ATTRIBUTION OF RESPONSIBILITY BY JUVENILE DELINQUENTS

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ATTRIBUTION OF RESPONSIBILITY BY JUVENILE DELINQUENTS

By
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TABLE OF CONTENTS

TABLE OF CONTENTS--Continued

LIST OF TABLES

LIST OF FIGURES

CHAPTER I

INTRODUCTION

The essential motivation for the establishment of juvenile courts in the United States over half a century ago sprang from a recognition that children differ from adults in responsibility, and that a more humane attitude should characterize society's dealing with the youthful violator (Glueck & Glueck, 1950). The original law of the earliest American juvenile court defined a delinquent as a "child under the age of sixteen years who has violated any law of the state, or any city or village ordinance" (Shulman, 1961, p. 19). Since that time, in practice, almost every definition of juvenile delinquency has assumed a legal aspect which is dependent upon varying social norms and attitudes of the "community" and those individuals who carry out the legal processes.

Definitions of juvenile delinquency offered by various investigators (Glueck & Glueck, 1950; Cloward & Ohlin, 1961; and Wilkins, 1963) stressed that delinquency is characterized by behavior that violates basic norms of the society, by acts of a kind which, when committed by persons beyond the statutory juvenile court age of sixteen years, are punishable as crimes, and by behaviors which are judged by agents of criminal justice as serious deviations from the cultural norms. An operational definition of juvenile delinquency was stated by Kelley and Veldman (1964): delinquents are those

individuals whose behavior has been determined by law enforcement officers and/or citizens of the community to be in violation of the legal code of the state as it applies to individuals designated as minors, and which lead to direct juvenile court action. Clinard (1965) further suggests that a distinction be made between delinquents who are guilty of crimes against property and those guilty of crime against person.

In the process of investigation and definition, juvenile delinquency has been shown to have some relationship to such variables as inadequate housing, hereditary traits, lack of recreational facilities, and broken homes (Whelan, 1955). However, Eissler (1955) states that, "Whether certain behavior is delinquent or not is entirely dependent upon the motivation which lies behind that particular behavior. No external feature can ever be used as a reliable index of delinquency" (p.5). This raises the question of the complex psychological factors which affect a juvenile's "social" and "moral" sense and his ability to operate within culturally defined limits. A considerable amount of literature has accumulated stressing a psychological conception of juvenile delinquency and describing personality characteristics of delinquents. The present study will investigate the juvenile delinquent's sense of responsibility, more specifically his perception and attribution of personal responsibility in social situations.

The psychological characteristics of juvenile delinquents will now be examined, as they are directly related to an understanding of the delinquent's perception and attribution of responsibility. An analytic study employing the MMPI (Ball, 1962) revealed that

delinquents more than non-delinquents were found to have maladjusted personalities and that delinquents illustrate amoral, immature, and rebellious personalities. It was further found that delinquents more than non-delinquents were failing in socialization processes. Another experimental investigation (Quay and Blumen, 1963) summarized four factors characteristic of delinquents: impulsivity, thrill seeking, interpersonal aggression, and impersonal aggression. Moreover, Cohen (1955), reviewing the problem of juvenile delinquency, concluded that the delinquent has learned to share the typical middle-class achievement values but comes from a lower socioeconomic background which has failed to equip him with the psychological traits and other means which are necessary for their attainment. Delinquency arises, therefore, when a person's achievement values exceed his ability to meet them. Cohen hypothesized that such a state would indicate that to the extent to which the delinquent's achievement values are out of proportion to his abilities and to the extent that such a disproportion reflects low self-acceptance, then delinquents would be less self-accepting than non-delinquents. However, such a pattern can only be conjectured, due to the lack of controlled research.

In a carefully constructed and executed criminological research program, Glueck and Glueck (1950) found that juvenile delinquents, on the whole, perform best on those subtests of the Wechsler-Bellevue for which approach to meaning is by direct physical relationship with minimal dependence upon intermediary symbols, while the conceptual generalization and abstract thinking of the non-delinquents is through the conventionally accepted symbolic means. Taking a different approach to

the problem of delinquency, Redl and Wineman (1951), using behavioral observations, found that the juvenile delinquent is characterized by low frustration tolerance--very little frustration is needed to upset the equilibrium of his ego. Further, the delinquent was observed as having difficulty coping with insecurity, anxiety, and fear--the mildest fears or anxieties are sufficient to break down his control. Further, it has been reported (Glueck & Glueck, 1950) that the delinquent has difficulty in developing the high degree of flexibility of adaptation, self-management, self-controls, and sublimation of primitive tendencies and self-centered desires demanded by a complex culture.

To continue, in an early review and synthesis of the literature on juvenile delinquency, Banay (1948) concluded that there was a relatively high degree of emotional immaturity in the delinquent, stating that the infantile standards of behavior--emotional immaturity--are essentially asocial or antisocial. The delinquent, he added, is self-centered. A more recent conceptual approach by Matza (1964) reports that delinquency, the acting out of a disorganized or malformed personality, arises from, among other factors, the failure of parents to adequately socialize their children--delinquency being merely infantile, presocialized behavior. Accordingly, there is an apparent attenuation of the ego culminating in an inability to fathom the realistic consequences of transgression. Matza concludes that delinquency can only be permissible when "responsibility," the moral bind between the actor and the legal norms is neutralized. Therefore, the sense of irresponsibility is the immediate condition of social drift.

A question may be raised at this point as to whether the previously cited psychological characteristics of juvenile delinquents are uniformly present when delinquents are segregated according to type of crime (crime against person and crime against property). Moles (1963) discusses the distinction of delinquents into two such groups: assaulters and thieves. He found, under experimental conditions, that assaulters more than thieves tended to have a combination of generalized expectations of deprivation and weakly internalized standards. Such differences between delinquents committing crimes against property and those committing crimes against person might be reflected in differences in their perception and attribution of personal/social responsibility.

The psychological characteristics and personality descriptions of juvenile delinquents cited above (relatively lower development of symbolic abstraction and cognitive processes, egocentrism, and greater rigidity, emotional immaturity, anxiety, intolerance of frustration and ambiguity, and implied poor self-acceptance, etc.) are incongruent with descriptions to be found concerning children who have developed relatively high degrees of moral judgment, perception of causality, and responsibility attribution.

Piaget (1932,1948) found that children pass through two stages in the development of moral judgment: in the first stage only material damages and not intentionality are considered in making moral judgments, while in the second stage conduct is judged in terms of intent rather than objective consequences. He states that egocentrism is characteristic of a relatively low level of development in moral judgment and

perception of causality. Further, within the theoretical frameworks of Piaget (1932) and Heider (1958a), a low level of development in moral judgment and perception of personal causality is associated with a low level of development of cognitive processes and symbolic thought.

Continuing, Muuss (1960) reports that an understanding of causality involves an attitude of flexibility: the causally oriented person is able to suspend judgment until sufficient factual information is available; realizes the consequences of his behavior; and recognizes alternative ways of solving social problems. Wright (1960,1963) found that the degree of rigidity influenced the attribution of responsibility. Individuals who are functionally rigid may be less capable of changing their original perceptions of responsibility than other persons. In a closer examination of the personality characteristics of causally oriented children, Muuss (1959) found that low causally oriented children (experimentally measured) differed negatively from high causally oriented youngsters on such indices of mental health as perceptual and verbal intolerance of ambiguity, anxiety, and anti-democratic attitude, honesty and security. The "lows" were found to be more rigid, final, and judgmental. Further, an individual's self-acceptance was found by Wright (1960) to be a major determinant of his attribution of responsibility to self, to others, or to social events.

Socially responsible individuals, according to the research of Gough, McClosky, and Meehl (1952), are less cynical, hostile, rebellious, and recalcitrant, more compliant, tolerant, sociable, and secure in their interrelationships than individuals illustrating a relatively low degree of social, interpersonal responsibility.

Several other experimental investigations (Deutsche, 1943; Ojemann, 1958; Ojemann et al., 1955; and Levitt, 1955, 1955a) report that the development of causal thinking is positively related to maturation, psychological adjustment, and emotional well-being, but is negatively related to authoritarianism, rigidity, punitive behavior, and irresponsibility.

It can be seen, therefore, that while the juvenile delinquent has been described as retarded in the development of symbolic abstraction, emotionally immature, egocentric, rigid, anxious, easily frustrated, irresponsible, impulsive, lacking in self-control, amoral, punitive, and anti- or a social, the child who has developed adequate moral judgment, causal thinking, and responsibility attribution is characterized as mature (for age level), secure and responsible in social relationships, able to suspend judgment and weigh factual evidence, self-accepting, flexible, lacking in punitive behavior, honest, and able to cope with frustration. Overall, the causally oriented child is seen as responsible and psychologically well adjusted and is described as less cynical, hostile, egocentric, and rebellious than individuals with a low development of causal thinking. Such differences in psychological characteristics suggest that the personality of the juvenile delinquent would demonstrate poor development of causal perception and responsibility attribution.

The present study will investigate the attribution of responsibility in social, interpersonal situations by juvenile delinquents and non-delinquents. Juvenile delinquents who have committed crimes against person and those who have committed crimes against property

will be compared with each other and with non-delinquent children. In order to ascertain if the pattern of attributing responsibility in social situations differs with age among the three groups, and what, if present, these differences are, the study will cross three age levels.

Basic to a consideration of attribution of responsibility, however, is a more detailed review of the theory and findings on the perception of causality.

The Perception of Causality

Changes in environment are frequently caused by the acts of persons, in combination with other factors. The tendency exists in man, however, to ascribe the changes entirely to persons. Often a momentary situation which, at least in part, determines the behavior of a person is disregarded and the behavior is singularly taken as a manifestation of personal characteristics (Heider, 1944).

According to Heider (1944), a change in environment gains its meaning from the source to which it is attributed. Here, causal integration is of major importance in the organization of the social field, since such integration is responsible for the formation of units which consist of persons and acts and which follow the laws of perceptual unit formation. Origin and effect, a person and his act, are the interlocking parts of a causal unit. The properties of the particular act may be similar or in contrast to those of the person. Moreover, in causal attribution the factor of past experience cannot be separated from the factor of similarity, because a person once having been the

origin of an act takes on its quality. Similarity and proximity (nearness to the event) favor the attribution of acts to persons, and the established person-act units make for the assimilation of contrast between the parts.

Zillig (1928) also shows that similarity is a factor in causal integration--a bad act being easily connected with a bad person. In addition, Huang (1931) and Dunker (1935) point out the importance of similarity and proximity in phenomenal causality, reporting that if two events are similar or near to each other one is likely to be perceived as being the cause of the other. Further, Shaw and Sulzer (1964) found that when one person attributes responsibility for an action and its effects to another, on the basis of motivational and situational conditions, he blames that person if the outcome is negative and praises that person if the outcome is positive.

The perception of causality is fundamental to the act of attributing responsibility. Pepitone (1958), for example, defines the attribution of responsibility as the process of identifying the causal agent for a social action. And, Wright (1960) suggests that the occurrence of this phenomenon at the social level is analogous to the causal interpretation of physical phenomena. For example, Michotte (1963) manipulated various physical dimensions in order to produce the perception of "mechanical causality," which he maintains is the basic, innate process involved in all causal connection. Earlier, Heider and Simmel (1944), in an experiment involving discrete physical events, had shown that the attribution of origin influences the interpretation of movements, and that it depends in some cases upon the characteristics of

the movements themselves, in others upon surrounding objects. The way in which the "actor's" movements and motives are judged is closely connected with the attribution of origin. Both Michotte and Heider and Simmel found that adults often make descriptions of discrete physical events in terms of intention, motive, and interpersonal factors. Piaget (1932,1955) observed similar interpretations in children.

According to Piaget (1947), the adaptation of the mind to the physical environment passes through the following stages:

1) From the first signs of speech (1-6 to 2 years) in a period which lasts until age four, a symbolic and preconceptual thought is developed.

2) Between 4 and 7 to 8 years old, a kind of intuitive thought is established, distorted by egocentrism, with the viewpoint of the subject being relative to his own action and not decentralized into an objective system.

3) From 7 to 8 until 11 or 12 years, certain concrete mental operations are organized in the following fashion: the intuited relations of the system under consideration are at a given moment suddenly organized. The organization is accomplished first through manipulation of objects. These children cannot reason with purely verbal propositions, as their reasoning about reality consists of an interiorized activity which is additive, multiplicative, and reversible.

4) Formal thought is elaborated from 11 or 12 years of age throughout adolescence. The child becomes capable of reasoning by pure assumptions without the necessity of relation to objects or to beliefs

of the subject, but by relying upon the logical necessity of the reasoning process itself.

Piaget (1948) distinguished two stages of moral judgment in children, demarcated from each other at approximately seven years of age. The tendency which the child has to regard duty and the value attaching to it as self-subsistent and independent of the mind, as imposing itself regardless of the circumstances in which the individual may find himself is that which Piaget (1932) defines as moral realism. Since a child takes rules literally and thinks of good only in terms of obedience, he will at first evaluate his acts not in accordance with the motive which has prompted them but in terms of their exact conformity with established rules. Hence, moral realism induces an objective conception of responsibility; and, objective responsibility will be seen in its clearest manifestations in the moral judgment of the child. "Objective responsibility" is the first stage of moral judgment. It is here that children judge the gravity of a deviant act in terms of the amount of material damages, while they disregard the intentionality of the action. By contrast, during the second, or "subjective responsibility," stage, children judge conduct in terms of intent rather than in terms of its material of its material consequences. Piaget (1932) states that it cannot be denied that the notion of objective responsibility diminishes as the child grows older. He found seven to be the average age for objective responsibility and nine to be the average age for subjective responsibility.

Sulzer (1964) stands somewhat in opposition to Michotte (1963) and Piaget (1932,1948,1955), arguing that the identification of causal

agents for social events requires inferences that are not characteristic of perceptions of physical causality. Sulzer pursues these premises as follows:

> In identifying a person as the first cause of an event, his intentions are of primary importance because they provide the basis for psycho-logical cognition that the event originated in him . . . it is likely that these findings (ibid., Michotte, Heider and Simmel) represent as if interpretations of artificially discrete events which were so constructed that they resembled human interaction. (Pp. 6-7)

This position is in accord with Heider's (1958a) concept of equifinality. Heider distinguishes personal from impersonal causality. Personal causality refers to instances in which P causes X intentionally--the action is purposive. This must necessarily be distinguished from other cases in which P is a part of the sequence of events. Unless intention ties together the cause-effect relations there cannot be a true case of personal causality.

Cases of personal causality must be distinguished from effects which involve persons but not intentions. The latter are more appropriately represented as instances of impersonal causality. Personal causality is characterized by equifinality--the invariance of the end and the variability of the means. In the case of personal causality, the invariant end is due to the person. Since the person controls the causal lines emanating from himself, he not only is the initial source of produced change, but he remains the persistent cause. Within a wide range of environmental conditions, the person may be thought of as the one necessary and sufficient condition for the effect to occur, for within that wide range the individual changes the means to achieve the end, the end itself remaining unaltered. However, in the case of

impersonal causality, a wide range of environmental conditions will lead to a wide range of effects. Since no one condition bears the responsibility for the creation of other conditions necessary for a particular effect, any specific effect of a complex process requires the presence of a great many specific conditions. The more conditions which are required, the more unlikely it is that the same effect will occur.

Intention is the central factor in personal causality--it is the intention of the person that brings order into the wide variety of possible action sequences by coordinating them to a final outcome. Thus, the question of premeditation becomes important in the decisions regarding guilt. People, for instance, may be held responsible for their intentions and exertions but not so strictly for their abilities. Personal responsibility, then, varies with the relative contribution of environmental factors to the action outcome; in general, the more that external factors are felt to influence the action, the less the person is held responsible.

Causal thinking in its relation to other behaviors has received considerable experimental attention. As early as 1943, Deutsche stated that maturation and innate factors had a determining effect upon causal thinking and that training such as is given in public schools is an important factor determining the causal explanations of children. Ojemann (1953), having hypothesized that causal thinking is associated in humans of a given age with psychological adjustment, emotional well-being, and similar characteristics in conjunction with Levitt, Lyle, and Whiteside (1955) stated that through the approaches that the teacher makes to the pupil he provides a demonstration from which the pupil

learns. These experimenters found that when children of upper elementary grades were brought under the influence of trained causally oriented teachers teaching causal content, significant differences arose between experimental and control groups in the child's awareness of the complex multiple causative nature of human behavior and in his tendencies toward immediate punitiveness--the experimental group showing an increase in causal orientation and a decrease in punitive behavior.

Continuing, Levitt (1955) hypothesized that in children of elementary school age an awareness of the dynamic, complex, and variable nature of human motivation was negatively related to rigid, moralistic punitiveness. His findings state that it could be safely assumed that a child who tends to be judgmentally punitive is inclining in an unwholesome direction from the point of view of mental hygiene. The question was whether or not punitiveness in the child could be reduced by means of learning programs designed to bring about an increase in causal perception and orientation.

As a follow-up, Levitt (1955a), investigating the effects of a causal teacher training program on authoritarianism and responsibility in children in their classes, found that the experimental, causally trained, classes showed significantly less authoritarianism and significantly more responsibility than the controls. It was concluded that such results were a function of the training of the teacher in a "causal" approach to the classroom.

An extensive program of research into the perception of causality was also conducted by Muuss (1959,1959a,1960,1960a,1961). He (1959)

states that a causal orientation toward one's environment involves an understanding of the lawfulness of cause-effect relationships as well as an awareness of the probabilistic nature of knowledge. In a social environment, a causal approach implies a recognition of the dynamic complexity of the motivations of humans and an awareness of antecedents and consequents of behavior. In an investigation of the causal orientation of children to their environment, Muuss (1959) found that high causally oriented children, as defined by social and physical causal tests, differed fro low causally oriented children on such indices of mental health as a perceptual intolerance of ambiguity scale, an anxiety scale, a scale of children's antidemocratic attitude, honesty, and on observational measures of security. Utilizing the same subjects, Muuss (1959a) found the "highs" to differ significantly from the "lows" in that the former made fewer guesses and guessed later if confronted with perceptually ambiguous stimuli. The guesses made by the highs were in the nature of hypotheses or hunches, while the guesses of the lows were more rigid, final, and judgmental.

Consequently defining causality, Muuss (1960) states that it is an understanding and appreciation of the dynamic, complex, and interacting nature of the forces that operate in human behavior. Causality involves an attitude of flexibility, of seeing things from the point of view of others. A causally oriented individual is capable of suspending judgment until sufficient factual information is available; furthermore, he realizes that his behavior has consequences and that alternate methods are available for the solution of social problems.

Muuss (1960) continued his experimental investigations by studying the extent to which fifth and sixth grade subjects who had been exposed to a causal learning program for one and two years would differ from control subjects who had no such training. He found that participation in the experimental learning program designed to develop an understanding of the causal nature of human behavior did increase the knowledge of social causality, and that the understanding of the dynamic nature of human behavior increased in proportion to time spent in the experimental learning program. Training in causality served to increase tolerance of ambifuity, to increase democratic attitude, and to decrease punitiveness. In a follow-up study (1960a) Muuss found that, as a result of such training, causally oriented subjects showed more security and less anxiety than did the non-trained control subjects.

In 1961, Muuss posed the question of whether those subjects who had participated in a learning program primarily designed to develop a more thorough understanding of social causality and human motivation would also develop a thorough understanding of the factors that operate in the physical world and that help to explain natural phenomena. Therefore, he compared those subjects from fifth and sixth grade classes who had had training in a causally oriented learning program in respect to their mean scores on measurements of social and physical causality with a group of non-trained controls to determine the transfer effect of a learning program designed to develop an understanding and appreciation of the motives of human behavior and

an awareness of factors operating in social situations. The findings allow the following generalizations:

1) The learning program has a transfer effect for fifth and sixth graders on an understanding of the causes of common events and phenomena in the physical world and an awareness of the probabilistic nature of knowledge.

2) The transfer effect differs for grade level. Fifth grade experimental subjects have a better understanding of the factors that produce a common event than their control subjects. Sixth graders have a better understanding of the probabilistic nature of knowledge than their respective controls.

3) Measures of physical causality have a higher correlation with IQ than measures of social causality.

4) There is a tendency for experimental subjects to obtain lower correlations between the measures of causality and IQ than is the case for controls. It appears that the learning program increases a subject's understanding of social and physical causality.

5) There is a developmental increase in the understanding of causality from fifth to sixth grade for controls.

As has been seen from the research cited (Pepitone, 1958; Wright, 1960; Michotte, 1963; Heider and Simmel, 1944) the perception of causality is fundamental to the act of attributing responsibility. The process of identifying the causal factor/s or agent/s of a social action is basic to the attribution of responsibility for the outcome of that action. Thus, having reviewed the theory and findings on the perception of causality it is appropriate at this point to turn to an examination of attribution of responsibility.

