (c) Ego-Defense involves the extent to which one's integrity is jeopardized in a frustrating situation.

These six scoring categories of direction and type of aggression result in nine distinct scoring factors. There are also two variants used in scoring, one that is concerned with the presence or absence of denial. The other is focused on whether an individual rationalizes his/her reactions to frustration. Appendix 1 lists the eleven

scoring factors with their respective definitions. Rosenzweig cautioned against using these categories and factors to predict personality, since they were more appropriately construed as descriptors of the ways people behave in situations.

The PF Study, unlike other projective techniques, was constructed in a manner which permits statistical analysis. An individual's scores are contrasted with a known reference group (Rosenzweig, 1950a), and an idiodynamic profile is evaluated. This affords researchers the opportunity to examine both the idiodynamic and nomothetic aspects of their subjects.

Individual patterns of scores are examined on the basis of the 6 scoring categories outlined above. They are then evaluated for their degree of conformity (GCR) to standardized norms. Once this is completed, the particular type and direction of aggression present is assessed.

There are altogether 16 scoring modes which comprise the GCR (Rosenzweig, 1967). An individual's GCR score indicates the degree of adjustment to the general population. This score further implicates one's overall level of frustration tolerance, with higher scores suggesting greater tolerance.

Reliability of the PF study has been examined in two distinct ways. One method focused primarily on the inter-rater agreement, or congruence among raters with respect to scoring the protocols. Rosenzweig (1978) reported approximately 85 percent inter-rater reliability. This value

was based on tallying all responses to the questions on the PF Study and obtaining the percentage of agreement between individual raters.

Another method used in calculating the reliability of the PF Study was based on the individual scoring categories. This differs from rater-reliability because of its essential concern with internal consistency. Emphasis is placed upon determining the degree to which the PF Study questions coalesced to form independent categories (e.g., Extrapunitive or Impunitive). In this regard, Taylor and Taylor (1951) and Taylor (1952) employed both a Kuder-Richardson and an ANOVA procedure to determine the reliability of the scoring categories. Their data analysis revealed low reliability for the 6 general scoring categories, ranging from .10 to .58.

Finally, further criticism of the PF Study was expressed by Lake, Miles, and Earle (1973) and Sutcliffe (1955). Lake et al. suggested the use of a split-half technique was permissible to use in evaluating the instrument despite its semi-projective nature. They indicated Rosenzweig's disregard for this form of reliability was inexcusable.

Sutcliffe's research involved scrutinizing the extent to which social desirability affected scores on the PF Study. His data indicated there was little item homogeneity with regard to the 6 scoring categories. Consequently, Sutcliffe argued that over two-thirds of the items served no discriminative function. Moreover, little evidence was found to buttress the hypothetical constructs of

extrapunitive and need-persistence.

In rebuttal, Rosenzweig argued that the nature of projective methodology was inherently opposed to item homogeneity. He stated "... heterogeneity of variables is fostered by this device to tap unique interrelationships of personality" (Rosenzweig, 1978, p. 22). Moreover, Rosenzweig argued the inclusion of the GCR "... allows the P-F [Study] to show reliability when measured by methods which demand low item variance..." (Rosenzweig, 1978, p. 22). Rosenzweig also argued that such procedures were inappropriate to projective methods, since it could not be assumed that the two halves were equivalent. More specifically, he indicated that the mean-difference in scores was not the most appropriate method of demonstrating the relation between the two test halves.

Nevertheless, Rosenzweig addressed the issue of split-half and test/retest reliability (Rosenzweig, 1978; Rosenzweig, Ludwig, and Adelman, 1975). However, he referred to previous research summarized at his laboratory (Mirmow, 1952) in order to do so. Rosenzweig observed that the correlation coefficients associated with test/retest reliability were greater than those for split-half techniques. If one must employ either of these reliability techniques, in view of the contra-indications stated above, Rosenzweig argued in favor of the test/retest procedure (Rosenzweig, 1978, p. 27).

Criterion-related validity has been observed in the correlation of various scoring categories and the GCR with

other personality measurement instruments (e.g., the Bernreuter Personality Inventory, the Bell Adjustment Inventory, and the MMPI (Rosenzweig, 1978)). For example, the Imaggression scoring factor was negatively correlated with Depression and Hysteria, as measured by the MMPI. Although the preponderance of research employed the Children's Form, further inquiry into the validity of the Adult Form has been undertaken. One such example: the observation boxers appear to score higher on Extraggression than non-boxers (Mastruzzo, 1964 in Rosenzweig, 1978).

The PF Study also detected differences between successful versus unsuccessful cadet trainees (Boisbourdin, Michel, and Peltier, 1956 in Rosenzweig, 1978). Moreover, length of employment has been associated with scores on Imaggression (DuBois and Watson, 1950).

Clinically, the PF Study was related to incidence of suicide attempts. Serious suicide attemptors were not as elevated on outward aggression as were individuals who threatened to injure themselves (Farebow, 1950). Suicide attemptors were, as a group, less outwardly aggressive and more inwardly so (Bulato, 1961).

Overall, the PF Study appears to be capable of distinguishing between different forms of aggression, or as stated by Rosenzweig - assertive behavior which is either constructive or destructive. Although it is both conceptually and methodologically distinct from the BD, there is ample evidence of its usefulness as a measurement of

behavior characterized as aggressive. As will be outlined in the context of comparisons and hypotheses, the degree of relation of this instrument with the BD should prove significant with respect to the construct of aggression.

FIRO-B Scales

The FIRO-B Scales are based on Schutz's theory of interpersonal needs (Schutz, 1966). These scales measure (a) the characteristic behavior with which a person responds in interpersonal situations and (b) attempts to predict how individuals are likely to interact with others. Schutz suggested all interpersonal behavior was governed by three specific needs - inclusion, control, and affection. He believed that the ability to predict how individuals will interact with others was based on both examining how an individual behaves toward others and how he/she wants them to respond to him/her.

Schutz developed a 54-item, 6 scale inventory, of three postulated needs and the two ways in which they are manifested. A Guttman scaling procedure was employed to assess scale reliabilities and reproducibility coefficients were in the high .90's, while the test/retest values for the scales over a one-month period ranged from .71 to .82. Prior research has demonstrated the usefulness of the FIRO-B scales in selecting participants for group psychotherapy (Yalom, 1975), identifying differences between traditional versus non-traditional family models (Schutz, 1978), and

examining the extent to which criminology personnel differed from other groups of individuals (Peoples, 1975).

Both Buss and Rosenzweig concern themselves with the interpersonal influences on aggressive behavior. Their individual attention to "interpersonal contexts" and "problem situations," respectively, clearly reflects this. Consequently, it was believed that including the FIRO-B Scales might shed some understanding on behaviors which are not related to aggression.

Revisions: BD and PF Study

Both the BD and the PF Study have been available and in use for quite some time. While the norms have been revised on the PF Study (Rosenzweig, 1950b; 1967), only recently has consideration been given to a revision of the BD. On the basis of prior research by Velicer and his associates (Oswald and Velicer, 1980; Velicer, DiClemente, and Corriveau, Note 2; Velicer and Stevenson, 1978) which focused on the influence of expanded item-response formats, Cherico, Velicer, and Corriveau (Note 1) administered the original, true-false format and a Likert-type version of the BD to two groups of subjects. Their data suggest several important considerations for a revision of the BD.

Cherico et al. (Note 1) observed that an expanded item-response format resulted in a change in the factorial structure of the BD. Also, the percentage of variance accounted for increased following a principal component

analysis. They suggested the following: First, the increased response format may have permitted a finer distinction of the components of aggression. Second, such an increase in format may have altered the meaning of items to subjects. Third and final, the different components obtained may be a function of the susceptibility of individual items to social desirability. With the artificial dichotomy imposed by the two-choice response format, individuals may be compelled to respond to the most desirable option. That is, restricting the range of possible responses available to individuals may unnecessarily "pull" for a socially desirable one.

Comparisons

One purpose of the present study will be to examine the relationship between the BD and the PF Study. A review of the literature failed to demonstrate that this has been undertaken. One reason may be the lack of relationship thought to exist between these two general approaches to psychological test construction. To the extent significant correlations between the two measures are obtained, one can argue in favor of the convergent validity of aggression.

A second purpose of this study will be to evaluate issues raised by Cherico et al. This will be accomplished by replicating their study. However, a within-subjects design will be used in place of the between-subjects one they employed. It is anticipated that doing so will make it possible to conduct a more thorough investigation of the

effects of increasing item-response format.

On the basis of the different components obtained by Cherico et al., an additional 20 items were constructed for this study. Each of the following components was supplemented with 4 of these items: General Level of Hostility, Physical Violence, Repression of Hostility, Negativism, and Hostile Reactivity. For their sixth component, Assertiveness, items from the multi-dimensional scale of assertiveness (Lorr and More, 1980) were employed. Dimensions of this scale delineate assertive behavior in the following: Directiveness, Social Assertiveness, Defense of Rights and Interests, and Independence. The notion that aggression and assertiveness are related has received recent consideration (Gaebeline, 1980; Rosenzweig, 1977; 1978).

An additional 19 items were also written. These focused on withdrawal as a dimension of aggression. Rather than permit themselves to aggress against others when either frustrated or provoked, some individuals may be apt to walk away. Velicer (Note 3) suggested that because of the behavioral directedness of leaving a situation where aggression is likely to occur, it might be reasonable to view such action as another way people deal with aggression.

A third purpose of this study will be to examine the relationship of social desirability to both measures of aggression. Previous researchers used the MCSDS in studying social desirability; the present investigation will employ the Desirability Scale from the Personality Research Form

(Jackson, 1967).

The Jackson Desirability Scale differs substantially from the MCSDS. This particular scale treats social desirability as a response style (Jackson, 1974) component which contributes to the method variance associated with personality test construction. The MCSDS postulates that social desirability essentially elicits the degree to which individuals express a need for social approval. It is characterized by Jackson (1974) as more like a measure of "defensiveness" than one of social desirability.

Conceptually, these are two distinct ways of talking about social desirability. For Jackson, the concern is predicated on a belief that some individuals will characteristically respond to personality test items in a desirable way, irrespective of the actual content, while others respond primarily to the item content. This point of view, though not accepted by some (e.g., Block, 1965), was based on previous research by Jackson (Jackson and Messick, 1958). Conversely, the MCSDS is not content free; that is, it is not based on a pure measure of social desirability. Test taking defensiveness can be viewed as an aspect of denial which I consider more a reflection of personality style.

The final aspect of this study will involve an investigation of the relationship of the FIRO-B scales to both the BD and the PF Study. Both Buss and Rosenzweig concern themselves with the interpersonal influences on aggressive behavior. Their respective individual attention

to "interpersonal contexts" and "problem situations" clearly reflects this. Thus, it was believed by this investigator that the inclusion of the FIRO-B Scales might prove enlightening with respect to some of the interpersonal variables that underly the construct of aggression.

Rationale and Hypotheses: The present study does not make any assumptions regarding the origin of aggression. Several competing theories exist among which individuals are aligned on the basis of ideological and philosophical proclivities. Instead, the essential theme guiding this research is the assessment of aggression. Toward this end, the comparisons were formulated in anticipation of providing a more comprehensive overview of the best way to research this construct.

If one is to assess the degree of convergence among measures of a given construct, one must examine the precise ways in which patterns of correlations co-vary among selected instruments. Moreover, one must further specify relationships which are not likely to co-exist with the construct of interest. Comparison one directly examines these two issues.

In the first comparison it is hypothesized the Assault, Irritability, Resentment and Verbal Aggression dimensions of the BD will be positively correlated with the general Extraggression scoring category and the Extrapunitive sub-dimension of the PF Study. It is further hypothesized that

there will be a negative relationship between these BD scales and the Rosenzweig dimensions of Imaggression and Intraggression, as well as their variants (i.e., Impunitive, Intropunitive).

The prediction of the positive relationship between Extraggression and Extrapunitiveness with the above-named BD scales is predicated on the belief that individuals who direct their aggression outward are more likely to be assaultive, verbally abusive, and irritable. Correspondingly, it is believed that individuals who internalize feelings of anger or disregard feelings of frustration are less apt to be assaultive and verbally hostile. However, it is possible for internalizers to be irritable, since they are likely to be overburdened with numerous frustrations.

As one attends to the particular type of aggression manifested, the present investigator anticipates a positive relationship between Assault, Irritability, Resentment, and Verbal Aggression with Ego-Defense and Obstacle-Dominance. Responding to frustration in a defensive posture, or perhaps with an incessant emphasis on a frustrating object, seems capable of yielding an outward display of aggression. However, it is also believed that individuals prone to seeking constructive alternatives or solutions to frustration will not be apt to assault, verbally abuse, or be irritable with another individual. Consequently, an inverse relationship between Need-Persistence and these BD dimensions

is expected.

The Cherico et al. research was a cogent preliminary step in a revision of the BD. Its assumptions regarding the influence of response format on the factorial structure proved significant with respect to the number of factors extracted. Their data suggested aggression was comprised of more dimensions than were originally proposed by Buss.

In replicating the Cherico et al. study, the present investigator anticipates retaining a similar array of components. To facilitate this end, items were written to supplement each of the dimensions identified by Cherico et al. It was believed the inclusion of these additional items would directly influence the nature of the retained components. Moreover, the inclusion of the multi-dimensional assertiveness scale is to evaluate whether this component will surface in the present study, as it had in Cherico et al.'s data.

