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ADOLESCENT AGGRESSION AS A FUNCTION OF
AGE, I.Q., AND DEGREE OF PARTICIPATION

by

MICHEL PIERRE JANISSE

B.A., University of Windsor, 1965

A Thesis

Submitted to the Faculty of Graduate Studies through the
Department of Psychology in Partial Fulfillment
of the Requirements for the Degree of
Master of Arts at the
University of Windsor

Windsor, Ontario, Canada

1967

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ABSTRACT

This study investigated the relationship between the three "direction" scales and the three "type" scales of the Rosenzweig P-F Study and age, I.Q. and degree of participation in adolescent boys. The P-F Study was chosen as a measure of aggression because of its facile administration, high reliability, adequate validity, and variation of measurement scales. It was hypothesized that there would be a negative relationship between the frequency of extrapunitive responses and degree of participation, the frequency of extrapunitive responses and age, and degree of extrapunitive responses and I.Q. It was further hypothesized that there would be a positive relationship between the frequency of need-persistive responses and age, the frequency of need-persistive responses and I.Q., and the frequency of obstacle-dominant responses and degree of participation.

It was found that there was a slight negative relationship between the frequency of extrapunitive responses and degree of participation, and that there was a significant positive relationship between the frequency of extrapunitive scores and I.Q. level. Also there was some indication that extrapunitive scale scores increased with age. Need-persistive scale scores were found not to be related to level of I.Q., but were negatively related to age. Finally a positive relationship between frequency of obstacle-dominant scores and the degree of participation was shown.

(ii)

PREFACE

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CHAPTER I

INTRODUCTION

Hostile behavior is all too familiar to every one of us, but we do not employ the same theories or conceptions in trying to understand such actions, and our needs in dealing with aggression are not the same. For many reasons, then, considerations that are important to one reader, are not necessarily significant for another. (Berkowitz, 1962, p. ix.)

The main purpose of this study is to investigate the effect of age, intelligence and degree of participation upon adolescent aggression. The subjects used in this investigation were four groups of high school students, whose age was within five months of the median age of each of four secondary school grade levels: that is, nine, ten, eleven and twelve. Each group was further divided into three sub-groups of high, medium and low intelligence, on the basis of their scores on the Dominion Learning Capacity Test (DLC). This I.Q. test was developed and published by the Dominion Testing Service (1960). Additionally, each of the intelligence groups was divided into three levels of participation in extra-curricular activities.

The "full participation" group was defined as a daily commitment (e.g., a player on a school football team). The "some participation" group consisted of students involved in a non-athletic school activity that involved no more than four hours of participation per week. The "no participation" group consisted of

- (1) the child is aggressive toward the father;
- (2) the father retaliates by punishing the child;
- (3) the child identifies with the punishing father;
- (4) the authority of the father is internalized and becomes the superego;
- (5) the superego punishes the ego when it disobeys a moral rule of the superego (Hall, 1954, p. 61).

As can be seen, control or lack of control of aggression lies in the superego. Furthermore, it is possible that a person may become so despondent over his behavior that he commits suicide, because acts of self aggression satisfy the aggressive impulses of the id. In the "moralistic" person, for example, the superego is said to be aggressive toward the ego, because it is made to feel wicked and unworthy.

The first type of aggression, according to Freud, is oral aggression. This is expressed shortly after the development of teeth. In the child, adolescent, or adult, this type aggression can be direct, displaced, or disguised, as can be any other type of aggression. The oral aggressive or "biting" infant may become the biting, sarcastic, or cynical adult. This prototypic infant may become a lawyer or politician, and throughout his life alleviate his psychic pain through displaced or disguised methods relating to the mouth. A relevant example is the member of the high school debating or cheerleading squads. In other ways, oral aggression can be a form of self punishment, as with the guilty person who bites his lips or tongue.

Oral aggression may give rise to anxiety, which in turn

is said to bring into play some mechanisms of the ego. These mechanisms are called defence mechanisms. One defence against oral aggression, called reaction formation, occurs, for example, when a person says only kind things about a person he dislikes. Another method of defence which may be employed by the orally aggressive character is called projection. For example, the person may see his own aggressive feelings in others, so that everyone becomes an enemy. The editor of a high school newspaper, for example, may be using this type of a defence. Another reaction to this anxiety is to "regress" to the oral level of behavior, or to "fixate" at it whenever frustrated beyond the capacity to handle it. Next to be considered is the object and the aim of the aggressive instinct.

Every instinct is said to have an object. The object, or the means by which the aim of the aggressive instinct is accomplished, is direct attack. However, direct attack for the adult in this culture is seldom an acceptable mode of conduct, thus the ego may use a defence mechanism. One way of disguising unacceptable aggressive instincts is by sublimation. For example, a surgeon operating on people may be sublimating his aggressive instincts. Projection and rationalization are other mechanisms frequently used by the aggressive person. Projection occurs when aggressive feelings are perceived in, or said to be possessed by, another person. An attack upon this person can then be rationalized as an act of self defence. The attack itself may also be said to be a regression to an earlier level of development. Aggression can also be expressed in many psychosomatic disorders. A person who inhibits his aggressive impulses may have them spread to that area of the body which

overtly expresses aggression, that is, the musculature. A situation of painful tension may then be created in the arms, hands, or legs.

For his own well being therefore, a person ordinarily projects the feelings of his death instinct (aggression) outward, and substitutes external objects for the original object choice, himself. Therefore, it has been said:

As long as the energy of the death instinct can be deflected from one's own person, danger is averted and the person does not feel anxious...
...Inasmuch as action upon a substitute object can never be fully satisfying, projection of the death instinct will persist. This accounts for the fact that aggressiveness is such a prominent human characteristic, and that lesser forms of displaced aggression such as mastery, dominance, exploitation, and competition, are even more prevalent. The weaker expressions are more prevalent than crude aggressiveness because they represent more of a compromise. Consequently, they are more persistently motivated because failing to reduce as much tension, they have more available to maintain the habit. A fistfight is more satisfying (discharges more tension) than competition between business rivals, but adults engage in few fistfights and a great deal of competition (Hall, 1954, p. 101).

Therefore, it would seem that an activity such as football would be more satisfying to the aggressive impulses than another, non-athletic high school activity. This would be so since, as indicated above, an overt expression of aggression is more fulfilling than a covert, or unconscious one.

The aggression outlined above refers to general aggression (overt or covert) and not to any of the qualities which aggression may possess. In order to illustrate the specific qualities of

aggressiveness which are dealt with in this study, and some of its other theorized antecedents, it is necessary to discuss the Frustration-Aggression Hypothesis.

The Frustration-Aggression Hypothesis

Most contemporary writers seem to agree that the antecedent of aggression is ultimately some form of frustration. In the original presentation of this hypothesis by Dollard et al. it is stated, "This study takes as its point of departure the assumption that aggression is always a consequence of frustration. More specifically the proposition is that the occurrence of aggressive behavior always presupposes the existence of frustration, and, contrariwise, the existence of frustration always leads to some form of aggression (1939, p. 1)". This, of course, is quite a sweeping generalization, and met almost immediately with equally sweeping attacks. So apparent seemed the weaknesses of this position, that one of the authors quickly revised his stand to say, "Frustration produces instigations to a number of different responses, one of which is aggression (Miller, 1941, p. 339)". However, although this new version does not contain the much criticized generalizations previously held, Miller does maintain that aggression is always caused by frustration. The basic problem that divides the opposing camps seems to be essentially one of definition, both of frustration and aggression.

Berkowitz (1962) uses the word frustration much in the same sense as did Dollard et al. (1939); that is, as "an interference with an on-going goal-directed activity (p. 43)".

