

THE EFFECTS OF LEVEL OF MORAL REASONING, "MORAL"
INSTRUCTIONAL SET, AND CONFEDERATE "CONTRACT"
COMPLIANCE ON WOMEN'S RETALIATORY BEHAVIOR
IN A GAMING SITUATION

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CURRICULUM STUDORIUM

Donald A. Sawyer was born November 20, 1952, in Springfield, Massachusetts. He received the Bachelor of Arts Degree with Major in Psychology from Assumption College, Worcester, Massachusetts in 1974. A Masters Degree in Psychology was awarded in 1977 by the Faculty of Psychology of the University of Ottawa, Ottawa, Ontario. The title of his interim report was "Moral Judgment, Sex, and Level of Temptation as Determinants of Resistance to Temptation", and was prepared under the direction of Henry Coady, Ph.D.

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ABSTRACT

THE EFFECTS OF LEVEL OF MORAL REASONING, "MORAL" INSTRUCTIONAL SET, AND CONFEDERATE "CONTRACT" COMPLIANCE ON WOMEN'S RETALIATORY BEHAVIOR IN A GAMING SITUATION

Rest's Defining Issues Test (1974b) was utilized to assess level of moral reasoning, with 50 conventional and 50 principled level subjects randomly assigned to one of two levels of "moral" instructional set in an experimental gaming situation. The instructional sets contained essential elements of conventional and principled moral reasoning. Subjects, prior to participation in a gaming interaction, verbally "contracted" with an experimental confederate to cooperate on all trials.

The prediction that behavior would be significantly influenced by the three-way interaction of level of moral reasoning, "moral" instructional set, and level of confederate contract compliance was not supported. However, two-way interaction hypotheses were supported; in response to a contract-breaking partner, subjects at the conventional level of moral reasoning exhibited significantly more retaliatory behavior than did principled level subjects. Moreover, subsequent to a return to "contract" behavior by the confederate, conventional

level subjects continued to exhibit significantly more retaliatory behavior than did principled level subjects. Findings were interpreted as providing evidence of the linkage between level of moral reasoning and actual behavior in a situation presenting a moral dilemma. Furthermore, results from self-report questionnaires revealed differences between conventional and principled level subjects with respect to 1) negative self-reported mood, 2) the importance of earning the most points in the gaming interaction, 3) the expressed desire to subtract points from the "contract" breaking confederate, and 4) the commitment to continued cooperation in the gaming interaction. Self-report results were interpreted as consistent with the cognitive-developmental model of moral reasoning.

INTRODUCTION

Statement of Problem

Recent research in the area of moral behavior has indicated that cognitive, affective, and situational factors are all involved in a complex process leading to behavior (Blasi, 1980, 1983; Burton, 1976; Rest, 1979a; Ward & Wilson, 1980). The general purpose of this study is to examine specified aspects of the relationship between level of moral reasoning and behavior in a situation which presents a moral dilemma. Moral judgment has been identified as a meaningful variable affecting behavior in situations with justice components and is believed to play a central role in the decision-making process leading to behavior (Blasi, 1980; Kohlberg, 1969; Kohlberg, Levine & Hower, 1983; Rest, 1979a, 1984). Numerous questions, however, must be resolved regarding the parameters of the reasoning-behavior relationship and, in particular, how moral judgment interacts with "mediating linkages" (Rest, 1979a) to direct behavior.

A number of potential factors have been identified as being involved in mediating the effects of level of moral judgment maturity on behavior (Blasi, 1980; Kohlberg, 1969; Rest, 1979a). An overview of the literature on moral reasoning's association with behavioral choice tentatively supports the notion of the presence and importance of these mediating links. In this regard, investigators have

often reported a significant relationship between level of moral reasoning and behavior, although this relationship typically has low statistical strength (e.g., Blasi, 1980; Burton, 1976).

While the hypothesized presence of additional factors presents one plausible explanation for the findings, the results to date do not strictly support the reasoning-behavior relationship suggested by cognitive-developmental theorists (Kohlberg, 1969; Kohlberg et al., 1983; Rest, 1979a). Rather, findings may reflect the operation of a more universal pattern of behavior as represented by a social exchange theory analysis (Blau, 1964; Heath, 1976; Homans, 1961, 1974; Kelly & Thibaut, 1978; Lerner, 1971, 1974; Leventhall, 1980). Social exchange theory is an approach which describes the reasons, rules, and processes that underlie behavior in interactive relationships in which individuals exchange any valued resource. This theoretical approach gives prominence to the role of fairness and equity in relationships. Therefore, the present investigation will combine cognitive moral development and social exchange theories as they offer distinctive predictions and theoretical explanations for behavior in a specific context.

What has been described as the embedded nature of moral reasoning in behavioral choice will also be investigated by addressing one of the proposed mediating links between thought and action. It has been suggested (Rest,

1979a) that the limited relationship between moral reasoning and behavior is due, in part, to individual differences in sensitivity to moral-justice issues which often underlie a situation. Varied ability for recognition of moral justice issues results in the probability that moral reasoning level will not affect behavior. Indeed, Gorsuch and Ortberg (1983) found that in situations perceived as "moral", assessed moral obligation was more highly correlated with expressed behavioral intention than were attitudes or social norms in the context of a Fishbein-Ajzen (Ajzen & Fishbein, 1969, 1980) model. They demonstrated that when hypothetical situations were cued as morally relevant, subjects reported themselves as behaving in a manner more congruent with their self-expressed moral obligation.

Cognitive prompting, or the providing of cues, can enhance an individual's awareness of specific aspects in many situations (e.g., Druckman, 1971; LaRue & Olejnik, 1980). This approach has been utilized extensively in research paradigms employing experimental games such as the prisoner's dilemma or other mixed-motive games. In these cases, prompts or cues created by the utilization of specific instructional sets have had a demonstrated impact on how participants define the social and situational parameters of the interaction or game played (Barnett, Matthews & Corbine, 1979; Deutsch, 1960, 1973; Druckman, 1971). Furthermore, cognitive prompting for

formal operational thought has been shown to enhance moral reasoning on a written task (LaRue & Olejnik, 1980).

In the present investigation, the prompting technique will be used to sensitize participants to relevant moral or justice related aspects of the gaming situation. Rather than being designed to promote a specific behavior, these instructional sets will represent the transformation of stage-specific cognitive-developmental notions of fairness and justice into a task relevant format. To this end, the distinctive and essential characteristics of conventional and principled moral development (Haan, 1977; Kohlberg, 1969; Rest, 1979a) will be employed to formulate the situationally relevant instructions presented to subjects prior to their participation in a socio-moral conflict-producing game. These "moral" instructional sets represent the introduction of a theoretically relevant cognitive cue in a salient manner into the gaming situation.

It is hypothesized that "moral" instructional set will serve to cue subjects to the moral dilemma contained in the gaming situation and to promote the organization of behavior which is consistent with the individual's self-reported level of moral reasoning. The same level "moral" instructional set should augment the natural predisposition to behavior which is consistent with the self-reported level of moral judgment maturity. If the notion of cognitive-developmental moral stage possesses appropriate construct

and predictive validity, then, when augmented through the same level "moral" instructional set in the gaming situation, there should result a stronger behavioral manifestation consistent with that stage. If this finding does not occur, one could possibly conclude that self-reported level of moral judgment maturity has little compelling measurable influence on behavior in a relevant situation. The implication would be that the cognitive-developmental model of moral judgment maturity (Haan, 1977; Kohlberg, 1969, 1979; Rest, 1974a, 1979a) shows limited evidence of convergent validity in a situation where such evidence would be expected.

Of related interest in this study is the subjective experience of both conventional and principled level participants as each faces a practical moral dilemma. These stage-specific differences in subjective experience may exist in relationship to the distinct, stage-specific, cognitive understanding of the moral dilemma. The subjective experience of conventional and principled level participants in 1) commitment to continued cooperation, 2) self-reported negative mood, 3) self-reported level of frustration experienced, 4) importance of earning the most points, 5) negative confederate-related affect, and 6) desire to subtract points from the contract-breaking partner will be examined. Investigation of these areas shall be carried out through self-report measures occurring during the course of the gaming interaction and at its conclusion.

An experimental game will be employed to test the prediction that participants at a specific level of moral reasoning will behave in a manner consistent with their self-reported level of moral judgment maturity. Experimental games involve elements of interpersonal and intrapersonal conflict (e.g., Davis, 1970; Rapoport, 1970; 1973; Rapoport & Chammah, 1965) and have demonstrated success in exploring behaviors such as competition and cooperation (e.g., Axelrod, 1984; Derlega & Grzelak, 1982; Greenberg & Cohen, 1982; Marwell & Schmitt, 1975) and in assessing the relationship between moral reasoning and behavior (Jacobs, 1975).

In the present study, the subject and partner (the experimental confederate) will establish a verbal "contract" to cooperate by following a mutually beneficial strategy on all trials during the three-phase game. Although each participant has given her word, the confederate will, after the initial period or baseline phase of total cooperation, break the contract in the second or provocation phase and a clear moral dilemma will exist. Thus, the dilemma for the subject is whether to maintain the agreement to cooperate or to break the contract and assume a retaliatory response style for the purpose of either assuring personal gain, as a monetary reward is a part of the game structure, or punishing the confederate for deviating from the pre-game agreement. In the present investigation, the task

and reward structure is sufficiently compelling and relevant for the participants so that both social exchange and moral reasoning considerations can combine to direct behavior.

An advantage to the present investigation is that the subject must repeatedly resolve the dilemma. In each instance, she must translate decisions into behavior. After the subject chooses a set of behavioral responses in the provocation phase, the confederate will resume a totally cooperative task approach during the third or restoration phase. During this third phase, the subject, knowing that the contract-breaking confederate has returned to the pre-game cooperative agreement, must choose a behavioral response. By measuring behavior over the duration of the game, a record of the subject's choice tendency is obtained.

Theoretical Overview

Empirically confirmed cognitive-developmental characteristics of moral reasoning at the conventional and principled levels provide the major hypotheses and rationales for the current investigation. Specifically, participants who are predicted more to maintain the verbal contract to cooperate subsequent to provocation will tend to be those at the principled level of moral reasoning. This is predicted even though exchange theory would postulate that all subjects would retaliate following provocation. Theo-

retically, this tendency toward cooperation is because maintenance of the contract becomes more a personal responsibility for principled participants, regardless of the behavior of their game partner (Kohlberg, 1969; Rest, 1979a).

In addition to the importance of a personal commitment to cooperate, the social "contract" provides a plan of action which minimizes inequities and maximizes cooperation, the most valued type of interaction (Haan, 1977; Kohlberg, 1969; Rest, 1979a). The added cue of a principled "moral" instructional set will make salient for principled level participants the importance of their commitment to the social contract. It will also promote the realization that cooperation and not personal gain represents the highest value in the gaming situation. The tailor-made and pre-tested principled "moral" instructional set both presents and augments the very components of the cognitive moral schema which by definition have been used to classify participants as at the principled level of moral judgment maturity. Literature to be reviewed supporting this position includes investigations by Andreason (1976), Froming (1977), Haan (1977), Haan, Smith & Block (1968), Horan & Kaplan (1983), Jacobs (1975), Julius (1978), LaRue & Olejnik (1980), Nassi, Abramowitz & Youmans (1983), and Rest (1979a).

In contrast, the preceding is not the predicted outcome for principled level participants if the gaming inter-

action is viewed from the perspective of social exchange theory (Blau, 1964; Homans, 1961, 1974; Kelly & Thibaut, 1978). Utilizing that research base and its notions of the aggression-approval proposition, principle of distributive justice, and comparison level, equivalent retaliatory behavior would be anticipated upon contract violation for all participants. In response to the reduced benefits associated with the interaction, retaliatory behavior should significantly increase for all participants, irrespective of the level of moral judgment maturity. The internal tension or dissatisfaction associated with the reduction in anticipated and agreed upon benefits will produce a diverse modification in level of cooperative responding. Only through a significant increase in subject retaliation can the costs and benefits associated with the continued gaming interaction be equalized and equity re-established. Social exchange theory suggests people should incur minimal costs to acquire maximal gains or at least to maintain the magnitude of their expected costs at less than the magnitude of their expected gain (Blau, 1964; Homans, 1974; Thibaut & Kelly, 1959).

When the contract is broken in the provocation phase, predictions from the two theoretical models agree for conventional level participants as both predict increased retaliation. The cognitive-developmental model would predict increased retaliation because the conventional level

individuals are most externally influenced by the demands of the particular situation (Kohlberg, 1969, 1979), in this case, a violated contract. Conventional level individuals do not have as highly developed internal frames of self-reference, but are more dependent upon external direction, less autonomous, and more likely to seek cues in the social situation which indicate an appropriate course of action. Thus, when the contract is broken, retaliatory behavior is more predictable in comparison to principled level individuals. Significant and readily available cues in the gaming interaction such as the monetary reward structure and the other's uncooperative behavior should clearly indicate that retaliation is an appropriate and justifiable alternative behavior. This behavior is hypothesized to be most likely exhibited when participants receive a tailor-made conventional "moral" instructional set which embodies the essence of conventional moral reasoning. Empirical evidence will be offered to support both the validity of this analysis (D'Augelli & Cross, 1975; Haan et al., 1968; Horan & Kaplan, 1983; McNamee, 1972; Nassi et al., 1983; Rest, 1979a) and its complementarity with the explanation offered by social exchange theory.

Another issue investigated in this dissertation is the relationship between predicted and actual behavioral outcome at the conventional and principled levels if,

after a period of contract-breaking behavior, the confederate resumes responding according to the pre-game cooperative agreement in the third or restoration phase of the experimental game. The literature (Haan 1977; Jacobs, 1975; Kohlberg, 1969; Rest, 1979a) suggests that principled level individuals as compared to conventional participants maintain the cooperative agreement as more a matter of personal responsibility, as these individuals place less emphasis on the behavior of the confederate. There is evidence that principled level participants, as opposed to conventional level participants, allow their personal justice orientation to modify their overall judgment and response tendencies. They should be more willing to allow exceptions and violations of the contract, for this is not as threatening an experience for them as it is for conventional level participants. This tends to promote more flexibility concerning normative expectations (Haan, 1977; Jacobs, 1975; Kohlberg, 1979; Kohlberg et al., 1983).

Accordingly, once the confederate returns to a stable cooperative response pattern, principled level participants should experience less difficulty in returning to and/or continuing cooperative behavior. There should be less delay in returning to pre-violation levels of cooperative behavior and/or less overall retaliatory behavior among participants at the principled level of moral judgment maturity because, again, they place less influence on

external parameters than do conventional level participants.

In contrast to principled level participants, conventional level subjects will continue to exhibit significantly greater levels of retaliatory responding and demonstrate a slower rate of return to pre-violation levels of cooperative behavior. This occurs because conventional level participants tend more often to employ external rules and social conventions when deciding issues of fairness (Kohlberg, 1969; Rest, 1979a). A logical analysis of the conventional stage reveals a rigidity in response to written moral dilemmas. These individuals attempt to maintain the norm and show a reluctance to allow for personal consideration of circumstances in a cooperative justice situation (D'Augelli & Cross, 1975; Haan, 1977; Kohlberg, 1976; Rest, 1974a, 1979a).

Furthermore, in their responses to written moral dilemmas, conventional level individuals often expressed concern about the possible detrimental effects of even a single deviation. Once a contract has been broken, the commitment cannot be easily re-established. It has also been intimated, but not directly investigated (Jacobs, 1975; Rest, 1979a), that conventional level individuals, as compared to principled level individuals, have a greater need to punish a deviation when it threatens specific social conventions since the former would have less highly developed internal frames of self-reference and would be

more threatened by a violation of contract and by the increase of costs relative to rewards.

However, as mentioned earlier, viewed from a social exchange perspective, continued retaliatory responding would be expected for all subjects, irrespective of level of moral judgment maturity. This is due to the fact that equity principles are posited as governing behavior, regardless of the particular sets of moral judgment cognitions that individuals hold (Blau, 1964; Homans, 1961, 1974; Kelly & Thibaut, 1978; Lerner, 1971, 1974). Based on the related notions of equity, comparison level, and the rationality proposition, it would be predicted that the principled level individual would continue to retaliate and/or show a slower rate of return to pre-violation levels of cooperative behavior, and this response would be no different than that of conventional level participants. Since rewards were unilaterally decreased earlier by the confederate, social exchange theory would postulate that costs should be diminished correspondingly. The cumulative nature of the interactions is such that progressively lower rewards have been offered and greater costs have been incurred. A similar continuation in retaliatory responding would occur for both conventional and principled level participants in order to equalize cumulative costs with benefits. A return to full cooperative responding by all subjects could only be re-established over a more

extended period of time.

Summary

In conclusion, the present investigation will address the issue of behavioral response in a moral justice situation. The methodology employed will enable one to ascertain whether predicted behavioral response will be more consistent with a straight social exchange paradigm, or with an interactive cognitive-developmental and social exchange explanation. The latter reflects the operation of an individual's self-reported cognitions in the area of moral judgment maturity as well as their response in the face of sudden inequity or unilaterally diminished rewards and increased costs. In this regard, the basic notion of divergent behavior consistent with distinctive cognitions is relevant, as the individuals at the conventional and principled levels of moral judgment maturity have distinct and divergent cognitive approaches to moral situations. Whereas principled level individuals should more often use internal principles to guide behavior, conventional level individuals should more often base behavior on external parameters. The inclusion of "moral" instructional set in this investigation may serve to strengthen anticipated differences between the two groups, thereby allowing comment on "mediating linkages" (Rest, 1979a) which have been suggested to be of importance in understanding the relationship between moral reasoning and behavior.

CHAPTER I

REVIEW OF LITERATURE

Overview

Selected literature relevant to this investigation is now presented. Examined is the cognitive-developmental approach to moral reasoning with an in-depth review of Rest's cooperative justice theory. Also presented is literature pertinent to social exchange theory and to retaliatory and cooperative behavior in experimental games.

Thus, the complex link between reasoning and behavior is examined through two divergent theoretical conceptualizations as well as an empirical investigation of cognitive-developmental moral reasoning and social exchange theory. This information is applied in the design of the gaming situation employed and in the formulation of the rationales for the investigated hypotheses.

Historical Perspective

The study of moral development from a cognitive-developmental perspective originated with Jean Piaget (1932). This approach stresses the importance of higher mental processes (reasoning, judgment, and evaluation) which can increasingly accommodate and adaptively resolve more complex and intricate moral problems. Piaget (1932)

demonstrated the process wherein the child passes through two stages during his moral development. Initially, in the stage of moral realism, judgments are based on external authority and fear of punishment. In the later stage of mutual reciprocity, judgments are made with the good of the other in mind.

Refinements and elaborations of Piaget's initial ideas have been made by numerous theorists. Two recent investigators who have achieved prominence through their extensive contributions to cognitive moral development are Lawrence Kohlberg and James Rest.

Kohlberg's Stage Model of Moral Development

Kohlberg (1958, 1969, 1976, 1979, 1983) maintains that moral development is a life-long process. Kohlberg, like Piaget, views moral development from a structural point of view and proposes that the organization of the child's thinking is qualitatively different from that of the adult. Also, Kohlberg insists that the study of moral development must include a sequential stage analysis of true developmental changes. Developmental advances from the structural perspective are only those changes which are demonstrated to be qualitatively new organizational patterns and which produce increased competence in dealing with moral problem solving.

Furthermore, Kohlberg (1969, 1976, 1983) ascribes

additional characteristics to the various stages of development. Each response pattern represents a structured whole. A given stage response is not determined by knowledge or task familiarity but rather represents an underlying thought organization. These developmentally different structures form an invariant sequence in ontogenic development. Although Kohlberg recognizes that social and/or cultural factors may accelerate, slow, or arrest the unfolding developmental progression, they are unable to alter its sequence. Stages are hierarchically integrated, as lower stages are not eliminated and access to them remains possible due to their incorporation into the next higher level.

Kohlberg's initial research (1958) consisted of extensive interviews with seventy-two boys ranging from ten to sixteen years of age. Analyzed case by case were the responses to ten hypothetical moral dilemmas in the form of stories (Moral Maturity Scale) in which acts of obedience to laws, rules, or commands of authority conflicted with the needs or welfare of other persons. From his analysis and ongoing research, Kohlberg has delineated three major levels of moral thought: the preconventional, the conventional, and the postconventional or principled. Each level is divided into two substages. A brief outline of these stages is available in Table 1.

A review of the literature reveals that Kohlberg's

Table 1
Kohlberg's Levels and Stages of
Moral Development

Level and Stage	Definition
Preconventional Level	Moral value resides in external happenings, bad acts rather than in people.
1. Pre-Moral	Characterized by avoidance of punishment and unquestioning deference to power. Assessment of good and bad solely in terms of the physical consequences of action regardless of the human significance.
2. Instrumental	Exemplified by a hedonistic perspective, with right action defined as that which is need satisfying. Elements of fairness are present in a pragmatic way. Formal moral commitment is absent.
Conventional Level	Moral value resides in performing a good role, maintaining the conventional order and fulfilling others' expectations.
3. Interpersonal Concordance	The "good boy" orientation with good defined as that which gains the approval of significant others. Conformity to stereotypic ideas of what is "good" while intentionality assumes significance in reasoning. The individual develops a concept of a morally good person as one who possesses virtues.
4. Law & Order	Right defined in terms of duty, respect for authority, maintenance of the social order for its own sake, and abidance by fixed rules. This individual takes the perspective of others who have legitimate rights in a situation. This level has developed from previous conformity to external expectations of authority.
Principled Level	Moral value resides in adherence to shared or shareable standards, rights or duties.
5. Social Contract	Characterized by an emphasis upon procedural rules. Right action defined in terms of rights and standards which have been critically examined and agreed upon. There is a clear awareness of the relativism of personal values and opinions and a corresponding emphasis upon procedural rules for reaching consensus. Duty and obligation are defined in terms of contract rather than in terms of the needs of individuals or the self.
6. Universal Principles	Use of self-chosen ethical principles based on logical comprehensiveness, universality and consistency in making moral decisions. These principles are abstract guides for decision-making and denote the universal principles of justice, reciprocity and equality of rights. Conduct is controlled by an internalized ideal which exerts pressure toward action that is judged right and just, regardless of the reactions of others. Though aware of the importance of law and contract, moral conflict is typically resolved by broader moral principles.

Note: Adapted from Kohlberg (1969).

stage theory has received broad empirical support. In particular, the cognitive aspects of moral development have been shown to form a developmental progression being invariant, sequential, and universal (Colby & Kohlberg, 1984; Holstein, 1976; Kohlberg, 1958, 1979; Kohlberg et al., 1983; Kramer, 1968; Turiel, 1966, 1977; White, 1975; White, Bushnell & Regnmer, 1978).

However, while support for Kohlberg's theoretical approach has been found, concerns with his methodology for assessing moral reasoning have been noted (Kurtines & Greif, 1974; Mischel & Mischel, 1976; Rest, 1974b, 1976a, 1979a). Even subsequent to numerous revisions (Kohlberg, 1976, 1979; Kohlberg et al., 1976, 1978, 1983), valid questions remain regarding the reliability and validity of Kohlberg's scoring system (Rest, 1974a, 1979a).

More recently, several theorists using Kohlberg's work as a basis, have directed cognitive-developmental investigations into related areas (Damon, 1977; Rest, 1979a; Selman, 1976; Shantz, 1975; Turiel, 1978). One of these initiatives, the work of James Rest, is central to the development of the present research.

Rest's Cooperative Justice Approach to Moral Development

Rest's (1974b, 1979a) model of moral development was inspired by Kohlberg's six stage scheme (1958, 1969) and underwent reformulation based on John Rawl's (1971) theory

of social justice and Rest's own extensive research in the field. Using evidence culled from his research on the Defining Issues Test (DIT), a moral judgment assessment device, Rest has offered new interpretations of two theoretical aspects of the cognitive-developmental approach, i.e., the stage concept and the relationship of moral judgment to behavior. Furthermore, Rest has reformulated Kohlberg's stages in terms of cooperation and interpersonal perspective, stating that:

...the development of moral thinking is in large part dependent on successively emerging concepts of how people form mutual expectations about the coordination of their behavior... (Rest, 1974a, p. 5).

Rest calls his approach to cognitive-developmental moral reasoning the cooperative justice approach.

Rest maintains all individuals are born into an association of people and that people band together for mutual advantage. Social cooperation improves the quality of life and, as a result, participants in the social group are motivated to maintain the collaboration. There are also, however, sources of potential conflict of interests since individuals are not indifferent to the distribution of benefits. While there are natural tendencies to cooperate, there additionally are competing tendencies to preserve and protect individual interests.

According to Rest (1979a, 1984), the crucial function of moral reasoning is to establish how the benefits and

burdens of social collaboration are to be distributed. In his description of each stage, Rest includes the two factors he believes underlie moral development. The first is the concept of how expectations about each other's actions are coordinated, known, and shared. The second concept deals with how the balance of personal interests in a cooperating group is achieved. These two factors are essential and give unity to the person's spoken or interpersonal moral judgment. With each new stage, changes in these two factors are responsible for the changes in the manner in which individuals understand concepts of personal/individual rights and responsibilities.

For Rest (1979a, 1984), the development of moral reasoning is analogous to advancement in determining a more equitable manner for the distribution of benefits and burdens of social or interpersonal cooperation. Of pivotal importance in this process are the individual's changing cognitions regarding the way mutual expectations among cooperating individuals are to be established and how interests are to be regulated. Table 2 provides an overview of the six stages on the two major developmental dimensions along with each stage's central concept for establishing moral rights and responsibilities. Column 1 indicates stage changes by providing examples as to how rules are known and shared. Column 2 reveals how the individuals at the various levels achieve a balance of interests, i.e.,

Table 2
Rest's Cooperative Justice Stages

Stage	Coordination of expectations about actions (how rules are known and shared)	Schemes of balancing interests (how equilibrium is achieved)	Central concept for determining moral rights and responsibilities
Stage 1	The caretaker makes known certain demands on the child's behavior.	The child does not share in making rules, but understands that obedience will bring freedom from punishment.	The morality of obedience: "Do what you're told."
Stage 2	Although each person is understood to have his own interests, an exchange of favors might be mutually decided.	If each party sees something to gain in an exchange, then both want to reciprocate.	The morality of instrumental egoism and simple exchange: "Let's make a deal."
Stage 3	Through reciprocal role taking, individuals attain a mutual understanding about each other and the on-going pattern of their interactions.	Friendship relationships establish a stabilized and enduring scheme of cooperation. Each party anticipates the feelings, needs, and wants of the other and acts in the other's welfare.	The morality of interpersonal concordance: "Be considerate, nice, and kind, and you'll get along with people."
Stage 4	All members of society know what is expected of them through public institutionalized law.	Unless a society-wide system of cooperation is established and stabilized, no individual can really make plans. Each person should follow the law and do his particular job, anticipating that other people will also fulfill their responsibilities.	The morality of law and duty to the social order: "Everyone in society is obligated and protected by the law."
Stage 5	Formal procedures are institutionalized for making laws, which one anticipates rational people will accept.	Law-making procedures are devised so that they reflect the general will of the people, at the same time insuring certain basic rights to all. With each person having a say in the decision process, each will see that his interests are maximized while at the same time having a basis for making claims on other people.	The morality of societal consensus: "You are obligated by whatever arrangements are agreed to by due process procedures."
Stage 6	The logical requirements of non-arbitrary cooperation among rational, equal, and impartial people are taken as ideal criteria for social organization which one anticipates rational people would accept.	A scheme of cooperation that negates or neutralizes all arbitrary distribution of rights and responsibilities is the most equilibrated, for such system is maximizing the simultaneous benefit to each member so that any deviation from these rules would advantage some members at the expense of others.	The morality of non-arbitrary social cooperation: "How rational and impartial people would organize cooperation is moral."

(Rest, 1979a, pp. 22-23).

effect cooperation. Column 3 presents the central concepts employed in determining rights and responsibilities for each of the six stages.

Reviewed in the next section are research findings regarding the validity and distinctiveness of Rest's cognitive-developmental approach to moral development as assessed by the Defining Issues Test (DIT).

Research on the Cooperative Justice Approach

A variety of cross-sectional and longitudinal investigations will now be examined. These range from investigations of age differences as revealed by the DIT (Rest, Cooper, Coder, Masanz & Anderson, 1974), findings associated with education and experience (Coder, 1975; Dortzbach, 1975; G. Rest, 1977), and the relationship of cognitive-developmental moral reasoning to intelligence, values, and content preference in moral dilemmas (Coder, 1975; Cooper, 1972; Panowitsch, 1975; Rest, 1979a).

Crucial to a cognitive-developmental construct such as level of moral reasoning is clear evidence of change over time from lower to more advanced levels of cognition. A cross-sectional study by Rest et al. (1974) not only explored age differences but examined whether a group of experts in moral judgment would be differentiated from other groups by their scores on the DIT. All five groups, junior high, senior high, college, seminary, and moral

philosophy students, were arranged in an ascending order consistent with prior predictions based on age and degree of anticipated expertness in the realm of moral reasoning. As predicted, the expert group composed of doctoral students in moral philosophy scored significantly higher on the DIT than did the four other groups. This differentiation of groups, based on age and experience, has been replicated by three other investigations (Martin, Shafto & VanDenise, 1977; Rest et al., 1974 (sample 2); Yussen, 1976).

Another cross-sectional investigation of age trends in cognitive moral reasoning is contained in accumulated data presented in a technical report by Rest (1976b). Data was analyzed from numerous studies across North America, and four age groups were established according to academic placement: junior high, senior high, college, graduate. Results of the investigations revealed an extremely strong trend toward increasing competence of moral judgment with increasing age and experience ($p < .0001$). Results of these and additional studies using composite samples of enrolled and out-of-school subjects (Coder, 1975; Dortzbach, 1975; G. Rest, 1977) support the hypothesis that moral reasoning as measured by the DIT increases with age, education, and experience.

While there have been many cross-sectional studies, the number of longitudinal investigations available is

limited due to the relatively short time span since the inception of Rest's theory and methodology (Rest, 1974a, 1974b). Initial longitudinal results analyzed by Rest (1979a) indicate significant upward movement in scores on the DIT with stronger evidence of change over four years than over two years. Further support for the developmental nature of moral reasoning is drawn from related longitudinal investigations employing Kohlberg's (1958) methodology for assessing moral development (Colby & Kohlberg, 1984; Holstein, 1976; Kramer, 1968; Kuhn, 1976; Turiel, 1966, 1977; White et al., 1978).

Another aspect of concern regarding the cooperative justice approach is the question of the distinctiveness of cognitive-developmental moral reasoning when compared to intelligence and achievement test results. Numerous studies have correlated moral reasoning ability with scores from tests of intelligence and achievement. Rest (1979a, p. 148-149) reports 52 separate correlations (verbal, spatial and mechanical reasoning, abstract thinking, grades, SAT), with 82% of these falling into the .20 through .50 range. This evidence of a moderate correlation supports the belief that the relationship between moral judgment and the above mentioned cognitive process is a limited one and that moral reasoning is not equivalent to intelligence, verbal fluency, or knowledge of vocabulary. Rest further explains that moral reasoning is not simply verbal intelli-

gence, as verbal subtests do not consistently correlate more highly with DIT scores than do non-verbal subtests. These results strongly imply that, although there is a cognitive component, moral reasoning is not equivalent to general ability or verbal ability but is rather an associated process with distinctive qualities.