In writing items for the proposed dimension of Withdrawal, the present investigator anticipated these items would comprise a relatively distinct component. Item content was sufficiently distinct from either overt or covert forms of aggression to make this a tenable hypothesis.

In selecting the Desirability Scale from the Jackson PRF, the present investigator anticipates there will be a non-significant correlation between this instrument and the BD. The reason for this is quite simple: the BD items were written to include instances whereby justification for

aggression was present. Such a strategem suggested to this investigator there would be little impetus to respond in a stylistically desirable fashion (Jackson, 1974). Again, it must be emphasized that the Jackson Desirability Scale is conceptually dissimilar to the MCSDS. Its essential aim is to evaluate the extent to which individuals respond to the item content. The MCSDS, on the other hand, assumes that responses to the content of individual items will indeed occur and does not treat social desirability as a source of method variance.

In the final source of comparison, examination of the relationship between the FIRO-B Scales and the BD should provide enlightenment regarding the construct of aggression. The FIRO-B Scales measure specific interpersonal behaviors which are purported to reflect the way individuals interact with others. It is not anticipated that any of the BD scales - Assault, Indirect Aggression, Irritability, Negativism, Resentment, Suspicion, and Verbal Aggression - will be positively correlated with the FIRO-B Scales - Expressed Inclusion, Control, and Affection and Wanted Inclusion, Control, and Affection. Instead, inverse relationships are anticipated.

It is highly unlikely that anyone who endeavors to express control over his/her interpersonal behavior is apt to respond with aggression toward others. One would expect greater concern for personal restraint or aplomb. It is also

improbable that one's expressed affection for others, or else one's desires to be included in sundry activities, would be evidenced in a positive relationship with the BD scales. In both cases, any aggressive actions would be antithetical to satisfying these interpersonal needs. Similarly, one can further argue that the need to receive affection, to be asked to participate in different activities, or to even be influenced by others (i.e., controlled) will be negatively correlated with the various BD scales.

Method

Subjects. An accidental sample (Kerlinger, 1973) of 265 subjects participated in this study. The sample was essentially white. Subjects were recruited for this study in two ways: announcements were made in both the lecture and recitation sections of a large introductory psychology course. Subjects were asked to commit themselves to two hours of testing time, one hour per sitting for two sessions. Those subjects completing both testing sessions received extra-credit for the course. Subjects were given the option of participating in other, non-related experiments where extra-credit was also available.

Of the 265 subjects who participated in the present study, those who failed to complete all forms were eliminated. This resulted in 253 scorable protocols. The ratio of female to male participation was approximately 3:1 (191 females, 62 males).

An institutional review board evaluated all relevant testing material and procedures prior to soliciting subjects and provided authorization to implement this investigation.

Procedure. Data were collected on two separate occasions approximately one week apart in a large lecture hall. During the first phase, the BD along with the Desirability Scale, supplemental items based on the preliminary findings of Cherico, which included items concerned with the various dimensions they obtained, and ones focused on withdrawal were administered. Subjects also received a multi-dimensional scale for assertiveness. All subjects were restricted to a binary response format.

During the second phase of testing subjects received essentially the same items, excluding the Desirability Scale, but this time with a seven-point, Likert-type format (e.g., from Never-to-Always). Subjects were also administered either the PF Study or the FIRO-B scales, choice being randomly determined.

Standard instructions preceded the administration of all instruments. Subjects were asked to review the directions while the experimenter read them aloud and all questions were answered. Examples were given when needed. After the second session subjects were de-briefed.

Raters were employed in the present investigation to score the PF Study. Three individuals participated in this endeavor: the present investigator and two third-year

graduate students in Psychology. Each of the two graduate students scored separate halves of the PF Study protocols. The principal investigator scored all of them.

Raters were trained by providing each of them with a copy of the PF Study scoring manual and a supplemental one which listed numerous scored examples of varied responses to this instrument that were compiled by Rosenzweig. The present investigator discussed the PF Study concepts with the raters and responses to a sample protocol were evaluated. Ratings provided by the principal investigator were used to form the basis of the comparison between the PF Study scoring categories and factors.

Results

Relation between BD binary format and PF Study

Pearson correlation coefficients were calculated between the six scoring categories of the BD and the nine scoring factors of the PF Study. Extrapunitiveness was correlated with Assault, Irritability, Resentment, and Verbal Aggression. Extrapunitiveness was also related to the Total Aggression score on the BD. Impeditiveness was inversely correlated with Assault. Impersistiveness was also inversely related to both Assault and Resentment (see Table 1). In this analysis and subsequent ones, an investigation was made of differences between females and males in their respective responses to the research protocols. The only significant

sex difference noted was in the relationship between the Desirability Scale and the PF Study, which will be discussed below.

Insert Table 1 about here

Correlations were also calculated between the BD and six scoring categories of the PF Study (see Table 1). Ego-Defense was related to Assault and Irritability. Need-Persistence was inversely correlated with Irritability and Resentment. Extraggression was positively related to Assault, Irritability, Resentment, and Verbal Aggression. Intraggression was inversely correlated with Assault, while Imaggression was also inversely related to Assault, Irritability, Resentment, and Verbal Aggression. Finally, the Total Aggression score was correlated with Ego-Defense and Extraggression and was inversely related to Need-Persistence and Imaggression.

Relation of BD Likert and PF Study

A Pearson procedure was conducted on the BD Likert format and the PF Study. Scoring of the Likert version followed the original item-scale allocation of the BD. Extrapunitiveness was correlated with Assault. In addition, Intrapunitiveness and Intropersitiveness were inversely related to Assault (see Table 2).

Insert Table 2 about here

Analysis of the BD and the six scoring categories of the PF Study yielded significant correlations. Assault was related to Ego-Defense and Extraggression. An inverse correlation between Assault and Need-Persistence, Intraggression, and Imaggression was also evident. Finally, Resentment was inversely correlated with Imaggression (see Table 2).

The Total Aggression score was also correlated with PF Study factors and categories. Both the Extrapunitive and Extraggressive dimensions were related to Total Aggression, while Imaggression was inversely correlated with this score.

Inter-scorer reliability and PF Study

Cohen's Kappa (K, Cohen, 1960) was calculated to measure agreement among the two judges. The median K-value was approximately .404, with a range of .621 to .066. Only one question fell below .223 in rater-agreement (see Table 3).

Insert Table 3 about here

Relation between Desirability scale and aggression measures

The correlation between the Desirability scale and both the sub-scales and Total Aggression scores on the two versions of the BD was assessed; no significant correlations

were obtained. However, the relationship between the PF Study and the Desirability scale yielded significant values. Desirability items were inversely correlated with both Extrapeditiveness and Extraggression, while Need-Persistence and Imaggresion were positively correlated with this scale (see Table 4).

Differences in the pattern of correlations between the sexes were also noted. The male sample only demonstrated a relationship with one PF Study category such that Intropeditiveness was positively correlated with the Desirability Scale. The female sample correlated with Extrapersistence, Need-Persistence, and Imaggression. Inverse relationships were present with Extrapeditiveness, Extrapunitiveness, Ego-Defense, and Extraggression.

Insert Table 4 about here

PCA of BD binary format and comparison to original scales

A principal component analysis of the 65X65 matrix of inter-item correlations (one BD item was inadvertently omitted), employing Velicer's (1976) Minimum Average Partial correlation method (MAP) to determine the number of components to retain, resulted in four components being extracted, accounting for 24.147 percent of the variance. Items loading .30 or greater were selected for inclusion and interpretation; the five highest items from each component

are found in Table 5. A cross-classification of the retained items with the original scales is found in Table 6.

Insert Tables 5 and 6 about here

In Table 5, the five highest loadings on the first component represent the following theoretical dimensions: Suspicion, Resentment, Negativism, and Verbal Aggression. Suspicion was most characteristic of this component. However, high loadings on Resentment suggested this component could be more accurately described as a combination of "Suspicion and Resentment." Additional items were concerned with a propensity for an excitable personal style.

The second component contained most of the items from the Verbal Aggression dimension of the BD. Items retained focused on the inability to defend oneself when irritated or angered. Remaining item-content suggested traces of bitterness. Consequently, this component was labelled "Verbal Aggression."

The third component contained loadings from the Indirect Aggression and Irritability scales of the BD. Items retained are mostly concerned with "Indirect Aggression" and with a degree of Irritability present. Remaining items focused on the tendency to be verbally aggressive.

The fourth and final component retained items from the Assault dimension. These items indicate tendencies toward

physical and behavioral displays of aggression. This component was designated "Assault."

PCA of BD Likert format and comparison to original scales

An identical principal component analysis was conducted on the 65X65 matrix of inter-item correlations of the Likert format. Again, scoring of the Likert format followed the item-scale allocation originally designated. Six components were retained which accounted for 38.205 percent of the variance. Table 7 illustrates the five highest loadings from each component with coefficients .30 or greater. Table 8 contains a cross-classification of items with the theoretical scales.

Insert Tables 7 and 8 about here

All of the retained components are related to the original BD scales. The first component is comprised of items from the Resentment and Suspicion scales; this dimension was named accordingly. Other items on this dimension indicated Indirect Aggression and Irritability are also elements of this component.

The second component was comprised of items primarily from the Assault dimension. Remaining items implicated a verbal aspect to this dimension. This component was designated "Assault." A specific feature of this component was person-directed violence.

The third component loaded high on Indirect and Verbal Aggression. Item-content focused on primarily responding to others with abusive speech or "acting-out" in a temper tantrum-like manner. Consequently, this component was labelled "Hostile Reactivity."

The fourth component contained items from several of the BD scales. Item-content focused on an array of responses to anger. This component was characterized as primarily one of "General Level of Hostility."

The fifth component contained items essentially concerned with the lack of positive interaction with others or displays of irritability. This component was labelled "Negative Interpersonal Relations," since such a designation best illustrates the nature of its content.

The sixth and final component is comprised of numerous inversely loaded items from the Verbal Aggression dimension. Item-content was concerned with the inability to verbally express one's anger or annoyance. Thus, it was labelled "Verbal Aggression."

Cross-classification of the item-scale breakdown between Cherico et al. and the present study BD binary format.

Table 9 illustrates the overlap of item-scale allocation between the Cherico et al. study and the present one. The first dimension of these respective investigations are concerned with Suspicion and Resentment. Item-content of the second dimension of Cherico et al. and the fourth one of the

present study is related to Assault. The third component of these studies focused on Indirect Aggression. There was little overlap with the second component of this investigation with any of Cherico's remaining ones. Finally, it was observed that many items from three components identified by Cherico - Negative Interpersonal Relations, Negativism, and Active Avoidance of Expression of Hostility - are contained in the first component of the present study.

Insert Table 9 about here

Cross-classification of item-scale breakdown between Cherico et al. and the present study BD Likert format.

Table 10 illustrates the item-scale allocation of these investigations. Item-content of the first component of each study is concerned with Suspicion and Resentment and a General Level of Hostility. Assault items are also present in the second component of both studies. Finally, Cherico's first component appears to have been divided into the first and fourth components of the present study.

Insert Table 10 about here

PCA of augmented BD binary format and comparison to original scales

A PCA of the augmented version of the 136X136 matrix of inter-item correlations of the BD with all supplemental items resulted in 9 components extracted which accounted for 31.145 percent of the variance. Items loading greater than .30 were selected for inclusion and interpretation. Five items from each component with their respective coefficients are presented in Table 11. Table 12 contains a cross-classification of these items with the original BD scales.

Insert Tables 11 and 12 about here

The first component was identified as Defense of Rights and Interests. Items were concerned with the inability to speak up in one's defense where an apposite display of anger or irritation is warranted. For example, an item loading high, "Even though I might be angered when short-changed, I don't say anything." The majority of these items were from the multi-dimensional assertiveness scale.

The second component contained items from several of the BD scales. Item content suggested an attitudinal dimension of General Hostility. The diversity of item content ranged from giving someone the cold shoulder to feelings of suspicion. As an example, "I sometimes have the feeling others are laughing at me."

The third component was overwhelmingly one of Withdrawal in response to aggression. Items focused on exiting a given situation to avoid displaying aggression (i.e., to conceal a temper tantrum or to control oneself). For example, "Rather than let someone see me mad, I try to walk away."

The fourth component contained items from the multi-dimensional assertiveness scale. Item content indicated a general component of Directiveness. For example, an inverse correlation was obtained for the following: "I follow my own ideas even when pressured by a group to change them."

The fifth component was characterized as a more specific form of assertiveness in which the item content suggested Social Assertiveness. Such issues as difficulty in meeting new people and making small talk best illustrated this component. For example, "I feel uncomfortable around people I don't know."

The sixth component suggested Person-Directed Violence was present. Item content focused on a readiness to self-defense, violence to protect one's rights, and also the defense of one's friends. Most items were from the original BD Assault scale. For example, "If somebody hits me first, I let him/her have it."

The seventh component was concerned with Negativism along with passive-aggressive features. Item content suggested a tendency toward possessing a chip on one's shoulder or passive-aggressiveness. For example, "When

people yell at me, I yell back."