Attribution of Responsibility

The literature on responsibility attribution is not extensive and there is a need at the present for conceptual clarification of the construct "responsibility" and of the process of attribution itself. There appears to be some general agreement among those who use the term that attribution of responsibility involves the designation of one or more persons as the primary origin of a specific event (X) which has occurred in the interpersonal life space. In spite of this commonality, prior studies using attribution of responsibility have been somewhat at variance as to precise definition. Pepitone (1958) has limited responsibility attribution to the process of designating a causal source of action. Wright (1960,1963), in agreement with Pepitone, adds the willingness of the observer to open the causal agent to sanction. The investigation carried out by Sulzer (1964) appears to bear out both of these factors. Kronstadt (1965), citing the work of Sulzer (1964) and Heider (1963), adopted the following definition of attribution of responsibility:

> Attribution of responsibility is regarded as consisting of two primary factors: (1) the perception of a causal source of action and (2) the designation of, or willingness to open the source(s) to sanction, i.e., praise or punishment (Wright, 1963). Designation of responsibility in a social situation can be regarded as an operational definition of an observer's perception of causality for that situation. (Pp. 2-3)

Attribution of Responsibility: Theoretical Analysis

It is apparent from the writings of Piaget (1932,1948,1955) that he holds that the moral value of an action outcome, as well as the responsibility for having produced it, may be decided in terms of the

amount of damage it represents (objective responsibility) or in terms of the actor's intentions and motives (subjective responsibility). Accordingly, adults typically make these judgments on the basis of motive, while most children, under the age of nine or so, show an almost total reliance upon outcome intensity. However, Bandura and McDonald (1963), on the basis of experimental findings, state that objective and subjective statements exist together rather than as successive developmental stages. They report that subjective morality increases gradually with age, but that there was no substantiation for a theory of demarcated stages. In contrast, Boehm (1963) states that apparently a particular stage of social or emotional growth must be reached before each type of moral problem can be successfully evaluated. She found, in agreement with Piaget, "stages" of moral development. The age at which the subject attained a new stage, however, varied with the type of problem and with the mental and cultural level of the subject. Shaw and Sulzer (1964), along the same lines, report experimental support for their hypothesis that children make little differentiation with respect to attribution of environmental and personal responsibility and that differentiation is a gradual process which becomes more distinct with age.

Explicit statements of theoretical relevance to responsibility attribution have been set forth by Pepitone (1958) and Heider (1958). Pepitone proposes a tri-dimensional theory of social causality in which "Responsibility" is but one dimension, conceptually distinct from "Intentionality" and "Justifiability." The dimension of Responsibility is primarily concerned with the identification of the causal agent for

a social (interpersonal) act. The intentionality dimension focuses upon the positive or negative aspects of the motivation of the agent. Justifiability refers to whether the act violates certain ethical standards--the extent to which an act is in agreement with logical and/or social norms.

Heider (1958a) extended his earlier naive analysis of causality to include personal responsibility, which he conceptualized as a cognized link between the person and the final outcome. Intention is the critical factor determining the intimacy of the link. Generalizing from his distinction between personal and impersonal causality, Heider maintains that responsibility for an outcome may be attributed to the person, to the environment, or to both. The environment consists of all impersonal factors which could be perceived as facilitating or inhibiting the production of a given outcome, e.g., "luck," task difficulty, coercion, social influence and norms, or even fate or "Supreme Being." Thus, responsibility for a given outcome is not necessarily attributed solely to a personal origin. Heider conceptualizes that:

> Personal responsibility then varies with the relative contribution of environmental factors to the action outcome; in general, the more they are felt to influence the action, the less the person is held responsible. (1958a, p. 113)

Sulzer (1964) asserts that an important implication of this assertion is that it is legitimate to ask questions about the degree of perceived responsibility in an event.

Heider (1958) drawing on the writings of Stern (1923), Fauconnet (1928), and Piaget (1932,1948) outlined five "levels" in which attribution to the person decreases as attribution to the environment

increases. Heider assumed the existence of underlying cognitive processes which determine attribution, beginning with the most primitive and progressing to the most sophisticated level. These levels have been labelled, explicated and restated by Shaw and Sulzer (1964) as follows:

Level I: Global Association: The person is held responsible for and effect that he is connected with in any way. In Piaget's (1955) terms, responsibility at this most primitive stage is determined by syncretistic, pseudocausal reasoning rather than by consideration of objective causal connections. Thus, a person may be blamed for harmful acts committed by his friends.

Level II: Extended Commission: The person is held responsible for any effect that he produced by his actions, even though he definitely could not have foreseen the consequences of his actions. As in Piaget's (1932) "objective responsibility" the person is judged according to what he does but not according to his motives.

Level III: Careless Commission: The person is held responsible for any foreseeable effect that he produced by his actions even though the effect was not a part of his goals or intentions. He is held responsible for the lack of restraint that a wider cognitive field would have produced.

Level IV: Purposive Commission: The person is held responsible for any effect that he produced by his actions, foreseeing the outcome and intending to produce the effect. This corresponds roughly to Piaget's "subjective responsibility" in which motives are the central issue.

Level V: Justified Commission: The person is held only partly responsible for any effect that he had intentionally produced if the circumstances were such that most persons would have felt and acted as he did. That is, responsibility for the act is at least shared by the coercive environment.

Sulzer (1964) comments that Heider apparently intended these "levels" to be descriptive of developmental stages, replacing or supplementing Piaget's theory of the development of causal thinking. Sulzer further suggests that these levels may also be viewed as descriptions of the information which is sufficient for attributing

degrees of social responsibility at varying levels of sophistication. He found, experimentally, that responsibility attribution increases to a maximum at Level IV, where intention is clearly indicated, thereafter decreasing slightly at Level V, where environmental factors are favorable and conducive to a particular social act.

Experimental Investigations of Attribution of Responsibility (AR)

Despite the existence of a considerable body of literature concerning the perception of causality, comparatively little research has been designed and executed which has direct relevance to the attribution of responsibility. The development of a broadly accepted methodological approach has not progressed far and reflects the fact that the topic has only recently been entertained by experimental psychology.

The only instruments to date which have been developed in a systematic way for the specific purpose of studying AR are the Social Interaction Series (SIS) devised by Wright (1960) and a set of short stories representing Heider's "levels in responsibility attribution" reported by Shaw and Sulzer (1964). The SIS consists of a set of 36 line drawings which depict man-woman, boy-woman, boy-man, and man-man interactions in successive stages of positive and negative outcome events. Suitable for both individual and group administration, the SIS obtains measures of both the direction and amount of AR. The Levels in Responsibility Attribution Stories of Shaw and Sulzer portray a series of social events involving some central character for whom responsibility ratings in a specified situation are obtained. This instrument has an additional advantage in that the use of stories has

been extensively employed in developmental studies of moral judgment and causal perception and several experiments concerning AR. Relevant findings have been reported by Piaget (1932,1948,1955), Harrower (1934), Cuber and Pell (1941), Seeman (1947), Levitt (1955), Diggory (1962), Johnson (1962), Bandura and McDonald (1963), Boehm (1963), Sulzer, Nikols, Blum and Brant (1963), Sulzer and Shaw (1963), Shaw and Sulzer (1964), Sulzer (1964), and Kronstadt (1965). This methodology (short stories) has been adopted for the present study.

Factors such as social status, justification, and intention of the agent have been demonstrated empirically to be determinants in the attribution of responsibility. In an early investigation, Seeman (1947) using a "moral evaluations questionnaire" designed by Cuber and Pell (1941), found that Negroes were considered to be less responsible or less "wrong" than their white counterparts when they were described as engaging in identical "amoral" behavior. The experimental findings of Thibaut and Riecken (1955) clearly indicate that individuals are more likely to perceive the causal locus for compliance as "internal" (own force) for high-status persons and as "external" (induced force) for low-status persons. Pepitone and Sherberg (1957) summarize that despite a general tendency for bad acts to be attributed to bad motives, that the more well-intentioned a threat (in this case punishment) the less the loss of attractiveness in the person who threatens. In other words, the attractiveness of a person who threatens or punishes varies with the goodness of intentions behind the threat or punishment. Jones and de Charms (1958) stated that persons acting on the basis of existing social norms (justifying conditions) were held less responsible

for the commitment of negative acts than those performing the same act outside the bounds of the accepted norm. Pepitone (1958) concludes that higher status leads to greater internalization of responsibility, a greater attribution of positive intention, and a greater tendency to perceive the acts of a high status person as justified. Wright (1963) reported that the pressure of the group influences the perception of responsibility in a social situation. He found that subjects responded to fictitious norms set by the experimenter regarding responsibility for an act. Even though the subjects conformed to these norms, they continued to attribute more responsibility to the active person in a dyad and to the other person (as opposed to a person with whom they had identified).

Sulzer (1964) stated that since AR concerns social (interpersonal) events it is likely that final judgments as to attribution are not based solely upon perceived causal relationships but are subject to the influence of the perceived degree of intention as well as favorableness and unfavorableness of outcome. Once a judgment has been made that another person is responsible for a given outcome he becomes open to sanction. At such a point, the attributor may or may not apply objectively appropriate sanctions. It was assumed that the primary determinants in the final judgmental processes included: perceived characteristics of the agent, interpersonal relations between the attributor and the agent, history and personality characteristics of the attributor, aspects of the current social environment, as well as the perceived quality (positive or negative), and intensity of the outcome for which the agent is held responsible. Sulzer's

experimental findings indicate that AR and sanction assignment are affected differently by causal structure and outcome characteristics. The assignment of appropriate sanctions was found to be more strongly affected by outcome (positive or negative) characteristics than by causal structure, although there was a complex relationship between these two variables. Shaw and Sulzer (1964) and Kronstadt (1965) found that greater mean amounts of AR were obtained for negative than for positive outcome events.

Shaw and Sulzer (1964) executed a study which partially supported their hypothesis that children would show relatively less differentiation than adults with regard to attribution of personal and environmental responsibility. It was found that children showed more attribution than adults at the Global Association and Extended Commission Levels, and less than adults at the Careless, Purposive, and Justified Commission Levels (corresponding to Heider's Levels I, II, III, IV, and V, respectively). It was further found that negative outcomes resulted in greater AR than did positive outcomes at higher levels, with no difference between outcomes at the Global Association and Extended Commission Levels. Children were generally less willing to attribute responsibility when the actor was presumably an adult. It was suggested that children are apparently more "objective" when adult actors and activities are concerned, but are more "subjective" in evaluating peers. Wright (1960) found that individuals are more prone to attribute, and to attribute to a greater degree, to authorities than to peers.

The experimental results of Shaw and Sulzer (1964) and Sulzer (1964) indicate that causal structure, as represented in Heider's Levels, is the main determinant of attribution of responsibility. However, it was also found that such attribution is influenced by other variables, such as the perceived quality and intensity of the outcome for which responsibility is attributed. Piaget (1932,1948), in his assessment of the development of moral judgment, varied outcome intensity (amount of involved danger), but dealt only with negative outcomes. From this research, Piaget concluded that the amount of punishment considered appropriate for a given act is determined by the actor's motives rather than by outcome intensity, in children of age ten or over. However, Piaget likewise assumed that outcome intensity was a potent determinant of sanctioning behavior when he made an attempt to explain the origin of "objective responsibility."

In studies explicitly designed to evaluate the role of outcome in responsibility attribution (Wright, 1960,1963; Shaw and Sulzer, 1964) it was outcome quality (positive and negative) rather than outcome intensity which was investigated. In his first experiment, Wright (1960) obtained significant outcome effects only in a second order interaction, while in a replication (1963) he produced a significant main effect attributable to outcome quality. In 1964, Shaw and Sulzer reported significant outcome effects in an experiment concerned with children's activities, but a replication using adult activities failed to confirm these results. Sulzer (1964) stated that the materials used by Wright and Shaw and Sulzer contained relatively mild outcomes.

Sulzer anticipated that this weakness could be overcome if both quality and intensity were varied.

Sulzer, defining outcome intensity as the degree of favorableness or unfavorableness of the action outcome, predicted and found that there was a positive relationship between outcome intensity and AR, mean AR increasing significantly as a positive function of outcome intensity. Although the interaction between outcome intensity and quality failed to achieve significance, the trend was as predicted, i.e., increasing differences between positive and negative outcomes as intensity increased. When analyzing Levels of AR x Intensity x Quality large differences were found favoring negative outcomes which occurred at Levels III and V, revealing a positive relationship between AR and outcome intensity. An overall finding was that the actor was perceived as more responsible for high intensity negative outcomes, regardless of the level.

In a further sophistication of their findings, Sulzer and Shaw (1963) summarized two broad classes of relevant variables. One includes features of the stimulus: the agent being evaluated, the action outcome, and the causal structure which perceptually relates the agent to the outcome. The other class of variables consists of the characteristics of the subject himself (the attributor), including such factors as age, sex, education level, sociocultural background, and a host of personality and response traits.

Several studies relate attribution patterns to personality characteristics of the person attributing. Gough, McClosky, and Meehl (1952) attempted to develop a scale which would order individuals

according to their social responsibility. This scale was found to be sufficiently reliable for group use and interpretation. The scale was administered to a group of high school students, a university sorority and fraternity. The trends found showed the most responsible students to be less cynical and hostile, more compliant and acquiescent, more tolerant, more sociable, less rebellious and recalcitrant, less perplexed and anxious, more secure in their relations to the outer world, more intelligent, more successful in academic work, and more liberal and open-minded on general social issues. Wright (1960), furthermore, concluded that attribution of responsibility to self or others or social events is determined by such personality characteristics of the attributor as self-acceptance and the degree of rigidity with which he conceived of himself. Wright found that maladjusted persons are more variable in their pattern of AR and more extreme in their attribution.

Continuing, Wright (1960,1963,1964) reports that field dependence (the ability to separate figure from ground) was found to influence the direction and amount of responsibility attribution, while psychological adjustment influences willingness to attribute. He (1963) states that, "Unwillingness to attribute responsibility is akin to impunitiveness in the aggression models and may underlie this latter behavior" (p.131). He adds:

> . . . such personality characteristics as self-acceptance and functional rigidity may be expected to produce differences in willingness to attribute. Persons who are more self-acceptant than other persons may be more capable to "calling a spade a spade" and placing responsibility where they feel it belongs, or they may feel less necessity to

> attribute responsibility at all. Persons who are functionally rigid may be less capable than other persons of changing their original perception of responsibility in the face of contradictory information and become unwilling to attribute at all.

Furthermore, the effects of criticism were found to influence both the willingness to attribute and the amount of responsibility attributed to others. Individuals attributed twice the responsibility when they were criticized than when they were praised (Wright, 1964).

Thus, it is seen that various psychological characteristics of the individual attributing responsibility, factors of the social setting and conditions under which he attributes, and the nature of the event to which he is attributing influence his causal perception and responsibility attribution.

The literature on the psychological characteristics of juvenile delinquents, the perception of causality, and the attribution of responsibility have been reviewed. Next, the attribution of responsibility by juvenile delinquents, the subject of the present investigation will be considered.

The Problem

Juvenile delinquents have been described in the literature (Glueck & Glueck, 1950; Ball, 1962; Quay and Blumen, 1963; Cohen, 1955; Redl and Wineman, 1951; Banay, 1948; Matza, 1964; and Moles, 1963) as immature, egocentric, relatively retarded in the development of symbolic abstraction and cognitive processes, irresponsible, and antisocial. Even within the group they have been found to have personality differences related to the type of crime committed. Such characteristics of delinquents are in striking contrast with descriptions

of children who have developed normal perception of causality, moral judgment, and responsibility attribution. These children are reported to be mature (for age level), flexible, able to control behavior, socially secure, able to cope with frustration, and are less hostile and rebellious than individuals with a low level of causal orientation (Piaget, 1932,1948; Deutsche, 1943; Ojemann, 1958; Ojemann et al., 1955; Levitt, 1955,1955a; Gough et al., 1952; Wright, 1960,1963; Muuss, 1959; and Heider, 1958a). Generally, the juvenile delinquent has been described as emotionally maladjusted, due to various factors, while the causally oriented child has been viewed as relatively well adjusted.

Thus the question arises as to the nature of causal perception and the attribution of responsibility by juvenile delinquents in social situations as compared to non-delinquents who do not obviously present personality disturbances which interfere with the development of attribution of responsibility. The present study will investigate the attribution of responsibility by juvenile delinquents, both crime against person and crime against property offenders, as compared to non-delinquent children. A juvenile delinquent will here be defined as an individual who has been committed by the juvenile court to a State correctional school.

As the previous research (Piaget, 1932; Heider, 1958a; and Shaw and Sulzer, 1964) reported that the development of causal perception and responsibility attribution are dependent upon age, maturational stages, and parallel increasing sophistication of the cognitive processes, a question also arose as to whether the delinquents would differ from the non-delinquents in responsibility attribution

when compared across ages; and, if present, would such differences become more obvious as age increased. Therefore, subjects for this study were selected at three ages: 12, 14, and 16.

It is to be noted that Heider (1958) outlined five levels of responsibility attribution, assuming the existence of underlying cognitive processes which determined the attribution, progressing from the most primitive to the most sophisticated level. Shaw and Sulzer (1964) interpreted these "levels" as representative of different maturational stages, replacing or supplementing Piaget's theory of the development of causal thinking. The present investigation will compare the attribution of responsibility by the crime against person, crime against property, and non-delinquent groups, at the three ages, across the five levels of attribution of responsibility to see whether differences appear between the groups in the frequency of attribution to these levels, thus reflecting differences in maturation, cognitive processes, and causal perception.

Previous research in attribution of responsibility (Wright, 1960, 1960,1963; Sulzer, 1964; Shaw and Sulzer, 1964; and Kronstadt, 1965) also indicated that variables other than causal structure, as represented in Heider's levels influenced the attribution of responsibility. These variables were the perceived quality (positive or negative) and intensity (high or low degree of favorableness or unfavorableness) of the outcome for which responsibility was attributed. Sulzer (1964), employing Heider's levels, reported an overall finding that more responsibility was attributed to high intensity negative outcomes, regardless of the level. As outcome quality and

intensity were found to affect attribution of responsibility, the issue arises as to whether attribution by the two groups of juvenile delinquents at the three ages would be influenced by these variables in a manner different from non-delinquents, when compared across the five levels of attribution of responsibility. Further, would differences in responsibility attribution appear between the crime aginst person and the crime against property groups?

Specific hypotheses concerning the attribution of responsibility by the two classes of delinquents as compared to the non-delinquents follow:

Hypotheses

1. Across all three groups there will be a linear development (increase) in responsibility attribution with age:

   (a) non-delinquent and crime against person groups will differ in their rates of development of the tendency to attribute responsibility;

   (b) non-delinquent and crime against property groups will differ in their rates of development of the tendency to attribute responsibility.

2. There will be a differential amount of the attribution of responsibility, across age levels, between the non-delinquent and the two delinquent groups across the five levels of responsibility attribution:

   (a) although there will be an increase in the attribution of responsibility across Levels of AR in both the non-delinquent and the crime against person groups, the magnitude of these increases will differ between the two groups;

(b) although there will be increases in the attribution of responsibility across Levels of AR in both the non-delinquent and crime against property groups, the magnitude of these increases will differ between the two groups.

3. Both the non-delinquent and the delinquent groups, across age levels and levels of responsibility, will attribute a differential amount of responsibility for positive and negative outcomes:

(a) non-delinquent and crime against person groups will differ on the magnitude of the difference between positive and negative outcomes;

(b) non-delinquent and crime against property groups will differ on the magnitude of the difference between positive and negative outcomes.

4. Non-delinquent, crime against person, and crime against property groups, across levels of age and responsibility, will attribute a differential amount of responsibility for high and low intensity outcomes:

(a) non-delinquent and crime against person groups will differ in the magnitude of the difference between high and low intensity outcomes;

(b) non-delinquent and crime against property groups will differ in the magnitude of the difference between high and low intensity outcomes.

5. Non-delinquent, crime against person, and crime against property groups will attribute a differential amount of responsibility for high and low intensity outcomes across Ages, Levels of AR, and Positive and Negative outcomes.

CHAPTER II

METHOD

Subjects. Seventy-two white male Florida residents, equally divided into three age groups (12, 14, and 16 years) were the subjects of the present investigation. Forty-eight of the boys (16 at each age level) represented two experimental delinquent populations: a) 24 males committed to correctional institutions as a result of crime against property (e.g., burglary, larceny, forgery, auto-theft, vandalism, robbery, breaking and entering, excluding such acts as arson and demolition) and (b) 24 males committed as a result of crime against person (e.g., assault, battery, ungovernable, and incorrigible, excluding such acts as rape and murder). These subjects were selected from boys at the Dade County Children's Home and Training School, the Florida School for Boys at Okeechobee, and the Florida School for Boys at Mariana. No delinquent subject in either of the experimental groups had been institutionalized for a period of greater than six or less than one month.

The 24 remaining subjects (8 of each age level) were non-delinquent boys selected as control subjects from elementary, junior and senior high schools in Dade, Pinellas and Palm Beach Counties. These three counties were chosen as the source of non-delinquent subjects for comparison to the delinquent youths as they are broad, representative population centers which commit juveniles to the

aforementioned institutions. One of the institutions sampled is exclusively a Dade County organization. Pinellas and Palm Beach Counties commit juvenile delinquents to the two remaining correctional schools. The 24 boys classified as non-delinquent had had no contact with the juvenile court or with peace officers due to deviant social behavior and none had a record of having ever been a management problem in his respective schools.

All of the 72 subjects in the present study had the normal number of years in school for their age level, two parental figures in the home, were within an IQ range of 90-110, and were comparable in socioeconomic status (slightly below the national average).

Materials. The abbreviated forms of the Wechsler Intelligence Scale for Children (WISC) (Yudin, 1966) and the Wechsler Adult Intelligence Scale (WAIS) (Satz and Mogel, 1962) were employed to ascertain the IQ's of the individual members of the 12- and 14-year and the 16-year-age groups, respectively. The Yudin form of the WISC has a .97 correlation with the Full Scale IQ of the Wechsler test and the Satz and Mogel form of the WAIS correlates .99 with the Full Scale Wechsler.

The North-Hatt (1947) evaluation scale for jobs and occupations was employed as a socioeconomic measure, rating and assigning scores to the types of employment of the parents of the subjects in order to assure matching by social class. This scale takes into consideration two chief factors of job prestige in the assignment of any score to an occupation: degree of specialized training and degree of responsibility for public welfare. Scoring on the scale allows a maximum rating of 96 points and a minimum rating of 33 points, with an average score of 69.8.