While the role intelligence plays in moral reasoning has been clarified, it has been suggested (Alston, 1971) that cognitive-developmental moral judgment is not true conceptual development. According to this position, moral reasoning as revealed by the DIT simply reflects age trends in preference to specific forms of thought rather than a developmental capacity to think in new ways. Relevant to this question is a study by McGeorge (1975) and a replication by Bloom (1977). In these investigations, subjects were able to significantly decrease DIT scores when instructed to do so. Subjects were unable, however, to increase their scores above their tested moral judgment level when directed to try to do so. These studies and related investigations (Rest et al., 1974; Rest, Davison & Robbins, 1978) support the notion that moral reasoning as measured by the DIT reflects a developmental trend in cognitive capacity rather than affective preference for certain forms of moral thought.

A further criticism made of the hierarchy of levels of moral development as assessed by the DIT is that it is

merely an intellectual style in presenting an argument. This style is dependent upon stage, unattached to values, and independent of commitments or attitudes (Mischel & Mischel, 1976). To investigate whether moral judgment is more than intellectual style, Cooper (1972) studied the action-choice or content preference of subjects on the six DIT dilemmas. By employing two groups of students, doctoral students in moral philosophy and in political science, Cooper established that principled level individuals tended to make similar action-choices in the six dilemmas. These choices could be generally characterized as humanitarian-liberal. Cooper also reported that action-choice was moderately correlated with moral reasoning for all subjects. Confirmation of this moderate but significant relationship between reasoning and action-choice is provided by Martin et al. (1977).

Further investigation of this issue includes studies employing the Law and Order Test (see Rest, 1979a) which is a set of fifteen value choices characterized by principled and conventional moral perspectives. It has been found that the greater complexity of principled moral thinking leads to preferences for actions in moral dilemmas which are typically in contrast to choices made by individuals at the conventional level of moral reasoning. With an increase in moral reasoning ability as measured by the DIT, action-choice response on written moral dilemmas

shifts in a moderately correlated manner (Cooper, 1972; Coder, 1975; Rest et al., 1974; Rest et al., 1978; Panowitsch, 1975). Therefore, it can be concluded that moral reasoning is not equivalent to various intellectual styles, but is moderately related to perception of appropriate action.

In summary, findings reported to this point in the review demonstrate that moral judgment as measured by the DIT is a distinctive developmental concept. As reported, there exist both qualitative differences in an individual's cognitive structure as well as clear distinctions in action-choice preferred. It is relevant, therefore, to investigate the stage specific understanding of and behavioral response to real life socio-moral conflict situations. The remaining sections of the literature review will now focus on the proposed relationship of moral reasoning to behavior as reported in previous studies and on the literature pertaining to retaliation and cooperation in experimental gaming interactions which are relevant to methodological issues in this investigation.

The Interrelationship Between Moral Reasoning, Behavior, and "Moral" Instructional Set

In this section, various studies which investigate the relationship between moral reasoning and behavior will be reported. These studies are relevant to the present investigation in two ways. First, they demonstrate in certain

instances that the moral reasoning an individual utilizes to interpret a situation has a bearing on behavior. In order to predict this relationship, a logical analysis must be completed of how the stage-specific cognitive-developmental framework interacts with the characteristics of that moral justice situation. Secondly, these relevant studies reveal that individuals who have attained the principled level of moral reasoning demonstrate an ability in some instances to respond in a manner which is less situation specific than do individuals at lower levels of moral development. Although a simple linear relationship between reasoning and behavior is not expected (Blasi, 1980, 1983; Burton, 1976; Rest, 1979a, 1984), it is important to note that few investigators have addressed additional variables which may mediate this process. In this regard, it has been suggested that variables such as ego strength (Krebs & Kohlberg, 1973), values (Damon, 1977), and initial detection of a moral dilemma (Rest, 1979a) to name a few, may be involved.

The review will now consider investigations which have explored the relationship between moral reasoning and cheating behavior, resistance to temptation, and helping behavior. Next, the association of level of moral reasoning and independence of thought, resistance to conformity, delinquency, and maladaptive aggression will be examined. Lastly, an empirical investigation of level of moral

development and behavior in the prisoner's dilemma game (Jacobs, 1975) will be recapitulated. Based upon these investigations, conclusions will be drawn regarding the relationship of moral reasoning to behavior and incorporated into the present research.

With respect to the relationship of moral maturity to cheating behavior, a moderately positive but inconsistent relationship has been found. Specifically, less cheating typically occurs as one moves from preconventional through conventional to principled moral reasoning (Harris, Mussen & Rutherford, 1976; Krebs & Kohlberg, 1973; Krebs & Rosenwald, 1977; Leming, 1978; Schwartz, Feldman, Brown & Heingartner, 1969). In a related investigation, Julius (1978) selected forty college women at each of three moral development stages, the conventional, the transitional, and principled. A socio-moral conflict in an interpersonal context was created to assess resistance to temptation and prosocial response. Julius reported that principled level subjects resisted temptation significantly more often than did conventional level participants. Similar to investigations of cheating behavior and resistance to temptation, related research exploring the correlation between moral reasoning and helping behavior (Damon, 1977; Dreman, 1976; Eisenberg, 1977; Emler & Rushton, 1974; Lazarowitz, Stephan & Friedman, 1976; Rubin & Schneider, 1973) has been successful in revealing a moderate, positive relationship between

the two.

Another variable demonstrated to have a positive relationship to moral development level is independence of thought. In this regard, a correlation between stage of moral development and socio-political activism (Haan et al., 1968; Nassi et al., 1983), flexibility and permissiveness in sexual standards (D'Augelli & Cross, 1975; Schwarz, 1975), and leadership ability (Damon, 1977) has been found. Similarly, another group of studies (Andreason, 1976; Froming, 1977; Froming & Cooper, 1976; Schwartz et al., 1969) reports a positive relationship between principled morality and resistance to conformity. Therefore, the independence of judgment verbalized by principled level subjects in moral judgment assessment was confirmed as a general characteristic of cognition in interpersonal situations. This independence was also demonstrated in a study completed by McNamee (1972). Subjects were presented with a dilemma in which they either had to follow an experimenter's direction to continue with the study or to respond to pleas for help from a person, an experimental confederate, seemingly undergoing an adverse drug reaction. Findings revealed that significantly more help was offered by principled than by conventional stage subjects. Furthermore, the nature of the aid differed as a function of stage, for principled subjects were the only ones to offer personal assistance. These findings support the position that principled level

individuals define right and wrong and choose behavior on the basis of rational consideration and not solely on external definition.

Other studies have examined the relationship between level of moral reasoning and conformity, political ideology, and delinquency. Considering conformity and level of moral judgment, Froming and Cooper (1976), cited in Rest (1979a), demonstrated the ability of principled subjects to stand alone and maintain behavioral independence. In an Asch-type situation, Froming and Cooper's results revealed a significant negative correlation between compliance/conformity scores and level of moral development. Likewise, Haan et al. (1968) reported that actual participation and justification of participation in an anti-war demonstration was significantly related to assessed level of moral development and its associated reasoning processes. A more recent investigation (Nassi et al., 1983) of this same group of now middle-age adults replicated the earlier finding of a significant relationship between level of moral judgment maturity and political ideology. One is limited in generalizing about the findings of these two studies because of the unrepresentative nature of both samples. A finding reported by McColgan (1977) is seen as consistent with results reported earlier which revealed a negative relationship between level of moral reasoning and compliance/conformity scores. McColgan (1977) matched a group of

identified pre-delinquents on fourteen dimensions with a control group and found that the pre-delinquent group scored significantly lower on the DIT. McColgan concluded that the data supported "...the suggestion that a person's tacit awareness of principled arguments has a lot to do with one's decision regarding overt action" (McColgan, 1977, p. 64).

Another relevant study, completed by Anchor and Cross (1974), utilized an experimental game to investigate the relationship of level of moral development to maladaptive aggression, which in this case was penalizing another at cost to oneself. Their findings suggest that the less developed in moral perspective, the more likely a subject was to aggress. Principled subjects were found to be more tolerant of frustration and better able to cope effectively with goal thwarting. Behavior was interpreted as consistent with the flexible and rational principles adhered to in their principled level of moral reasoning.

Lastly and of key importance to the present research is an investigation completed by Jacobs (1975). Jacobs examined the relationship between moral development and behavior by employing the prisoner's dilemma game. Subjects at the conventional and principled levels of moral reasoning were randomly assigned to one of three conditions: defect, partial defect, or control. A confederate was employed who agreed early in the game to cooperate

with the other subject throughout all trials so that both would win a modest amount of money. The confederate broke the agreement 100% of the time in the defect condition, 50% of the time in the partial defect condition, while, in the control condition, the agreement was maintained. The dependent variable measure was the number of times subjects chose a cooperative response. Experimental findings demonstrated that in the defect condition, although all subjects showed competitive responses, principled subjects kept their promise significantly more often than did conventional level subjects ($p < .0001$). Post hoc analysis of the interaction of moral judgment with partner's behavior revealed that promise breaking affected conventional subjects more than principled level subjects.

Jacobs also reported a significant interaction of moral judgment level with defection ($p < .05$). She indicated that conventional level subjects with defecting partners became progressively less cooperative as the game continued, while principled level subjects showed an initial decrease followed by a slight increase in cooperation. Jacobs hypothesized that this reflected a desire by conventional subjects to punish the other for breaking the agreement.

In conclusion, while there is no simple linear relationship between level of moral reasoning and behavior, empirical support is provided for the conclusion that level of moral development is a variable which has behavioral

manifestations (Froming & Cooper, 1976; Jacobs, 1975; Julius, 1978; Leming, 1978; McColgan, 1977; McNamee, 1972). The literature generally supports the view that conventional level individuals are less flexible and unaccepting of alternative behaviors (D'Augelli & Cross, 1975; Haan et al., 1968; Horan & Kaplan, 1983; Schwarz, 1975) and demonstrate less independent judgment in a conformity situation (Andreason, 1976; Froming, 1977; Froming & Cooper, 1976). It has also been reported that conventional level individuals offer less help (McNamee, 1972) and maladaptively aggress more often (Anchor & Cross, 1974) than do principled level individuals.

A common aspect of the reviewed studies is that individuals at the principled level of moral reasoning frequently employ universal principles of justice when defining right and wrong and, at times, when choosing behavior (Andreason, 1976; Froming, 1977; Haan et al., 1968; Horan & Kaplan, 1983; Leming, 1978; Schwartz et al., 1969). Principled level individuals are less situation specific in the application of moral values than individuals at the lower level of moral reasoning (Jacobs, 1975). Particularly revealing was the McNamee study where principled level subjects pointedly disregarded the directions of an authority figure and assisted another in distress (McNamee, 1972). Likewise, principled level individuals were found better able to cope with goal thwarting (Anchor & Cross, 1974) as

behavior remained consistent with the flexible, rational principles demonstrated on their responses to moral dilemmas (Kohlberg, 1969; Rest, 1979a).

While this review has focused on investigations reporting a significant relationship between moral reasoning and behavior, the complexity of this relationship is evident in two ways. First, numerous investigations have been unsuccessful in attempts to demonstrate a relationship between moral judgment and behavior (Arndt, 1975; Grinder, 1964; Jurkovic & Prentice, 1974; Kantner, 1975; Ruma, 1967; Ruma & Mosher, 1967; Santrock, 1975). Secondly, while several studies reviewed in this section reported a significant relationship between moral reasoning and behavior, they also reported significant and unexpected amounts of behavioral inconsistency within specific moral reasoning stages (Jacobs, 1975; Julius, 1978; McNamee, 1972).

Given evidence of the inconsistencies in the findings, additional research is necessary which attempts to further reveal the complex relationship between moral reasoning and behavior. One such study, pivotal to the current research, is the aforementioned investigation by Jacobs (1975). While reporting a significant main effect for level of moral reasoning in a gaming situation, Jacobs also revealed that 30% of the principled subjects in the defect condition displayed serious "contract" breaking behavior. It should be noted that, in the Jacobs (1975)

investigation, this substantial amount of inconsistency was evidenced despite the fact that the incentive, or level of monetary reward offered to break the cooperative "contract" was clearly insignificant. It can be questioned, therefore, if the findings of a significant relationship between level of moral reasoning and behavior would be evidenced in a more relevant and compelling gaming situation. Hence, in the gaming interaction employed in this study the level of monetary incentive must be at a level achieving relevance for the participants involved.

Furthermore, the demonstrated complexity of the relationship between reasoning and behavior prompts the conclusion that mediating linkages should be included and explored in a systematic fashion in empirical investigations. In this regard, it has been suggested by Rest (1979a) that the moral-justice issues contained in many situations are embedded and therefore overlooked by certain individuals. Rest suggests this is due to individual differences in sensitivity to moral concerns. If this suggestion were accurate, by addressing this differential sensitivity in an experimental manipulation, there should result stronger, more consistent findings in support of the claim that cognitive-developmental stages of moral reasoning are not merely theoretical artifacts but possess a significant amount of construct validity. As such, they would become an even more useful means for understanding aspects of

behavioral choice in real life moral justice situations. Because of such findings, the effect of an additional variable of a "moral" instructional set must be considered in an investigation of this type. The providing of cues, or cognitive prompting can enhance awareness of specific aspects in many situations (e.g., Barnett et al., 1979; Druckman, 1971; LaRue & Olejnik, 1980; Turiel & Rothman, 1972). Especially relevant is the finding reported by LaRue and Olejnik (1980) that cognitive prompting for formal operational thought enhanced the moral reasoning demonstrated by subjects on a written test. In the 1980 study, subjects who received a cognitive cue demonstrated a P% on the DIT which was significantly greater than the P% of subjects who had not been sensitized in this manner.

Because of the specific needs of the present investigation, cognitive prompting will be used to sensitize participants to relevant moral or justice related aspects in a gaming situation. The two "moral" instructional sets will be transformations of the distinctive and essential characteristics of conventional or principled stage conceptions of fairness and justice (Haan, 1977; Kohlberg, 1969; Rest, 1979a) into a situationally relevant format. These "moral" instructional sets represent an introduction of a theoretically relevant cognitive cue, which should highlight for participants the moral dilemma presented in a mixed-motive gaming interaction. It is hypothesized

the same level "moral" instructional set will promote the mobilization of behavior which is consistent with the individual's self-reported level of moral reasoning. If this finding does not occur and a substantial amount of inconsistency remains, then it can be concluded that level of moral judgment has little compelling influence on behavior in a situation where such influence is expected.

Upon review of the literature, it became apparent that one possible reason for the inconsistency of earlier findings pertaining to the relationship between moral reasoning and behavior may be the result of viewing such behavior solely from a cognitive-developmental perspective. Behavior may be more readily understood by examining the relationship of cognitive-developmental moral reasoning parameters to a more general theory such as social exchange (Blau, 1964; Homans, 1961, 1974; Kelly & Thibaut, 1978). In some instances, empirical findings may be reflecting the operation of a more universal pattern like social exchange, while in other instances these findings may be reflecting the impact of a cognitive-developmental factor such as level of moral reasoning. One contribution of this study is to explore the influence of these two factors in a systematic and relevant scenario where one theory generates predictions that can be viewed as complementary to the predictions of the other theory.

This review will now turn to a consideration of social

exchange theory and the empirical investigations which support this approach to the understanding of human interaction.

Social Exchange Theory

Social exchange theory is a theoretical approach that describes the reasons, rules, and processes that underlie behavior in interactive relationships in which individuals exchange any valued resource. This approach gives prominence to the role of fairness in the exchange process. Social exchange theory is not a single, unified approach to the understanding of human interaction; rather, it is at least three separate, although related, approaches, best represented by the positions and research of G. Homans (1961, 1974), P. Blau (1964), and H. Kelly and J. Thibaut (1978). Instead of being treated as distinct theories, for the purpose of the present investigation, these approaches will be considered as parts of the overall social exchange approach to human interaction with each possessing its own major points of emphasis. Prior to exploring these three orientations, a brief overview will be provided of the two major exchange traditions which precede these later developments. These traditions are, first, the economic model of exchange as developed from analyses of transactions in the marketplace, and, secondly, the social anthropological model which encompasses the exchange

of both physical and social commodities at the societal level.

The economic model of exchange (Robbins, 1932) began from consideration of how individuals make decisions regarding the utilization of limited resources, for example, currency, in their pursuit of desired outcomes. The exchange processes are important as most such decisions involve at least two interdependent parties, one with goods or a service and the other with a need and ability to pay. With the development of the economic exchange model, a general paradigm of human decision making evolved which could be applied to both economic and non-economic contexts. This was referred to as the decision-making paradigm of rational choice (Heath, 1976). At its most basic level, this position asserts that an individual makes choices in a purposive manner in order to obtain preferred outcomes in the most effective way and to maximize personal gain (Blau, 1964).

The social anthropological model encompasses the exchange of both physical and social commodities at the societal level (Levi-Strauss, 1969; Mauss, 1967). While the economic tradition in social exchange viewed individual self-interests and needs as paramount, this approach focuses attention on identifying and assessing the corresponding social processes which contribute to the successful functioning of society. Although one sociologist has

maintained that the two traditions of social exchange are incongruous to one another (Durkheim, 1947), later theorists have employed elements of both in their positions (Blau, 1964; Homans, 1961, 1974; Kelly & Thibaut, 1978).

Next, the three main social psychological theories of social exchange will be explored with emphasis in the review placed upon points of convergence among the three.

The theory of exchange proposed by Homans (1961, 1974) is psychological rather than economic in orientation. Homans delineates major "propositions" which he considers to be fundamental determinants of exchange and which were gleaned from studies of animal behavior (Homans, 1961) and from his own research (Homans, 1974). Even complex interactions are believed to be reducible to the same basic propositions. Of the numerous points put forth by Homans, his aggression-approval proposition (1974) is essential to the current investigation. Homans asserts that if an individual does not receive a reward he expected his action to produce or if the individual receives less than he expected, frustration and anger will result. When the anticipated rewards are personally valued, the individual is likely to behave aggressively and be in conflict with another.

The rationality proposition (Homans, 1974) further clarifies this approach to human interactions as it states that, in choosing between alternative behaviors, the in-

dividual will select the act which provides the greatest probability of maximizing results. Homans' approach depicts decision making as purposive and rational in as much as individuals are taking future outcomes into account. In further consideration of human relations, it is expected that frustration, anger, and conflict will result if one individual perceives the other as having achieved an unfair advantage or reward. When this is the case, the principle of distributive justice (Homans, 1974) becomes operative. Stated another way, an individual in an exchange relationship with another expects the rewards of both to be proportional to the costs. If rewards are not proportional, equity is re-established, when possible, by the individual whose costs have outweighed rewards. This principle indicates that, in a relationship, the individual who has the larger resources should receive larger rewards. Homans, in this manner, depicts man as not strictly rational, but as an emotional creature who experiences and responds to his affect through the aforementioned processes when discrepancies occur between expected and obtained results.

Blau (1964) makes a number of basic assertions which complement Homans' propositions and principle of distributive justice. However, Blau's interpersonal exchange differs from economic exchange in that it suggests such interaction is dependent upon both conditions established

in the exchange relationship and by ongoing trust between those involved. Blau (1964) addresses the psychological aspects of the exchange process as he views exchange as a dynamic process wherein individuals are interested in maintaining balance between inputs and rewards while staying out of debt in social interactions. He observes that individuals are attracted to rewarding associations and interactions where payoffs exceed the costs. Individuals, then, are active decision makers choosing between alternative courses of action by first evaluating expected rewards and costs and then selecting appropriate courses of action. This manifests itself in a desire to achieve reciprocity in interactions (Gouldner, 1960), although individuals will, whenever possible, achieve an exchange balance in their favor (Blau, 1964).

Two other theorists, Thibaut and Kelly have focused (Thibaut & Kelly, 1959; Kelly & Thibaut, 1978) predominantly on the exchange process in social interactions. In their analysis, they employ a form of game theory, arguing that interactions between individuals can be depicted through a game-type matrix in which the outcomes indicated are a composite of costs and rewards associated with each choice or behavior. The notion of comparison level (Thibaut & Kelly, 1959) is the standard an individual employs to evaluate the attractiveness of an interaction and is the process of comparing the outcome one feels is

deserved to the actual reward obtained. At the most basic level, dyadic interactions are conceived of through an analysis of comparison level and by aspects of the relationship which decide who controls the outcomes of the interaction. Given the capability to exercise control over their own and another's outcome, individuals exhibit cooperative behavior when appropriate but will maximize personal payoff in a competitive, interdependent relationship (Thibaut & Kelly, 1959).

In summary, the following general points of convergence relevant to the present investigation can be established based upon this overview of social exchange theory. These points can be viewed as essential processes which govern the relations between individuals. In this regard, individuals establish relationships which provide themselves with rewards which are at least equal to the costs incurred (Blau, 1964; Homans, 1974; Kelly & Thibaut, 1978). In a relationship or interaction where an individual's costs exceed rewards, there is an inequity in exchange and this inequity results in tension and frustration. This condition creates the motivation to reduce or eliminate the inequity through a change in behavior. While a general adherence to fairness and cooperation accompanies the social exchange perspective, other guiding principles of behavior may become operative when costs exceed rewards and there is competition and conflict. The individual

may or may not behave aggressively (Homans, 1974), but he will certainly operate to achieve an exchange balance in his favor (Blau, 1964). Or, he will attempt to maximize his personal outcome compared with that of the other individual (Thibaut & Kelly, 1959).

There exists a substantial body of empirical investigations which support this social exchange perspective. It has been reported (Lerner, 1971, 1974; Leventhall, 1980) that if the essential fairness in an interpersonal relationship is violated through a change in the distribution of rewards from existing agreements, then behavior consistent with self-interest is evidenced in an attempt to maximize one's own rewards. With regard to research on outcomes in coalition studies, Komorita and Brinberg (1977) reported that self-interest was a stronger determinant in a bargaining situation than the norm of fairness. They interpreted their results as supporting Homans' principle of distributive justice (Homans, 1974). Similarly, Kelly and Arrowood (1960), Komorita and Barnes (1969), Komorita and Kravitz (1979), Lawler and Bachrach (1976) and Yukl (1976) found a direct relationship between the power held by an individual in an interaction and their respective share of the outcome in both gaming and negotiation situations.

Gaming investigations also support the contention that, in competitive or conflictual situations, game choice

which is consistent with self-interest results. In this regard, Deutsch (1973) has found that a return to cooperative behavior is significantly less likely after a period of conflict if there are incentives which allow subjects to maximize their results. Also, gaming research results indicate that cooperation is less likely to the extent that it benefits one party more than the other (Marwell & Schmitt, 1975; Tedeschi, Lindskold, Horai & Gahagan, 1969) and to the extent that the two parties are faced with unequal assets (Aranoff & Tedeschi, 1968). These findings suggest the importance of exchange-equity considerations and the importance of the principle of distributive justice (Homans, 1974).

Further support of a social exchange analysis of interactive relationships comes from several prisoner's dilemma and negotiation studies which reported that the greatest cooperation is evidenced by subjects who were weak in comparison to the other participant (Komorita, Sheposh & Braver, 1968; Lindskold & Bennet, 1973; Michener, Vaske, Schleifer, Plazewski & Chapman, 1975). These findings can be interpreted as an attempt by subjects to maximize their personal outcomes in an interaction. While relative weakness produces a tendency to reciprocate the other's cooperative behavior, relative strength in a competitive situation produces a tendency to exploit the other's weakness (Marwell & Schmitt, 1975; Komorita & Kravitz, 1979).

It is thus consistent with the social exchange analysis and the presented empirical results that if subjects are treated unfairly, they demonstrate a willingness to seek reprisal and re-establish equity through retaliatory behavior in both bargaining and gaming interactions (Baron and Bell, 1975; Brown, 1968; Geen, 1968; Weick & Nasset, 1968).

This literature review will next turn to an exploration of the literature on psychological gaming and, in particular, focus on the issues of retaliation and cooperation.

Retaliatory and Cooperative Behavior in Experimental Games

Pertinent investigations in the psychological gaming literature are now to be reviewed. Prior analyses of situational characteristics of mixed-motive games have revealed that they present to subjects components of everyday social conflicts on a reduced scale (Davis, 1973; Deutsch, 1973; Pincus & Bixenstine, 1977; Rapoport, 1970, 1973). Such experimental games can provide an opportunity for a confrontation between individuals and the stimulation of conflicting motives within each subject. Therefore, a mixture of interpersonal and intrapersonal conflict is operative (Pincus & Bixenstine, 1977; Pruitt & Kimmel, 1977; Rapoport & Chammah, 1965).

These selected studies are reviewed for two purposes.

First, they complement the research presented on moral reasoning's relationship to behavior and thus contribute to the empirical rationale of this investigation. Secondly, the studies have aided in the development of the procedural characteristics of the gaming situation employed in this research. Discussed will be several variables affecting cooperation and retaliation. These variables are duration of the game, opponent strategy, subject's attitude toward opponent, and magnitude of potential difference in final score between the subject and opponent.

Studies have established that the duration of the gaming interaction has import on the amount of retaliatory behavior demonstrated. Cooperation increases in games of ten trials or longer, for it is at that point that subjects begin to consider overall goals, motives, and strategy when deciding how to maximize personal gain (Gruder & Duslak, 1973; Morehous, 1966; Terhune, 1974).

With respect to a confederate's strategy during the gaming interaction, impact on the subject is greatest when a strategy change is abrupt. In these cases, cooperative responding is adversely affected with the number of retaliatory responses increasing (Oskamp, 1971). Consistently uncooperative behavior by the confederate leads to a similar strategy on the part of subjects (Bixenstine & Gaebelin, 1971). Furthermore, if a competitive/retaliatory pattern is established early in the game, subjects remain

relatively unaffected by any change of strategy initiated by the other. This includes a later switch to a conciliatory, cooperative pattern of behavior (Krauss, 1966; Swingle, 1966; Tornatzky & Geiwitz, 1968). Tit for tat strategies by confederates create less retaliation and more cooperation, while the presentation of a random response pattern results in no definable pattern in the subject (Bixenstine, Potash & Wilson, 1963; Deutsch, 1973; Kuhlman & Marsello, 1975; Rapoport, 1973).

Finally, previous research has shown a systematic relationship between cooperative behavior and an individual's predisposition to trust others (Lacy, 1978; Schlenker, Helm & Tedeschi, 1973; Tedeschi, Lindskold, Horai & Gahagan, 1969; Wrightsman, 1966). These researchers report that subjects who believed human nature to be trustworthy, altruistic and independent respond more cooperatively in prisoner's dilemma research. It has also been reported (Bixenstine, Levitt & Wilson, 1966; Deutsch, 1962; Loomis, 1959; Terhune, 1968; Voissen & Sistrunk, 1971; Wichman, 1972) that an opportunity for conversation between participants significantly increases levels of cooperation. Deutsch (1960) reports that when a subject is instructed to be concerned with both his own and the other's welfare substantially less retaliatory behavior occurs. Extent of retaliation is reported to be influenced more by the magnitude of potential differences in the final score

between self and others than by the absolute amount that can be earned (Deutsch, 1973; Gumpert, Deutsch & Epstein, 1969; Kuhlman & Marsello, 1975; Rapoport & Chammah, 1965; Wyer, 1969).

From this review of variables operative in a gaming interaction, the following methodological conclusions are drawn and incorporated into the present research. Elements of interpersonal and intrapersonal conflict will be built into the task by employing an experimental confederate who will establish a verbal contract to cooperate with the subject. The existence of a verbal contract will also allow for the operation of the subject's level of moral reasoning during decision making. The probability of a social contract being established by a commitment to cooperate is optimized by allowing the subject and the confederate to communicate without the experimenter being present. The present experimental game is to be played over three phases, so that consideration of goals, motives, and strategy can occur during the interaction. Impact of the confederate's behavior will be maximized by having that individual's strategy change abruptly and decisively. Existence of the verbal contract to cooperate on all trials and the presence of a substantial monetary reward will create a dilemma for subjects to resolve when confederate cooperative responding is abruptly reduced. Finally, all females are used as participants and as the confeder-

ate in order to avoid confounding due to sex differences. It was in this setting that there occurred an investigation of stage-specific notions regarding issues of fairness and justice which subjects could employ when formulating a response.

This review will now consider an additional questionnaire, the Philosophy of Human Nature Scale (Wrightsman, 1962, 1964, 1974). The vast majority of bargaining and gaming research completed has involved the manipulation of situational variables. As is evident from a review of critiques of gaming research (Nemeth, 1972; Pruitt & Kimmel, 1977; Terhune, 1970), subject variables such as personality characteristics and attitudes also demand consideration if an understanding of behavioral choice in gaming situations is to be expanded.

Wrightsman's Dimensions of Human Nature

In his review of gaming research, Terhune (1970) concludes that in developing a comprehensive understanding of the processes of cooperation and retaliation more than situational variables need to be considered. Although variables such as level of payoff can produce distinctive effects on cooperative and retaliatory behavior, there is typically sufficient behavioral variance among subjects to infer that other variables exert a significant influence as well (Pruitt & Kimmel, 1977; Vinake, 1969).

This dissertation proposes that level of moral judgment maturity is one such influential subject variable operative in the particular gaming situation employed. In an attempt to complete a comprehensive investigation and understanding of behavior and the self-report measures employed in the gaming interaction, it is concluded that an understanding of personality or attitudinal variables could contribute significantly to the eventual interpretation of findings. To provide this information, an additional pre-game measure, the Philosophy of Human Nature Scale (PHN), is employed. This scale is judged as relevant to the present investigation as it assesses an individual's established attitudes about another's human nature; and, by virtue of the dimensions included, it appears to be complementary to both the theories of cognitive moral development and social exchange utilized in completing the rationales for investigated hypotheses. A brief outline of the six dimensions of human nature assessed by the PHN Scale is available in Table 3.

According to Wrightsman (1974), a coherent philosophy of human nature is possible because we attribute other's behavior to a limited number of factors, such as situational characteristics and motives, and we assume another's behavior is not completely capricious and random but is rather purposeful and volitional. As the scale assesses an individual's expectancy that another will behave in a

Table 3

Dimensions Assessed by the Philosophy of
Human Nature Scale

Dimension	Definition
Trustworthiness <u>versus</u> Untrustworthiness	The extent to which one believes that people are basically trustworthy, moral and responsible as opposed to believing that people are untrustworthy, immoral, and irresponsible.
Strength of will/ rationality <u>versus</u> External control/ irrationality	The extent to which one believes that people have control over their own lives and understand the motives behind their behavior. This dimension also includes one's personal belief about man's rationality. Rationality pertains to a belief that one's ego is in control and that cognitions dominate emotions.
Altruism <u>versus</u> Selfishness	The extent to which one believes that people are basically unselfish and sincerely interested in others rather than selfish and unconcerned about others.
Independence <u>versus</u> Conformity	The extent to which one believes that a person can maintain his or her convictions in the face of pressure to conform coming from a group, from society in general, or from an authority figure.
Complexity <u>versus</u> Simplicity	The extent to which one believes that people are complicated and hard to understand rather than simple and easy to understand.
Similarity <u>versus</u> Variability	The extent to which one believes that people differ in their basic natures and are unique rather than similar and basically alike.

Note: Adapted from Wrightsman, (1974, p. 41-45).

certain way, it is potentially useful in understanding retaliatory behavior and self-report responding in a gaming situation.