Berkowitz is quite liberal in what he considers an 'interference' and a 'goal-directed activity'; and others, while they may agree with his definition, are quite narrow in their interpretation of what these two concepts mean. For example, Buss (1961) contends that although attack, threat, and insult cause aggression, they are not frustrations, and Menninger insists, "anyone who has his toe stepped on, which is certainly not a frustration, knows how inadequate such a formula is (1942, p. 295)". The Frustration-Aggression theorists argue that the concept of frustration must not be so narrowly limited, nor must it be an evident or obvious situation. McDougall (1926, p. 26), as pointed out by Berkowitz, shows how situations, such as the 'stepping on toes' example of Menninger, may be regarded as the blocking of the gratification of an impulse, although it might not be openly interfering with an activity at the moment of the confrontation. Berkowitz goes on to say, "the exact nature of this impulse, of course, is unimportant; what is relevant here is the interruption of an internal response sequence of the blocking of some drive (1962, p. 30)".

The same problem can be pointed out in the definition of aggression. The definition by Dollard et al. is "an act whose goal response is injury to another person (1939, p. 11)". Buss, (1961) however, says the aggression "is a response that delivers noxious stimuli to another organism (p. 1)". He condemns the use of any definition that implies an intent, such as Dollard's definition, first because a purposive act towards a future goal does not fit in with his behavioral approach, and second, the concept of intent

is difficult to apply to behavioral (that is, measurable) events, because it is a private event that may or may not be able to be verbalized. In keeping with the behavioral approach, Buss excludes all socially acceptable acts of aggression and accidents from the category of aggression. Berkowitz (1962) defends Dollard's approach by saying that aggression may arise in a situation where hostility is primarily oriented toward the attainment of some goal, other than doing injury. This type, instrumental aggression, was excluded from consideration by Dollard and his associates, as they confined their study to reactive aggression; that is, "hostility stemming from the thwarting of instigated response sequences (Berkowitz, 1962, p. 49)".

Berkowitz proposes that, "every frustration increases the instigation to aggression, but this instigation is here termed anger (p. 47)"; that is, frustration produces an emotional state that increases the probability of aggression. However, he goes on, whether or not aggression actually occurs depends upon the presence or absence of suitable cues. These are stimuli which are associated with the instigator of the anger, frustration. Buss disagrees with this and says flatly that in instrumental aggression, "the attacking response is reinforced by acquisition of a reward, and anger need not occur (1961, p. 11)".

Maslow (1941, 1943) and others contend that only particular types of interference, that is, blocking of the basic, or more important drives, breed aggression. These are called threats. Thus he sees qualitative differences in frustrations, in that deprivation gives rise to non-hostile reactions. The Frustration-Aggression

theorists argue that it is impossible to assign qualitative differences to interferences, because certain situations, occasions, and cues, be they threats or deprivations, to certain individuals, may be perceived in such a way as to lead to aggressive or non-aggressive responses. That is, the type of response depends upon the individual's own perception of the event. These theorists say that Maslow's concept leads to an unparsimonious proliferation of concepts, whereas in their theory the dimensions of the thwarted drive are seen as being on a continuum, with deprivation being quite low and threat quite high. Thus the stronger the instigation to the blocked goal, the stronger the resulting tendency to aggress; and thus threats are more likely to produce hostility than deprivations.

Rosenzweig (1934, 1935) is among those theorists who claim that all frustrations lead to aggression. However, he sees a non-response or a seemingly non-aggressive response to frustrative situations as being an inturning of the aggression upon the individual. He calls this an intropunitive response. A full account of Rosenzweig's Frustration Theory appears in the following section.

Rosenzweig's Theory of Frustration and Aggression

Saul Rosenzweig was among the early students of Henry Murray, who gave psychoanalytic theory its first academic audience at the Harvard Psychological Clinic (c.f. Hall and Lindzey, 1962). From Murray's theory of Personology, Rosenzweig developed his Frustration Theory within the unity-of-man concept (Rosenzweig, 1944). Being an outcome of experimental psychoanalysis, Frustration Theory, in keeping with the organismic approach, was called a "psychobiology".

Though not intending a dichotomy or dualism, Rosenzweig allowed that everything occurring on a psychic plane had a corresponding physiological equivalent. Frustration Theory is a centrally orienting concept and uses, in both operational and experimental terms, many of the insights from psychoanalysis and psychosomatic medicine. For purposes of this study, three main subdivisions of Frustration Theory will be discussed: 1. Definition; 2. Types of Strees; and 3. Reaction to Frustration.

1. DEFINITION

The basic tenet of Frustration Theory, for Rosenzweig, is that frustration occurs if a relatively insurmountable obstacle or barrier hinders the organism from satisfying any need. The encompassing situation is called 'stress' and the distress occurring is called 'an augmentation of tension'. As with most theories of frustration, there are both primary and secondary frustrations. An example of primary frustration is that occurring when hunger is experienced because a long period of time has elapsed since food was last consumed. Secondary frustration encompasses the primary, but goes further, that is, causes a greater augmentation of tension. For example, secondary frustration is the label given to the situation in which the hungry person is confronted with some obstacle to obtaining food. Here, the basic frustration (hunger) is made more stressful by a secondary frustration (obstacle). Most studies in this area (for example, Brozek, Guetzkow, Baldwin and Cranston, 1951; Levine, Chein and Murphy, 1942; Sandford, 1936) have concentrated on the investigation of secondary frustration in hopes of

learning about primary frustration. This is also true of Rosenzweig.

2. TYPES OF STRESS

Rosenzweig divides stressful or frustrating situations into operationally convenient groups by using as a basis of division the nature of the obstacle preventing satisfaction. An obstruction may be active or passive -- the active obstruction usually containing all of the passive characteristics, but in addition being a threat to the safety or well-being of the organism. The concept of defence is introduced at this point because the passive obstruction involves just one need, whereas the active obstruction involves additional needs which pertain to security. Obstacles may be internal or external, i.e. inside or outside of the individual. By combination, Rosenzweig comes up with four types of stress: passive internal, passive external, active internal, and active external. He does not go on to label any more types of frustration, since he sees that this can be done from so many different points of view that it would prove valueless. For example, he gives the fields of medicine, economics, sociology, and anthropology, which could look at disease, hunger, sexual and vocational dissatisfaction, each being worthy aspects, but not relevant to Frustration Theory as basic categories. He does hold as relevant, however, developmental factors such as precipitating and predisposing experiences, as well as certain conditional aspects such as deprivation after a period of satisfaction.

3. REACTIONS TO FRUSTRATION

Reactions are generally classified as to whether they are

concerned with the immediate, obvious need of the organism ("need-persistent") or the personality as a whole ("ego-defensive"). The former is considered to occur after every frustration, while the latter occurs only in certain situations that are considered to be a threat to the ego. Rosenzweig sees this as being related to the internal-external division of obstacles. The need-persistent and ego-defensive categories are usually both seen in a reaction to frustration, but are sometimes seen separately, thus the need for the distinction. A third category, which usually includes either or both of the others, is called "obstacle-dominance". This is the predominant feature of the reaction.

Three Directions of Aggression

- i) Extrapunitive - In this type of reaction, the frustration is aggressively attributed to external objects or persons and is somewhat analogous to the psychoanalytic concept of projection. This type of response is not always an inhibited, redirected type of aggression, but may be quite overt and uninhibited.
- ii) Intropunitive - The quality characterizing this type of response is the attributing of frustration to self. This inturning of aggression can be the result of the inhibition of its outward expression.
- iii) Impunitive - In this situation it appears that aggression does not supply the motivating force. Rather, it seems that socially directed or erotic drives are at work. The characteristic most obvious in this type of response is that all blame is glossed over, for both self and other.

Speaking in terms of development, Rosenzweig sees the extrapunitive

response occurring first, with the intro-punitive type following. Although there is much overlapping, both of these types of reaction develop before the impunitive reaction.

The need-persistent types of reaction are usually more limited in their aim than the ego-defensive reactions. They serve to fulfill a specific frustrated need in any way possible, as soon as possible, and seem to be related to the psychoanalytic concept of sublimation. All types of reaction -- adequate, inadequate, direct, or indirect -- are adjustive in aim, and if a psychological balance cannot be achieved by adequate means, then any means possible is used. By an inadequate reaction, Rosenzweig means those responses that are retrogressive and that bind a person inordinately to the past. Also, an inadequate response is one that interferes with future reactions to stressful situations. Adequacy is a difficult criterion to employ, and is better understood in terms of which acts are appropriate and which are inappropriate. This is essentially a common sense criterion of adequacy, but it is the best one available at the present time.

