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BEHAVIORAL CORRELATES OF
MORAL JUDGMENT

by Henry Coady

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of Psychology of the University
of Ottawa as partial fulfilment
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CURRICULUM STUDIORUM

Henry Coady was born April 16, 1943, in Nova Scotia, Canada. He received the Bachelor of Science degree from Saint Francis Xavier University, Antigonish, Nova Scotia, in 1963; the Master of Arts degree in Psychology from Dalhousie University, Halifax, Nova Scotia, in 1966. The title of his thesis was Social Class and the Nature of the Reward Incentive in Learning.

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INTRODUCTION

In recent periods, morality has slipped in and out of focus as a central interest in child development. The earliest works on children's moral conduct and of moral judgment were followed by two decades of relative inactivity in the area. In the early 1930's and 1940's, discussions of children's social adjustment absorbed thought about moral character while socialization processes increased specific concerns about moral development. In the past decade, however, there has been a great increase both in research investigations and in theoretical statements about conscience and moral values.

Most studies take their initial and early inspiration from the classic work of Piaget; his account of moral development springs largely from his general theory of the child's conception of the world. On the basis of children's responses to his semi-structured questions, he distinguished two major stages of moral development. He called the first stage "moral realism" which is based on an "ethic of authority". In contrast, the second and more mature stage of "reciprocity" or "cooperation" is characterized by the ethics of "mutual respect". Thus, a cornerstone of Piaget's position about the development of moral judgments is that a mature level of these judgments involves concepts of equality, fairness and the right of others that can only come from interaction

with an equal status peer group.

The various manifestations of moral development posited by Piaget are primarily cognitive and, in particular, reflect the child's knowledge of the ideal norms held up to him by his culture. As such, they shed little light on the habitual and behavioral aspects of moral standards and development. Perhaps in partial reaction to Piaget's intellectual and "moralistic" approach, American scientists, especially since World War II, have directed their attention primarily to overt expressions of moral behavior. Despite their concern with overt behavior, the protagonists of the new look, as did Piaget, have left unexplored the relation of moral judgment to everyday moral or socially acceptable behavior. Instead, the two types of data have been compartmentalized resulting in limited knowledge of the relationship of Piaget's concept of moral development to behavioral counterparts in actual life situations. Following a review of this literature, the writer became convinced that a developmental study would be possible and could lead to fruitful insights if one were to investigate the correlation between these two approaches.

Whereas Piaget's conceptualization involves implicit rules, game theory lends itself to both approaches since a solution of the game requires different levels of cognitive abilities to be translated into overt behavior. Consequently,

a gaming situation is utilized to elucidate whether this relationship does, in fact, exist.

The thesis is divided into four chapters. The review of the literature starts with a discussion of the past trends and theoretical views on moral development supported by experimental evidence. This is followed by an introduction to Piaget's theory on moral development, which is contrasted to more recent approaches. The second chapter presents a description of the sample, the measuring tools, procedures and techniques for data analyses. The quantitative and qualitative results are presented in the third chapter. Finally, an interpretation of the behavioral patterns in children is offered. Conclusions are followed by suggestions for future research.

CHAPTER I

REVIEW OF THE LITERATURE

It is a sobering reflection on the state of our knowledge in the behavioral sciences that even our most reliable facts and theories about specific phenomena can usually be seriously challenged by asking a simple descriptive question: How does this phenomenon vary with the age, sex and experience of the person? Paradoxically, the response to the first of these challenges may at first seem reassuring. Until relatively recently, psychologists were preoccupied with documenting observable changes with age in practically every variable that they had succeeded in measuring. The result was an impressive array of 'apparently highly consistent variations as a function of the developmental level of the child. But then, with the growth of the interdisciplinary approach in the behavioral sciences, investigators of developmental trends began to look for possible variation as a function of the child's role in society--his sex, his ordinal position, the social status, ethnicity and religious background of the parents. With the introduction of these social factors, the seeming generality, simplicity and regularity of developmental age trends were challenged first from one quarter and then another. Consequently, the notion underlying much of American child psychology, that a normal

maturational sequence could be expected of all children everywhere, was cast into serious doubt. In its place, there emerged a social-situational conception of development in which maturational conditions were accorded only a vague and somewhat secondary importance.

It is precisely this historical course which is reflected in empirical studies of moral development over the past forty years. During this period, morality was the central category for defining social relationships and development; consequently, the social sciences were termed "moral sciences". The great theorists of the nineteenth century also considered morality to be the key to understanding social development, as indicated by McDougall's statement that "the fundamental problem of social psychology is the moralization of the individual by the society",¹ or Freud's statement that "the sense of guilt is the most important problem in the evolution of culture".²

In recent periods, morality has slipped in and out of focus as a central interest in child development.³ The

1 W. McDougall, An Introduction to Social Psychology, London, Methuen, 1908.

2 Sigmund Freud, Civilization and its Discontents, London, Hogarth Press, 1955 (originally published 1930).

3 E.M. Albert and C. Kluckhohn, Selected Bibliography on Values, Ethics and Esthetics in the Behavioral Sciences and Philosophy, 1920-58, Glencoe, Ill., Free Press, 1959.

important work of Hartshorne and May⁴ on children's moral conduct and of Piaget⁵ upon moral judgment was followed by two decades of relative inactivity in the area. In the 1930's and 1940's, discussions of children's moral and social adjustment absorbed thought about character and discussions of socialization processes absorbed specific concerns about moral development. In the past decade, however, there has been a great increase both in research investigations and in theoretical statements about conscience and moral values.

The increased interest in moral development seems to be partly the result of recent history which has sharpened awareness of the distinction between internal moral development and outward socialization and social adjustment. The barbarities of the socially conforming members of the Nazi and Stalinist systems and the hollow lives apparent in our own society have made it painfully evident that adjustment to the group is no substitute for moral maturity. This concern with internal aspects of socialization, then, has formed the distinctive focus of recent research on children's

⁴ H. Hartshorne and M.A. May, Studies in the Nature of Character: Vol. 1 Studies in Deceit, Vol. 2 Studies in Self-control, Vol. 3 Studies in the Organization of Character, New York, Macmillan, 1928-1930.

⁵ J. Piaget, The Moral Judgment of the Child, Glencoe, Ill., Free Press, 1948 (originally published 1932).

morality. It has been addressed to the general question-- "How does the amoral infant become capable of morality?" Generally, moral behavior has been defined by a social group as good or right and for which sanctions are administered. However, some moral imperatives are rarely universally found in all social groups, others vary from one setting to another and, of course, it is possible for an individual to belong to different groups whose moral precepts differ so that moral dilemmas are posed for the individual in the early stages of development. Conflict over morality more often comes not out of pressure from alternative value systems, but because the moral demands of society are incompatible with the individual's needs and desires for immediate gratification. Conflict for the individual may be produced either when others demand that he should not do something he wishes to do, or when the social demands are that he should do something that he does not want to do. While moral behavior in childhood often involves this conflict of interests, research has shown that it lessens with increasing training. That is, while the unsocialized person may want immediate sexual gratification without restriction to time or may want to acquire attractive objects without regard to property rules, the successfully socialized person will have come to want what society wants him to want, at least to a degree, so that he experiences little conflict

or temptation when he confines his sexual activities to socially prescribed settings or avoids stealing. From the standpoint of the larger society, one of the objectives of the socialization process is to produce individuals for whom the socially prescribed rules of conduct will not only be conformed to, but will be accepted by members of society as their own values. Thus, the concept of "internalization" has been a central one in the study of moral development and, consequently, has been conceived of as an increase in the internalization of such basic cultural rules.

It is clear that some individuals who conform to social values have accepted them as their own while others have not and yield unwillingly as a result of external pressures. Thus, there are some puzzling problems in the relationship between moral judgments, moral knowledge and moral behavior. The cognitive and behavioral aspects of morality appear not to follow the same developmental paths and do not predict one another reliably.⁶ For this reason, some students of morality have concluded that the cognitive aspects are of little importance and have confided themselves to the study of overt behavior on the grounds that it is what people do, not what they believe about right and

6 R. Grinder, Relations between Moral Judgment and Resistance to Temptation in Conscience Development, Paper read before meetings of the Society for Research in Child Development, Berkeley, California, April 1963.

wrong, that will make a difference in the way society functions. Thus, various theories and researches have led to the postulation of two major theoretical positions concerning moral development: the cognitive-developmental position and the behavioral viewpoint.

1. Piaget's Theory of Moral Development.

Most studies take their initial and early inspiration from the classic work of Piaget.⁷ His account of moral development springs mainly from his general theory of the child's conception of the world.⁸ This investigator presented a series of brief stories, each centering on a moral issue, to more than one hundred Swiss children and on the basis of their responses to his semi-structured questions, distinguished two major stages of moral development. The first stage which he called "moral realism" is based on an "ethic authority". The child views moral rules and restraints as laid down from above; they must be interpreted literally and cannot be altered. Piaget believes that the cognitive limitations of the child of three to eight lead him to confuse moral rules with physical laws and to view rules as fixed external things rather than as the instruments

7 Piaget, The Moral Judgment of the Child.

8 -----, The Child's Conception of the World, London, Routledge, Kegan Paul, 1928.

of human purposes and values. Piaget believes that the child sees rules as absolutes and confusing because of his "realism" (his inability to distinguish between subjective and objective aspects of his experience) and because of his "egocentrism" (his inability to distinguish his own perspective on events from that of others). In addition to seeing rules as external absolutes, the young child feels his parents and other adults are all-knowing, perfect and sacred. This attitude of unilateral respect toward adults, joined with the child's realism, is believed to lead him to view rules as unchangeable. In accordance with the principle of immanent justice, punishment follows inevitably upon violation and its severity varies directly with the enormity of the consequences of action regardless of the motive which inspired it. At this immature level, moral rules are not internalized but are adhered to solely through fear of external punishment by superordinate authority.

In contrast, the more mature stage of "reciprocity" or "cooperation" is characterized by the ethics of mutual respect. Piaget believes that intellectual growth and the experiences of role-taking in the peer group naturally transform perceptions of rules from external authoritarian commands to internal principles. In essence, he views internal moral norms as logical principles of justice. Of these, he says that in contrast to a given rule imposed

upon a child from the outside, the rule of justice is an immanent condition of social relationships or a law governing their equilibrium. The sense of justice is largely independent of adult precept and requires nothing more for its development than mutual respect and solidarity among children.⁹

By the sense of justice, Piaget means a concern for reciprocity and equality between individuals. Norms of justice are not simply matters of abstract logic, however; rather, they are sentiments of sympathy, gratitude and vengeance which have taken on logical form. Piaget believes that an autonomous justice morality develops at about age eight to ten and eventually replaces the earlier morality based on unquestioning respect for adult authority. He expects the autonomous justice morality to develop in all children, unless development is fixated by unusual correctiveness of parents or cultures or by deprivation of experiences of peer cooperation.¹⁰

Thus, a cornerstone of Piaget's position about the development of moral judgments is that a mature level of these judgments involves concepts of equality, fairness and the right of others that can only come from interaction with an equal status peer group. The presence of what Piaget

9 Piaget, The Moral Judgment of the Child.

10 Ibid.

calls "adult constraint" in the child's relationships with his parents, while functional for the early phases of moral development is inimical to what Piaget sees as the most advanced levels of moral thought. A parent-child pair, as Piaget sees it, can never free themselves from the relationship of "unilateral respect" which is established in early childhood and this makes it impossible for the parent to be the socialization agent who will teach the child a mature morality based on mutual respect and cooperation. Only other children can do this; hence, it is only between the ages of about eight and eleven when parental control is diminishing and strong peer bonds are formed that the morality of mutual respect begins to develop.

Rules, then, are seen as compact, arrived at and maintained by equals in the common interest. They may be changed by mutual consent and modified in the light of extenuating circumstances. Punishment, instead of being generalized and "expiatory", is specific to the infraction, aimed at reciprocity in kind or restitution and is guided by the principle of equity involving consideration of the motive underlying the act and of the particular circumstances in which the transgression was committed. Moral principles are internalized so that the child acts morally without the necessity of external sanctions. In short, moral behavior is its own reward.

Thus, the implications of Piaget's viewpoint for internalization of moral behavior would lead one to believe that rules may be interiorized to a greater or lesser degree and distinguishes three levels in development toward greater interiorization. Rules are first seen by the young child as entirely external to himself. Then comes a period in which the child accepts the obligation to conform to the rules even though he does not feel that he has had a part in creating them. In this stage, he obeys the spirit rather than simply the letter of the rule. He can generalize the rule to new situations and identify the situations to which it does not apply in a fairly differentiated fashion, so that his application of the rule is now more thoughtful and less mechanical than it was initially. But the rule is still something emanating from external authority; moral judgment does not truly become autonomous (fully interiorized) until the phase of mutual respect and cooperation is reached. At this point, the child comes to feel that he served to be bound by certain rules of conduct for the sake of others and in return they have agreed to regulate their behavior for his sake. Morality at this level is said to be fully interiorized because the individual feels that he has some control over the rules--they are maintained by his assent, not imposed by external authority. Piaget holds that this morality of reciprocity is usually not attained until the age of about eleven.

It was on the basis of age differences in responses to the stories that Piaget formulated his two-stage theory of moral development. Since his original study was published, a number of investigators in Europe and the United States have sought to replicate his findings and, at first blush, there appears to be considerable empirical support. An impressive number of studies over a quarter of a century in two continents have reported age differences consistent with Piaget's postulated shift from moral realism toward reciprocity and equity. Thus, evidence in support of one or another aspect of Piaget's theory is reported in studies from England (Harrower,¹¹ Morris¹²); Switzerland (Lerner¹³); Belgium (Caruso¹⁴); and in the United States (MacRae,¹⁵ Havighurst

11 M.E. Harrower, "Social Status and Moral Development", British Journal of Educational Psychology, Vol. 4, 1934, p. 75-95.

12 J.F. Morris, "The Development of Moral Values in Children", British Journal of Educational Psychology, Vol. 28, 1958, p. 1-14.