Form E (Appendix A) of the Attribution of Responsibility Questionnaire (Shaw and Sulzer, 1965) was employed to investigate responsibility attribution in all subjects. This form consists of eight stories at each of five levels of responsibility attribution. Four stories at each level are "high" in outcome intensity and the remaining four are "low." The high and low outcome intensity stories are divided equally into positive (favorable) and negative (unfavorable) outcomes at each of the five Levels of AR. This set of stories has been validated across age, from first grade elementary school students to college seniors, and has been found to be consistently and highly reliable. A multi-name variation of the original Form E AR Questionnaire stories, which all had the same central character--Perry--was employed. An unpublished investigation by Shaw and Sulzer found a correlation of .98 between the multi-name and the Perry forms of the AR Questionnaire. The Form E Response Sheet and Instructions (Shaw and Sulzer, 1965) are also included in the Appendix (B and C).

Procedure. At each of the three correctional institutions the cumulative record folder of every committed delinquent in residence was made available. Those not meeting the age criteria (12, 14, and 16) were eliminated. The remaining delinquents were then divided into two groups defined by the type of act which resulted in their committal: 1) crime against property and (2) crime against person. Subjects then were chosen from these two populations who met the criteria of race, number of years in school, presence of two parental figures in the home, and length of institutionalization. As much socioeconomic information as was available concerning the family of each delinquent was recorded for later comparison of subjects.

All subjects meeting the selective criteria up to that point were then told before the administration of any test or questionnaire that the experimenter had no connection of any sort with the institution and that no individual concerned in any capacity with the institution would be permitted access to any test results or responses. Each subject was then administered the WISC or WAIS, depending upon age. Every boy was tested individually by the experimenter in a quiet room, testing requiring approximately 30 minutes. Only those delinquents falling within the IQ range of 90-110 were retained for further investigation. Following the administration of the intelligence test, the AR Questionnaire - Form E was administered to each subject individually, again requiring approximately 30 minutes. The delinquent subject was told that some short stories would be read to him and that it would be his task to decide whether and to what degree the identified actor was responsible for what happened in the story. The instructions (Appendix C) were carefully read to each boy, with the term "responsibility" being appropriately defined. The illustrated response sheet (Appendix B) and sharpened pencils were given to the subject and the manner of recording of the response was described and demonstrated before the story was read. The subject was instructed to decide, after hearing the story, first if the actor were responsible for the outcome and then to record a judgment by circling "Yes" or "No." If "Yes" were circled, then an "X" was to be placed in one of the five boxes of descending size and order to indicate the degree of responsibility attributed to the actor.

Each story was read aloud twice by the experimenter. Following the reading of the instructions and the commencement of the reading of the stories to the subject, any question on the part of the subject was responded to by simply reading the story again.

For the selection of control (non-delinquent) subjects, the Dade, Pinellas, and Palm Beach County Boards of Public Instruction suggested schools which would be appropriate sources from which to select subjects, their recommendations taking into consideration general socioeconomic conditions of the neighborhoods from which each school drew its student body. The administrations also took into account the areas from which they had a relatively high incidence of reported juvenile behavioral management problems.

The guidance counselor at each school, using office files, selected white males at the ages of 12, 14, and 16 who had no record of delinquent or behavioral management problems and whom the counselor, on the basis of previously recorded IQ estimates and scholastic ability test scores, considered to be within the IQ range of 90-110. The birth date of the pupil, number of years in school, and information about the parental domestic and occupational situations were also noted.

Those students who appeared on this initial screening to be most similar to the delinquent subjects on all of the conditions previously described were selected for intelligence testing. The parents of each child chosen to serve as a control subject were then contacted by letter or by telephone in order to secure their consent for participation of their son in the present investigation.

Following the reception of parental approval, each boy was administered the WISC or WAIS (appropriate to age) and the AR Questionnaire - Form E under the conditions of administration that existed for the delinquent subjects. Those non-delinquent students whose IQ was found not to be within the chosen range were then eliminated.

Those students in the public school group who most clearly and closely matched the delinquent subjects on IQ and the North-Hatt scale score, as well as age, race, years in school, and parental figures in the home, were selected as a comparison group to the two delinquent groups.

The crime against property group was found to have a mean IQ of 103.38; the crime against person group demonstrated a mean IQ of 102.78; and the mean IQ of the non-delinquent group was 104.37. There was no statistically significant difference between the groups on the basis of intelligence as measured by the WISC and WAIS.

The North-Hatt (1947) scale, used as a socioeconomic measure in matching the three defined groups, determined the mean scores of the crime against property, crime against person, and non-delinquent groups to be 62.79, 62.42, and 63.38, respectively. There was no statistically significant difference in socioeconomic status between the groups as measured by this scale.

CONTINUED

1 OF 3

CHAPTER III

RESULTS

An analysis of variance was used to investigate the attribution of responsibility by the two delinquent (experimental) and the non-delinquent (control) populations at the three age levels. The analysis, a repeated measures over three factors design (Winer, 1962) was employed so as to examine responsibility attribution across five levels, where events were of positive or negative outcome and were high or low in outcome intensity. Where significant main effects and interactions were found, multiple *t* and studentized *t* comparisons were made in order to determine the origin of the differences in the variance.

Analysis of Variance

The analysis of variance (Appendix D) was made using the raw scores (Appendix E) of the Attribution of Responsibility Questionnaire. Appendix D contains a summary of the statistical analysis, revealing the contribution of the main treatment effects, and treatment interactions.

The results indicate that the Age and Group main effects did not contribute, to any significant degree, to the overall variance. However, it was found that the Levels of AR and the Intensity variables were statistically significant at $< .01$ level, indicating the presence of significant differences in responsibility

attribution to the five Levels of AR and to high or low outcome Intensity. Moreover, several treatment interaction effects were statistically significant at $< .01$ level: Levels of AR x Outcome (positive or negative), Age x Levels of AR x Intensity (high or low), Outcome x Intensity, and Levels of AR x Outcome x Intensity. These results demonstrate respectively:

(a) responsibility attribution differed significantly across Levels of AR between positive and negative Outcomes,

(b) attribution differed significantly between Ages across Levels of AR between positive and negative Outcomes,

(c) a significant difference in attribution of responsibility exists between Ages across Levels of AR between high and low outcome Intensity,

(d) attribution of responsibility significantly differed between high and low Intensity across positive and negative Outcomes,

(e) a significant difference in responsibility attribution is present between Outcomes across Levels of AR between Intensities.

The treatment interaction effects of Levels of AR x Intensity and of Groups x Outcome x Intensity were significant at $< .05$ level, demonstrating, respectively:

(a) responsibility attribution differed significantly between high and low Intensity across Levels of AR,

(b) attribution of responsibility was significantly different between Groups and across Outcomes between Intensities.

These initial significant results raised questions as to the location or origin of the mean variations found. Duncan's multiple range tests (Edwards, 1963) were used to analyze multiple mean variations within the significant treatment and treatment interaction effects, with the exception of the Intensity treatment effect, where a *t* test for the difference between two means (high intensity/low intensity) was required. The results of these analyses will be discussed in detail in relation to the appropriate hypothesis.

To be noted is the fact that with the exception of the results cited, none of the main treatment effects or treatment interactions contributed significantly to the overall variance found in the data of the present investigation of the attribution of responsibility. The results, therefore, are generally in disaccord with the hypotheses upon which the present investigation and analysis were based.

Considering the applicability of the results of the analyses to the experimental hypotheses the following findings are noteworthy:

Hypothesis 1

It was hypothesized that across all three groups there would be a linear development (increase) in responsibility attribution with age:

(a) non-delinquent and crime against person groups would differ in their rates of the development of the tendency to attribute responsibility,

(b) non-delinquent and crime against property groups would differ in their rates of development of the tendency to attribute responsibility.

The analysis of variance indicated that there was no significant difference between the non-delinquent and crime against person or between the non-delinquent and crime against property groups in their rates of the development of the tendency to attribute responsibility. Further, no significant increase in responsibility attribution with age was found across Groups.

Hypothesis 2

It was hypothesized that there would be a differential amount of responsibility attributed across age levels, between the non-delinquent and the two delinquent groups across the five Levels of AR:

(a) although there would be an increase in the attribution across Levels of AR in both the non-delinquent and the crime against person groups, the magnitude of these increases would differ between the two groups,

(b) although there would be increases in the attribution across Levels of AR in both the non-delinquent and the crime against property groups, the magnitude of these increases would differ between the two groups.

The results of the analysis indicated that some treatment effects contributed to the variance within subjects. Appendix D reveals that the Levels of AR treatment effect was significant at the .01 level ($F[4,252]=609.81$). Such a result indicated the presence of a significant difference in responsibility attribution across five Levels of AR.

A consequent analysis as to the origin of the mean variation is summarized in Appendix F. Duncan's multiple range test revealed the significant mean differences between the five Levels of AR. Significant differences were found between all adjacent Levels and each Level was found to be significantly different from every other Level. Figure 1 represents these results in graphic form. It should be noted, in Figure 1, that the subjects of the present investigation, as a whole, demonstrated a linear increase in the attribution of responsibility through Level IV, followed by a decline in Level V.

The results of these analyses are, therefore, in partial support of the present hypothesis.

Hypothesis 3

Hypothetically it was thought that both the non-delinquent and delinquent groups, across Age levels and Levels of AR, would attribute a differential amount of responsibility for positive and negative Outcomes:

(a) non-delinquent and crime against person groups would differ on the magnitude of the difference between positive and negative Outcomes,

(b) non-delinquent and crime against property groups would differ on the magnitude of the difference between positive and negative Outcomes.

There was no support for the consideration that the attribution of responsibility for positive or negative Outcomes by both the non-delinquent and the delinquent groups would be significantly different

across Age levels and Levels of AR. Further, neither section (a) nor (b) of this hypothesis received support from the results of the analysis, indicating that the positive or negative Outcome of an event did not result in significant differential attribution of responsibility between non-delinquents and delinquents who committed crimes against person or against property, as measured by the Attribution of Responsibility Questionnaire.

However, the analysis revealed that Levels of AR x Outcome and Age x Levels of AR x Outcome were significant at the .01 level ($F[4,252]=124.38$; and $F[8,252]=2.69$, respectively), indicating that attribution of responsibility to positive and negative Outcomes across Levels of AR differed significantly and that responsibility attribution to positive and negative Outcomes differed significantly across the Levels of AR between the three Age groups. Such results are in partial support of the basic premise of the present hypothesis.

The subsequent analyses as to the origin of mean variations are summarized in Appendices G and H. Duncan's multiple range test revealed the intricate effect of the Levels of AR x Outcome treatment interaction upon mean variation (Appendix G). Significant differences in the attribution of responsibility were found between positive and negative Outcomes both within and between all Levels of AR (adjacent and distant), with the exception of the following:

1. no significant difference between positive and negative outcomes within Level I,
2. no significant difference between Level II positive outcome and Level III positive outcome,

3. no significant difference between Level II positive outcome and Level V negative outcome,
4. no significant difference between Level III positive outcome and Level V negative outcome.

Figure 2 represents these results graphically, denoting the comparison of the mean AR scores for positive and negative Outcomes across the five Levels of AR.

The complex effect of the Age x Levels of AR x Outcome treatment interaction upon mean variation was also revealed by a Duncan multiple range test (Appendix G). Significant differences in the attribution of responsibility to positive and negative Outcomes across the five Levels of AR by three Ages were found within and between Ages, within and between Levels (adjacent and distant), and within and between Outcomes, with numerous exceptions. The exceptions, non-significant differences, are listed in Appendix I for closer examination by the reader. With the exception of this list, all other interactions of Age x Levels of AR x Outcome were significantly different from one another.

Figure 3 illustrates these results graphically, denoting the comparison of mean AR scores for positive and negative Outcomes across the five Levels of AR for the three Age groups.

Hypothesis 4

It was hypothesized that non-delinquent, crime against person, and crime against property groups, across Ages and Levels of AR, would attribute a differential amount of responsibility for high and low Intensity outcomes:

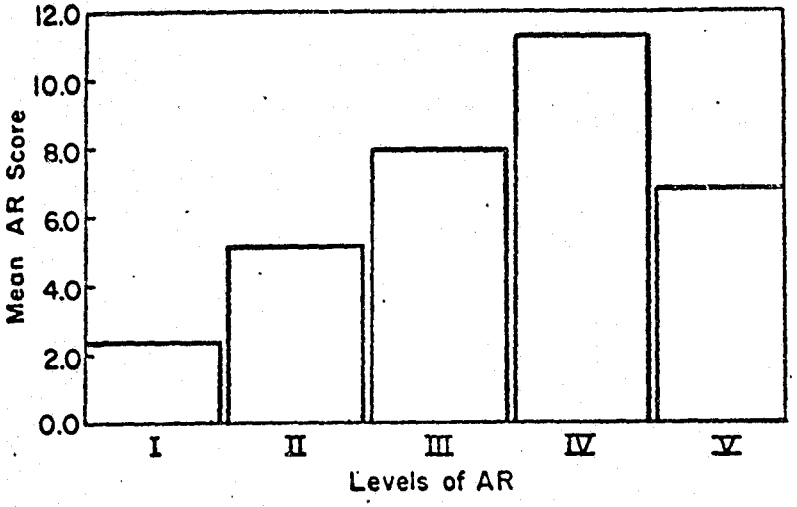


Figure 1. Mean AR Scores Across Levels of AR

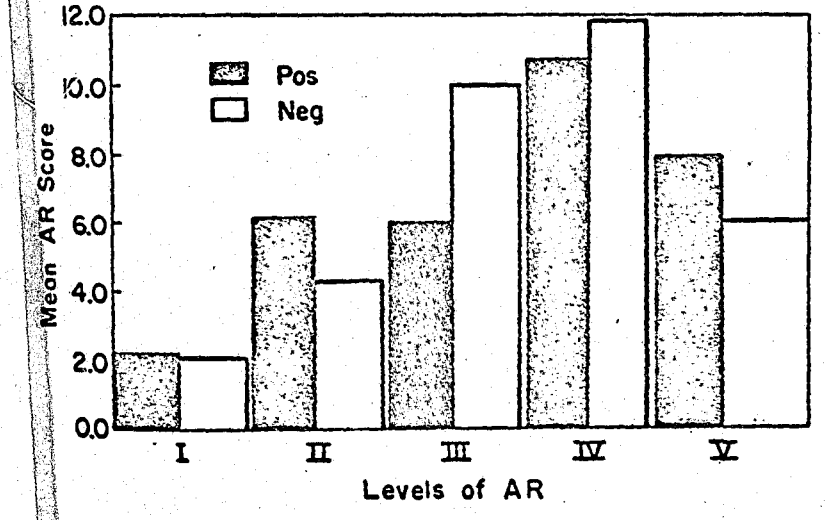


Figure 2. Comparison of Mean AR Scores for Positive and Negative Outcomes Across Levels of AR

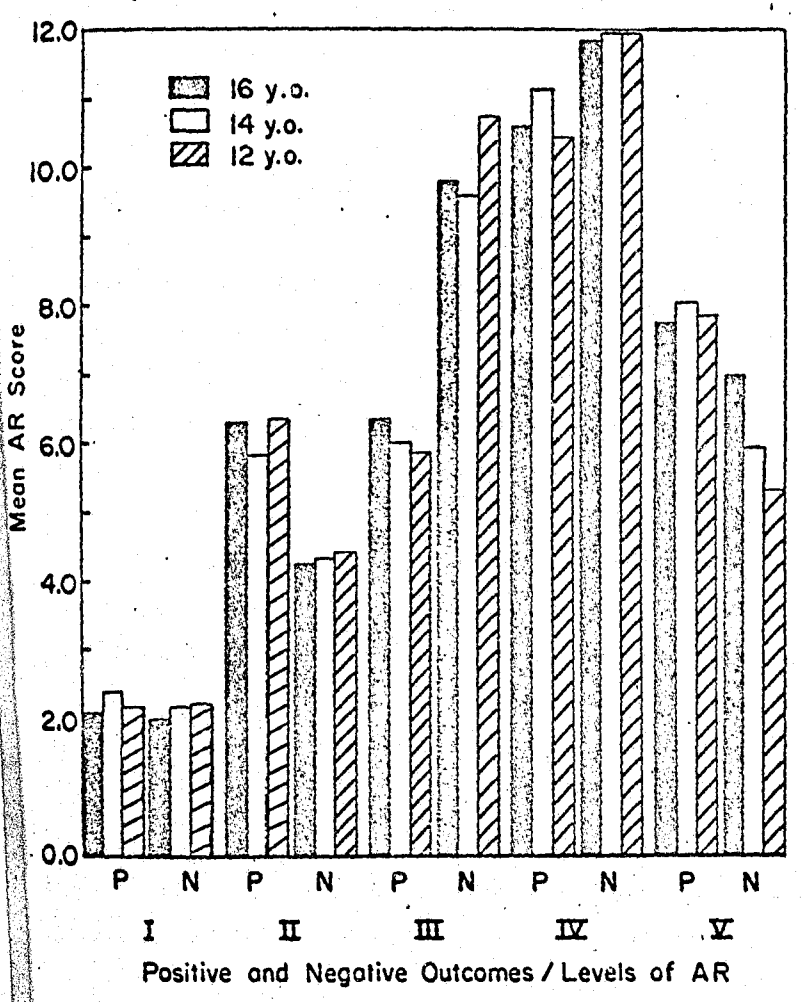


Figure 3. Comparison of Mean AR Scores for Positive and Negative Outcomes Across Levels of AR at Three Ages

(a) non-delinquent and crime against person groups would differ in the magnitude of the difference between high and low Intensity outcomes,

(b) non-delinquent and crime against property groups would differ in the magnitude of the difference between high and low Intensity outcomes.

The results of the analysis indicate that no sifnificant difference was found between the non-delinquent, crime against person, and crime against property groups in the magnitude of a difference of responsibility attribution to high and low Intensity outcomes or a tendency to differentially attribute responsibility to high and low Intensity outcomes across Ages and Levels of AR.

In partial support of the present hypothesis, however, a significant difference at the .01 level, was found in the amount of responsibility attributed to high and low Intensity outcomes. A *t* test (Table 1) for the difference between two mean variations indicated that the subjects, as a whole, attributed responsibility significantly more to high Intensity outcomes than to low Intensity outcomes ($t_{719} = 3.63$, $p < .01$).

TABLE 1

t TEST FOR DIFFERENCES BETWEEN MEANS OF HIGH AND LOW INTENSITY OUTCOMES

Intensity	n	m	t
High	720	6.9472	3.63
Low	720	6.5847	

Significant: $p < .01$.

It was also found that Levels of AR x Intensity and Age x Levels of AR x Intensity treatment interactions were significant at the .05 ($F[4,252]=3.33$) and .01 ($F[8,252]=3.91$) levels, respectively. This indicates that attribution of responsibility to high and low Intensity outcomes across Levels of AR differed significantly and that responsibility attribution to high and low Intensity outcomes was significantly different across the Levels of AR between the three Age groups. Such results partially support the predictions made.

Consequent analyses as to the origin of mean variations of these interactions are summarized in Appendices J and K. Duncan's multiple range test was employed to find the significant mean differences of the Levels x Intensity interaction (Appendix J). No significant difference was found in the amount of attribution of responsibility to high or low Intensity outcomes within Levels I, II, III, or IV. A significant difference was found, however, within Level V in the amount of responsibility attributed to high or low Intensity, more responsibility being attributed to high Intensity outcomes. Further, significant differences were found between all other possible interactions of the five Levels of AR and high and low Intensity outcomes, indicating that between all Levels of AR (adjacent and distant) attribution to high and/or low Intensity outcomes differed significantly. Figure 4 graphically illustrates these results, showing the comparison of mean AR scores for high and low Intensity outcomes across the five Levels of AR.

Appendix K illustrates the origin of the mean variations of the Age x Levels of AR x Intensity interaction, as revelaed by a Duncan

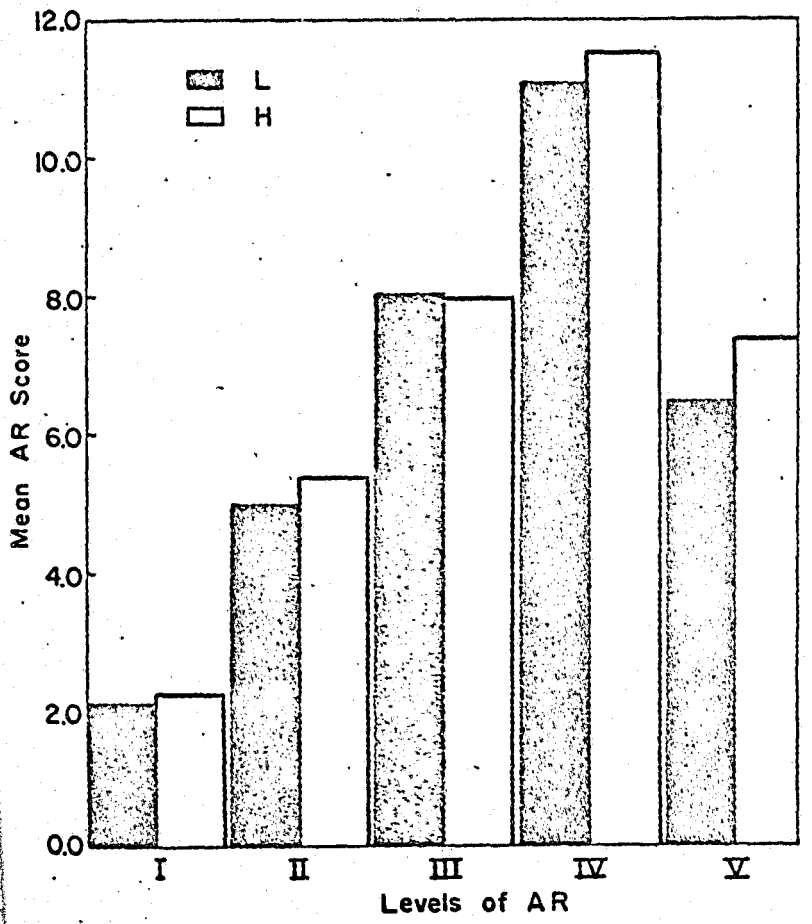


Figure 4. Comparison of Mean AR Scores for High and Low Intensity Outcomes Across Levels of AR

multiple range test. Attribution of responsibility to high and low intensity outcomes across the five Levels of AR by three Ages was found to be significantly different within and between Ages, within and between Levels of AR, and within and between Intensities, with a large number of exceptions. These exceptions are found listed in Appendix L, where the reader may examine them more closely.