On the need persistence level, the difference between an adequate and an inadequate act, as seen by Rosenzweig, can be spoken of as being on a continuum where only the two extremes are recognizable. Approaching adequacy are those acts which represent a continued and consistent striving toward a goal in spite of obstacles. Approaching inadequacy are those compulsively repeated acts which go on indefinitely. Ego-defensive reactions may be classified in the same way. For example, unwarranted self-blame is not an

adequate means of reacting; whereas, if the situation calls for it, self-criticism can become quite adequate. Moreover, as Rosenzweig points out, "Consistent adherence to one or more of the reaction types marks an individual as having a particular trait or reaction and would appear to imply some weakness of personality structure demanding special defence (1944, p. 385)".

Several considerations had to be made before choosing the Rosenzweig P-F Study (1946) for this investigation. First of all, as Sears, Hovland, and Miller (1940) have pointed out, straight-forward paper and pencil type tests fail to reflect aggression adequately. Also, the use of a purely projective technique would be too time consuming and perhaps reflect more the feelings of the experimenter than the subjects (Murstein, 1961). The P-F Study forces the S to make a projecting response to the only stimulus present (the cartoon), thus limiting the effective influence of the E. This also narrows down the possibility of social suppression of aggression (Sears et al., 1940). The P-F Study may also be presented in many non-orthodox forms to make administration and scoring much more facile (Schwartz, 1957). This projective device also enables study of both the direction and type of aggression. Although this study will consider both aspects, more emphasis will be placed on the latter, as very little research has been carried out in this area (Clark, 1962, Stoltz and Smith, 1942).

The consideration of age as a factor in direction of aggression has brought out some conflicting evidence in the literature. Some studies (Stoltz and Smith, 1942) have found

extrapunitive responses increasing with age, while intro-punitive and impunitive responses decreased. Other studies, however, and these are in the majority (Clark, 1962, Rosenzweig and Rosenzweig, 1952) have found decreased extrapunitive responses and increased intro-punitive and impunitive responses with an increase in age. Schalock and MacDonald (1966) have found that because of intro-punitive and impunitive responses being related to so-called 'good' personality variables, for example, cheerfulness, composure, stability, and introspectiveness, these types of responses must be considered the healthier responses. These relationships have also been found by Bennett and Jordan (1958), Dollard et al. (1939), and Rosenzweig (1938). As in other studies, (Davids, 1955, Singer and Seymour, 1959), Schalock and MacDonald found that extrapunitive reactions seem to be related to unacceptable or 'evil' personality traits such as, anxiety, jealousy, depression, and insecurity.

Hypotheses to be Tested

It is seen from Freudian Theory that there are various methods used by people to allay and alleviate aggression, and that these methods vary in their degree of satisfaction of the need (e.g., football is more satisfying than speech writing). Therefore, the following hypothesis was put forward for the present study:

Hypothesis I. Aggression¹ and degree of athletic participation will be negatively related; that is, as the degree of participation increases, the amount of aggression decreases.

¹The aggression measure here is the extrapunitive scale on the P-F Study. See Holzberg and Posner, 1951 and Rosenzweig and Rosenzweig, 1952.

In the foregoing, several studies (Davids, 1955 Singer and Seymour, 1959, etc.) have been mentioned that have related negative personality traits, such as anxiety and jealousy, to high scores on the extrapunitive scale. Since growth and increasing maturity of a personality is assumed to develop over a period of time in a normal adolescent, and these "good" traits seem related positively to intropunitive and impunitive responses, the next hypothesis was proposed:

Hypothesis II. Extrapunitive responses and age will be negatively related; that is, as age increases, the frequency of extrapunitive responses will decrease.

Since the concept of I.Q. is another aspect of development and to some extent maturity, as is age, and has been shown to be a factor of personality, the following hypothesis was put forward:

Hypothesis III. The level of I.Q. and extrapunitive responses will be negatively related; that is, as the level of I.Q. increases, the frequency of extrapunitive responses will decrease.

In a study by Stoltz and Smith (1942) it was found that, regardless of sex or socio-economic level, there was an increase in the frequency of responses indicating that a solution for the frustration is expected of someone else. This indicates that the older the S, the greater the likelihood of his making predominantly need-persistent responses. Other studies (e.g., Clark, 1962) seem to concur, with special emphasis on male Ss. Therefore, the next hypothesis was proposed:

Hypothesis IV. The age level of the subjects and the frequency of need-persistive responses will be positively related; that is, as age increases, the greater will be the frequency of need-persistive responses.

Again it is assumed that age and I.Q. are but separate facets of maturity and development, and that in the normal adolescent, I.Q. is a factor in personality development. Thus the next hypothesis was put forward:

Hypothesis V. The I.Q. level and the frequency of need-persistive responses will be positively related; that is, the higher the I.Q., the greater the frequency of need-persistive responses.

No research has been carried out in the area of participation and type of response to frustration. Since it is assumed that football players (the highest degree of participation in the present groups) are faced with the task of solving a problem of survival, it is postulated that their main type of response to frustration is an obstacle-dominant one. Thus the following hypothesis was considered:

Hypothesis VI. The degree of participation and frequency of obstacle-dominance responses will be positively related; that is, when the degree of participation increases, the frequency of obstacle-dominant responses increases.

CHAPTER II

METHODOLOGY AND PROCEDURE

Experimental Sample. The Ss used in the present study were students enrolled at a male high school in Windsor: Grades nine, ten, eleven, and twelve. They were divided into four groups of students whose age is within five months of the median age of each of the four grade levels.

Psychometric Instruments. These four groups were further divided into three I.Q. levels, high, medium, and low. The I.Q. of the high group was 120 or better, the medium group, 108 and 113, and the low group, 100 and below. These twelve subgroups were further divided on the basis of full, some, or no participation in extra-curricular activities. Since every student enrolled was given the Dominion Learning Capacity Test (1960), the I.Q. of each S was obtained from school records. The total number of subjects was 144. Each S was given the Rosenzweig P-F Study in the usual manner for group testing. The number of Ss in each group at a testing session was between 10 and 30. The following instructions were given to the Ss:

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 would answer and write in the blank box the very first reply that comes to your mind. Work as fast as you can. Remember, it is your first response that is wanted, whether or not it is what you would say in the situation. You may begin.

The Rosenzweig Picture-Frustration Study consists of 24 cartoons presenting some frustrating situations to the S. In each of the cartoons, the balloon above the person being frustrated is blank. The S writes in the blanks what his first impression is of how he would react. Each of the situations is given in Appendix A. Experimental Procedure. The measures used in this study are the following: extrapunitive (E), intropunitive (I), impunitive (M), obstacle-dominance (O-D), ego-defensive (E-D), and need-persistive (N-P).

The following statistical technique was used in order to analyze the data: a 3 x 3 x 4 analysis of variance, with participation, age, and I.Q. being the main effects. A separate analysis will be performed with each of the six measures. Further, more sophisticated, analyses were performed where applicable.

CHAPTER III

RESULTS

The results concerning the hypotheses that deal with extrapunitive (E) responses (Hypotheses I, II and III) are presented first, followed by those dealing with need-persistent (N-P) responses (Hypotheses IV and V). The third section presents responses having to do with obstacle-dominant (O-D) responses (Hypothesis VI). Following each of these sections is a brief explanation of the results as they relate to the particular hypothesis in question. A fourth section presents further results, not predicted by any hypothesis, but of such a nature as to be of particular importance to the study of aggression.

Hypotheses I, II and III. Each subject received one score from the E scale that could range from 0 to 100. The actual range for these scores was 25 to 88. A three-way analysis of variance with I.Q., grade, and participation as the main effects was carried out for the scores on this scale.