A review of studies utilizing this scale in mixed-motive games reveals the trustworthiness dimension of the PHN Scale has been found to be significantly related to cooperative behavior in a two-trial quasi-prisoner's dilemma game (Wrightsman, 1966). Significant relationships have also been found between the scale and cooperative choice in a 50-trial prisoner's dilemma game (Uejio & Wrightsman, 1967). Other studies (Baxter, 1973; Richman, 1971; Ward, 1972; Wrightsman, Bruiniks, Luckner & Anderson, 1972) have been less conclusive, reporting at best a moderate relationship between the PHN Scale and behavior. Wrightsman (1974) suggests that the scale is most valuable if three conditions are met. First, there should be a face-to-face interaction at some point in the gaming interaction. Secondly, there should be a degree of latitude for improvisation so that individuals can exaggerate or amplify responses. Lastly, affective response can in some way be manifested (Wrightsman, 1974).

Thus, the PHN Scale will be included in this research as an additional measure as it possesses potential for explaining observed variations in both behavioral response and self-report measures in the gaming situation employed.

Problem Reconsidered and Conceptual Hypotheses

The preceding discussion reveals that cognitive moral development is a relatively well-understood phenomenon after more than twenty years of research (Haan, 1977; Kohlberg, 1958, 1969; Rest, 1974b, 1979a, 1984). Even though less research has been completed, the relationship of cognitive moral reasoning to behavior is beginning to be substantiated (Blasi, 1980, 1983; Froming & Cooper, 1972; Jacobs, 1975; Julius, 1977; Nassi et al., 1983; Ward & Wilson, 1980). However, several aspects of this relationship still require empirical investigation.

This study attempts to expand current knowledge of this complex phenomena in two ways: first, by employing a conflict situation wherein the respective predictions of cognitive-developmental and social exchange theories can be combined to further understanding of behavioral response, and secondly, through the inclusion of "moral" instructional set as an independent variable.

By combining social exchange and cognitive moral reasoning theories, it is not the purpose of this research to attempt to refute either. Rather, by combining the two approaches predictions of each may be made more precise. Broadly stated, the social exchange approach is designed as a more "universal" theory of behavior (Blau, 1964; Homans, 1961, 1974; Kelly & Thibaut, 1978). Its purpose is to describe the reasons, rules and processes that underlie

behavior in all interactive relationships in which individuals exchange any valued resource. This theoretical approach gives prominence to the role of fairness and equity in interpersonal relationships. Similarly, cognitive moral reasoning stresses the importance of higher mental processes, in particular, reasoning, judgment and evaluation, which can increasingly accomodate and adaptively resolve more complex and intricate moral problems. As Rest (1979a, 1984) maintains, the development of moral reasoning is analogous to advancement in determining a more equitable manner for the distribution of benefits and burdens of social or interpersonal cooperation. As an "individual" theory of behavior, cognitive-developmental moral theory can offer stage-specific predictions about behavior. At the conventional level of moral reasoning, these predictions correspond to those offered by social exchange theory, as both theories focus on normatively defined relationships. This is in contrast however, to those individuals at the principled level of moral reasoning as described by cognitive-developmental theorists (Haan, 1977; Kohlberg, 1969; Rest, 1979a). These individuals are believed to employ more universal principles of justice when attempting to balance personal interests in an exchange relationship and therefore are more internally controlled in behavioral response. It is clear that both theories regard issues of fairness and equity in relationships as paramount.

The distinctive features of conventional and principled moral reasoning (Haan, 1977; Kohlberg, 1969; Rest, 1979a) form the basis of the "moral" instructional sets introduced to subjects immediately prior to their participation in the experimental game. Thus, "moral" instructional set would provide a supposedly relevant cue which would serve to augment the basic moral judgment processes at the same level of moral judgment maturity. This especially salient cognitive cue would lead to: 1) an increase in the awareness of a moral dilemma in the gaming interaction, 2) greater access to the behavioral choice consistent with the same level of moral reasoning by providing a point around which to organize behavioral response, and 3) a focus on the justice-fairness aspects of the gaming interaction. Therefore, instructional set may provide a cognitive cue to orient the subject in the situation and to augment the distinctive cognitive-developmental characteristics of each of the two stages.

In summary, this review suggests that further investigation of the relationship between level of moral reasoning and behavior is possible. The investigation differs from prior studies which have been after-the-fact examinations of moral reasoning's relationship to behavior or which have explored this relationship through written tasks. The present investigation is unique because it combines social exchange and cognitive-developmental theory in a relevant situation and because it includes "moral" instruc-

tional set which may serve as a variable mediating the complex process from reasoning to actual behavior. While the specific hypotheses investigated in this dissertation are found at the end of the next chapter with their corresponding rationales, the broad conceptual hypotheses prompted by this review of the literature are now offered.

1) Whereas social exchange theory predicts all participants in a gaming interaction will show a significant increase in retaliatory behavior subsequent to provocation by a contract-breaking partner, cognitive-developmental theory predicts differences in behavior at the conventional and principled levels of moral reasoning. In particular, individuals at the principled level of moral reasoning will retaliate significantly less than will individuals at the conventional level. The predicted difference is based upon the theoretical conclusion that maintenance of a cooperative contract is the most important personal responsibility for principled participants, regardless of the behavior of their game partner.

2) Social exchange theory predicts that significant levels of retaliatory behavior will continue for all participants in a gaming interaction subsequent to restoration of cooperative behavior by a contract-breaking partner in order to equalize cumulative costs with benefits. Cognitive-developmental theory predicts the continuation

of retaliatory behavior only by conventional level individuals. Principled level participants should reveal virtually no retaliatory behavior in this case. The predicted difference is based upon the theoretical conclusion that conventional level individuals tend more often to employ external rules and social conventions when deciding issues of fairness and justice. In contrast to principled level participants who embrace more universal principles, conventional level individuals rigidly maintain social norms and show a reluctance to allow for personal consideration of circumstances in a cooperative justice situation. In this case, once a contract has been broken, it cannot be easily re-established.

3) It is predicted that "moral" instructional set will augment the same level of cognitive-developmental moral reasoning. That is, principled level participants receiving a principled "moral" instructional set will retaliate the least following the provocation and restoration behavior of a contract-breaking partner, while conventional level participants receiving a conventional "moral" instructional set will retaliate the most. Theoretically, the same level instructional set will serve as a situationally relevant cognitive cue, sensitizing participants to relevant moral or justice-related aspects of a gaming interaction. Furthermore, the set should promote behavior appropriate for that level of moral reasoning.

4) It is predicted that significant differences will be recorded in the subjective experience of conventional and principled level participants during the gaming interaction. That is, evidenced differences in behavior will be accompanied by corresponding differences in six self-report areas. Conventional level individuals will be 1) less committed to continued cooperation, 2) more frustrated by the partner's behavior, 3) more negatively disposed towards the partner, 4) more negative in their own mood, 5) more interested in earning the most points, and 6) more willing to subtract points from the contract-breaking partner, than will principled level individuals. Observed differences in subjective experience are predicted in a direction consistent with the respective groups' divergent notions of fairness and justice.

CHAPTER II

METHODOLOGY AND RESEARCH HYPOTHESES

Overview

Based upon a theoretical and empirical overview of the literature dealing with moral development, a 2x2x3 repeated measures design was employed using as factors self-reported level of moral reasoning (conventional and principled), level of "moral" instructional set (conventional and principled), and level of confederate "contract" compliance (3 phases: 100%, 40%, 100%). Dependent measures were repeated over experimental phases.

The following procedures were employed. (1) Initial testing using the Defining Issues Test determined level of moral reasoning and two groups of 50 subjects each at the conventional (P-score equal to or less than 35%) and principled (P-score equal to or greater than 45%) levels were chosen. (2) Subjects were randomly exposed to one of the two prepared "moral" instructional sets (conventional or principled, resulting in cell sizes of 25 subjects) and then each participated with another person, who was actually a pre-trained confederate, in the message game which had 3 phases of confederate contract compliance. The gaming paradigm was a mixed-motive situation which could be resolved by the subject in an observable manner. In

the situation, the subject and confederate contracted to cooperate all of the time after agreeing that cooperation provided the greatest mutual gain. The confederate, however, systematically varied the level of cooperation demonstrated in the 3 phases: 100%, 40%, 100%. Gaming tasks of this type have been demonstrated to elicit ego involvement from the participants (Davis, 1970; Jacobs, 1975; Nemeth, 1972; Rapoport & Chammah, 1965) while the subject remains free to respond in a variety of ways. (3) Self-report measures were administered three times, once after Phase 1 (100% confederate contract compliance/baseline phase), Phase 2 (40% confederate contract compliance/provocation phase), and Phase 3 (100% confederate contract compliance/restoration phase). The questionnaires assessed commitment to continued cooperation, negative confederate-related affect, subject's own-negative mood, self-reported level of frustration, importance of earning the most points, and expressed desire to subtract points from the contract-breaking confederate during the provocation and restoration phases. Upon completion of the 3 phase message game and final self-report questionnaire, each subject was interviewed and thoroughly debriefed.

Questionnaires Employed

Three questionnaires were employed in the present investigation and will now be examined. All participants

completed James Rest's Defining Issues Test (Rest, 1974b, 1979b; see Appendix 1), Lawrence Wrightsman's Philosophy of Human Nature Scale (Wrightsman, 1974; see Appendix 2), and an author developed in-process, self-report questionnaire (see Appendix 3). Characteristics of each assessment device will now be discussed.

The Defining Issues Test (DIT) is derived from the cognitive-developmental approach to moral development and assesses the individual's moral reasoning capacity. The DIT is a standardized, group administered, and objectively scored device which avoids many of the psychometric shortcomings associated with earlier, interview technique assessments of moral reasoning ability (Kohlberg, 1958; Piaget, 1932). In this regard, the DIT has minimal dependence on the testee's verbal expressiveness and is limited only to those individuals having more than a sixth grade reading level.

The DIT consists of six moral dilemma stories, followed by twelve prototypic statements, all adapted from Kohlberg's (1958) work. The testee is first asked to rate each of the twelve statements on a five-point Likert scale based upon the statement's relative importance in reaching a conclusion with respect to the dilemma presented. The testee then rank orders the four most important statements. These statements are then used in the calculation of the actual index of moral maturity which is referred to as the P-score.

The P-score is a continuous index which identifies a subject's development in terms of the relative importance given to principled moral thinking on the four ranked prototypic statements. Therefore, this method avoids the arbitrary nature of stage-typing based upon predominant usage and allows for the inclusion in the final moral reasoning index (P%) of discrepant information caused by mixed-moral stage usage.

DIT protocols are also scored for internal consistency and reliability, both of which can result in the discarding of a protocol as unusable. Poor internal consistency is operationalized as inconsistencies between prototypic ratings and rankings on more than two stories, or more than eight instances of inconsistency on any one story. Protocols are also considered to be unreliable and are discarded if the M-score exceeds one standard deviation above the mean. The M-score corresponds to choices of items which were written to sound lofty and pretentious but are inherently meaningless. M-items are interspersed throughout the prototypic statements. The above scoring schema is available in more detail in the most recent manual for the DIT (Rest, 1979b).

The utilization of P-scores for grouping purposes is suggested by Rest (1976a, 1979b). Although P% is a continuous index (from 0 to 95%), two distinct groups can be created which correspond to those considered low (conven-

tional level) and high (principled level) in self-reported moral judgment maturity. The present research employs groups which are more distinct than those used in previous investigations. Past authors have often selected a single value and considered those below or above to function predominantly at the conventional or principled levels (e.g. Jacobs, 1975; Julius, 1978) or have used the P-score as a continuous measure in a correlational analysis (Froming & Cooper, 1976; McColgan, 1975; G. Rest, 1975). Guidelines offered by Rest (1979b) were employed to develop "extreme" groups by eliminating a central group of scores. Only those subjects with P-scores equal to or less than 35% (conventional level) and those with P-scores equal to or greater than 45% (principled level) were recruited to participate in the gaming situation.

It should be recognized that while the DIT measures the basic theoretical concepts described by Kohlberg (1958, 1969), it cannot be considered as measuring an identical phenomena as that measured by Kohlberg's moral maturity interview (Kohlberg et al., 1976, 1978, 1983; Colby & Kohlberg, 1984). The essential difference between Kohlberg's assessment of moral reasoning and the information afforded by the DIT is one of production versus recognition. In a Kohlberg interview, testees are required to generate and verbalize a personal answer to questions regarding moral dilemmas. The DIT requires a testee to evaluate consider-

ations provided by the instrument and consequently to classify his own response. The DIT is, therefore, more of a recognition task, and it is widely reported that testees show more advanced, principled moral thinking on the DIT than in Kohlberg's interview (Alozie, 1976; Rest, 1976a, 1979a; Stevens, 1980).

The DIT methodology is now based on reliability and validity research with over 5000 subjects. A number of supporting investigations pertaining to the distinctiveness of the moral reasoning concept, its developmental nature, and its relationship to relevant variables have been reviewed elsewhere in this dissertation (Bloom, 1977; Coder, 1974; Cooper, 1972; Martin et al., 1977; Panowitsch, 1975; Rest, 1976b; Rest et al., 1974). Comprehensive reviews of reliability and validity information are also available (Dortzbach, 1975; Rest, 1976b, 1979a, 1979b) and confirm the DIT's effectiveness for the investigation of cognitive-developmental moral reasoning. As noted in those reviews internal consistency and test-retest reliabilities are generally in the high .70s and low .80s (Dortzbach, 1975; Rest, 1979a).

Turning to the Philosophy of Human Nature Scale (PHN) contained in Appendix 2, Wrightsman (1962, 1964, 1974) chose to employ a modified trait approach to conceptualize various attitudes pertaining to human nature. His work eventually gave rise to a methodology for assessing the six dimensions of human nature previously described in Table 3,

page 54. The first four dimensions, trustworthiness versus untrustworthiness, strength of will/rationality versus external control/irrationality, altruism versus selfishness, and independence versus conformity, assess beliefs of an individual regarding qualities of others' human nature. The final two scales, complexity versus simplicity and similarity versus variability, can be interpreted by themselves and are also useful in interpreting the first four dimensions. These two scales assess beliefs about the extent of individual differences or variability in human nature. Wrightsman (1974) reported that the first four dimensions are concerned with overall qualities of human nature and are generally uncorrelated to the last two individual differences dimensions.

Each of the six dimensions is assessed through fourteen Likert-type questions, and are scored from 0 to 84. Higher scores on scales generally indicate the more positive beliefs regarding human nature. These dimensions represent attitudes a person holds about people in general and emphasize others' social qualities. Viewed in another way, they are expectancies that people possess certain qualities and will behave in certain ways. As Wrightsman states, the dimensions represent "certain assumptions about the expected behavior of others" (Wrightsman, 1974, p. 34). These assessed attitudes are predominantly revealed in the ways individuals interpret the behavior of others in ambig-

uous situations. Split-half reliability for the six subscales has been reported to be above $\underline{r} = .70$ ($\underline{p} < .01$) for an undergraduate population (Wrightsman, 1964). Test-retest reliability for the same group over a three month period is reported to also be above $\underline{r} = .70$ ($\underline{p} < .01$) for five out of six subscales. Other investigations of the test characteristics of the PHN Scale which further establish its reliability and construct validity are summarized in Wrightsman, 1974 (pp. 52-83).

The third measure employed in this research was an author developed self-report questionnaire. This in-process questionnaire acquired information from participants three times during the gaming interaction by means of a Semantic Differential technique (Osgood, Suci, & Tannenbaum, 1957). Standard instructions (Snider & Osgood, 1969) and seven point scales were utilized to measure participants' subjective reactions during the gaming interaction (see Appendix 3). In the questionnaire, subjects' self-reported commitment to continued cooperation, the importance of earning the most points, and the desire to subtract points from the other player were assessed by single question scales. Other areas of investigation represented by aggregate scores included negative confederate-related affect (six items), the subjects' self-reported mood (three items), and the subjects' self-reported level of experienced frustration (three items).

Participants

One hundred women participated in the study. The initial population consisted of volunteers enrolled in classes at the University of Ottawa and at St. Paul's University in Ottawa, Ontario. Sixteen classes in psychology and education were entered from which 605 individuals volunteered. Of this number, 303 individuals returned completed questionnaire packets, 69 males and 234 females. All had been asked to complete the DIT, PHN Scale, and an author developed Background Information Sheet (see Appendix 4). Of the 234 protocols completed by female volunteers, 32 were eliminated because of poor internal consistency or excessive M-scores.

Fifty conventional level women with P-scores equal to or less than 35% and fifty principled level women with P-scores equal to or greater than 45% were recruited by phone to participate in the gaming situation. Conventional level participants had a mean age of 287.04 months (SD = 104.04) or 23.9 years while their P-scores ranged from 7% to 35% ($\bar{X}$ = 29.00, SD = 6.575); principled level participants had a mean age of 322.72 months (SD = 106.33) or 26.9 years and P-scores which ranged from 45% to 72% ($\bar{X}$ = 55.62, SD = 7.483). Mean, standard deviation, and standard error information for the two groups for age and P-scores are summarized in Table 4. When reviewing this information, it should be noted that the difference in mean ages of the two groups is not significant at a $p < .05$ level (t = -1.559).

The present research was restricted to women as the

Table 4

Means, Standard Deviations and Standard Errors
for Age and Defining Issues Test Scores
(P%) by Level of Moral Reasoning

Level of Moral Reasoning	Age			DIT P%		
	$\bar{X}$	<u>SD</u>	<u>SE</u>	$\bar{X}$	<u>SD</u>	<u>SE</u>
Conventional Level N=50	287.04	104.04	14.71	29.00	6.575	0.93
Principled Level N=50	322.72	106.33	15.04	55.62	7.483	1.06

investigation's primary aim was to view the relationship of level of moral reasoning to behavior in a social-justice situation. The cognitive-developmental literature (Kohlberg et al., 1983; Rest, 1979a, 1984) suggests the conclusion that there are no consistent sex differences in cognitive moral reasoning, in particular for an adult population. The literature pertaining to sex-role socialization and distributive justice behavior (Major & Adams, 1983) suggests there are differences across gender in the ways males and females respond to provocation. Under extreme levels of provocation, both sexes seem to retaliate in a parallel fashion. Under moderate levels, such as in this study, females may show comparatively less retaliatory behavior than males. As well, differences have been noted (Major and Adams, 1983) due to sex of partner, with both sexes responding equitably to provocation from a partner of the same sex and in a less retaliatory manner to provocation from a partner of the opposite sex. Including sex of partner as an additional independent variable would result in too expansive a study as the main interest was to investigate level of moral reasoning's relationship to behavior. By limiting the investigation to women, a more controlled study of the predictions could occur.

The PHN Scale was also hand scored for each participant and was included as a measure for use in post-hoc analyses to explore the relationship of its six dimensions

to level of moral reasoning and to possibly further the understanding of the retaliatory behavior to be observed. Questionnaires were distributed from May through October of 1983, while data was collected in the gaming situation from June until November of 1983. Fourteen pilot individuals took the measures and participated in the gaming interaction so as to investigate the task relevance and saliency for subsequent participants. One hundred and five subjects participated in the actual experimental situation. Twenty individuals who were scheduled to participate did not appear for the gaming task. Five participants were eliminated from the final analyses due to problems experienced with data collection.

Experimental Apparatus

The gaming apparatus consisted of a standard gray gaming console with an inclined top measuring 8" x 13" x 9½" high. Uppermost on the console board was a green cue light. Slightly below were four evenly spaced red message lights labeled A, B, C, and D. Directly under each message light was a pushbutton. On the right of the gaming console, attached by a double lead, was a point counter (Model 54519-A, LaFayette Instrument Co.). This console was clearly labeled GAME BOARD A.

Visually isolated from the participant was the control panel which was operated by the experimental confederate.

Participants were on either side of an H-shaped division in a room measuring 14' by 16'. The control sequencing of the different panel lights and dispensing of points was accomplished by utilization of a pre-programmed sequence generator consisting of a one-second clock, binary counter (CD 4040), EPROM (Erasable Programmable Read Only Memory-Texas Instrument TMS 2516 JL-45), and Multiplexer Switch Selector (74153). Cue light illumination and message light illumination was programmed and therefore was presented to all subjects in the same random pattern. The randomized presentation for sequence of message lights for all three phases of the gaming interaction is found in Appendix 5.

Procedure

In the first part of data collection, the experimenter went into the various classes to request volunteers to complete the DIT, PHN, and Background Information Sheet. The expressed purpose was that the experimenter was studying the decision-making processes of various university and non-university groups (see Appendix 6). After a sufficient number of protocols were acquired, potential subjects were contacted by phone by the experimenter and were asked to take part in the second portion of the research, a session to investigate interpersonal decision making. If the individual was agreeable to participation, an acceptable time was established and subjects were informed of the location of the second portion of the study. It was stressed that the in-

dividual should make every effort to participate as scheduled since pairs of individuals were required. It should be noted that neither the experimenter nor the confederate were aware of the level of moral reasoning of each subject as all questionnaires were scored in isolation by an independent scorer. Also, the confederate was unaware of the "moral" instructional set to be employed with a particular subject.

Upon arriving at the experimental location, the subject was seated in the testing area in front of GAME BOARD A to await the arrival of the other participant. The other subject, a pre-trained confederate, arrived shortly thereafter. At this point in the study, both participant and confederate were seated in front of the same message board. General instructions regarding the task and the game board's operation were given by the experimenter as follows:

I'd like to thank both of you for coming. I know you had to go out of your way and I appreciate it.

So far you have taken a written decision-making test in your respective classes. Now, I would like you to participate in a practical, problem-solving situation. I'm interested in how you make decisions which have a specific impact on each other. I will also be asking for your reactions during various parts of the testing sequence, so there will be some short questionnaires to fill out. This is of interest because as you know, I am gathering norms for the decision-making experiences that people report.

Now, you may view this task as an individual problem, each arriving at your own independent decisions, or as a mutual problem, by solving the situation together in some way...how ever you both decide. Please keep this aspect in mind while I review the rest of the directions, as the decisions you reach will have specific consequences for both of you.

Today you will play the message game together; one on Game Board A and the other on Game Board B. Let me explain how the game board operates. Notice in the uppermost center, there is a green cue light, while four red lights appear lower, and each of these four has a button underneath. This apparatus can be used to both send and to receive simple messages.

When it is your turn to receive a message, the green cue light will come on first. When the cue light comes on, please watch the four red lights. One of the four lights can be illuminated. It lights up because the other person has sent a message to you. If you press the button under the light that comes on, you will get a point. Each point recorded on your counter at the end of the game will be worth five cents. You must press the button as soon as it comes on or you will miss your chance. If the green cue light comes on and one of the four red lights does not, then the other person has chosen not to send the message, and you will be unable to earn that point.

When it is your turn to send the message to the other person, the green cue light will come on. If you like, choose any one of the buttons and push it. When you do this, the other person will receive the message - that red light will illuminate on their game board, and when they push the corresponding button they will get a point. If you do not press one of the buttons after the green cue light comes on, the other person will not receive the message and will not be able to earn a point. The choice to send or not send is yours.

There will be three different parts in this game. Each part will have twenty consecutive trials of sending and twenty consecutive trials of receiving messages. That is, you will each have an opportunity to receive twenty consecutive messages and to send twenty consecutive messages three different times during the game.

As I indicated, each point is worth five cents. Additionally, there will be a bonus award of three dollars for the person who has the most points at the end of the game. The bonus is divided evenly in the event you both end up with the same score. Finally, a fifty dollar draw will be held among all participants who have the high score on this task. If one individual ends up with the most points, they will be awarded the fifty dollars.

There will be no talking during these trials. We will break after every twenty trials to change the direction of the game. During the break after part 1, part 2, and part 3, I would ask that you answer these short questionnaires about your feelings during the preceding trials. We will continue until the last trial occurs.

If you have any questions or comments, now is the time to raise them, before we begin, as there will be no further communication between you after this time.

At this point, the confederate cautiously stated:

Well... I was wondering... you said something about a mutual problem? Um... could we (gesturing toward the subject) talk about this before we start? I don't want to change your experiment but...?

The experimenter stated in response that:

It is permissible for the two of you to talk now if you choose. You have the option of solving the problem together. Would you like to discuss the situation? (If both reply affirmatively), Okay, but I will not be involved when you talk. My responsibility during the experiment is simply to record the behaviors that result from your decisions. I'll wait over here (gesturing to one side), please let me know when you're finished.

At this point the confederate initially established the participant's understanding of the game by asking the participant to confirm her (the confederate's) interpretation of the task. Next, the confederate proposed they cooperate on every trial. Stated reasons for doing so were first, her lack of competitive feeling, and secondly, a desire to ensure mutual winnings. If a participant agreed to cooperate but suggested occasional variety in responding, i.e. no message, the confederate stated a preference for simplicity, and noted a lack of opportunity for further communication, the possible loss of financial reward, and the potential

exclusion from the pool of participants eligible for the fifty dollar draw. To finalize the cooperative "contract", with the participant, the confederate stated:

Well, we've agreed right? We'll always send the message to each other.

After receiving a clear verbal agreement from the participant to cooperate, both informed the experimenter they were ready to begin (aspects of the above procedure adapted from Jacobs, 1975). All subjects except two agreed to cooperate with the confederate on all trials. The data of these two participants was excluded from this report as a "contract" had not been established. In many instances it was the subject herself who suggested cooperation as an appropriate strategy to the confederate. Upon being informed that the participants were ready to begin, the experimenter stated:

All right then, if there are no more questions we will begin.

I have assigned (Subject) to GAME BOARD A and (Confederate) to GAME BOARD B. (Confederate), please come over to GAME BOARD B.

The confederate was led to "Game Board B", which was in actuality the control panel for the gaming interaction and was visually isolated from the subject. All participants next received typed instructions for the Message Game (see Appendix 7) and a copy of the appropriate "moral" instructional set condition (see Appendix 8) employed with that subject. Subjects were also given a copy of the self-

report questionnaire (see Appendix 3) for completion after Phase 1, Phase 2, and Phase 3. The experimenter then continued:

So that you both are totally familiar with the game, there will be some practice trials. First, I would like (Confederate) to practice sending two messages. Send these as soon as the green cue light comes on. (Subject), you will practice receiving two messages. As soon as the green cue light comes on, watch for a red message light and press the button underneath it. During these two practice trials, the points will not be recorded on your counter.

Now, we will reverse the order of practice. (Subject), you will practice sending two messages, while (Confederate), you will practice receiving two messages.

If there are no questions, the Message Game will begin immediately after I read these final comments.

The "moral" instructional set utilized with that participant was then read aloud by the experimenter and the gaming interaction began. Upon completion of the three phases of the message game, subjects were informed that a brief individual interview would follow. The experimenter stated he would interview the subject first, and therefore asked the confederate to take a seat in a waiting area down the hall.

The post-experimental interview and debriefing session was informal but assumed a similar format for all subjects. Participants were asked to comment about the game and were encouraged to relate their feelings and impressions of the task and the other individual. Also, subjects were specifically asked if the game adversely affected their mood or personal status in any way. Finally, participants were

questioned if they felt the outcome of the game was fixed or if the results were manipulated. Upon completion of this dialogue, debriefing occurred.

Participants were informed of the actual nature of the Message Game, the role of the confederate, and were provided with a brief review of cognitive moral theory and the relevance of the present investigation. Debriefing was not terminated until all questions were answered to the satisfaction of the participants. At the close of the interview, payment was offered to each subject based upon the pre-determined point total of 48 and the full three dollar bonus, for a total of five dollars and forty cents. Upon completion of the data collection, the fifty dollar bonus was awarded to one of the participants who was chosen by draw.

Experimental Task

The actual gaming task represented a slight modification of the procedure employed by Murray (1980). All participants, irrespective of level of moral development, played the same game. The game was divided into 3 phases: Phase 1 - 100% confederate contract compliance/baseline phase; Phase 2 - 40% confederate contract compliance/provocation phase; Phase 3 - 100% confederate contract compliance/restoration phase. In this "Message Game", each of the three phases consisted of the subject first receiving and then being able to send messages for twenty consecu-

tive, five-second trials.

When in the receiving mode, subjects were first alerted by the cue light, and then waited for one of their message lights (labeled A, B, C, and D) to illuminate. Subjects were instructed that if the other player (experimental confederate) sent a message, the corresponding light would illuminate, and when they pushed the button under that light, a point would be recorded on their counter. Subjects were playing for five-cents per point, a possible three dollar bonus for the winner of the match which had to be divided evenly in the event of a tie, and for access to a pool of subjects who would be eligible for a fifty dollar draw.

When in the sending mode, subjects were presented twenty consecutive cue lights, indicating an opportunity for them to "send" messages to the other player. Subjects were instructed to choose any one of the four buttons, labeled A, B, C, and D, in order to forward a message to the other person.

Each trial was five-seconds in length with a ten-second interval between termination of one trial and the beginning of the next. Cue lights remained on during the entire five-second period when a message could be received or sent. A five-second trial time was employed in order to allow the subject sufficient time to view the stimulus light and receive a message or to push a button to send a

message. Message lights were illuminated for the subject for two-seconds, although messages could be received and a point earned at any time while the cue light was on. A ten-second between trial interval was utilized to allow subjects an opportunity to consider strategy during each twenty-trial sequence.

Practice in both sending and receiving a message occurred to ensure that subjects had a full understanding of the message game. Subjects were provided with typed copies of the directions (see Appendix 7) to consult during the gaming interaction. After each phase, subjects were asked to complete a section of the self-report questionnaire previously described in this chapter (see Appendix 3). A brief point-by-point summary of the standardized procedure of the gaming interaction follows:

Phase 1 / Baseline

- Confederate sends a message to the subject 100% (20 out of 20) of the trials.
- Subject is given the opportunity to send messages to the confederate (dependent measure of retaliation).
- Self-Report Questionnaire is completed.

Phase 2 / Provocation

- Confederate sends a message to the subject 40% (8 out of 20) of the trials.
- Subject is given the opportunity to send messages to the confederate (dependent measure of retaliation).
- Self-Report Questionnaire is completed.

Phase 3 / Restoration

- Confederate sends a message to the subject 100% (20 out of 20) of the trials.
- Subject is given the opportunity to send messages to the confederate (dependent measure of retaliation).
- Self-Report Questionnaire is completed.

Instructional Set

Two "moral" instructional sets (Appendix 8) were employed in this investigation. Both were derived from prior research, so that one set was consistent with the distinctive cognitive parameters of conventional moral reasoning, as indicated in the cognitive moral developmental literature (Haan, 1977; Kohlberg, 1969; Rest, 1979a). The second set reflected the distinctive cognitive parameters of principled moral reasoning (Haan, 1977; Kohlberg, 1969; Rest, 1979a).

The distinctive characteristics of each level was formed into task relevant "moral" instructional sets through utilization of the Delphi Method (Linstone & Turoff, 1975). A group of five "experts" in developmental psychology were asked to judge the consistency of the two "moral" instructional sets, sentence by sentence, with corresponding or matching theoretical descriptors of the two stages. Descriptors were established via the cognitive moral developmental literature (Haan, 1977; Kohlberg, 1969; Rest, 1979a). Specific directions for the respondent group

and the descriptor points are found in Appendix 9. The "moral" instructional sets experienced three revisions using feedback from prior attempts before being accepted by all members of the respondent group as optimally congruent with the intended level of moral judgment maturity.

In order to establish the distinctiveness of the "moral" instructional sets, a manipulation check occurred prior to the actual collection of data in the gaming interaction. A "portrait matching technique" (Guilford, 1954) was employed. With this technique, a hold-out group similar to the potential project participants were used. Thirty-three students were asked to rate the conventional instructional set on ten questions, while thirty-five other students were asked to rate the principled instructional set on the same ten questions (see Appendix 10). Of the thirty-three students rating the conventional set, fourteen had previously completed the DIT and PHN questionnaires, nineteen had not. Of the group rating the principled set, fifteen students had previously completed the DIT and PHN questionnaires, twenty had not.