It should be noted that significant differences existed in the attribution of responsibility to high or low intensity outcomes between all adjacent Levels of AR both within and between Ages.

Figure 5 shows the comparison of mean AR scores for high and low Intensity outcomes across the five Levels of AR for the three Age groups.

Hypothesis 5

It was hypothesized that non-delinquent, crime against person, and crime against property groups would attribute a differential amount of responsibility for high and low Intensity outcomes across Ages, Levels of AR, and positive and negative Outcomes.

The results of the present analysis clearly indicate that no significant differences were found to support this hypothesis.

It was found, in partial support, however, that the treatment interaction of Outcome x Intensity was significant at the .01 level ($F[1,63]=26.85$), indicating the presence of a significant difference in the attribution of responsibility to high and low Intensities across positive and negative Outcomes. A subsequent analysis as to the origin of mean variations (Duncan's multiple range test) is summarized in

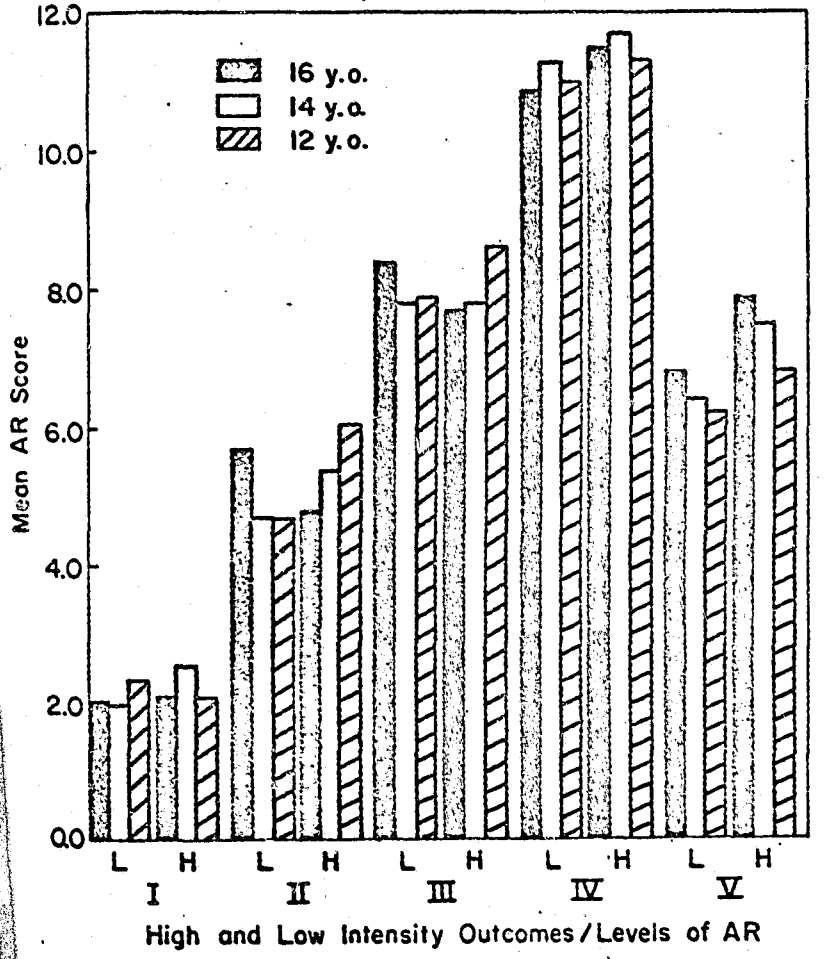


Figure 5. Comparison of Mean AR Scores for High and Low Intensity Outcomes Across Levels of AR at Three Ages

Appendix M. Significant differences were found only between Positive-Low and Positive-High, Negative-Low, and Negative-High interactions. Positive-High, Negative-Low, and Negative-High were not differentially significant from one another.

Further, it was found that the Groups x Outcome x Intensity treatment interaction was significant at the .05 level ($F[2,63]=3.12$). Such a result points out the presence of a significant difference in responsibility attribution to high and low Intensities between positive and negative Outcomes across the three Groups. Duncan's multiple range test, summarized in Appendix N revealed the effect of the Groups x Outcome x Intensity treatment interaction upon mean variations. It can be seen that significant differences existed mainly between the means for positive-low outcomes across Groups and other Groups x Outcome x Intensity interaction means and between negative-low outcome means of the control (non-delinquent) group and other G x O x I interaction means. The significant differences found by the range test are listed for inspection in Appendix O.

Figure 6 presents the mean variations within the Groups x Outcome x Intensity interaction in a graphic form.

Final partial support of the present hypothesis is the Levels x Outcome x Intensity treatment interaction which is significant at the .01 level ($F[4,252]=26.85$). This indicates that the attribution of responsibility was significantly different to high and low Intensity outcomes across Levels of AR and positive and negative Outcomes. A multiple range test (Appendix P) revealed the significant mean differences. Significant differences in the attribution to high and low

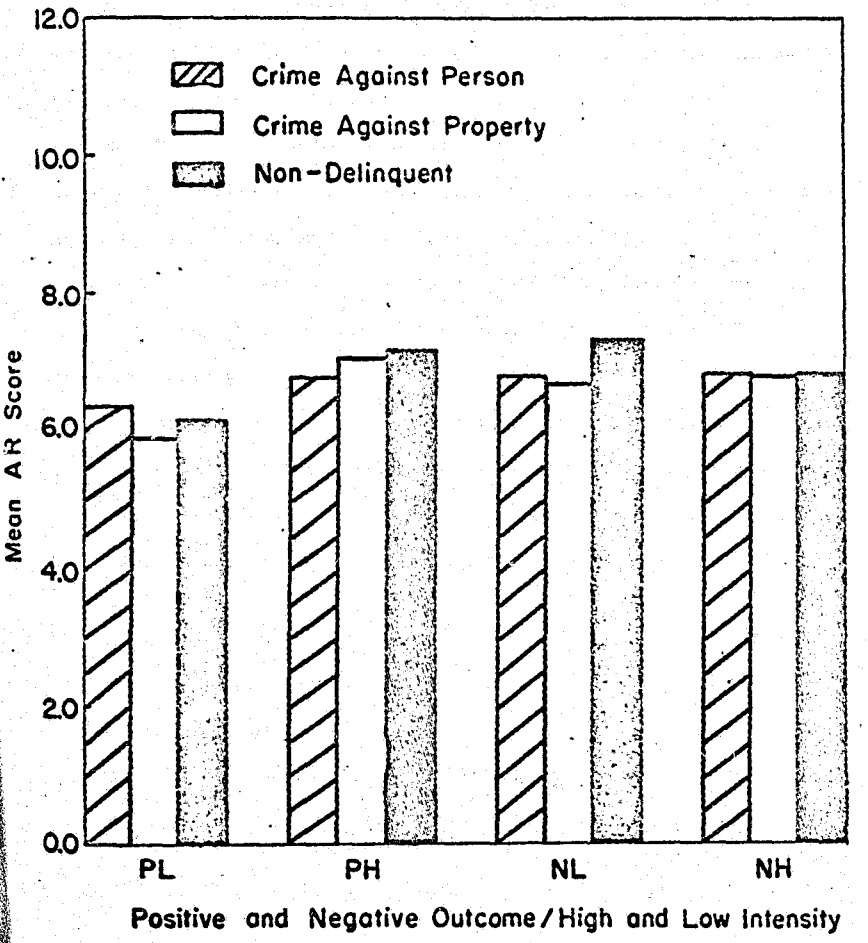


Figure 6. Comparison of Mean AR Scores for High and Low Intensity Outcomes Across Positive and Negative Outcomes and Crime Against Person, Crime Against Property, and Non-delinquent Groups

Intensity outcomes across the Levels of AR and positive and negative outcomes were found within and between Levels of AR, within and between Outcomes, and within and between Intensities, with numerous exceptions. The non-significant differences are presented for examination in Appendix Q. It should be noted that significant differences were found in the attribution of responsibility to high and low intensity outcomes between all adjacent Levels of AR between Outcomes.

Figure 7 graphically illustrates the comparison of the mean AR scores for high and low Intensity outcomes across Levels of AR and positive-negative Outcomes.

Overall, the findings of the analysis of the present investigation do not support the predictions made. Partial support, however, was found for some of the hypotheses, suggesting trends in the attribution of responsibility in the manners predicted.

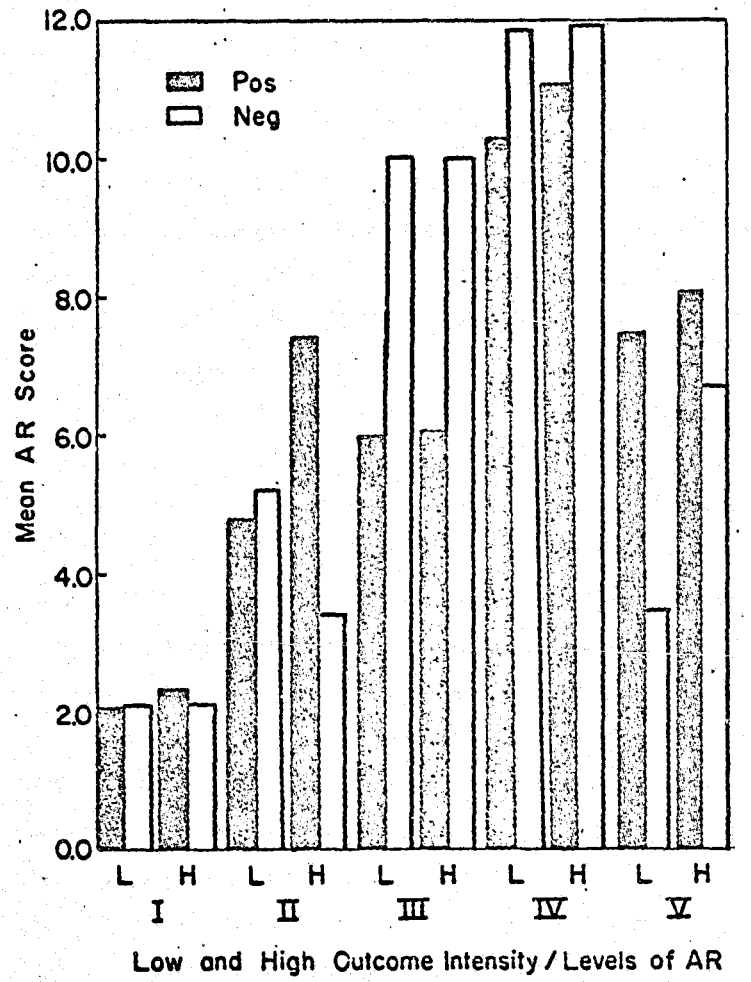


Figure 7. Comparison of Mean AR Scores for High and Low Intensity Outcomes Across Levels of AR and Positive and Negative Outcomes

CHAPTER IV

DISCUSSION

Juvenile delinquents have been described as immature, impulsive, irresponsible, egocentric and antisocial individuals who are relatively retarded in their development of symbolic thinking and abstract cognitive processes. Such psychological characteristics are in opposition to those which are ascribed to children who have adequately developed moral judgment, causal perception, and attribution of responsibility. These children are found to be relatively mature, flexible, able to control their impulses, socially secure, and less hostile and rebellious than individuals with a low level of development of causal orientation. These differences in personality and psychological characteristics between the juvenile delinquent and the causally oriented child, in relation to social judgment, perception, and responsibility, led to the expectation in the present study that differences would exist between two delinquent groups, crime against person and crime against property offenders, and a non-delinquent group in the development of attribution of responsibility.

However, contrary to prediction, no significant differences were found in the attribution of responsibility between non-delinquent, crime against person, and crime against property groups. Rather than supporting previous reports, it appears that if personality deviations

and psychological maladjustments characterize the juvenile delinquents selected for this investigation, then these deviations and maladjustments did not influence the development of the attribution of responsibility in a negative manner when compared to non-delinquent subjects. In other words, the characteristics attributed to juvenile delinquents and reported to be incongruent with the development of causal thinking and responsibility attribution did not contribute significantly to the establishment of differences between the non-delinquent, crime against person, and crime against property groups as measured by the AR Questionnaire.

The present findings, therefore, take issue with the observational, conceptual, and operational definitions and descriptions of delinquent behavior and personality. The characteristics so frequently ascribed to the delinquent were not influential in his performance to a degree sufficient to reveal differences in the attribution of responsibility between the delinquents and the non-delinquents. More precise experimental investigation and measurement of the delinquent personality, as compared to the non-delinquent, are needed before reliable comparisons in responsibility attribution can be made and valid conclusions can be drawn. A study should be done where the personality characteristics and responsibility attribution by juvenile delinquents are measured in the same subjects.

However, it is possible that the psychological characteristics of the delinquent associated with relatively low levels of moral judgment, perception of causality, and attribution of responsibility did not have the degree of influence upon responsibility attribution

hypothesized due to the fact that in the present study delinquents who had committed crimes of an excessive or "hard core" nature reflecting a relatively high degree of emotional disturbance were eliminated from the sample. This limitation may have reduced the personality maladjustments of the selected sample to a level which made it, as a whole, less socially deviant than the delinquents described in the majority of studies. Future investigations might wish to relax this restriction so that a wider latitude of personality deviations might become available for study and their contribution, if any, to differences in the development of responsibility attribution might be examined.

It should also be noted in speaking of differences between delinquent and non-delinquent youths that Cohen (1955) talked of the delinquent from a low socioeconomic background and that Shaw and Sulzer (1965) and Boehm (1963) found socioeconomic and sociocultural factors to influence responsibility attribution and moral judgment. In the present study all groups were matched by means of a socioeconomic measure, controlling out the variance in attribution of responsibility due to socioeconomic influence. Further, Wright (1963) and Shaw and Sulzer (1965) pointed out that IQ is also a factor which influences the attribution of responsibility; but, all of the groups of the present investigation were closely matched in intelligence, again controlling the amount of variance in responsibility attribution between the groups. The overall effect of socioeconomic and intellectual matching of the delinquent and non-delinquent groups was to make them more similar, reducing sources of difference between

them. It would be of interest for further research, also, to broaden the IQ and socioeconomic ranges so that if their effects do influence responsibility attribution they would become more obvious, measurable, and interpretable.

Since the pattern of responding did not differ between groups, as predicted, the question arises as to whether or not the effects of institutionalization altered the response patterns of the delinquents such that they did not appear different from the non-delinquents in responsibility attribution. It is possibly that the period of institutionalization offered the delinquent the structure and guidance which allowed him to reduce his anxieties and tensions and to increase his social stability. While it is doubtful to the present investigator that institutional effects would be so positively pervasive, such a consideration is not ruled out. If the effects are, in fact, sufficient in degree and strength, then it would demonstrate that, indeed, the perception of responsibility by delinquents can be altered by institutionalizing them for a period no longer than six months. A follow-up study would be needed, however, after the delinquent is released to see if the effects were purely within the institutional regime or if there would be a carryover to life in the community. Moreover, in viewing the absence of differences between the groups, another possibility might be examined. Perhaps the delinquent responded in a manner which he felt would "please" the examiner or which he felt would not jeopardize his position in the institution. If so, then it becomes important to recognize that the delinquent could perceive and attribute responsibility as non-delinquents do,

regardless of any personality deviations or maturational difficulties. From this, it could be assumed that under certain situational or motivational conditions delinquents show no significant differences from non-delinquents in responsibility attribution. This raises the question of the difference in the delinquent between knowing, or "perceiving," and acting. The present selected group of delinquents appear capable of perceiving causality and of attributing responsibility but perhaps incapable of controlling their own intentions or behavior. Further investigation of these conditions would certainly be warranted.

The crime against person and crime against property delinquent groups were also found not to differ significantly from one another in responsibility attribution. This may be postulated to be due to the considerations previously brought out in regard to the comparisons of the non-delinquent with the delinquent groups. It is also possible, however, that the choice of the object of the crime (property or person) may be due to situational or environmental circumstances rather than to critical differences in personalities (extreme offenses excluded).

Finally, the possibility exists that the measurement scale itself (AR Questionnaire) was not sensitive to differences of attribution of responsibility related to personality deviations and as such failed to distinguish between the three groups.

The age of an individual attributing responsibility had been found in previous research to be a variable which influences that attribution. Shaw and Sulzer (1964) found that children are relatively undifferentiated with respect to attribution of environmental

and personal responsibility. Such differentiation, they report, becomes more clearly distinct with age. Further, Sulzer (1964) commented that Heider's five "levels" of responsibility were descriptive of developmental stages, a reflection of the development of causal thinking. These "levels" of attribution of responsibility, it was reported (Shaw and Sulzer, 1964) represented different levels of maturation.

Moreover, Boehm (1963), agreeing that stages of moral development exist, stated that a particular stage of social or emotional growth must be reached before each type of moral problem can be successfully evaluated, adding that the age at which a subject attained a new stage varied with the type of problem. In contrast, however, Bandura and McDonald (1963) stated that objective and subjective statements (as defined by Piaget) exist together rather than as successive demarcated stages. In fact, they report finding no experimental substantiation for a theory of demarcated stages.

The subjects of the present investigation were not found to differ significantly in their attribution of responsibility or in their perception of causality, as it is reflected by responsibility attribution, at three different ages (12, 14, and 16). Such a result is initially congruent with the report of Bandura and McDonald (1963) and in contrast to the reports of Piaget (1932,1948), Shaw and Sulzer (1964), Sulzer and Shaw (1965), Sulzer (1964), and Boehm (1963). It should be noted, however, that Shaw and Sulzer did refer to Heider's levels of responsibility as developmental or maturational stages. In this sense, the ages of 12 through 16 sampled might be viewed as

"adolescence," a growth or maturational stage which is more remarkable for its similarities and continuities in social and emotional growth than for its differences between the years within this period. Perhaps the physiological, emotional, and social influences which impinge upon the adolescent from age 12 to 16 are relatively consistent throughout this period rather than demonstrating significant differential effects upon behavior at various years within this age range. Such consistency and lack of differentiation by age might then be reflected in causal perception and responsibility attribution by the adolescent in a manner similar to that found in the present study.

This investigation, however, cannot rule out the statements of Piaget (1932,1948) that children pass through successive stages in the development of causal perception and moral judgment. However, Piaget (1932) had suggested that ages 7 and 9 represented the average ages for objective and subjective responsibility, respectively. The present study was prevented, operationally, from tapping these young age levels. The factor of "institutionalization" of the delinquent subjects, although intended to control variation due to type of juridical disposition, prevented the sampling of children under age 12 who had committed delinquent acts but who, due to their age, were not placed in juvenile institutions. Future studies might broaden the definition of delinquency so as to include lower age samples and thus test Piaget's assumptions. Further, ages might be grouped by ranges, reflecting certain developmental periods (e.f., 6-10, 12-16, 18-22), in order to ascertain whether or not differences in responsibility attribution might occur between "ranges" of growth and development

rather than between certain years chiefly characteristic of a single maturation level.

In considering the absence of significant differences in the attribution of responsibility by subjects at the three age levels in this study, a question is raised in relation to the measurement scale itself. Perhaps the AR Questionnaire is not sensitive in detecting differences between ages closely related within a maturational level but might detect differences between such levels, especially in the comparison of earlier and later stages of growth. Further experimentation could cast light on this.

The research previously cited describing the personality and psychological disposition of the delinquent and its incongruity with the development of causal perception and the attribution of responsibility also led to the expectation that the characteristics of the delinquent would retard his development of responsibility attribution and would result in significant differences from non-delinquents across the three ages in responsibility attribution. Further, as differences in the personality characteristics of those who commit crimes against person and those who commit crimes against property were also reported, differences in the attribution of responsibility were expected to appear between these two delinquent samples across ages. More succinctly, the more pervasive the lack of the development of an adequate social personality, the more retarded the development of the tendency to attribute responsibility was expected to be across ages. However, crime against person, crime against property, and non-delinquents in the present investigation were not found to differ significantly in

their attribution of responsibility at or across any of the three age levels as measured by the AR Questionnaire. Therefore, if delinquents do indeed differ from non-delinquents in their emotional, cognitive, and social maturation as many studies indicate it is not reflected in their development of responsibility attribution within the age range studied.

To continue, as has been previously discussed, Heider's five levels of responsibility have been interpreted as levels of maturation or developmental stages based upon cognitive processes which determined attribution of responsibility from the most primitive to the most sophisticated level. These five levels, distinguished from one another in causal structure, were employed in the present study, as measured by the AR Questionnaire. It was expected that, due to the personality and psychological characteristics already mentioned, the crime against person, crime against property, and non-delinquent groups would differ in their frequency of attribution of responsibility across the five Levels of AR, with differences becoming increasingly larger the higher (more sophisticated in causal structure) the Level. Further, it was expected that these differences would demonstrate themselves across the three ages of the groups, differences in attribution across the five Levels of AR by the delinquent and non-delinquent groups increasing with age--a reflection of maturation. In short, however, no such differences were found. Such a result may again be viewed in terms of lack of sufficient influence by the psychological characteristics attributed to delinquents upon responsibility attribution and the likelihood that the three ages selected reflect only one maturational level

or developmental stage. However, care should be taken not to assume that because there are no significant differences between the delinquent and non-delinquent groups across ages and Levels of AR and that because the delinquent is apparently capable of perceiving responsibility and social outcomes that he would necessarily act in accordance with his perceptions. The intentions and consequent behavior of the delinquent may differ from the non-delinquent even if his causal perception and attribution of responsibility do not.