The total group scores for the E responses appear in Table 1. It is noted that in 25 cells the score is 200 or better. The maximum possible score for each cell would be 400. Of the remaining 11 cells, a score of over 150 is attained in 8 cells. The average score was 213.2, which is 53.2 per cent of 400. Since the total score of 400 is divided between the E, I, and M scales, it is seen that the E response was the most common one, especially among the

grade 12 group and the high I.Q. group.

TABLE 1

TOTAL GROUP SCORES FOR EACH GRADE, I.Q.,
AND PARTICIPATION LEVEL ON THE E SCALE
(N CONTRIBUTING TO WITHIN-CELL TOTAL=4)

| Grade | Participation | I. Q. Level | | | Participation Totals | Grade Totals |
|--------------------------------|---------------|-------------|--------|------|-------------------------|-----------------|
| | | Low | Medium | High | | |
| 9 | F | 241 | 108 | 227 | 576 | 1840 |
| | S | 209 | 224 | 241 | 674 | |
| | N | 165 | 201 | 224 | 590 | |
| 10 | F | 162 | 235 | 249 | 646 | 2010 |
| | S | 149 | 228 | 241 | 618 | |
| | N | 243 | 267 | 236 | 746 | |
| 11 | F | 195 | 188 | 223 | 606 | 1748 |
| | S | 176 | 209 | 178 | 563 | |
| | N | 142 | 216 | 221 | 579 | |
| 12 | F | 165 | 292 | 181 | 638 | 2077 |
| | S | 231 | 258 | 263 | 752 | |
| | N | 238 | 208 | 241 | 687 | |
| I.Q. Totals | | 2316 | 2634 | 2725 | | |
| Maximum within-cell total: 400 | | | | | | |
| F: Full S: Some N: None | | | | | | |

A summary of the three-way analysis of variance for E responses appears in Table 2. The F ratios for the main effect I.Q. and the I.Q. X grade X participation interaction were significant (at the .05 level), but those for the other main effects and interactions were nonsignificant. A comparison test, of a non-orthogonal nature, among the I.Q. totals indicated that all three totals were significantly different from each other at the .01 level, except for

the difference between the medium I.Q. group and the high I.Q. group, which was significant at the .05 level. From the results

TABLE 2

THREE-WAY ANALYSIS OF VARIANCE FOR E
RESPONSES WITH I.Q., GRADE, AND PAR-
TICIPATION AS THE MAIN EFFECTS
(N CONTRIBUTING TO WITHIN-CELL TOTAL=4)

| Source | df | Mean Squares | F |
|-----------------------|-----|--------------|-------|
| I.Q. (Q) | 2 | 960.72 | 3.8* |
| Grade (G) | 3 | 636.36 | 2.5 |
| Participation (P) | 2 | 133.34 | .5 |
| Q x G Interaction | 6 | 345.40 | 1.4 |
| Q x P Interaction | 4 | 34.78 | .01 |
| G x P Interaction | 6 | 263.33 | 1.04 |
| Q x G x P Interaction | 12 | 466.56 | 1.84* |
| Error | 108 | 252.73 | |
| Total | 143 | | |

*Significant beyond the .05 level.

of the three-way analysis of variance and the non-orthogonal comparison upon the scores for the I.Q. groups, it is seen that the difference between the scores are significant, but in a direction opposite to that predicted. Thus, Hypothesis III, that I.Q. and E responses are negatively related, was not upheld.

A test for linear, quadratic, and cubic trends was performed on the totals for the grade level groups. It was found that all three trends were significant, the linear and the cubic at the .01 level, and the quadratic at the .05 level. From the analysis of variance results and the extremely high F ratio of the cubic trend analysis (51.76), it is seen that the difference

in the total E scale scores between grade levels approaches significance in a manner which suggests a cubic relationship. Therefore, Hypothesis II, that age and E responses are negatively related, must be rejected.

TABLE 3

TOTAL E SCORES FOR THE FULL, SOME,
AND NONE PARTICIPATION GROUPS
(N CONTRIBUTING TO WITHIN-CELL TOTAL=16)

| Participation Level | Full | Some | None |
|---------------------|------|------|------|
| | 2466 | 2607 | 2602 |

A non-orthogonal test of comparison was performed upon the total scores of each of the participation groups. It was shown that the full group differs significantly from both the some and none groups (at the .01 level). Thus, from the analysis of variance and the non-orthogonal tests, it is seen that the differences between the E scores of the participation groups generally are significant in the direction predicted. Therefore, Hypothesis I, that E scores and the degree of participation are negatively related, is upheld at least partially, because not all of the differences found were significant.

Summary of Results for Hypotheses I, II, and III. It was hypothesized (Hypothesis I) that the degree of participation would be negatively related to the E scores on the P-F Study. Hypothesis I was partially accepted, since there was no significant difference between the total E scores of the three participation groups in the

analysis of variance, but a test of non-orthogonal comparison revealed that there is a significance in the direction predicted.

It was hypothesized (Hypothesis II) that age level and the E responses would be negatively related; that is, as age increased, the frequency of E responses was expected to decrease. Hypothesis II was not upheld, as the difference in the total E scores for each of the grade levels were shown to be non-significant. However, there appeared to be some tendency toward significance as indicated by the approach of the F ratio toward the critical ratio, and by the presence of significant linear, quadratic and cubic trends.

It was also hypothesized (Hypothesis III) that the level of I.Q. and the scores on the E scale would be negatively related; that is, as the I.Q. level increased, the frequency of E responses would decrease. It was shown that the opposite was true; that is, as the I.Q. level increased, the frequency of E responses also increased. Thus, Hypothesis III was rejected.

Hypotheses IV and V. Each subject received a score ranging from 0 to 100 on the N-P scale of the P-F Study. However, these individual scores are only part of the total (100), as the remainder is divided between the O-D and the E-D scales. The actual range for N-P scores was 8 to 45. A three-way analysis of variance with I.Q., grade, and participation the main effects was carried out on the N-P scale scores.

Table 4 provides the total group scores for the N-P scale. It is seen that of the 36 entries, only 2 are above 150 and 31 scores are below 126. Since the maximum score per group cell of the N-P scale is 400, and the average group response is 105.5 which is 26.3

per cent of 400, it is seen in Table 4 that the N-P response was not a popular one. This is true especially among the high I.Q. group and the grade 12 age group.

TABLE 4

TOTAL GROUP SCORES FOR GRADE, I.Q.,
AND PARTICIPATION LEVEL ON THE N-P SCALE
(N CONTRIBUTING TO WITHIN-CELL TOTAL=4)

| Grade | Participation | I.Q. Level | | | Participation Totals | Grade Totals |
|-------------|---------------|------------|--------|------|-------------------------|-----------------|
| | | Low | Medium | High | | |
| 9 | F | 100 | 153 | 86 | 339 | 1006 |
| | S | 83 | 131 | 113 | 327 | |
| | N | 116 | 124 | 100 | 340 | |
| 10 | F | 137 | 95 | 111 | 343 | 926 |
| | S | 106 | 106 | 85 | 297 | |
| | N | 84 | 112 | 90 | 286 | |
| 11 | F | 113 | 153 | 82 | 348 | 993 |
| | S | 122 | 65 | 122 | 309 | |
| | N | 109 | 125 | 102 | 336 | |
| 12 | F | 121 | 96 | 126 | 343 | 873 |
| | S | 89 | 79 | 87 | 255 | |
| | N | 89 | 96 | 90 | 275 | |
| I.Q. Totals | | 1269 | 1335 | 1194 | | |

Maximum within-cell total: 400

A summary of the three-way analysis of variance for N-P responses appears in Table 5. None of the F ratios for the main effects or the interactions was significant.