The eighth component was characterized as Suspicion and Argumentativeness. Item content ranged from fearing others are gossiping about oneself to incessant arguing when in disagreement with others. For example, "I can't help getting into arguments when people disagree with me."

The ninth and final component was concerned with Object-Directed Violence. Item content indicated a tendency to destroy things and throw objects. For example, "If I get mad enough, I am likely to smash something."

PCA of augmented BD Likert format and comparison to original scales

A PCA of the augmented 135X135 matrix of inter-item correlations of the BD Likert version with all supplemental items produced 14 components which accounted for 48.106 percent of the variance. Scoring of the Likert version was consonant with the previously reported analyses. Items loading greater than .30 on the components were selected for inclusion and interpretation; only the first eleven components proved interpretable. Table 13 contains the five highest loaded items on each of the components. Table 14 is a cross-classification of these items with the original scales.

Insert Tables 13 and 14 about here

The first component was characterized as Suspicion and Resentment. Item content focused on the feeling others are laughing at oneself, suspicion about the motives of others, etc. For example, "There are a number of people who seem to dislike me very much." An underlying aspect of this dimension was noted to be resentment.

The second component focused on Withdrawal in response to aggression. This was specific to the impact others have on oneself as well as controlling one's impulse to aggress. For example, "When I feel like a powder keg ready to explode, I try to back out and go somewhere else."

The third component focused on Social Assertiveness. Item content was related to meeting new people and feeling comfortable at parties. For example, "I feel uncomfortable around people I don't know."

The fourth component was characterized as Hostile Reactivity (i.e., an embittered personality style). Item content suggested a diversity of attitudinal elements. For example, "When I am angry, I sometimes sulk."

The fifth component was overwhelmingly loaded with Person-Directed Violence. The type of violence observed is predicated on a defense of one's rights and an impatience with annoyance. For example, "People who continually pester you are asking for a punch in the nose."

The sixth component focused on Directiveness. Item content suggested an inability to assume responsibility. For example, "I would avoid a job which required me to supervise

other people."

The seventh component contained items associated with a confluence of Negativism and Passive-Aggression. Particular item content focused on reactions toward others. For example, "When people are bossy, I take my time just to show them."

The eighth component characterized Defense of Rights and Interests. Item content focused on the inability to speak in one's behalf when warranted in a particular situation. For example, "When someone repeatedly kicks the back of my chair in a theatre, I don't say anything."

The ninth component suggested a tendency toward Independence. Item content characterized a reluctance for "giving in" to avoid a quarrel. For example, "I defend my point of view even though someone in authority disagrees with me."

The tenth component was characterized as General Hostility. Item content centered primarily on irritability and impatience. For example, "I am not as patient as I should be."

Finally, the eleventh component was predominantly one of Verbal Aggression with a potential for Object-Directed Aggression. Item content indicated a tendency toward abusive speech. For example, "When I get mad, I say nasty things."

Relation between BD binary format and FIRO-B

Analysis of the relationship between the BD and the

FIRO-B scales was undertaken. Both Assault and Verbal Aggression were inversely correlated to Expressed Control. Expressed Affection was related to Suspicion, while Irritability was inversely correlated with Wanting Affection. Total Aggression score on the BD was unrelated to the scales (see Table 15).

Insert Table 15 about here

Relation between BD Likert and FIRO-B

In this analysis, Assault was correlated with Expressed Affection while inversely related to Expressed Control. Irritability was inversely correlated with Wanting Control. Suspicion was related to Expressed Affection. Finally, Verbal Aggression was inversely correlated with Expressed Control. In only one instance was the Total Aggression score related to the FIRO-B. Expressed Control was inversely correlated with Total Aggression (see also Table 15). Calculation of the Likert scores followed similar procedures outlined above.

Discussion

Several hypotheses regarding the assessment of aggression were articulated earlier in this thesis. A review of the major findings is now necessary. Toward this end, the major hypotheses will be considered. Attention will be given to highlighting both significant and unanticipated findings. Second, there will also be a review of the methodological implications of this investigation. Here the influence of the augmented response will be evaluated. Third, an overview of the limitations of the present study will also be presented. Fourth, suggestions for future research will be addressed. Finally, a summary of the major findings will be provided.

As stated above and elsewhere (e.g., Cronbach and Meehl, 1955), one of the methods employed to evaluate the merits of a given psychological test is the investigation of its convergent and discriminant validity. A major focus of this study was to examine the convergent validity between the BD and PF Study.

The Assault, Irritability, Resentment, and Verbal Aggression dimensions of the BD were positively correlated with Extraggression and Extrapunitiveness. It was further noted that scores on the Ego-Defense dimension of the PF Study were related to Assault and Irritability. In each of these PF Study scoring facets, the Total Aggression score of the BD was also significantly and positively correlated.

As one tries to explain these correlations, one observes

the convergency of specific BD and PF Study dimensions. The data indicated that individuals who reported a tendency of blaming or directing their hostility toward external sources (e.g., another person) also reported a proclivity toward assaultive behavior, outbursts of irritability, feelings of resentment, and verbally aggressing against others. This finding is in agreement with Rosenzweig's observation that individuals who manifest "destructive" forms of aggression are likely to be assaultive (Rosenzweig, 1978, p. 11). Moreover, such individuals are sometimes identified by their general display of defensiveness in response to frustration.

Although the research on the Adult Form of the PF Study is limited, the present findings are consonant with previous investigations. Studies by Mastruzzo (1964) and Riccio and Antonelli (1962), reported in Rosenzweig (1978), observed that Italian boxers displayed significantly greater amounts of Extraggression, Extrapunitiveness, and Ego-Defense. As a group they generally exhibited less Need-Persistence, Imaggression, and Obstacle-Dominance.

Several other correlations between the BD and PF Study were negative. These data provide further evidence of the significant relationship between these two instruments. Assault was inversely correlated with Impeditiveness, Impersistence, Intraggression, and Imaggression. In addition, both Need-Persistence and Imaggression were negatively related to Irritability, while Impersistence, Need-Persistence, and Imaggression bore a similar

relationship to Resentment. The Verbal Aggression dimension was negatively correlated with Imaggression.

Suggested in these data is an important consideration identified by Rosenzweig (1978). He postulated that there are some individuals who seek "constructive" solutions to various sources of frustration; that is, some individuals try to minimize the impact of such experiences. In the present investigation, individuals who reported leading care-free lives also indicated by their responses to the BD that they were less likely to be irritable, verbally abusive, or even resentful when provoked. Others who reported internalizing hostility or feelings of frustration, or who sometimes sought solutions of their difficulties in friends or acquaintances, also reported that they were unlikely to be assaultive.

As the results of the FIRO-B Scales are considered among the array of validity data, the expectation that several of these scales would be inversely correlated with the BD was not upheld. Only a few of the FIRO-B Scales bore a significant inverse relationship to the BD. One finding, the positive correlation between Expressed Affection and Suspicion, was unexpected and will be discussed later. Overall, the data suggested that there was little relationship between interpersonal behavior and the dimensions of aggression and hostility identified by Buss. Nevertheless, the data obtained in this study are worth discussing.

A significant inverse relationship between Expressed

Control with both the Assault and Verbal Aggression dimensions of the BD supported the general convergent validity of these instruments. The data revealed that individuals who reported being concerned with expressing personal restraint over their behavior also reported not being likely to assault or verbally abuse others. This finding is in concert with previous research by Megargee and Mendelsohn (1962) on over-controllers.

An additional significant relationship BD was the inverse correlation between Irritability and Wanting Affection. Edmunds and Kendrick (1980) view Buss's Irritability dimension as more congruent with a general measure of hostility. Extrapolating from Edmunds and Kendrick, the data suggested that individuals who wanted affection from others were not likely to characterize themselves as generally hostile. Thus, individuals who reported a desire to receive affection also characterized themselves as not being particularly irritable.

On both the BD and the PF Study some of the findings proved inconsistent with this investigator's expectations. For example, earlier it was hypothesized that the Obstacle-Dominance category of the PF Study would be positively correlated with several of the BD dimensions (e.g., Assault and Irritability). This assumption was predicated on the belief that repeated focus on, or attention to, a given source of frustration results in some form of aggression. This relationship was not found. Instead, there were

negative correlations between Obstacle-Dominance, its variants, and several BD dimensions. This finding agrees with a view espoused by Miller (1941), who argued that aggression is only one of many possible responses to frustration.

On the FIRO-B Scales, the significant positive relationship between Expressed Affection and the Suspicion scale of the BD was unexpected and enigmatic. It suggested that individuals who reported the desire to display affection towards others also reported a tendency of being suspicious. Three hypotheses were generated to account for this unexpected finding.

Perhaps the most basic consideration regarding the correlation between these two dimensions is that the finding is essentially fortuitous. These correlations may have arisen solely on the basis of chance. Another equally plausible hypothesis concerns the presence of content overlap in the respective item-pools for each of these dimensions. A careful perusal of the Suspicion and Expressed Affection items ruled out this possibility. Finally, one may conjecture that psychodynamic underpinnings are relevant to this finding. The relationship between Wanting Affection and Suspicion suggests a reaction formation, an unconscious process whereby one displays behaviors or attitudes antithetical to one's more deeply experienced impulses. For example, overt displays of fondness and affection may actually reflect difficulty in trusting others.

Before proceeding to a review of the Jackson Desirability Scale and the implications of the Cherico et al. replication, some final comments on the PF Study require consideration. Here the focus shifts to an evaluation of rater-agreement in scoring these protocols.

The modest reliability coefficients among raters in scoring the PF Study is cause for concern; the range of K-values was considerable. Rosenzweig (1978) indicated that rater-agreement approximated the 85 percent level. However, it should be noted that this value was based solely on the percentage of agreement among raters without removing chance factors.

The difference in reliability observed in the present investigation and that reported by Rosenzweig may be explained in several ways. First, the amount of training the raters possessed may have been insufficient. Second, as Lake et al. (1973) indicated, Rosenzweig's raters "negotiated" the correctness of disagreed upon protocols. A consequence of such arbitration may be the artificial inflation of reliability estimates. Third, and perhaps the most significant reason, are the different techniques employed to measure rater-reliability. Only the percentage of agreement between raters is customarily examined on the PF Study. In the present investigation, Cohen's Kappa (K, Cohen, 1960), a more sensitive measure of rater-agreement, was used, since Kappa removes chance factors associated with rater-reliability. Consequently, the low reliability coefficients

observed among the raters may indicate the presence of ambiguity among certain PF Study questions.

In summarizing the data of the BD and PF Study, it is essential to note the generally low correlation coefficients between these two measures of aggression. Little item content may be shared among the BD and PF Study. For example, both instruments have a component of aggression that is directed outward (i.e., Assault and Extraggression); otherwise, the remaining content overlap is limited.

Another explanation for the low correlations between these instruments may center on the reliability of the PF Study. If one considers the position that this instrument is deficient in its reliability, one may conjecture that the correlations between the BD and PF Study are attenuated. As such, the low coefficients are not accurate reflections of the relationship between these measures of aggression.

A third major concern of this research involved evaluating the degree to which subjects responded stylistically (Jackson, 1970; 1971; 1974) to the items. As indicated in the data, there were no significant correlations between the BD and the Desirability Scale.

The lack of a relationship between the BD and the desirability items suggested that the tendency of subjects to respond to the items, irrespective of content, on the basis of social desirability (Edwards, 1957) did not arise. This finding indicated that measurement error associated with this particular response set was not observed in the data. Thus,

it does not appear that this aspect of internal validity (Campbell and Stanley, 1966; Cook and Campbell, 1980) was compromised in the investigation.

In previous research, the MCSDS has been negatively correlated with the BD. The contradictory nature of the present findings are explained as one reflects upon the nature of the differences between the MCSDS and the Jackson Desirability Scale. The MCSDS was initially constructed to measure a need-for-approval. According to Jackson (1974), the MCSDS actually measures "defensiveness," or the inability to identify unpleasant things in association with oneself. Such a perspective differs markedly from Jackson, who posited that some individuals respond in socially desirable ways without regard for the item-content of a given personality measure, thus reflecting a more generalized personality variable.

The Desirability response set did, however, seem to influence responses to the PF Study. Several significant correlations between the PF Study and the Desirability Scale were noted. In this particular analysis, differential responding on the basis of gender was examined.

Table 4 illustrated the influence of gender in responding to these items. The male sample considerably suppressed the value of combined correlation coefficients. There was only one instance in which a significant relationship in the male sample was noted. Intropeditiveness was positively correlated with the Desirability Scale.

Consequently, it seemed more useful to focus on the female sample. Examination of the data yielded the following significant findings: Extrapersistence, Imaggression, and Need-Persistence were all significantly related to the desirability items. Thus, one may conjecture that the female sample responded in a stylistically desirable fashion to these PF Study dimensions. One may further speculate that the female sample was less free to express aggression.

In reviewing the correlations between the dimensions of the BD and PF Study, it was suggested that low reliability of the PF Study may have attenuated the coefficient values. It seems equally plausible to consider the correlations between the PF Study and the Desirability Scale in the same way. Thus, social desirability may be a much larger component of the PF Study than the present data indicate.