If, however, group and age distinctions are disregarded, then it was found that the subjects as a whole attributed responsibility with significant difference to each of the five Levels of AR, with attribution linearly increasing to a maximum at Level IV (Purposive Commission), where intention is clearly indicated, thereafter decreasing at Level V, where environmental factors are favorable and conducive to a particular act. Such a result is in direct support of the findings of Sulzer (1964) and Shaw and Sulzer (1964,1965), with the increasing attribution at higher Levels of AR reflecting a movement from the more primitive to the more sophisticated levels of causal perception and responsibility attribution. The present finding suggests that adolescence is a relatively "sophisticated" maturational stage which distinguishes causality and responsibility primarily by evaluating the intentions (motivations) of the causal agent. Further, it can be seen that the measuring instrument is reliable, as in previous studies, in distinguishing differences between Levels of AR in linear increase of the attribution of responsibility.

The absences of differences between groups and ages in responsibility attribution across Levels of AR further indicates the need for intensive investigation of the appropriate parameters of attribution of responsibility in various groups distinguished by personality deviations and in various ages reflecting developmental stages. Experimentation might also shed light on the nature and process by which perceptions of causality and responsibility are translated into actions.

While it has been reported (Shaw and Sulzer, 1964; and Sulzer, 1964) that causal structure, as represented in Heider's levels, is the main determinant of attribution of responsibility, it has also been found that such attribution is influenced by other variables. Sulzer (1964) stated that since responsibility attribution concerns social (interpersonal) events it is likely that final judgments as to attribution are not based solely upon perceived causal relationships but are also subject to the influence of the perceived degree of intention as well as favorableness or unfavorableness of the outcome. Once a judgment has been made that another person is responsible for a given outcome he becomes open to sanction (praise or punishment). Sulzer, therefore, assumed that perceived quality (positive or negative) of outcome for which the individual is held responsible is a primary determinant in the final judgmental process involved in responsibility attribution. Sulzer's experimental findings indicated that attribution of responsibility and sanction assignment are affected differently by causal structure and outcome characteristics. Greater mean amounts of responsibility attribution were obtained for negative

than for positive outcome events, indicating that the subjects attributed responsibility more when events resulted in unpleasant rather than pleasant outcomes (Shaw and Sulzer, 1964). Kronstadt (1965) and Wright (1960,1963) also found outcome quality (positive or negative) to have a significant influence upon responsibility attribution.

The question arises, therefore, as to whether attribution of responsibility by the crime against person and crime against property delinquent groups at three ages would be influenced by outcome quality in a manner different from the non-delinquent group across the five Levels of AR; and, further, whether differences would appear between the two delinquent groups themselves. However, the subjects of the present experiment, regardless of group and age classification, were not found to differ significantly in their attribution of responsibility to social situations having positive or negative outcomes at any of the five Levels of AR. This indicates that the subjects, regardless of group, did not significantly differentiate between positive or negative outcome main effects. Such findings do not lend support to those of previous research in which outcome quality was found to affect attribution of responsibility. In the present investigation, the quality of the outcome had a negligible influence upon responsibility attribution, especially in view of the finding that the non-delinquent group, as well as the two delinquent groups, did not differentiate significantly between positive and negative outcome quality.

Such results raise further question as to the nature of the effect of outcome quality upon responsibility attribution. Wright (1960) initially obtained significant outcome effects only in a second-

order interaction. Shaw and Sulzer (1964) reported significant outcome effects in an experiment concerned with children's activities but not in an experiment concerned with adult activities. Further, although Shaw and Sulzer found negative outcomes to result in greater responsibility attribution than positive outcomes, the difference occurred only at the higher levels (III, IV, and V) in interaction with the intensity of the outcome. Thus, the influence of positive or negative outcome quality upon attribution of responsibility appears to have been inconsistent and somewhat unstable.

Similar variations of the effects of outcome quality are also evident in the present study. For example, significant differences were found in the attribution by all subjects (regardless of age) to positive and negative outcomes across the five Levels of AR, suggesting the presence of some influence of outcome quality upon attribution to the agent producing positive or negative outcomes at various Levels. The differences in attribution to positive and negative outcomes were found within all Levels of AR except Level I (Global Association). The absence of a difference in attribution within Level I suggests that the quality of an outcome does not influence attribution to events which are primitive in their level of causal structure. The largest difference in attribution to positive or negative outcomes was found at Level II$_1$ (Careless Commission). Significantly more responsibility was attributed to negative than to positive outcomes within this Level, indicating that an individual is held more responsible for the outcome of an event which was foreseeable but not necessarily intended when that outcome is unfavorable rather than favorable.

The differences in attribution to positive or negative outcomes were found to be greatest, however, between the five Levels of AR (both adjacent and distant), suggesting that these differences, though not interpretable in and of themselves, are dependent upon the Level of AR and its causal structure. This would indicate that while outcome quality may have some effect upon responsibility attribution this effect depends primarily upon the causal structure within a particular Level. Furthermore, as it has been seen that there was no overall significant difference in responsibility attribution by the subjects as a whole to positive or negative outcomes, it must be considered here that the differences found in attribution to positive or negative outcomes across Levels of AR are primarily due to the influence of the significant differences found between the five Levels of AR themselves. Moreover, it was observed in this study that as differences between Levels of AR increased the differences in attribution to positive and negative outcomes between the Levels also increased. In other words, there generally appeared to be a linear increase in attribution of responsibility to positive and negative outcomes through Level IV, followed by a decrease in Level V. Thus, the influence of outcome quality upon responsibility attribution appears to be a function of the particular Level of AR, or, more exactly, the sophistication of the causal structure within a given Level of AR. This may explain the absence of differences between the delinquent and non-delinquent groups in attribution of responsibility to outcome quality, as no differences had been found between the groups in their attribution across the five Levels of AR.

It was also found in the present study that when outcome quality is combined with age and Levels of AR that responsibility attribution to positive and negative outcomes differs significantly, these differences varying considerably across ages, Levels of AR, and outcome quality. The most consistent differences in responsibility attribution to positive and negative outcomes across ages and Levels of AR also occurred between Levels (adjacent and distant). These interactions, however, cannot be clearly interpreted. Nevertheless, in view of the previously noted absence of significant differences in the attribution of responsibility between ages or between positive and negative quality (or in the combination of the two), the significant differences found when age, outcome quality, and Levels of AR interact would appear to be primarily due to and dependent upon the differences between the Levels of AR and their causal structure. This further emphasizes the conclusion that causal structure is the primary determinant of responsibility attribution and that the influence of outcome quality is a function of the causal structure within a given Level of AR.

Another variable found in previous research (Sulzer, 1964; Shaw and Sulzer, 1964) to influence the final judgmental process involved in attribution of responsibility is the intensity (high or low) of an outcome for which an agent is held responsible. Intensity is defined as the degree of favorableness or unfavorableness of an action outcome (Sulzer, 1964).

Outcome intensity was varied by Piaget (1932,1948) early in his assessment of the development of moral judgment. Dealing with

negative outcomes only, he found outcome intensity to be a potent determinant of sanctioning behavior at the level of "objective responsibility," but that at age 10 or over the amount of punishment considered appropriate for a given act was determined by the actor's motives rather than by outcome intensity. Sulzer (1964) predicted and found a positive relationship between outcome intensity and responsibility attribution--mean attribution of responsibility increased significantly as a positive function of outcome intensity. However, an interaction between outcome intensity and outcome quality failed to achieve significance, though the trend was as predicted--increasing differences between positive and negative outcomes as intensity increased. An overall finding by Sulzer was that the agent was perceived as more responsible for high intensity negative outcomes regardless of the Level of AR. As these reports indicate that outcome intensity plays an important role in the determination of responsibility attribution the issue arose as to whether differences would appear in the effect of high and low outcome intensity upon attribution of responsibility across the five levels of AR by the crime against person, crime against property, and non-delinquent groups at the three different ages.

In the present study, however, no significant differences were found in attribution of responsibility to high and low intensity outcomes by the three groups at ages 12, 14 and 16 across the five Levels of AR. This indicates that outcome intensity is not a potent determinant of responsibility attribution in delinquent and non-delinquent adolescents across Levels of AR. Further, this finding again points

out the absence of differences between crime against person, crime against property, and non-delinquents at the three ages in their causal perception and attribution of responsibility. Such a conclusion is additionally confirmed by the finding that there were no significant differences between groups or between ages in responsibility attribution to high and low intensity outcomes. However, while the absence of differences between the three ages in attribution of responsibility to high and low outcome intensities in no way supports the experimental prediction it is not in conflict with Piaget's (1932, 1948) conclusion that at age 10 and over the amount of punishment considered appropriate for a given act was determined by the actor's motives rather than by outcome intensity. The limitation of ages in the present study does not make it possible to further examine Piaget's concepts concerning outcome intensity.

To continue, in basic agreement with the research of Sulzer (1964), where a positive relationship was found between degree of outcome intensity and attribution of responsibility, the subjects of the present experiment, as a whole, attributed significantly more responsibility to high than to low intensity outcomes. This indicates that the higher the degree of perceived favorability or unfavorability of an outcome the more the influence of the outcome upon attribution of responsibility and, therefore, the more frequently responsibility was attributed. Such a result, however, also points out once again the absence of differences between delinquent and non-delinquent groups and between the different ages of these groups in attribution of responsibility.

Outcome intensity was also found in the present study to influence responsibility attribution across the five Levels of AR. Only within Level V (Justified Commission), where responsibility for an act is at least shared by a coercive environment did responsibility attribution differ significantly between outcomes of high and low intensity. This result suggests that the subjects, regardless of age or group classification, responded to high intensity outcomes differently from low only when environmental factors came into play, sharing with the agent in responsibility for the outcome of a given act. However, significant differences in responsibility attribution to high and low intensity outcomes, though not meaningful in and of themselves, were found between all Levels (adjacent and distant). As it has been seen that intensity was not a primary determinant of responsibility attribution within Levels (except for Level V), it is felt that that significant differences in attribution to high and low intensity outcomes between Levels are also due to and dependent upon the strength of the differences found between the Levels of AR. In other words, the degree of influence of outcome intensity is a direct function of the causal structure within the Levels.

In addition to the effects of outcome intensity upon responsibility attribution just reviewed and discussed, it was also found in the present study that attribution to high or low intensity outcomes was significantly different between the three age groups across the five Levels of AR. Such differences, however, were not consistent and were found to vary considerably within and between ages, Levels of

AR, and outcome intensities. Outcome intensity was found to significantly influence responsibility attribution only at Level II (Justified Commission) and Level V (Extended Commission) between 12-year-olds and 16-year-olds.

More frequent responding by 16-year-olds to low intensity and by 12-year-olds to high intensity outcomes at Level II reflects upon the previous reports of Piaget (1932,1948). He found a greater influence of outcome intensity at the "objective responsibility" stage of moral judgment. Level II is similar to the concept of objective responsibility--where a person is judged according to what he does but not according to his motives. The 16-year-olds at Level II may be demonstrating more caution and deliberation in their attribution of responsibility, not being as overtly influenced by the degree of favorableness or unfavorableness of an outcome as the 12-year-olds appear to be when and where intention and motivation are not clear. This is further reflected by the fact that, where greater sophistication is needed to perceive and interpret the intention involved in the responsibility for events which is shared by both the agent and the environment (Level V), 16-year-olds attribute significantly more responsibility than do 12-year-olds to high intensity outcomes.

Further examination of this result indicates that the only consistent differences in the attribution of responsibility to high and low intensity outcomes by the different age groups occurred between Levels of AR. As attribution to Levels of AR increased, differences in attribution to intensity across ages increased. The significant differences found, therefore, were both due to and

dependent upon the differences existing between the five Levels of AR. This again emphasizes the importance of causal structure in the determination of responsibility attribution.

Continuing, it has been reported previously that attribution of responsibility is affected by the psychological characteristics of the attributor, age, the quality of the outcome of an event, and the intensity of that outcome. It was expected, therefore, that crime against person, crime against property, and non-delinquent groups would attribute a differential amount of responsibility across three ages and five Levels of AR to positive and negative outcomes of high and low intensity. No significant differences were found, however, indicating that under the conditions of the present study, the three groups did not differ significantly in their perception of causality and attribution of responsibility across the variables measured.

Such a result suggests, conclusively, that juvenile delinquents of either classification are similar to non-delinquents at ages 12, 14, and 16 in responsibility attribution and that it is not the ability to perceive causality or responsibility under the varying conditions of causal structure and outcome but the translation of such into behavior and physical actions which distinguishes the juvenile delinquent from the non-delinquent. If the delinquent is able to perceive causality and attribute responsibility in a manner not significantly different from the non-delinquent, then the deviant behavior of the juvenile delinquent must be the product of something other than a lack or retardation of the development of social perception and responsibility. Future research should address itself to the identification of the

nature of the "change" from perception to behavior which results in the delinquent's socially deviant behavior and under what conditions such changes are likely to occur. Perhaps it is the the juvenile delinquent's intentions or motivations rather than a lack of understanding or failure in perception which are responsible for his deviant behavior.

While the present expectation was not supported by the experimental findings, some results related to the overall prediction did reveal the presence of significant differences in the attribution of responsibility. These differences will be discussed briefly.

Responsibility was attributed by the subjects, regardless of group classification, significantly less frequently to agents producing or connected with events of low degree of favorableness of outcome. No other significant differences appeared in attribution to positive and negative outcomes of high and low intensity. It should be noted, however, that favorable outcomes of high intensity received, summarily, the largest amount of responsibility attribution. These findings are not consistent with the trends reported by Sulzer (1964) that increasing differences would occur between positive and negative outcomes as intensity increased, in favor of negative outcomes. the only pattern of responsibility attribution evidenced by the present subjects was to judge individuals who produced outcomes of a low degree of favorableness to be significantly less responsible for those outcomes than if the quality-intensity combinations were otherwise.

Basically concordant with this conclusion is the finding that, when responsibility was attributed by the crime against person, crime

against property, and non-delinquent groups to positive and negative outcomes of high or low intensity, outcomes of a low degree of favorableness received, to a significant degree, the least amount of attribution regardless of group. There was no other consistent relationship between groups, outcome quality and intensity. It would appear, therefore, particularly in view of the fact that significant differences in responsibility attribution were not found between groups or between outcome qualities, either singly or in combination, that outcome intensity is the primary determinant of attribution when the different groups respond to outcome qualities of high or low intensity. Further, there was some indication, though not significant, in both this and the previous finding that responsibility attribution becomes more frequent as intensity increases, regardless of groups or outcome quality. This points out a positive relationship between attribution of responsibility and outcome quality.

However, it should be noted that non-delinquents attributing responsibility to unfavorable outcomes of low intensity attained the highest mean frequency of attribution. This may reflect relatively less influence of the degree of unfavorableness as opposed to the negative quality itself upon responsibility attribution by non-delinquents. However, it should also be recognized that this interaction did not differ significantly from others having high intensity outcomes, both positive and negative. Therefore, it is assumed that the particular <u>combination</u> of groups, outcome qualities, and intensities led to its significantly greater reception of attributed responsibility.

Finally, the primary influence of causal structure upon responsibility attribution is once more pointed out by the finding that significant differences in attribution of responsibility to high and low intensity outcomes of favorable or unfavorable quality occurred mainly between all adjacent Levels of AR. Further, unlike previous research (Sulzer, 1964), where more responsibility was found to be attributed to high intensity negative outcomes, regardless of Level of AR, a trend can be noted in the present investigation for more responsibility to be attributed to high intensity positive outcomes both within and between Levels of AR. From this, it can be seen that outcome quality, though not the primary determinant, when in combination with Levels of AR and outcome intensity, does contribute to significant differences in responsibility attribution.

Moreover, previously discussed findings had suggested that Levels of AR is the primary determinant of responsibility attribution, that positive and negative outcomes, not found to be significantly different overall, were variable in their influence when interacting with other effects, and that, while high and low intensity outcomes were found to be significantly different in their influence upon attribution of responsibility, intensity had a greater effect than outcome quality but a lesser effect than Levels of AR upon responsibility attribution. Therefore, it is felt that, while significant differences were found between high and low intensity outcomes across positive and negative qualities and Levels of AR, these differences are a result of the combination of the three effects. However, while all three effects contribute to the significant differences, it is

again concluded that the major influence upon attribution is causal structure within the five Levels of AR, and that it is the differences between the Levels which allow for the appearance of the relative influence of outcome intensity and quality when these three effects interact with one another.

Thus, it was seen that there were no significant differences between the three groups across all variables measured as predicted. This indicates that, under the conditions of the present study, there were no significant differences found between the two types of delinquents and non-delinquents in their perception of causality and attribution of responsibility across ages, intensity, outcome quality, and Levels of Responsibility.

CHAPTER V

SUMMARY

It has been shown in the literature that juvenile delinquents were distinguished from other juveniles by developmental retardation and psychological disturbances which were incongruous with the characteristics of youngsters showing an adequate development of the perception of causality and attribution of responsibility.

In the present investigation juvenile delinquents of two classifications, crime against person and crime against property, were matched across several variables (age, education, socioeconomic status, IQ, and two parental figures in the home) with non-delinquents. At three ages, 12, 14 and 16, the groups were compared in their attribution of responsibility to outcomes of social interactions. Five levels of attribution were employed, progressing from the more primitive to the more sophisticated levels of causal perception and responsibility attribution. The social events at each level had positive (favorable) and negative (unfavorable) outcomes which were of high or low intensity (degree of favorableness or unfavorableness).

It was predicted that delinquents would differ from non-delinquents in their manner and frequency of attribution because of their personality deviances cited in the literature. Further, the two types of delinquents were expected to differ from each other in

responsibility attribution as a result of the type of crime committed and research which suggested basic differences in their psychological make-up.

No differences were found between any of the groups, indicating that, under the conditions of the present investigation, delinquents (of either classification) were able to perceive causality and to attribute responsibility with no significant difference from the non-delinquents. If, indeed, delinquents are able to attribute responsibility in a manner not unlike non-delinquents, then it is apparent that they are not retarded in their development of causal perception and attribution of responsibility and that personality or psychological disturbances, if present at all to a significant degree, can be overcome by the delinquent under a given set of circumstances. Therefore, if the delinquent can perceive and attribute responsibility as accurately as a non-delinquent, it suggests that developmental or psychological retardation in this area are not factors which promote the delinquent behavior. The set of circumstances within which the delinquent finds himself operating may possibly be a more potent determinant of the deviant behavior.

In addition, in the present study no differences were found in the attribution of responsibility between the ages of 12, 14, and 16. This suggests that at one developmental stage, adolescence, causal perception and responsibility attribution had reached a relatively stable level--a product of the similarities rather than the differences of boys at ages within the adolescent period.

The five levels of attribution of responsibility were found to be reliable as reported in previous literature. There was an increase in the frequency of attribution through Level IV, with a slight decrease at Level V, where individual and environment share responsibility for the outcome.

Positive and negative outcomes were not found to significantly influence responsibility attribution; but, high intensity outcomes were significantly more often attributed responsibility than outcomes of low intensity by all subjects. This indicates that events high in degree of favorableness or unfavorableness influence attribution of responsibility by all groups, regardless of age or Levels.

Future research should consider broadening the age range to include maturational stages other than adolescence in order to ascertain if differences then appear in attribution of responsibility between delinquents and non-delinquents. Further, the inclusion of the delinquent who commits the extremely grave crime against person or crime against property might then exhibit the influence of psychological disturbance upon responsibility attribution. Certainly, a need is recognized for a thorough experimental investigation of the personality of the juvenile delinquent, the conditions under which that personality affects his causal perception and responsibility attribution, and how the delinquent translates such into socially deviant behavior.

APPENDICES

APPENDIX A

AR QUESTIONNAIRE - Form E

1. Perry was watching a house that was burning down. As he watched, a small child appeared at a window and called for help. Most of the people there thought that there was so much fire that no one should go into the house. Perry ran in and pulled the child to safety. Is Perry responsible for saving the child's life?

2. One day several of Tom's classmates were playing by the lake. Tom was not with them. They found a fishing rod in the bushes and broke it into pieces. Is Tom responsible for the fishing rod being broken?

3. Alan carried a bucket of water to the yard so that he could wash the family car. Then he went back to get the soap. A thirsty bird flew down and got a drink of water from the bucket. Is Alan responsible for the bird getting a drink of water?

4. A man grabbed Bill by the shirt collar and threatened to hurt him if he did not splash mud on an old man who was walking by. Bill splashed the mud on the old man's best shoes. Is Bill responsible for the old man's best shoes getting mud on them?

5. Mike woke up in the middle of the night and saw that the house next door was on fire. He was frightened and woke up his father to ask him if he could sleep in his parent's room. His father ran to the house and saved two old people who were trapped in the burning house. Is Mike responsible for saving the two old people?

6. Jerry called a boy and asked him to come over to his house to see his birthday presents. On the way to Jerry's house the boy was struck by a car and was killed. Is Jerry responsible for the boy's death?

7. One day when Jim was absent from school some of the boys in his class helped a lady pull weeds from her garden. Is Jim responsible for the weeds being pulled from the garden?

8. Ricky was helping his father unload some rocks from a truck. One of the rocks he threw missed the pile and crashed through the window of a nearby building. Is Ricky responsible for the broken window?

9. A little boy was lost in a large cave. Everyone was afraid to go in the cave because they might get lost too. A much bigger boy told Alex that he would knock his head off if he did not go hunt for the lost boy. Alex went into the cave, found the boy and brought him to safety. Is Alex responsible for saving the little boy's life?

10. Ed put poison into a coca cola and gave it to another boy. The boy drank the coke and died from the poison. Is Ed responsible for the boy's death?