A test for linear, quadratic, and cubic trends among the grade level totals indicated that the linear and cubic trends were significant (at the .01 level), but the quadratic trend was

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non-significant. Thus Hypothesis IV, that age and frequency of N-P responses are positively related, was not upheld. In point of fact,

TABLE 5

THREE-WAY ANALYSIS OF VARIANCE FOR N-P
RESPONSES WITH I.Q., GRADE, AND PAR-
TICIPATION AS THE MAIN EFFECTS
(N CONTRIBUTING TO WITHIN-CELL TOTAL=4)

| Source | df | Mean Squares | F |
|-----------------------|-----|--------------|------|
| I.Q. (Q) | 2 | 103.69 | 1.23 |
| Grade (G) | 3 | 106.38 | 1.26 |
| Participation (P) | 2 | 191.40 | 2.27 |
| Q x G Interaction | 6 | 108.98 | 1.29 |
| Q x P Interaction | 4 | 72.87 | .86 |
| G x P Interaction | 6 | 33.25 | .39 |
| Q x G x P Interaction | 12 | 136.84 | 1.62 |
| Error | 108 | 84.31 | |
| Total | 143 | | |

there was some indication that the converse of this hypothesis would be a more adequate, though not complete statement of this relationship. A test for non-orthogonal comparison among the I.Q. level totals revealed significant differences at the .01 level between all groups. The sole exception was that difference between the low and the medium I.Q. groups which was significant at the .05 level. Thus, Hypothesis V, that I.Q. level and N-P responses are positively related was rejected.

Summary of Results for Hypotheses IV and V. It was hypothesized (Hypothesis IV) that age and frequency of N-P responses on the P-F Study would be positively related. Hypothesis IV was rejected, since there was no significant difference between

the total N-P scale scores of each of the four grade levels. However, the presence of significant linear and cubic trends indicates a tendency toward significance, but in a direction opposite to that predicted.

It was hypothesized (Hypothesis V) that I.Q. level and frequency of N-P responses on the P-F Study would be positively related. Hypothesis V was rejected as no significant difference

TABLE 6

TOTAL N-P SCALE SCORES FOR THE FULL,
SOME, AND NONE PARTICIPATION GROUPS
(N CONTRIBUTING TO WITHIN-CELL TOTAL=16)

| Participation Level | Full | Some | None |
|------------------------|------|------|------|
| | 1373 | 1188 | 1237 |

was found between the total N-P scores of the three I.Q. levels in the analysis of variance. However, the presence of significant difference revealed by the non-orthogonal comparisons that there are differences, but in a direction opposite to the one predicted.

Hypothesis VI. Each subject received a score on the O-D scale of the P-F Study which could vary from 0 to 400. Again, the O-D scale scores are part of the total of 100 shared with the E-D and N-P scales. The actual range of scores was 0 to 28. A three-way analysis of variance with I.Q., grade, and participation the main effects was performed on the scores of the O-D scale.

Table 7 provides the total group scores from the O-D scale. It is seen that the group scores are very low. Of a

TABLE 7
TOTAL GROUP SCORES FOR GRADE,
I.Q., AND PARTICIPATION LEVEL
ON THE O-D SCALE
(N CONTRIBUTING TO WITHIN-CELL TOTAL=4)

| Grade | Participation | Low | Medium | High | Participation Totals | Grade Totals |
|-------------|---------------|-----|--------|------|----------------------|--------------|
| 9 | F | 51 | 49 | 56 | 156 | 466 |
| | S | 52 | 52 | 40 | 144 | |
| | N | 53 | 66 | 47 | 166 | |
| 10 | F | 63 | 81 | 50 | 194 | 441 |
| | S | 76 | 38 | 44 | 158 | |
| | N | 33 | 42 | 14 | 89 | |
| 11 | F | 62 | 58 | 73 | 193 | 551 |
| | S | 56 | 86 | 59 | 201 | |
| | N | 65 | 36 | 56 | 157 | |
| 12 | F | 86 | 65 | 71 | 222 | 533 |
| | S | 62 | 45 | 31 | 138 | |
| | N | 61 | 68 | 44 | 173 | |
| I.Q. Totals | | 720 | 686 | 585 | | |

Maximum within-cell total: 400

possible score of 400, the mean for the entire sample of O-D responses was 55.3.

A summary of the three-way analysis of variance for the O-D scores appears in Table 8. The F ratio for the main effect participation was significant (at the .05 level), but all other main effects and interactions were non-significant.

A test for linear and quadratic trends among the total O-D responses for the participation groups indicated that they were

TABLE 8

THREE-WAY ANALYSIS OF VARIANCE FOR O-D
RESPONSES WITH I.Q., GRADE, AND PAR-
TICIPATION AS THE MAIN EFFECTS
(N CONTRIBUTING TO WITHIN-CELL TOTAL=4)

| Source | df | Mean Squares | F |
|-----------------------|-----|--------------|-------|
| I.Q. (Q) | 2 | 102.72 | 2.30 |
| Grade (G) | 3 | 76.91 | 1.72 |
| Participation (P) | 2 | 176.78 | 3.96* |
| Q x G Interaction | 6 | 30.32 | .68 |
| Q x P Interaction | 4 | 18.72 | .42 |
| G x P Interaction | 6 | 88.24 | 1.98 |
| Q x G x P Interaction | 12 | 48.29 | 1.08 |
| Error | 108 | 44.60 | |
| Total | 143 | | |

*Significant beyond the .05 level.

both significant, the former at the .01 level, and the latter at the .05 level. Thus Hypothesis VI, that degree of participation and frequency of O-D responses are positively related, was upheld.

TABLE 9

TOTAL O-D SCALE SCORES FOR THE FULL,
SOME AND NONE PARTICIPATION GROUPS
(N CONTRIBUTING TO WITHIN-CELL TOTAL=16)

| Participation Level | Full | Some | None |
|---------------------|------|------|------|
| | 765 | 641 | 585 |

Summary of Results for Hypothesis VI. It was hypothesized (Hypothesis VI) that as the degree of participation increased, so to the frequency of O-D scale responses would increase. Hypothesis VI was accepted in that the analysis of variance indicated that a significant difference in the totals of the participation groups scores existed in the direction predicted. The test of trend indicated that the relationship could best be described as a linear one.

Further Results. The results outlined in this section will deal with the scores obtained on the I, M, and E-D scales of the P-F Study.

Results of the I Scale. A three-way analysis of variance with I.Q., grade, and participation the main effects was performed on the scores obtained from the I scale of the P-F Study. A summary of this analysis of variance appears in Table 10. This summary table indicates that the main effect for grade was significant (at the .01 level), while the other main effects and all interactions were non-significant.

The Newman-Keuls procedure was used to test the significance of the differences between the total I scale scores on the P-F Study among the four grade levels. A summary of the results of the application of this procedure appears in Table 11. Inspection of these results reveals that the total I scale scores for grades, 9, 10, and 11 are significantly higher (at the .01 level) than the total I scale score for grade 12. All other comparisons are nonsignificant.

Summary of I Scale Results. From the analysis of variance

of the scores on the I scale of the P-F Study it is seen that the only significant effect is the main effect for grade. The application of the Newman-Keuls procedure reveals that the only significant difference in the totals is that between grade 12 and grades

TABLE 10

THREE-WAY ANALYSIS OF VARIANCE FOR I
RESPONSES WITH I.Q., GRADE, AND PAR-
TICIPATION AS THE MAIN EFFECTS
(N CONTRIBUTING TO WITHIN-CELL TOTAL=4)

| Source | df | Mean Squares | F |
|-----------------------|-----|--------------|--------|
| I.Q. (Q) | 2 | 259.93 | 2.53 |
| Grade (G) | 3 | 485.19 | 4.72** |
| Participation (P) | 2 | 28.26 | .27 |
| Q x G Interaction | 6 | 130.22 | 1.27 |
| Q x P Interaction | 4 | 89.32 | .87 |
| G x P Interaction | 6 | 31.08 | .30 |
| Q x G x P Interaction | 12 | 151.46 | 1.47 |
| Error | 108 | 102.92 | |
| Total | 143 | | |

**Significant beyond the .01 level.

9, 10, and 11; the grade 12 scores being lower.

Results of the M Scale. A three-way analysis of variance with I.Q., grade, and participation the main effects was performed on the scores of the M scale from the P-F Study. A summary of this analysis of variance is shown in Table 12. This summary table indicates that the main effect for grade was significant (at the .05 level) while the other main effects and the interactions were non-significant.