13 E. Lerner, "Perspectives in Moral Reasoning", American Journal of Sociology, Vol. 43, 1937, p. 249-269.

14 I.H. Caruso, "La notion de responsabilité et du justice immanente chez l'enfant", Archives de Psychologie, Vol. 29, 1943 (Whole No. 114).

15 R. MacRae, Jr., "A Test of Piaget's Theories of Moral Development", Journal of Abnormal Psychology, Vol. 49, 1954, p. 14-18.

and Neugarten,¹⁶ Medinnus,¹⁷ Kohlberg,¹⁸ Durkin,¹⁹ and Boehm and Nass.²⁰

On the basis of their recent review of virtually all of these studies, Boehm and Nass²¹ conclude that age is the only consistently operative factor in development toward maturity. At the same time they call attention to strong trends toward socio-cultural differences. A more critical examination of some of these studies would indicate, first of all, that the closest correspondence with Piaget's original results is found in studies of children from continental Europe.^{22,23} The farther one moves from Europe

16 R.J. Havighurst and B.L. Neugarten, American Indian and White Children, Chicago, University of Chicago Press, 1955.

17 G.R. Medinnus, "Immanent Justice in Children: A Review of the Literature and Additional Data", Journal of Genetic Psychology, Vol. 90, 1959, p. 253-262.

18 L. Kohlberg, The Development of Modes of Moral Thinking and Choice in the Years Ten to Sixteen, unpublished doctoral dissertation, University of Chicago, 1958.

19 D. Durkin, "Children's Concepts of Justice: A Comparison with Piaget Data", Child Development, Vol. 30, 1959, p. 59-67.

20 L. Boehm and M.L. Nass, "Social Class Differences in Conscience Development", Child Development, Vol. 33, 1962, p. 565-575.

21 Ibid.

22 Lerner, op. cit., p. 249-269.

23 Caruso, op. cit.

in mainland and culture, the more frequently are departures from or outright contradictions of Piaget's findings. Indeed, it is noteworthy, although generally unnoticed, that the very first attempt to satisfy Piaget's theory turned up highly significant findings across both class and culture. The English psychologist Harrower,²⁴ observing that Piaget's subjects were Swiss children mostly from the poorer parts of Switzerland,²⁵ sought to determine whether similar results would be obtained with children of the same age range in another country and from different social class levels. Accordingly, she selected a comparable sample from schools in the poorer parts of London and, as a control group, youngsters from distinctly well-to-do homes and children of cultured parents.²⁶ The results from the lower socio-economic group were consistent with Piaget's theory in showing a decrease in moral realism with age. Quite a different pattern, however, emerged at the higher social level, where the younger children from the very beginning gave high percentages of mature responses; additionally, ... there was no evidence of a shift over the age range. The author concluded that either the stages of development which Piaget had been emphasizing are not a universal characteristic

24 Harrower, op. cit., p. 75-95.

25 Piaget, The Moral Judgment of the Child.

26 Harrower, op. cit., p. 75-95.

of development per se, but are to be found only within certain uniform groups subject to constant conditions; or, in some environments, these stages can be so far accelerated that children exhibiting characteristics of the most developed stage are to be found at the ages of the first.

Even sharper contrasts in patterns of normal standards and development emerge in cross-cultural studies. The first comparative results of this kind appear in Harrower's research.²⁷ Curiously enough, she makes no reference to them in her analysis and discussion, even though she described as the first problem of her research to discover whether national characteristics and traditions in any way affect what may be considered as a pattern of mental development largely independent of external influences. An examination of the comparative data which she cited, first from Piaget's and then from her own experiments, certainly called the last assumption into question, since the Swiss children show evidence of greater moral realism than the English children at either socio-economic level and the decrease with age is appreciably greater for the latter group. In other words, if Piaget's criteria are valid, English children achieve a more mature conscience earlier than Swiss children of comparable age.

²⁷ Ibid.

A second major line of evidence calling into question central assumptions in Piaget's theory of moral development appears in the work of MacRae²⁸ and Kohlberg.²⁹ Each of these investigators note from their data that the presumed components of morality do not hang together empirically. The first and most comprehensive study of this phenomenon is by MacRae³⁰ who did a cluster analysis of responses to moral judgment questions holding age constant and identified four relatively independent factors. An examination of the relationships of these factors to patterns of parental authority led MacRae to postulate two distinct processes of moral development: 'cognitive' moral development involving the learning of what behavior patterns are approved and disapproved, and 'emotional' moral development, including the association of anxiety with one's own deviance and moral indignation with that of others. MacRae suggests further that the types of questions used by Piaget are concerned primarily with cognitive moral development. Interestingly enough, it was not until the 1950's that researchers shifted from Piaget's type of questions to those designed to get at what the child might wish to do rather than merely what he

28 MacRae, op. cit., p. 14-18.

29 Kohlberg, op. cit.

30 MacRae, op. cit., p. 14-18.

thought was the appropriate answer. It is, of course, a matter of considerable interest whether answers to the latter type of question exhibit variations with age and culture similar to those obtained with Piaget's technique. Before turning to this topic, one must consider briefly another category, typically neglected in analysis of Piaget-type data, but assuming considerable importance in contemporary studies of conscience development. This is the category of sex.

It is somewhat surprising that although Piaget conducted dozens of experiments presumably with children of both sexes, in only one instance does he pay systematic attention to differences in the responses of boys and girls. In answer to the question of what a smaller boy should do when struck by a bigger boy, the tendency to consider it legitimate to give back the blows received (i.e. reciprocity) tended to increase more rapidly with age for boys than for girls.³¹ In the twenty-five year period that followed, only three studies and these relatively recent ones, have dealt with possible sex differences in moral response. According to a secondary source,³² Medinnus³³ found girls to be less advanced than boys in respect to the concept of immanent

31 Piaget, The Moral Judgment of the Child.

32 Boehm and Nass, op. cit., p. 565-575.

33 Medinnus, op. cit., p. 253-262.

justice and punishment and Morris³⁴ found no significant differences between boys and girls in age of decreasing moral realism but found a tendency for the values of girls to change earlier than those of boys. These two sets of findings do not seem to be consistent; indeed, the last statement appears self-contradictory. The present consensus of opinion views the question of sex differences in Piaget-type responses as yet a completely open one.

In summary, then, studies utilizing Piaget's technique represent the first major effort to investigate the process of moral development. In light of the present survey of research, the tentative conclusions are indicated:

1. It is clear, first of all, that, as Durkin³⁵ suggests, Piaget unjustifiably minimizes the influence of the environment on a child's understanding of what is just, but recognizes differences among children in their rate of progression through the developmental levels in moral judgment.

2. The range of variation in moral development by age and culture is so great as to call into question the dominant role of maturational factors, at least beyond the age of five. It would appear that under appropriate

34 Morris, op. cit., p. 1-14.

35 Durkin, op. cit., p. 59-67.

environmental conditions, children as young as six years of age can learn equally well responses characteristic of Piaget's moral realism or the patterns of reciprocation, equality and equity presumably indicative of moral maturity. In a word, the primary factors concerning the nature of moral standards appear to be social and situational rather than genetic. However, Kohlberg³⁶ insists that there are indeed aspects of the child's general cognitive growth (other than the specifically moral ones) which provide a framework for and impose restraints upon the nature of the moral judgments that are possible for children of different ages. He asserts further that the child progresses through an invariant sequence of stages which are to some degree independent of cultural and sub-cultural variations and takes seriously the responsibility for demonstrating that these are indeed stages.

3. The preceding conclusion is not incompatible with the manifestation of orderly sequences of moral development in certain cultural contexts since such genetic sequences may only mirror the changing character of the child's relation to his social environment as he grows older. Thus, the classic two-stage sequence observed by Piaget could be a reflection of the fact that European

36 Kohlberg, op. cit.

children, especially a quarter of a century ago, tended to be dealt with in a rather authoritarian and arbitrary fashion through the early years and exposed to rationalistic, equalitarian treatment only at later ages. A similar but less extreme transition was found in America but has been steadily decreasing, especially at upper middle-class levels;³⁷ hence, the frequent departures from the stipulated pattern of moral development in recent American data.

A cursory examination of the various manifestations of moral development posited by Piaget are primarily cognitive. In particular, they reflect the child's knowledge of the ideal norms held up to him by his culture and, as such, they shed little light on the behavioral aspects of moral standards and development. Perhaps in partial reaction to Piaget's intellectual and moralistic approach, American scientists, especially since World War II, have directed their attention primarily to overt expressions of moral behavior and their social-psychological antecedents. It would be illuminating, then, in this context to turn to a consideration of the results of this contrasting approach.

³⁷ U. Bronfenbrenner, "Socialization and Social Class Through Time and Space", in E.E. Maccoby, T.M. Newcomb and E.L. Hartley (eds.), Readings in Social Psychology, New York, Holt, 1958.

2. Recent Developments in Moral Behavior.

Current studies of moral development show strong influences from three theoretical traditions: behaviorism, psychoanalysis and the cognitive theories of Piaget. Of these, behaviorism was the first to make a major impact through the inspiring monumental works of Hartshorne, May and their colleagues.^{38,39,40} The major conclusion of these researchers, in part pre-ordained by the highly specific nature of their theoretical concepts and of the tasks and tests they employed, is that moral qualities, such as honesty and deceit, represent not general ideals but specific habits learned in relation to specific situations which have made one or the other response successful.

The chief importance of this pioneering research was the precedent it set for studying moral character not merely through verbal response but through observation of concrete behaviors, such as cheating, sacrifice, sharing and the like. This precedent was followed a few years later by

38 H. Hartshorne and M.A. May, Studies in the Nature of Character: Vol. 1 Studies in Deceit, New York, Macmillan, 1928.

39 H. Hartshorne, M.A. May and J.B. Maller, Studies in the Nature of Character: Vol. 2 Studies in Service and Self-control, New York, Macmillan, 1929.

40 H. Hartshorne, M.A. May and F.K. Shuttleworth, Studies in the Nature of Character: Vol. 3 Studies in the Organization of Character, New York, Macmillan, 1930.

MacKinnon^{41,42}-who compared the personality characteristics of college students yielding or not yielding to the temptation of cheating. As the conceptual framework for his research, however, MacKinnon explicitly rejected Hartshorne and May's theory of specificity and turned instead to structural and developmental hypotheses from psychoanalysis. With these as a guide, MacKinnon observed a number of reliable relationships reflecting dynamic processes. Despite the promising character of his work, it was twenty years before social scientists once again turned to psychoanalytic theory as a guide for research on moral development. It is necessary, therefore, to look to other researches for the integration of the cognitive and maturational aspects of moral development with the social-psychological antecedents. Some progress in this direction was made possible during the 1950's through the resurgence--this time on a broad scale--of psychoanalytically oriented studies of moral standards and behavior.

This new wave of studies of moral development following World War II was stimulated not by psychoanalysis alone but through a remarkable fusion of psychoanalytic dynamics,

41 D.W. MacKinnon, The Violation of Prohibitions in the Solving of Problems, unpublished doctoral dissertation, Harvard University, 1933.

42 -----, "Violation of Prohibition", in H.A. Murray (ed.), Explorations in Personality, New York, Oxford University Press, 1938, p. 491-501.

post-Hullian behavior theory and hypotheses derived from the concepts and data of social anthropology and sociology. The imaginative scope required for such a strange and sweeping coalition is reflected in part of a broader cross-cultural study of child training and personality which Whiting and Child⁴³ undertook to investigate the developmental antecedents of guilt; they were able to obtain confirmation for a number of their hypotheses.

During the past ten years, a number of different investigators^{44,45,46,47,48,49,50} often using different

43 J.W.M. Whiting and L.I. Child, Child Training and Personality, New Haven, Conn., Yale University Press, 1953.

44 W. Allinsmith and T.C. Greening, "Guilt over Anger as Predicted from Parental Discipline: A Study of Superego Development", American Psychologist, Vol. 10, 1955, p. 320 (Abstract).

45 J. Aronfreed, Internal and External Orientation in the Moral Behavior of Children, Paper read before the Annual Meeting of the American Psychological Association, 1965.

46 -----, "Moral Behavior and Sex Identity", in D.R. Miller and G.E. Swanson (eds.), Inner Conflict and Defense, New York, Holt, 1960, p. 177-193.

47 -----, The Nature, Variety and Social Patterning of Moral Responses (mimeographed), 1961.

48 M.L. Hoffman and H.D. Saltzstein, Parent Practices and the Child's Moral Orientation, Interim research report presented before the American Psychological Association, Chicago, September 1960.

49 E.E. Maccoby, The Generality of Moral Behavior, Paper read before the American Psychological Symposium on the Development of Moral Standards, 1959.

50 D.R. Miller and G.E. Swanson, Inner Conflict and Defense, New York, Holt, 1960.

methods for measuring both parental behavior and internalization, have obtained results consistent with the same general hypothesis. Since most of these studies have recently been carefully reviewed by Hoffman, one need only to quote the author's general conclusion:

The use of psychological discipline (which includes techniques that appeal to the child's needs for affection and self-esteem and his concern for others), especially in the context of an affectionate parent-child relationship, appears to foster the development of an internalized moral orientation, especially with respect to one's reactions following the violation of a moral standard.⁵¹

But as is readily apparent from a reading of Hoffman's painstaking survey, the preceding generalization, valid as it probably is, nevertheless conceals under its very generality a multitude of major lacunae, qualifications, ambiguities and even contradictions. To begin with, there is the fact noted by Hoffman that the majority of the studies reported used males as subjects. Where both sexes have been included, there are important differences within the general pattern, with certain parental variables showing stronger relationships for boys and others for girls. Moreover, as a

⁵¹ M.L. Hoffman, The Role of the Parent in the Child's Moral Growth (mimeographed), Paper presented for the Research Planning Workshop of the Religious Education Association, 1961.

number of investigators have pointed out,^{52,53,54} these variations present certain features consistent with Freud's theory of personality development in the two sexes.⁵⁵ In other words, the behavior of fathers and mothers tends to affect sons and daughters somewhat differently. The available data are as yet insufficient, however, to permit a clear statement of the nature of these contrasting effects.