11. After supper, Phil put some meat scraps into the garbage can which had no lid. A hungry dog came along and ate the meat scraps. Is Phil responsible for the hungry dog getting some food?

12. Larry was cutting the grass in front of his house. A rock got into the mower and was thrown across the yard. It broke a window in the house next door. Is Larry responsible for the broken window?

13. Willie had been playing with classmates in a tree. While he was home for lunch, some of the boys decided to kill another boy. They pushed him out of the tree and his neck was broken. Is Willie responsible for the boy getting a broken neck?

14. John saw a boy building a block tower. John threw a ball at the tower and knocked it down. Is John responsible for the tower being knocked down?

15. One day it was raining very hard. A man told Pete that he would whip him if he did not take an umbrella to a woman getting out of a car in the rain. Pete took the umbrella to the woman and she was able to get in out of the rain without getting wet. Is Pete responsible for the woman not getting wet?

16. One day when Charles was at the dentist's office, the boys in his class went swimming. While there, they saved a little boy from drowning. Is Charles responsible for saving the little boy's life?

17. Stewart had an old bicycle which had no brakes. He told his sister to ride it to the store several blocks away. When she came to a busy street, she could not stop the bicycle and ran into the path of a car and was killed. Is Stewart responsible for his sister's death?

18. Keith saw someone's coat on the floor and picked it up so that it would not get dirty. Is Keith responsible for the coat not getting dirty?

CONTINUED

2 OF 3

19. A small child had fallen into a swimming pool and was drowning. Greg did not know that the child was in the pool, but just at that time he was draining the pool so that he could clean it. The water ran out quickly and the child's life was saved. Is Greg responsible for saving the child's life?

20. Another boy tried to kill Chuck with a large knife. Chuck grabbed the knife and stabbed the other boy to death to keep from being killed himself. Is Chuck responsible for the boy's death?

21. Curtis was fishing when he saw a boy drowning in the river. Curtis could not swim, but he fought his way out to the boy and pulled him out. Is Curtis responsible for saving the boy's life?

22. Joe was absent from school the day that his class lost the relay race. Is Joe responsible for his class losing the relay race?

23. While Terry was cleaning the garage, he found some old shoes. He put them on the trash pile. The garbage man found them and kept them for himself. Is Terry responsible for the man getting some shoes?

24. A man was twisting David's arm so much that it hurt. He ordered David to break a store window. David broke the window. Is David responsible for the window being broken?

25. Tom was taking his little sister to school. She started to step into a busy street, but Tom wanted to look into a store window so he pulled her back. This kept his sister from being hit by a speeding car. Is Tom responsible for saving his sister's life?

26. Sam told some people about a short-cut to the next town. They took the short-cut, but as they were crossing a river the bridge broke. Their car fell into the river and the people were drowned. Is Sam responsible for the people drowning?

27. Mark was at home in bed the day his class won the baseball game. Is Mark responsible for winning the baseball game?

28. Nathan was at a party. When the cookies were passed, Nathan took five. There were not enough to go around and one of the boys got none. Is Nathan responsible for the boy not getting any cookies?

29. A small child had crawled into the pasture with a very mean bull that had gored several people to death. The little boy's brother, who was bigger than Edward, picked up a club and told Edward that he would beat him to death if he did not go into the pasture and

save the child. Edward dashed in front of the angry bull and pulled the child to safety. Is Edward responsible for saving the child?

30. Tim was playing with another boy. He decided to kill the other boy so he stabbed him to death with a knife that he had been playing with. Is Tim responsible for the boy's death?

31. Dan had tickets to the movies, but he could not go. He left the tickets on the hall table. His sister found the tickets and went to the movies. Is Dan responsible for his sister getting free tickets?

32. Carl was coming through the door into a restaurant. Just as he opened the door, a waitress was passing with a tray of dishes. The door struck her arm, causing her to drop the tray and break the dishes. Is Carl responsible for the dishes being broken?

33. One day after Frank had gone home from school, some other boys in his class stabbed a child to death. Is Frank responsible for the child being killed?

34. George threw some broken glass into a man's driveway so that he would get a flat tire. The man drove in and got a flat tire. Is George responsible for the man getting a flat tire?

35. Hank's mother said that she would whip him if he did not cut the grass. Hank cut the grass, and the lawn looked very nice. Is Hank responsible for the lawn looking nice?

36. One day after Jack had gone home from school, the boys in his class pulled a small child from the path of a speeding automobile. Is Jack responsible for saving the child's life?

37. Ken was playing with some bricks on the roof of his father's garage. When he was tired of playing with the bricks, he began tossing them down to the sidewalk. A woman coming down the sidewalk was struck on the head and killed by one of the falling bricks. Is Ken responsible for the woman's death?

38. While he was on his way to the park, Matthew found a newspaper. When he got to the park, he gave it to an old man who was sitting on a park bench. Is Matthew responsible for the old man getting a free newspaper?

39. Paul was making telephone calls to several of his friends. When the phone rang in one home he called, it awakened a man who was sleeping near a broken gas stove. If he had not

awakened, the leaking gas would have killed him. Is Paul responsible for the man waking up in time to escape death?

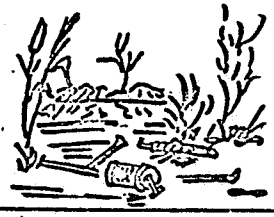
40. Richard was taking some money to the bank for his father. A man attacked and threatened to kill Richard if he did not give him the money. Richard picked up a rock, hit the man on the head, and killed him. Is Richard responsible for killing the man?

APPENDIX B

AR Questionnaire Form E
Response Sheet

1. YES NO

2. YES NO



3. YES NO

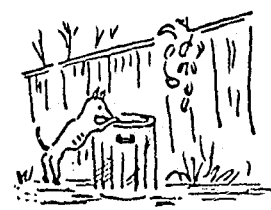
4. YES NO

5. YES NO

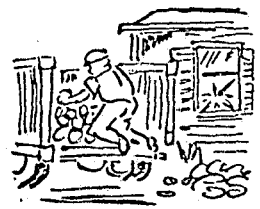
6. YES NO

7. YES NO

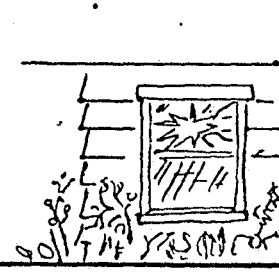
11. YES NO



8. YES NO



12. YES NO



9. YES NO

13. YES NO

10. YES NO

14. YES NO

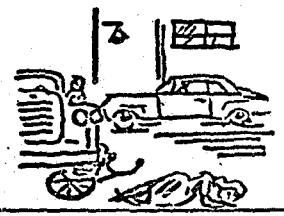
15. YES NO

19. YES NO

16. YES NO

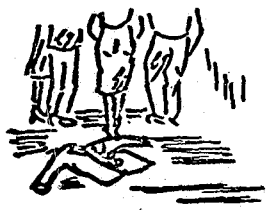
20. YES NO

17. YES NO



21. YES NO

18. YES NO

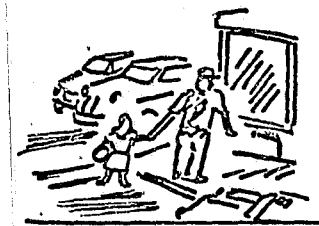


22. YES NO

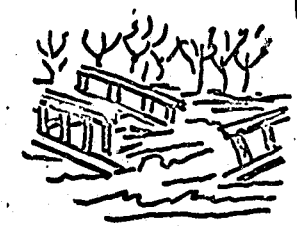
23. YES NO

24. YES NO

25. YES NO

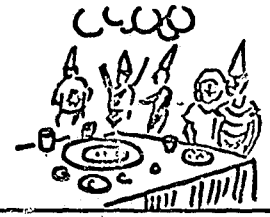


26. YES NO



27. YES NO

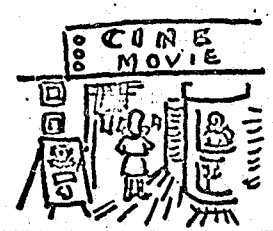
28. YES NO



29. YES NO

30. YES NO

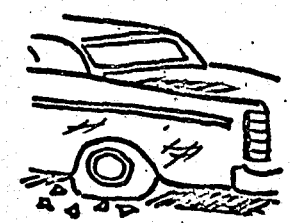
31. YES NO



32. YES NO

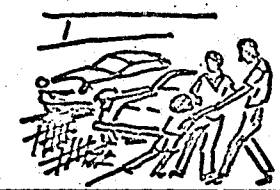
33. YES NO

34. YES NO

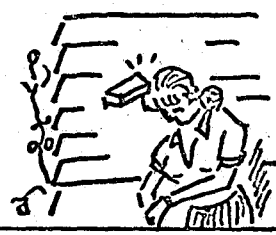


35. YES NO

36. YES NO

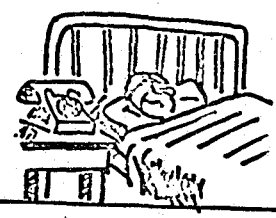


37. YES NO



38. YES NO

39. YES NO



40. YES NO

APPENDIX C

INSTRUCTIONS

I am going to read some short stories about a boy. I will read each story twice to be sure that you understand. After I read each story the second time, I will ask you if you think that the boy is responsible for what happened in that story. If a person is responsible for something, that means that we might blame him for it or that we might thank him for it.

I will ask you whether you think that the boy is responsible for what happened in each of the stories. If you think that the boy is responsible circle "YES" on your answer sheet. If you think that the boy is NOT responsible for what happened, circle the "NO" on your answer sheet.

If you circle "YES" then check one of the boxes to show how much responsible you think the boy is for what happened. If you think he is VERY responsible, put an "X" in the biggest box on your answer sheet. If you think he is less responsible, then put an "X" in one of the SMALLER boxes. The less responsible you believe the boy to be, the smaller the box you check. (Demonstrate with the placard.) See . . . you put the "X" here if he is very responsible and here or here if less responsible . . . and in this small box if you think he is only a little responsible.

REMEMBER - put an "X" in one of these boxes to show how much you think the boy is responsible only if you circled "YES." If you circled "NO" that is all that you do for that one.

Are there any questions? If you do not understand something, tell me now, because I will not be able to answer questions once we get started.

APPENDIX D

TABLE 2

ANALYSIS OF VARIANCE OF ATTRIBUTION OF RESPONSIBILITY BY CRIME AGAINST PERSON, CRIME AGAINST PROPERTY, AND NON-DELINQUENT GROUPS AS A FUNCTION OF AGE, LEVELS OF AR, OUTCOMES, AND INTENSITIES (N = 72)

Source	df	SS	MS	F	P
Between Subjects	71	986.27			
Group	2	18.67	9.34	.06	
Age	2	1.10	0.55	.003	
Groups x Age	4	45.04	11.26	.08	
Subjects w. Groups [error (a)]	63	921.46	14.63		
Within Subjects	1368	20643.55			
Levels of AR	4	13123.21	3280.80	609.81	**
Groups x Levels	8	52.37	6.55	1.22	
Age x Levels	8	54.01	6.75	1.25	
Groups x Age x Levels	16	103.67	6.48	1.20	
Levels x Subjects w. Groups [error (b)]	252	1354.86	5.38		
Outcome (Pos-Neg)	1	30.92	30.92	3.59	
Groups x Outcome	2	2.24	1.12	.01	
Age x Outcome	2	6.32	3.16	.04	
Groups x Age x Outcome	4	31.48	7.87	.09	
Outcome x Subjects w. Groups [error (c)]	63	542.99	8.62		
Intensity (Hi-Lo)	1	47.30	47.30	13.95	**
Groups x Intensity	2	12.82	6.41	1.89	
Age x Intensity	2	17.63	8.82	2.60	
Groups x Age x Intensity	4	31.33	7.83	2.31	
Groups x Age x Intensity	4	31.33	7.83	2.31	
Intensity x Subjects w. Groups [error (d)]	63	213.28	3.39		

TABLE 2--Continued

Source	df	SS	MS	F	P
Levels x Outcome	4	1671.67	417.92	124.38	**
Groups x Levels x Outcome	8	50.03	6.25	1.86	
Age x Levels x Outcome	8	72.43	9.05	2.69	**
Groups x Age x Levels x Outcome	16	69.77	4.36	1.30	
Levels x Outcome Subjects w. Groups [error (e)]	252	846.43	3.36		
Levels x Intensity	4	34.28	8.57	3.33	*
Groups x Levels x Intensity	8	20.51	2.56	.10	
Age x Levels x Intensity	8	80.34	10.04	3.91	**
Groups x Age x Levels x Intensity	16	52.79	3.30	1.28	
Levels x Intensity Subjects w. Groups [error (f)]	252	646.03	2.57		
Outcome x Intensity	1	87.52	87.52	26.85	**
Groups x Outcome x Intensity	2	20.35	10.18	3.12	*
Age x Outcome x Intensity	2	6.52	3.23	.99	
Groups x Age x Outcome x Intensity	4	12.12	3.03	.93	
Outcome x Intensity Subjects w. Groups [error (g)]	63	205.04	3.26		
Levels x Outcome x Intensity	4	290.32	72.58	26.85	**
Groups x Levels x Outcome x Intensity	8	40.19	5.02	1.68	
Age x Levels x Outcome x Intensity	8	24.76	3.09	1.04	
Groups x Age x Levels x Outcome x Intensity	16	37.09	2.32	.78	
Levels x Outcome x Intensity Subjects w. Groups [error (h)]	252	751.05	2.98		
Total	1439	21629.82			

** $p < .01$. *$p < .05$.

APPENDIX E

TABLE 3

SUBJECT RAW DATA

Group	Age	Ss	Levels of Attribution of AR																			
			I				II				III				IV				V			
			Pos		Neg		Pos		Neg		Pos		Neg		Pos		Neg		Pos		Neg	
			Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo
EXPERIMENTAL I Crime Against Property	12	1	1	6	1	1	1	1	6	1	6	9	1	1	1	5	6	6	1	6	1	1	6	6	6	6	6	6	1	1	1	6	1	1	6	5
		2	1	1	1	1	1	1	1	1	6	1	1	1	1	1	1	1	1	1	1	1	5	6	1	6	6	4	6	6	6	6	5	1	1	5	5	1	3	1
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		7	1	1	1	1	1	1	1	1	2	6	1	6	1	2	1	2	1	2	1	6	6	6	4	6	6	6	6	6	6	6	6	6	6	2	2	2	1	2	2	1
		8	1	1	1	1	1	1	1	1	3	6	4	4	1	3	3	4	2	2	4	5	6	5	5	6	6	6	6	6	6	6	6	5	6	6	1	3	2	1
	14	1	1	1	1	1	1	1	1	1	5	6	1	5	1	1	1	5	4	5	4	6	4	6	6	1	6	6	6	6	6	6	6	5	6	5	5	6	4	1	1
		2	1	1	1	1	1	1	1	1	3	5	1	3	1	5	2	4	3	6	4	6	6	3	6	6	6	6	6	6	6	6	4	6	4	5	6	5	4	3
		3	1	1	1	1	1	1	1	1	4	5	1	1	1	1	1	2	6	4	4	1	3	6	6	6	6	6	6	6	6	6	5	4	1	5	3	1	1	1
		4	1	1	1	1	1	1	1	1	2	2	1	1	1	4	2	3	6	3	1	4	4	5	4	6	5	5	1	3	6	6	6	6	4	3	3	4	6	4	3	2
		5	1	1	1	1	1	1	1	1	1	5	1	1	1	5	1	3	6	4	4	2	4	6	1	6	6	6	6	6	6	6	6	6	4	5	4	3	3	6	1	1
		6	1	1	1	1	1	1	1	1	4	2	6	1	1	4	1	4	1	4	2	4	6	6	2	6	6	6	6	6	6	6	6	6	4	4	4	4	4	2	6	4
		7	1	1	1	1	1	1	1	1	1	4	1	4	1	1	1	6	1	1	1	6	5	6	4	6	6	6	6	6	6	6	6	6	5	4	1	5	1	2	4	3
		8	1	1	1	1	1	1	1	1	5	5	1	1	1	1	3	1	1	3	4	4	2	4	4	6	6	6	6	4	6	6	6	6	4	5	6	6	1	2	4	3
	16	1	1	1	1	1	1	1	1	1	1	3	1	4	1	1	1	1	2	1	1	4	5	4	5	4	5	6	1	1	6	6	6	6	2	2	4	4	1	2	2	2
		2	1	1	1	1	1	1	1	1	4	2	1	2	1	1	1	1	1	2	4	2	4	3	4	4	6	6	6	6	6	6	6	6	2	2	4	4	1	2	2	2
		3	1	1	1	1	1	2	1	1	3	3	1	4	1	1	2	2	4	3	3	5	6	6	6	5	6	5	6	6	6	6	5	4	5	6	4	4	6	2	2
		4	1	1	1	1	1	1	1	1	1	2	1	4	1	1	1	3	1	5	1	4	4	4	5	4	5	1	1	3	6	4	4	3	1	5	1	3	5	1	4	1
		5	1	1	1	1	1	1	1	1	3	4	2	4	1	1	5	4	3	3	5	3	4	5	3	4	6	6	6	5	6	6	6	6	3	3	4	4	5	3	5	4
		6	1	1	1	1	1	1	1	1	1	6	1	6	1	1	3	6	1	2	4	6	5	6	6	6	6	6	6	6	6	6	6	6	3	2	2	6	6	6	2	2
		7	1	1	1	1	1	1	1	1	2	4	2	2	1	2	3	1	2	4	1	4	2	4	4	4	6	6	6	2	6	6	6	6	3	3	3	5	6	6	5	3
		8	1	1	1	1	1	1	1	1	6	6	3	5	2	4	4	5	3	5	5	6	6	5	6	6	6	6	6	5	6	6	6	6	5	5	5	5	4	4	5	4

TABLE 3--Continued

Group	Age	Ss	Levels of Attribution of AR																			
			I				II				III				IV				V			
			Pos		Neg		Pos		Neg		Pos		Neg		Pos		Neg		Pos		Neg	
			Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo
EXPERIMENTAL II Crime Against Person	12	1	1	1	1	1	1	1	3	2	6	1	1	1	1	1	1	4	4	1	3	6	5	5	5	6	6	6	5	6	6	6	6	4	2	2	4	1	1	1	2
		2	1	1	1	1	1	1	1	1	6	1	1	1	1	6	1	1	1	6	1	1	6	6	6	6	2	1	1	1	6	6	6	6	4	1	1	5	1	1	1	1
		3	1	1	1	1	1	1	1	1	2	6	1	1	1	1	6	1	2	5	1	1	6	6	6	6	6	6	5	5	6	6	6	6	5	2	1	5	1	1	1	1
		4	1	1	1	1	1	1	6	1	6	4	1	1	1	3	1	1	1	1	1	1	6	6	4	1	2	1	1	1	6	6	6	6	1	1	4	1	1	6	2	1
		5	1	1	1	1	1	1	1	1	6	6	1	1	1	1	4	1	1	6	4	1	1	5	4	5	6	6	6	5	6	6	6	6	4	6	1	5	6	6	5	3
		6	1	1	1	1	1	1	1	1	4	3	3	6	2	2	2	1	2	6	2	6	6	6	4	5	6	6	6	6	6	6	6	6	5	6	2	5	4	4	1	1
		7	1	1	1	1	1	1	1	1	5	5	1	5	1	5	1	5	1	6	1	6	4	6	6	6	6	6	6	6	6	5	5	4	4	6	2	2				
		8	1	1	1	1	1	1	1	1	1	5	1	1	1	6	1	1	3	6	1	1	6	6	4	6	6	6	6	4	6	5	6	6	5	6	4	6	1	2	6	2
	14	1	1	1	1	1	1	1	1	1	2	4	4	2	1	1	2	2	3	2	5	2	4	4	3	1	6	6	6	5	6	6	6	6	3	3	1	1	3	2	2	3
		2	5	1	4	1	6	1	1	1	5	5	6	5	5	6	3	2	6	5	4	5	5	5	5	5	5	4	4	4	6	6	6	6	5	5	5	5	1	1	2	1
		3	3	6	1	1	2	1	1	1	1	6	2	1	1	1	2	1	1	3	3	3	4	5	4	6	5	4	3	4	6	6	6	5	4	1	2	2	1	2	6	2
		4	1	6	1	1	1	6	1	1	6	6	1	1	1	1	1	1	1	6	1	1	5	6	1	6	6	5	6	6	6	6	6	6	6	5	1	6	1	1	1	1
		5	1	1	1	1	1	1	1	1	6	6	6	6	1	1	5	2	5	4	6	6	4	6	5	6	6	6	6	6	6	5	6	6	4	6	1	5	3	2	4	4
		6	1	1	1	1	1	1	1	1	2	4	2	1	6	2	4	1	1	5	1	1	4	5	5	6	6	6	6	4	6	6	6	6	1	2	2	5	6	5	5	4
		7	1	1	1	1	1	1	1	1	6	2	1	5	1	1	1	2	1	6	1	6	4	6	6	6	6	6	6	6	6	6	5	5	4	4	6	2	2			
		8	1	1	1	1	1	1	1	1	2	1	6	1	2	2	1	1	2	1	2	1	4	2	2	6	6	6	6	6	6	6	6	6	3	2	2	4	2	2	2	2
	16	1	1	1	1	1	1	1	1	1	4	1	5	1	1	1	1	1	4	1	1	5	4	1	6	1	6	6	6	6	6	6	6	6	4	3	4	1	1	1	1
		2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6	6	1	1	1	1	6	6	6	6	6	6	1	6	6	6	6	6	6	6	6	6	6	6	6	6
		3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	6	4	1	1	1	6	5	6	6	1	1	6	6	1	6	6	6	6	6	1	1	1	1	2	5	6
		4	1	6	1	1	1	1	1	1	6	6	4	3	1	1	1	2	5	6	4	4	6	6	6	4	5	6	6	6	6	6	6	6	6	6	6	6	4	3	1	1
		5	1	1	1	1	1	1	1	1	4	6	4	6	1	3	6	1	2	6	6	6	6	6	6	5	6	6	5	5	6	6	6	6	5	5	4	5	6	1	4	1
		6	1	1	1	1	1	1	1	1	1	6	2	5	1	1	1	1	4	1	5	5	4	6	6	5	6	6	6	6	6	6	6	6	6	5	5	5	6	5	4	4
		7	1	1	1	1	1	1	1	1	4	4	3	2	2	2	4	4	2	2	2	5	4	5	4	3	6	6	6	5	6	6	6	6	2	3	2	3	6	4	2	2
		8	1	1	1	1	1	1	1	1	3	3	1	3	1	1	3	3	1	2	3	4	6	4	5	6	5	6	6	2	6	6	6	6	4	4	4	6	2	2	6	2