The Newman-Keuls procedure was used to test the significance

TABLE 11

NEWMAN-KEULS TESTS OF THE SIGNIFICANCE
OF THE DIFFERENCE FOR THE TOTAL \bar{I}
SCORES ON THE P-F STUDY AT EACH OF
THE FOUR GRADE LEVELS (9, 10, 11, 12)

| | 12 | 9 | 10 | 11 |
|----------|-----|-----|-----|-----|
| Totals: | 704 | 953 | 961 | 987 |
| Grade 12 | | ** | ** | ** |
| Grade 9 | | | | |
| Grade 10 | | | | |
| Grade 11 | | | | |

**Significant at the .01 level.

of the differences between the total \bar{M} scores among the four grade

TABLE 12

THREE-WAY ANALYSIS OF VARIANCE FOR \bar{M}
RESPONSES WITH I.Q., GRADE, AND PAR-
TICIPATION AS THE MAIN EFFECTS
(N CONTRIBUTING TO WITHIN-CELL TOTAL=4)

| Source | df | Mean Squares | F |
|-----------------------|-----|--------------|-------|
| I.Q. (Q) | 2 | 261.03 | 2.79 |
| Grade (G) | 3 | 291.63 | 3.11* |
| Participation (P) | 2 | 51.86 | .55 |
| Q x G Interaction | 6 | 99.30 | 1.06 |
| Q x P Interaction | 4 | 30.28 | .32 |
| G x P Interaction | 6 | 166.60 | 1.78 |
| Q x G x P Interaction | 12 | 114.73 | 1.23 |
| Error | 108 | 93.63 | |
| Total | 143 | | |

*Significant at the .05 level.

levels. A summary of the results of the application of this procedure appear in Table 13. Inspection of these results reveals the

TABLE 13

NEWMAN-KEULS TESTS FOR THE SIGNIFICANCE
OF THE DIFFERENCES FOR THE TOTAL M
SCORES ON THE P-F STUDY AT EACH OF
THE FOUR GRADE LEVELS (9, 10, 11, 12)

| | 10 | 9 | 12 | 11 |
|----------|-----|-----|-----|-----|
| Totals: | 629 | 787 | 819 | 865 |
| Grade 10 | | ** | ** | ** |
| Grade 9 | | | | * |
| Grade 12 | | | | |
| Grade 11 | | | | |

**Significant at the .01 level.

*Significant at the .05 level.

following:

- (1) the total M scale scores for grades 9, 11, and 12 were significantly higher (at the .01 level) than the total M scale scores for grade 10.
- (2) the total M scale score for grade 11 was significantly higher (at the .05 level) than the total M scale score for grade 9.

Summary of the M Scale Results. From the analysis of variance on the scores of the M scale of the P-F Study, it is seen that the only significance occurs with the main effect grade. The Newman-Keuls procedure reveals the following: (1) the total score of grade 10 is significantly lower than the total scores of grades 9, 11, and 12; and (2) the total score of grade 9 is significantly lower than the total score of grade 11.

Results of the E-D Scale. A three-way analysis of

variance with I.Q., grade, and participation the main effects was performed on the scores obtained from the E-D scale of the P-F Study. A summary of this analysis of variance is found in Table 14. This summary indicates that the main effects for I.Q.

TABLE 14

THREE-WAY ANALYSIS OF VARIANCE FOR E-D
RESPONSES WITH I.Q., GRADE, AND PAR-
TICIPATION AS THE MAIN EFFECTS
(N CONTRIBUTING TO WITHIN-CELL TOTAL=4)

| Source | df | Mean Squares | F |
|-----------------------|-----|--------------|--------|
| I.Q. (Q) | 2 | 360.03 | 3.12* |
| Grade (G) | 3 | 167.73 | 1.45 |
| Participation (P) | 2 | 678.43 | 5.87** |
| Q x G Interaction | 6 | 154.14 | 1.33 |
| Q x P Interaction | 4 | 58.77 | .51 |
| G x P Interaction | 6 | 195.81 | 1.69 |
| Q x G x P Interaction | 12 | 100.59 | .87 |
| Error | 103 | 115.53 | |
| Total | 143 | | |

**Significant at the .01 level.

*Significant at the .05 level.

(at the .05 level) and participation (at the .01 level) were significant. The main effect for grade and all the interaction effects were nonsignificant.

The Newman-Keuls procedure was used to test the significance of the differences between the total E-D scores among the three I.Q. levels. A summary of the results of the application of this procedure appears in Table 15. Inspection of these results indicates that the high I.Q. group totals are significantly

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higher (at the .01 level) than the medium and low I.Q. group totals on the E-D scale.

TABLE 15

NEWMAN-KEULS TESTS OF THE SIGNIFICANCE OF THE DIFFERENCES FOR THE E-D SCALE SCORES ON THE P-F STUDY AT EACH OF THE THREE I.Q. LEVELS

| Totals: | Medium 2997 | Low 2811 | High 3021 |
|--------------|----------------|-------------|--------------|
| I.Q.: Medium | | | ** |
| I.Q.: Low | | | ** |
| I.Q.: High | | | |

**Significant at the .01 level.

The Newman-Keuls procedure was also used to test the significance of the differences between the total E-D scores among the three participation groups. A summary of the results of the application of this procedure appears in Table 16. Inspection of these results indicates that the E-D scale group totals at the full participation level is significantly lower (at the .01 level) than the group totals at the some and no participation levels.

Summary of the E-D Scale Results. From the analysis of variance of the scores on the E-D scale, it is seen that the main effects I.Q. and participation are significant. The application of the Newman-Keuls procedure to the I.Q. group totals, reveals that the high I.Q. group has significantly higher (at the .01 level) group totals on the E-D scale than do the medium and low

I.Q. groups. The same procedure applied to the participation group totals, indicates that the full participation group has

TABLE 16

NEWMAN-KEULS TESTS OF THE SIGNIFICANCE OF THE
DIFFERENCES FOR THE E-D SCALE SCORES ON THE
P-F STUDY AT EACH OF THE THREE PARTICIPATION LEVELS

| Totals: | Full 2662 | Some 2971 | None 2978 |
|-----------------|--------------|--------------|--------------|
| Participation F | | ** | ** |
| Participation S | | | |
| Participation N | | | |

**Significant at the .01 level.

significantly lower group totals on the E-D scale than do the some and no participation groups.

CHAPTER IV

DISCUSSION

This chapter will discuss the results of six scales of the P-F Study. The first scale, that measuring extrapunitive aggression, refers to the type of aggression directed outward, away from the person aggressing. The next scale is the intrapunitive scale, which measures aggression directed inward, or towards the individual. The impunitive scale implies a "glossing over" of the frustrating situation or a denial of aggression. The obstacle-dominance scale refers to the concern of overcoming some obstacle to satisfaction. The ego-defensive scale implies measurement of a type of aggression aimed at protecting the self. The need-persistive scale measured the type of aggression that seeks to fulfill a specific frustrated need.

The discussion will be divided into three parts; that is, a discussion concerning the results of each of the three independent variables, participation, age, and I.Q.

Discussion of the Degree of Participation Results. The finding (Hypothesis I) that there is at least a partial negative relationship between extrapunitive responses on the P-F Study and the level of participation (p. 23) would tend to uphold the general opinion of the positive value of athletics to adolescents. It seems to be popularly believed that athletics gives an adolescent the opportunity to learn leadership, responsibility, teamwork, and many

other qualities said to be necessary for the formation of a mature adult personality. Additionally, it is held, both in lay and scientific circles, that athletics affords the individual the opportunity to express aggression in a socially acceptable manner. In lay terms, this is called "getting it out of your system", and in scientific terms, it is called the "Cathartic Theory". The Cathartic Theory, upon which the popular beliefs are based, holds that by expressing hostility in a controlled and constructive way, such as by athletics, there will be less tendency to be aggressive in social, or everyday situations. The basic tenet of this theory, which is an instinctual theory, is that there is a given amount of aggression present in the personality at all times. This aggression is constantly seeking an outlet which, if not expressed in a violent way, emerges in what is called sublimated, or socially accepted way. However, if there are fewer violent outlets available (such as athletics), the more violent may become the sublimated aggression. Thus, all things being equal, (for example, motivation, ability, weight, size) athletics is seen as a "good" thing, and even therapeutic. It is, therefore, when looked at from this point of view, easy to understand why many children and adolescents are directed by their elders to take up some form of athletics.