Enough has been said of the "new look" in studies of moral development so that it may be instructive to compare it with the earlier work of Piaget and his followers. The new approach to research on moral development differs from its classic predecessors in a number of striking respects. First of all, the more recent studies give virtually no attention to age differences in moral response. Although experimental subjects have ranged in age from four or five years of age to college level, the possibility of developmental stages in moral development has hardly been raised.

52 R.V. Burton, E.E. Maccoby and W. Allinsmith, Antecedents of Resistance to Temptation, Washington, D.C., National Institute of Mental Health, U.S. Department of Health, Education and Welfare (mimeographed), 1960.

53 Hoffman and Saltzstein, op. cit.

54 U. Bronfenbrenner, "Freudian Theories of Identification and Their Derivatives", Child Development, Vol. 31, 1960, p. 15-40.

55 Sigmund Freud, New Introductory Lectures in Psychoanalysis, New York, W.W. Norton, 1933.

Second, just as the Piaget approach has been one-sided in its emphasis on the cognitive aspects of moral development, so has the new look, true to its origins, directed its attention to overt behavior in specific situations.

Third, while Piaget and his followers gave first consideration to describing the content of moral judgments, the current approach focused almost immediately on developmental antecedents and gave short shrift to the comparative analysis of the phenomena being predicted. This "historical" bias is reflected most sharply by a striking omission in the current literature of comparisons by sex and age and in most recent researches, except in a few isolated instances, such questions remain unanswered.

The most curious and perhaps the most serious void in current studies of moral development lies in the once over-worked area of age changes. No one seems to be asking the question of how the cognitive and objective manifestations of guilt, internalization, resistance to temptation and altruism emerge and develop in the growing child. The fact that the child's maturational level may not be as determining an influence in moral development as was once believed does not in any way detract from the scientific importance of age-developmental studies. On the contrary, as the evidence mounts in favour of the view of human morality

as man-made rather than an inevitable product of organismic evolution, understanding of the genetic process of moral development becomes even more urgent and intriguing.

Along with the contrasts, however, there are similarities as well. Like Piaget and his collaborators, the new investigators of the fifties began by treating morality as if it were a unitary trait and were only gradually forced by their own data to a more differentiated conception. As a number of investigators acknowledge,^{56,57,58} indices of guilt, confession, resistance to temptation, all of which are used to measure internalization, consistently show only low intercorrelations at best. Thus, after a review of studies done at Harvard and Stanford, Maccoby concludes: "Our results [...] argue against a single-process theory of moral development."

Finally, despite their concern both with covert needs and conflicts expressed through overt behavior, the protagonists of the new look, like their more traditional predecessors, have left unexplored the relation of verbal response to every-day action. Instead, the two types of

⁵⁶ W. Allin Smith, "The Learning of Moral Standards", in D.R. Miller and G.E. Swanson (eds.), Inner Conflict and Defense, New York, Holt, 1960, p. 141-176.

⁵⁷ Burton et al., op. cit.

⁵⁸ Maccoby, op. cit.

data have remained compartmentalized. As a result, virtually nothing is known about the relation of Piaget's concept of moral development to behavior in actual interpersonal situations. Thus, the review of this literature would lead one to surmise the possibility of cognitive, moral judgment being reflected in overt, moral behavior. If it is indeed the case, the findings would confirm the proposed correlation. The study is yet to be done in which these two approaches are combined within a single research design; consequently, it is necessary to find a procedure stringent enough to put this hypothesis to the test. Since Piaget's conceptualization involves implicit rules, game theory lends itself to both trends since a solution of the game requires different levels of cognitive abilities to be translated into overt behavior. Therefore, the next section will deal with a description of the use of gaming techniques.

3. Research on Gaming Behavior.

The impetus for utilizing games as experimental paradigms in the study of interpersonal interactions stems primarily from the work of Luce and Raiffa.⁵⁹ Stated simply, game theory aims at developing criteria for rational behavior

⁵⁹ R.D. Luce and H. Raiffa, Games and Decisions, New York, John Wiley, 1957.

in situations that involve total or partial conflict of interests between two or more individuals. Such game theoretic concepts have been defined and derived on the basis of two assumptions known as rationality postulates. The first of these, the postulate of individual utility maximization or individual rationality, states that each player tries to maximize his own expected satisfaction (or utility). The second, known as the postulate of mutually expected rationality, states that each player expects and acts on the expectation that the other player(s) will also try to maximize his (their) own expected utility. Essentially, these postulates describe the interaction of two or more individuals in terms of behavior which can be defined as the rational pursuit of their own self-interests.

Of particular importance in measuring this behavior, contemporary game research has utilized the Prisoner's Dilemma game (PD), a special type of mixed-motive situation.⁶⁰ It has mixed motives because the player has to decide between increasing his own immediate gain, maximizing the difference between both gains or increasing the total gain of both players. (An example and description of the PD game is given in Appendix 1.) Some of the attempts at a possible rationale have tried to clarify PD findings in terms of personality

⁶⁰ Ibid.

variables of the players, strategies employed by the player as well as a variety of other situational determinants.

Studies trying to relate individual personality differences to choice behavior in PD games have followed the generalized experimental design of separating subjects on some personality dimension (in terms of high and low scores) and then, either matching subjects with respect to the same pole of the presumed continuum or pairing them in terms of "polar opposites".⁶¹ Other investigations involving strategies as explanatory concepts for the PD game behavior have been more interesting from the point of view of presenting the rationale in more dynamic terms than the previous static approach. These studies have usually been designed in such a way as to control the strategy of one of the players in some predetermined fashion and study what influencing effect, if any, this has on the strategy of the other player. The person who plays the predetermined set of strategies is a confederate or "stooge" of the experimenter; occasionally, the pre-programmed other player has been an electronic computer unknown to both players.

In addition to both personality variables and strategy, another area of recent interest in bargaining

⁶¹ K.W. Terhune, "The Effects of Personality in Cooperation and Conflict", in P.G. Swingle (ed.), The Structure of Conflict, New York, Academic Press, 1970.

research is the situational variable of pretraining^{62,63,64} which has shown to be very relevant in influencing choice behavior in the PD game. It is clear from a consideration of these studies, that a person's choice behavior is very much affected in a new situation by the extent to which the other player has responded in a previous one. Thus, the former factors, as well as a multitude of others, have been used in PD studies with a usually followed standardized procedure. In most games, the researcher presents the task in terms of rules (and may even instruct the subjects what their goals are to be). Post-experimental interviews often reveal, however, that the "game" actually played was not as the experimenter defined. For example, subjects are sometimes told that their goal is simply to earn as much money (or other kinds of payoff) as they can; later interviews often reveal that the subjects had set their own goal to "beat their partner"; thus, the PD game, a seemingly simple

62 V. Sermat, "The Effect of an Initial Cooperative or Competitive Treatment upon a Subject's Response to Conditioned Cooperation", Behavioral Science, Vol. 12, 1967, p. 301-313.

63 -----, "Possibility of Influencing the Other's Behavior and Cooperation: Chicken vs. Prisoner's Dilemma", Canadian Journal of Psychology, Vol. 21, 1967, p. 204-219.

64 P.G. Swingle, "Effects of Prior Exposure to Cooperative or Competitive Treatment upon Subject's Responding in the Prisoner's Dilemma", Journal of Personality and Social Psychology, Vol. 10, 1968, p. 44-52.

situation, reflects mixed-motives in which the underlying intention for a particular act is seldom obvious; for example, an ostensibly cooperative move may be either a genuinely cooperative act or an attempt to lure another into a vulnerable position. Given such ambiguities, the interpretation of one person's actions by another is likely to be a function of the latter's predispositions and "success" in the game reflecting tendencies such as trust or suspicion rather than due strictly to the structural aspects. Consequently, in an experimental design utilizing different levels of pretraining, various motives change over the sequence of the game and remain uncontrolled. Unfortunately, the effect which this previous conditioning would have on later iterations of the PD game remains unclear. To dwell on this point, one must ponder what goes on in any interaction sequence that has a definite beginning. The initial actions of each party are likely to be determined in large measure by their individual predispositions. These factors set in motion a sequence of action and counteraction where each party's behavior is influenced not only by his own propensities but also by the actions of the other. A state in which one person is endeavoring to cooperate while the other is defecting (exploiting, aggressing) is likely to be most unstable. Hence, the interaction behavior will eventually reach a steady state where both persons are cooperating

or become involved in a conflict deadlock. The stable state that obtains will in large measure be the resultant of behaviors early in the interaction sequence;⁶⁵ that is, the structure of the PD game frequently masks otherwise significant behavioral differences. However, this problem could be circumvented by initially utilizing a PD game for pretraining; this short period would allow the behavioral predispositions of the individuals to be exemplified. Following this relatively brief phase and before behaviors became stabilized, the individual could be exposed to a power matrix where the motives are more obvious. An experimental design of this type could further elucidate the effect of pretraining treatments and other situational variables on the individual's motives in the gaming situation.

In summary, then, it seems that behavior in the PD game is a function of personality and attitudinal factors whether induced by giving the subjects orientation or giving them none, in which case they supply their own. Furthermore, in this type of game where rationality prescribes no precise strategy, the individual's motivation, whether inherent or induced, determines his strategy.

⁶⁵ K.W. Terhune, "Motives, Situation and Interpersonal Conflict within Prisoner's Dilemma", Journal of Personality and Social Psychology, Vol. 8, No. 3, 1968, Part 2 (Monograph Supplement).

Consequently, if the foregoing discussion merits consideration, it could be hypothesized that the stages of moral development would be reflected differentially in response to the various gaming situations. Furthermore, these measures should serve as discriminating tools to determine the degree to which internalization has occurred.

CHAPTER II

EXPERIMENTAL DESIGN

The present chapter will attempt to give a precise description of the methods employed in screening the subjects, the experimental procedures, the definitions of the dependent variables and the hypotheses to be tested.

1. The Sample.

Seventy-two children, consisting of an equal number of boys and girls, served as subjects. They were selected on the basis of their scores on the eighteen story situations and questions drawn from Piaget.¹ To eliminate possible differences due to amount of school experience, only white, English-speaking, Protestant children who had not repeated grades were chosen.

The subjects were obtained from one elementary school of the Ottawa Public School Board; the data were gathered between the dates of December 15, 1969 and February 25, 1970, inclusively.

The intelligence quotients recorded for the older children were not readily accessible to the experimenter

1 G.R. Medinnus, An Investigation of Piaget's Concept of the Development of Moral Judgment in Six to Twelve Year Olds, unpublished doctoral dissertation, University of Minnesota, 1957.

and, since the younger children in the study had not yet been exposed to the battery of psychological tests offered by the school, the teachers in each of the home-classrooms were asked to compile a list of those pupils whom they felt were probable candidates for a special class. This was done for the purpose of excluding children with learning problems. Since the data were gathered at mid-year, the teachers' knowledge of their pupils' work permitted a fairly accurate gross estimate of their ability and intelligence. Table I summarizes the description of the subjects.

2. Administration of the Questionnaire.

Eighteen story situations and questions (shown in Appendix 2) drawn from Piaget and utilized by Medinnus² were administered to approximately three hundred children in grades one through six respectively. Initially, the questionnaire was given in the group classroom setting where the examiner read aloud each question and asked the child to complete only items which required a single word answer. The papers were then collected and screened; possible candidates were administered the remaining items in an individual, structured-interview situation.

2 Ibid.

TABLE I.-

Age and Moral Questionnaire Characteristics of the
Subject Sample.

Group	Age		Questionnaire	
	Mean (months)	s.d.	Mean (score)	s.d.
Moral Realism (MR)	86	2.3	7.3	1.5
Moral Realism (MR1)	140	1.9	7.8	1.3
Mutual Cooperation (MC)	142	1.7	16.1	2.7

N=72

The subjects' responses to the questions were recorded verbatim, insofar as possible, by the examiner and the testing was done in rooms assigned by the principal. The subjects were escorted from their home-rooms by the examiner who accompanied them on their return from the testing session.

The interviews varied in length from thirty to forty minutes. Not one refusal of the entire test was encountered; no single test items were refused. The interest value of items seemed high for children of the ages examined and sufficient rapport was established between examiner and subjects to ensure their cooperation. The stories were verbally presented to the subjects and they were asked to repeat it in their own words so that the examiner could be sure they had understood its contents. An informal inquiry followed each story, during which the subjects were asked to make evaluative judgments concerning specific aspects of each item.

The responses were scored plus or minus following Medinnus' technique³ based on Piaget's evaluations of his subjects' answers. A minus score indicates that the item was answered in the direction of moral realism, while a plus score denotes a mature, relativistic response. The

3 Ibid.

scoring key is illustrated in Appendix 3.

Subjects scoring in the zero to six range (based on the plus value) were assigned to the moral realism stage and those scoring in the twelve to eighteen category were assigned to the mutual reciprocity stage; consequently, there were two moral realism groups (MR and MR1) differing only in age, and one mutual reciprocity group (MC) consisting of twenty-four subjects with an equal number of boys and girls in each condition.

3. Administration of the Prisoner's Dilemma Game.

In the gaming situation, subjects were summoned from their respective home-classrooms by a child who had previously participated. They arrived individually and were seated at small tables separated by portable partitions. The four subjects used in each session came from different classrooms to ensure anonymity and although it was possible to guess who the other person might be, they were told that it could be any of the other three children involved in the task. They were read the instructions (shown in Appendix 4) and probed to ascertain their understanding of the matrix. When all questions were answered, the game began.