Students were asked to rate the instructional set relative to 10 semantic differential scale questions which tapped the extent to which the particular set condition was congruent with either conventional or principled moral reasoning. A t test analysis (Ferguson, 1971) of this data revealed the following. The two overall groups (convention-

al set group, $N = 33$; principled set group, $N = 35$) rated the two sets as significantly different on two of the questions at the $p < .05$ level and on six questions at the $p < .01$ level. Sets were judged as not significantly different on the remaining two questions. Results of the analyses are summarized in Table 5. It can be concluded that the hold-out group rated the conventional "moral" instructional set as congruent with the conventional level of moral reasoning and the principled set as congruent with the principled level of moral reasoning.

It was also established that individuals who previously completed DIT and PHN questionnaires did not view the "moral" instructional set differently from individuals who had not completed the DIT and PHN. In this case, there were no significant differences on any of the ten questions for the groups rating either the conventional "moral" set, or the principled "moral" instructional set. Results are summarized in Tables 6 and 7.

It was therefore concluded that, first, the "moral" instructional sets possessed consensual and face validity as established by the expert group through the Delphi Method (Linstone & Turoff, 1975). Secondly, the sets were functionally dissimilar through a "portrait matching technique" (Guilford, 1954) as established by a hold-out group of subjects who were peers of individuals who would eventually participate in the gaming investigation. Lastly, it was concluded that prior exposure to the DIT and PHN

Table 5

t Test Analyses of Manipulation Check Items

Item	$\bar{X}_1$	$\bar{X}_2$	<u>t</u>
1	5.3	4.54	1.9*
2	2.7	6.14	8.19**
3	3.0	4.94	4.11**
4	5.42	4.11	3.89**
5	1.9	3.54	4.10**
6	5.4	6.17	1.89*
7	1.7	3.84	5.87**
8	3.1	2.89	.49 ^{ns}
9	2.5	1.94	1.57 ^{ns}
10	3.2	6.09	6.66**

$\bar{X}_1$ = Means for conventional "moral" instructional set (n=33)

$\bar{X}_2$ = Means for principled "moral" instructional set (n=35)

* $p < .05$

** $p < .01$

df = 66

Table 6

t Test Comparisons of Subgroups:
Conventional Set Manipulation Check

Item	$\bar{X}_1$	$\bar{X}_2$	<u>t</u>
1	5.36	5.53	.35 ^{ns}
2	3.21	2.32	1.29 ^{ns}
3	2.64	3.26	.81 ^{ns}
4	5.21	5.58	.63 ^{ns}
5	1.71	2.05	.63 ^{ns}
6	5.64	5.26	.63 ^{ns}
7	1.64	1.74	.26 ^{ns}
8	2.71	3.37	1.06 ^{ns}
9	2.29	2.53	.40 ^{ns}
10	3.71	2.84	1.33 ^{ns}

$\bar{X}_1$ = Means for subjects completing the DIT and PHN prior to conventional set manipulation check (n=14).

$\bar{X}_2$ = Means for subjects not completing the DIT and PHN prior to conventional set manipulation check (n=19).

df = 31

Table 7

t Test Comparisons of Subgroups:
Principled Set Manipulation Check

Item	$\bar{X}_1$	$\bar{X}_2$	t
1	4.40	4.62	.37 ^{ns}
2	6.00	6.25	.60 ^{ns}
3	4.87	5.00	.29 ^{ns}
4	3.87	4.30	.63 ^{ns}
5	3.73	3.40	.54 ^{ns}
6	6.60	5.85	1.56 ^{ns}
7	3.73	3.90	.27 ^{ns}
8	3.47	2.75	1.22 ^{ns}
9	1.73	2.10	.84 ^{ns}
10	6.13	6.05	.18 ^{ns}

$\bar{X}_1$ = Means for subjects completing the DIT and PHN prior to principled set manipulation check (n=15).

$\bar{X}_2$ = Means for subjects not completing the DIT and PHN prior to principled set manipulation check (n=20).

df = 33

did not differentially affect perception of the "moral" instructional sets utilized in this study.

Experimental Design and Statistical Analyses

A 2x2x3 repeated measures design was employed using as factors self-reported level of moral reasoning (conventional and principled), level of "moral" instructional set (conventional and principled), and level of confederate contract compliance (100%, 40%, 100%); dependent measures were repeated over experimental phases (see Table 8). The dependent measures employed included retaliatory behavior and the self-report questionnaire data regarding potential differences in the subjective experience of conventional and principled moral level participants.

Retaliatory response was defined as a failure on the part of the participant to send a "message" to the confederate during the twenty, five-second trial periods in Phase 1, Phase 2, and Phase 3 of the gaming interaction. Fifty conventional and fifty principled level individuals participated resulting in four cells of twenty-five subjects. The main technique of data analysis was repeated measures analysis of variance utilizing the BMDP Statistical Software (Dixon, Brown, Engleman, Frame, Hill, Jennrich, & Toporek, 1981) computer program and as outlined by Kirk (1982). Also employed were one-way and two-way analyses of variance where appropriate by employing the Statistical Package for the

Table 8

Display of Cells of
2x2x3 Repeated Measures Design

Level of Moral Reasoning	Instructional Set	
	Conventional	Principled
Conventional	25 Ss	25 Ss
Principled	25 Ss	25 Ss

Phases of Confederate
"Contract" Compliance

Social Sciences (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975).

Research Hypotheses and Rationales

The present research was designed to test the following hypotheses. Presented first will be relevant three-way interaction hypotheses with corresponding theoretical and empirical rationales. Next, two-way interaction, and lastly, main effects hypotheses will be reviewed.

Three-Way Interaction Hypotheses

Hypothesis 1:

There will be a significant three-way interaction between level of moral reasoning (conventional and principled levels) and "moral" instructional set on magnitude of retaliatory behavior when level of confederate cooperative responding is significantly reduced from agreed upon contract levels (from 100% to 40% in the second phase of the testing sequence). That is, the joint presence of phase 2 and conventional "moral" instructional set shall prompt a greater difference between conventional and principled level participants' retaliatory behavior than will the joint presence of phase 2 and a principled "moral" instructional set.

A consideration of the empirically established cognitive-developmental characteristics of moral reasoning at the conventional and principled levels and of the main principles of social exchange theory provides the theoretical rationale for the expected behavior of participants at the two levels.

Social exchange theory would suggest that all participants would exhibit a commitment to personal achievement

which in a gaming situation is characterized by the use of the best strategy and the accumulation of the most points (Blau, 1964; Homans, 1961, 1974). In this paradigm, the individual would be prompted during the gaming interaction, despite the level of moral judgment maturity, to keep rewards greater than offsetting costs. The implication would be that if the cooperative contract is violated and the rewards decrease, all subjects would logically be inclined to retaliate in order to keep the costs of the contract to a minimum, thereby preventing undue exploitation by the confederate's contract-violating behavior.

However, from a cognitive-developmental standpoint, greater retaliatory behavior is predicted from conventional as opposed to principled level individuals. By definition, the conventional level individual is more dependent upon external direction, is less autonomous and is more likely to seek cues in the social situation which indicate an appropriate course of action. For conventional level participants, significant and readily available cues such as a conventional "moral" instructional set and the other's uncooperative behavior will more likely indicate that retaliation is an appropriate and justifiable alternative behavior. Thus, for conventional participants, both the social exchange and cognitive-developmental models predict the same outcome.

Principled level participants are more often predicted,

on the other hand, to maintain the contract even after the confederate violates the agreement. We have seen that for principled level participants, the social contract developed with the confederate has greater salience and provides for a plan of action which minimizes the inequities and maximizes cooperation. By definition, maintaining the mutually agreed upon cooperative pattern, even in the face of a repeated violation, is increasingly a matter of personal responsibility for principled level participants. Whereas by definition (Kohlberg, 1969), principled level individuals have better developed internal frames of self-reference and are better able to deal with the frustration generated from unilateral confederate violation of the contract, they should be more able to channel or delay retaliation. The salient cue of the principled "moral" instructional set consistent with their principled orientation will help principled level individuals to recognize that their commitment to the social contract is a matter of principle. The cue will also promote the conclusion that the verbal contract and not personal gain represents the highest value in the gaming situation.

Empirical evidence offered to support the viability of the rationale for conventional level participants revealed that conventional level individuals are less flexible and generally unaccepting of alternative behavior patterns (D'Augelli & Cross, 1975; Haan et al., 1968; Leming, 1974;

Schwarz, 1975. Furthermore, conventional level subjects demonstrate less independent judgment in a conformity situation (Andreason, 1976; Froming, 1977; Froming & Cooper, 1976; Schwartz et al., 1969). It was also established that conventional level subjects offer significantly less help (McNamee, 1972) and maladaptively aggress more often (Anchor & Cross, 1974) than do principled level subjects. On the strength of the theoretical and empirical evidence summarized, it is concluded that conventional level participants will exhibit significantly more retaliation in the gaming situation in the conventional "moral" instructional set condition than will principled level participants in the principled "moral" instructional set condition. This will be evident when the confederate deviates from the pre-game agreement to cooperate on all trials in the second phase of the gaming interaction.

Additional empirically based literature supporting this rationale for principled level participants included investigations which indicate that principled level subjects define right and wrong and choose behavior through internal principles and rational consideration (Andreason, 1976; Damon, 1977; Froming, 1977; Haan et al., 1968; Leming, 1978). Particularly revealing was the McNamee (1972) study in which principled level subjects pointedly disregarded the directions of an authority figure and assisted another. Considering their commitment to a course

of action, it has been suggested that principled level individuals are more tolerant of frustration and better able to cope effectively with goal thwarting (Anchor & Cross, 1974). In the gaming literature (Deutsch, 1960, 1962) when subjects were instructed to be concerned with their own and the other's welfare, substantially more cooperative behavior resulted. In this case, the experimenter's instruction was similar to the basic characteristics of moral reasoning at the principled level.

Therefore, individuals at the principled level are more able to define right and wrong for themselves and to choose behavior based upon personal principles. They also appear better able to tolerate frustration and to cope with goal thwarting. Consequently, these subjects will remain less affected by the confederate's break from the pre-game contract and will exhibit significantly less retaliatory behavior than will conventional level participants.

By way of summary, the joint presence of conventional moral reasoning and the congruent "moral" instructional set condition will prompt more retaliation than either factor in isolation; while the joint presence of principled moral reasoning and the principled "moral" instructional set will prompt less retaliation than either factor in isolation.

Hypothesis 1b:

There will be a significant three-way interaction between level of moral reasoning (conventional and

principled levels) and "moral" instructional set (conventional and principled) on self-reported level of frustration experienced when level of confederate responding is significantly reduced from agreed upon contract levels (from 100% to 40% in the second phase of the testing sequence). That is, the joint presence of phase 2 and conventional "moral" instructional set shall prompt a greater difference between conventional and principled level participants' self-reported level of frustration experienced than will the joint presence of phase 2 and a principled "moral" instructional set.

For conventional level individuals, available cues such as a conventional "moral" instructional set and the confederate's contract-breaking behavior should result in significantly greater self-reported frustration. This frustration could be generated either by the conventional level individual's desire to accumulate the most points in the gaming interaction or because of the importance they place on fair play and the upholding of one's word (Kohlberg, 1969; Rest, 1979a) in this contract situation. Principled level participants should be less affected by the unilateral confederate violation of the contract and more able to release the frustration generated by that violation. This is anticipated as principled level participants are generally more reliant on more universal internal frames of reference, i.e. principles and values, when understanding justice situations, and are by definition, even in this provocative situation, more committed to the cooperative contract (Haan, 1977; Kohlberg, 1969; Rest, 1979a). The added cue of a principled "moral" instructional set should further reduce the self-reported level of frustration experienced by principled level

subjects, as this cognitive cue will make more salient for these individuals the importance of their adherence to the cooperative contract.

As indicated in the rationale for hypothesis 1, social exchange theory would predict all subjects, irrespective of level of moral reasoning, would employ the best strategy to accumulate points in the gaming interaction. Internally prompted to keep rewards greater than offsetting costs, when the cooperative contract is violated and rewards decrease, all subjects should report a significant increase in self-reported frustration experienced.

Hypothesis 1c:

There will be a significant three-way interaction between level of moral reasoning (conventional and principled levels) and "moral" instructional set (conventional and principled) on self-reported negative mood when level of confederate responding is significantly reduced from agreed upon contract levels (from 100% to 40% in the second phase of the testing sequence). That is, the joint presence of phase 2 and conventional "moral" instructional set shall prompt a greater difference between conventional and principled level participants' self-reported negative mood than will the joint presence of phase 2 and a principled "moral" instructional set.

The rationale for hypothesis 1c is essentially the same as that offered for hypothesis 1b. It is anticipated that self-reported frustration and self-reported negative mood will closely correspond in intensity as both measure the subjective, i.e. affective, experience of the message game participant after phase 2.

Hypothesis 1d:

There will be a significant three-way interaction between level of moral reasoning (conventional and principled levels) and "moral" instructional set (conventional and principled) on negative confederate-related affect when level of confederate responding is significantly reduced from agreed upon contract levels (from 100% to 40% in the second phase of the testing sequence). That is, the joint presence of phase 2 and conventional "moral" instructional set shall prompt a greater difference between conventional and principled level participants' negative confederate-related affect than will the joint presence of phase 2 and a principled "moral" instructional set.

As previously indicated in the theoretical overview, participants at the conventional level of moral reasoning are more influenced by the external demands of a particular situation. It is anticipated that conventional level participants will attribute significantly more negative qualities to a contract-breaking confederate because upholding one's word is by definition extremely important (Haan, 1977; Kohlberg, 1969).

Principled level participants should more frequently adhere to their personal commitment to cooperate despite the behavior of the confederate. Furthermore, principled level individuals are by definition (Haan, 1977; Kohlberg, 1969; Rest, 1979a) better able to accept behavioral inconsistencies as a part of human nature and recognize a need to trust others. Sensitive to the possibility that the confederate may have personal needs (Haan, 1977), principled level participants should be more able to maintain personal flexibility and attribute significantly fewer negative qualities to the contract-breaking confederate than will conven-

tional level individuals.

By way of conclusion, the presence of a "moral" instructional set which is congruent with the individual's level of moral reasoning will serve to intensify the negative confederate-related affect reported by conventional level subjects and to lessen the negative confederate-related affect reported by principled level subjects. As was the case with self-reported level of frustration experienced (hypothesis 1b), social exchange theory would conclude there should be no difference on this self-report measure between conventional and principled level subjects. All participants should attribute significantly more negative qualities to a contract-breaking confederate in phase 2 of the gaming interaction.

Hypothesis 2:

There will be a significant three-way interaction between level of moral reasoning (conventional and principled levels) and "moral" instructional set (conventional and principled) on magnitude of retaliatory behavior following confederate return to pre-violation levels of cooperative contract behavior (from 40% to 100% in the third phase of the testing sequence). That is, the joint presence of phase 3 and a conventional "moral" instructional set shall accompany a greater difference between conventional and principled level participants' retaliatory behavior than will the joint presence of phase 3 and a principled "moral" instructional set.

An analysis of the cognitive-developmental characteristics of individuals at the conventional stage reveals considerable rigidity in response to written moral dilemmas.

This tendency is apparent by their maintenance of the norm and reluctance to allow for personal consideration or unique circumstances in a cooperative justice situation (Haan, 1977; D'Augelli & Cross, 1975; Kohlberg, 1976; Rest, 1974). Furthermore, they more frequently express concern about the possible detrimental effects of even a single deviation from a social contract. Therefore, it may be expected that once a contract has been broken, the commitment cannot be easily re-established. As already discussed, after contract-breaking behavior, personal gain becomes a likely motive in directing behavior. It is also possible and has been intimated but not directly investigated (Jacobs, 1975; Rest, 1979a) that conventional level individuals have a greater tendency to punish a deviation.

Moreover, Jacobs (1975) indicated that conventional level individuals become progressively less cooperative in a gaming interaction in response to contract-breaking behavior. Anchor and Cross (1974) noted that conventional level subjects were more affected by another's behavior than were principled level subjects. Evidence from experimental gaming investigations (Krauss, 1966; Swingle, 1966; Swingle & Gillis, 1968; Tornatzky & Geiwitz, 1968) indicates that when an early, competitive/retaliatory pattern is established, subjects in general remain relatively unaffected when a change of strategy is implemented by the confederate. This includes a later switch to a conciliatory, cooperative pattern

of behavior. A conclusion relevant to the current investigation is that since conventional level individuals are more common in the general population (Kohlberg, 1969, 1976; Rest, 1979a), it is logical to infer that Swingle (1966) and Swingle and Gillis (1968) illustrate the rigidity involved.

For principled level participants, it would appear that maintaining the contract is a more important aspect of the gaming situation, as it is by definition (Kohlberg, 1969; Rest, 1979a) a matter of personal responsibility. Despite the confederate's behavior, cooperative responding should be more congruent with the principled level justice orientation, especially when enhanced by the principled "moral" instructional set. As the confederate has returned to the guidelines of the pre-game agreement, there would be even less reason for the principled level subjects to continue to retaliate, if indeed they had, since there would be evidence now that continued cooperative responding in the face of confederate violations might have been instrumental in reducing confederate violations. Based upon their justice orientation, by definition a more uniform cooperative pattern should result.

The literature reviewed in this investigation (Haan, 1977; Jacobs, 1975; Kohlberg, 1969; Rest, 1979a) suggests that for principled level individuals maintaining commitments and adhering to principles is more a matter of personal responsibility regardless of the actual behaviors or expressed posi-

tions of others. Principled subjects have demonstrated judgmental independence when under pressure to conform (Froming, 1977; Froming & Cooper, 1976). They are reported as better able to cope with goal thwarting as evidenced by lesser amounts of maladaptive aggression (Anchor & Cross, 1972) and able to disregard external direction and adhere to an internal decision (McNamee, 1972). In a related finding, all subjects demonstrated substantially reduced levels of retaliatory/competitive responding in an experimental game when instructed to be concerned with both their own and the other's welfare (Deutsch, 1960, 1962).

On the strength of the theoretical and empirical evidence summarized, it is predicted that conventional level participants will continue to exhibit significantly greater levels of retaliation subsequent to a return to cooperative responding by the confederate, particularly when they have received a conventional "moral" instructional set than will principled level participants who have received a principled "moral" instructional set.

Addressed from a social exchange perspective, continued retaliatory responding is expected for all participants regardless of level of moral reasoning. This is because equity principles are seen as governing behavior no matter what set of moral judgment cognitions an individual holds (Blau, 1964; Homans, 1974; Kelly & Thibaut, 1978; Lerner, 1971, 1974). Based on the notions of equity, comparison level, and the

rationality proposition, social exchange theorists would predict that both conventional and principled level individuals would continue to retaliate and show a slow rate of return to pre-violation levels of cooperative behavior. Since rewards were unilaterally decreased by the confederate, social exchange theory would postulate that costs should be diminished correspondingly. A return to predominantly cooperative responding could only occur over a more extended period of time. Retaliatory responding would continue for both conventional and principled level subjects in order to equalize cumulative costs with benefits.

Hypothesis 2b:

There will be a significant three-way interaction between level of moral reasoning (conventional and principled levels) and "moral" instructional set (conventional and principled) on self-reported level of frustration experienced following confederate return to pre-violation levels of cooperative contract behavior (from 40% to 100% in the third phase of the testing sequence). That is, the joint presence of phase 3 and a conventional "moral" instructional set shall accompany a greater difference between conventional and principled level participants' self-reported level of frustration than will the joint presence of phase 3 and a principled "moral" instructional set.

Due to the greater rigidity implied by definition (Kohlberg, 1969) to be more of an issue at the conventional level of moral reasoning, the effect of prior contract violation by the confederate should not be as readily disregarded for conventional as compared to principled level participants. A greater level of frustration should continue to be exper-

perienced and reported by conventional level participants given the relatively recent unilateral contract-breaking behavior of the confederate, particularly when they have received the cognitive cue of a conventional "moral" instructional set.

Principled level participants are hypothesized to report significantly less frustration at this point in the experimental game, as the confederate has returned to the pre-game cooperative agreement. Based upon principled level individuals' considerable reliance upon their internal frames of reference to understand justice situations and as they are by definition (Haan, 1977; Kohlberg, 1969; Rest, 1979a) committed to fairness and equity for all, the return by the confederate to 100% cooperative responding should reduce the experience of further frustration. A principled "moral" instructional set should serve to enhance the moral reasoning orientation of the principled level subjects and further reduce the self-reported level of frustration experienced.

The social exchange rationale provided for hypothesis 2 remains relevant in the case of self-reported level of frustration experienced. It is interpreted from this perspective that all participants will continue to report significant levels of frustration showing a slow rate of return to pre-violation levels of experienced frustration.

Hypothesis 2c:

There will be a significant three-way interaction

between level of moral reasoning (conventional and principled) and "moral" instructional set (conventional and principled) on self-reported negative mood following confederate return to pre-violation levels of cooperative contract behavior (from 40% to 100% in the third phase of the testing sequence). That is, the joint presence of phase 3 and a conventional "moral" instructional set shall accompany a greater difference between conventional and principled level participants' self-reported negative mood than will the joint presence of phase 3 and a principled "moral" instructional set.

The rationale for hypothesis 2c is essentially the same as that for 2b. It is anticipated that self-reported frustration and self-reported negative mood will closely correspond in intensity as both measure the subjective, or affective, experience of participants after phase 3 of the message game.

Hypothesis 2d:

There will be a significant three-way interaction between level of moral reasoning (conventional and principled) and "moral" instructional set (conventional and principled) on negative confederate-related affect following confederate return to pre-violation levels of cooperative contract behavior (from 40% to 100% in the third phase of the testing sequence). That is, the joint presence of phase 3 and a conventional "moral" instructional set shall accompany a greater difference between conventional and principled level participants' negative confederate-related affect than will the joint presence of phase 3 and a principled "moral" instructional set.

By definition, conventional level participants are more influenced by external demands of justice situations. In the gaming interaction, personal gain is likely to be a stronger motive directing the conventional level individual's behavior (see rationale, hypotheses 1 and 2) Furthermore, conventional level individuals express frequent concern

about the possible detrimental effects of even a single deviation on a social contract, while by definition (Haan, 1977; Kohlberg, 1969; Rest, 1979a) punishment for violation of norms is considered appropriate. Although the confederate has returned to the pre-game cooperative agreement, it is concluded that conventional level participants will remain less affected by the change in strategy and will attribute significantly greater negative qualities to the confederate than will principled level participants. In light of the justice orientation of principled level individuals, after the confederate returns to the pre-game cooperative agreement, there remains little or no reason for continued retaliation. The personally valued outcomes of maximum gain for all and equity are now attainable. Therefore, it is concluded that principled level participants will report significantly more positive feelings regarding the confederate than will conventional level individuals.

By way of conclusion, the presence of a "moral" instructional set which is congruent with the individual's level of moral reasoning will serve to intensify the negative confederate-related affect reported by conventional level subjects and to lessen the negative confederate-related affect reported by principled level participants. It remains the case that social exchange theory would predict continued high levels of negative confederate-related affect and no difference between the two groups of moral judgment maturity.

Two-Way Interaction Hypotheses

Two-way interaction hypotheses focus on the effects of level of moral reasoning, conventional or principled, and level of confederate contract compliance, irrespective of the impact of level of "moral" instructional set. The rationale for all two-way interaction hypotheses (3 - 3e, and 4 - 4e) will be summarized after all are listed.

Hypothesis 3

There will be a significant two-way interaction between level of moral reasoning (conventional and principled) and phase of the gaming interaction on retaliatory behavior. That is, participants at the conventional level of moral reasoning will exhibit significantly more retaliatory behavior than will participants at the principled level of moral reasoning when level of confederate cooperative responding is reduced from agreed upon levels (from 100% to 40% in the second phase of the gaming interaction).

Hypothesis 3b:

There will be a significant two-way interaction between level of moral reasoning (conventional and principled) and phase of the gaming interaction on self-reported level of frustration experienced. That is, participants at the conventional level of moral reasoning will exhibit significantly more self-reported frustration than will participants at the principled level of moral reasoning when level of confederate cooperative responding is reduced from agreed upon levels (from 100% to 40% in the second phase of the gaming interaction).

Hypothesis 3c:

There will be a significant two-way interaction between level of moral reasoning (conventional and principled) and phase of the gaming interaction on self-reported negative-mood. That is, participants

at the conventional level of moral reasoning will exhibit a significantly more negative self-reported mood than will participants at the principled level of moral reasoning when level of confederate cooperative responding is reduced from agreed upon levels (from 100% to 40% in the second phase of the gaming interaction).

Hypothesis 3d:

There will be a significant two-way interaction between level of moral reasoning (conventional and principled) and phase of the gaming interaction on negative confederate-related affect. That is, participants at the conventional level of moral reasoning will exhibit a significantly more negative confederate-related affect than will participants at the principled level of moral reasoning when level of confederate cooperative responding is reduced from agreed upon levels (from 100% to 40% in the second phase of the gaming interaction).

Hypothesis 3e:

There will be a significant two-way interaction between level of moral reasoning (conventional and principled) and phase of the gaming interaction on self-reported importance of earning the most points. That is, participants at the conventional level of moral reasoning will attribute significantly more importance to earning the most points than will participants at the principled level of moral reasoning when level of confederate cooperative responding is reduced from agreed upon levels (from 100% to 40% in the second phase of the gaming interaction).

Hypothesis 4:

There will be a significant two-way interaction between level of moral reasoning (conventional and principled) and phase of the gaming interaction on retaliatory behavior. That is, participants at the conventional level of moral reasoning will exhibit significantly more retaliatory behavior than will participants at the principled level of moral reasoning following confederate return to pre-violation levels of cooperative responding (from 40% to 100% in the

third phase of the gaming interaction).

Hypothesis 4b:

There will be a significant two-way interaction between level of moral reasoning (conventional and principled) and phase of the gaming interaction on self-reported level of frustration experienced. That is, participants at the conventional level of moral reasoning will exhibit significantly more self-reported frustration than will participants at the principled level of moral reasoning following confederate return to pre-violation levels of cooperative responding (from 40% to 100% in the third phase of the gaming interaction).

Hypothesis 4c:

There will be a significant two-way interaction between level of moral reasoning (conventional and principled) and phase of the gaming interaction on self-reported negative mood. That is, participants at the conventional level of moral reasoning will exhibit a significantly more negative self-reported mood than will participants at the principled level of moral reasoning following confederate return to pre-violation levels of cooperative responding (from 40% to 100% in the third phase of the gaming interaction).

Hypothesis 4d:

There will be a significant two-way interaction between level of moral reasoning (conventional and principled) and phase of the gaming interaction on negative confederate-related affect. That is, participants at the conventional level of moral reasoning will exhibit a significantly more negative confederate-related affect than will participants at the principled level of moral reasoning following confederate return to pre-violation levels of cooperative responding (from 40% to 100% in the third phase of the gaming interaction).

Hypothesis 4e:

There will be a significant two-way interaction between level of moral reasoning (conventional and

principled) and phase in the gaming interaction on self-reported importance of earning the most points. That is, participants at the conventional level of moral reasoning will attribute significantly more importance to earning the most points than will participants at the principled level of moral reasoning following confederate return to pre-violation levels of cooperative responding (from 40% to 100% in the third phase of the gaming interaction).

The theoretical and empirical rationales for hypotheses 3 - 3e and 4 - 4e are very similar to the previously presented rationales for hypotheses 1 - 1d and 2 - 2d, with only the anticipated influence of "moral" instructional set being irrelevant.

The gaming procedure employed in this investigation is designed to explicitly highlight the justice aspect of the message game interaction for all participants. This is accomplished by employing a pre-game verbal contract to cooperate on all trials with a serious later reduction in the confederate's cooperative response level. In this manner, it is anticipated that the cognitive-developmental differences hypothesized to be operative (Haan, 1977; Kohlberg, 1969; Rest, 1979a) at the conventional and principled levels of moral reasoning will be accentuated.

If results are consistent with the predictions which are based upon stage specific cognitive-developmental rationales irrespective of the influence of "moral" instructional set, then it can be concluded that self-reported level of moral reasoning as measured by the DIT has some compelling influence with respect to guiding behavior in a competitive, relevant, tailor-made situation. Likewise, given this outcome,

it would appear that alternative predictions of social exchange theory (Blau, 1964; Homans, 1961, 1974; Kelly & Thibaut, 1978) are somewhat distinct across levels of a cognitive-developmental construct. While the predictions of social exchange may be appropriate for conventional level subjects, they are less accurate for individuals at the principled level of moral reasoning.

Main Effects Hypotheses

The present research has been predominantly designed to test the interaction hypotheses previously offered (1 - 4e). The following main effects hypotheses are included for investigation as "minor" predictions which pertain to expected overall differences between conventional and principled level subjects on behavioral and self-report measures. In cases where significant interactions are reported, interpretation of main effects findings will be qualified by results of post-hoc analyses of the significant interactions. The rationale for hypotheses 5, 6, and 7 will be briefly summarized after the three main effects hypotheses are presented.

Hypothesis 5:

There will be a main effect for level of moral reasoning (conventional and principled levels) on retaliatory behavior. That is, participants at the conventional level will exhibit significantly more retaliatory behavior than will participants at the principled level, irrespective of "moral" instructional set and phase of the gaming interaction.

Hypothesis 6:

There will be a main effect for level of moral reasoning (conventional and principled levels) on self-reported desire to subtract points from the confederate. That is, participants at the conventional level of moral reasoning will self-report a significantly greater level of desire to subtract points than will participants at the principled level, irrespective of "moral" instructional set and phase of the gaming interaction.

Hypothesis 7:

There will be a main effect for level of moral reasoning (conventional and principled levels) on self-reported commitment to continued cooperation. That is, participants at the conventional level of moral reasoning will self-report significantly less commitment to continued cooperation than will participants at the principled level, irrespective of "moral" instructional set and phase of the gaming interaction.

By way of summary, the rationale for hypotheses 5, 6, and 7 closely reflects the general rationales offered for hypotheses 1, 1b, 1c, and 1d. In this case, it is concluded that level of moral reasoning will figure most prominently in results recorded for 1) retaliatory behavior, 2) self-reported desire to subtract points from the contract-breaking confederate, and 3) commitment to continued cooperation during the course of the gaming interaction. These conclusions, as outlined in earlier rationales, are supported by reported differences in reasoning at the two levels of cognitive moral development (Kohlberg, 1969; Rest, 1979a) and by previously reported empirical findings (e.g., Anchor and Cross, 1974; Jacobs, 1975; McNamee, 1972) which offer evidence of divergent behavior in some situations which present a moral dilemma.

CHAPTER III

PRESENTATION OF RESULTS

Overview

In this section, results are reported regarding subject behavior in the message game. A total of one-hundred subjects participated in the research, fifty at the conventional level and fifty at the principled level of moral reasoning. Equal numbers of participants at each level randomly received either a conventional or principled "moral" instructional set resulting in a cell size of twenty-five subjects. Data from one subject for self-report measures in the gaming interaction and from one other subject for the PHN Scale were unavailable and replaced with mean values for all analyses performed.

While repeated measures analysis of variance (Dixon et al., 1981) was the main technique of data analysis, univariate analysis of variance, product-moment correlation coefficients, and discriminant analysis (Nie et al., 1975) were also used where appropriate. Unless otherwise indicated, the $p < .05$ level of significance was adopted as recommended by Kirk (1982). In order to reduce the probability of committing a type 1 error, post-hoc analyses of significant interactions utilized more conservative error terms appropriate for samples which have non-equality

of variance and covariance (Kirk, 1982). A treatment-contrast procedure, recommended for repeated measures designs (Kirk, 1982), was employed to further investigate significant interactions recorded. Statistical findings are presented in this chapter in the following order.