In the opposite camp scientifically, and not as popular among laymen, is the Circular or Inter-Action Theory (Morlan, 1949), which holds that athletics tends to increase the amount of aggression present. This is a behavioristic theory that implies that

aggression is not necessarily always present but must be learned. By practising aggression and by being positively reinforced for using it, one becomes aggressive. It is further postulated that if no overt expression of aggression is seen, it is just not present. Likewise, the negative reinforcement of aggression will lead to its disappearance. These theorists would say that aggression in a football player would be increased because of several factors; some examples are, the exposure to it, the teaching of its use, and the reinforcement of its use as acceptable behavior.

Although there is scientific evidence to uphold both of these theories, there are several circumstances which must be taken into consideration when trying to account theoretically for aggression. One determinant for accepting or rejecting either of these theories is the nature or type of athletic event in question. For example, one could look at the varying degree of physical violence and aggressive behavior expressed in events as diverse as boxing and cross-country running. Although physical violence seems to be a pertinent variable, Husman (1955) has shown that the most important variable seems to be the degree to which the event is emotionally charged for the individual. He found that an emotionally charged contest tended to depress both the extrapunitive and the ego-defensive scale scores of the P-F Study. In using several projective techniques (such as, the P-F Study, TAT, and Sentence Completion Test), Husman (1955) found that certain sports events were, in fact, more emotionally charged than others, and there seemed to be a direct positive relationship between the degree of physical

violence and how emotionally charged the event was for the participant. From the above cited evidence and recalling the great amount of violence involved in the game of football, it would appear that the particular group of athletes in this study approached football in a highly charged emotional manner. Further, perhaps the Spartan training schedule of these athletes, together with the aggression evoking "pep talks" of their coaches, might heighten or augment any previous emotional attitude regarding football.

One would hypothesize that this emotion arousal would pervade the whole personality, yet the hostile aspect of it does not seem to be found outside of the athletic arena. This is indicated by their failure to express any significant amount of aggression in a projected social situation, such as that measured by the E scale of the P-F Study. Since this particular scale of the P-F Study seems to measure projected aggression (Lindzey and Goldwyn, 1954), it is doubtful if the large amounts of hostility that have been drilled into these athletes would find any sort of expression in a social situation. Although, as mentioned, the E scale scores were depressed, there was no corresponding rise in the I scale or M scale scores (Tables 10 and 12). This may indicate that their lack of expression of aggression in social situations did not cause, nor was accompanied by, an increase of self-blame (inturned aggression) or a "glossing over" of the occasion for aggression.

Here one may point to other studies, especially the one by Holzberg and Pasner (1951), that indicate the E scale measures fantasy aggression rather than overt aggression, and argue that a low

E scale score is normal for a football player because of the high degree of overt aggression. However, this does not account for the previously cited lack of increase in the I and M scale score responses, which may indicate that lack of fantacized aggression is not the major factor (if at all a factor) in the low E scale scores. Further, other studies have suggested a direct positive relationship between overt and fantasy aggression (Chorost, 1962, Kagan, 1956, and Mussen and Nagler, 1954). If these findings are correct, the high degree of overt aggression in the football player would likewise indicate a high degree of fantasy aggression. It is postulated here that these particular results were found in the football group mainly because of the severe training methods which evoked a highly charged emotion in the athletes. Thus, if one accepts the definition of a mature person as one who can adequately express all of his emotions, it would appear that this sample high school football team has been a failure with regard to its goal of creating mature adults, in so far as their aggressive emotions at least, seem to be inhibited.

To see further possible evidence for the relationship of training methods and the type of aggressive reaction, it is necessary to refer to a study by Mercer and Kyriazis (1962) dealing with physically assaultive prisoner mental patients, and a matched, corresponding group of normals. The results showed that on all scales of the P-F Study there was no significant difference between the assaultive group and the normal group. The question arises, Why is it that football players differ significantly in their E

scale scores from a normal population, while the prisoners do not?. The football players are just as violent and assaultive in limited situations as are the prisoners, in limited situations, so this is not the area in which to look for differences; nor is the area of "opportunity" to express interpersonal aggression very different for each of the groups. The area of difference seems to lie in the varied background of the two groups. Looking closely at these backgrounds, indicates that the Spartan training and rigid rules for the expression of aggression in the football players has had a blunting or deadening effect upon its expression in other areas. In the prisoners, however, it is assumed that there has never been the practiced violence nor the narrow control of specific techniques for its expression, thus there has been no deadening of emotionality (at least not as a result of the aggressive acts). Thus, it seems that when an emotion, or the expression of that emotion, is over-controlled, that is, controlled to an inordinate degree, the emotion simply disappears. What seems to have occurred in the football players is that the over-control of emotional aggression has eliminated the expression of aggression at any other time.

As has been indicated above, the degree of participation is not a significant factor in determining the scores of the intrapunitive and impunitive scales. In the Some group, at least, this may be related to the dedication and satisfaction gained from the particular non-athletic extracurricular activity involved. It appears that the subjects in the None group have sparse measurable or significant amounts of aggression, and that which is expressed is

balanced between all the scales of the P-F Study. This may be the very reason they are non-participants, in that they have little need for a violent outlet, or at least have more convenient outlets for their hostility in less structured, social situations.

Overall, therefore, it would seem that the best adjusted (with regard to aggression) may be those subjects in this study who did not play football. The findings would seem to indicate that both the Cathartic, and the Circular theories of aggression are adequate, though incomplete, explanations of the dynamics involved in the particular athletic situation reported here. It may be necessary to employ a theory that is a meld of these two, plus several other uncontrolled factors, such as emotionality, motivation, supervision, and training.

Further, respects must be paid to a few individual football players, whose scores went against the general flow of the scores of their mates, and indicated good adjustment despite the cited negative influence of this particular version of the high school athletics. This was evidenced by their relatively high I scale scores, and their results on the O-D scale which is dealt with below.

The finding that the football group scored significantly higher on the O-D scale (Table 8) than did the other two groups (Hypothesis VI) tends to uphold the postulate that the problem of survival is of great import to the football player. A further inference for these high scores is that aggression, for the football player, is not of an interpersonal nature, but more predominately

instrumental aggression, that is, an effort to overcome an obstacle in order to reach a goal. The opposing player may not be seen as a personal aggressor, or a person to be overcome per se, but rather as a restriction or a hindrance to achievement of both short and long term goals. The short term goal would involve the assurance of success on any particular play and may be extended as far as the winning of the game. The long term goal seems to be that of remaining on the football team by being more successfully aggressive than anyone else. This long range goal, appears to have the predominant influence upon the motivation of the player, because it has been measured. This is postulated in that the immediate success - goal motivation lasts but a relatively short time, the length of a particular game, at most. The P-F Study was administered at mid-week, between games, when it had been several days since any violent physical contact had taken place, thus it seems unlikely that any short term motivational influences were picked up. Therefore, the high percentage of O-D Scale score responses present are assumed to be the result of long range motivation.

Both of the other participation groups scored significantly lower (Table 3) on the O-D Scale than did the Full participation group, but they did not differ significantly from each other. This may indicate that subjects who are not allowed the use of physical violence to express aggression, are not as concerned with goal directed aggressive responses. This suggests that the immediate overcoming of obstacles to attain future goals, is not the major component in the handling of their aggression. What may be indicated

here is that the non-athlete is not as concerned with success, remote or immediate, as is the well trained athlete. One possible explanation of this, might be that the entire schedule of the athlete is directed toward the overcoming of obstacles and the attaining of goals. The non-athlete seemingly can be much more free with regard to goals and success, in that he does not have the same obvious constant pressure placed upon him, towards a specific goal, as does the athlete. Likewise, his role as part of a team, and his own success or failure having an effect on others, is not as pronounced.