As the focus of the discussion shifts to the replication of the Cherico et al. investigation, it is essential to outline the manner in which this will be conducted. First, there will be an evaluation of the data regarding the influence of the expanded item format on the factorial structure of the BD. Following this, attention will be given to analyzing the psychometric implications of employing a multiple-response format in lieu of a binary one. Finally, there will be a discussion of the impact of augmenting the BD item pool. Emphasis will be on evaluating the merits of broadening the network of variables associated with the general construct of aggression.

The present investigation supports some of Cherico et al.'s findings. On the binary formatted version of the BD, three of the six dimensions extracted by Cherico et al. appeared: Suspicion and Resentment, Indirect Aggression, and Assault. The three additional dimensions they obtained and not present in this study were Negative Interpersonal Relations, Negativism, and Active Avoidance of Expression of Hostility. The fourth component retained in the binary version of the present study was Verbal Aggression.

Data on the Likert version of the BD in this study are also important in relation to Cherico et al.'s findings. Of the six factors extracted in their study, three of the factors retained in this study are comparable: Resentment/Suspicion, Assault, and Hostile Reactivity. There is also evidence that items on three of Cherico et al.'s components - Negativism (Passive-Aggression), Hostile Reactivity, and Assertiveness - merged into the first component of the present study. Finally, one component was extracted which was unlike any of Cherico et al.'s - Indirect Aggression.

Although the influence of response format on the factor structure will be addressed shortly, a major implication of the Cherico et al. replication is that the factor structure of the Likert version is more stable across samples when compared to the binary one. This finding is consistent with previous research by Velicer and Stevenson (1978) and Oswald and Velicer (1980). Accordingly, one can argue that the

components extracted more accurately reflect and define significant underlying dimensions of aggression.

The methodological impact of increasing the item-response format is significant. Support was provided for several of the issues raised by Comrey and Montag (1982), Oswald and Velicer (1980), Velicer, DiClemente, and Corriveau (Note 2), and Velicer and Stevenson (1978). The data indicated that there was an increase in the overall reliability of individual items, the underlying theoretical structure was altered, and the factorial validity of the BD was enhanced.

Increased item-response formats are believed to permit individuals greater accuracy in responding to testing situations. Values of the correlation coefficients between the BD and the PF Study generally increased as the item-response format was enlarged. For example, Tables 1 and 2 illustrate the effects of increasing the response format. Intropersisistence (PF Study) had a considerably higher correlation coefficient on the Likert version with the Assault (BD) dimension than did the binary one.

As the findings of the initial principal component analysis are considered, the data revealed that the binary and Likert formats resulted in four components from the binary sample and six from the Likert version, accounting for 24.147 and 38.205 percent of the variance, respectively. Even when six factors were extracted from the binary version, only 30.039 percent of the variance was accounted for. Only

Assault, Indirect Aggression, Verbal Aggression, and the combination of Resentment and Suspicion resembled Buss's original dimensions. Thus, one is compelled to concede that the increased response format yielded a significantly different factor structure from the one espoused by Buss. Factorial validity coefficients are enhanced as one shifts to the larger item-response format. For example, the statement, "I have known people who pushed me so far that we came to blows." had a .64 loading on the Likert format and only a .50 on the binary one."

The two augmented versions of the BD - binary and Likert - provided data which were consonant with other analyses reported in this investigation. This was noted in the altered factorial structures of the two item pools following principal component analyses. Both formats of the BD demonstrated consistent deviations from Buss's original item-scale allocation. Additionally, the increase in factorial validity coefficients was noted in the general trend of increased item-loadings on the Likert components in comparison to the binary ones.

Some of the components retained are conceptually similar to those of Cherico et al. Negativism was present on both the binary and Likert formats of each study. This component had an underlying passive-aggressive feature on each version of the studies. Where Cherico extracted a component for Assault, the present study did so as well. Similarly, Object-Directed violence was related to Cherico's Indirect

Aggression dimension.

A perusal of the overlap between the augmented component structures and those obtained by Cherico et al. reveal some further agreement. On their binary format there is correspondence with both versions of the expanded item pool for the following components: Indirect/Object Directed Aggression, Negativism with underlying passive-aggressivity, Physical Assault (Person-Directed), and Suspicion and Resentment/Argumentativeness. Neither Active Avoidance of Expressing Hostility nor Negative Interpersonal Relations of the Cherico et al. study were related to the two augmented versions.

On the Cherico et al. Likert version, Negativism with passive-aggressive features and Physical Assault (Person-Directed) were comparable to two similarly named components of the augmented versions. Hostile Reactivity from Cherico et al. had a comparable component structure to the augmented Likert format, while their General Level of Hostility was more similar to the augmented binary version. Neither Assertiveness nor Repression of Hostility from Cherico et al. were identified on the augmented component structures.

In general, many of the components retained in these two expanded versions are conceptually similar. Defense of Rights and Interests, Directiveness, General Hostility, Person-Directed Violence, Social Assertiveness, a combination of Suspicion and Resentment/Argumentativeness, and Withdrawal were present on the two augmented versions of the item-pool.

On the binary format, only Object-Directed Aggression remained. This was related to Verbal/Object-Directed Aggression on the Likert format. Both Hostile Reactivity and Independence were present on the Likert version.

Several new components were also extracted from the augmented item-pool. They came from the Withdrawal items and the multi-dimensional Assertiveness Scale, while only a few of the supplementary items proved useful. These findings suggest that the tentative conceptualization of the empirically identified components which guiding item development require further investigation.

There was overwhelming support for the notion that withdrawal is a likely response to frustration. Both the binary and the Likert versions of the augmented item-pool produced component structures associated with this response mode. A consistently higher factor loading on the seven-choice format was also observed.

Inclusion of a sub-dimension of aggression pertaining solely to withdrawal is novel. The various aspects of aggression and hostility identified by Buss connote relatively undesirable responses to anger. Suggested in this finding then is the possibility that withdrawal is a more adaptive response to frustration, since it reduces the likelihood that one will aggress against another. Moreover, while Rosenzweig's Imaggression factor can be characterized as an attitudinal disinclination to aggress, the withdrawal dimension may appropriately tap a behavioral concomitant.

The component structures associated with the four multi-dimensional assertiveness components (Lorr and More, 1980) were replicated. Although both versions of this scale produced the original dimensions of Defense of Rights and Interests, Directiveness, Independence, and Social Assertiveness, these four dimensions were more clearly visible on the Likert version. There was also a consistent increase in the factor loading of the seven-choice format.

Of the four components extracted from the assertiveness item-pool, one dimension - Defense of Rights and Interest - has clear implications in the present research. Item content focused on the inability to speak in one's behalf in apposite life situations where anger or irritation appears justified or warranted.

After careful consideration, the Defense of Rights and Interests component was believed to be conceptually linked to Cherico et al.'s dimension, Repression of Hostility. Item content on these two scales was the deciding factor. For example, one of the items retained by Cherico et al. "If someone doesn't treat me right, I don't let it annoy me", does not appear vastly different from the negatively loaded item, "If I have been 'shortchanged', I go back and complain." Thus, it appears feasible to include items from the Defense of Rights and Interests in a Repression of Hostility dimension.

Finally, on the basis of these two components - Withdrawal and Repression of Hostility - there is tentative

support for the significance of these dimensions. By subsequently re-administering these items, further validation of the item-scale distributions for these components can be scrutinized. One is then in a better position to accept or reject these two dimensions for future research on aggression.

Limitations of the present investigation: Extreme caution must be exercised in generalizing from the results obtained herein. This is particularly evident as the nature of the sample population is considered. Subjects in this study were predominantly white and enrolled in a state university. Approximately three-fourths of the participants were female. As a result of these considerations, the subject pool constituted a restricted sample.

In their discussion of sources of invalidity, Campbell and Stanley (1966) and Cook and Campbell (1979) indicated that selection procedures often compromise the validity of research designs. The limitations posed by the restricted sample of subjects in this investigation are therefore seen as potential sources of invalidity. The data does not permit generalization to non-students. One cannot discuss these results with respect to unemployed individuals, convicted felons, or the like.

An equally important consideration in this study related to the extent to which scores on self-report measures accurately reflect actual behavior in real-life situations.

How probable is it that an individual scoring high on assault will thrash someone when frustrated or annoyed? The most likely method of determining such a probability is through the use of additional assessment techniques. For example, having extant information about an individual's history of fighting or inability to get along with others would be helpful. Alternatively, one could employ an unobtrusive design in a natural setting to observe an individual's tendency to aggress.

Taken together, an individual's scores on a multi-dimensional measurement of aggression, knowledge of a past history of similar behaviors, and the use of participant observation may aid the assessment and prediction of aggression. The present investigation can be best construed as an undertaking directed toward refining and clarifying the paper-and-pencil measurement of aggression.

A final word of caution involves the identification of the various components of aggression following the principal component analyses. Patterns of factors shift from the binary to Likert samples. There is evidence that certain components stand out independent of response format (e.g., Assault and Withdrawal) while others do not. Where different factor patterns emerge one is compelled to speculate on the nature of the observed component. One must label the particular dimension although the process is difficult and subjective. It is conceivable that another researcher might label the components differently. Item augmentation and

exploration of convergent and discriminant validity help to verify the utility of a label. The first did not work very well in this study and the second was not addressed.

Implications for future research: There are several directions one can take in future research involving the BD and the data reported herein. Probably the most pressing enterprise involves a re-analysis of the PF Study. First, it is essential to examine the reliability of the PF Study factors and categories. Second, a re-examination of the relationship between the PF Study scoring factors and categories must be made with the newly extracted dimensions of the BD. These dimensions should be re-coded and then correlated with the PF Study. Evaluation of these results could ostensibly determine whether the presently suggested recoding schema makes sense. There is the possibility that the new coding schema may be less correlated with the PF Study than would be desirable.

Further evaluation of the augmented version of the aggression scales should also be undertaken. There are several steps to this process. First, the data of the present investigation should be re-analyzed. All items with loadings less than .30 must be removed. In addition, more items need to be written which clearly define the dimensions obtained in this study. Items should then be subjected to another principal component analysis. Second, the retained items must be administered to a new sample on two separate

occasions. In doing so, the reliability of these factors can then be estimated.

Once the reliability of the aggression measure is assessed, the next task is to conduct validity studies. Validation must take place at the individual scale level where the criteria is actual behavior, specific conditions under which different dimensions of aggression take place, self-report ratings, and the ability to predict diverse types of aggression. This approach will differ from previous researches where the focus has been on assaultiveness or an undifferentiated view of aggression. For example, one might employ the Jackson Personality Inventory (JPI, Jackson, 1976) and a modified version of the S-R Hostility Inventory (Endler and Hunt, 1969) in conjunction with this aggression measure. The goal is to establish the convergent and discriminant validity of the aggression measure.

Selection of the JPI and the creation of a derivative of the S-R Hostility Inventory in an effort to validate the aggression scales is based on sound considerations. The JPI provides a coherent conceptual framework which tries to organize personality variables into meaningful constructs or traits. Jackson (1976) has labored extensively in selecting significant aspects of human behavior to investigate, and he has also struggled to homogenize individual scales (i.e., stringently adhering to recent advances in psychological theory, test construction and validation). It is the belief

of this investigator that the JPI will provide useful information in comprehending underlying personality variables associated with various aspects of aggression.

In the original version of the S-R Hostility Inventory, Endler and Hunt (1969) failed to differentiate between anger, hostility, and aggression. Their perspective on aggression was undifferentiated. Endler and Hunt's research suggested that the greater percentage of the variance was accounted for by individuals and neither the interaction between a person and situation nor the person and response mode, as they anticipated. Combining anger, hostility, and aggression into a generic instrument fails to address the fact that aggression occurs in many different forms.

After establishing sufficient convergent and discriminant validity, it will be necessary to administer the aggression scales to a non-student population. One would also do well to balance the male-female ratio as well as consider other variables such as socio-economic status, race, etc. It then becomes possible to more clearly evaluate the construct of aggression.

Summary: Aggression is a complex behavior which is comprised of numerous behavioral and personality correlates. In the present investigation attention was aimed at examining the relationship between two methodologically dissimilar measures of aggression. Significant correlations between the BD and the PF Study provided substantiation of specific aspects of

aggression.

When the focus of the study shifted to an examination of the interpersonal behavior associated with diverse dimensions of aggression, the data proved interesting. Evidence was obtained that implicated specific personality correlates with specific forms of aggression.

As consideration was given to the social desirability response set and the two aggression measures, the data indicated that females were more susceptible to this tendency. Significant correlations were noted between the Desirability Scale from the Jackson PRF and the PF Study. These results suggested that females were less free to express aggression.

When the present investigation attempted to replicate an earlier item analysis of the BD, evidence was obtained which suggested that an enlarged item-response format affected the properties of this inventory. The enlarged item-response format yielded both an altered factor structure and an increase in validity coefficients. Several of the dimensions retained in the principal component analysis of the expanded version of the BD were comparable to those obtained in the earlier study.

Finally, an augmented item pool for assessing aggression was evaluated. The data suggested there are more ways to construe dimensions of aggression than were previously noted. Such tendencies as withdrawal and the repression of hostility were important considerations in the study of aggression.