The experimental design provided for subjects to receive fifty pretraining trials on the PD game followed

immediately by another fifty trials on a power matrix where the subject was in power; thus, each person made one hundred choices for the entire session. The treatment of subjects varied only on the pretraining strategy level of the other person during the first fifty trials of the PD game. One-half of the subjects (six male and six female) at each of the three levels of moral development were randomly chosen and pretrained on an eighty per cent level of cooperation (C) while the remainder were exposed to an eighty per cent competition level (K) on the PD game. Following this, all subjects received fifty trials of unconditional cooperation (one hundred per cent cooperation) on the power matrix.

At the end of the gaming sessions, the children were asked to complete a post-game questionnaire (shown in Appendix 5). To facilitate administration of this task, the questionnaire was read aloud to each subject. The gaming task varied from forty minutes to one hour.

4. Analysis of Game Behavior.

After the experiment had been completed, all game responses for the different conditions were tabulated in ten, ten-trial blocks of competitive responses. Thus, the dependent variables for the present study are the number of competitive responses and, additionally, three stochastic

variables labelled by Rapoport⁴ as forgiveness, trust and repentance. Each of these two-trial variables is operationally defined; for example, trust occurs when a subject cooperates on trial $n+1$ after both players had defected on trial n . A subject displays forgiveness when he cooperates on trial $n+1$ after he had cooperated and the other subject had defected on trial n . Finally, repentance is displayed when a subject cooperates on trial $n+1$ after he had defected and the other subject had cooperated on trial n . The score for each variable is obtained by taking each of the occasions for which the response disposition could be demonstrated (the specified trial outcome) and dividing it into the actual number of times it was demonstrated.

5. Statistical Design and Hypotheses.

The general statistical approach used in this study is that of a five-way classification analysis of variance. The five independent variables used were levels of moral development, sex, matrix, level of pretraining and number of trials. Since the main interest of this study is to compare the levels of moral development under the different gaming conditions, the null hypotheses are stated as follows:

⁴ A. Rapoport, Strategy and Conscience, New York, Harper and Row, 1964.

1. There is no significant difference in competitive responses between levels of moral development.
2. There is no significant difference in competitive responses due to pretraining strategies.
3. There is no significant difference in response to the stochastic variables due to pretraining strategies. .

If in the main analysis, there are other indications of variables exhibiting differential effects from condition to condition, an analysis is performed to compare gaming responses between the groups involved. The procedure will be described in the following chapter where a presentation will be given of the analyses and results.

CHAPTER III

PRESENTATION OF RESULTS

This chapter will present results stemming from the research findings mainly in terms of hypotheses formulated at the end of the previous chapter. The summaries of all analyses of variance on the response data will be shown and commented upon utilizing individual comparisons for the experimental variables used in the study.

1. The Statistical Findings.

This section will present analyses of variance for the measures employed in the experimental design. To facilitate communication, the reader will be presented with a brief description of how the response data were operationally defined, measured and grouped prior to the presentation of the summary of the statistical treatment.

The study called for an overall analysis of variance of the competitive response data. Following the procedure established by game researchers, for example, Swingle,¹ the competitive response data were arcsined-transformed whereas

¹ P.G. Swingle, "Effects of Prior Exposure to Cooperative or Competitive Treatment upon Subject's Responding in the Prisoner's Dilemma", Journal of Personality and Social Psychology, Vol. 10, 1968, p. 44-52.

proportion and frequency measures were square-root transformed.² Consequently, the data to be reported are based on these transformations. Additionally, the one hundred trials of competitive response data were grouped into ten, ten-trial blocks; the overall analysis therefore consisted of the following factors: sex (S), pretraining (P), trials (T), level of moral development (L) and the type of game matrix (M).

The summary for the arcsine transformed analysis of variance of the total competitive response data is presented in Table II. A competitive response is defined as a number two response based on the information provided about response criteria in Appendix 1. Although not a predicted hypothesis in the experimental design, the highly significant sex main effect ($F(1,60)=9.64$; $p<.01$) demonstrates that males ($\bar{X}=1.87$) tend to be more competitive than females ($\bar{X}=1.65$). At this point in the presentation of the results, it is noteworthy to mention that this same trend consistently presents itself throughout the other analyses. The pretraining effect, found to be significant ($F(1,60)=5.52$; $p<.05$), rejected the second null hypothesis; that is, those subjects exposed to a cooperative pretraining strategy

² Computer programs for complete scoring and analyses of game data were kindly made available by Dr. P.G. Swingle.

Table II.-

Arcsine-transformed Table of Variance of 10x10 Trial Blocks
of Competitive Responses.

Source	Sums of Squares	df	Variance Estimate	F	P.05	P.01
Between						
S	8.883	1	8.883	9.64	4.00	7.08
P	5.088	1	5.088	5.52	4.00	7.08
SP	8.213	1	8.213	8.91	4.00	7.08
L	6.466	2	3.233	3.51	3.15	4.98
SL	.427	2	.213	.23	3.15	4.98
PL	.019	2	.010	.01	3.15	4.98
SPL	2.653	2	1.326	1.44	3.15	4.98
S/G Error	55.292	60	.922			
Within						
T	.604	4	.151	1.54	2.41	3.41
TS	.288	4	.072	.74	2.41	3.41
TP	.031	4	.008	.08	2.41	3.41
TSP	.377	4	.094	.96	2.41	3.41
TL	.623	8	.078	.80	1.98	2.60
TSL	.306	8	.038	.39	1.98	2.60
TPL	.754	8	.094	.96	1.98	2.60
TSPL	.964	8	.120	1.23	1.98	2.60
T.S/G Error	23.479	240	.098			
M	.214	1	.214	.76	4.00	7.08
MS	.232	1	.232	.83	4.00	7.08
MP	.084	1	.084	.30	4.00	7.08
MSP	.387	1	.387	1.38	4.00	7.08
ML	2.918	2	1.459	5.19	3.15	4.98
MSL	.310	2	.155	.55	3.15	4.98
MPL	.778	2	.389	1.38	3.15	4.98
MSPL	.736	2	.368	1.31	3.15	4.98
MR.S/G Error	16.857	60	.281			
TM	1.259	4	.315	3.04	2.41	3.41
TMS	.400	4	.100	.97	2.41	3.41
TMP	.607	4	.152	1.47	2.41	3.41
TMSP	1.059	4	.265	2.56	2.41	3.41
TML	1.542	8	.193	1.86	1.98	2.60
TMSL	.473	8	.059	.57	1.98	2.60
TMPL	.393	8	.049	.47	1.98	2.60
MRT.S/G Error	24.836	240	.103			

were more cooperative ($\bar{X}=1.67$) than those who were administered the competitive pretraining ($\bar{X}=1.84$). However, this finding is further elucidated in terms of the reliable SxP interaction ($F(1,60)=8.91$; $p<.01$) and is illustrated in Figure 1. Application of the Duncan Multiple Range Test indicates that the MK group made significantly more competitive responses ($p<.05$) than the MC and FK conditions whereas the MC, FK and FC conditions do not differ reliably from one another ($p>.25$). Thus, the experimental hypothesis holds only for males whereas pretraining does not differentially effect response choice in females. The first null hypothesis that there is no difference in choice behavior among the levels of moral development is rejected ($F(2,60)=3.51$; $p<.05$); the Duncan Multiple Range Test reveals a reliable difference ($p<.05$) between the MC ($\bar{X}=1.89$) and MR ($\bar{X}=1.63$) groups whereas the MR1 ($\bar{X}=1.79$) condition does not vary from either at the conventional level of probability. The significant TxM interaction ($F(4,240)=3.04$; $p<.01$) depicted in Figure 2 indicates that there was a progressive trend for more competitive responding as the PD game continued. The Duncan Multiple Range Test yields significant differences ($p<.05$) in the PD matrix between the first trial block when compared with the third, fourth and fifth trial blocks whereas the last three trial blocks did not differ reliably ($p>.25$). For the power matrix, there was initially

Figure 1.- Representation of Mean Competitive Responses for Males and Females under Cooperative and Competitive Pretraining.

Figure 2.- Representation of Mean Competitive for the Five Trial Blocks of Prisoner's Dilemma and Power Matrices.

higher competitive responding in the first trial block which gradually gave way to reliably more cooperative behavior ($p < .05$) by the third trial block and again increased to a significantly more competitive level ($p < .05$) at the fifth trial block. It is interesting to note that there was no immediate shift in behavior as a consequence of a change in matrices; that is, there was no reliable difference ($p > .25$) between the last trial block of the PD matrix (trial block five) and the first trial block of the power matrix (trial block six).

A measure of related interest is that of forgiveness which is defined as the proportion of cooperative responses on trial $n + 1$ after the subject had cooperated and the other person had defected on trial n ; that is, a C response after a CD outcome (C/CD). These data were square-root transformed and submitted to the analysis of variance; the results appear in Table III. There were no significant main effects ($p > .25$); however, the PxL interaction ($F(2,60) = 3.20$; $p < .05$) depicted in Figure 3 indicates differential forgiveness behavior. The Duncan Multiple Range Test demonstrates that the MR cooperative pretraining group is more forgiving than a similar group exposed to a competitive strategy ($p < .05$). In contrast, the MC group's average forgiveness score was less than their counterparts administered the competitive strategy although this trend is not reliable ($p > .25$). It

Table III.-

Square Root Transformed Table of Variance for Forgiveness Responses.

Source	Sums of Squares	df	Variance Estimate	F	P.05	5.01
S	10.619	1	10.619	.17	4.00	7.08
P	72.208	1	72.208	1.13	4.00	7.08
SP	199.386	1	199.386	3.11	4.00	7.08
L	50.587	2	25.294	.40	3.15	4.98
SL	35.596	2	17.798	.28	3.15	4.98
PL	409.999	2	205.000	3.20	3.15	4.98
SPL	87.784	2	43.892	.69	3.15	4.98
S/G Error	3841.603	60	64.027

Figure 3.- Representation of Mean Forgiving Responses for Level of Moral Development under Cooperative and Competitive Pretraining.

is noteworthy to mention that there was no significant change in forgiving behavior compared over the pretraining conditions for the MR1 group ($p > .25$). Comparison of the levels of moral development with the pretraining conditions by the Duncan Multiple Range Test reveals that for the cooperative pretraining conditions, the MC group differs from the MR group ($p < .05$) whereas MR1 does not differ from either at the conventional level of probability. To gain further insight into the dynamics of this measure, the SxP interaction, although only approaching the reliable acceptance level ($.05 < p < .10$), was examined and is illustrated in Figure 4. It is readily apparent from the graph and supported by the Duncan Multiple Range Test that males exposed to cooperative pretraining are more forgiving than their counterparts influenced by a competitive history ($p < .05$) whereas pretraining has no reliable effect on females' choices ($p > .25$). Thus, in view of the foregoing evidence, the third null hypothesis of the study is rejected.

The second variable utilized to measure internalized behavior is trust which is operationally defined as cooperation on trial $n+1$ after both players had defected on trial n (C/DD). The results are shown in Table IV and illustrated in Figure 5. The sex main effect was significant ($F(1,60) = 7.80$; $p < .05$) indicating that females ($\bar{X} = 23.6$) were more trusting than males ($\bar{X} = 19.0$) but is further qualified

Figure 4.- Representation of Mean Forgiving Responses for Males and Females under Cooperative and Competitive Pre-training.

Table IV.-

Square Root Transformed Table of Variance for Trusting Responses.

Source	Sums of Squares	df	Variance Estimate	F	P.05	P.01
S	385.953	1	385.953	7.80	4.00	7.08
P	23.466	1	23.466	.47	4.00	7.08
SP	271.536	1	271.536	5.49	4.00	7.08
L	206.481	2	103.241	2.09	3.15	4.98
SL	115.943	2	57.971	1.17	3.15	4.98
PL	113.686	2	56.843	1.15	3.15	4.98
SPL	125.763	2	62.882	1.27	3.15	4.98
S/G Error	2968.762	60	49.479

Figure 5.- Representation of Mean Trusting Responses for Males and Females under Cooperative and Competitive Pre-training.

by the SxP interaction. The Duncan Multiple Range Test reveals that FK is more trusting than MK ($p < .05$); similarly, as in the case of the forgiveness measure, the MC condition was reliably more trusting than their MK counterparts ($p < .05$) whereas the pretraining treatment appears to have the opposite effect upon female trust behavior although the difference between FC and FK is not reliable ($p > .10$).

Repentence, the final stochastic measure used in the present study, is demonstrated when a subject cooperates on trial $n+1$ after he had defected and the other subject cooperated on trial n (C/DC). The results for this measure, shown in Table V, demonstrate a reliable sex main effect ($F(1,60)=10.84$; $p < .01$) suggesting that males ($\bar{X}=18.3$) are significantly less repentent than females ($\bar{X}=22.9$). The highly reliable pretraining main effect ($F(1,60)=11.58$; $p < .01$) indicates that those groups receiving the competitive pretraining strategy ($\bar{X}=18.1$) are, on the average, less repentent than those receiving cooperative pretraining ($\bar{X}=23.1$). However, this conclusion is further qualified in terms of the highly significant SxP interaction ($F(1,60)=10.13$; $p < .01$) illustrated in Figure 6. Application of the Duncan Multiple Range Test reveals a reliable difference between the MK group ($\bar{X}=27.0$) and the MC ($\bar{X}=46.1$), FC ($\bar{X}=46.4$) and FK ($\bar{X}=45.2$) conditions respectively whereas the latter three averages do not vary reliably from one

Table V.-

Square Root Transformed Table of Variance of Repentance Responses.