TABLE 3--Continued

Group	Age	Ss	Levels of Attribution of AR																			
			I				II				III				IV				V			
			Pos		Neg		Pos		Neg		Pos		Neg		Pos		Neg		Pos		Neg	
			Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo	Hi	Lo
CONTROL GROUP Non-delinquent	12	1	1	1	1	1	1	1	1	5	4	1	1	2	1	6	1	1	4	5	5	6	6	6	6	6	6	6	5	4	3	3	3	2	3	2	2
		2	1	1	1	1	1	1	1	4	4	1	1	1	1	1	1	1	1	5	1	1	3	6	6	6	6	6	6	5	6	5	1	5	5	1
		3	1	1	1	1	1	1	1	1	2	2	1	1	1	2	2	6	1	6	3	6	6	6	6	6	4	6	6	6	6	5	1	2	5	1	5	3	1
		4	1	1	1	1	1	1	1	1	6	1	4	1	1	4	1	6	4	1	1	4	6	6	6	6	4	6	4	6	6	4	4	4	1	1	6	1	6
		5	1	1	1	1	1	1	1	1	5	6	1	6	2	4	5	4	4	6	5	5	4	6	6	6	6	6	6	6	6	6	5	6	5	6	6	5	5	4	5
		6	1	1	1	1	1	1	1	1	4	6	4	1	1	1	1	3	1	5	2	4	5	6	6	6	6	6	6	5	6	6	6	3	5	2	3	3	1
		7	1	1	1	1	1	1	1	1	3	2	2	2	1	1	6	2	1	2	3	1	5	6	6	6	6	6	6	6	4	3	2	4	4	2	4	4
		8	1	1	1	1	1	1	1	1	3	5	2	1	2	2	3	2	3	3	4	4	4	6	6	6	6	6	5	5	6	6	6	5	4	4	4	2	3	3	2
	14	1	1	1	1	1	1	1	1	1	6	5	1	1	1	5	5	5	4	6	1	1	6	6	5	5	6	6	6	6	6	6	6	5	5	5	5	4	5	6	4
		2	1	1	1	1	1	1	1	1	1	3	1	1	1	1	5	1	1	1	1	1	5	2	5	5	6	6	6	6	6	6	6	5	6	6	6	4	5	2	3
		3	1	1	1	1	1	1	1	1	1	6	1	1	1	1	4	1	1	1	3	1	4	6	5	6	6	6	6	6	6	6	6	3	3	3	3	2	2	2	1
		4	1	1	1	1	1	1	1	1	2	2	1	3	1	1	1	2	4	5	1	3	4	4	5	6	6	2	1	6	6	6	6	6	5	6	5	4	6	6	1
		5	1	1	1	1	1	1	1	1	1	5	5	2	1	5	4	5	1	3	5	4	5	6	6	6	6	6	6	5	6	6	6	6	5	4	4	4	3	2	2	4
		6	1	1	1	1	1	1	1	1	3	3	4	2	1	2	2	2	1	2	3	2	4	5	5	6	6	6	6	6	6	6	6	3	4	3	2	3	3	5	3
		7	1	1	1	1	1	1	1	1	1	3	1	3	1	3	2	1	3	2	1	4	4	5	6	5	6	6	6	6	6	6	6	4	4	4	4	2	2	5	2
		8	1	1	1	1	1	1	1	1	2	4	2	2	1	3	4	2	2	3	3	2	5	5	5	6	6	6	6	6	6	6	6	5	3	4	4	4	3	3	4
	16	1	1	1	1	1	1	1	1	5	5	1	4	1	2	3	1	1	4	1	4	5	5	4	6	6	6	6	6	6	6	6	5	4	4	3	5	3	4	3
		2	1	1	1	1	1	1	1	1	3	4	5	4	1	2	4	2	2	4	4	4	3	4	5	5	6	6	6	5	6	6	6	6	5	5	5	5	5	3	4	3
		3	1	1	1	1	1	1	1	1	2	4	1	2	2	1	2	2	3	6	2	2	5	5	5	5	6	6	6	6	6	6	6	4	4	4	2	3	5	5	3
		4	1	1	1	1	1	1	1	1	6	6	1	5	1	2	3	2	5	6	4	2	6	5	6	6	6	6	6	6	6	6	6	5	5	3	3	6	6	2	4
		5	1	1	1	1	1	1	1	1	3	3	4	3	2	2	3	4	3	2	4	3	4	3	6	6	6	6	6	6	6	6	6	4	3	2	4	3	5	2	2
		6	1	1	1	1	1	1	1	1	1	5	2	6	1	2	1	2	5	2	1	6	6	3	5	5	6	6	5	5	6	6	6	6	3	4	3	2	1	2	1	2
		7	1	1	1	1	1	1	1	1	3	5	3	4	2	4	5	5	3	3	5	4	6	6	6	5	6	6	5	4	6	6	6	6	4	4	3	2	6	6	5	3
		8	1	1	1	1	1	1	1	1	3	5	4	3	1	2	3	2	3	4	4	3	5	3	5	6	6	6	6	6	6	6	6	5	4	4	3	4	4	4	3

APPENDIX F

TABLE 4

DUNCAN'S NEW MULTIPLE RANGE TEST FOR MEAN DISTRIBUTION IN FIVE LEVELS OF ATTRIBUTION OF RESPONSIBILITY

Levels	I	II	V	III	IV	Shortest Significant Range
Means	2.20	5.26	6.98	8.07	11.32	.01
2.20		3.06*	4.78*	5.87*	9.12*	.51
5.26			1.72*	2.81*	6.06*	.53
6.98				1.09*	4.34*	.55
8.07					3.25*	.56

*$p < .01$

APPENDIX G

TABLE 5

DUNCAN'S NEW MULTIPLE RANGE TEST FOR MEAN DISTRIBUTION IN LEVELS OF AR X OUTCOME INTERACTION

LxO	IN	IP	IIN	VN	IIIP	IIP	VP	IIIN	IVP	IVN	Shortest Significant Range
Means	2.17	2.24	4.35	6.08	6.09	6.17	7.88	10.05	10.72	11.92	.01
2.17		.07	2.18*	3.91*	3.92*	4.00*	5.71*	7.88*	8.55*	9.75*	.55
2.24			2.11*	3.84*	3.85*	3.93*	5.64*	7.81*	8.48*	9.68*	.57
4.35				1.73*	1.74*	1.82*	3.53*	5.70*	6.37*	7.57*	.59
6.08					.01	.09	1.80*	3.97*	4.64*	5.84*	.60
6.09						.08	1.79*	3.96*	4.63*	5.83*	.61
6.17							1.71*	3.88*	4.55*	5.75*	.61
7.88								2.17*	2.84*	4.04*	.62
10.05									.67*	1.87*	.63
10.72										1.20*	.63

Levels x Outcome

IN	= I-Neg	IP	= I-Pos
IIN	= II-Neg	IIP	= II-Pos
IIIN		IIIP	
IVN		IVP	
VN		VP	

*p < .01

TABLE 6

DUNCAN'S NEW MULTIPLE RANGE TEST FOR MEAN DISTRIBUTION
IN AGE X LEVELS X OUTCOME TREATMENT INTERACTION

AxLxO	16IN	16IP	12IP	14IN	12IN	14IP	16IIN	14IIN	12IIN	12VN	14IIP	12IIIP	14VN	14IIIP	16IIP	16IIIP
Means	2.02	2.10	2.21	2.23	2.25	2.40	4.29	4.35	4.42	5.35	5.88	5.88	5.90	6.06	6.31	6.33
2.02		.08	.19	.21	.23	.28	2.27*	2.33*	2.40*	3.33*	3.86*	3.86*	3.88*	4.04*	4.29*	4.31*
2.10			.11	.13	.15	.30	2.19*	2.25*	2.32*	3.25*	3.78*	3.78*	3.80*	3.96*	4.21*	4.23*
2.21				.02	.04	.19	2.08*	2.14*	2.21*	3.14*	3.67*	3.67*	3.69*	3.85*	4.10*	4.12*
2.23					.02	.17	2.06*	2.12*	2.19*	3.12*	3.65*	3.65*	3.67*	3.83*	4.08*	4.10*
2.25						.15	2.04*	2.10*	2.17*	3.10*	3.63*	3.63*	3.65*	3.81*	4.06*	4.08*
2.40							1.89*	1.95*	2.02*	2.95*	3.48*	3.48*	3.50*	3.66*	3.91*	3.93*
4.29								.06	.13	1.06	1.59*	1.59*	1.61*	1.77*	2.02*	2.04*
4.35									.07	1.00	1.53*	1.53*	1.55*	1.71*	1.96*	1.98*
4.42										.93	1.46*	1.46*	1.48*	1.64*	1.89*	1.91*
5.35											.53	.53	.55	.71	.96	.98
5.88												.00	.02	.18	.43	.45
5.88													.02	.18	.43	.45
5.90														.16	.41	.43
6.06															.25	.27
6.31																.02
6.33																
6.33																
6.98																
7.77																
7.83																
8.02																
9.60																
9.79																
10.42																
10.60																
10.75																
11.15																
11.83																
11.96																

*p < .01

TABLE 6--Continued

12IIP	16VN	16VP	12VP	14VP	14IIN	16IIIN	12IVP	16IVP	12IIIN	14IVP	16IVN	14IVN	12IVN	Shortet Significant
6.33	6.98	7.77	7.[illegible]	8.02	9.60	9.79	10.42	10.60	10.75	11.15	11.93	11.96	11.96	Ranges .01
4.31*	4.90*	5.75*	5.[illegible]*	6.00*	7.58*	7.77*	8.40*	8.58*	8.73*	9.13*	9.81*	9.94*	9.94*	.95
4.23*	4.88*	5.67*	5.73*	5.92*	7.50*	7.69*	8.32*	8.50*	8.65*	9.05*	9.73*	9.86*	9.86*	.99
4.12*	4.77*	5.56*	5.62*	5.81*	7.39*	7.58*	8.21*	8.39*	8.54*	8.94*	9.62*	9.75*	9.75*	1.01
4.10*	4.75*	5.54*	5.60*	5.79*	7.37*	7.56*	8.19*	8.37*	8.52*	8.92*	9.60*	9.73*	9.73*	1.03
4.08*	4.73*	5.52*	5.58*	5.77*	7.35*	7.54*	8.17*	8.35*	8.50*	8.90*	9.58*	9.71*	9.71*	1.05
3.93*	4.58*	5.37*	5.43*	5.62*	7.20*	7.39*	8.02*	8.20*	8.35*	8.75*	9.43*	9.56*	9.56*	1.06
2.04*	2.69*	3.48*	3.54*	3.73*	5.31*	5.50*	6.13*	6.31*	6.46*	6.86*	7.54*	7.67*	7.67*	1.08
1.98*	2.63*	3.42*	3.48*	3.67*	5.25*	5.44*	6.07*	6.25*	6.40*	6.80*	7.48*	7.61*	7.61*	1.08
1.91*	2.56*	3.35*	3.41*	3.60*	5.18*	5.37*	6.00*	6.18*	6.33*	6.73*	7.41*	7.54*	7.54*	1.09
.98	1.63*	2.42*	2.48*	2.67*	4.25*	4.44*	5.07*	5.25*	5.40*	5.80*	6.48*	6.61*	6.61*	1.10
.45	1.10	1.89*	1.95*	2.14*	3.72*	3.91*	4.54*	4.72*	4.87*	5.27*	5.95*	6.08*	6.08*	1.11
.45	1.10	1.89*	1.95*	2.14*	3.72*	3.91*	4.54*	4.72*	4.37*	5.27*	5.95*	6.08*	6.08*	1.11
.43	1.08	1.87*	1.95*	2.12*	3.70*	3.89*	4.52*	4.70*	4.85*	5.25*	5.93*	6.06*	6.06*	1.12
.27	.92	1.71*	1.77*	1.96*	3.54*	3.73*	4.36*	4.54*	4.69*	5.09*	5.77*	5.90*	5.90*	1.13
.02	.67	1.46*	1.52*	1.71*	3.29*	3.48*	4.11*	4.29*	4.44*	4.84*	5.52*	5.65*	5.65*	1.13
.00	.65	1.44*	1.50*	1.69*	3.27*	3.46*	4.09*	4.27*	4.42*	4.82*	5.50*	5.63*	5.63*	1.13
	.65	1.44*	1.50*	1.69*	3.27*	3.46*	4.09*	4.27*	4.42*	4.82*	5.50*	5.63*	5.63*	1.14
		.79	.85	1.04	2.62*	2.81*	3.44*	3.62*	3.77*	4.17*	4.85*	4.98*	4.98*	1.14
			.06	.25	1.83*	2.02*	2.65*	2.83*	2.98*	3.38*	4.06*	4.19*	4.19*	1.15
				.19	1.77*	1.96*	2.59*	2.77*	2.92*	3.32*	4.00*	4.13*	4.13*	1.15
					1.58*	1.77*	2.40*	2.58*	2.73*	3.13*	3.81*	3.94*	3.94*	1.15
						.19	.82	1.00	1.15	1.55*	2.23*	2.36*	2.36*	1.16
							.63	.81	.96	1.36*	2.04*	2.17*	2.17*	1.16
								.18	.33	.73	1.41*	1.54*	1.54*	1.17
									.15	.55	1.23*	1.36*	1.36*	1.17
										.40	1.08	1.21*	1.21*	1.17
											.68	.81	.81	1.18
												.13	.13	1.18
													.00	1.19

APPENDIX I

DUNCAN MULTIPLE RANGE TEST NON-SIGNIFICANT DIFFERENCES WITHIN THE AGE X LEVELS OF AR X OUTCOME TREATMENT INTERACTION

1. No significant differences were found between positive and negative outcomes within Level I age 12, Levels I or IV age 14, or Levels I or V age 16.

2. No significant difference between positive and negative outcomes within Levels between Ages were found for:

   (a) age 12 Level I positive vs. age 14 Level I negative
   (b) 12-I-neg. vs. 14-I-pos
   (c) 12-IV-neg vs. 14-IV-pos
   (d) 16-I-pos vs. 14-I-neg
   (e) 16-I-neg vs. 14-I-pos
   (f) 16-V-neg vs. 12-V-pos
   (g) 16-V-neg vs. 14-V-pos

3. No significant difference between positive and negative outcomes between Levels within Ages were found for:

   (a) 12-IV-pos vs. 12-III-neg
   (b) 12-V-neg vs. 12-III-pos
   (c) 12-V-neg vs. 12-II-pos
   (d) 14-V-neg vs. 14-III-pos
   (e) 16-II-pos vs. 16-V-neg
   (f) 16-III-pos vs. 16-V-neg
   (g) 16-III-neg vs. 16-IV-pos

4. No significant difference between positive and negative outcomes between Levels between Ages were found for:

   (a) 12-II-pos vs. 16-V-neg
   (b) 12-III-pos vs. 14-V-neg
   (c) 12-V-neg vs. 14-II-pos
   (d) 12-V-neg vs. 14-III-pos
   (e) 12-III-neg vs. 14-IV-pos
   (f) 12-V-neg vs. 16-II-pos
   (h) 12-V-neg vs. 16-III-pos
   (i) 14-III-pos vs. 16-V-neg
   (j) 14-III-neg vs. 12-IV-pos
   (k) 14-III-neg vs. 16-IV-pos
   (l) 14-V-neg vs. 16-II-pos
   (m) 14-V-neg vs. 16-III-pos
   (o) 16-IV-pos vs. 12-III-neg

5. No significant differences between positive and negative outcomes attributed to adjacent Levels of AR within Ages were found for:

   (a) 12-IV-pos vs. 12-III-neg
   (b) 16-III-neg vs. 16-IV-pos

6. No significant differences between positive and negative outcomes at adjacent Levels of AR between Ages were found for:

(a) 12-III-neg vs. 14-IV-pos
(b) 14-III-neg vs. 12-IV-pos
(c) 14-III-neg vs. 16-IV-pos
(d) 16-III-neg vs. 12-IV-pos
(e) 16-IV-pos vs. 12-III-neg

7. No significant differences were found between positive and negative outcomes between distant Levels of AR within Ages in the following:

(a) 14-V-neg vs. 12-III-pos
(b) 12-V-neg vs. 12-II-pos
(c) 14-II-pos vs. 14-V-neg
(d) 14-V-neg vs. 14-III-pos
(e) 16-II-pos vs. 16-V-neg
(f) 16-III-pos vs. 16-V-neg

8. No significant differences between positive and negative outcomes between distant Levels of AR between Ages were found for:

(a) 12-II-pos vs. 16-V-neg
(b) 12-III-pos vs. 14-V-neg
(c) 12-V-neg vs. 14-II-pos
(d) 12-V-neg vs. 14-III-pos
(e) 12-V-neg vs. 16-II-pos
(f) 12-V-neg vs. 16-III-pos
(g) 14-III-pos vs. 16-V-neg
(h) 14-V-neg vs. 16-II-pos
(i) 14-V-neg vs. 16-III-pos
(j) 14-V-neg vs. 12-II-pos
(k) 16-IV-pos vs. 12-III-neg

9. No significant differences were found in the attribution to positive outcomes within Levels of AR between Ages in the following:

(a) 12-I-pos vs. 14-I-pos
(b) 12-III vs. 14-III
(c) 12-V vs. 14-V
(d) 14-II vs. 16-II
(e) 14-II vs. 12-II
(f) 14-III vs. 16-III
(g) 14-IV vs. 12-IV
(h) 16-I vs. 12-I
(i) 16-I vs. 14-I
(j) 16-II vs. 12-II
(k) 16-IV vs. 14-IV
(l) 16-V vs. 12-V

10. No significant differences in the attribution to negative outcomes within Levels of AR between Ages were found for:

(a) 12-V-neg vs. 14-V-neg
(b) 12-I vs. 14-I
(c) 12-III vs. 14-III
(d) 14-II vs. 14-II
(e) 14-III vs. 16-III
(f) 14-IV vs. 12-IV
(g) 14-V vs. 16-V
(h) 16-I vs. 14-I
(i) 16-I vs. 12-I
(j) 16-II vs. 12-II
(k) 16-II vs. 14-II
(l) 16-III vs. 12-III
(m) 16-IV vs. 12-IV
(n) 16-IV vs. 14-IV

11. No significant differences in positive outcomes between Levels of AR between ages were found for:

(a) 12-III-pos vs. 16-II-pos
(b) 14-II vs. 12-III
(c) 14-II vs. 16-III
(d) 14-III vs. 16-II
(e) 14-III vs. 12-II
(f) 16-III vs. 12-II

12. No significant differences in negative outcomes between Levels of AR between Ages were found for:

(a) 14-II vs. 12-V
(b) 16-II vs. 12-V

APPENDIX J

TABLE 7

DUNCAN'S NEW MULTIPLE RANGE TEST FOR MEAN DISTRIBUTION IN LEVELS OF AR X INTENSITY INTERACTION

LxI	IL	IH	IIL	IIH	VL	VH	IIIH	IIIL	IVL	IVH	Shortest Significant Range
Means	2.14	2.26	5.05	5.46	6.53	7.42	8.06	8.08	11.10	11.54	.01
2.14		.12	2.91*	3.32*	4.39*	5.28*	5.92*	5.94*	8.96*	9.40*	.47
2.26			2.79*	3.20*	4.27*	5.16*	5.80*	5.82*	8.84*	9.28*	.49
5.05				.41	1.48*	2.37*	3.01*	3.03*	6.05*	6.49*	.51
5.46					1.07*	1.96*	2.60*	2.62*	5.64*	6.08*	.52
6.53						.89*	1.53*	1.55*	4.57*	5.01*	.53
7.42							.64*	.66*	3.68*	4.12*	.53
8.06								.02	3.04*	3.48*	.54
8.08									3.02*	3.46*	.54
11.10										.44	.55