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Table 1

Matrix of correlations: BD binary format theoretical scales
and the PF Study (N=122)*

	BD Dimensions							
	ASS	IND	IRR	NEG	RES	SUSP	VER	TOT
PF Factors								
Extrapeditive								
Intropeditive								
Impeditive	-.22							
Extrapunitive	.34		.23		.26		.22	.31
Intropunitive								
Impunitive								
Extrapersistive								
Intropersistive								
Impersistive	-.20				-.21			
PF Categories								
Obstacle-Dom								
Ego-Defense	.25		.22					.25
Need-Persist			-.20		-.24			-.20
Extraggress	.34		.21		.25		.28	.30
Intraggress	-.29							
Imaggress	-.21		-.22		-.26		-.29	-.28

* Non-significant correlations ($p > .05$) are deleted.

Table 2

Matrix of correlations: BD Likert format of theoretical scales
and the PF Study (N=122)*

	BD Dimensions							
	ASS	IND	IRR	NEG	RES	SUSP	VER	TOT
PF Factors								
Extrapeditive								
Intropeditive								
Impeditive								
Extrapunitive	.40							.23
Intropunitive	-.21							
Impunitive								
Extrapersistive								
Intropersistive	-.27							
Impersistive								
PF Categories								
Obstacle-Dom								
Ego-Defense	.28							
Need-Persist	-.25							
Extraggress	.37							.22
Intraggress	-.35							
Imaggress	-.28				-.25			-.23

* Non-significant correlations ($p > .05$) are deleted.

Table 3
Kappa Coefficients for PF Study Questions

<u>Cartoon</u>	<u>K-coefficient</u>
1.	.621
2.	.539
3.	.270
4.	.472
5.	.516
6.	.326
7.	.375
8.	.331
9.	.397
10.	.405
11.	.521
12.	.423
13.	.439
14.	.453
15.	.270
16.	.275
17.	.066
18.	.267
19.	.576
20.	.404
21.	.364
22.	.455
23.	.425
24.	.223

Table 4
Correlations between the PF Study and Desirability Scale

	Desirability		
	Combined (N=122)*	Females (N=90)*	Males (N=32)*
PF Factors			
Extrapeditive	-.21	-.20	
Intropeditive			.39
Impeditive			
Extrapunitive		-.33	
Intropunitive			
Impunitive			
Extrapersistive		.22	
Intropersistive			
Impersistive			
PF Categories			
Obstacle-Dom			
Ego-Defense		-.26	
Need-Persist	.21	.28	
Extraggress	-.22	-.33	
Intraggress			
Imaggress	.24	.28	

* Non-significant correlations ($p > .05$) are deleted.

Table 5

The Five Items* with Highest Loadings on the Varimax Rotated Components of the Two-Choice Version (with a listing of additional items loading > .30)

Loading	Item Number	Items	Original Scale
Component I. Suspicion and Resentment			
.53	48.	I commonly wonder what hidden reason another person may have for doing something nice for me.	Suspicion
.50	47.	If I let people see the way I feel, I'd be considered a hard person to get along with.	Resentment
.50	6.	I know that people tend to talk about me behind my back.	Suspicion
.49	*17.	When someone is bossy, I do the opposite of what he/she asks.	Negativism
.47	21.	I can't help getting into arguments when people disagree with me.	Ver Agg
Additional Items - 3,12*,13,14,20,26*,27,31,32,34*,36,39*,40*,41,53,54*,55,59,62*.			
Component II. Verbal Aggression			
-.59	7.	When I disapprove of my friends' behavior, I let them know it.	Ver Agg
.50	49.	I could not put someone in their place, even if he/she needed it.	Ver Agg
-.48	38.	If somebody annoys me, I am apt to tell him/her what I think of them.	Ver Agg
.44	65.	I would rather concede a point than get into an argument about it.	Ver Agg
-.38	42.	When people yell at me, I yell back.	Ver Agg
Additional Items - 12*,17*,28,35,54*,56.			
Component III. Indirect Aggression			
.61	23.	When I am mad, I sometimes slam doors.	Ind Agg
.55	45.	When I get mad, I say nasty things.	Ver Agg

Table 5 continued

-.54	9.	I never get mad enough to throw things.	Ind Agg
-.50	24.	I am always patient with others.	Irritability
.45	2.	Once in awhile I cannot control my urge to harm others.	Assault

Additional Items - 4,26*,34*,35,37*,39,40*,43*,44,46,51,52,
60,62*,66.

Component IV. **Assault**

.67	22.	If somebody hits me first, I let him/her have it.	Assault
.66	57.	If I have to resort to physical violence to defend my rights, I will.	Assault
-.56	1.	I seldom strike back, even if somebody hits me first.	Assault
-.52	15.	I can think of no good reason for ever hitting anyone.	Assault
.50	61.	I have known people who pushed me so far that we came to blows.	Assault

Additional Items - 29,36,37*,43*,59*.

* Indicates items with a loading > .30 on at least one other component.

Table 6

Cross-Classification of Items* between the Theoretical Scales
and the Four Components of the Two-Choice Version

Theoretical Scales	Component				Total in Theoretical
	I	II	III	IV	
Ass	1	0	2	8	10
Ind Agg	0	0	6	1	9
Irr	4	0	5	0	11
Neg	3	1	0	0	5
Res	5	2	2	0	8
Sus	9	0	1	1	10
Ver Agg	2	8	4	0	13

* Includes all items with loadings > .30 on any component.
Complex items are listed multiple.

Table 7

The Five Items* with Highest Loadings on the Varimax Rotated Components of the Seven-Choice Version (with a listing of additional items loading > .30)

Loading	Item Number	Item	Original Scale
Component I. Resentment and Suspicion			
.76	54.	At times I feel I get a raw deal out of life.	Resentment
.74	26.	When I look back on what's happened to me, I can't help feeling mildly resentful.	Resentment
.69	12.	Other people always seem to get the breaks.	Resentment
.59	48.	I commonly wonder what hidden reason another person may have for doing something nice for me.	Suspicion
.58	5.	I don't seem to get what's coming to me.	Resentment

Additional Items - 6*,13,16,20,34*,36,39*,46,51*,52,55,65.

Component II. Assault (Person-Directed Violence)			
.71	57.	If I have to resort to physical violence to defend my rights, I will.	Assault
.68	22.	If somebody hits me first, I let him/her have it.	Assault
.64	61.	I have known people who pushed me so far that we came to blows.	Assault
.61	29.	Whoever insults me or my family is asking for a fight.	Assault
-.57	15.	I can think of no good reason for ever hitting anyone.	Assault

Additional Items - 38*,42*,43,45,50.

Component III. Hostile Reactivity			
.68	60.	When arguing, I tend to tend to raise my voice.	Ver Agg

Table 7 continued

.58	45.	When I get mad, I say nasty things.	Ver Agg
-.56	35.	Even when my anger is aroused, I don't use "strong language."	Ver Agg
.51	23.	When I am mad, I sometimes slam doors.	Ind Agg
-.49	30.	I never play practical jokes.	Ind Agg

Additional Items - 9,10,42*,44,46,58*.

Component IV.	General Level of Hostility		
.63	32.	When people are bossy, I take my time just to show them.	Negativism
.61	17.	When someone is bossy, I do the opposite of what he/she asks.	Negativism
.52	16.	When I am angry, I sometimes sulk.	Ind Agg
.52	31.	It makes my blood boil to have somebody make fun of me.	Irritability
.48	53.	I can't help being a little rude.	Irritability

Additional Items - 2*,3,10*,11,25,37,38*,40*,41,42*,47,58*.

Component V.	Negative Interpersonal Relations		
.59	20.	There are a number of people who seem to dislike me very much.	Suspicion
.51	33.	Almost every week I see someone I dislike.	Resentment
.49	6.	I know that people tend to talk about me behind my back.	Suspicion
-.45	59.	I have no enemies who really wish to harm me.	Suspicion
-.45	62.	I don't let a lot of unimportant things irritate me.	Irritability

Additional Items - 2*,14,19,21*,24,34*,39*,47,48,51*,65.

Component VI.	Indirect Aggression		
-.58	28.	I demand that people respect my rights.	Ind Agg
.54	65.	I would rather concede a point than get into an	Ind Agg

Table 7 continued

		argument about it.	
.47	49.	I could not put someone in his/her place, even if he/she needed it.	Ind Agg
-.45	7.	When I disapprove of my friends' behavior, I let them know it.	Ind Agg
-.39	38.	If somebody annoys me, I am apt to tell him/her what I think of them.	Ind Agg

Additional Items - 1,21*,40*,42*.

* Indicates items with a loading > .30 on at least one other component.

Table 8

Cross-Classification of Items* between the Theoretical Scales
and the Six Components of the Seven-Choice Version

Theoretical Scales	Components						Total in Theoretical
	I	II	III	IV	V	VI	
Ass	1	8	0	0	0	1	10
Ind Agg	3	0	4	3	2	0	12
Irr	2	0	3	4	3	0	12
Neg	0	0	0	5	0	4	9
Res	4	0	0	2	3	1	10
Sus	6	0	0	1	5	0	11
Ver Agg	1	3	4	2	3	7	20

* Includes all items with loadings > .30 on any component.
Complex items are listed multiple.

Table 9

Cross-Classification of Items* between the Two-Choice
Components of Cherico et al. and Govia BD binary format

		Cherico et al. Components					
		I	II	III	IV	V	VI
Govia Components	I	8	0	1	5	6	5
	II	2	1	1	3	2	2
	III	2	1	7	3	0	6
	IV	1	6	1	1	2	1

*Includes all items with loadings > .30 on any component.
Complex items are listed multiple.

Table 10

Cross-Classification of Items* between the Seven-Choice
Components of Cherico et al. and Govia BD Likert format

		Cherico et al. Components					
		I	II	III	IV	V	VI
Govia Components	I	10	0	2	3	4	0
	II	0	7	0	3	3	3
	III	2	1	4	0	5	1
	IV	5	0	2	5	6	1
	V	3	2	2	0	3	1
	VI	0	1	1	1	2	0

*Includes all items with loadings > .30 on any component.
Complex items are listed multiple.

Table 11

The Five Highest Loadings on the Varimax Rotated
Components of the Two-Choice Augmented Version
(with a listing for additional items loading > .30)

Loading	Item Number	Item	Original Scale
Component I. Defense of Rights and Interests			
-.71	101.	If I have been "short-changed," I go back and complain.	Assertiveness
.66	125.	Even though I might be angered when short-changed, I don't say anything.	Rep Hostility
-.51	102.	If the food I am served in a restaurant is unsatisfactory, I complain to the waiter.	Assertiveness
.50	97.	It is uncomfortable for me to exchange a purchase I've found to be defective.	Assertiveness
.45	100.	When someone interrupts me in a serious conversation, I find it hard to ask him/her to wait a minute.	Assertiveness

Additional Items - 9,22,96,98,103,130.

Component II. General Hostility			
.52	37.	Occasionally when I am mad at someone, I will give him/her the "silent treatment."	Negativism
.48	67.	I sometimes carry a chip on my shoulder.	Irritability
.47	58.	Although I don't show it, I am sometimes eaten up with jealousy.	Resentment
.46	50.	I sometimes have the feeling others are laughing at me.	Suspicion
.41	78.	I can't help being a little rude to people I don't like.	Irritability

Additional Items - 2,16,65,79.

Table 11 continued

Component III. Withdrawal

.63	24.	When I do get mad, I make it a point to go somewhere else.	Withdrawal
.62	48.	Rather than let someone see me mad, I try to walk away.	Withdrawal
.61	83.	I would rather leave a situation than stay there and get into an argument.	Withdrawal
.61	111.	I usually walk away when someone is pestering and making me mad.	Withdrawal
.60	126.	When I really lose my temper, I walk away.	Withdrawal

Additional Items - 6,18,36,42,51,54,79,81,93,94,99,105,124,135.

Component IV. Directiveness

.60	5.	I have no particular desire to be the leader of a group.	Assertiveness
.57	17.	I let others take the lead when I'm on a committee.	Assertiveness
.53	12.	I sometimes leave when I don't get my way.	Withdrawal
-.50	114.	I follow my own ideas even when pressured by a group to change them.	Assertiveness
.48	109.	When there is disagreement I accept the decision of the majority.	Assertiveness

Additional Items - 23,29,35,41,47,106,108,110,112,113.

Component V. Social Assertiveness

.70	64.	I feel uncomfortable around people I don't know.	Assertiveness
-.67	88.	I find it easy to talk with all kinds of people.	Assertiveness
.67	53.	It is difficult for me to start a conversation with a stranger.	Assertiveness
-.67	82.	It's easy for me to make "small talk" with people I've just met.	Assertiveness
-.64	76.	At a party I find it easy to introduce myself and join a group conversation.	Assertiveness

Additional Items - 58,70,92.

Table 11 continued

Component VI. Person-Directed Violence

.64	84.	If I have to resort to physical violence to defend my rights, I will.	Assault
.64	32.	If somebody hits me first, I let him/her have it.	Assault
-.58	71.	If I have to resort to physical violence to defend my rights, I would just as soon leave.	Withdrawal
-.55	1.	I seldom strike back, even if somebody hits me first.	Assault
.40	89.	I have known people who pushed me so far that we came to blows.	Assault

Additional Items - 21,43,52,117.

Component VII. Negativism with Passive-Aggressivity

.48	46.	When people are bossy, I take my time just to show them.	Negativism
.46	25.	When someone is bossy, I do the opposite of what he/she asks.	Negativism
.43	117.	I won't take a lot of crap from someone.	Gen Hostility
.42	61.	When people yell at me, I yell back.	Ver Agg
.42	3.	Unless somebody asks me in a nice way, I won't do what they want.	Negativism

Additional Items - 9,40,56,104,131,132.