Source	Sums of Squares	df	Variance Estimate	F	P.05	P.01
S	823.468	1	823.468	10.84	4.00	7.08
P	879.561	1	879.561	11.58	4.00	7.08
SP	769.684	1	769.684	10.13	4.00	7.08
L	927.296	2	463.648	6.10	3.15	4.98
SL	46.906	2	23.453	.31	3.15	4.98
PL	4.994	2	2.497	.03	3.15	4.98
SPL	8.253	2	4.127	.05	3.15	4.98
S/G Error	4559.146	60	75.986			
M	98.262	1	98.262	4.55	4.00	7.08
MS	89.831	1	89.831	4.16	4.00	7.08
MP	34.772	1	34.772	1.61	4.00	7.08
MSP	.009	1	.009	.00	4.00	7.08
ML	33.407	2	16.703	.77	3.15	4.98
MSL	28.213	2	14.107	.65	3.15	4.98
MPL	16.672	2	8.336	.39	3.15	4.98
MSPL	317.882	2	158.941	7.36	3.15	4.98
M.S/G Error	1307.268	60	21.787			

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Figure 6.- Representation of Mean Repenting Responses for Males and Females under Cooperative and Competitive Pre-training.

another ($p > .25$). From the point of view of level of moral development, the MR group ($\bar{X}=24.0$) was, on the average, more repentent ($p < .01$) than either the MR1 ($\bar{X}=19.2$) or MC ($\bar{X}=18.6$) groups which do not differ significantly from one another ($p > .25$). The matrix main effect ($F(1,60)=4.55$; $p < .05$), indicating more repentence responses in the PD matrix ($\bar{X}=21.5$) as compared to the Power matrix ($\bar{X}=19.8$) can be more clearly seen by virtue of the reliable MxS interaction ($F(1,60)=3.16$; $p < .05$) depicted in Figure 7. This finding indicates that males ($\bar{X}=18.3$) are generally more exploitative than females ($\bar{X}=23.1$); furthermore, females are equally exploitative under either the PD or Power matrix ($\bar{X}=23.2$ and $\bar{X}=22.9$ respectively) whereas males ($\bar{X}=16.7$) are more exploitative when in Power than when in the PD matrix ($\bar{X}=19.8$).

The highly reliable MSPL interaction ($F(2,60)=7.36$; $p < .01$) was broken down into levels of moral development, plotted individually and is illustrated in Figures 8, 9 and 10. The Duncan Multiple Range Tests reveal that, in Figure 8, the MK group ($\bar{X}=16.7$) shows significantly less repentence than FC ($\bar{X}=26.3$), FK ($\bar{X}=27.5$) and MC ($\bar{X}=27.4$) respectively ($p < .01$) whereas the latter do not differ reliably from each other under either matrix ($p > .25$). Similarly, in Figure 9, MK ($\bar{X}=15.5$) differs reliably from FC ($\bar{X}=23.2$) and MC ($\bar{X}=23.3$) ($p < .01$) whereas MK ($\bar{X}=15.5$) and FK ($\bar{X}=17.5$) do not vary

Figure 7.- Representation of Mean Repenting Responses for Males and Females under the Prisoner's Dilemma and Power Matrices.

Figure 8.- Representation of Mean Repenting Responses for Males and Females under Cooperative and Competitive Pre-training for the Prisoner's Dilemma and Power Matrices in the MR₁ Group.

Figure 9.- Representation of Mean Repenting Responses for Males and Females under Cooperative and Competitive Pre-training for the Prisoner's Dilemma and Power Matrices in the MR1 Group.

Figure 10.- Representation of Mean Repenting Responses for Males and Females under Cooperative and Competitive Pre-training for the Prisoner's Dilemma and Power Matrices in the MC Group.

under the PD strategy; comparisons across the Power Condition establish that MK ($\bar{X}=9.4$) deviates significantly from FK ($\bar{X}=24.3$), FC ($\bar{X}=18.0$) as well as MC ($\bar{X}=21.7$) at ($p<.01$) whereas FC ($\bar{X}=18.0$) differs from MC ($\bar{X}=21.7$) and FK ($\bar{X}=24.3$) at ($p<.05$); additionally, there is no difference at the conventional level between MC ($\bar{X}=21.7$) and FK ($\bar{X}=24.3$) at ($p>.10$). Furthermore, Duncan Multiple Range Tests reveal that the FC group became less repentent ($p<.05$) over the trial sequence whereas the contrary occurs for the FK condition ($p<.05$). There is also a progressive trend for the MK group to become less repentent as the game continued ($p<.05$). Individual comparisons in Figure 10 reveal that MK ($\bar{X}=11.2$) differs reliably from MC ($\bar{X}=24.4$), FC ($\bar{X}=22.0$) and FK ($\bar{X}=22.5$) at ($p<.01$) whereas the latter three do not vary at the conventional level of acceptance ($p>.10$) under the PD matrix. Analysis of the Power treatment reveals that MK ($\bar{X}=10.4$) differs from MC ($\bar{X}=16.3$) at ($p<.05$), FK ($\bar{X}=19.3$) and FC ($\bar{X}=22.5$) at ($p<.01$); MC ($\bar{X}=16.3$) from FC ($\bar{X}=22.5$) at ($p<.05$) whereas there is no significant difference between MC ($\bar{X}=16.3$) and FK ($\bar{X}=19.3$) or FK ($\bar{X}=19.3$) and FC ($\bar{X}=22.5$) at ($p>.10$) respectively. Established from the individual tests also was the finding that the MC group became less repentent when changed from the PD to a Power matrix ($p<.05$).

The significant MxL interaction effect demonstrated by the analysis of variance in Table II is illustrated by

Figure 11. The Duncan Multiple Range Test reveals a reliable difference between the MC and MR groups under the Power matrix ($p < .05$) whereas all other comparisons do not vary significantly ($p > .10$).

Independent analyses were completed on various groupings of the data in an attempt to elucidate and provide additional information which might clarify the results of the previous overall analysis of variance. Therefore, the competitive responses for the first five trials of the PD game were arcsine transformed and submitted to an analysis of variance. The summary of results appears in Table VI. Neither main effects nor subsequent interactions reach the conventional level of significance ($p > .25$ respectively for each treatment). The purpose of this analysis was to estimate the subject's initial predisposition to respond to the cooperative or competitive pretraining established from the first five trials of the PD game; subsequently, competitive responses for the first five trials of the Power matrix (extending from trials fifty to fifty-five in the game) were submitted to a similar analysis and are shown in Table VII. Thus, having built in a predisposition to respond in the first fifty trials, this analysis was utilized to measure the effectiveness of the built-in history. There was a highly significant sex main effect ($F(1,60)=11.97$; $p < .01$) indicating that males ($\bar{X}=2.1$) were more exploitative than

Figure 11.- Representation of Mean Competitive Responses for Level of Moral Development under the Prisoner's Dilemma and Power Matrices.

Table VI.-

Table of Variance of First Five Trials of Competitive
Responses on the Prisoner's Dilemma Game.

Source	Sums of Squares	df	Variance Estimate	F	P.05	P.01
S	.002	1	.002	.02	4.00	7.08
P	.002	1	.002	.02	4.00	7.08
SP	.032	1	.032	.21	4.00	7.08
L	.087	2	.043	.29	3.15	4.98
SL	.140	2	.070	.47	3.15	4.98
PL	.021	2	.011	.07	3.15	4.98
SPL	.421	2	.210	1.40	3.15	4.98
S/G Error	9.001	60				

Table VII.-

Table of Variance of First Five Trials of Competitive Responses on the Power Matrix.

Source	Sums of Squares	df	Variance Estimate	F	P.05	P.01
S	.833	1	.833	11.97	4.00	7.08
P	.635	1	.635	9.13	4.00	7.08
SP	.285	1	.285	4.07	4.00	7.08
L	.210	2	.105	1.51	3.15	4.98
SL	.272	2	.136	1.95	3.15	4.98
PL	.133	2	.067	.96	3.15	4.98
SPL	.106	2	.053	.76	3.15	4.98
S/G Error	4.172	60	.070			

were females ($\bar{X}=1.8$). The reliable pretraining effect ($F(1,60)=9.13$; $p<.01$) established more exploitation on behalf of the competitive pretraining group ($\bar{X}=2.1$) as compared to the cooperative strategy ($\bar{X}=1.9$). The significant SxP interaction ($F(1,60)=4.07$; $p<.05$) illustrated in Figure 12 indicates that neither pretraining strategy affected the female groups; however, the MK group tended to be more competitive than the FC, FK and MC conditions ($p<.05$) whereas the latter three did not differ reliably ($p>.25$). It is interesting to note that in contrast to Terhune's³ assumptions, there were no statistically reliable differences on the first five trials of the PD game, however, the reverse is the case for the Power matrix.

³ K.W. Terhune, "The Effects of Personality in Cooperation and Conflict", in P.G. Swingle (ed.), Structure of Conflict, New York, Academic Press, 1970.

Figure 12.- Representation of Mean Competitive Responses for the First Five Trials of the Power Matrix for Males and Females under Cooperative and Competitive Pre-training.

CHAPTER IV

INTERPRETATION OF FINDINGS

This chapter will deal with the findings directly relevant to the specific predictions presented previously. To facilitate the reading of the manuscript, the hypotheses will precede each interpretation. Since the main concern of the study is the comparison of moral judgment with overt behavior, the discussion will emphasize this aspect. In pursuit of this goal, then, attention will first be directed to the behavioral features demonstrated in the study with the elements which constitute the development of moral judgment within Piaget's frame of reference. It will also attempt to incorporate previous relevant empirical studies on moral development with additional theoretical perspectives which may provide valuable insights into the possible meaning of the obtained results.

1. Discussion of the Main Effect: Level of Moral Development.

It was shown in the previous chapter that the formally stated null hypothesis: there is no significant difference in competitive responses between the levels of moral development, was rejected. Consequently, this conclusion deserves to be more closely examined, for since

it holds good, the contribution it can make to the analysis of child morality is of importance. However, in its present state, the specific nature of this finding remains unclear; McClintock, Gallo and Harrison¹ (1965) have pointed out that when dealing with competitive response, trial-block data, the particular underlying motive for the overt behavior is not immediately obvious. Furthermore, in a recent study, Swingle and Coady² (1967) concluded that, in some cases, the average number of competitive responses between groups exposed to different strategy manipulations may not be a sensitive index of the treatment effect. Obviously, what would be required to test the specific hypothesis of the present study would be a significant PxL interaction of total competitive responses; the obtained findings in Table II lend no conclusive evidence to explain the observed difference between MC and MR approaches to the game. However, valuable evidence was gleaned from children's overt behavior during the game as well as from casual comments they made afterwards. Thus, in addition to the

1 C.G. McClintock, P. Gallo and A.A. Harrison, "Some Effects of Variations in Other Strategy upon Game Behavior", Journal of Personality and Social Psychology, Vol. 1, 1965, p. 319-325.

P.G. Swingle and H. Coady, "Effects of the Partner's Abrupt Strategy Change upon Subject's Responding in the Prisoner's Dilemma", Journal of Personality and Social Psychology, Vol. 5, 1967, p. 357-363.

present behavioral results, qualitative data can be used to bear witness to and elucidate the underlying motives leading to the rejection of the first null hypothesis. It is from this point of view, then, and with this objective in mind, that the following argument will be posited in an attempt to clarify and lend support to the previous finding.

Originally, the experimental design called for an analysis of variance of the post-experimental questionnaire concerned with various aspects related to the game and the other player; however, the younger children were unable to comprehend the questions adequately; therefore, it was qualitatively interpreted rather than quantitatively analyzed. The difficulty revealed itself in two respects: first, the child could not accurately assess the other person's behavior in the gaming situations because of his inattention to the other's moves. Generally, between responses, he could be observed sorting his tickets in piles of similar color and playing the alternate choices on every other trial suggesting a child impervious to the other's behavior and subsequent strategy changes, being concerned only with his own "immediate game". Second, that the child was unable to assess the other person's gaming behavior can be expected on the basis of Piaget's concept of egocentrism; that is, the young child was unable to assume the role of an equal status peer member since he rates people and

actions from his own frame of reference. Thus, at this stage of development, he was rendered too difficult a task for adequate evaluation. Thus, the confirmed findings of the previous chapter, as well as the behavioral observations noted during the experimental task seem to suggest that the younger child (MR) is dominated by rules which, being unable to place himself on the same level with regard to his peers, he utilizes for his own ends. In the gaming situation, the child played either in an individualistic manner without regard to the other person's move or responded along with him but without trying to win and therefore without attempting to find the different modes of interaction. In other words, children of this stage even when they are playing together, do so each one on his own (everyone can win at once) and without regard for the codification of rules. This was established in the game by the fact that neither was trying to get the better of the other; each was merely having a game of his own, i.e., trying to win from his own point of view. His interest did not consist of competing with his companions and in binding himself by common rules to see who would get the better of the other. His aims seemed different; they were indeed dual and quite paradoxical. These children played more or less as they chose; they were influenced by a few responses and observed roughly the results of such a move; but they did so without

troubling to obey in detail the rules they knew or could have known with a little attention and without attributing the least importance to the infringements of which they might have been guilty. Besides all this, each child sought neither to control nor be controlled; furthermore, he did not try to beat the other -- "to win" simply meant to succeed in the goals he had set for himself.

It can be concluded, then, that the dual characteristic, combining imitation of others' moves with a purely individual use of the examples received (designated as egocentrism by Piaget) is clearly exemplified in the stage of moral realism and is distinct from the more "mature" stage of reciprocity.

Generally speaking, it is a normal thing that in its beginnings, reciprocity has to be practised for a long time before its consequences can be fully brought to light by reflective thought. Thus, in the stage of mutual reciprocity, each player now tries to win and begin, therefore, to concern themselves with the question of mutual control and of the unification of rules. In seeking to win, the child is trying above all to contend with his partner while observing some common rules. The specific pleasure of the game thus ceases to be egocentric and becomes social. Henceforth, for these children, there is a mutual evaluation of the competing powers which lead, due to the

observation of common rules, to a conclusion that is accepted by both. Thus, what becomes important is not only to compete with the other person but also to regulate the game with a set of systematic rules which will ensure the most complete reciprocity in the methods used. The game has, therefore, become social; one emphasizes "become" because it is only after this stage that real cooperation exists between the players.

Thus, as with the MR child, the data of the older age group (MC) can be wholly encompassed within Piaget's conceptual framework. Furthermore, these findings demonstrate the reliable correlation obtained between the cognitive approach posited by Piaget and the more empirical viewpoint based on overt behavior.