Their very low ego-defensive scale scores (Table 14) would tend to support the implication that the football group is more concerned with the obstacle, than with itself. In other words, the type of aggression evoked in the athlete seems to be less defensive than in the non-athlete. This would indicate that the non-athlete groups interpret frustration as more of a personal threat than does the athletic group. This may be because of the great deal of motor-activity of the football player delimiting his thinking and introspection, or it could be the result of the previously hypothesized non-personal type of aggression employed by him. It is assumed that to be ego-defensive involves a great deal of concern with the self, at least in the sense of protecting it, while a dearth of ego-defensiveness implies more of an outgoing, offensive reaction which is essentially non-personal.

Discussion of Age Group Results. The finding (Hypothesis IV) that the N-P scale response frequency tended to decrease as the age

of each S increased (pp. 26 and 27), is supplementary to the findings of Stoltz and Smith (1959). They found just the opposite result; however, in their study the ages of the Ss were considerably lower than those in the present study. In the Stoltz and Smith study, the ages varied from nine to thirteen years, while in the present study the ages varied from thirteen to eighteen years. If as postulated, high N-P scale scores indicate an expectancy of one's problems to be solved by others, or at least to find resolutions for frustrating situations, the present study would indicate that when a child reaches a certain age, this dependency tends to decrease. Stoltz and Smith found that up to age thirteen, there was a gradual increase in N-P scale scores, and thus dependency; however, the present study indicates that after age thirteen there seems to be a gradual gaining of more and more independence. Another factor to be kept in mind is that the former study used the Children's Form of the P-F Study, while the present study employed the Adult Form. However, the two forms are considered analogous.

The present study is not in complete agreement with the findings of Rosenzweig and Rosenzweig (1952) which indicated that aggression, scored as extrapunitive responses, was more completely expressed by younger Ss. In point of fact, in the present study (Hypothesis II) there was a slight increase (Table 1) in the frequency of E scale responses for older Ss; actually, grades 10 and 12 scored higher than grades 9 and 11. However, these increases were not statistically significant. Again, the previously alluded to age differences (Rosenzweig and Rosenzweig used Ss four to

thirteen years of age) and the use of the Children's Form of the P-F Study may account for some of the differences in the results.

Interestingly, however, these results imply that the newly quasi-independent teenager, unsure of his role, and short on practice in it, may respond more in an extrapunitive manner as a means of defense. Further evidence of this is seen in the significantly lower Grade 12 I scale scores (Table 10). It seems that the oldest group, those about to graduate and leave high school, are much less ready to blame themselves for being frustrated or for being placed in frustrating situations. Again this seems to be related to independence, as the Grade 12 student is about to sever one of his main ties to dependency, that is, high school. This suggests a vast area for future research into the adolescent's concept of dependence-independence and how he handles this new relationship to the world.

Discussion of I.Q. Group Results. Several studies (McCary, 1959, McCary and Tracktir, 1957) have stated that there is no consistent relationship between level of intelligence (in terms of high, medium and low I.Q.) and patterns on the Rosenzweig P-F Study. The present study (Hypothesis III) does not fully support this postulate. It was found that as the level of I.Q. increased, so to did the frequency of E scale responses increase (Table 2). Again, it is inferred that this type of reaction to frustration may be used as a defense; that is, when frustrated, the person, backed up by his intelligent use of verbiage, can strike out at others. It may, however, be more useful to look at the nature of the training

that the high I.Q. person has undergone. Just as the football player has had intensive, narrowing training in the studied practice of aggression, perhaps the high I.Q. person has been just as coaxed, coerced, and cojoked into being a superior intellectual. If this be the case, it would seem that his expression of aggression is just as inadequate as is that of the football player. From the finding (Table 15) that the High I.Q. group scored significantly higher on the E-D scale than did the other two groups, it is seen that this group reacts to frustration in a defensive manner also. This type of aggression is essentially concerned with protecting oneself, rather than with satisfying specific needs or overcoming obstacles. Therefore, with this combination of E and E-D types of reaction, it is seen that the high I.Q. individual may be one who defends himself by striking out at others. If we accept the findings (Davids, 1955, etc.) that relate a high frequency of E scale responses to negative personality traits, it must be held that other methods are necessary to train, or better, to educate, not only the more gifted intellectually, but also the medium and low I.Q. students. The present results indicate that the "nice guys" turned out by our high schools are probably not very bright, and that the intelligent product is very difficult to get along with. Our society seems to provide positive reinforcement for mediocrity, since the medium I.Q. group had average scores on the E scale which indicate an excess in neither positive nor negative personality traits.

CHAPTER V

SUMMARY

The present study used as Ss 144 high school students enrolled at a private school for boys in Windsor, Ontario. The Ss were grouped in terms of three independent variables: age, I.Q., and degree of participation. There were four age levels, consisting of Ss within five months of the median age of each of the four secondary school grade levels; that is, nine thru twelve. The three I.Q. groups were High (above 120), Medium (108 to 113), and Low (below 100) as obtained from the Dominion Learning Capacity Test. The participation groups were divided into three levels: Full (football players), Some (students participating in non-athletic extracurricular activities), and None (students participating in no extracurricular activities). Each S was given the Rosenzweig Picture-Frustration Study which measures three directions of aggression, extrapunitive, intrapunitive, and impunitive, and three types of reaction to frustration, need-persistent, ego-defensive, and obstacle-dominant.

It was intimated from the findings that football was a failure as far as creating mature personalities and that the type of aggression expressed in football playing was more of an instrumental nature than of an interpersonal nature. The findings were inconclusive as far as relating the frequency of extrapunitive

responses to age, but a definite decrease in N-P responses with age indicated that in the teenage years, (esp. 13-18) the adolescent becomes slowly more and more independent. A definite relationship was found between I.Q. and frequency of E scale scores, in that as I.Q. increased, there was a correspondingly significant increase in extrapunitive responses. From this it was suggested that the intelligent person had more to be defensive about and had better means with which to do it.

APPENDIX A

The following are the situations depicted in the
Rosenzweig Picture-Frustration Study:

1. A man has just been splashed by a car and the driver is apologizing.
2. A woman has just broken a vase and another woman is telling her that it was her mother's favourite.
3. Two women are in a show and one cannot see because the woman in front of her is wearing a large hat.
4. One man has just missed a train because another man's car has broken down.
5. A woman is returning a new watch to a store for the third time saying it always stops when she gets home.
6. A woman taking four books is told by the librarian that she is only allowed to remove two.
7. A waiter is saying to a seated customer that he is very fussy.
8. One man is telling another that he is taking the other's girlfriend out.
9. A pawnbroker is telling a man he will have to wait until the afternoon to get his umbrella, while it is pouring rain outside.
10. One man is calling another a liar.
11. Someone has just awakened a man at 2:00 A.M. with a wrong number.
12. It is being pointed out to a man that his hat has been taken by mistake and another left in its place.
13. A man is seen breaking a previously arranged appointment with another man.
14. Two women are waiting in a storm for a third who is late.
15. A woman is apologizing to her partner at cards that it is her mistakes that lost the game.
16. After an auto accident one man is telling a second that he had no right to try to pass him.

17. A woman is chiding a man as he has seemingly lost his keys.
18. A clerk is telling a customer that he has just sold the last of a particular item.
19. A policeman is accusing a man of speeding 60 miles an hour past a school house.
20. While a party is going on elsewhere, one uninvited woman is asking another why they weren't invited.
21. A woman is informing two other women that someone they talked about is now in the hospital.
22. A man has just fallen and another is asking if he hurt himself.
23. A man and woman about to leave on a trip when 'Auntie' calls and wants to give them her blessing again.
24. A man is returning a torn newspaper to the man he borrowed it from.

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