Component VIII. Suspicion and Argumentativeness

.49	20.	I often find myself disagreeing with people.	Ver Agg
.49	31.	I can't help getting into arguments when people disagree with me.	Ver Agg
.47	8.	I know that people tend to talk about me behind my back.	Suspicion
.46	29.	There are a number of people who seem to dislike me very much.	Suspicion
.41	69.	I commonly wonder what hidden reason another may have for doing something nice for me.	Suspicion

Additional Items - 19,27,38,49,57,60,68,75,80,86,90,91,116.

Table 11 continued

Component IX. Object-Directed Violence

.64	74.	I can remember being so angry that I picked up the nearest thing and broke it.	Ind Agg
-.63	13.	I never get mad enough to throw things.	Ind Agg
.62	119.	If I get mad enough, I am likely to smash something.	Phys Violence
.51	33.	When I am mad, I sometimes slam doors.	Ind Agg
.46	4.	I lose my temper easily but get over it quickly.	Irritability

Additional Items - 10,30,34,62,63,66,95.

Table 12
 Cross-Classification of Items between the Augmented
 Theoretical Scales and the Nine Components
 of the Two-Choice Version

Augmented Scales	Components									Total in Scale
	I	II	III	IV	V	VI	VII	VIII	IX	
Ass	0	0	0	0	0	7	0	0	2	9
Ind Agg	1	1	0	0	0	0	0	0	4	6
Irr	0	2	0	0	0	0	0	2	2	6
Neg	0	1	0	0	0	0	3	0	0	4
Res	0	2	1	0	1	0	0	4	0	8
Sus	0	2	0	0	0	0	0	7	0	9
Ver Agg	1	0	3	0	0	0	4	4	1	13
Gen Hos	0	0	0	0	0	1	1	1	0	3
Phy Viol	0	0	0	0	0	0	0	0	1	1
Rep Hos	2	0	1	0	0	0	0	0	0	3
Neg (P-A)	0	0	0	0	0	0	1	0	0	1
Hos Reac	0	0	1	0	0	0	1	0	0	2
Dir Asrt	0	0	0	7	0	0	0	0	0	7
Soc Asrt	0	0	0	0	7	0	0	0	0	7
Def Rt/Int	7	0	1	0	0	0	1	0	1	10
Ind Asrt	0	0	0	7	0	0	0	0	0	7
Withdraw	0	1	12	1	0	1	0	0	1	16

* Includes all items with loadings > .30 on any component.
 Complex items are listed multiple.

Table 13

The Five Items with Highest Loadings on the Varimax Rotated
Components of the Augmented Seven-Choice Version
(with a listing for additional items loading $> .30$)

Loading	Item Number	Item	Original Scale
Component I. Suspicion			
.69	21.	I know that people tend to talk about me behind my back.	Suspicion
.71	77.	There a number of people who seem to dislike me very much.	Suspicion
.68	104.	I sometimes have the feeling others are laughing at me.	Suspicion
.69	118.	I commonly wonder what hidden reason another may have for doing something nice for me.	Suspicion
.57	124.	At times I feel I get a raw deal out of life.	Resentment
Additional Items - 5,17,18,29,36,37,45,49,53,61,62,78,89,91,103,109,110,116,117,121,122,125,129,135.			
Component II. Withdrawal			
.82	24.	When I do get mad, I make it a point to go somewhere else.	Withdrawal
.79	28.	When I really lose my temper I walk away.	Withdrawal
.68	48.	I usually walk away when someone is pestering and making me mad.	Withdrawal
.74	56.	To avoid a temper tantrum, I always walk away.	Withdrawal
.72	60.	When I feel like a powder keg ready to explode, I try to back out and go somewhere else.	Withdrawal

Table 13 continued

Additional Items - 4,8,12,16,20,32,40,44,46,52,64,
68,72,76,134.

Component III. Social Assertiveness

.80	35.	It is difficult for me to start a conversation with a stranger.	Assertiveness
.82	39.	When I meet new people I usually have little to say.	Assertiveness
-.74	51.	At a party I find it easy to introduce myself and join a group conversation.	Assertiveness
-.78	55.	It's easy for me to make "small talk with people" I've just met.	Assertiveness
-.78	59.	I find it easy to talk with all kinds of people.	Assertiveness

Additional Items - 43,47,63,111.

Component IV. Hostile Reactivity

.55	61.	When I am angry, I sometimes sulk.	Ind Agg
-.55	68.	Rather than give someone the "silent treatment" when I am mad, I prefer to walk away.	Withdrawal
.57	87.	Occasionally when I am mad at someone, I will give him/her the "silent treatment."	Negativism
.51	99.	It makes my blood boil to have somebody make fun of me.	Irritability
.54	107.	I sometimes pout when I don't get my own way.	Ind Agg

Additional Items - 74,91,128.

Component V. Person-Directed Violence

.71	127.	If I have to resort to physical violence to defend my rights, I will.	Assault
-.64	8.	If I have to resort to physical violence to defend my rights, I would just as soon leave.	Withdrawal
.64	81.	If somebody hits me first, I let him/her have it.	Assault
.60	22.	I won't hesitate to thrash someone if they insult me.	Assault
.60	106.	People who continually pester you are asking for a	Assault

Table 13 continued

punch in the nose.

Additional Items - 18,26,57,108,113,120,136.

Component VI. Directiveness

-.73	19.	I work best in a group when I'm the person in charge.	Assertiveness
.70	11.	I let others take the lead when I am on a committee.	Assertiveness
.69	7.	I shy away from situations where I might be asked to take charge.	Assertiveness
.64	15.	I would avoid a job which required me to supervise other people.	Assertiveness
-.62	27.	I am the one who usually initiates activities in my group.	Assertiveness

Additional Items - 3,23,31.

Component VII. Negativism with Passive-Aggressivity

.68	101.	When people are bossy, I take my time just to show them.	Negativism
.62	65.	When someone is bossy, I do the opposite of what he/she asks.	Negativism
.62	41.	When someone makes a rule I don't like I am tempted to break it.	Negativism
.48	9.	Unless somebody asks me in a nice way, I won't do what they want.	Negativism
.37	50.	When a taxi blows it's horn behind me, I generally slow down.	Negativism

Additional Items - 58,123,126.

Component VIII. Defense of Rights and Interests

-.75	82.	If I have been short-changed, I go back and complain.	Assertiveness
.70	42.	Even though I might be angered when short-changed, I don't say anything.	Rep Hostility
-.69	84.	If the food I am served in a restaurant is unsatisfactory, I go back and complain.	Assertiveness

Table 13 continued

.63	71.	It is uncomfortable for me to exchange a purchase I've found to be defective.	Assertiveness
.48	67.	When someone repeatedly kicks the back of my chair in a theatre I don't say anything.	Assertiveness

Additional Items - 25,75,79,86.

Component IX. Independence

.65	102.	I follow my own ideas even when prssured by a group to change them.	Assertiveness
.63	66.	When someone tells me something that I know is inaccurate, I argue until he/she sees my way.	Assertiveness
.62	100.	I nearly always argue for my viewpoint if I think I'm right.	Assertiveness
.61	98.	I defend my point of view of view even though someone in authority disagrees with me.	Assertiveness
.42	93.	My opinions are not easily changed by those around me.	Assertiveness

Additional Items - 68,80,88.

Component X. General Hostility

.47	69.	I am irritated a great deal more than people are aware of.	Irritability
-.41	85.	I am always patient with others.	Irritability
.41	2.	I'm not as patient as I should be.	Gen Hostility
.32	14.	I am unable to let off steam when I am angered.	Gen Hostility
.32	6.	I get angry easily.	Gen Hostility

Additional Items - None.

Component XI. Verbal/Object-Directed Aggression

.57	30.	When I am angered, I try to let off steam by hollering.	Phys Violence
.57	83.	When I am mad, I sometimes slam doors.	Ind Agg
.57	130.	When arguing, I tend to raise my voice.	Ver Agg

Table 13 continued

.52	115.	When I get mad, I say nasty things.	Ver Agg
-.47	33.	I never get mad enough to throw things.	Ind Agg

Additional Items - 13,34,97,105,114.

Table 14
 Cross-Classification of Items* between the Augmented
 Theoretical Scales and the Eleven Components
 of the Seven-Choice Likert Version

Augmented Scales	Components											Total in Scale
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	
Ass	1	0	0	0	7	0	0	0	0	0	0	8
Ind Agg	4	0	0	2	0	0	0	0	0	0	4	10
Irr	3	0	0	2	0	0	1	0	0	2	1	9
Neg	0	0	0	1	0	0	5	0	0	0	0	6
Res	8	0	0	0	0	0	0	0	0	0	0	8
Sus	8	0	1	1	0	0	0	0	0	0	0	10
Ver Agg	2	1	0	0	1	0	1	1	1	0	3	10
Gen Hos	0	0	0	0	0	0	0	0	0	3	0	3
Phy Viol	1	0	0	0	2	0	0	0	0	0	1	4
Rep Hos	0	1	0	0	0	0	0	1	0	0	1	3
Neg(P-A)	1	0	0	0	0	0	1	0	0	0	0	2
Hos Reac	1	0	0	1	0	0	0	0	1	0	0	3
Dir Asrt	0	0	0	0	0	8	0	0	0	0	0	8
Soc Asrt	0	0	8	0	0	0	0	0	0	0	0	8
Def Rt/Int	0	0	0	0	1	0	0	7	0	0	0	8
Indep	0	0	0	0	0	0	0	0	5	0	0	5
Withdraw	1	18	0	1	1	0	0	0	1	0	0	22

* Includes all items with loadings > .30 on any component.
 Complex items are listed multiple.

Table 15

Matrix of correlations: BD binary and Likert format
theoretical scales and FIRO-B (N=131)*

	FIRO-B Dimensions					
	ExInclu	ExCntrl	ExAfctn	WaInclu	WaCntrl	WaAfctn
BD binary						
ASS		-.29				
IND						
IRR						-.23
NEG						
RES						
SUSP			.26			
VER		-.21				
BD Likert						
ASS		-.28	.22			
IND						
IRR					-.22	
NEG						
RES						
SUSP			.28			
VER		-.31				
TOT		-.21				

* Non-significant correlations ($p > .05$) are deleted.

Appendix 1

Constructs of Reaction to Frustration

Direction of Aggression	Obstacle-Dominance (O-D)	Ego-Defense (E-D) (Etho-Defense)	Need-Persistence (N-P)
Extraggession (E-A)	E (Extrapeditive): The presence of the frustrating obstacle is insistently pointed out.	E (Extrapunitive): Blames, hostility, etc., are turned against some person or thing in the environment. E: In this variant of E, the subject aggressively denies that he is responsible for some offense with which he is charged.	e (Extrapersis- tive): A solu- tion for the frustrating sit- uation is emphati- cally expected of someone else.
Intraggession (I-A)	I (Intropeditive): The frustrating obstacle is construed as not being frustrating or even as in some way beneficial; or, in some instances, the subject emphasizes the extent of his embarrassment at being involved in instigating another's frustration.	I (Intropunitive): Blame, censure, etc., are directed by the subject upon himself. I: A variant of I in which the subject admits his guilt but denies any essential fault by referring to unavoidable circumstances.	i (intropersis- tive): Amends are offered by the subject, usually from a sense of guilt, to solve the problem.
Imaggession (M-A)	M (Impeditive): the obstacle in the frustrating situation is minimized almost to the point of denying its existence.	M (Impunitive): Blame for the frustration is evaded altogether, the situation being regarded as unavoidable; in particular, the "frustrating" individual is absolved.	m (Impersistive): Expression is given to the hope that time or normally expected circumstances will bring about a solution of the problem; patience and conformity are characteristic.

Form A:

Buss-Durkee Hostility Inventory, Binary Format

Assertiveness Scale

Desirability Scale

Supplemental Items

Directions: Please answer each of the following questions by circling either "T" for true or "F" for false on the answer sheet provided.

1. I seldom strike back, even if somebody hits me first.
2. I sometimes spread gossip about people I don't like.
3. Unless somebody asks me in a nice way, I won't do what they want.
4. I lose my temper easily but get over it quickly.
5. I have no particular desire to be the leader of a group.
6. When I get mad enough to throw things, I usually go someplace else.
7. I don't seem to get what's coming to me.
8. I know that people tend to talk about me behind my back.
9. When I disapprove of my friends' behavior, I let them know it.
10. Once in a while I cannot control my urge to harm others.
11. I shy away from situations where I might be asked to take charge.
12. I sometimes leave when I don't get my way.
13. I never get mad enough to throw things.
14. Sometimes people bother me just by being around.
15. When someone makes a rule I don't like I am tempted to break it.
16. Other people always seem to get the breaks.
17. I let others take the lead when I'm on a committee.
18. To avoid a temper tantrum, I always walk away.
19. I tend to be on my guard with people who are somewhat more friendly than I expected.
20. I often find myself disagreeing with people.
21. I can think of no good reason for ever hitting anyone.
22. When I am angry, I sometimes sulk.
23. I would avoid a job which required me to supervise others.