One final aspect worthy of comment is the performance of the MRL group. Scoring at the moral realism level, they were utilized as a control group in the experimental design for purposes of observing directionality of behavior. Although the questionnaire indicated "immature" moral judgment, their behavior was consistent with the MC condition suggesting an ability to profit, through "apprenticeship" from the environment, enough of these rules to adapt in a manner similar to that expected of other children their own age.

In conclusion, then, the acquisition and practice of the rules of the game followed a simple and natural

sequence, the stages of which may be defined as follows:
(1) simple, individual regularity with imitation and egocentricity in the young child to (2) cooperation and interest in rules for their own sake in the older children. Thus, it would appear, at least on the speculative level, that support for Piaget's formulation concerning the stated hypothesis has been attained. However, in keeping with the behavioral approach of the present study, an appreciation of gaming behavior to confirm the foregoing assumptions would be of the utmost importance. From this point of view, then, the following findings and consequent interpretation shall be presented.

Obviously evident from Figure 4, forgiving behavior is differentially reflected by the various groups utilized in the experimental design with the MR1 group remaining relatively insensitive. The question of why this should occur will be subsumed under the basic concepts previously utilized. It is in this respect, then, that the following formulation will be attempted and, taking things broadly, the obtained results do nevertheless seem to converge. They appear to point to the existence of a sort of law of evolution in the moral development of the child. It would seem that one must distinguish between two types of reaction, one founded on the notion of expiation and the other on reciprocity. Although representatives of both

types are to be found at all ages, it would seem, nevertheless, that the second tended to predominate for the MC group and vice versa for the MR condition. The use of punishments is the first thing that brings this out. The MR children preferred to continually utilize the competitive response while remaining insensitive to the other's choice in such a way as to emphasize the necessity of the punishment itself; this occurred in the competitive pretraining group rather than when playing against a cooperative other. The older children (MC) are more likely to reciprocate which simply serves to make the transgressor feel that the bond of solidarity has been broken and that things must be put right again. This can be confirmed by the fact that they persisted in attempting to elicit cooperation in face of a very competitive strategy. It is also brought out by their reactions when questioned on the subject of relapses in Piaget's moral development questionnaire. The MR group thought that a well-punished child could not repeat its offence because it had realized the external and coercive authority of the rule in question whereas MC children hold that a child to whom (even without punishment) the consequences of his actions have been thoroughly explained is less likely to begin again than if he had been punished and nothing more. The same thing finally, would seem to be confirmed by the questionnaire on the utility and

soundness of punishment in general: the MR children introduced an expiatory element into all of their answers whereas the MC group was content to justify punishments by their preventive value. On this point, indeed, the older children take up an attitude that definitely contradicts that which they had been observed to hold in the earlier stage.

If one admits this kinship between the two types of reaction relating to punishment and the two moralities distinguished up to the present, how, then, can the performance of the MR1 group be accounted in the aforementioned rationale? This, in fact, would seem to pose a problem. In the first instance, the overall analysis indicates no significant difference between MR1 and MC groups in that they reacted to the strategies in similar manners. The interpretation for this finding was an ability of the MR1 group to profit from the social environment in a manner similar to other "morally mature" children their own age; that is, the MR1 children were able to interpret and consequently react to the norms in a socially acceptable manner. However, the analysis of forgiveness behavior sheds further light on this issue. Very noticeably, when faced with either pretraining condition, this group remained insensitive to the differential strategy effects. Thus, the results suggest sensitivity only to the general social motives and norms predominant in a child's social world.

However, serving in an "apprentice" capacity, this child has neither managed to codify nor interiorize them as a frame of reference; thus, these children remain relatively insensitive only to the more intricate, internalized measures. Consequently, to the extent that the moral development questionnaire scores fall short of the acceptable range and additionally, in light of the "immature" behavior shown in the gaming situation, the interpretation of lack of interiorization for this group is strongly warranted. These assumptions become more evident in the analysis of the pretraining main effect which will follow.

2. Discussion of the Main Effect: Pretraining.

It was noted in the analysis of the data that a significant pretraining main effect warranted rejection of the second null hypothesis. Although the correlation between the two stages of moral development posited in the previous discussion is yet only a crude one, broadly speaking, the relation seems less doubtful according to the behavioral data obtained in the present study. It was concluded that the collective rules was at first something external to the individual and consequently sacred to him; then, as he gradually makes it his own, it comes to be felt as the free product of mutual agreement. With regard

to practical use, it is only natural that a mystical respect for laws should reflect a rudimentary knowledge and application of their contents, while a rational and well-founded respect is accompanied by an effective application of each rule in detail. To use an apter comparison, the child plays as he reasons so that about the age of seven to eight, discussion and reflection begin to gain an increasing ascendancy over unproved affirmation and intellectual egocentrism. Not only do these children commence seeking to win, cooperate, "to fix things up", rather than play for themselves alone, but also--and this is something new and found only in the reciprocity stage--they seem to take peculiar pleasure in anticipating all possible cases and codifying them. Throughout this stage, then, the dominating interest seems to be in the rules themselves; the fact that the child enjoys complicating things at will bears witness that what he is after is rules for their own sake. Thus, any rule that the child accepts from within (that is, binding him to his equals by the bond of reciprocity) does not require external imposition to put things right again; it will be enough for the breach of the social bond incurred by the transgressor to make its effects felt. In other words, it will suffice if the principle of reciprocity be brought into play. It is also clear that the measures of this stage contain an element of incurred cost. This is not inflicted for its own sake nor is it

destined to instill respect for the law in the subject's mind. Such "suffering" as does occur (accompanied in the game by material disadvantages) is simply an inevitable result of the breach of the bond of solidarity. The essential point is to do to the aggressor something analogous to what he has done himself so that he should realize the results of his actions.

Support for the previous statements comes from the behavioral data of the pretraining main effect indicating that when faced with a cooperative strategy, the individual reciprocated this choice in kind whereas those exposed to a competitive person reacted in favor of retaliation. The preceding discussion would lead one to expect this for the MC group in the reciprocity stage; on the other hand, since the PxL interaction fell short of the acceptable level, the assumption seems paradoxical in that all groups responded in a similar manner. Thus, a conclusion that either the foregoing interpretation holds for both stages or that different principles exert differential effects leading to similar behavioral outcomes, is warranted. Preference for the latter hypothesis could be confirmed on the basis of the moral judgment questionnaire. Very briefly, there are two types of reaction to be found with regard to the punishment items. Some think that it is just and necessary; the sterner, the better and it is efficacious in the sense

that the child who has been duly chastized will, in the future, do his duty.

Others do not regard expiation as a moral necessity; among possible punishments which are just are those which entail putting things right, a restoration of the status quo ante, or which make the guilty one endure the consequences of his deed; or again, those which consist in a purely reciprocal treatment. Indeed, apart from such non-expiatory penalties, punishment as such is regarded as useless with reproach and explanation being deemed more profitable than chastisement. On the average, this second mode of reaction is found more frequently among the older children, while the first is more often found among the little ones.

Thus, it appears that the punishments just described can be classified according to two distinct stages, the common core of which stems from the previous discussion. In the case of the first, expiatory punishment seems to go hand-in-hand with moral constraint and the rules of authority. For example, take any given rule imposed upon the individual from without and suppose him to have transgressed this rule; independent of the indignation and anger that occurs in the young child, the only way of putting things right is to bring the individual back to his duty by means of a sufficiently powerful method of coercion and to emphasize his guilt to him by means of a painful penalty.

Thus, expiatory punishment has an arbitrary character in the sense that there is no relation between the content of the guilty act and the nature of the punishment.

In contrast to this type of reaction, punishment by reciprocity is "motivated"; misdeed and punishment are related both in content and nature, such that of the various kinds of misdeeds possible, a number of different varieties can be distinguished which are more or less suitable and just according to the nature of the reprehensible act.

The general meaning of these assumptions, then, is not hard to perceive. In young children's eyes, punishment consists, as a matter of course, in inflicting upon the guilty a pain that will smart enough to make them realize the gravity of their misdeed. Naturally, the fairest punishment will be the most severe. It is quite clear that none of these children mean punishment to mark a break in the bond of solidarity nor to drive home the need of reciprocity.

To sum up, the assumptions on the pretraining main effect mentioned previously necessarily require a postulation of either the same underlying process for the similar behavior among the groups or different factors involved revealing identical behavioral outcomes. On the basis of the questionnaire, support at least on the speculative level favoured the latter hypothesis.

From the behavioral point of view, the required PxL interaction of the total response data fell short of the acceptance level; however, other overt data of the present study lend support to the statements already posited. Strong evidence in support of this contention comes from the single statistically significant finding in the analysis of the forgiveness measure; that is, the PxL interaction, which was previously interpreted, was grouped along with directly relevant findings obtained from the overall pretraining main effect. Additionally, examination of the repentance measure sheds further light on this issue indicating not only that a competitive strategy produced a similar reciprocation but it also established a reluctance on the part of the player to repent and return to a cooperative state. Once again, the dual motives of the two levels of moral development (MR and MC) previously posited are clearly demonstrated; that is, when exposed to a competitive strategy, the MR group responded in a similar manner. In this instance, the motive was to punish the opponent for utilizing his competitive response. On the other hand, the MC group performed the same choice but for very different reasons. Based on the previous speculation, it would be expected that the MC group would be more repentant; that is, they would use the competitive response only to make the transgressor aware of his act and, having communicated this intention, would return to a state much more

beneficial to both. However, in view of the highly competitive strategy (only 20% cooperation), it is clear that the MC player had to point out the other's transgression many times during the sequence of trials and would thereby wait for communication via the game that the other had "learned his lesson". Consequently, this could account for the low repentance score of this group; that it differed in motive from the MR level can be shown in view of the forgiveness measure. It is obvious from the data that the MC group was more forgiving even in light of such a competitive other revealing the yearning to return to a more conducive aspect of mutual cooperation, yet, at the same time, reluctant to be "suckered". Their behavior demonstrated a bargaining attitude, of letting "by-gones be by-gones" and willingness to start over again, but, at the same time, indicating to the other that he would not tolerate being either exploited or suckered into the other's demands. On the other hand, the finding of lowered repentance and forgiveness on the part of the MR group suggests the need to punish the other player for having committed such an action without regard for "putting things right again". Thus, the behavioral data is in agreement with the questionnaire results revealing substantial evidence to verify the previous speculations. These results are in contradistinction to the groups receiving a cooperative orientation; they were more willing

to reciprocate the other's choice and did not hesitate in repenting from their infrequent competitive gestures.

Before drawing any general conclusions from the facts set out above, it must be acknowledged that many of the main effects previously established and discussed in the present study have been influenced by differential sex effects thereby qualifying many of the statements formerly mentioned. Thus, it will be useful to see whether the game played by boys yields the same motives as those for girls; it is from this standpoint that attention to the next topic will be focused.

3. Discussion of the Main Effect: Sex.

Although not a specific hypothesis in the experimental design, it is clear that there are very strong sex effects exerting considerable influence on gaming behavior. The present challenge thus borders on resolving these apparent incongruities and whether, in the process, male-female differences can enhance our understanding of moral development. It is interesting to note that, consistent with the present behavioral findings, in his analysis, Piaget did not succeed in finding a single collective game played by girls in which there were as many rules and, above all, as fine and consistent an organization and codification as in games boys play. The most superficial

observation of the present data would suggest as well that the legal sense is far less developed in girls than boys. Piaget found that for girls, each game in itself is very simple and never presents the codification and complicated rules of boys' games. Moreover, the few girls who took any interest in them seemed more concerned with achieving dexterity than with the legal structure of this social situation. In this line of thinking, then, the next point to settle is what the feelings are which girls entertain towards rules making their behavior so significantly different from that of boys. Is it to be found that girls, like boys, gradually subordinate rules to mutual agreement and abandon the absolutely binding element in tradition?

The facts, as gleaned from the behavioral findings, point to a difference from that observed in boys. Where the analogy is complete is that girls also begin by regarding the law as untouchable and innovations as illegitimate and admit that later on rules become endowed with the force of the law insofar as they are ratified by the collective will. This early tolerance is clearly connected with the somewhat loosely knit character of their games showing that girls of this stage, while perhaps not quite so keen on conformity as boys, show a sufficient feeling for tradition to ensure respect for rules.

At a later period in development, the girls questioned by Piaget changed their attitude and declared the new rules as good as the old, provided it is practical and, above all, provided it rallies all the votes. It is on this point that the girls, more tolerant and more easily reconciled to innovations, diverge and appear to be different from boys.

In a review of the literature on sex differences observed in mixed-motive situations (Terhune, 1970),³ females were generally described as being less competitive in games where there is no interpersonal challenge and where strategic coping is not required. As a matter of fact, they prefer straightforward accommodative solutions in conflict of interest problems and, on these occasions, generally seek to compromise and avoid competition. Although these findings are based on the adult female (usually of college or university age), the results do, nevertheless, approximate the game findings of the present study. These girls demonstrated more generosity and willingness to make greater concessions than boys. These assumptions seem to be borne out in view of the stochastic trusting measures. The PxS interaction indicates that females tended to become more trusting under the competitive strategy hoping to elicit

³ K.W. Terhune, "The Effects of Personality in Cooperation and Conflict", in P.G. Swingle (ed.), The Structure of Conflict, New York, Academic Press, 1970.

cooperative choices with a high tolerance predominating throughout the pretraining session. Very noticeable, on the other hand, is the change in trust demonstrated by the males. Unable, as it were, to elicit cooperation and establish a set of playing rules, they became less trusting. Furthermore, the SxP interaction on the forgiveness measure indicates that when placed in a vulnerable position, as when they have been exploited, girls react with less retaliation and vindictiveness than do boys. Additionally, data from the MxS interaction of the repentance variable suggests that girls are less exploitative than boys; moreover, females are equally exploitative under both the PD and Power matrix whereas males are more exploitative under Power than when in the PD game. Thus, the data seems to point out that, in general, girls have difficulty in comprehending strategic situations, often failing to recognize the "optimal" or "rational" strategy. They fail, for example, to see that threats can be used as signals for establishing and coordinating cooperation. To reconcile these findings, a motivational explanation can be offered; due to the sex-role typing which is active during the ages of the children involved in the present study, girls could be posited to be more affiliative and dependent while boys are more dominant and aggressive. It is, indeed, very noteworthy that Piaget observed that girls tended to

withdraw from competitive situations. If this is the case, then it could be expected that they are dependent and affiliation-oriented which should lead to behavior that is acquiescing, agreeable, cooperative and obliging. Such was their behavior in the present study where cooperation could be achieved through concession and tolerance. In most gaming studies where women were found to be uncooperative, the elicitation of cooperation generally rested on the strategic coordination between the parties. Quite naturally, coordinating, directing and leading are all dominance behaviors; if, in fact, males are more dominance motivated, then they would be more likely to have the skills to "command" the game while girls would be handicapped. Unable to achieve cooperation in this instance, girls would then be inclined to accept what was "handed their way" with greater tolerance which also constitutes dependence behavior.