In order to reveal the general relationship found between all variables employed in this investigation, product-moment correlation coefficients are presented first. Subsequent to this review of the general relationship between variables, the interaction hypotheses undergoing evaluation in this research are addressed by means of statistical findings from repeated measures analyses of variance and appropriate post-hoc tests. Finally, ancillary findings are reported including results of an analysis of the relationship of PHN Scale data to self-reported level of moral reasoning as assessed by the DIT.

Correlations Between All Variables

In the present investigation, 31 variables were employed as independent and dependent measures to examine the hypotheses offered in Chapter 2. Pearson product-moment correlation coefficients between all variables are found in Appendix 11. As revealed through the correlation table, these variables bear in some instances the expected relationship to one another and, in other instances, demonstrate a lack of relationship where one would be predicted. For example,

in regards to the main dependent variable of retaliatory behavior (columns labeled RET2 or retaliatory behavior in Phase 2/Provocation, and RET3 or retaliatory behavior in Phase 3/Restoration), Table 9 reveals that its relationship to level of moral reasoning (row labeled P%) is in the expected direction, that is, negatively related, and achieves significance ($\underline{r} = -.40$, $\underline{p} < .001$, and $\underline{r} = -.45$, $\underline{p} < .001$ respectively). Therefore, subjects who scored higher in self-reported level of moral reasoning evidenced less retaliatory behavior than subjects who scored lower in moral reasoning. A key to all symbols employed in the table is also available in Appendix 11.

Further analysis of these variables will be presented in the next section of the results designed to assess support for the hypotheses proposed regarding effects of level of moral reasoning, level of "moral" instructional set, and level of confederate contract compliance in an experimental gaming interaction. The presentation of results will now turn to a report of repeated measures analyses of variance.

Repeated Measures Analyses of Variance

Reviewed in this section are results of the 2x2x3 repeated measures analyses of variance (with level of moral reasoning, conventional/principled; level of "moral" instructional set, conventional/principled; and level of confederate contract compliance, 100%/40%/100%) performed

on the dependent variables of retaliatory behavior and the six self-report measures utilized in this investigation. These six measures were level of negative self-reported mood, importance of earning the most points, self-reported desire to subtract points from the contract-breaking confederate, commitment to continued cooperation, self-reported level of frustration experienced, and negative confederate-related affect. Prior to the individual variables being presented, a summary table listing probabilities of F contrasts is provided (see Table 9).

As indicated in Table 9, main effect findings achieving significance for the independent variable of level of moral reasoning (conventional/principled) include those for retaliatory behavior ($p < .0001$), importance of earning the most points ($p < .01$), desired subtraction of points from a contract-breaking confederate ($p < .001$), and commitment to continued cooperation ($p < .02$). Considering the independent variable of "moral" instructional set, main effects were seen on two dependent variables, retaliatory behavior ($p < .001$) and self-reported level of frustration experienced ($p < .01$). Considering the final independent variable or level of confederate contract compliance (3 phases: 100%, 40%, 100%), main effect findings were recorded for all seven dependent variables (retaliation, $p < .0001$; negative mood, $p < .0001$; importance of earning the most points, $p < .02$, desire to subtract points, $p < .0001$; commitment to continued

Table 9

Summary of Probabilities of F Contrasts
from Repeated Measures Analyses of Variance
for the Seven Dependent Variables

Source	Retaliation	Mood	Importance of Points	Subtraction of Points	Continued Cooperation	Frustration	Confederate Affect
Level of Moral Reasoning	.000*	.913	.010	.001*	.021*	.119	.325
I. Set	.001	.349	.244	.645	.434	.019	.571
Phase	.000	.000	.028	.000	.000	.000	.000
Moral Reasoning x I. Set	.929	.427	.968	.194	.922	.403	.298
Moral Reasoning x Phase	.000*	.025*	.009*	.151	.369	.487	.159
I. Set x Phase	.002	.295	.586	.251	.067	.419	.822
Moral Reasoning x I. Set x Phase	.926	.564	.271	.374	.658	.630	.636

*predicted and attained significance

cooperation, $p < .0001$; frustration experienced, $p < .0001$; and negative confederate-related affect, $p < .0001$).

As revealed by the main effect for level of confederate contract compliance for all seven dependent variables, the gaming interaction offered a compelling and ego-involving situational dilemma for most participants.

The main effects as reported in Table 9 are qualified in some instances by significant interactions. Those F contrasts which attained significance for the interaction of level of moral reasoning and level of confederate contract compliance/phase were those for retaliatory behavior ($p < .0001$), negative self-reported mood ($p < .025$), and the importance of earning the most points ($p < .009$). Also attaining significance was the F contrast for the interaction between level of "moral" instructional set and level of confederate contract compliance/phase for retaliatory behavior ($p < .002$). All other two-way and three-way interactions failed to achieve significance.

Retaliatory Behavior

The results of the repeated measures analysis of variance (Dixon et al., 1981) for retaliatory behavior is presented in Table 10. In examining the table, significant main effects for level of moral reasoning ($F = 29.10$, $df = 1, 96$, $p < .001$), level of "moral" instructional set ($F = 11.95$, $df = 1, 96$, $p < .001$), and level of confederate

Table 10

Summary of Repeated Measures Analysis of Variance
of Retaliatory Behavior

Source	Sum of Squares	<u>df</u>	Mean Square	<u>F</u> Ratio	Prob.
Level of M.R.	436.813	1	436.813	29.10	0.000
I. Set	179.413	1	179.413	11.95	0.001
M.R. x I. Set	0.120	1	0.120	0.01	0.929
Error (Between)	1440.987	96	15.010		
Phase	2272.347	2	1136.173	103.83	0.000
M.R. x Phase	262.586	2	131.293	12.00	0.000
I. Set x Phase	139.707	2	69.853	6.38	0.002
M.R. x I. Set x Phase	1.680	2	0.840	0.08	0.926
Error (Within)	2101.013	192	10.943		

contract compliance/phase ($F = 103.83$, $df = 2, 192$, $p < .0001$) will be noted. The main effect reported for level of moral reasoning indicates that significantly more retaliatory behavior was evidenced by individuals at the conventional level of moral reasoning ($\bar{X} = 4.07$, $SD = 5.20$) during the entire gaming interaction than did subjects at the principled level of moral reasoning ($\bar{X} = 1.66$, $SD = 3.98$), and is in support of hypothesis 5. Furthermore, the significant main effect for level of "moral" instructional set indicates that those subjects who were presented with a conventional "moral" instructional set engaged in more retaliatory behavior ($\bar{X} = 3.64$, $SD = 5.22$) than did subjects presented with a principled "moral" instructional set ($\bar{X} = 2.09$, $SD = 4.18$).

The main effects of Table 10 are qualified, however, by significant interactions for level of moral reasoning by level of confederate contract compliance/phase ($F = 12.00$, $df = 2, 192$, $p < .0001$) and for level of "moral" instructional set by level of confederate contract compliance/phase ($F = 6.38$, $df = 2, 192$, $p < .002$). The relevant means for these two interactions are depicted in Figure 1 (moral reasoning by phase) and in Figure 2 ("moral" instructional set by phase). As Kirk (1982) recommends, a treatment-contrast procedure was used to further investigate these significant interactions.

Considering Figure 1, treatment-contrasts contained

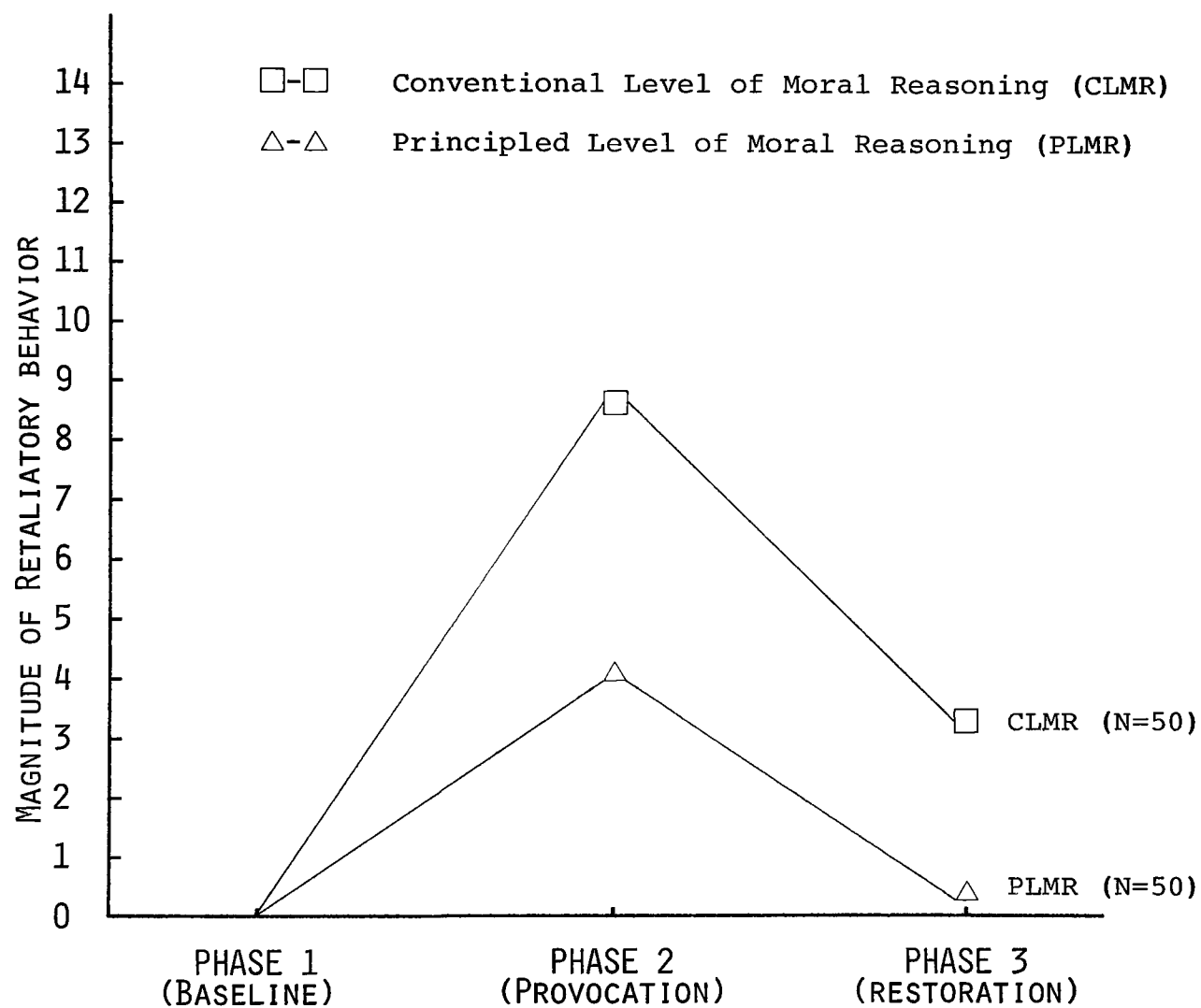


Figure 1. Retaliatory Behavior by Level of Moral Reasoning Across All Three Phases.

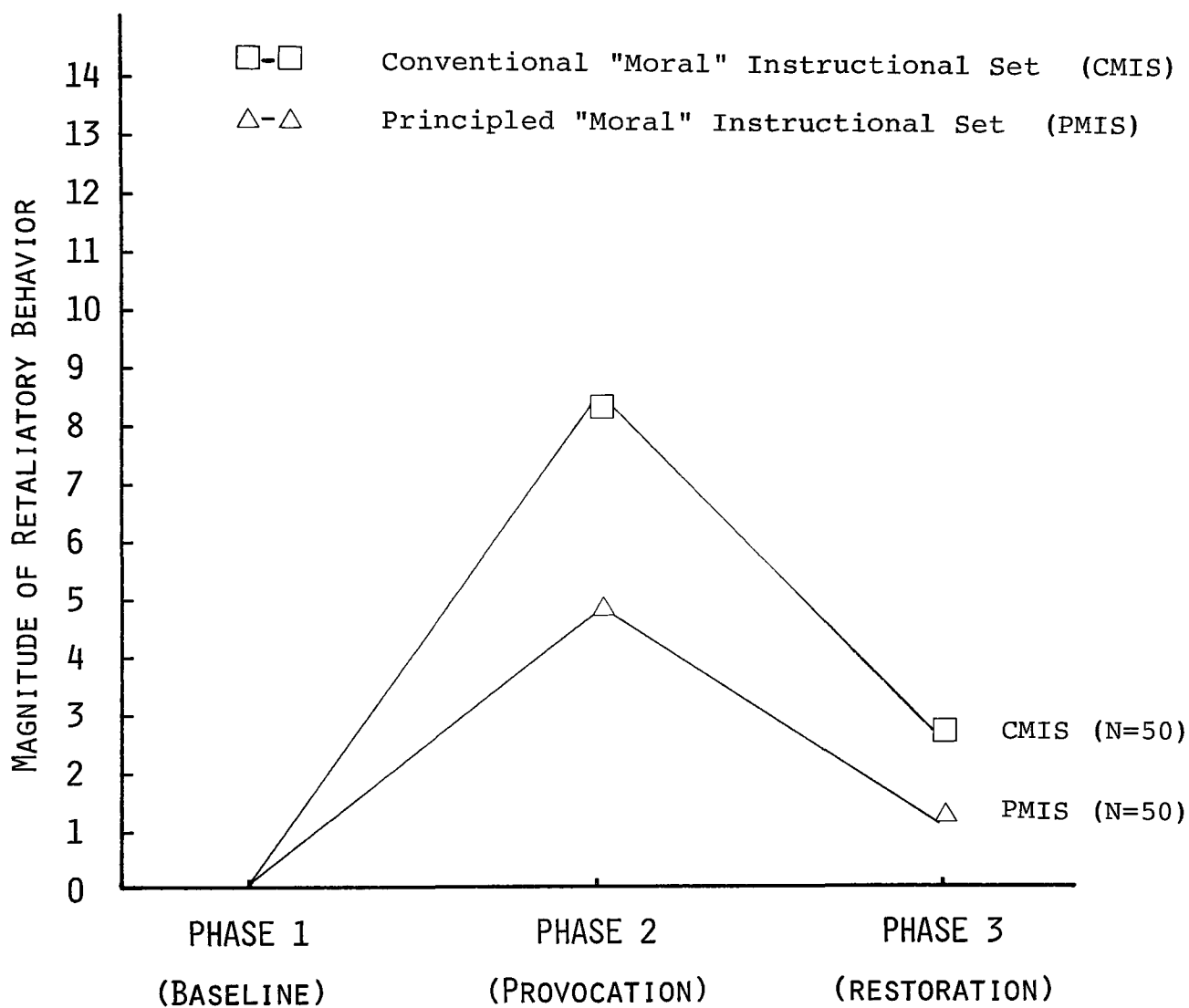


Figure 2. Retaliatory Behavior by Level of "Moral" Instructional Set Across All Three Phases.

in Table 11 reveal that the degree of increase in retaliatory behavior by subjects at the conventional level of moral reasoning (CLMR) from Phase 1/Baseline to Phase 2/Provocation is significantly greater ($F = 225.33$, $df = 1, 96$, $p < .01$) than the increase demonstrated by subjects at the principled level of moral reasoning (PLMR). The second contrast performed indicates that for conventional level subjects (CLMR) the amount of increase in retaliatory behavior from Phase 1/Baseline to Phase 3/Restoration is significantly greater than the increase for principled level subjects (PLMR), $F(1, 96) = 65.74$, $p < .01$. The third contrast between Phase 2/Provocation and Phase 3/Restoration also reveals a significant difference between participants at the conventional and principled levels of moral reasoning. In this case, subjects at the conventional level of moral reasoning (CLMR) demonstrate a greater decrease in retaliatory behavior ($F = 74.03$, $df = 1, 96$, $p < .01$) than do subjects at the principled level of moral reasoning (PLMR). Thus, there is corroboration of hypotheses 3, 4, and 5, while hypotheses 1 and 2 are offered no support by the present findings. A summary of the treatment-contrast procedure for the interaction of level of moral reasoning by level of confederate contract compliance (Phase 1/Baseline, Phase 2/Provocation, Phase 3/Restoration) is found in Table 11.

To complete the analysis of the interaction of level

Table 11

Treatment - Contrast Analyses of
the Interaction of Level of Moral Reasoning and Phase
for Retaliatory Behavior

Contrast	Sum of Squares	<u>df</u>	Mean Square	<u>F</u> Ratio	Prob.
Phase 1 Contrast Phase 2	676.00	1	676.00	225.33	.01
Error	288.00	96	3.00		
Phase 1 Contrast Phase 3	104.04	1	104.04	65.74	.01
Error	151.92	96	1.58		
Phase 2 Contrast Phase 3	249.64	1	249.64	74.03	.01
Error	323.72	96	3.37		

of moral reasoning and level of confederate contract compliance, correlated t test analyses (Nie et al., 1975) were performed on two sets of means. The purpose of these analyses was to judge if, during the final portion of the gaming interaction (Phase 3/Restoration), the level of retaliatory behavior demonstrated by subjects at the conventional (CLMR) and principled levels (PLMR) of moral reasoning returned to levels demonstrated by these subjects during the Phase 1/Baseline period. Results offer further support for the validity of hypotheses 4 and 5 in that while conventional level subjects did not return to baseline ($t = -7.19$, $df = 49$, $p < .0001$), means between the two phases for subjects at the principled level of moral reasoning were not significantly different at the $p < .01$ level ($t = -2.04$, $df = 49$, $p < .047$). Therefore, the amount of retaliatory behavior evidenced by principled level subjects in Phase 3/Restoration did not differ significantly from that recorded during Phase 1/Baseline, while conventional level participants did not return to baseline levels subsequent to confederate restoration of the cooperative contract.

Consideration of the treatment-contrast analysis of the interaction between "moral" instructional set and level of confederate contract compliance for retaliatory behavior (Figure 2, Table 12) reveals the following differences. Subjects who received a conventional "moral"

Table 12

Treatment - Contrast Analyses of the
Interaction of Level of "Moral" Instructional Set
and Phase for Retaliatory Behavior

Contrast	Sum of Squares	<u>df</u>	Mean Square	<u>F</u> Ratio	Prob.
Phase 1 Contrast Phase 2	676.00	1	676.00	225.33	.01
Error	288.00	96	3.00		
Phase 1 Contrast Phase 3	104.04	1	104.04	65.74	.01
Error	151.92	96	1.58		
Phase 2 Contrast Phase 3	249.64	1	249.64	74.03	.01
Error	323.72	96	3.37		

instructional set (CMIS) evidenced a significantly greater increase in retaliatory behavior from Phase 1/Baseline to Phase 2/Provocation ($F = 225.33$, $df = 1, 96$, $p < .01$) than did subjects receiving a principled "moral" instructional set (PMIS). Contrasting Phase 1/Baseline with Phase 3/Restoration, the treatment-contrast analysis reveals a significantly greater increase in retaliatory behavior occurred in the group receiving a conventional "moral" instructional set (CMIS) compared to those subjects who received a principled "moral" instructional set (PMIS), $F(1, 96) = 65.74$, $p < .01$. Lastly, a contrast of Phase 2/Provocation and Phase 3/Restoration reveals that subjects receiving a conventional "moral" instructional set demonstrated a significantly greater decrease in retaliatory behavior ($F = 74.03$, $df = 1, 96$, $p < .01$) than that recorded for subjects receiving a principled "moral" instructional set. Although significant findings were recorded, no a priori hypotheses were offered regarding the effects of level of "moral" instructional set isolated from the effects of level of moral reasoning. A summary of the treatment-contrast procedure for the interaction between level of "moral" instructional set and level of confederate contract compliance is found in Table 12.

Returning to Table 10, it can be seen that the remaining two-way interaction of level of moral reasoning and level of "moral" instructional set ($F = 0.01$, $df = 1, 96$)

and three-way interaction of level of moral reasoning, level of "moral" instructional set, and level of confederate contract compliance ($F = 0.08$, $df = 2$, 192) did not result in F values achieving significance; therefore, no support was recorded in this investigation for hypotheses 1 and 2.

Negative Self-Reported Mood

The results of the repeated measures analysis of variance (Dixon et al., 1981) performed on negative self-reported mood are presented in Table 13. In examining this table, it is noted that one significant main effect for level of confederate contract compliance/phase ($F = 39.54$, $df = 2$, 192, $p < .0001$) occurs. Main effects for level of moral reasoning ($F = 0.01$, $df = 1$, 96) and level of "moral" instructional set ($F = 0.88$, $df = 1$, 96) were not significant.

The data on interaction effects contained in Table 13 indicates the interaction between level of moral reasoning and level of confederate contract compliance/phase for negative self-reported mood ($F = 3.74$, $df = 2$, 192, $p < .025$) achieves significance. Interactions were not significant for level of moral reasoning and level of "moral" instructional set ($F = 0.52$, $df = 1$, 96), level of "moral" instructional set and level of confederate contract compliance ($F = 1.23$, $df = 2$, 192), and for level of moral reasoning

Table 13

Summary of Repeated Measures Analysis of
Variance of Negative Self-Reported Mood

Source	Sum of Squares	<u>df</u>	Mean Square	<u>F</u> Ratio	Prob.
Level of M.R.	0.333	1	0.333	0.01	0.913
I. Set	24.653	1	24.653	0.88	0.349
M.R. x I. Set	14.520	1	14.520	0.52	0.472
Error (Between)	2676.613	96	27.881		
Phase	497.407	2	248.703	39.54	0.000
M.R. x Phase	47.047	2	23.523	3.74	0.025
I. Set x Phase	15.447	2	7.723	1.23	0.295
M.R. x I. Set X Phase	7.220	2	3.610	0.57	0.564
Error (Within)	1207.547	192	6.289		

by level of "moral" instructional set by level of confederate contract compliance ($F = 0.57$, $df = 2, 192$).

A treatment-contrast procedure (Kirk, 1982) was used to investigate the significant interaction between level of moral reasoning and level of confederate contract compliance for negative self-reported mood and is available in Table 14. Referring to Figure 3, the treatment-contrasts reveal that the degree of increase in negative self-reported mood for subjects at the conventional level of moral reasoning (CLMR) was significantly greater than that of participants at the principled level (PLMR) from Phase 1/Baseline to Phase 2/Provocation ($F = 60.07$, $df = 1, 96$, $p < .01$). The second contrast of differences in negative self-reported mood between Phase 1/Baseline and Phase 3/Restoration was not significant ($F = 9.62$, $df = 1, 96$). The final contrast between Phase 2/Provocation and Phase 3/Restoration reveals a significant difference between participants at the conventional and principled levels of moral reasoning. In this case, subjects at the conventional level (CLMR) demonstrate a greater decrease in negative self-reported mood than did subjects at the principled level (PLMR) of moral reasoning, $F(1, 96) = 35.44$, $p < .01$. Therefore, while no support was recorded for hypotheses 1c, 2c, and 4c, there is evidence from statistical analyses in support of hypothesis 3c.

To complete the analysis of the interaction of level

Table 14

Treatment - Contrast Analyses of the
Interaction of Level of Moral Reasoning and Phase
for Negative Self-Reported Mood

Contrast	Sum of Squares	<u>df</u>	Mean Square	<u>F</u> Ratio	Prob.
Phase 1 Contrast Phase 2	118.81	1	118.81	60.07	.01
Error	189.88	96	1.98		
Phase 1 Contrast Phase 3	10.89	1	10.89	9.62	N.S.
Error	108.72	96	1.13		
Phase 2 Contrast Phase 3	57.76	1	57.76	35.44	.01
Error	156.48	96	1.63		

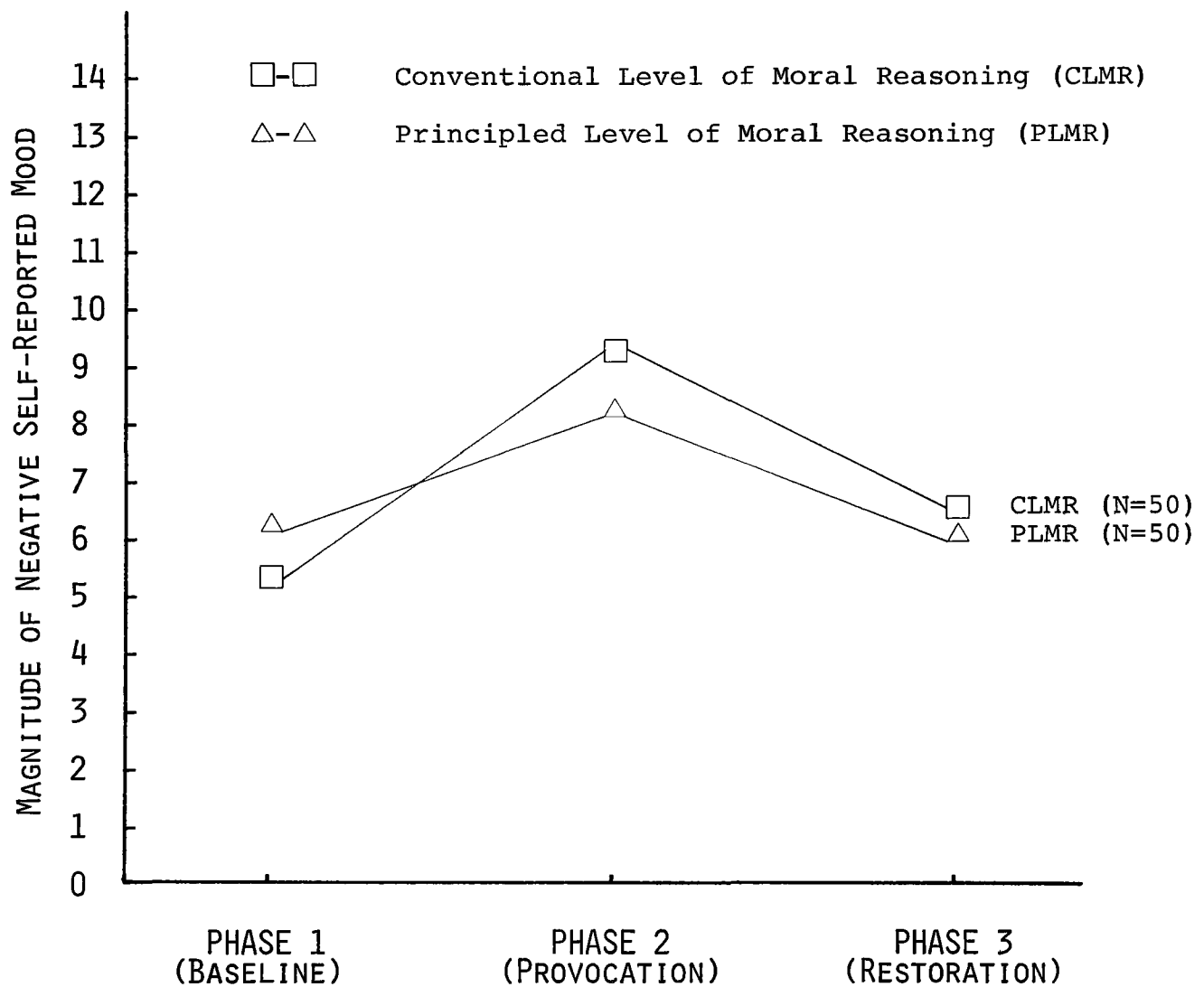


Figure 3. Negative Self-Reported Mood by Level of Moral Reasoning Across All Three Phases.

of moral reasoning and level of confederate contract compliance for self-reported mood, correlated t test analyses (Nie et al., 1975) were performed on two sets of means. The comparisons were performed on the means for negative self-reported mood for conventional level subjects (CLMR) in Phase 1/Baseline and Phase 3/Restoration. A second t test was completed on the means of principled level subjects (PLMR) in the same two phases. Results indicate that conventional level subjects self-reported significantly greater negative mood in Phase 3/Restoration when compared to Phase 1/Baseline ($t = -3.36$, $df = 49$, $p < .001$), while the means between the two phases for principled level subjects did not achieve significance ($t = -1.68$, $df = 49$, $p < .098$). Therefore, the amount of negative self-reported mood for principled level subjects did not differ significantly when comparing the restoration and baseline phases, while conventional level participants did self-report a significantly more negative mood in Phase 3/Restoration than they had in Phase 1/Baseline.

Importance of Earning the Most Points

Found in Table 15, are the results of a repeated measures analysis of variance (Dixon et al., 1981) performed on the self-reported importance of earning the most points in the gaming interaction. In examining this table, it can be noted that there occurred two significant main

Table 15

Summary of Repeated Measures Analysis of
Variance of Self-Reported Importance of
Earning the Most Points

Source	Sum of Squares	<u>df</u>	Mean Square	<u>F</u> Ratio	Prob.
Level of M.R.	56.333	1	56.333	6.89	0.010
I. Set	11.213	1	11.213	1.37	0.244
M.R. x I. Set	0.013	1	0.013	0.00	0.968
Error (Between)	784.773	96	8.174		
Phase	10.127	2	5.063	3.65	0.028
M.R. x Phase	13.407	2	6.703	4.83	0.010
I. Set x Phase	1.487	2	0.743	0.54	0.5864
M.R. x I. Set x Phase	3.647	2	1.823	1.31	0.271
Error (Within)	266.667	192	1.389		

effects. The first main effect is for level of moral reasoning ($F = 6.89$, $df = 1, 96$, $p < .010$), while the second is for level of confederate contract compliance ($F = 3.65$, $df = 2, 192$, $p < .028$). The main effect for level of "moral" instructional set ($F = 1.37$, $df = 1, 96$) was not significant. The main effect for level of moral reasoning indicates that significantly more importance was given to earning the most points in the gaming interaction by conventional level participants ($\bar{X} = 3.20$, $SD = 2.00$) than by principled level subjects ($\bar{X} = 2.33$, $SD = 1.82$).

The main effect is qualified, however, by a significant interaction between level of moral reasoning and level of confederate contract compliance ($F = 4.83$, $df = 2, 192$, $p < .010$) displayed in Figure 4. Interactions of level of moral reasoning and "moral" instructional set ($F = 0.00$, $df = 1, 96$), "moral" instructional set and confederate contract compliance ($F = 0.54$, $df = 2, 192$) and moral reasoning, "moral" instructional set, and confederate contract compliance ($F = 1.31$, $df = 2, 192$) all failed to achieve a $p < .05$ level of significance (see Table 15).