Levels x Intensity

IL = I-Low
IIL
IIIL
IVL
VL

IH = I-High
IIH
IIIH
IVH
VH

*p < .01

APPENDIX K

TABLE 8

DUNCAN'S NEW MULTIPLE RANGE TEST FOR MEAN DISTRIBUTION
IN AGE X LEVELS X INTENSITY TREATMENT INTERACTION

AxLxI	16IL	14IL	12IH	16IH	12IL	14IH	12IIL	14IIL	16IIH	14IIH	16IIL	12IIH	12VL	14VL	12VH	16VL
Means	2.00	2.06	2.10	2.13	2.35	2.56	4.73	4.75	4.88	5.48	5.73	6.02	6.35	6.40	6.83	6.85
2.00		.06	.10	.13	.35	.56	2.73*	2.75*	2.88*	3.48*	3.73*	4.02*	4.35*	4.40*	4.83*	4.85*
2.06			.04	.07	.29	.50	2.67*	2.69*	2.82*	3.42*	3.67*	3.96*	4.29*	4.34*	4.77*	4.79*
2.10				.03	.25	.46	2.63*	2.65*	2.78*	3.38*	3.63*	3.92*	4.25*	4.30*	4.73*	4.75*
2.13					.22	.43	2.60*	2.62*	2.75*	3.35*	3.60*	3.89*	4.22*	4.27*	4.70*	4.72*
2.35						.21	2.38*	2.40*	2.53*	3.13*	3.38*	3.67*	4.00*	4.05*	4.48*	4.50*
2.56							2.17*	2.19*	2.32*	2.92*	3.17*	3.46*	3.69*	3.84*	4.27*	4.29*
4.73								.02	.15	.75	1.00*	1.29*	1.62*	1.67*	2.10*	2.12*
4.75									.13	.73	.98*	1.27*	1.60*	1.65*	2.08*	2.10*
4.88										.60	.85	1.14*	1.47*	1.52*	1.95*	1.97*
5.48											.25	.54	.87	.92	1.35*	1.37*
5.73												.29	.62	.67	1.10*	1.12*
6.02													.33	.38	.81	.83
6.35														.05	.48	.50
6.40															.43	.45
6.83																.02
6.85																
7.52																
7.71																
7.81																
7.85																
7.90																
7.96																
8.42																
8.67																
10.90																
11.04																
11.33																
11.38																
11.54																

*p < .01

Table 8--Continued

14VH 7.52	16IIIH 7.71	14IIIH 7.81	14IIIL 7.85	16VH 7.90	12IIIL 7.96	16IIIL 8.42	12IIIH 8.67	16IVL 10.90	12IVL 11.04	12IVH 11.33	14IVL 11.38	16IVH 11.54	14IVH 11.73	Shortest Significant Ranges .01
5.52*	5.71*	5.81*	5.85*	5.90*	5.96*	6.42*	6.67*	8.90*	9.04*	9.33*	9.38*	9.54*	9.73*	.84
5.46*	5.65*	5.75*	5.79*	5.84*	5.90*	6.36*	6.61*	8.84*	8.98*	9.27*	9.32*	9.48*	9.67*	.87
5.42*	5.61*	5.71*	5.75*	5.80*	5.86*	6.32*	6.57*	8.80*	8.94*	9.23*	9.28*	9.44*	9.63*	.90
3.29*	5.58*	5.68*	5.72*	5.77*	5.83*	6.29*	6.54*	8.77*	8.91*	9.20*	9.25*	9.41*	9.60*	.92
5.17*	5.36*	5.46*	5.50*	5.55*	5.61*	6.07*	6.32*	8.55*	8.69*	8.98*	9.03*	9.19*	9.38*	.93
4.96*	5.15*	5.25*	5.29*	5.34*	5.40*	5.86*	6.11*	8.34*	8.48*	8.77*	8.82*	8.98*	9.17*	.94
2.79*	2.98*	3.08*	3.12*	3.17*	3.23*	3.69*	3.94*	6.17*	6.31*	6.60*	6.65*	6.81*	7.00*	.95
2.77*	2.96*	3.06*	3.10*	3.15*	3.21*	3.67*	3.92*	6.15*	6.29*	6.58*	6.63*	6.79*	6.98*	.96
2.64*	2.83*	2.93*	2.97*	3.02*	3.08*	3.54*	3.79*	6.02*	6.16*	6.45*	6.50*	6.66*	6.85*	.97
2.04*	2.23*	2.33*	2.37*	2.42*	2.48*	2.94*	3.19*	5.42*	5.56*	5.85*	5.90*	6.06*	6.25*	.97
1.79*	1.98*	2.08*	2.12*	2.17*	2.23*	2.69*	2.94*	5.17*	5.31*	5.60*	5.65*	5.81*	6.00*	.98
1.50*	1.69*	1.79*	1.83*	1.88*	1.94*	2.40*	2.65*	4.88*	5.02*	5.31*	5.36*	5.52*	5.71*	.99
1.17*	1.36*	1.46*	1.50*	1.55*	1.61*	2.07*	2.32*	4.55*	4.69*	4.98*	5.03*	5.19*	5.38*	.99
1.12*	1.31*	1.41*	1.45*	1.50*	1.56*	2.02*	2.27*	4.50*	4.64*	4.93*	4.98*	5.14*	5.33*	1.00
.69	.88	.98	1.02*	1.07*	1.13*	1.59*	1.84*	4.07*	4.21*	4.50*	4.55*	4.71*	4.90*	1.00
.67	.86	.96	1.00*	1.05*	1.11*	1.57*	1.82*	4.05*	4.19*	4.48*	4.53*	4.69*	4.88*	1.00
	.19	.29	.33	.38	.44	.90	1.15*	3.38*	3.52*	3.81*	3.86*	4.02*	4.21*	1.01
		.10	.14	.19	.25	.71	.96	3.19*	3.33*	3.62*	3.67*	3.83*	4.02*	1.01
			.04	.09	.15	.61	.86	3.09*	3.23*	3.52*	3.57*	3.73*	3.92*	1.01
				.05	.11	.57	.82	3.05*	3.19*	3.48*	3.53*	3.69*	3.88*	1.02
					.06	.52	.77	3.00*	3.14*	3.43*	3.48*	3.64*	3.83*	1.02
						.46	.71	2.94*	3.08*	3.37*	3.42*	3.58*	3.77*	1.02
							.25	2.48*	2.62*	2.91*	2.96*	3.12*	3.31*	1.03
								2.23*	2.37*	2.66*	2.71*	2.87*	3.06*	1.03
									.14	.43	.48	.64	.83	1.03
										.29	.34	.50	.69	1.04
											.05	.21	.40	1.04
												.16	.35	1.05
													.19	1.05

APPENDIX L

DUNCAN MULTIPLE RANGE TEST NON-SIGNIFICANT DIFFERENCES WITHIN THE AGE X LEVELS OF AR X INTENSITY TREATMENT INTERACTION

1. No significant differences were found between high and low intensity outcomes within Levels I, III, IV, and V at age 12, within Levels I, II, III, and IV at age 14, or within Levels I, II, III, or IV at age 16.

2. No significant difference between high and low intensity outcomes within Levels of AR between Ages were found for:

(a) age 12 Level I low vs. age 14 Level I high
(b) 12-II-l vs. 16-II-h
(c) 12-II-l vs. 14-II-h
(d) 12-V-h vs. 16-V-l
(e) 12-IV-l vs. 16-IV-h
(f) 12-IV-l vs. 14-IV-h
(g) 12-IV-h vs. 14-IV-l
(h) 14-I-l vs. 16-I-h
(i) 14-I-l vs. 12-I-h
(j) 14-II-l vs. 16-II-h
(k) 14-II-h vs. 16-II-l
(l) 14-V-l vs. 12-V-h
(m) 14-III-h vs. 12-III-l
(n) 14-III-h vs. 16-III-l
(o) 14-III-l vs. 12-III-h
(p) 14-IV-l vs. 16-IV-h
(q) 16-I-l vs. 12-I-h
(r) 16-I-l vs. 14-I-h
(s) 16-I-h vs. 12-I-l
(t) 16-II-l vs. 12-II-h
(u) 16-V-l vs. 14-V-h
(v) 16-III-h vs. 14-III-l
(w) 16-III-h vs. 12-III-l
(x) 16-III-l vs. 12-III-h
(y) 16-IV-l vs. 12-IV-h
(z) 16-IV-l vs. 14-IV-h

3. No significant difference between high and low intensity outcomes between Levels of AR within Ages were found for:

(a) 12-II-h vs. 12-V-l
(b) 14-II-h vs. 14-V-l
(c) 14-V-h vs. 14-III-l
(d) 16-V-l vs. 16-III-h
(e) 16-V-h vs. 16-III-l

4. No significant difference between high and low intensity outcomes between Levels of AR between Ages were found for:

(a) 12-II-h vs. 14-V-l
(b) 12-II-h vs. 12-V-l
(c) 14-II-h vs. 12-V-l
(d) 14-V-h vs. 16-III-l
(e) 14-V-h vs. 12-III-l
(f) 14-III-l vs. 16-V-h
(g) 16-V-l vs. 14-III-h
(h) 16-V-h vs. 12-III-l

5. No significant differences were found between high and low intensity outcomes between distant Levels of AR within Ages in the following:

(a) 14-II-h vs. 12-V-1
(b) 14-II-h vs. 14-V-1
(c) 14-V-h vs. 14-III-1
(d) 16-V-h vs. 16-III-1
(e) 16-V-1 vs. 16-III-h

6. No significant differences between high and low intensity outcomes between distant Levels of AR between Ages were found for:

(a) 12-II-h vs. 14-V-1
(b) 14-V-h vs. 16-III-1
(c) 12-II-h vs. 16-V-1
(d) 14-II-h vs. 12-V-1
(e) 14-V-h vs. 12-III-1
(f) 14-III-1 vs. 16-V-h
(g) 16-V-1 vs. 14-III-h
(h) 16-V-h vs. 12-III-1

7. No significant differences were found in the attribution to high intensity outcomes within Levels of AR between Ages in the following:

(a) 12-I-h vs. 14-I-h
(b) 12-I-h vs. 16-I-h
(c) 12-V-h vs. 14-V-h
(d) 12-IV-h vs. 14-IV-h
(e) 12-IV-h vs. 16-IV-h
(f) 14-II-h vs. 12-II-h
(g) 14-V-h vs. 16-V-h
(h) 14-III-h vs. 12-III-h
(i) 16-I-h vs. 14-I-h
(j) 16-II-h vs. 14-II-h
(k) 16-III-h vs. 14-III-h
(l) 16-III-h vs. 12-III-h
(m) 16-IV-h vs. 14-IV-h

8. No significant differences in the attribution to low intensity outcomes within Levels of AR between Ages were found for:

(a) 12-II-1 vs. 14-II-1
(b) 12-V-1 vs. 14-Vpl
(c) 12-V-1 vs. 16-V-1
(d) 12-III-1 vs. 16-III-1
(e) 12-IV-1 vs. 14-IV-1
(f) 14-I-1 vs. 12-I-1
(g) 14-V-1 vs. 16-V-1
(h) 14-III-1 vs. 12-III-1
(i) 14-III-1 vs. 16-III-1
(j) 16-I-1 vs. 14-I-1
(k) 16-I-1 vs. 12-I-1
(l) 16-IV-1 vs. 12-IV-1
(m) 16-IV-1 vs. 14-IV-1

9. No significant differences in high intensity outcomes between Levels of AR between Ages were found for:

(a) 12-V-h vs. 16-III-h
(b) 12-V-h vs. 14-III-h
(c) 14-V-h vs. 16-II-h
(d) 14-III-h vs. 16-V-h
(e) 16-V-h vs. 12-III-h

10. No significant differences in low intensity outcomes were found between Levels of AR between Ages for:

(a) 16-II-1 vs. 12-V-1
(b) 16-II-1 vs. 14-V-1

APPENDIX M

TABLE 9

DUNCAN'S NEW MULTIPLE RANGE TEST FOR MEAN DISTRIBUTION IN OUTCOME X INTENSITY INTERACTION

OxI	PL	NH	NL	PH	Shortest Significant Range .01
Means	6.19	6.85	6.98	7.05	
6.19		.66*	.79*	.86*	.38
6.85			.13	.20	.39
6.98				.07	.40

PL = Pos-Low
NH = Neg-High
NL = Neg-Low
PH = Pos-High

*p < .01

APPENDIX N

TABLE 10

DUNCAN'S NEW MULTIPLE RANGE TEST FOR MEAN DISTRIBUTION IN GROUPS X OUTCOME X INTENSITY INTERACTION

Gx(xI	E2PL	CPL	E1PL	E2NL	E1NL	E1PH	E2NH	CNH	E1NH	E2PH	CPH	CNL	Shortest Significant Range	
Means	5.93	6.24	6.40	6.75	6.80	6.81	6.81	6.87	6.87	7.13	7.20	7.38	.05	.01
5.93		.31	.47	.82**	.87**	.88**	.88**	.94**	.94**	1.20**	1.27**	1.45**	.48	.64
6.24			.16	.51*	.56*	.57*	.57*	.63*	.63*	.89**	.96**	1.14**	.51	.67
6.40				.35	.40	.41	.41	.47	.47	.73**	.80**	.98**	.52	.69
6.75					.05	.06	.06	.12	.12	.38	.45	.63**	.53	.70
6.80						.01	.01	.07	.07	.33	.40	.58**	.54	.71
6.81							.00	.06	.06	.32	.39	.57*	.55	.72
6.81								.06	.06	.32	.39	.57*	.56	.73
6.87									.00	.26	.33	.51	.56	.73
6.87										.26	.33	.51	.57	.74
7.13											.07	.25	.57	.74
7.20												.18		

Groups x Outcome x Intensity

E1PL=Exper.1 Pos-Low
E1PH=Exper.1 Pos-High
E1NL=Exper.1 Neg-Low
E1NH=Exper.1 Neg-Low
E2=Exper. 2
C =Control

E1=Crime against Person
E2-Crime against Property
C-Non-Delinquent

**p< .01. *p<05.

APPENDIX O

DUNCAN MULTIPLE RANGE TEST SIGNIFICANT DIFFERENCES WITHIN THE GROUP X OUTCOME X INTENSITY TREATMENT INTERACTION

1. Significant differences were found between Control (non-delinquent)-negative-low and:

   (a) Experimental 1 (crime against person)- negative-low
   (b) Exper. 1-pos-low
   (c) Exper. 1-pos-high
   (d) Exper. 2 (crime against property)-pos-low
   (e) Exper. 2-neg-low
   (f) Exper. 2-neg-high
   (g) Control-pos-low

2. Significant differences were found between Exper. 1-pos-low and:

   (a) Exper. 2-pos-high
   (b) Control-pos-high
   (c) Control-neg-low

3. Significant differences were found between Exper. 2-pos-low and:

   (a) Exper. 2-neg-low
   (b) Exper. 1-neg-low
   (c) Exper. 1-pos-high
   (d) Exper. 2-neg-high
   (e) Control-neg-high
   (f) Exper. 1-neg-high
   (g) Exper. 2-pos-high
   (h) Control-pos-high
   (i) Control-neg-low

4. Significant differences were found between Control-pos-low and:

   (a) Exper. 2-neg-low
   (b) Exper. 1-neg-low
   (c) Exper. 1-pos-high
   (d) Exper. 2-neg-high
   (e) Control-neg-high
   (f) Exper. 2-pos-high
   (g) Exper. 1-neg-high
   (h) Control-pos-high
   (i) Control-neg-low

TABLE 11

DUNCAN'S NEW MULTIPLE RANGE TEST FOR MEAN DISTRIBUTION IN LEVELS X OUTCOME X INTENSITY TREATMENT INTERACTION

LxOxI	IPL	INL	[illegible]	IPH	IINH	IIPL	IINL	VNL	IIIPL	IIIPH	VNH	IIPH	VPL	VPH	IIINH	IIINL
Means	2.11	2.17	2.17	2.36	3.43	4.86	5.28	5.49	6.08	6.10	6.67	7.49	7.58	8.17	10.03	10.07
2.11		.06	.06	.25	1.32*	2.75*	3.17*	3.38*	3.97*	3.99*	4.56*	5.38*	5.47*	6.06*	7.92*	7.96*
2.17			.00	.19	1.26*	2.69*	3.11*	3.32*	3.91*	3.93*	4.50*	5.32*	5.41*	6.00*	7.86*	7.90*
2.17				.19	1.26*	2.69*	3.11*	3.32*	3.91*	3.93*	4.50*	5.32*	5.41*	6.00*	7.86*	7.90*
2.36					1.07*	2.50*	2.92*	3.13*	3.72*	3.74*	4.31*	5.13*	5.22*	5.81*	7.67*	7.71*
3.43						1.43*	1.85*	2.06*	2.65*	2.67*	3.24*	4.06*	4.15*	4.74*	6.60*	6.64*
4.86							.42	.63	1.22*	1.24*	1.81*	2.63*	2.72*	3.31*	5.17*	5.21*
5.28								.21	.80	.82	1.39*	2.21*	2.30*	2.89*	4.75*	4.79*
5.49									.59	.61	1.18*	2.00*	2.09*	2.68*	4.54*	4.58*
6.08										.02	.59	1.41*	1.50*	2.09*	3.95*	3.99*
6.10											.57	1.39*	1.48*	2.07*	3.93*	3.97*
6.67												.82	.91*	1.50*	3.36*	3.40*
7.49													.09	.68	2.54*	2.58*
7.58														.59	2.04*	2.49*
8.17															1.86*	1.90*
10.03																.04
10.07																
10.32																
11.13																
11.89																

*p < .01

TABLE 11--Continued

IVPL	IVPH	IVNL	IVNH	Shortest Significant Ranges .01
10.32	11.13	11.89	11.94	
8.21*	9.02*	9.78*	9.83*	.73
8.15*	8.96*	9.72*	9.77*	.76
8.15*	8.96*	9.72*	9.77*	.78
7.96*	8.77*	9.53*	9.58*	.80
6.89*	7.70*	8.46*	8.51*	.81
5.46*	6.27*	7.03*	7.08*	.82
5.04*	5.85*	6.61*	6.66*	.83
4.83*	5.64*	6.40*	6.85*	.83
4.24*	5.05*	5.81*	5.86*	.84
4.22*	5.03*	5.79*	5.84*	.85
3.65*	4.46*	5.22*	5.27*	.85
2.83*	3.64*	4.40*	4.45*	.86
2.74*	3.55*	4.31*	4.36*	.86
2.15*	2.96*	3.72*	3.77*	.87
.29	1.10*	1.86*	1.91*	.87
.25	1.06*	1.82*	1.87*	.87
	.81	1.57*	1.62*	.88
		.76	.81	.88
			.05	.88

APPENDIX Q

DUNCAN MULTIPLE RANGE TEST NON-SIGNIFICANT DIFFERENCES WITHIN THE LEVELS OF AR X OUTCOME X INTENSITY TREATMENT INTERACTION

1. No significant differences were found between high and low intensity outcomes within Levels of AR and within Outcomes for:

   (a) I-pos-low vs. I-pos-high
   (b) III-pos-low vs. III-pos-high
   (c) IV-pos-low vs. IV-pos-high
   (d) V-pos-low vs. V-pos-high
   (e) I-neg-low vs. I-neg-high
   (f) III-neg-high vs. III-neg-low
   (g) IV-neg-low vs. IV-neg-high

2. No significant differences were found between high and low Intensity outcomes within Levels of AR between Outcomes for:

   (a) I-pos-low vs. I-neg-high
   (b) I-neg-low vs. I-pos-high
   (c) IV-pos-high vs. IV-neg-low

3. No significant difference was found between high and low Intensity outcomes between Levels of AR within Outcomes for:

   (a) II-pos-high vs. V-pos-low

4. No significant difference was found between high and low Intensity outcomes between Levels of AR between Outcomes for:

   (a) II-neg-low vs. III-pos-high
   (b) III-neg-high vs. IV-pos-low
   (c) III-pos-low vs. V-neg-high
   (d) V-neg-low vs. III-pos-high

5. No significant difference was found between high and low intensity outcomes at adjacent Levels of AR between Outcomes for:

   (a) II-neg-low vs. III-pos-high
   (b) III-neg-high vs. IV-pos-low

6. No significant differences were found between high and low Intensity outcomes between distant Levels of AR within Outcome for:

   (a) II-pos-high vs. V-pos-low

7. No significant differences were found between high and low Intensity outcomes between distant Levels of AR between Outcomes for:

   (a) III-pos-low vs. V-neg-high (b) V-neg-high vs. III-pos-high

8. No significant differences were found in the attribution to high Intensity outcomes within Levels of AR between Outcomes for:

   (a) I-neg-high vs. I-pos-high (b) IV-pos-high vs. IV-neg-high

9. No significant differences were found in the attribution to low Intensity outcomes within Levels of AR between Outcomes for:

   (a) I-pos-low vs. I-neg-low (b) II-pos-low vs. II-neg-low

10. No significant difference was found in high Intensity outcomes between Levels of AR between Outcomes for:

    (a) III-pos-high vs. V-neg-high (b) V-neg-high vs. II-pos-high

11. No significant differences in low Intensity outcomes between Levels of AR between Outcomes were found for:

    (a) II-pos-low vs. V-neg-low (c) III-neg-low vs. IV-pos-low
    (b) II-neg-low vs. III-pos-low (d) V-neg-low vs. III-pos-low

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BIOGRAPHICAL SKETCH

Charles Edward Moan was born June 21, 1940, at Baltimore, Maryland. In June, 1958, he was graduated from Palm Beach High School, West Palm Beach, Florida. In September, 1958, he enrolled at Palm Beach Junior College, where he received the Associate of Arts degree in June, 1960. In September, 1960, he enrolled at the University of Florida, receiving his Bachelor of Arts degree in June, 1962. In September of 1962, he accepted a position at Palm Beach High School as an Instructor of English. In September, 1963, he returned to the University of Florida, enrolling in the Graduate School, Department of Psychology, beginning his graduate program in January, 1964. He received a graduate stipend from the Florida Mental Health Association, a graduate teaching assistantship, a trainee stipend from the Veterans Administration, a VRA fellowship, and an NIMH fellowship. He did his clinical internship at the Greater Kansas City Mental Health Foundation, Western Missouri Mental Health Center, University of Missouri School of Medicine.

After completion of the internship, he was employed by the Westinghouse Learning Corporation as a Field Assessment Officer for the Peace Corps. Then, he did a six-month specialization in Clinical Neuropsychology at the University of Florida Shands Teaching Hospital.

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This dissertation was prepared under the direction of the chairman of the candidate's supervisory committee and has been approved by all members of that committee. It was submitted to the Dean of the College of Arts and Sciences and to the Graduate Council, and was approved as partial fulfillment of the requirements for the degree of Doctor of Philosophy.

June, 1968

E. Eugene Jones
Dean, College of Arts and Sciences

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END