24. When I get mad, I make it a point to go somewhere else.
25. When someone is bossy, I do the opposite of what he/she asks.
26. I am irritated a great deal more than people are aware of.
27. I don't know any people that I downright hate.
28. There are a number of people who seem to dislike me very much.
29. I work best in a group when I'm the person in charge.
30. I can remember being so angry that I had to go somewhere else.
31. I can't help getting into arguments when people disagree with me.
32. If somebody hits me first, I let him/her have it.
33. When I am mad, I sometimes slam doors.
34. I am always patient with others.
35. I seek positions where I can influence others.
36. Whenever people insult me or my family, I try and leave to do something else.
37. Occasionally when I am mad at someone, I will give him/her the "silent treatment".
38. When I look back on what's happened to me, I can't help feeling mildly resentful.
39. There are a number of people who seem to be jealous of me.
40. I demand that people respect my rights.
41. I am the one who initiates activities in my group.
42. I would rather walk away than put someone in their place, even when they deserve it.
43. Whoever insults me or my family is asking for a fight.
44. I never play practical jokes.
45. It makes my blood boil to have somebody make fun of me.
46. When people are bossy, I take my time just to show them.
47. In an emergency, I get people organized and take charge.

48. Rather than let someone see me mad, I try to walk away.
49. Almost every week I see someone I dislike.
50. I sometimes have the feeling that others are laughing at me.
51. Even when my anger is aroused, I don't use "strong language".
52. People who continually pester you are asking for a punch in the nose.
53. It is difficult for me to start a conversation with a stranger.
54. I'd rather walk away than deal with someone bossy.
55. I sometimes pout when I don't get my own way.
56. If somebody annoys me, I am apt to tell him/her what I think of them.
57. I often feel like a powder keg ready to explode.
58. Although I don't show it, I am sometimes eaten up with jealousy.
59. When I meet new people, I usually have little to say.
60. My motto is "never trust strangers".
61. When people yell at me, I yell back.
62. When I really lose my temper, I am capable of slapping someone.
63. Since the age of ten, I have never had a temper tantrum.
64. I feel uncomfortable around people I don't know.
65. Rather than give someone the "silent treatment" when I am mad, I prefer to walk away.
66. When I get mad, I say nasty things.
67. I sometimes carry a chip on my shoulder.
68. If I let people see the way I feel, I'd be considered a hard person to get along with.
69. I commonly wonder what hidden reason another person may have for doing something nice for me.
70. I find it difficult to make new friends.
71. If I have to resort to physical violence to defend my rights, I would just as soon leave.

72. I could not put someone in his place, even if he/she needed it.
73. I get into fights as often as the next person.
74. I can remember being so angry that I picked up the nearest thing and broke it.
75. I often make threats I don't really mean to carry out.
76. At a party I find it wasy to introduce myself and join a group conversation.
77. When I feel like a powder keg ready to explode, I try to back out and go somewhere else.
78. I can't help being a little rude to people I don't like.
79. At times, I feel like I get a raw deal out of life.
80. I used to think that most people told the truth but now I know otherwise.
81. I generally cover up my poor opinion of others.
82. It's easy for me to make "small talk" with people I've just met.
83. I would rather leave a situation than stay there and get into an argument.
84. If I have to resort to physical violence to defend my rights, I will.
85. If someone doesn't treat me right, I don't let it annoy me.
86. I have no enemies who really wish to harm me.
87. When arguing, I tend to raise my voice.
88. I find it easy to talk with all kinds of people.
89. I have known people who pushed me so far that we came to blows.
90. I don't let a lot a unimportant things irritate me.
91. I seldom feel that people are trying to anger or insult me.
92. When I am attracted to a person I've not met, I actively try to get acquainted.
93. When I am angry, it is necessary for me to go off by myself.
94. I would rather concede a point than get into an argument about it.

95. I sometimes show my anger by banging on the table.
96. When someone repeatedly kicks the back of my chair in a theater, I don't say anything.
97. It is uncomfortable for me to exchange a purchase I've found to be defective.
98. When a friend borrows something of value to me and returns it damaged I don't say anything.
99. If somebody annoys me, I am apt to walk away.
100. When someone interrupts me in a serious conversation, I find it hard to ask him/her to wait a minute.
101. If I have been "short-changed", I go back and complain.
102. If the food I am served in a restaurant is unsatisfactory, I complain to the waiter.
103. If a friend betrays a confidence, I express my annoyance to him/her.
104. When an acquaintance takes advantage of me, I confront him/her.
105. When people yell at me, I go off by myself.
106. In discussions, I go along with the will of the group.
107. I try to dress like the other people I work or go to school with.
108. I'll take a drink (or smoke pot) when out with a group even though I really don't want to.
109. When there is a disagreement, I accept the decision of the majority.
110. My opinions are not easily changed by those around me.
111. I usually walk away when someone is pestering and making me mad.
112. I defend my point of view even though someone in authority disagrees with me.
113. I nearly always argue for my viewpoint if I think I'm right.
114. I follow my own ideas even when pressured by a group to change them.
115. I always try to be considerate of the feelings of my friends.
116. I'm not as patient as I should be.
117. Nothing that happens to me makes much difference one way or the other.

118. I get angry easily.
119. I often take some responsibility for looking out for newcomers in a group.
120. I won't take a lot a crap from someone.
121. I have a number of health problems.
122. I am unable to let off steam when I am angered.
123. In the long run humanity will owe a lot more to the teacher than to the salesman.
124. If I get mad enough, I am likely to smash something.
125. I often have the feeling that I am doing something evil.
126. I won't hesitate to thrash someone if they insult me.
127. I am seldom ill.
128. I don't hesitate to defend my friends physically, if they are assaulted.
129. I almost always feel sleepy and lazy.
130. When I am angered, I try to let off steam by hollering.
131. My memory is as good as other people's.
132. When I get angered over something, I generally tell myself not to worry.
133. I am not willing to give up my own privacy or pleasure in order to help other people.
134. When my girlfriend/boyfriend criticizes me, I usually keep my mouth shut.
135. Most of my teachers were helpful.
136. Even though I might be angered when short-changed, I don't say anything.
137. We ought to let the rest of the world solve their own problems and just look out after ourselves.
138. My life is full of interesting activities.
139. When I really lose my temper, I walk away.

140. I think people should "turn the other cheek" when someone makes them angry.
141. I often question whether life is worthwhile.
142. When a taxi blows its horn behind me, I generally slow down.
143. I am able to make correct decisions on difficult questions.
144. If I am criticized for my work, I will purposely slow down.
145. I believe people tell lies any time it is to their advantage.
146. If I don't like a course, I generally don't hand in papers on time.
147. Rarely, if ever, has the sight of food made me ill.
148. I cannot tell someone directly when they have angered me, but I tell others though.
149. I find it very difficult to concentrate.
150. When someone tells me something that I know is inaccurate, I argue until he/she sees my way.
151. I am always prepared to do what is expected of me.
152. I waste no time in defending myself when verbally attacked.
153. Many things make me feel uneasy.
154. I get pissed when people step in front of me in a line.
155. People have often told me that I am argumentative.
156. Once in a while I cannot control myself, so I usually back off.

Appendix 2b.

Form B:

Rosenzweig P-F Study

Buss-Durkee Hostility Inventory

Assertiveness Scale

Supplemental Items

Withdrawal Items

Name _____

Age _____ Birthday _____

Address _____

Education _____

Institution _____

Present Date _____

ROSENZWEIG P-F STUDY

(Revised Form for Adults)

Instructions

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

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

5.

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

6.

Aren't you being a little too fussy?

7.

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

8.

Perhaps you do need your umbrella but you will have to wait until this afternoon when the manager comes.

9.

You're a liar and you know it!

10.

Pardon me-- the operator gave me the wrong number.

11.

If this isn't your hat, Fred Brown must have walked off with it by mistake and left his.

12.

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

13.

She should
have been here
10 minutes
ago.

14.

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

15.

You had no
right to try
and pass me.

16.

This is a fine
time to have
lost the keys!

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

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

I wonder why
she didn't
invite us?

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

21.

Did you hurt yourself?

22.

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

23.

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

24.

Directions: Please answer each of the following questions by referring to the answer sheet provided.

- X1. I seldom strike back, even if someone hits me first.
- Y2. I'm not as patient as I should be.
- X3. I have no particular desire to be the leader of a group.
- X4. Once in a while, I cannot control myself, so I usually back off.
- X5. I sometimes spread gossip about people I don't like
- Y6. I get angry easily.
- X7. I shy away from situations where I might be asked to take charge.
- X8. If I have to resort to physical violence to defend my rights, I would just as soon leave.
- Y9. Unless somebody asks me in a nice way, I won't do what they want.
- Y10. I won't take a lot of crap from someone.
- X11. I let others take the lead when I'm on a committee.
- X12. When I am angry, it is necessary for me to go off and be by myself.
- X13. I lose my temper easily but get over it quickly.
- Y14. I am unable to let off steam when I am angered.
- X15. I would avoid a job which required me to supervise other people.
- X16. If somebody annoys me, I am apt to walk away.
- X17. I don't seem to get what's coming to me.
- Y18. If I get mad enough, I am likely to smash something.
- X19. I work best in a group when I'm the person in charge.
- X20. When people yell at me, I go off by myself.
- Y21. I know that people tend to talk about me behind my back.
- Y22. I won't hesitate to thrash someone if they insult me.
- X23. I seek positions where I can influence others.
- X24. When I do get mad, I make it a point to go somewhere else.

- X25. When I disapprove of my friends' behavior, I let them know it.
- Y26. I don't hesitate to defend my friends physically, if they are assaulted.
- X27. I am usually the one who initiates activities in my group.
- X28. When I really lose my temper I walk away.
- X29. Once in awhile I cannot control my urge to harm others.
- Y30. When I am angered, I try to let off steam by hollering.
- X31. In an emergency I get people organized and take charge.
- X32. Whenever people insult me or my family, I try to leave to do something else.
- Y33. I never get made enough to throw things.
- Y34. When I get angered over something I generally tell myself not to worry.
- X35. It is difficult for me to start a conversation with a stranger.
- X36. I sometimes leave when I don't get my way.
- Y37. Sometimes people bother me just by being around.
- Y38. When my boy/girlfriend criticizes me, I usually keep my mouth shut.
- X39. When I meet new people I usually have little to say.
- X40. I can remember being so angry that I had to go somewhere else.
- X41. When someone makes a rule I don't like I am tempted to break it.
- Y42. Even though I might be angered when short-changed, I don't say anything.
- X43. I feel uncomfortable around people I don't know.
- X44. I would rather leave a situation than stay there and get into an argument.
- Y45. Other people always seem to get the breaks.
- Y46. I think people should "turn the other cheek" when someone makes them angry.
- X47. I find it difficult to make new friends.

- X48. I usually walk away when someone is pestering and making me mad.
- X49. I tend to be on my guard with people who are somewhat more friendly than I expected.
- Y50. When a taxi blows its horn behind me, I generally slow down.
- X51. At a party I find it easy to introduce myself and join a group conversation.
- X52. When I get mad enough to throw things, I usually go some place else.
- Y53. I often find myself disagreeing with people.
- Y54. If I am criticized for my work, I will purposely slow down.
- X55. It's easy for me to make "small talk" with people I've just met.
- X56. To avoid a temper tantrum I always walk away.
- Y57. I can think of no good reason for ever hitting anyone.
- Y58. If I don't like a course, I generally don't hand in papers on time.
- X59. I find it easy to talk with all kinds of people.
- X60. When I feel like a powder keg ready to explode, I try to back out and go somewhere else.
- X61. When I am angry, I sometimes sulk.
- Y62. I cannot tell someone directly when they have angered me, but I tell others though.
- X63. When I am attracted to a person I've not met, I actively try to get acquainted.
- X64. I'd rather walk away than deal with someone bossy.
- X65. When someone is bossy, I do the opposite of what he/she asks.
- Y66. When someone tells me something which I know is inaccurate, I argue until he/she sees my way.
- X67. When someone repeatedly kicks the back of my chair in a theatre I don't say anything.
- X68. Rather than give someone the "silent treatment" when I am mad, I prefer to walk away.
- Y69. I am irritated a great deal more than people are aware of.

- Y70. I waste no time in defending myself when verbally attacked.
- X71. It is uncomfortable for me to exchange a purchase I've found to be defective.
- X72. Rather than have someone see me when I am mad, I try to walk away.
- Y73. I don't know any people that I downright hate.
- Y74. I get pissed when people step in front of me in a line.
- X75. When a friend borrows something of value to me and returns it damaged, I don't say anything.
- X76. I would rather walk away than put someone in their place, even when they deserve it.
- Y77. There are a number of people who seem to dislike me very much.
- Y78. People have often told me that I am argumentative.
- X79. When someone interrupts me in a serious conversation, I find it hard to ask him/her to wait a minute.
- X80. I can't help getting into arguments when people disagree with me.
- X81. If somebody hits me first, I let him have it.
- X82. If I have been "short-changed", I go back and complain.
- X83. When I am mad, I sometimes slam doors.
- X84. If the food I am served in a restaurant is unsatisfactory, I complain to the waiter.
- Y85. I am always patient with others.
- X86. If a friend betrays a confidence, I express my annoyance to him/her.
- Y87. Occasionally when I am mad at someone, I will give him/her the "silent treatment".
- X88. In discussions, I go along with the will of the people.
- X89. When I look back on what's happened to me, I can't help feeling mildly resentful.
- X90. I try to dress like the other people I work or go to school with.
- Y91. There are a number of people who seem to be jealous of me.