These reactions, characteristic of girls, are thus both like and unlike those of boys. They are similar insofar as cooperation between the players brings about the gradual diminution of rule mysticism; the rule is no longer an imperative coming from an adult and accepted without discussion; it is a means of agreement resulting from cooperation itself. But girls are less explicit about this agreement and this is the reason for suspecting them of being less concerned with legal elaborations. A rule is

good so long as the game repays to them what they anticipate. Girls are, therefore, extremely tolerant and it never occurs to them to introduce a distinction and to codify the possible cases or even the very conditions of agreement.

Finally, as a concluding remark, it is indeed noteworthy that the MR1 appears to diverge from the MR and MC female groups in the significant TSPL interaction of the repentance measure. These findings demonstrate that for the MR and MC female, neither pretraining nor matrix influence repentant behavior whereas for the MR1 group, competitive pretraining leads to a greater trend for repentance when changed from PD to Power whereas cooperative orientation leads to a change in the opposite direction. The underlying motive for the observed discrepancies remains unclear at the present time but does suggest direction for further studies in this area.

Attention will now be turned to the summary and conclusions where the most important findings will be briefly presented.

SUMMARY AND CONCLUSIONS

The review of the literature indicates that most studies on moral development take their initial and early inspiration from the work of Piaget. Consequently, following a discussion of his methods, the behavioral approach was revealed and contrasted to the present outlook on moral behavior. Anticipating the possible use of gaming techniques to obtain behavioral correlates for the cognitive measures, an introduction to these bargaining situations was described. The next chapter dealt with the sample, administration of the moral judgment questionnaire, presentation of the Prisoner's Dilemma game, analysis of the gaming behavior, statistical design and hypotheses.

Since the main concern of the present study was to investigate the relation between the cognitive measures of moral judgment and overt behavior, a comparison of the different moral development stages classified as moral realism (eight years old, MR); moral realism (twelve years old, MR1) and mutual cooperation (twelve years old, MC) was investigated. The second aim was to measure possible pretraining effects on the three levels of moral development. Finally, an attempt was made to observe the responsiveness of the various groups utilized in the design to the stochastic measures of trust, repentance and forgiveness.

The first null hypothesis that there are no significant differences between the levels of moral development and number of competitive responses, was rejected. It was found that the MR group was significantly more cooperative than the MC condition whereas the MR1 category did not vary from either at the conventional level of probability. This finding was further clarified by the significant MxL interaction indicating increasing cooperation when changed from PD to Power matrix whereas the reverse is the case for both the MR1 and MC groups.

The second null hypothesis stating that there is no significant difference in competitive responses due to pre-training strategies, is rejected; that is, those subjects exposed to a cooperative strategy responded in a similar manner whereas those who were administered the competitive treatment reciprocated this choice in kind. Elucidation of the reliable SxP interaction revealed that this finding holds only for males whereas females' response choice is not differentially affected.

The third and final null hypothesis indicating no significant difference in response to the internalized stochastic variables due to pretraining strategies could not be accepted. The PxL interaction depicted differential forgiveness behavior in that the MR cooperative pretraining group is more forgiving than their corresponding control

whereas the reverse is the case for the MC conditions. Observation of the MR1 group suggested a relative insensitivity in forgiving behavior reflected by the pretraining variable.

In terms of future research, multiple suggestions can be offered as the field investigated in this dissertation is still relatively unexplored with almost unlimited scope. Consequently, a few suggestions regarded as important will be posited.

First, further research should be aimed at verification of the reliability and validity of the moral development questionnaire employed in the present study. Some of the hypothetical situations require a theoretical re-evaluation in terms of the criteria used for classification into stages. Furthermore, to date, insufficient attention has been directed to variables such as personality, sex, education level and the wording of questions. It would be elucidating, then, to explore these factors more thoroughly in an attempt to clarify findings in this area. Consequently, one could relate more specific aspects of moral judgment to overt behavior.

Second, although a promising method for research with adults, gaming techniques have very rarely been used for observing children. The findings of the present study indicate that it is highly sensitive to, and very

discriminant of, behaviors demonstrated by the child. Therefore, it is believed that similar gaming techniques can be used to study status, class and personality variables as they are related to behavior in children such as cooperation-competition, trust-distrust and other dependent measures derivable from this kind of research. In addition, the procedure could also serve as a measuring instrument to explore the developmental aspects of cognitive behaviors which have been utilized only with adults.

Third, an interesting phenomenon evolving from the thesis are the findings concerned with the older moral realism group (MR1). Since the research on moral development is scanty and has neither controlled nor systematically explored this stage, many questions regarding these behavioral observations remain unanswered. However, from the point of view of the social milieu in general, reasons for the obtained discrepancies are of the utmost importance. Thus, more research ought to be done on this finding not only from the point of view of normative descriptions but also in terms of dynamic, interactional processes as well.

Finally, it is a matter of considerable interest that consistent sex differences prevailed throughout the analyses. It would be illuminating in this context, then, to explore more systematically the ramifications of these findings since the question of sex effects is still an entirely open one.

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Burton, Roger V., "Generality of Honesty Reconsidered", Psychological Review, Vol. 70, 1963, p. 481-499.

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Kohlberg, Lawrence and Richard Kramer, "Continuities and Discontinuities in Childhood and Adult Moral Development", Human Development, Vol. 12, 1969, p. 93-120.

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The author urged caution in the types of measures used to assess conscience development in children. It was concluded that attempts to identify antecedents of conscience behavior appear fruitless since a child's behavior on a given task depends partly upon the psychological relevance of the task to him.

-----, "Behavioral and Cognitive Measures of Conscience Development", Journal of Genetic Psychology, Vol. 109, 1966, p. 147-150.

The results of the investigation supported previous findings in showing little association between a child's actual behavior and verbal expression. The findings were explained, in part, by considering motivations for behavior where, at any age level, children's behavior in a temptation situation is a function of the strength of motivation.

-----, "Identification, Conscience Development and Sex-appropriate Behavior", Human Development, Vol. 10, 1967, p. 18-21.

The findings of the study did not substantiate the notion of the general relationship between identification and conscience that is suggested by several theoretical points of view. Conclusions urged a re-assessment of measurement techniques and indicated a re-examination of the relevance of some of the antecedent variables to conscience development in children.

Piaget, Jean, The Moral Judgment of the Child, London, Routledge and Kegan Paul Ltd., 1932, ix-418 p.

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APPENDIX 1

EXAMPLE AND DESCRIPTION OF THE PRISONER'S DILEMMA AND POWER MATRICES

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A class of structured laboratory situations used for exploring bargaining behavior are the non-zero-sum games. These games are usually two-person, two-choice situations which are designed so that either person's pay-off is determined by both persons' behavior. An example is as follows:

		Person B	
		Response 1	Response 2
Person A	Response 1	3 3	4 0
	Response 2	0 4	1 1

Person A and Person B are each provided with two alternative responses--response one and response two. The rules of the game situation are quite simple. On any particular trial, each player must decide whether he wants to play response one or two. Each player makes his decision (usually without any knowledge of his partner's choice) and then the experimenter announces the results of the trial. The pay-offs for player A are shown in the lower left-hand corner of each quadrant; the pay-offs for player B are

shown in the upper right-hand corner.

There are four possible combinations of responses for the matrix shown above. If both players choose response one, each player receives three pay-off units (each unit may represent 1¢, points in a competitive game, etc.). This outcome may be called mutual cooperation, and response one as the cooperative response. If player A makes response one, and player B makes response two, A receives nothing while B receives four. It may be said, then, that person B has yielded to the temptation of trying to exploit person A's cooperative response. The same situation would be present if A took advantage of B's cooperative response, which would result in the pair's ending up in quadrant three (i.e. A_2B_1). If both players make response two, each person receives only one pay-off unit.

Responses may be defined, then, in terms of the effects they have upon both the player himself and his partner. Response one may be called the "Cooperative" and "Trusting" response; that is, the response is cooperative because it does not penalize the partner, or conversely it makes larger rewards available to the partner than response two does. Response one is also a trusting response because the person is taking some degree of risk that his cooperative response will be exploited rather than reciprocated and that he will receive no reward at all. The person is, in effect, trusting his partner not to make a number two response.

Response two may be defined as a "Non-trusting" or "Exploitive" response. If one person plays response one, the second player may take advantage of his trust and exploit him by playing response two. On the other hand, it may be called a "Non-trusting" response. If one player believes that his partner will most probably play response two, then the safest response is also response two because it minimizes the person's loss (the worst a person can do with response two is one pay-off unit, whereas with response one the person may receive zero pay-off).

The matrix shown above is symmetrical and is designed so that unilateral non-cooperation yields a larger pay-off for the non-cooperative person than does his pay-off under mutual cooperation. Mutual cooperation, in turn, yields a larger pay-off than mutual non-cooperation. It should be apparent that, in the short run, type two responses may result in a larger pay-off if the partner is initially cooperative. In the long run, however, exploitive behavior will most likely not be tolerated with the result that both players will end up with very small rewards unless they cooperate. This matrix is referred to as the "Prisoner's Dilemma" game because the dilemma refers to (a) the short-term advantage of defection (playing number two when your partner cooperates) and the long-term disadvantage of such behavior due to the increased likelihood of mutual

non-cooperation, and (b) the decision necessary on any single trial as to whether one person may trust the other not to play number two.

There are a tremendous number of variables which may be studied by using game situations such as the one described above. First of all, factors peculiar to the structure of the situation might affect cooperative behavior; for example, the degree of power one subject has relative to his partner, the amount of risk involved in making a cooperative response, the amount lost when both subjects make non-cooperative responses, the amount gained by exploitation, and so forth. These variables may be systematically studied by making systematic changes in the Prisoner's Dilemma matrix. If one were interested in the effects of differences in power of one player relative to the second player upon the number of cooperative responses made, the matrix could be varied as follows:

		B	
		1	2
A	1	3 / 3	0 / 4
	2	4 / 0	1 / 1

Equal Power
(Prisoner's Dilemma)

		B	
		1	2
A	1	3 / 3	0 / 4
	2	4 / 0	4 / 0

Player A in Power
(Guaranteed advantage
of four pay-off units
per trial)

As shown by the matrices, slight changes in the pay-offs in quadrant four can result in rather drastic changes in the power relationship between the two players. In the first matrix above, both players have equal power. If the worst comes to the worst, either player may guarantee that his partner cannot beat him. That is, by playing response two, either player may be assured that, at worst, both he and his partner will receive one pay-off unit, neither player winning more than the other. At best, with a number two response, the player may receive four units while his partner receives zero if the partner should play number one.

In the second matrix, all the power is in the hands of player A. Player A may, by playing response two, guarantee that he will win four on every trial and his partner will receive nothing. That is, if player A plays response two, player A receives four points regardless of which response player B makes. Player B is helpless in that he cannot prevent his receiving zero should player A play number two. As a matter of fact, it is somewhat disadvantageous for player A to play the cooperative response since he receives four for response two and, at best, three for response one.

APPENDIX 2

QUESTIONNAIRE UTILIZED FOR MEASURE OF
MORAL DEVELOPMENT

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QUESTIONNAIRE UTILIZED FOR MEASURE OF MORAL DEVELOPMENT

NAME _____ GRADE _____

Present Date _____ Age _____

Birth Date _____

Item 1

There was once a little boy who didn't mind his mother. He took the scissors one day when he had been told not to. While he was trying to cut up some paper, he cut his finger.

Why did his finger get cut? _____

If his mother had said it was all right if he used the scissors, would his finger have been cut just the same?

Did the scissors know that he wasn't supposed to use them? How? _____

Now tell me what you really believe. Why did the boy get a cut on his finger? _____

Item 2

A. A boy didn't know the names of the streets in a city very well. He was not quite sure where Federal Street was. One day a man stopped him and asked him where Federal Street was. The boy answered, "I'm not sure, but I think it's over there." But it wasn't there so the man completely lost his way and could not find the house he was looking for.

B. Here's another story. A boy who knew the names of the streets in a city very well was asked by a man where Federal Street was. The boy wanted to play a trick on the man and so he said to him, "It's over there," and he pointed to the wrong street. But the man didn't get lost and managed to find his way again.

Comparing this story with the first one, which one of the two boys do you think did the worst thing? _____

Why? _____

Item 3

One day Tommy and Peter were playing together. Tommy had a new electric train and Peter had a boat which could be wound up and it would sail in the water. Now Peter was a naughty little boy, and suddenly he kicked Tommy's electric train and broke it so it wouldn't run any more. What do you think should be done to the naughty Peter?

Should he be spanked? _____

Should his boat be broken? _____

Should he be made to save up his own money until he can buy Tommy another electric train? _____

Which one? _____

Why? _____

Item 4

One Saturday morning a mother asked her two little boys to help her clean the house; one of the little boys was to empty the waste paper, and the other one was to empty the tin cans. But the little boy who was supposed to empty the waste paper went out and played instead, so the mother asked the second boy to do all the work.