A treatment-contrast approach (Kirk, 1982) was employed to investigate the significant interaction between level of moral reasoning and level of confederate contract compliance/phase and is summarized in Table 16. Utilizing Figure 4, the treatment-contrasts reveal that

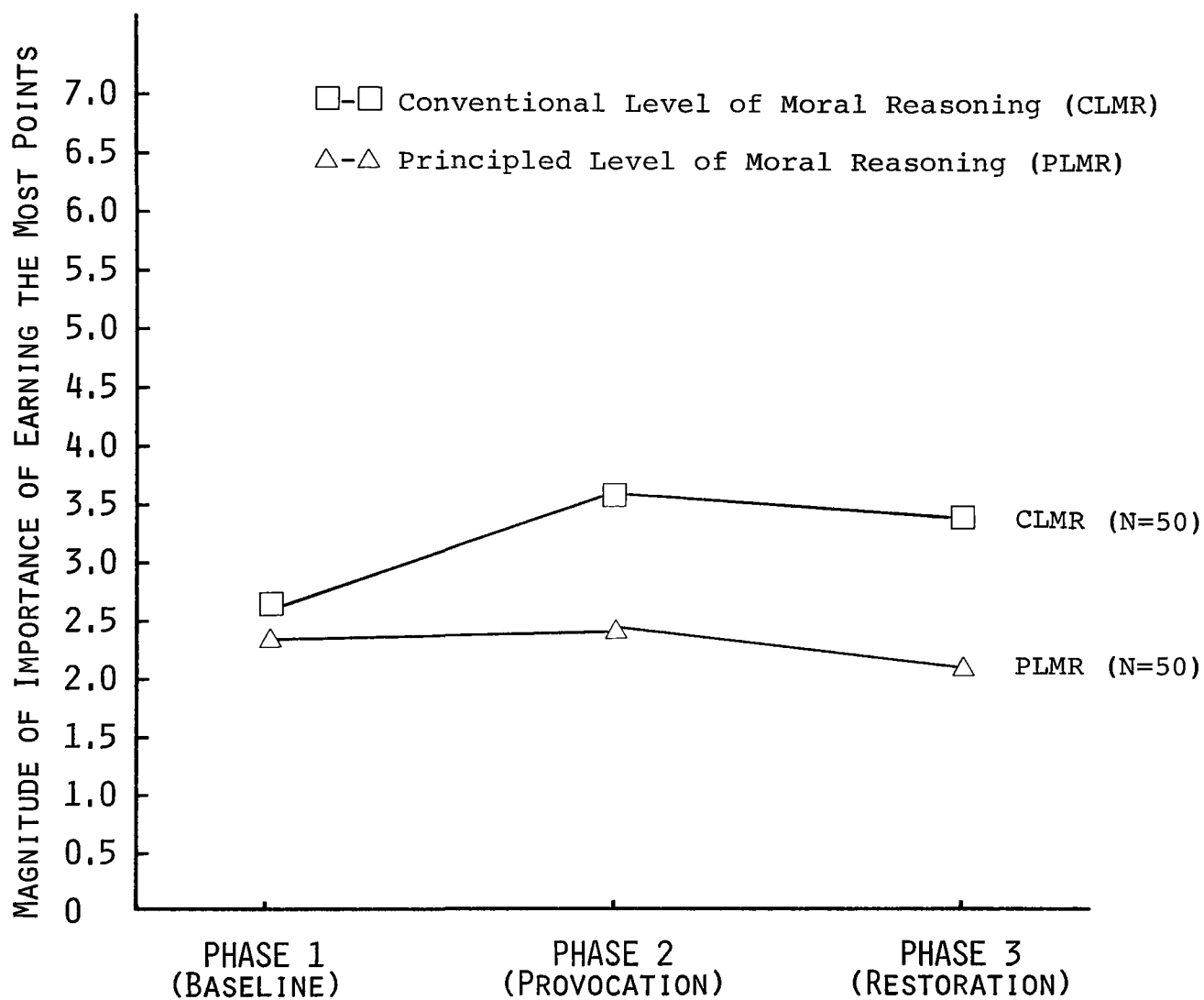


Figure 4. Importance of Earning the Most Points by Level of Moral Reasoning Across All Three Phases.

Table 16

Treatment - Contrast Analyses of the
Interaction of Level of Moral Reasoning and Phase
for Importance of Earning the Most Points

Contrast	Sum of Squares	<u>df</u>	Mean Square	<u>F</u> Ratio	Prob.
Phase 1 Contrast Phase 2	7.29	1	7.29	11.68	N.S.
Error	59.92	96	0.62		
Phase 1 Contrast Phase 3	8.41	1	8.41	15.33	.05
Error	52.68	96	0.55		
Phase 2 Contrast Phase 3	0.04	1	0.04	0.12	N.S.
Error	30.92	96	0.32		

only the contrast between Phase 1/Baseline and Phase 3/Restoration achieves significance at a $p < .05$ level. In this case, the degree of increase in importance of earning the most points from the baseline to the restoration phase for conventional level subjects (CLMR) tended to be greater than the change self-reported by principled level (PLMR) subjects ($F = 15.33$, $df = 1$, 96 , $p < .05$). It is noted that this contrast only achieves significance at the less conservative $p < .05$ level. Treatment-contrasts between Phase 1/Baseline and Phase 2/Provocation ($F = 11.66$, $df = 1$, 96) and Phase 2/Provocation to Phase 3/Restoration ($F = 0.12$, $df = 1$, 96) did not achieve significance.

To complete the analysis of the interaction of level of moral reasoning and level of confederate contract compliance for self-reported importance of earning the most points in the gaming interaction, correlated t tests (Nie et al., 1975) were completed on two sets of means. The comparisons were performed to ascertain if, during the final phase (Phase 3/Restoration) of the gaming interaction, subjects at the conventional (CLMR) and principled (PLMR) levels of moral reasoning returned to the baseline self-report levels for the importance of earning the most points. Results reveal that, while conventional level subjects (CLMR) did not return to baseline ($t = -2.52$, $df = 49$, $p < .015$), subjects at the principled level of moral reasoning (PLMR) did return to baseline ($t = 1.07$, $df = 49$, $p < .291$).

In conclusion, results of the repeated measures analysis of variance, treatment-contrast procedure and correlated t tests provide evidence in support of hypothesis 4e, while hypothesis 3e is offered no support by the present findings.

Desire to Subtract Points from the Confederate

Available in Table 17 are the results of a repeated measures analysis of variance completed on self-reported desire to subtract points from the contract-breaking confederate. In examining the table, significant main effects for level of moral reasoning ($F = 12.00$, $df = 1$, 96 , $p < .001$) and for level of confederate contract compliance/phase ($F = 20.12$, $df = 2$, 192 , $p < .0001$) are noted. Other main effects and all interactions failed to achieve significance for this self-report variable.

In this instance, the main effect reported for level of moral reasoning indicates that subjects at the conventional level of moral reasoning ($\bar{X} = 1.87$, $SD = 1.39$) indicated significantly more desire to subtract points from a contract-breaking confederate during the course of the gaming interaction than did subjects at the principled level of moral reasoning ($\bar{X} = 1.27$, $SD = 1.12$), and is in support of hypothesis 6.

Commitment to Continued Cooperation

Available in Table 18 are the results of a repeated

Table 17

Summary of Repeated Measures Analysis of
Variance of Self-Reported Desire to
Subtract Points from the Confederate

Source	Sum of Squares	<u>df</u>	Mean Square	<u>F</u> Ratio	Prob.
Level of M.R.	27.000	1	27.000	12.00	0.001
I. Set	0.480	1	0.480	0.21	0.645
M.R. x I. Set	3.853	1	3.853	1.71	0.193
Error (Between)	216.053	96	2.251		
Phase	42.446	2	21.223	20.12	0.000
M.R. x Phase	4.020	2	2.010	1.91	0.151
I. Set x Phase	2.940	2	1.470	1.39	0.251
M.R. x I. Set x Phase	2.087	2	1.043	0.99	0.374
Error (Within)	202.507	192	1.055		

Table 18

Summary of Repeated Measures Analysis of Variance of
Self-Reported Commitment to Continued Cooperation

Source	Sum of Squares	df	Mean Square	F Ratio	Prob.
Level of M.R.	30.720	1	30.720	5.54	0.020
I. Set	3.413	1	3.413	0.62	0.434
M.R. x I. Set	0.053	1	0.053	0.01	0.922
Error (Between)	531.867	96	5.540		
Phase	115.087	2	57.543	41.43	0.000
M.R. x Phase	2.780	2	1.390	1.00	0.369
I. Set x Phase	7.607	2	3.803	2.74	0.067
M.R. x I. Set x Phase	1.167	2	0.583	0.42	0.658
Error (Between)	266.693	192	1.389		

measures analysis of variance (Dixon et al., 1981) of self-reported commitment to continued cooperation in the gaming interaction. When examining Table 18, significant main effects are noted for level of moral reasoning ($F = 5.54$, $df = 1, 96$, $p < .020$) and for level of confederate contract compliance ($F = 41.43$, $df = 2, 192$, $p < .0001$). The main effect reported for level of moral reasoning is found to be in support of hypothesis 7, and indicates that participants at the principled level of moral reasoning ($\bar{X} = 2.25$, $SD = 1.79$) tended to be more committed to continued cooperation during the gaming interaction than did subjects at the conventional level of moral reasoning ($\bar{X} = 2.89$, $SD = 1.74$). It should be noted that this scale was scored in the opposite direction, and, therefore, a lower score indicates a greater commitment to cooperation. Other main effects and all interactions failed to achieve significance for this self-report variable.

Self-Reported Level of Frustration Experienced

Results of the repeated measures analysis of variance (Dixon et al., 1981) completed on self-reported level of frustration experienced are found in Table 19. Significant main effects were found for level of "moral" instructional set ($F = 5.70$, $df = 1, 96$, $p < .019$) and for level of confederate contract compliance ($F = 30.50$, $df = 1, 192$, $p < .0001$). The main effect finding for level of "moral"

Table 19

Summary of Repeated Measures Analysis of Variance of
Self-Reported Level of Frustration Experienced

Source	Sum of Squares	df	Mean Square	F Ratio	Prob.
Level of M.R.	67.213	1	67.213	2.46	0.119
I. Set	155.520	1	155.520	5.70	0.019
M.R. x I. Set	19.253	1	19.253	0.71	0.403
Error (Between)	2621.013	96	27.302		
Phase	353.780	2	176.890	30.05	0.000
M.R. x Phase	8.487	2	4.243	0.72	0.488
I. Set x Phase	10.260	2	5.130	0.87	0.419
M.R. x I. Set X Phase	5.447	2	2.723	0.46	0.630
Error (Within)	1130.027	192	5.886		

instructional set indicates that those subjects who received a conventional "moral" instructional set ($\bar{X} = 7.42$, $SD = 4.14$) reported they experienced significantly more frustration during the gaming interaction than did subjects receiving a principled "moral" instructional set ($\bar{X} = 5.98$, $SD = 3.34$). As is evident from a further review of Table 19, other main effects and all interactions failed to achieve significance. Therefore, no support was found in this investigation for hypotheses 1b, 2b, 3b, or 4b.

Negative Confederate-Related Affect

Available in Table 20 are results for the self-report measure of negative confederate-related affect. Only one main effect, level of confederate contract compliance/phase ($F = 85.61$, $df = 2, 192$, $p < .0001$) was significant, while no interactions achieved significance for this self-report variable. Therefore, most subjects, irrespective of level of moral reasoning and level of "moral" instructional set, reported an increase in negative feelings toward the confederate during the gaming interaction (Phase 1/Baseline, $\bar{X} = 10.10$, $SD = 4.65$; Phase 2/Provocation, $\bar{X} = 20.42$, $SD = 9.20$; Phase 3/Restoration, $\bar{X} = 15.66$, $SD = 7.64$). However, since no three-way or two-way interactions achieved significance, there was no support recorded for hypotheses 1d, 2d, 3d, and 4d in this investigation.

Table 20

Summary of Repeated Measures Analysis of Variance
of Negative Confederate-Related Affect

Source	Sum of Squares	<u>df</u>	Mean Square	<u>F</u> Ratio	Prob.
Level of M.R.	100.920	1	100.920	0.98	0.325
I. Set	33.333	1	33.333	0.32	0.571
M.R. x I. Set	112.853	1	112.853	1.09	0.298
Error (Between)	9903.813	96	103.1647		
Phase	5335.787	2	2667.893	85.61	0.000
M.R. x Phase	115.440	2	57.720	1.85	0.159
I. Set x Phase	12.187	2	6.093	0.20	0.823
M.R. x I. Set x Phase	28.187	2	14.093	0.45	0.637
Error (Within)	5983.067	192	31.161		

Summary of Repeated Measures Analyses of Variance

In summary, results of repeated measures analyses of variance completed on retaliatory behavior and the six self-report scales employed in this research were reported in this section. Support was recorded for hypotheses 3 and 4 pertaining to the interaction of level of moral reasoning and level of confederate contract compliance/phase for retaliatory behavior, as well as hypotheses pertaining to the self-report measures of negative self-reported mood (hypothesis 3c), importance of earning the most points (hypothesis 4e), desire to subtract points from the contract-breaking confederate (hypothesis 6), and, lastly, commitment to continued cooperation in the gaming interaction (hypothesis 7).

In the next chapter, discussion of these findings relative to the theories under investigation will occur. To conclude the presentation of results, consideration will now be given to the relationship between PHN Scale scores and level of self-reported moral reasoning.

Analysis of Variance Comparison of PHN and DIT Scores

In order to further understand the relationship between self-reported level of moral reasoning as assessed by the DIT and philosophy of human nature as measured by the PHN Scale, one-way analyses of variance were utilized. In this case, scores of subjects at the conventional level

of moral reasoning (P-score less than or equal to 35%) on the six subscales of the PHN were compared to the same scores of principled level participants (P-score greater than or equal to 45%). Results of the one-way analyses of variance are summarized in Table 21 while means and standard deviations of the two moral reasoning groups on the six subscales are provided in Table 22.

As is noted from a review of Table 21, the two groups of subjects were found to differ significantly on the Trustworthiness/Untrustworthiness ($F = 5.44$, $df = 1, 98$, $p < .021$), Altruism/Selfishness ($F = 5.30$, $df = 1, 98$, $p < .023$), and Complexity/Simplicity ($F = 7.30$, $df = 1, 98$, $p < .008$) dimensions. Groups were not significantly different on the Will/External Control ($F = 0.01$, $df = 1, 98$), Independence/Conformity ($F = 0.01$, $df = 1, 98$), or Similarity/Variability ($F = 0.62$, $df = 1, 98$) subscales.

Therefore, the one-way analyses of variance completed on these scales reveal that, as a group, participants at the principled level of moral reasoning ($\bar{X} = 54.80$, $SD = 10.19$) reported that they believed that other people tended to be more trustworthy, moral, and responsible than did the participants at the conventional level of moral reasoning ($\bar{X} = 50.42$, $SD = 8.49$). Furthermore, the principled level of moral reasoning group ($\bar{X} = 52.96$, $SD = 10.32$) reported they tended to view other people as less selfish and more interested in the welfare of others than did the subjects

Table 21

Summary of One-Way Analyses of Variance of
Philosophy of Human Nature Scales by Level
of Moral Reasoning

Source	Sum of Squares	df	Mean Square	F Ratio	Prob.
Trustworthiness	479.610	1	479.610	5.44	0.021
Error	8632.180	98	88.083		
Will/Rationality	4.410	1	4.410	0.06	0.809
Error	7356.340	98	75.065		
Altruism	479.610	1	479.610	5.30	0.023
Error	8872.100	98	90.532		
Independence	0.360	1	0.360	0.01	0.940
Error	6243.640	98	63.711		
Complexity	561.690	1	561.690	7.30	0.008
Error	7542.820	98	76.967		
Variability	42.250	1	42.250	0.62	0.4321
Error	6652.060	98	67.884		

Table 22

Means and Standard Deviations of Philosophy of Human
Nature Scale Scores by Level of Moral Reasoning

Philosophy of Human Nature Scale	Conventional $\bar{X}$	Level $\underline{SD}$	Principled $\bar{X}$	Level $\underline{SD}$
Trustworthiness	50.42	8.49	54.80	10.19
Will/Rationality	58.54	8.56	58.96	8.76
Altruism	48.58	8.63	52.96	10.32
Independence	52.66	7.72	52.54	8.23
Complexity	52.20	9.27	56.94	8.24
Variability	60.32	8.24	61.62	8.23

at the conventional level of moral reasoning ($\bar{X} = 48.58$, $SD = 8.63$). Lastly, subjects at the principled level of moral reasoning ($\bar{X} = 56.94$, $SD = 8.24$) viewed others as more difficult to analyze and hard to understand, while participants at the conventional level were more likely to view others as uncomplicated and easy to understand ($\bar{X} = 52.20$, $SD = 9.27$). Although not relating to specific hypotheses, these findings will be employed in the interpretation of results offered in the next chapter of this research.

CHAPTER IV

DISCUSSION

Overview

The stated objective of this research was to offer further clarification of the apparent inconsistencies in the complex relationship between level of moral reasoning and behavior in a situation presenting a moral dilemma. The specific focus of this dissertation was to examine this relationship subsequent to the introduction of a cognitive cue, the "moral" instructional set, into a relevant and compelling situation. This situation also allowed for the integration of cognitive-developmental moral reasoning and social exchange theories. Aspects of each theory contributed to the formulation of alternative predictions and rationales for behavior which would be recorded during a gaming interaction. Although each theory had previously experienced verification in selected situations (Anchor & Cross, 1974; D'Augelli & Cross, 1975; Homans, 1974; Jacobs, 1975; Julius, 1978; Kelly & Arrowood, 1960; Komorita & Brinberg, 1977; Lerner, 1971, 1974; Leventhall, 1980; Marwell & Schmitt, 1975; McNamee, 1972), they had never before been combined in a single research paradigm. Also, a series of analyses were performed on the seven dependent variables and the results of PHN Scale data.

While results might be presented in several ways, the format of discussion is as follows. Initially, two methodological issues will be considered: the formation and operation of "moral" instructional set and the appropriateness and impact of the experimental gaming manipulation. Next, a priori hypotheses which relate to the predicted impact of level of moral reasoning, level of "moral" instructional set, and the level of confederate contract compliance on behavioral and self-report measures employed in this investigation will be discussed and the dependent variables will be reviewed across all statistical analyses. Finally, a discussion will present theoretical conclusions and explore implications for future research.

Discussion of Methodological Considerations

The introduction of "moral" instructional set into the gaming situation occurred in order to sensitize participants to relevant moral or justice related aspects of the interaction. "Moral" instructional sets were designed to project stage-specific cognitive-developmental notions of fairness and justice into a task relevant format. Distinctive and essential characteristics of conventional and principled moral development (Haan, 1977; Kohlberg, 1969; Rest, 1979a) were utilized to formulate the situationally relevant sets. As previously explained, sets were judged to possess consensual and face validity

as established by the Delphi Method (Linstone & Turoff, 1975), while a portrait matching manipulation check technique (Guilford, 1954) revealed that sets were functionally dissimilar. Evidence was also presented which led to the conclusion that prior exposure to the DIT and PHN did not differentially influence perception of sets utilized in this study.

Although a thorough construction process was followed, "moral" instructional set did not interact with either level of moral reasoning or level of confederate contract compliance in the predicted manner. However, in support of the conclusion that these sets were a meaningful aspect of the experimental manipulation, findings clearly reveal that "moral" instructional set did influence both behavioral and self-report results in this investigation. Statistical findings demonstrate the sets were active in promoting main effects with respect to retaliatory behavior and self-reported level of frustration experienced as well as interacting with level of confederate contract compliance for retaliatory behavior.

While no predictions were offered regarding the isolated effects of the sets, results were consistent with behavioral expectations for the parallel level of moral reasoning from which the particular set was formed (Jacobs, 1975; Kohlberg, 1969). For example, significantly more retaliation and frustration was evidenced by those

subjects under a conventional "moral" set than was recorded for subjects receiving a principled "moral" set. These findings can be interpreted as a further manipulation check establishing the distinctiveness of the two "moral" instructional sets. Likewise, findings confirm that during the gaming interaction, instructional sets were active and considered by subjects when responding even though a significant interaction with level of moral reasoning did not occur.

A second methodological concern also appears worthy of discussion. This study combines two distinct theories of behavior in a single pertinent situation. To establish this contrast, a number of situational variables were considered germane and consequently were incorporated into the gaming interaction. Specifically, an experimental confederate was employed to enhance the ego-involving characteristics of the gaming interaction (Davis, 1970; Jacobs, 1975; Julius, 1978; Rapoport & Chammah, 1965; Wrightsman, 1974). Conversation between subject and confederate prior to the gaming interaction (Bixenstine et al., 1966; Loomis, 1959; Rapoport, 1973; Terhune, 1968; Wichman, 1972) and an abrupt change in the cooperative responding of the confederate in the second or provocation phase (Oskamp, 1977) ensured that all subjects had to consider the confederate's contract-breaking behavior. Finally, a level of monetary gain (Druckman, 1971; Pruitt & Kimmel,

1977) was established which was thought to be relevant for the group of individuals employed as subjects. The reward format was structured so as to allow the subject to maximize the difference between self and other in the amount of money earned (Deutsch, 1973; Gumpert et al., 1969; Kuhlman & Marsello, 1975; Wyer, 1969).

The main effects findings for level of confederate contract compliance supports the proposition that the gaming interaction was engaging, relevant, and compelling. In this regard, changes were recorded in subject status as revealed by both the behavioral increase of retaliation and through the six self-report scales which assessed changes in the subjective experience of the subjects. Therefore, the experimental manipulation appears to have established basic boundary conditions for understanding the phenomenon under investigation.

Hence, there was a relevant test of the respective contributions of moral reasoning and social exchange theories as subjects attempted to resolve a situational dilemma. This dilemma allowed for the potential operation and interaction of level of moral reasoning, level of "moral" instructional set, and level of confederate contract compliance. The discussion will now turn to a consideration of dependent variables beginning with retaliatory behavior.

Consideration of Retaliatory Behavior

Results of this investigation substantiate several authors (Blasi, 1980, 1983; Burton, 1976; Kohlberg, 1969; Lickona, 1976; Rest, 1979a, 1984) who have suggested that behavior in a social justice interaction can bear a predictable relationship to level of moral reasoning. In particular, the way a subject self-reports on a moral justice questionnaire bears a relationship to retaliatory behavior in a situation in which a verbal contract to cooperate is broken. Although results did not support hypotheses predicting the outcome of the three-way interaction of level of moral reasoning, level of "moral" instructional set, and confederate contract compliance, anticipated findings were recorded for the interaction of level of moral reasoning and confederate contract compliance.

Viewing the dependent variable retaliatory behavior more closely, a strong main effect for level of moral reasoning was recorded. Additionally, a significant interaction of moral reasoning and confederate contract compliance was noted. In this regard, conventional level subjects demonstrated significantly greater levels of retaliatory behavior than did principled level subjects subsequent to the initial confederate violation of the contract during the provocation phase. Similarly, a significantly greater degree of retaliatory behavior was maintained subsequent

to the confederate's return in the restoration phase to the pre-game verbal agreement to cooperate. Therefore, it appears that as suggested by Kohlberg (1969) and Rest (1979a) maintenance of the cooperative contract is for principled level subjects a personal responsibility which is not disregarded, in spite of the behavior of the other participant.

The significant difference between conventional and principled level subjects is not only evident during the provocation phase, but is maintained after the confederate resumes cooperative responding in the restoration phase. The strength of the commitment is further revealed by the finding that principled level subjects return to baseline levels of retaliation, while conventional level individuals do not. Some principled level participants evidenced retaliatory behavior during the provocation phase; however, retaliatory behavior essentially disappeared in the restoration phase. These findings provide further evidence that principled level participants are more committed to their internal frames of self-reference and are less disturbed by situational irritants when compared to their conventional level counterparts (Haan, 1977; Kohlberg, 1969; Rest, 1979a).

These findings are more striking if one reconsiders the gaming interaction payoffs and overall structure. The confederate has already forfeited the subject's access to the fifty dollar draw as a result of her provocation. The

subject can exert control over the confederate's outcome because she plays last during each phase throughout the gaming experience. Therefore, the subject can easily win the situational bonus of three dollars in addition to receiving the payoff for her already recorded 48 points or \$2.40, thereby earning a total monetary reward of \$5.40. Yet, principled level subjects engage in virtually no retaliatory behavior when the confederate is no longer able to adversely affect the monetary outcome. It is therefore concluded that for principled level participants the verbal contract to cooperate represents the highest value in the gaming interaction as opposed to maximizing one's personal monetary gain.

On the other hand, conventional level participants were predicted to retaliate during both provocation and restoration phases and, in fact, did so at significantly greater levels than did principled level participants. Additionally, conventional level participants did not return to baseline levels of retaliation during the restoration phase. It then appears confirmed that, as predicted (Haan, 1977; Kohlberg, 1969), after contract-breaking behavior, conventional level subjects were committed to individual personal achievement and were motivated to find the best strategy to accumulate the most points. Furthermore, for conventional level subjects, retaliation appeared to be an appropriate and justifiable alternative behavior

after the confederate breaks the contract. Although no questions were directed toward this possibility, it seems feasible that conventional level individuals could have interpreted renewed cooperative behavior by the confederate as the confederate's "having learned a lesson". This could account for the reduction conventional level subjects evidenced in magnitude of retaliation during the restoration phase although, as has been noted, retaliation remained at a level significantly greater than that demonstrated by principled level individuals. Furthermore, conventional level subjects did not return to baseline levels of cooperation whereas principled level participants did.

It can be concluded then that conventional level individuals exhibited a rigidity in behavior which is similar to the rigidity they revealed in response to written moral dilemmas (Kohlberg, 1969, 1979, 1983; Rest, 1979a). These individuals attempted to maintain social norms and demonstrated a reluctance to allow for personal consideration of circumstances (D'Augelli & Cross, 1975; Haan, 1977; Kohlberg, 1969). They showed evidence of the impact of situational frames of reference in contrast to the internal frames of reference of principled level subjects.

The conventional level individual is by definition and as confirmed by behavior in this gaming interaction, more dependent upon external definition, less autonomous, and more likely to seek cues in the social situation which

indicate appropriate courses of action. Significant and readily available cues such as the monetary reward structure and the other's uncooperative behavior, at least during phase 2, clearly indicate that retaliation is an appropriate and justifiable alternative behavior. Even more important, their continued retaliation and failure to return to baseline levels of cooperation lends credence to the view that, for the conventional level individual, once a contract is broken, it cannot be easily re-established. Conventional level individuals are not simply reacting affectively, but are responding with a strategy and from notions of fairness and justice in the gaming interaction. They are implementing a cognitively considered course of action.

While significant support has been found for the appropriateness of a cognitive-developmental understanding of retaliatory behavior, some support has been recorded for a social exchange analysis of such behavior also. Retaliation main effects for provocation indicate that reduced benefits prompted a reaction by many participants. But social exchange theory predicted that all subjects would retaliate at the same level. Principled level subjects should not have adhered to the broken pre-game contract, but should have significantly increased retaliatory behavior (Blau, 1964; Homans, 1974; Kelly & Thibaut, 1978; Lerner, 1971, 1974) in response to the reduced benefits

associated with the interaction. Social exchange theory also suggests that all participants would not have returned to baseline, but would have continued to retaliate in the third phase. According to social exchange theorists, retaliatory response constitutes a means to equalize the level of benefits in the gaming interaction.

In conclusion, with respect to retaliatory behavior in the gaming situation, social exchange principles appear to interact with level of moral judgment maturity. At least for principled level subjects, the set of moral reasoning cognitions that an individual holds (Haan, 1977; Kohlberg, 1969; Rest, 1979a) attenuates the operation of equity principles (Blau, 1964; Homans, 1974; Kelly & Thibaut, 1978; Lerner, 1971, 1974; Leventhall, 1980). Principled level subjects do operate more from an internal perspective when choosing behavior and give more recognition to their values and principles. It can be questioned whether principled level individuals retaliate less because of their moral reasoning abilities or because they are also less involved, detached, or dispassionate. Analyses of self-report data should contribute to a more complete understanding of revealed differences in behavioral response in the gaming interaction.

Consideration of Self-Report Findings

The self-report measures utilized in this research

will be grouped into two categories so that findings and their interrelationships may be examined. Considered first will be four measures: negative self-reported mood, level of frustration experienced, desire to subtract points from the confederate, and negative confederate-related affect. All four correspond generally to the emotional status of the subject during the message game. The last two measures, self-reported commitment to continued cooperation and the importance of earning the most points in the gaming interaction, reflect the subject's reasoning about the desired and expected outcome of the gaming interaction. These two self-report scales may also represent a measure of the individual's competitiveness.

As for those variables most closely associated with the emotional status of subjects, recorded findings for negative self-reported mood were in support of several of the a priori predictions. As was explained in Chapter 3, during the provocation phase, conventional level subjects reported more negative mood than did principled level subjects. Although conventional level subjects' mood became significantly more positive upon restoration in phase 3, these subjects did not return to their baseline mood levels. On the other hand, during the restoration phase, principled level subjects' mood became more positive and they returned to baseline levels of mood. To have returned to a more positive self-reported mood, it appears

that the principled level subjects responded to an aspect of the gaming interaction other than the monetary reward. It seems likely that their mood was more positive because cooperative behavior had been re-established between themselves and the other person.

In regards to self-reported level of frustration experienced, no significant difference was recorded between conventional and principled level subjects on either the main or interactions effects levels. However, as is revealed by the highly significant main effect finding for level of confederate contract compliance, the confederate's contract-breaking behavior was frustrating for all subjects. Both conventional and principled level participants were emotionally affected by the contract-breaking behavior. While principled level subjects were significantly less retaliatory than conventional level subjects, their level of experienced frustration did not differ appreciably. Thus, findings support the conclusion that principled level individuals cannot be considered detached or unaffected participants in life situations. They were as emotionally involved in the gaming interaction as were conventional level individuals, but as was discussed earlier, their cognitions can, and at times, will, overrule emotions (Anchor & Cross, 1974; Kohlberg, 1969; McNamee, 1972; Rest, 1979a).

The level of negative confederate-related affect was

not significantly related to level of moral reasoning. However, provocation did result in a significant increase in negative confederate-related affect for all subjects, irrespective of level of moral reasoning. As a result of provocation, all participants felt more negatively towards the confederate. This finding, when considered in conjunction with the similar finding for level of frustration experienced, suggests that principled level individuals experienced feelings similar to their conventional counterparts. However, the principled level participants did not allow these emotional states to promote as much increased retaliatory behavior as was exhibited by conventional level participants. It can be suggested then that conventional level subjects behaved in a manner which correlated more closely with their emotional state.

With regard to the self-reported desire to subtract points from the confederate, conventional level subjects, as predicted, expressed a significantly greater desire to subtract more points from the confederate throughout the gaming interaction than did principled level subjects. The present finding appears to support the suggestion previously offered in the literature (Jacobs, 1975; Rest, 1979a) that conventional level subjects possess a greater need to punish others. Conventional level subjects not only self-reported frustration and anger, but they expressed their emotional status in an "aggressive" manner as indicated in

self-reporting a significantly greater desire to subtract points from the confederate. This finding is also consistent with an earlier report (Anchor & Cross, 1975) that conventional level individuals in a gaming interaction were more likely to maladaptively aggress by penalizing another even at a cost to oneself.

Principled level participants did not express the same level of desire to subtract points. It would seem consistent with the literature to conclude that they resolved their anger and frustration toward the confederate in a different manner. Either they employed strategies to re-engage the other in the cooperative agreement, or they were so committed to the pre-game agreement that they did not express a desire to subtract points as this was secondary to cooperation in the gaming interaction. Their personal commitment to cooperate remained for them the highest value in the situation (Haan, 1977; Kohlberg, 1969; Rest, 1979a), even if this commitment was not shared with another.

Commitment to continued cooperation and self-reported importance of earning the most points in the gaming interaction are the final two self-report scales to be considered. Although these scales are the least connected to the emotional status of the participants, they are, in a general way, a measure of an individual's competitiveness.

Reviewing commitment to continued cooperation, the

expected level of moral reasoning finding (main effect) was recorded. Principled level subjects did self-report greater commitment to continued cooperation during the course of the gaming experience than did subjects at the conventional level of moral reasoning. This self-report main effect is consistent with the behavior demonstrated by both groups of subjects respectively. Behaviorally, principled level subjects adhered to the contract by maintaining significantly more cooperative behavior in the gaming interaction than did conventional level subjects.