- X92. I'll take a drink (or smoke pot) when out with a group even though I really don't want to.
- X93. I demand that people respect my rights.
- X94. When there is disagreement I accept the decision of the majority.
- X95. Whoever insults me or my family is asking for a fight.
- X96. My opinions are not easily changed by those around me.
- Y97. I never play practical jokes.
- X98. I defend my point of view even though someone in authority disagrees with me.
- X99. It makes my blood boil to have somebody make fun of me.
- X100. I nearly always argue for my viewpoint if I think I'm right.
- X101. When people are bossy, I take my time just to show them.
- X102. I follow my own ideas even when pressured by a group to change them.
- Y103. Almost every week I see someone I dislike.
- X104. I sometimes have the feeling that others are laughing at me.
- Y105. Even when my anger is aroused, I don't use "strong language".
- Y106. People who continually pester you are asking for a punch in the nose.
- X107. I sometimes pout when I don't get my own way.
- X108. If somebody annoys me, I am apt to tell him/her what I think of them.
- X109. I often feel like a powder keg ready to explode.
- X110. Although I don't show it, I am sometimes eaten up with jealousy.
- X111. My motto is "never trust strangers".
- X112. When people yell at me, I yell back.
- Y113. When I really lose my temper, I am capable of slapping someone.
- Y114. Since the age of ten, I have never had a temper tantrum.
- X115. When I get mad, I say nasty things.
- Y116. I sometimes carry a chip on my shoulder.

APPENDIX 2c.

FORM BB:

FIRO-B SCALES

Buss-Durkee Hostility Inventory, Likert Format

Assertiveness Scales

Supplemental Items

For each statement below, decide which of the following answers best applies to you. Place the number of the answer in the box at the left of the statement. Please be as honest as you can.

1. never 2. rarely 3. occasionally 4. sometimes 5. often 6. usually

- ☐ 1. I try to be with people. ☐ 9. I try to include other people in my plans.
- ☐ 2. I let other people decide what to do. ☐ 10. I let other people control my actions.
- ☐ 3. I join social groups. ☐ 11. I try to have people around me.
- ☐ 4. I try to have close relationships with people. ☐ 12. I try to get close and personal with people.
- ☐ 5. I tend to join social organizations when I have an opportunity. ☐ 13. When people are doing things together I tend to join them.
- ☐ 6. I let other people strongly influence my actions. ☐ 14. I am easily led by people.
- ☐ 7. I try to be included in informal social activities. ☐ 15. I try to avoid being alone.
- ☐ 8. I try to have close, personal relationships with people. ☐ 16. I try to participate in group activities.

For each of the next group of statements, choose one of the following answers:

1. nobody 2. one or two 3. a few people 4. some people 5. many people 6. most people

- ☐ 17. I try to be friendly to people. ☐ 23. I try to get close and personal with people.
- ☐ 18. I let other people decide what to do. ☐ 24. I let other people control my actions.
- ☐ 19. My personal relations with people are cool and distant. ☐ 25. I act cool and distant with people.
- ☐ 20. I let other people take charge of things. ☐ 26. I am easily led by people.
- ☐ 21. I try to have close relationships with people. ☐ 27. I try to have close, personal relationships with people.
- ☐ 22. I let other people strongly influence my actions. ☐ 28. I take charge of things when I'm with people.

For each of the next group of statements, choose one of the following answers:

1. nobody 2. one or two 3. a few people 4. some people 5. many people 6. most people

- ☐ 28. I like people to invite me to things. ☐ 35. I like people to act cool and distant toward me.
- ☐ 29. I like people to act close and personal with me. ☐ 36. I try to have other people do things the way I want them done.
- ☐ 30. I try to influence strongly other people's actions. ☐ 37. I like people to ask me to participate in their discussions.
- ☐ 31. I like people to invite me to join in their activities. ☐ 38. I like people to act friendly toward me.
- ☐ 32. I like people to act close toward me. ☐ 39. I like people to invite me to participate in their activities.
- ☐ 33. I try to take charge of things when I am with people. ☐ 40. I like people to act distant toward me.
- ☐ 34. I like people to include me in their activities.

For each of the next group of statements, choose one of the following answers:

1. never 2. rarely 3. occasionally 4. sometimes 5. often 6. usually

- ☐ 41. I try to be the dominant person when I am with people. ☐ 48. I like people to include me in their activities.
- ☐ 42. I like people to invite me to things. ☐ 49. I like people to act close and personal with me.
- ☐ 43. I like people to act close toward me. ☐ 50. I try to take charge of things when I'm with people.
- ☐ 44. I try to have other people do things I want done. ☐ 51. I like people to invite me to participate in their activities.
- ☐ 45. I like people to invite me to join their activities. ☐ 52. I like people to act distant toward me.
- ☐ 46. I like people to act cool and distant toward me. ☐ 53. I try to have other people do things the way I want them done.
- ☐ 47. I try to influence strongly other people's actions. ☐ 54. I take charge of things when I'm with people.

Directions: Please answer each of the following questions by referring to the answer sheet provided.

- X1. I seldom strike back, even if someone hits me first.
- Y2. I'm not as patient as I should be.
- X3. I have no particular desire to be the leader of a group.
- X4. Once in a while, I cannot control myself so I usually back off.
- X5. I sometimes spread gossip about people I don't like.
- Y6. I get angry easily.
- X7. I shy away from situations where I might be asked to take charge.
- X8. If I have to resort to physical violence to defend my rights, I would just as soon leave.
- Y9. Unless somebody asks me in a nice way, I won't do what they want.
- Y10. I won't take a lot of crap from someone.
- X11. I let others take the lead when I'm on a committee.
- X12. When I am angry, it is necessary for me to go off and be by myself.
- X13. I lose my temper easily but get over it quickly.
- Y14. I am unable to let off steam when I am angered.
- X15. I would avoid a job which required me to supervise other people.
- X16. If somebody annoys me, I am apt to walk away.
- X17. I don't seem to get what's coming to me.
- Y18. If I get mad enough, I am likely to smash something.
- X19. I work best in a group when I'm the person in charge.
- X20. When people yell at me, I go off by myself.
- Y21. I know that people tend to talk about me behind my back.
- Y22. I won't hesitate to thrash someone if they insult me.
- X23. I seek positions where I can influence others.
- X24. When I do get mad, I make it a point to go somewhere else.

- X25. When I disapprove of my friends' behavior, I let them know it.
- Y26. I don't hesitate to defend my friends physically, if they are assaulted.
- X27. I am usually the one who initiates activities in my group.
- X28. When I really lose my temper, I walk away.
- X29. Once in awhile, I cannot control my urge to harm others.
- Y30. When I am angered, I try to let off steam by hollering.
- X31. In an emergency, I get people organized and take charge.
- X32. Whenever people insult me or my family, I try to leave to do something else.
- Y33. I never get mad enough to throw things.
- Y34. When I get angered over something, I generally tell myself not to worry.
- X35. It is difficult for me to start a conversation with a stranger.
- X36. I sometimes leave when I don't get my way.
- Y37. Sometimes people bother me just by being around.
- Y38. When my boy/girlfriend criticizes me, I usually keep my mouth shut.
- X39. When I meet new people, I usually have little to say.
- X40. I can remember being so angry that I had to go somewhere else.
- X41. When someone makes a rule I don't like, I am tempted to break it.
- Y42. Even though I might be angered when short-changed, I don't say anything.
- X43. I feel uncomfortable around people I don't know.
- X44. I would rather leave a situation than stay there and get into an argument.
- Y45. Other people always seem to get the breaks.
- Y46. I think people should "turn the other cheek" when someone makes them angry.
- X47. I find it difficult to make new friends.

- X48. I usually walk away when someone is pestering and making me mad.
- X49. I tend to be on my guard with people who are somewhat more friendly than I expected.
- Y50. When a taxi blows its horn behind me, I generally slow down.
- X51. At a party, I find it easy to introduce myself and join a group conversation.
- X52. When I get mad enough to throw things, I usually go some place else.
- Y53. I often find myself disagreeing with people.
- Y54. If I am criticized for my work, I will purposely slow down.
- X55. It's easy for me to make "small talk" with people I've just met.
- X56. To avoid a temper tantrum, I always walk away.
- Y57. I can think of no good reason for ever hitting anyone.
- Y58. If I don't like a course, I generally don't hand in papers on time.
- X59. I find it easy to talk with all kinds of people.
- X60. When I feel like a powder keg ready to explode, I try to back out and go somewhere else.
- X61. When I am angry, I sometimes sulk.
- Y62. I cannot tell someone directly when they have angered me, but I tell others though.
- X63. When I am attracted to a person I've not met, I actively try to get acquainted.
- X64. I'd rather walk away than deal with someone bossy.
- X65. When someone is bossy, I do the opposite of what he/she asks.
- Y66. When someone tells me something which I know is inaccurate, I argue until he/she sees my way.
- X67. When someone repeatedly kicks the back of my chair in a theatre, I don't say anything.
- X68. Rather than give someone the "silent treatment" when I am mad, I prefer to walk away.
- Y69. I am irritated a great deal more than people are aware of.

- Y70. I waste no time in defending myself when verbally attacked.
- X71. It is uncomfortable for me to exchange a purchase I've found to be defective.
- X72. Rather than have someone see me when I am mad, I try to walk away.
- Y73. I don't know any people that I downright hate.
- Y74. I get pissed when people step in front of me in a line.
- X75. When a friend borrows something of value to me and returns it damaged, I don't say anything.
- X76. I would rather walk away than put someone in their place, even when they deserve it.
- Y77. There are a number of people who seem to dislike me very much.
- Y78. People have often told me that I am argumentative.
- X79. When someone interrupts me in a serious conversation, I find it hard to ask him/her to wait a minute.
- X80. I can't help getting into arguments when people disagree with me.
- X81. If somebody hits me first, I let him/her have it.
- X82. If I have been "shrot-changed" I go back and complain.
- X83. When I am mad, I sometimes slam doors.
- X84. If the food I am served in a restaurant is unsatisfactory, I complain to the waiter.
- Y85. I am always patient with others.
- X86. If a friend betrays a confidence, I express my annoyance to him/her.
- Y87. Occasionally when I am mad at someone, I will give him/her the "silent treatment".
- X88. In discussions, I go along with the will of the group.
- X89. When I look back on what's happened to me, I cant' help feeling mildly resentful.
- X90. I try to dress like the other people I work or go to school with.
- Y91. There are a number of people who seem to be jealous of me.

- X92. I'll take a drink (or smoke pot) when out with a group even though I really don't want to.
- X93. I demand that people respect my rights.
- X94. When there is disagreement, I accept the decision of the majority.
- X95. Whoever insults me or my family is asking for a fight.
- X96. My opinions are not easily changed by those around me.
- Y97. I never play practical jokes.
- X98. I defend my point of view even though someone in authority disagrees with me.
- X99. It makes my blood boil to have somebody make fun of me.
- X100. I nearly always argue for my viewpoint if I think I'm right.
- X101. When people are bossy, I take my time just to show them.
- X102. I follow my own ideas even when pressured by a group to change them.
- Y103. Almost every week I see someone I dislike.
- X104. I sometimes have the feeling that others are laughing at me.
- Y105. Even when my anger is aroused, I don't use "strong language".
- Y106. People who continually pester you are asking for a punch in the nose.
- X107. I sometimes pout when I don't get my own way.
- X108. If somebody annoys me, I am apt to tell him what I think of him/her.
- X109. I often feel like a powder keg ready to explode.
- X110. Although I don't show it, I am sometimes eaten up with jealousy.
- X111. My motto is "never trust strangers".
- X112. When people yell at me, I yell back.
- Y113. When I really lose my temper, I am capable of slapping someone.
- Y114. Since the age of ten, I have never had a temper tantrum.
- X115. When I get mad, I say nasty things.
- Y116. I sometimes carry a chip on my shoulder.

- Y117. If I let people see the way I feel, I'd be considered a hard person to get along with.
- X118. I commonly wonder what hidden reason another person may have for doing something nice for me.
- X119. I could not put someone in his/her place, even if he/she needed it.
- Y120. I get into fights about as often as the next person.
- X121. I can remember being so angry that I picked up the nearest thing and broke it.
- X122. I often make threats I don't really mean to carry out.
- Y123. I can't help being a little rude to people I don't like.
- X124. At times, I feel I get a raw deal out of life.
- Y125. I used to think that most people told the truth but now I know otherwise.
- X126. I generally cover up my poor opinion of others.
- Y127. If I have to resort to physical violence to defend my rights, I will.
- Y128. If someone doesn't treat me right, I don't let it annoy me.
- Y129. I have no enemies who really wish to harm me.
- X130. When arguing, I tend to raise my voice.
- X131. I have known people who pushed me so far that we came to blows.
- X132. I don't let a lot of unimportant things irritate me.
- Y133. I seldom feel that people are trying to anger or insult me.
- Y134. I would rather concede a point than get into an argument about it.
- Y135. I sometimes show my anger by banging on the table.
- X136. When an acquaintance takes advantage of me, I confront him/her.