Did the second boy do what he was told to do? _____

Why? _____

Would it be all right if the boy who had to do all the work told his mother that he wouldn't do it? _____

Item 5

A. One day a little boy was walking home and he saw a dog that scared him. When he got home, he told his mother that he had seen a dog that was as big as an elephant.

B. One day another little boy came home from school and told his mother that the teacher had given him a good mark in school. But this wasn't true because the teacher had not given him any mark at all that day in school. The mother was very pleased and gave the little boy a reward.

Which one of the boys told the worse lie? _____

Why? _____

Item 6

A mother had two little girls, one was a good little girl and did what her mother told her, but the other one did not mind her mother. One day the mother baked a cake, and since she liked the good little girl best, she gave her the biggest piece of cake.

What do you think of that? _____

Was that all right? _____

Item 7

A. A boy was playing in his room while his father was at work. After a little while the boy thought he would like to draw. But he had no paper. So he went and took some lovely sheets of white paper from one of the drawers of his father's desk. When the father came home he found that his desk was all messed up and he found that someone had taken his paper. He went straight into the boy's room and there he saw the floor covered with the sheets of paper. They were scribbled all over with colored chalk. The father was very angry and he gave the boy a good spanking.

B. Now I shall tell you a story that is nearly the same but not quite. Another little boy was playing at home while his father was gone. He wanted to draw so he went to his father's desk and took some of his white paper. When his father came home, he found that the paper had been taken, so he went right into his son's room. There he saw the white paper on the floor, scribbled all over with colored chalk. This father was angry too, but he did not spank his son. He explained to him that it wasn't right of him. He said, "When you're not at home, when you've gone to school, if I were to go and take your toys, you wouldn't like it. So, when I'm not home, you mustn't go and take my paper either. It isn't right to do that."

Now a few days later these two boys were playing in their own yards. The boy who had been spanked was in his yard, and the one who had not been spanked was playing in his yard. And then each of them found a pencil. It was their father's pencil. Then each of them remembered that his father had said that he had lost his pencil and that it was too bad because he wouldn't be able to find it again. So then they thought that if they were to steal the pencil, no one would ever know and there would be no punishment.

Well now, one of the boys kept the pencil for himself and the other one took it back to his father. Guess which one took it back--the one who had been spanked before for taking the paper or the one who had been talked to for having taken the paper.

Why did the other one not give it back? _____

Which does the most good--a talking to or a spanking? _____

Which would you rather have? _____

Why? _____

Item 8

There was once a big boy in a school who beat up on a smaller boy. The little boy couldn't hit back because he wasn't strong enough. So one day during recess, he hid the big boy's lunch so he couldn't find it.

What do you think of that? _____

Was it fair of the little boy to hide the older boy's lunch? _____

Why? _____

What should the little boy have done instead of hiding the big boy's lunch? _____

Item 9

A father had two boys. One of them always grumbled when he was sent on errands. The other one didn't like being sent either, but he always went without saying a word. So the father always used to send the boy who didn't grumble on errands more often than the other one.

Was this fair? _____

Why? _____

Did the boy who got sent all the time go on the errands? _____

Item 10

A. A little boy named John was in his room. He was called to dinner. He went into the dining room. But behind the door there was a chair, and on the chair there was a tray with fifteen cups on it. But John didn't know the cups were behind the door. He went in, the door knocked against the tray and bang went the fifteen cups and they were all broken.

B. Once there was a little boy whose name was Henry. One day when his mother was out he tried to get some jam out of the cupboard. He climbed up onto a chair and stretched out his arm. But the jam was too high up and he couldn't reach it. But while he was trying to get it he knocked over one cup. The cup fell down and broke.

Which one of the boys do you think is the naughtiest one? _____

Why? _____

Item 11

One afternoon a mother took her children for a walk along the river. In the middle of the afternoon she gave each of them a piece of cake which she had brought along. They all began to eat their cake except the youngest one who was careless and let his piece fall into the water.

What should be done? _____

What should the mother do? _____

Should the careless child have nothing to eat or should each of the others give him a little piece of their cake? _____

Why? _____

Item 12

A. Alfred met a little friend of his who was very poor. This friend told him that he had had no dinner that day because there was nothing to eat in his house. Then Alfred went into a bakery. Since he had no money, he waited until the baker's back was turned and he took a loaf of bread. Then he ran out of the bakery and gave the loaf of bread to his friend who was hungry.

B. Frank went into a candy store. He saw some candy that he liked. He didn't have any money. So he waited until the store-owner's back was turned and he stole one piece of candy. Then he ran out of the store and ate the candy.

What do you think of what the two boys did? _____

Which little boy do you think was the naughtiest one?

Item 13

Once there were two children who were walking by a house in the country. There were some apple trees out in the yard in front of the house. No one was around so they went into the yard and stole some apples. Suddenly a man came out of the house and ran after them. He caught one of the boys but the other one got away. This one crossed a river on a rotten bridge and fell into the water.

Why do you think the boy fell into the water? _____

If he had not stolen the apples but he had crossed the river on that rotten bridge, would he have fallen into the water anyway? _____

Why? _____

Did the bridge know he had stolen the apples? _____

Now tell me, what do you really believe? Why did the boy fall into the water? _____

Item 14

Once there was a father who had two sons. One was very good and obedient. The other one was all right, but often he did things he shouldn't. One day when the father went to work, he said to the first son, "You must watch carefully to see what your brother does and when I come back I want you to tell me." Well, the father went away and the brother went and did something he shouldn't. When the father came home, he asked the first boy to tell him everything.

What ought the boy to do? _____

Why? _____

Item 15

A. There was once a little girl who was called Marie. She wanted to give her mother a nice surprise, so she cut out a red valentine for her. But she didn't know how to use the scissors and she cut a big hole in her dress.

B. Another little girl named Margaret went and took her mother's scissors one day when her mother was out. She played with the scissors for a while, but since she didn't know how to use them, she cut a little hole in her dress.

Was one or both girls naughty? _____

Which one of the little girls do you think is the naughtiest? _____

Why? _____

Item 16

A child is looking at a picture book belonging to his mother. Instead of being careful, he gets many of the pages dirty. What should the mother do to him? Should she not let him watch television that evening? Or, should she not let him look at any of her picture books anymore? Or, should she go and get one of his books dirty? Which one?

Why is that the best punishment for him? _____

Which do you think is the hardest punishment? _____

Why? _____

Item 17

There was once a family with a lot of boys. They all had holes in their shoes, so one day their father told them to take their shoes to the shoemaker to be fixed. But one of the boys had been naughty several days before so the father said to him, "You can't go to the shoemaker. You will have to wear your shoes with holes in them since you have been disobedient."

Was this right? _____

Why? _____

Item 18

A. Why is it naughty (wrong) to tell lies? _____

B. Would it be all right to tell a lie if you didn't get caught and no one punished you for it? _____

APPENDIX 3

SCORING KEY FOR MORAL DEVELOPMENT QUESTIONNAIRE

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The responses to the moral development questionnaire were scored plus or minus following Medinnus' technique.¹ A minus score indicates that the items were answered in the direction of moral realism, while a plus score denotes a "mature", relativistic response. Each item is scored as follows: a minus score was given to the response if the subjects:

- Item 1 -indicated a belief in immanent justice by stating that the boy cut his finger as a punishment for not minding his mother.
- Item 2 -chose the actions of the first boy as worse than those of the second because the man got lost, indicating a disregard for the motive underlying the act of lying and a concern only with the consequences of the lie.
- Item 3 -selected spanking as the best punishment; this, in contrast to the other two punishments, indicates a belief in the necessity of arbitrary, expiatory punishment as opposed to punishment by reciprocity.
- Item 4 -felt that the adult command was fair and if any reserve feels that he should do what the parent says just to please him.
- Item 5 -judged the first lie to be worse than the second; thus, the more unlikely the lie, the more its contents mark a departure from reality, the worse it is.
- Item 6 -concurred with the mother's actions, indicating a belief in the necessity for punishment to the exclusion of a consideration of equality between siblings.

¹ G.R. Medinnus, An Investigation of Piaget's Concept of the Development of Moral Judgment in Six to Twelve Year Olds, unpublished doctoral dissertation, University of Minnesota, 1957.

- Item 7 -declared in favor of the infliction of punishment rather than verbal explanation.
- Item 8 -condemned reciprocity between children involving taking revenge because it is forbidden by adults.
- Item 9 -felt that the adult command was fair and if any doubt, they agree with the parent to please him.
- Item 10 -judged in terms of material result rather than in terms of motive; this was indicated if the subject stated that the first boy was the naughtier one because he broke the most cups.
- Item 11 -required that the careless child be punished by nothing more to eat.
- Item 12 -judged on the basis of value of the object stolen rather than on the basis of the intention underlying the theft.
- Item 13 -indicated a belief in immanent justice by stating that the boy fell into the water because he had stolen the apples.
- Item 14 -revealed a preference for submission to adult authority as opposed to solidarity between children, indicated by the boy's refusal to tell on his brother.
- Item 15 -evaluated the stories in terms of the material damage rather than in terms of motive.
- Item 16 -chose the punishment, forbidding the child to watch television, which bears no relation to the content of the guilty act and is therefore arbitrary in nature.
- Item 17 -approved of the punishment imposed by the father; this points to a belief in the need for retribution rather than a feeling of equality between children.
- Item 18 -state that a lie is wrong because it is an object of punishment; if the punishment were removed, it would be allowed.

APPENDIX 4

INSTRUCTIONS USED IN THE GAMING SITUATION

APPENDIX 4

INSTRUCTIONS USED IN THE GAMING SITUATION

Today, I would like to see how you choose things. It is called BESIDE MINE and UNDER THE OTHER. In front of you is a card with four boxes. These four boxes have different numbers in them. Listen carefully and I'll tell you what to do. When I say "CHOOSE," I want you to pick an orange (number one choice) or a green (number two choice) ticket from the piles on the side of the card and put it on the spike in front of you. Now, at the same time, the other person will choose either X (number one choice) or Y (number two choice) as you see on the top of the card. When both of you have chosen, then you can find out how many points you receive; your points are marked in red and the other person's are in black. For example, if you choose orange and the other person chooses X, then you get three points and the other person gets three points. Remember, choose the box BESIDE YOUR'S and UNDER THE OTHER'S. If you choose green and the other person chooses X, then pick the box BESIDE YOUR'S and UNDER THE OTHER'S --you will get four points and the other person will get zero points. If you choose green and the other person chooses Y, then you get the points in the box BESIDE YOUR'S and UNDER THE OTHER'S; that is, you get one point and the

other person gets one point. If you choose orange and the other person chooses Y, then, in the box BESIDE YOUR'S and UNDER THE OTHER'S, you will get zero points and the other person will get four points.

Now, when I say "CHOOSE," I want you to pick either green or orange (whichever one you want) and hold it in your hand so that I'll know which one and then put it on the spike in front of you. When the other person has chosen, I will tell you which one has been picked. Then, I want you to find the right box and copy down your points and the other person's points in the correct columns on the paper on the desk. (A sample score sheet follows on the next page).

There is to be ABSOLUTELY NO TALKING during the task. If there are any questions, then raise your hand and I'll come to help you.

(The "other" player was a preprogrammed strategy which distributed either cooperative or competitive responses on the following trials: 3, 8, 15, 19, 24, 27, 35, 38, 43 and 47 respectively).

TABULATION SHEET FOR GAME SCORES

Name _____ Date _____
 Grade _____ Time _____
 Age _____

TALLY SHEET

MINE	OTHER	MINE	OTHER	MINE	OTHER	MINE	OTHER	MINE	OTHER
1	21	41	61	81					
2	22	42	62	82					
3	23	43	63	83					
4	24	44	64	84					
5	25	45	65	85					
6	26	46	66	86					
7	27	47	67	87					
8	28	48	68	88					
9	29	49	69	89					
10	30	50	70	90					
11	31	51	71	91					
12	32	52	72	92					
13	33	53	73	93					
14	34	54	74	94					
15	35	55	75	95					
16	36	56	76	96					
17	37	57	77	97					
18	38	58	78	98					
19	39	59	79	99					
20	40	60	80	100					

APPENDIX 5

POST-GAME QUESTIONNAIRE

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POST-GAME QUESTIONNAIRE

Name _____ Date _____

Grade _____ Time _____

Age _____

1. Who got the most points? YOU _____ OTHER _____
2. Would you like to play this again? YES _____ NO _____
3. Would you like to play with the same person? YES _____ NO _____
4. Would you get the most points next time? YES _____ NO _____
5. Would you get the most points next time if you played against the same person? YES _____ NO _____
6. Would you like to play with the other person at recess?
YES _____ NO _____
7. Did the other person play the way you wanted?
YES _____ NO _____
8. Did the other person play differently after the games were changed? YES _____ NO _____
9. Did you enjoy this? YES _____ NO _____
10. Did the other person get more points in the first game than in the second? MORE IN THE FIRST _____
MORE IN THE SECOND _____

APPENDIX 6

ABSTRACT OF

Behavioral Correlates of Moral Judgment

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Behavioral Correlates of Moral Judgment¹

The main concern of the study was to demonstrate the relationship between moral judgment and overt behavior. Moral development as outlined by Piaget's stage-specific formulation, was measured through the application of his questionnaire. The experimental groups consisted of twenty-four subjects including an equal number of boys and girls in the following developmental stages: moral realism (eight years old), moral realism (twelve years old) and mutual cooperation (twelve years old). A gaming approach was utilized to obtain the behavioral data.

The null hypotheses were: (1) there is no significant difference in competitive responses between levels of moral development; (2) there is no significant difference in competitive responses due to pretraining strategies; (3) there is no significant difference in response to the internalized, stochastic variables due to pretraining strategies. All three null hypotheses were rejected.

The results of the study were interpreted in view of Piaget's conceptualization of moral development.

¹ Henry Coady, doctoral thesis presented to the Faculty of Psychology of the University of Ottawa, Ontario, April 1970, ix-119 p.