Turning to the self-reported importance of earning the most points in the gaming interaction, significant main and interaction effects were found. In this regard, conventional level subjects indicated it was more important for them to earn points overall during the gaming interaction than did principled level subjects. Viewing the interaction of phase of the gaming experience and level of moral reasoning, for conventional and principled level subjects, there was not a significant difference in the self-reported desire to earn the most points when comparing the baseline and provocation phases. However, when the confederate returned to the pre-game contract in the restoration phase, conventional level subjects maintained it was still more important to them to earn the most points. In the restoration phase, principled level subjects, on the other hand, recorded a drop to a level below where they

initially placed themselves on this self-report scale during the baseline phase. It is relevant to question why it became less important to principled level subjects to earn the most points after restoration. Cognitive-developmental theory (Haan, 1977; Kohlberg, 1969; Rest, 1979a) provides one interpretation of this finding. As was mentioned above in the discussion on experienced frustration, for principled level subjects, earning the most points did not appear to be the most compelling aspect of the gaming interaction. More important for these individuals was their initial commitment to cooperate and their need to re-establish cooperative behavior with the confederate. Earning the most points was secondary to the goal of cooperation, even though a situationally based bonus award was available if they retaliated.

Consideration of Absence of Interaction Between "Moral" Instructional Set and Level of Moral Reasoning

One must question why there was not an interaction between level of "moral" instructional set and level of moral reasoning although one was predicted in the present investigation. The absence of interaction is possibly the result of the fact that the latter provided the basis for the former. In fact, instructional set and level of moral reasoning can be viewed respectively as a situational induction and as an individual manifestation of the importance

given to principles of justice.

The evidence here is that "moral" instructional set and level of moral reasoning did not function additively in producing increased or reduced retaliation. However, either one in isolation is sufficient to prompt changes in retaliatory behavior as can be seen by the main effects of each in Table 9 on page 117. In this regard, those subjects who received a conventional "moral" instructional set retaliated significantly more often than did participants who received a principled set. At the same time, subjects at the conventional level of moral reasoning evidenced significantly more retaliatory behavior than did participants at the principled level of moral reasoning. Thus, the individual variable of level of moral reasoning was not differentially affected by the situational variable of cognitive cue or "moral" instructional set.

While a viable theoretical infrastructure for the inclusion of "moral" set was developed, this particular variable contributes little additional information to an understanding of the complex relationship between level of moral reasoning and behavior in a relevant situation. An alternative explanation for a lack of findings would be the notion of threshold for retaliatory behavior, either as a general phenomenon or as a condition-specific occurrence within each level of moral reasoning. It seems feasible that there exists a general point beyond which increases in

conventional and principled level characteristics created by situational cues are not accompanied by increased or diminished retaliatory behavior. An acceptance of the notion of threshold would also necessitate the conclusion that the individual's personal level of moral reasoning is prepotent and can neither be appreciably augmented nor diminished by the type of cognitive cue used in this investigation. In support of this interpretation, it was seen (Table 9, p. 117) that while the set condition affected level of retaliatory behavior, as indicated by the main effects for "moral" instructional set, the congruent level set did not induce principled level people to act in an even more "principled" manner nor did it induce conventional level individuals to behave in an even more "conventional" fashion. Hence, it appears possible to support the notion of threshold for moral reasoning behavior, with such behaviors being more fixed by the cognitive moral reasoning predispositions of the individual than by the instructions of the "moral" set condition.

Consideration of the PHN Scale

As this study is largely concerned with the construct and convergent validity of the cognitive-developmental theory of moral reasoning, additional evidence of such construct validity is provided by PHN Scale contrasts which distinguish conventional from principled level subjects in

a manner which conforms with their respective cognitive-developmental moral reasoning characteristics. Specifically, the parameters of principled moral reasoning as outlined by various cognitive-developmental theorists (Haan, 1977; Kohlberg, 1969; Rest, 1979a) indicate that principled level individuals are guided more by their use of self-chosen ethical principles which make allowances for individual needs and limitations of human nature and less by a "good boy" orientation with its inflexible insistence on fixed rules. On the other hand, conventional level individuals are, by definition (Kohlberg, 1969; Rest, 1979a), more likely to employ external rules and social conventions when deciding issues of fairness. At this stage, an analysis of individuals' responses to moral dilemmas reveals considerable rigidity. These individuals attempt to maintain the norm and show a reluctance to allow for personal consideration of circumstances in a cooperative justice situation.

Consistent with the above cognitive-developmental propositions, the PHN Scale contrasts revealed that principled level participants did indeed see other people in more complex terms than did conventional level individuals (Table 21, p. 148). In addition to and congruent with a more developed level of moral reasoning, principled level individuals reported they perceived others as being more trustworthy and more characterized by a helpful, charitable disposition toward others.

In contrast, it was consistently revealed by the PHN Scale data that conventional level individuals viewed other people as less trustworthy and as more interested in personal needs. Others with whom they are interacting must demonstrate their personal characteristics through behavior before a conventional level individual will be accepting and trusting; whereas principled level individuals were more accepting in their initial evaluation of others. The results of the PHN Scale corroborate Kohlberg (1969) who indicates conventional level individuals tend more to view and evaluate others as "good" to the extent others fulfill duties, respect authority, and maintain the social order for its own sake.

Theoretical Conclusions and Implications for Future Research

In summary, this study provides additional evidence of the construct validity of Kohlberg (1969) and Rest's (1979a) moral judgment maturity postulates. Based on the theoretical nature of the two levels of cognitive moral reasoning, conventional and principled level behavioral predictions were made pertaining to individual differences in retaliatory behavior in response to a provocation. After a consideration of exchange theory and the cognitive-developmental moral reasoning model, it was predicted that all subjects would retaliate but that conventional level individuals would retaliate more and would take longer to

stop retaliating once provocation ceased.

In this study, the subject's behavior was significantly affected by the interaction of level of moral reasoning and the confederate's change of strategy. It can thus be concluded that moral reasoning level alone does not predict behavior: the behavior of others in a specific situation is also important in shaping an individual's response. Because of this, the developmental attribute of level of moral reasoning must be considered in its interaction with environmental or situational opportunities, demands, and stresses. This interactive process produces effects which may modify or change behavior and which may even attenuate the impact of a developmental variable such as level of moral reasoning. From this perspective, behavior can be considered a dynamic, fluid process. Other variables may influence and even render inoperable a particular developmental stage's most appropriate course of action.

The continuity dictated by parameters of a level of moral reasoning (Haan, 1977; Kohlberg, 1969; Rest, 1979a) is not isolated or insulated from change. From an ideal perspective, moral reasoning and behavior would always be in a perfect one-to-one correspondence. However, it appears that different, even conflicting, tendencies may be simultaneously elicited in any situation with social-justice implications. The action or behavior which is ultimately displayed depends on the interplay of all

relevant factors. Therefore, it becomes valuable to complete a study such as the current one which combines a general model of behavior such as social exchange theory with an individual variable of particular relevance such as level of cognitive-developmental moral reasoning. In the present situation, that is, a contractual gaming interaction incorporating a relevant monetary reward, behavior is more fully interpreted by a combination of two theories. While the social exchange model provides general predictions about cooperation and retaliation, the hypothesized outcomes are made more accurate and precise by a consideration of the influence of level of moral reasoning.

Although the study indicated that level of moral reasoning can support and enhance the predictive power of social exchange theory, level of moral reasoning remains but the idealized frame of justice that an individual may choose to follow. Also, inconsistency between professed ideals and actual behavior was not remedied by the inclusion of "moral" instructional set as a mediating variable, as is evident from the absence of an interaction between moral reasoning and "moral" instructional set (see Table 9, p. 117). Furthermore, with respect to the cognitive cue of "moral" instructional set, the lack of finding may indicate that detection of a moral dilemma is either not as difficult or is less important in increasing the consistency between level of moral reasoning and behavior than previously

suggested (Rest, 1979a). It can be stated that the dilemma should have been clarified by the "moral" instructional sets utilized in the gaming scenario. Rather than the detection of a dilemma, the important issue leading to behavior may instead be the individual's interpretation of elements of the dilemma once it has been recognized and the ability to translate personal decisions into behavior.

We are reminded of earlier authors (Krebs & Kohlberg, 1967) who have suggested that the role of ego strength in determining behavior must be further investigated and clarified. Krebs and Kohlberg (1967) suggest that differences in ego strength may be closely associated with the execution of a plan of action considered to be most appropriate. In this regard, variations in ego strength may account for the fact that some principled level subjects did retaliate in the present investigation. Deciding what one should do ideally and carrying out such behavior are two separate, although related activities. The relative "ego strength" of a subject could become an essential consideration in future investigations of the moral reasoning-behavior relationship.

The reasoning-behavior relationship continues to be an extremely complex one. The relationship between verbally expressed moral beliefs and actively pursued goals is not easily understood. While a measure of moral reasoning level provides information about an individual's concepts of

justice and fairness, many other psychological processes are involved in interpreting a situation and organizing one's actions or behavioral responses. Each of the above-mentioned variables, such as ego strength and personal interpretation of a situation not only complicate the relationship between moral reasoning and behavior but also provide an explanation for the attenuated relationship between the two.

Future research designed to further the understanding of how level of moral reasoning relates to actual behavior could take several directions. First, further investigations could reconsider the issues addressed in the present research but utilize both male and female subjects. As this investigation employed only female participants, results are limited in their generalization to just one of the sexes. Another interesting domain which could be investigated in a future study is the impact of self-presentational concerns both within and across gender. Major and Adams (1983) noted that both men and women distributed rewards more equally when allocations were public rather than private. In a related finding, Rapoport (1973) reported that significantly more uncooperative choices were recorded in a condition where subjects were told that they would not see the other participant after the gaming interaction when compared to a condition in which the expectation was that there would be a brief meeting. One

can question if the results contained in the literature on moral behavior actually reflect cognitive moral reasoning, or are the results related to more salient self-presentational concerns on the part of principled level individuals. Therefore, it would be informative to determine whether a public versus private scenario would differentially effect the retaliatory behavior of conventional versus principled participants in a gaming interaction. One prediction could be that principled level individuals are not only concerned with principles of justice, but are more concerned with other people's evaluations of them. Specifically, these more sophisticated individuals might reveal they are not choosing behaviors based upon principles of justice but upon a desire to be judged in a positive manner and appear in a good light.

Another area of investigation concerns the role of macro-political orientation in moral reasoning and in related behavior. There appears to be tentative evidence offered by Emler, Renwick and Malone (1983) that differences in adult moral reasoning may be a reflection of macro-level liberal or conservative political views. Their study involved having a group of students complete the DIT first from their own personal perspective and then from the point of view of a conservative or radical. Findings revealed that scores on the DIT could be significantly altered by these experimenter instructions. Emler, Renwick

and Malone (1983) interpreted these findings as indicating that macro-level political views were more important in determining dilemma answer choice on the DIT than was level of cognitive moral reasoning. A more valid and generalizable demonstration would bypass the role-playing, simulation methodology and would compare DIT scores and in vivo moral behavior of actual political party members from different points on the political spectrum.

Further work could reconsider the present investigation using Kohlberg's interview format (1958) of measuring level of cognitive-developmental moral reasoning instead of Rest's DIT (1979b). The results may be more striking, since as discussed earlier, Kohlberg's measure is one of generation and production rather than of recognition of principled level solutions to hypothetical moral dilemmas. Although the present investigation used extreme groups as established by P-scores on the DIT, use of Kohlberg's moral interview approach may further increase the evidence of differences recorded between conventional and principled level subjects.

In conclusion, it is widely recognized that humanity today faces a number of educational, political, and social challenges. Under what condition does cooperation emerge and principled behavior flourish? Given the numerous problems with which we are presented, it is imperative in today's world that we learn all we can concerning how

cooperation and justice-related behavior can emerge among self-seeking individuals and nations when there is no central authority to control actions.

An educational implication of the present investigation is that schools must not only foster the development of moral reasoning ability and specific behaviors such as resistance to temptation or altruism, but schools should also expose students to a variety of cues and justice-related situations since the likely interpretation individuals make of such information is clearly important. To utilize procedures which encourage competition such as grading systems and limited allocations of approval may be detrimental to developing a principled, justice-oriented citizen. A focus on the "good boy" orientation, and confirmation of a stereotypic understanding of and interpretation of situations constitutes only one possible approach. Alternatively, multiple problem presentation, enhancement of critical thinking abilities, and the cultivation of perceptual abilities should more allow for the generalization and application of principles of justice in everyday life, especially at those times when such principles are not in complete conformity with the authority of the fixed moral order, but have validity with respect to the broader needs of the individual and society. In this case, the person would remain essentially independent, capable of rising above the circumstances of the situation

if necessary, with actions being both guided and prompted by principles of justice.

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APPENDIX 1

Defining Issues Test

(Please Print)

OPINIONS ABOUT SOCIAL PROBLEMS

This questionnaire is aimed at understanding how people think about social problems. Different people often have different opinions about questions of right and wrong. There are no "right" answers in the way that there are right answers to math problems. We would like you to tell us what you think about several problem stories. The papers will be fed to a computer to find the average for the whole group, and no one will see your individual answers.

In this questionnaire you will be asked to give your opinions about several stories. Here is a story as an example.

Frank Jones has been thinking about buying a car. He is married, has two small children and earns an average income. The car he buys will be his family's only car. It will be used mostly to get to work and drive around town, but sometimes for vacation trips also. In trying to decide what car to buy, Frank Jones realized that there were a lot of questions to consider. Below there is a list of some of these questions.

If you were Frank Jones, how important would each of these questions be in deciding what car to buy?

Instructions for Part A: (Sample Question)

On the left hand side check one of the spaces by each statement of a consideration. (For instance, if you think that statement #1 is not important in making a decision about buying a car, check the space on the right.)

IMPORTANCE:

Great Much Some Little No

				✓	1. Whether the car dealer was in the same block as where Frank lives. (Note that in this sample, the person taking the questionnaire did not think this was important in making a decision.)
✓					2. Would a <u>used</u> car be more economical in the long run than a <u>new</u> car. (Note that a check was put in the far left space to indicate the opinion that this is an important issue in making a decision about buying a car.)
		✓			3. Whether the color was green, Frank's favorite color.
				✓	4. Whether the cubic inch displacement was at least 200. (Note that if you are unsure about what "cubic inch displacement" means, then mark it "no importance.")
✓					5. Would a large, roomy car be better than a compact car.
				✓	6. Whether the front connibillies were differential. (Note that if a statement sounds like gibberish or nonsense to you, mark it "no importance.")

Instructions for Part B: (Sample Question)

From the list of questions above, select the most important one of the whole group. Put the number of the most important question on the top line below. Do likewise for your 2nd, 3rd and 4th most important choices. (Note that the top choices in this case will come from the statements that were checked on the far left-hand side--statements #2 and #5 were thought to be very important. In deciding what is the most important, a person would re-read #2 and #5, and then pick one of them as the most important, then put the other one as "second most important," and so on.)

MOST

SECOND MOST IMPORTANT

THIRD MOST IMPORTANT

FOURTH MOST IMPORTANT

5

2

3

1

HEINZ AND THE DRUG

In Europe a woman was near death from a special kind of cancer. There was one drug that the doctors thought might save her. It was a form of radium that a druggist in the same town had recently discovered. The drug was expensive to make, but the druggist was charging ten times what the drug cost to make. He paid \$200 for the radium and charged \$2000 for a small dose of the drug. The sick woman's husband, Heinz, went to everyone he knew to borrow the money, but he could only get together about \$1000, which is half of what it cost. He told the druggist that his wife was dying, and asked him to sell it cheaper or let him pay later. But the druggist said, "No, I discovered the drug and I'm going to make money from it." So Heinz got desperate and began to think about breaking into the man's store to steal the drug for his wife.

Should Heinz steal the drug? (Check one)

_____ Should steal it _____ Can't decide _____ Should not steal it

IMPORTANCE:

Great Much Some Little No

					1. Whether a community's laws are going to be upheld.
					2. Isn't it only natural for a loving husband to care so much for his wife that he'd steal?
					3. Is Heinz willing to risk getting shot as a burglar or going to jail for the chance that stealing the drug might help?
					4. Whether Heinz is a professional wrestler, or has considerable influence with professional wrestlers.
					5. Whether Heinz is stealing for himself or doing this solely to help someone else.
					6. Whether the druggist's rights to his invention have to be respected.
					7. Whether the essence of living is more encompassing than the termination of dying, socially and individually.
					8. What values are going to be the basis for governing how people act towards each other.
					9. Whether the druggist is going to be allowed to hide behind a worthless law which only protects the rich anyhow.
					10. Whether the law in this case is getting in the way of the most basic claim of any member of society.
					11. Whether the druggist deserves to be robbed for being so greedy and cruel.
					12. Would stealing in such a case bring about more total good for the whole society or not.

From the list of questions above, select the four most important:

Most important _____

Second Most Important _____

Third Most Important _____

Fourth Most Important _____

STUDENT TAKE-OVER

At Harvard University a group of students, called the Students for a Democratic Society (SDS), believe that the University should not have an army ROTC program. SDS students are against the war in Viet Nam, and the army training program helps send men to fight in Viet Nam. The SDS students demanded that Harvard end the army ROTC training program as a university course. This would mean that Harvard students could not get army training as part of their regular course work and not get credit for it towards their degrees.

Agreeing with the SDS students, the Harvard professors voted to end the ROTC program as a university course. But the President of the University stated that he wanted to keep the army program on campus as a course. The SDS students felt that the President was not going to pay attention to the faculty vote or to their demands.

So, one day last April, two hundred SDS students walked into the university's administration building, and told everyone else to get out. They said they were doing this to force Harvard to get rid of the army training program as a course.

Should the students have taken over the administration building? (Check one)

 Yes, they should take it over Can't decide No, they shouldn't take it over

IMPORTANCE:

Great Much Some Little No

					1. Are the students doing this to really help other people or are they doing it just for kicks?
					2. Do the students have any right to take over property that doesn't belong to them?
					3. Do the students realize that they might be arrested and fined, and even expelled from school?
					4. Would taking over the building in the long run benefit more people to a greater extent?
					5. Whether the president stayed within the limits of his authority in ignoring the faculty vote.
					6. Will the takeover anger the public and give all students a bad name?
					7. Is taking over a building consistent with principles of justice?
					8. Would allowing one student take-over encourage many other student take-overs?
					9. Did the president bring this misunderstanding on himself by being so unreasonable and uncooperative?
					10. Whether running the university ought to be in the hands of a few administrators or in the hands of all the people.
					11. Are the students following principles which they believe are above the law?
					12. Whether or not university decisions ought to be respected by students.

From the list of questions above, select the four most important:

Most Important

Second Most Important

Third Most Important

Fourth Most Important

ESCAPED PRISONER

A man had been sentenced to prison for 10 years. After one year, however, he escaped from prison, moved to a new area of the country, and took on the name of Thompson. For 8 years he worked hard, and gradually he saved enough money to buy his own business. He was fair to his customers, gave his employees top wages, and gave most of his own profits to charity. Then one day, Mrs. Jones, an old neighbor, recognized him as the man who had escaped from prison 8 years before, and whom the police had been looking for.

Should Mrs. Jones report Mr. Thompson to the police and have him sent back to prison? (Check one)

_____ Should report him _____ Can't decide _____ Should not report him

IMPORTANCE:

Great Much Some Little No

					1. Hasn't Mr. Thompson been good enough for such a long time to prove he isn't a bad person?
					2. Everytime someone escapes punishment for a crime, doesn't that just encourage more crime?
					3. Wouldn't we be better off without prisons and the oppression of our legal systems?
					4. Has Mr. Thompson really paid his debt to society?
					5. Would society be failing what Mr. Thompson should fairly expect?
					6. What benefits would prisons be apart from society, especially for a charitable man?
					7. How could anyone be so cruel and heartless as to send Mr. Thompson to prison?
					8. Would it be fair to all the prisoners who had to serve out their full sentences if Mr. Thompson was let off?
					9. Was Mrs. Jones a good friend of Mr. Thompson?
					10. Wouldn't it be a citizen's duty to report an escaped criminal, regardless of the circumstances?
					11. How would the will of the people and the public good best be served?
					12. Would going to prison do any good for Mr. Thompson or protect anybody?

From the list of questions above, select the four most important:

Most Important _____

Second Most Important _____

Third Most Important _____

Fourth Most Important _____

THE DOCTOR'S DILEMMA

A lady was dying of cancer which could not be cured and she had only about six months to live. She was in terrible pain, but she was so weak that a good dose of pain-killer like morphine would make her die sooner. She was delirious and almost crazy with pain, and in her calm periods, she would ask the doctor to give her enough morphine to kill her. She said she couldn't stand the pain and that she was going to die in a few months anyway.

What should the doctor do? (Check one)

_____ He should give the lady an overdose that will make her die _____ Can't decide. _____ Should not give the overdose

IMPORTANCE:

Great Much Some Little No

					1. Whether the woman's family is in favor of giving her the overdose or not.
					2. Is the doctor obligated by the same laws as everybody else if giving her an overdose would be the same as killing her.
					3. Whether people would be much better off without society regimenting their lives and even their deaths.
					4. Whether the doctor could make it appear like an accident.
					5. Does the state have the right to force continued existence on those who don't want to live.
					6. What is the value of death prior to society's perspective on personal values.
					7. Whether the doctor has sympathy for the woman's suffering or cares more about what society might think.
					8. Is helping to end another's life ever a responsible act of cooperation.
					9. Whether only God should decide when a person's life should end.
					10. What values the doctor has set for himself in his own personal code of behavior.
					11. Can society afford to let everybody end their lives when they want to.
					12. Can society allow suicides or mercy killing and still protect the lives of individuals who want to live.

From the list of questions above, select the four most important:

Most Important _____
 Second Most Important _____
 Third Most Important _____
 Fourth Most Important _____

-6-

WEBSTER

Mr. Webster was the owner and manager of a gas station. He wanted to hire another mechanic to help him, but good mechanics were hard to find. The only person he found who seemed to be a good mechanic was Mr. Lee, but he was Chinese. While Mr. Webster himself didn't have anything against Orientals, he was afraid to hire Mr. Lee because many of his customers didn't like Orientals. His customers might take their business elsewhere if Mr. Lee was working in the gas station.

When Mr. Lee asked Mr. Webster if he could have the job, Mr. Webster said that he had already hired somebody else. But Mr. Webster really had not hired anybody, because he could not find anybody who was a good mechanic besides Mr. Lee.

What should Mr. Webster have done? (Check one)

_____ Should have hired Mr. Lee _____ Can't decide _____ Should not have hired him

IMPORTANCE:

Great Much Some Little No

					1. Does the owner of a business have the right to make his own business decisions or not?
					2. Whether there is a law that forbids racial discrimination in hiring for jobs.
					3. Whether Mr. Webster is prejudiced against orientals himself or whether he means nothing personal in refusing the job.
					4. Whether hiring a good mechanic or paying attention to his customers' wishes would be best for his business.
					5. What individual differences ought to be relevant in deciding how society's roles are filled?
					6. Whether the greedy and competitive capitalistic system ought to be completely abandoned.
					7. Do a majority of people in Mr. Webster's society feel like his customers or are a majority against prejudice?
					8. Whether hiring capable men like Mr. Lee would use talents that would otherwise be lost to society.
					9. Would refusing the job to Mr. Lee be consistent with Mr. Webster's own moral beliefs?
					10. Could Mr. Webster be so hard-hearted as to refuse the job, knowing how much it means to Mr. Lee?
					11. Whether the Christian commandment to love your fellow man applies in this case.
					12. If someone's in need, shouldn't he be helped regardless of what you get back from him?

From the list of questions above, select the four most important:

Most Important _____

Second Most Important _____

Third Most Important _____

Fourth Most Important _____

NEWSPAPER

Fred, a senior in high school, wanted to publish a mimeographed newspaper for students so that he could express many of his opinions. He wanted to speak out against the war in Viet Nam and to speak out against some of the school's rules, like the rule forbidding boys to wear long hair.

When Fred started his newspaper, he asked his principal for permission. The principal said it would be all right if before every publication Fred would turn in all his articles for the principal's approval. Fred agreed and turned in several articles for approval. The principal approved all of them and Fred published two issues of the paper in the next two weeks.

But the principal had not expected that Fred's newspaper would receive so much attention. Students were so excited by the paper that they began to organize protests against the hair regulation and other school rules. Angry parents objected to Fred's opinions. They phoned the principal telling him that the newspaper was unpatriotic and should not be published. As a result of the rising excitement, the principal ordered Fred to stop publishing. He gave as a reason that Fred's activities were disruptive to the operation of the school.

Should the principal stop the newspaper? (Check one)

_____ Should stop it _____ Can't decide _____ Should not stop it

IMPORTANCE:

Great Much Some Little No

					1. Is the principal more responsible to students or to the parents?
					2. Did the principal give his word that the newspaper could be published for a long time, or did he just promise to approve the newspaper one issue at a time?
					3. Would the students start protesting even more if the principal stopped the newspaper?
					4. When the welfare of the school is threatened, does the principal have the right to give orders to students?
					5. Does the principal have the freedom of speech to say "no" in this case?
					6. If the principal stopped the newspaper would he be preventing full discussion of important problems?
					7. Whether the principal's order would make Fred lose faith in the principal.
					8. Whether Fred was really loyal to his school and patriotic to his country.
					9. What effect would stopping the paper have on the student's education in critical thinking and judgments?
					10. Whether Fred was in any way violating the rights of others in publishing his own opinions.
					11. Whether the principal should be influenced by some angry parents when it is the principal that knows best what is going on in the school.
					12. Whether Fred was using the newspaper to stir up hatred and discontent.

From the list of questions above, select the four most important:

Most Important _____
 Second Most Important _____
 Third Most Important _____
 Fourth Most Important _____

APPENDIX 2

Philosophy of Human Nature Scale
and Answer Sheet

INSTRUCTIONS

This questionnaire is a series of attitude statements. Each represents a commonly held opinion, and there are no right or wrong answers. You will probably disagree with some items and agree with others. We are interested in the extent to which you agree or disagree with matters of opinion.

Read each statement carefully. Then, on the separate answer sheet, indicate the extent to which you agree or disagree by filling in a number for each statement. The numbers and their meanings are as follows:

If you disagree strongly, fill in 0.
 If you disagree somewhat, fill in 1.
 If you disagree slightly, fill in 2.
 If you agree slightly, fill in 3.
 If you agree somewhat, fill in 4.
 If you agree strongly, fill in 5.

Here is how you are to use these scales: Say you were rating CAPITAL PUNISHMENT.

If you feel that you *agree strongly* with, in this case CAPITAL PUNISHMENT, you would fill in box 5 on the answer sheet as follows:

1. (0) (1) (2) (3) (4) (5)

If you feel that you *disagree somewhat* with, in this case CAPITAL PUNISHMENT, you would fill in box 1 on the answer sheet as follows:

1. (0) (1) (2) (3) (4) (5)

If you feel that you *agree slightly* with, in this case CAPITAL PUNISHMENT, you would fill in box 3 on the answer sheet as follows:

1. (0) (1) (2) (3) (4) (5)

Please be careful to *fill the box in completely*. Remember, there are no right or wrong answers. The important thing is to give your personal opinion.

First impressions are usually best in such matters. Read each statement, decide if you agree or disagree and determine the strength of your opinion, and then fill in the appropriate number on the answer sheet. *Be sure to answer every statement.*

If you find that the numbers to be used in answering do not adequately indicate your own opinion, use the one that is closest to the way you feel.

Before beginning, please write in your name, student identification number, and course code in capital letters on the answer sheet.

OPINION SURVEY

1. Great successes in life, such as great artists and inventors, are usually motivated by forces of which they are unaware.
2. Most students will tell the instructor when he has made a mistake in adding up their scores, even if he has given them *more* points than they deserved.
3. Most people will change the opinion they express as a result of an onslaught of criticism, even though they really don't change the way they feel.
4. ~~Most~~ people try to apply the Golden Rule, even in today's complex society.
5. A person's reaction to things differs from one situation to another.
6. I find that my first impression of a person is usually correct.
7. Our success in life is pretty much determined by forces outside our control.
8. If you give the average person a job to do and leave him to do it, he will finish it successfully.
9. Nowadays many people won't make a move until they find out what other people think.
10. Most people do not hesitate to go out of their way to help someone in trouble.
11. Different people react to the same situation in different ways.
12. People can be described accurately by one term, such as "introverted" or "moral" or "sociable".
13. Attempts to understand ourselves are usually futile.
14. People usually tell the truth, even when they know they would be better off lying.
15. The important thing in being successful nowadays is not how hard you work but how well you fit in with the crowd.
16. Most people will act as "Good Samaritans" if given the opportunity.
17. Each person's personality is different from the personality of every other person.

18. It's not hard to understand what really is important to a person.
19. There's little one can do to alter his fate in life.
20. Most students do not cheat when taking an exam.
21. The typical student will cheat on a test when everybody else does, even though he has a set of ethical standards.
22. "Do unto others as you would have them do unto you" is a motto that most people follow.
23. People are quite different in their basic interests.
24. I think I get a good idea of a person's basic nature after a brief conversation with him.
25. Most people have little influence over the things that happen to them.
26. Most people are basically honest.
27. It's a rare person who will go against the crowd.
28. The typical person is sincerely concerned about the problems of others.
29. People are pretty different from one another in what "makes them tick."
30. If I could ask a person three questions about himself (assuming that he would answer them honestly), I would know a great deal about him.
31. Most people have an unrealistically favorable view of their own capabilities.
32. If you act in good faith with people, almost all of them will reciprocate with fairness toward you.
33. Most people have to rely on someone else to make their important decisions for them.
34. Most people with fallout shelters would let their neighbors stay in them during a nuclear attack.
35. Often a person's basic personality is altered by such things as a religious conversion, psychotherapy, or a charm course.
36. When I meet a person, I look for one basic characteristic through which I try to understand him.

37. Most people vote for a political candidate on the basis of unimportant characteristics, such as his appearance or name, rather than on the basis of his stand on the issues.
38. Most people lead clean, decent lives.
39. The average person will rarely express his opinion in a group when he sees that the others disagree with him.
40. Most people would stop and help a person whose car was disabled.
41. People are unpredictable in how they'll act from one situation to another.
42. Give me a few facts about a person, and I'll have a good idea of whether I'll like him or not.
43. If a person tries hard enough, he will usually reach his goals in life.
44. People claim that they have ethical standards regarding honesty and morality, but few people stick to them when the chips are down.
45. Most people have the courage of their convictions.
46. The average person is conceited.
47. People are pretty much alike in their basic interests.
48. I find that my first impressions of people are frequently wrong.
49. The average person has an accurate understanding of the reasons for his behavior.
50. If you want people to do a job right, you should explain things to them in great detail and supervise them closely.
51. Most people can make their own decisions, uninfluenced by public opinion.
52. It's only a rare person who would risk his own life and limb to help someone else.
53. People are basically similar in their personalities.
54. Some people are too complicated for me to figure out.
55. If people try hard enough, wars can be prevented in the future.
56. If most people could get into a movie without paying and be sure that they were not seen, they would do it.

57. It is achievement, rather than popularity with others, that gets you ahead nowadays.
58. It's pathetic to see an unselfish person in today's world, because so many people take advantage of him.
59. If you have a good idea about how several people will react to a certain situation, you can expect most people to react the same way.
60. I think you can never really understand the feelings of other people.
61. The average person is largely the master of his own fate.
62. Most people are not really honest for a desirable reason; they're afraid of getting caught.
63. The average person will stick to his opinion if he thinks he's right, even if others disagree.
64. People pretend to care more about one another than they really do.
65. Most people are consistent from situation to situation in the way they react to things.
66. You can't accurately describe a person in just a few words.
67. In a local or national election, most people select a candidate rationally and logically.
68. Most people would tell a lie if they could gain by it.
69. If a student does not believe in cheating, he will avoid it even if he sees many others doing it.
70. Most people inwardly dislike putting themselves out to help other people.
71. A child who is popular will be popular as an adult, too.
72. You can't classify everyone as good or bad.
73. Most persons have a lot of control over what happens to them in life.
74. Most people would cheat on their income tax if they had a chance.
75. The person with novel ideas is respected in our society.
76. Most people exaggerate their troubles in order to get sympathy.

77. If I can see how a person reacts to one situation, I have a good idea of how he will react to other situations.
78. People are too complex to ever be understood fully.
79. Most people have a good idea of what their strengths and weaknesses area.
80. Nowadays people commit a lot of crimes and sins that no one else ever hears about.
81. Most people will speak out for what they believe in.
82. People are usually out for their own good.
83. When you get right down to it, people are quite alike in their emotional makeup.
84. People are so complex that it is hard to know what "makes them tick."

UTILISER UN CRAYON HB SEULEMENT
USE HB PENCIL ONLY

UNIVERSITÉ D'OTTAWA
CENTRE D'INFORMATIQUE



UNIVERSITY OF OTTAWA
COMPUTING CENTRE

210

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APPENDIX 3

Self-Report Questionnaire

Directions: Self Report Questionnaire

The purpose of this questionnaire is to measure the meaning of certain aspects of the previous phase of the message game by having you rate them on a series of scales. In completing this questionnaire, please make your judgments on the basis of what these questions mean to you. When you turn the page you will find the different questions to be rated and beneath each, a set of scales. You are to rate the questions on each of these scales in order.

Here is how you are to use these scales: say you were rating CAPITAL PUNISHMENT.

If you feel that the question, that is in this case CAPITAL PUNISHMENT, is *very closely related* to one end of the scale, you should place your check-mark as follows:

fair ✓ : _____ : _____ : _____ : _____ : _____ : _____ unfair

OR

fair _____ : _____ : _____ : _____ : _____ : _____ : ✓ unfair

If you feel that the question, that is CAPITAL PUNISHMENT, is *quite closely related* to one or the other end of the scale (but not extremely), you should place your check-mark as follows:

strong _____ : ✓ : _____ : _____ : _____ : _____ : _____ weak

OR

strong _____ : _____ : _____ : _____ : _____ : ✓ : _____ weak

If the question seems *only slightly related* to one side as opposed to the other side (but is not really neutral), then you should check as follows:

active _____ : _____ : ✓ : _____ : _____ : _____ : _____ passive

OR

active _____ : _____ : _____ : _____ : ✓ : _____ : _____ passive

The direction toward which you check, of course, depends upon which of the two ends of the scale seem most characteristic of the thing you're judging.

If you consider the question to be *neutral* on the scale, both sides of the scale *equally associated* with the question or if the scale is *completely irrelevant*, unrelated to the question, then you should place your check-mark in the middle space:

safe _____ : _____ : _____ : ✓ : _____ : _____ : _____ dangerous

IMPORTANT: (1) Place your check-marks *in the middle of spaces*, not on the boundaries:

THIS NOT THIS

_____ : _____ : ✓ : _____ : _____ : ✓ : _____

- (2) Be sure you check every scale for every question - *do not omit any*.
- (3) Never put more than one check-mark on a single scale.

Sometimes you may feel as though you've had the same item before on the questionnaire. This will not be the case, so *do not look back and forth* through the items. Do not try to remember how you checked similar items earlier in the questionnaire. *Make each item a separate and independent judgment*. Work at fairly high speed through this test. Do not worry or puzzle over individual items. It is your first impressions, the immediate "feelings" about the items, that I want. On the other hand, please do not be careless, because I want your true impressions.

PHASE I

Self Report Questionnaire

(All results will be kept strictly confidential)

1. What is your general reaction to this set of trials?

CALM _____:_____:_____:_____:_____:_____:_____ FRUSTRATED

INTOLERANT _____:_____:_____:_____:_____:_____:_____ TOLERANT

FRIENDLY _____:_____:_____:_____:_____:_____:_____ UNFRIENDLY

NEGATIVE _____:_____:_____:_____:_____:_____:_____ POSITIVE

KIND _____:_____:_____:_____:_____:_____:_____ CRUEL

TENSE _____:_____:_____:_____:_____:_____:_____ RELAXED

GO TO NEXT PAGE....

2. What is your general reaction to the OTHER PERSON now that
you've finished THIS SET of trials?

SOCIABLE _____:_____:_____:_____:_____:_____:_____:_____ UNSOCIABLE

SELFISH _____:_____:_____:_____:_____:_____:_____:_____ UNSELFISH

FRIENDLY _____:_____:_____:_____:_____:_____:_____:_____ UNFRIENDLY

UNTRUSTWORTHY _____:_____:_____:_____:_____:_____:_____:_____ TRUSTWORTHY

UNAGGRESSIVE _____:_____:_____:_____:_____:_____:_____:_____ AGGRESSIVE

UNFAIR _____:_____:_____:_____:_____:_____:_____:_____ FAIR

GO TO NEXT PAGE.....

3. During THIS SET of trials, how important to you was earning the most points?

NOT
IMPORTANT _____ : _____ : _____ : _____ : _____ : _____ : _____ EXTREMELY
IMPORTANT

4. If at this point in time you were able to subtract as many points as you would like from the other person's score, how much would you subtract?

NONE _____ : _____ : _____ : _____ : _____ : _____ : _____ A GREAT DEAL
OF POINTS
0 pts. 7 pts. 15 pts.

GO TO NEXT PAGE.....

5. At this point in time, how committed do you feel to continued cooperation with the other person in the message game?

NO
COMMITMENT _____ : _____ : _____ : _____ : _____ : _____ : _____ EXTREMELY
COMMITTED

STOP !

PHASE II

Self Report Questionnaire

(All results will be kept strictly confidential)

1. What is your general reaction to this set of trials?

CALM _____:_____:_____:_____:_____:_____:_____ FRUSTRATED

INTOLERANT _____:_____:_____:_____:_____:_____:_____ TOLERANT

FRIENDLY _____:_____:_____:_____:_____:_____:_____ UNFRIENDLY

NEGATIVE _____:_____:_____:_____:_____:_____:_____ POSITIVE

KIND _____:_____:_____:_____:_____:_____:_____ CRUEL

TENSE _____:_____:_____:_____:_____:_____:_____ RELAXED

GO TO NEXT PAGE....

2. What is your general reaction to the OTHER PERSON now that
you've finished THIS SET of trials?

SOCIABLE _____:_____:_____:_____:_____:_____:_____ UNSOCIABLE

SELFISH _____:_____:_____:_____:_____:_____:_____ UNSELFISH

FRIENDLY _____:_____:_____:_____:_____:_____:_____ UNFRIENDLY

UNTRUSTWORTHY _____:_____:_____:_____:_____:_____:_____ TRUSTWORTHY

UNAGGRESSIVE _____:_____:_____:_____:_____:_____:_____ AGGRESSIVE

UNFAIR _____:_____:_____:_____:_____:_____:_____ FAIR

GO TO NEXT PAGE....

3. During THIS SET of trials, how important to you was earning the most points?

NOT
IMPORTANT _____:_____:_____:_____:_____:_____:_____:_____ EXTREMELY
IMPORTANT

4. If at this point in time you were able to subtract as many points as you would like from the other person's score, how much would you subtract?

NONE _____:_____:_____:_____:_____:_____:_____ A GREAT DEAL
OF POINTS
0 pts. 7 pts. 15 pts.

GO TO NEXT PAGE....

5. At this point in time, how committed do you feel to continued cooperation with the other person in the message game?

NO
COMMITMENT _____:_____:_____:_____:_____:_____:_____:_____ EXTREMELY
COMMITTED

STOP !

PHASE III

Self Report Questionnaire

(All results will be kept strictly confidential)

1. What is your general reaction to this set of trials?

CALM _____:_____:_____:_____:_____:_____:_____FRUSTRATED

INTOLERANT _____:_____:_____:_____:_____:_____:_____TOLERANT

FRIENDLY _____:_____:_____:_____:_____:_____:_____UNFRIENDLY

NEGATIVE _____:_____:_____:_____:_____:_____:_____POSITIVE

KIND _____:_____:_____:_____:_____:_____:_____CRUEL

TENSE _____:_____:_____:_____:_____:_____:_____RELAXED

GO TO NEXT PAGE....

2. What is your general reaction to the OTHER PERSON now that
you've finished THIS SET of trials?

SOCIABLE _____:_____:_____:_____:_____:_____:_____ UNSOCIABLE

SELFISH _____:_____:_____:_____:_____:_____:_____ UNSELFISH

FRIENDLY _____:_____:_____:_____:_____:_____:_____ UNFRIENDLY

UNTRUSTWORTHY _____:_____:_____:_____:_____:_____:_____ TRUSTWORTHY

UNAGGRESSIVE _____:_____:_____:_____:_____:_____:_____ AGGRESSIVE

UNFAIR _____:_____:_____:_____:_____:_____:_____ FAIR

GO TO NEXT PAGE....

3. During THIS SET of trials, how important to you was earning the most points?

NOT
IMPORTANT _____:_____:_____:_____:_____:_____ EXTREMELY
IMPORTANT

4. If at this point in time you were able to subtract as many points as you would like from the other person's score, how much would you subtract?

NONE _____:_____:_____:_____:_____ A GREAT DEAL
OF POINTS
0 pts. 7 pts. 15 pts.

GO TO NEXT PAGE....

5. At this point in time, how committed do you feel to continued cooperation with the other person in the message game?

NO
COMMITMENT _____:_____:_____:_____:_____:_____ EXTREMELY
COMMITTED

STOP !

APPENDIX 4

Background Information Sheet

BACKGROUND INFORMATION

Please fill in the following information:

NAME: _____

MALE: _____ FEMALE: _____

CURRENT ADDRESS (Where you can be contacted by mail):

PHONE NUMBER: _____

BEST TIME OF DAY TO CALL: _____

YEAR IN UNIVERSITY: 1 2 3 4

DATE OF BIRTH: YEAR _____ MONTH _____ DAY _____

APPENDIX 5

Randomized Sequence - Message Lights

APPENDIX 5

Randomized Sequence - Message Lights

Trial Number	Phase 1	Phase 2	Phase 3
1	A	*	C
2	D	A	B
3	C	D	A
4	B	*	D
5	B	C	A
6	D	*	C
7	A	*	B
8	C	*	D
9	B	*	B
10	C	*	D
11	A	B	A
12	D	*	C
13	A	*	B
14	D	B	D
15	C	*	C
16	B	A	A
17	B	*	C
18	A	*	B
19	C	C	D
20	D	D	A

*No message sent during 6 second trial.

APPENDIX 6

Experimenter In-Class Directions

INSTRUCTIONS FOR ADMINISTRATION
OF THE
DIT AND PHN QUESTIONNAIRES

My name is Donald Sawyer. I am a doctoral student in psychology at the University of Ottawa and I am currently collecting data for my Ph. D. dissertation. Dr. _____ has graciously allowed me class time to explain my project, and to request volunteers who would like to participate. The study I am conducting involves aspects of the decision making process of various university and non-university groups of people. I am attempting to explore this process by employing two questionnaires, one on social opinions, the other on attitudes. Together, these questionnaires would take up to 90 minutes of your time. I will now pass out copies of the questionnaires to those of you who may be interested in participating, and will review the directions for each questionnaire.

(Test packets containing the Background Information Sheet, Defining Issues Test, and Philosophy of Human Nature Scale are distributed.)

On the first page, you will find a request for basic background information. Next is the questionnaire designed to assess decisions about social problems. In particular, in making a decision about social problems, what should be the most important questions a person asks himself or herself? On what basis would you want people to determine what is crucial in these problems? (At this point, the introduction on the first page of the DIT is read aloud. Students are informed that the protocols will be hand scored, not computer scored, and assured that all information will remain strictly confidential.)

The second questionnaire is an Opinion Survey which is comprised of a series of attitude statements. Each statement represents a commonly held opinion, and there are no right or wrong answers. You will probably disagree with some items and agree with others. I am interested in the extent to which you agree or disagree with these statements.

Your answers should be placed on the attached computer sheet. If you disagree strongly with a statement, simply fill in 0. If you disagree somewhat, fill in 1. If you disagree slightly, fill in 2. If you agree slightly, fill in 3. If you agree somewhat, fill in 4, and if you agree strongly, fill in 5. Please review the remainder of the directions and ask any questions you may have.

Once again, I wish to remind you that the 2 questionnaires will remain strictly confidential. I ask that when you complete these, you remain motivated as I need to know your genuine and independent ideas regarding these questions. For this reason, I also ask that you not discuss these questionnaires or items with anyone, until you have completed them. I am interested in individual decisions on these 2 tasks, the answers must be solely your own.

Now, in 2 to 4 weeks time, I will contact some of you, and ask you to volunteer in a further portion of this research study. The later decision making experience will not be an individual experience, but will involve a small group of people. Your cooperation at that time would also be greatly appreciated. Are there any further questions?

I will return next week to collect the questionnaires and will answer any additional questions you have at that time.

Thank you.

APPENDIX 7

Instructions For The Message Game

INSTRUCTIONS FOR THE MESSAGE GAME

NOTE: The experimenter will tell you who is sending and who is receiving the messages.

Receiving a Message - 20 Trials

Note the green light in the center of your panel. When it comes on, watch for a red light to come on. The light illuminates when the other person sends you a message. Press the button under the light that is on and you receive a point on the counter. You must press the button while the green cue light is still on or you will miss your chance. If the green cue light comes on and goes off without a red message light coming on, the other person has chosen not to send a message and you will be unable to get that point. Before we begin, you will receive two practice messages to familiarize you with this part of the game.

Sending a Message - 20 Trials

Now you may choose to send a message to the other person. When the green cue light comes on, you can choose to press any one of the buttons. When you do this, the other person can press the corresponding button and receive a point. If you do not press one of the buttons while the light is on, the other person will not receive the message and will not be able to receive a point. You will now send two practice messages to familiarize you with this part of the game. If you do not want to send a message, do not press a button.

Questionnaire

The experimenter will tell you which pages of the self-report questionnaire you should complete.

APPENDIX 8

"Moral" Instructional Sets

Conventional "Moral" Instructional Set

These are the final directions you will receive before playing the message game. These directions are designed to help you in your personal decision making.

Most people in today's world use external rules and guidelines when making decisions. Straying from agreed upon rules for decisions and behavior can be threatening when people interact with each other. Therefore, interactions with others should be based upon clear guidelines and people can legitimately expect certain acceptable behaviors and decisions from each other. Rules should be applied impartially to everyone and when dealing with others in decision making, there is no room for personal considerations or exceptions to rules. Although everyone should adhere to agreed upon rules, people should rely and trust only in themselves so as not to be disappointed by others who do not comply. As interactions with others should follow clearly established rules, consequences for those who break acceptable rules should be strong.

Principled "Moral" Instructional Set:

These are the final directions you will receive before playing the message game. These directions are designed to help you in your personal decision making.

Most people in today's world use personal principles and values when making decisions. Awareness that people have to solve problems jointly in order to maintain fairness is important. Universal principles of justice and fairness should be used when making decisions in situations involving competing interests. Personal values and actions should be based upon universal concepts of justice and fairness and on private moral values. People should be aware that others can make mistakes when working toward valuable goals. The ideal situation is when people can make mutual concessions and achieve maximum gain for everyone. Decisions are best made after devising a plan for cooperation which minimizes inequities and maximizes cooperation. People should be aware that everyone has needs of her own, and therefore that flexibility when dealing with others is important. Consequently, it is understood that there are valid explanations why compliance with rules is not always the case. People need to trust one another and to risk that the other's intentions are good.

APPENDIX 9

Delphi Process: Development of "Moral"
Instructional Set Conditions

Instructions to Respondent Group

Summaries, that is to say a series of summation points, will be presented to you on the following page. These summaries resum  the distinctive characteristics of the conventional and the principled stages of moral judgment. These will be followed by sentences which may be included in the instructional sets that we will use later on in our research. You are asked to judge each sentence on the extent to which it is consistent with the respective summation point(s). The instructional sentences are numbered to correspond with the specific summation points. You are asked to eliminate or to alter inappropriate items. You are also asked to add any other descriptive sentences which you feel do a better job of describing the essence of a particular summation point.

This information will be collected and a new set of descriptive sentences will be formed. The new set will be returned to you for your further comments.

Summation Points: Conventional Moral Development

The following ten points represent the essential characteristics of the conventional stage of moral development (Haan, 1977; Kohlberg, 1969; Rest, 1979).

1. This stage is distinguished by a person giving priority to characteristics of the situation, i.e. to the rules and expectations of society.
2. Any deviation from the norm produces anxiety and threatens the relationship with the other person.
3. Interactions are legalistic, based upon the individual's concept of a formal organization of rules and duties.
4. Specific behaviors are derived from norms which are publicly set and shared.
5. An important consideration is the formal organization of rules and duties.
6. In matters of compliance to rules, it is maintained that people should rely and trust only in themselves.
7. Rules for behavior are impartially applied, and then impersonally enforced.
8. Personal consideration is irrelevant.
9. Clarity and not sensitivity of exchange is the most important factor.
10. Punishment for the violation of norms is considered appropriate.

Conventional "Moral" Instructional Set

Other people who have played the message game have said that most people in today's world use external rules and guidelines when making decisions (1). Straying from agreed upon rules for decisions and behavior can be threatening when people interact with each other (2). Therefore, interactions with others should be based upon clear guidelines (3). and people can legitimately expect certain acceptable behaviors and decisions from each other (4). Rules should be applied impartially to everyone (7), and when dealing with others in decision making, there is no room for personal considerations or exceptions to rules (8). Although everyone should adhere to agreed upon rules (5), people should rely and trust only in themselves so as not to be disappointed by others who do not comply (6). As interactions with others should follow clearly established rules (9), consequences for those who break acceptable rules should be strong (10).

Summation Points: Principled Moral Development

The following ten points represent the essential characteristics of the principled stage of moral development (Haan, 1977; Kohlberg, 1969; Rest, 1979).

1. This stage is distinguished by a person giving priority to his internal principles of equity and fairness.
2. Awareness exists that people can hold different views and that in order to be fair it is necessary to solve problems mutually.
3. Equitable, universal principles are used in choosing among norms and obligations.
4. Principles and behaviors are based upon universal concepts of justice and fairness and on personal moral values.
5. Sensitivity to another's personal needs permits flexibility rather than a demand for rigid rule compliance.
6. A realization exists that there are valid explanations why compliance is not always forthcoming.
7. Inconsistencies between goals and actual behavior are understood as part of human nature.
8. Principles of fairness and maximum gain for all people are given very high priority.
9. People try to minimize inequities and maximize cooperation.
10. A need to trust and risk that others' intentions are good, is important.

Principled "Moral" Instructional Set:

Other people who have played the message game have said that most people in today's world use personal principles and values when making decisions (1). Awareness that people have to solve problems jointly in order to maintain fairness, is important (2). Universal principles of justice and fairness should be used when making decisions in situations involving competing interests (3). Personal values and actions should be based upon universal concepts of justice and fairness and on private moral values (4). People should be aware of each other's strengths and weaknesses (7). The ideal situation is when people can make mutual concessions and achieve maximum gain for everyone (8). Decisions are best made in a rational manner after devising a plan for cooperation which minimizes inequities and maximizes cooperation (9). People should be aware that everyone has needs of her own, and therefore that flexibility when dealing with others is important (5). Consequently, it is understood that there are valid explanations why compliance with rules is not always the case (6). People need to trust one another and to risk that the other's intentions are good (10).

APPENDIX 10

Questionnaire for Hold-Out Group Manipulation

Check of Instructional Set

INSTRUCTIONS

The purpose of this questionnaire is to measure certain concepts by having you rate them on a series of scales. In completing this questionnaire, please make your judgments on the basis of what these questions mean to you. When you turn the page you will find the different questions to be rated and beneath each, a set of scales. You are to rate the questions on each of these scales in order.

Here is how you are to use these scales: Say you were rating CAPITAL PUNISHMENT.

If you feel that the question, that is in this case CAPITAL PUNISHMENT, is *very closely related* to one end of the scale, you should place your check-mark as follows:

fair ☒ : ____ : ____ : ____ : ____ : ____ : ____ unfair

OR

fair ____ : ____ : ____ : ____ : ____ : ____ : ☒ unfair

If you feel that the question, that is CAPITAL PUNISHMENT, is *quite closely related* to one or the other end of the scale (but not extremely), you should place your check-mark as follows:

strong ____ : ☒ : ____ : ____ : ____ : ____ : ____ weak

OR

strong ____ : ____ : ____ : ____ : ____ : ☒ : ____ weak

If the question seems *only slightly related* to one side as opposed to the other side (but is not really neutral), then you should check as follows:

active ____ : ____ : ☒ : ____ : ____ : ____ : ____ passive

OR

active ____ : ____ : ____ : ____ : ☒ : ____ : ____ passive

The direction toward which you check, of course, depends upon which of the two ends of the scale seem most characteristic of the thing you're judging.

If you consider the question to be neutral on the scale, both sides of the scale equally associated with the question or if the scale is completely irrelevant, unrelated to the question, then you should place your check-mark in the middle space:

safe _____ : _____ : _____ : ✓ : _____ : _____ : _____ dangerous

IMPORTANT: (1) Place your check-marks in the middle of spaces, not on the boundaries:

THIS

NOT THIS

_____ : _____ : ✓ : _____ : _____ : ✓ : _____

- (2) Be sure you check every scale for every question - do not omit any.
- (3) Never put more than one check-mark on a single scale.

Sometimes you may feel as though you've had the same item before on the questionnaire. This will not be the case, so do not look back and forth through the items. Do not try to remember how you checked similar items earlier in the questionnaire. Make each item a separate and independent judgment. Work at fairly high speed through this test. Do not worry or puzzle over individual items. It is your first impressions, the immediate "feelings" about the items, that I want. On the other hand, please do not be careless, because I want your true impressions.

1. As proposed by this paragraph, the degree of threat or anxiety associated with a lack of interpersonal cooperation is:

VERY SLIGHT _____:_____:_____:_____:_____:_____:_____ VERY GREAT

2. As indicated in this paragraph, interactions between people should be:

INFLEXIBLE _____:_____:_____:_____:_____:_____:_____ FLEXIBLE

3. This paragraph supports the idea that interpersonal interactions between individuals should be based on:

PUBLIC NORMS _____:_____:_____:_____:_____:_____:_____ INTERNAL PRINCIPLES OF JUSTICE AND EQUITY

4. As indicated in this paragraph, personal needs and considerations should assume precedence over mutually agreed upon contracts.

OFTEN _____:_____:_____:_____:_____:_____:_____ NEVER

5. This paragraph supports the idea that rules for behavior must be impartially established in all cases and must be universally enforced.

VERY
MUCH _____:_____:_____:_____:_____:_____:_____:_____:VERY
LITTLE

6. From the paragraph, how important is clarity of communication.

NOT
IMPORTANT _____:_____:_____:_____:_____:_____:_____:VERY
IMPORTANT

7. This paragraph indicates that when guidelines and rules are broken, punishment is:

VERY
NECESSARY _____:_____:_____:_____:_____:_____:_____:_____:NOT
NECESSARY

8. As surmised from this paragraph, inconsistencies between stated goals and later behavior can be understood as an inherent part of human nature:

TRUE _____:_____:_____:_____:_____:_____:_____:FALSE

9. As indicated in this paragraph, cooperation and maximum gain for all is:

EXTREMELY
IMPORTANT _____:_____:_____:_____:_____:_____:_____:_____ OF NO
IMPORTANCE

10. This paragraph indicates trusting in others' good intentions is:

OF NO
IMPORTANCE _____:_____:_____:_____:_____:_____:_____:_____ EXTREMELY
IMPORTANT

APPENDIX 11

Pearson Product-Moment Correlation Table and Key

Pearson Product-Moment Correlations for All Variables

	-AGE	-P%--	-SET	TRUS	WILL	ALTR	INDE	COMP	VARI	PRES	RET1	RET2	RET3	FRU1	FRU2	FRU3	MOO1	MOO2	MOO3	COF1	COF2	COF3	COP1	COP2	COP3	SUB1	SUB2	SUB3	IMP1	IMP2	IMP3
AGE-	+1.0 p.00																														
P%--	+1.20 p.04	1.00 p.00																													
SET-	-.08 p.41	+0.01 p.95	1.00 p.00																												
TRUS	+0.25 p.01	+0.27 p.01	-.03 p.73	1.00 p.00																											
WILL	-.00 p.98	+0.12 p.23	+0.11 p.26	+0.39 p.00	1.00 p.00																										
ALTR	+0.06 p.53	+0.22 p.03	-.02 p.79	+0.57 p.00	+0.30 p.00	1.00 p.00																									
INDE	+0.03 p.72	+0.06 p.55	+0.18 p.06	+0.48 p.00	+0.48 p.00	+0.41 p.00	1.00 p.00																								
COMP	+0.19 p.05	+0.22 p.03	-.14 p.14	+0.11 p.24	-.19 p.05	-.02 p.81	-.09 p.37	1.00 p.00																							
VARI	-.11 p.25	+0.03 p.76	+0.08 p.40	-.01 p.89	+0.11 p.29	+0.20 p.04	+0.07 p.45	+0.17 p.10	1.00 p.00																						
PRES	+0.14 p.16	+0.03 p.78	-.01 p.93	+0.03 p.76	-.01 p.90	+0.03 p.75	+0.04 p.66	+0.02 p.88	-.01 p.95	1.00 p.00																					
RET1	0.00 1.00	0.00 1.00	0.00 1.00	0.00 1.00	0.00 1.00	0.00 1.00	0.00 1.00	0.00 1.00	0.00 1.00	0.00 1.00	0.00 1.00	0.00 1.00	0.00 1.00	0.00 1.00	0.00 1.00	0.00 1.00	0.00 1.00	0.00 1.00	0.00 1.00	0.00 1.00	0.00 1.00	0.00 1.00	0.00 1.00	0.00 1.00	0.00 1.00	0.00 1.00	0.00 1.00	0.00 1.00	0.00 1.00	0.00 1.00	
RET2	-.24 p.02	-.40 p.00	-.28 p.00	-.15 p.15	-.05 p.59	-.05 p.64	-.01 p.87	-.38 p.00	-.10 p.31	-.02 p.86	0.00 1.00	1.00 p.00																			
RET3	+0.01 p.93	-.45 p.00	-.21 p.04	-.14 p.16	-.15 p.13	-.16 p.11	-.04 p.65	-.17 p.10	-.08 p.44	-.00 p.97	0.00 1.00	+0.44 p.00	1.00 p.00																		
FRU1	-.05 p.55	-.04 p.68	-.15 p.14	-.05 p.59	+0.04 p.72	-.14 p.17	-.06 p.52	+0.10 p.31	-.13 p.18	+0.05 p.65	0.00 1.00	+0.05 p.64	-.03 p.79	1.00 p.00																	
FRU2	-.17 p.08	-.23 p.02	-.21 p.04	-.09 p.39	-.08 p.42	-.15 p.13	-.06 p.57	-.12 p.22	-.03 p.78	+0.02 p.85	0.00 1.00	+0.23 p.02	+0.18 p.08	+0.53 p.00	1.00 p.00																
FRU3	-.15 p.13	-.14 p.14	-.24 p.02	-.19 p.06	-.16 p.10	-.12 p.22	-.16 p.11	-.06 p.53	+0.03 p.80	-.11 p.27	0.00 1.00	+0.17 p.08	+0.20 p.04	+0.58 p.00	+0.66 p.00	1.00 p.00															

Pearson Product-Moment Correlations for All Variables

	-AGE	-P%-	-SET	TRUS	WILL	ALTR	INDE	COMP	VARI	PRES	RET1	RET2	RET3	FRU1	FRU2	FRU3	MOO1	MOO2	MOO3	COF1	COF2	COF3	COP1	COP2	COP3	SUB1	SUB2	SUB3	IMP1	IMP2	IMP3
MOO1	+.05 p.64	+.16 p.10	-.16 p.12	-.02 p.88	-.02 p.83	+.11 p.29	-.01 p.93	+.05 p.59	-.08 p.40	+.08 p.40	0.00 1.00	+.05 p.61	-.09 p.36	+.44 p.00	+.28 p.00	+.39 p.00	1.00 p.00														
MOO2	-.26 p.01	-.11 p.26	-.09 p.12	-.11 p.28	-.09 p.39	-.06 p.52	+.07 p.48	-.19 p.05	+.09 p.35	-.05 p.64	0.00 1.00	+.26 p.01	+.22 p.03	+.28 p.00	+.71 p.00	+.57 p.00	+.41 p.00	1.00 p.00													
MOO3	-.18 p.07	+.01 p.93	+.01 p.93	-.15 p.15	-.17 p.08	+.04 p.70	+.01 p.96	-.05 p.56	-.03 p.74	-.07 p.49	0.00 1.00	+.15 p.14	+.14 p.17	+.33 p.00	+.38 p.00	+.60 p.00	+.58 p.00	+.62 p.00	1.00 p.00												
COF1	-.01 p.95	+.03 p.80	+.01 p.90	-.08 p.43	-.10 p.30	+.07 p.46	-.06 p.52	+.04 p.66	-.03 p.78	+.10 p.32	0.00 1.00	+.03 p.75	-.04 p.66	+.27 p.01	+.18 p.07	+.33 p.00	+.56 p.00	+.25 p.01	+.45 p.00	1.00 p.00											
COF2	-.27 p.01	-.16 p.11	+.04 p.67	-.05 p.59	-.01 p.91	+.02 p.84	+.18 p.07	-.39 p.00	+.08 p.42	-.02 p.80	0.00 1.00	+.36 p.00	+.20 p.04	+.21 p.03	+.59 p.00	+.49 p.00	+.17 p.08	+.76 p.00	+.47 p.00	+.21 p.03	1.00 p.00										
COF3	-.23 p.02	-.06 p.50	+.07 p.48	-.17 p.08	-.10 p.30	+.02 p.86	+.07 p.39	-.24 p.01	+.14 p.16	-.14 p.16	0.00 1.00	+.22 p.03	+.13 p.20	+.20 p.05	+.33 p.00	+.53 p.00	+.25 p.01	+.51 p.00	+.65 p.00	+.33 p.00	+.72 p.00	1.00 p.00									
COP1	-.22 p.03	-.20 p.04	+.00 p.40	-.11 p.26	-.19 p.06	-.16 p.12	-.08 p.41	-.04 p.71	+.02 p.88	+.09 p.37	0.00 1.00	+.21 p.03	+.12 p.23	+.13 p.21	+.08 p.45	+.25 p.01	+.17 p.08	+.23 p.02	+.19 p.06	+.25 p.01	+.16 p.11	+.12 p.22	1.00 p.00								
COP2	-.24 p.02	-.31 p.00	-.15 p.13	-.06 p.53	-.09 p.35	-.14 p.16	+.07 p.48	-.15 p.13	+.01 p.93	+.03 p.76	0.00 1.00	+.51 p.00	+.38 p.00	+.17 p.09	+.36 p.00	+.35 p.00	+.16 p.12	+.44 p.00	+.28 p.00	-.02 p.79	+.44 p.00	+.33 p.00	+.37 p.00	1.00 p.00							
COP3	-.31 p.00	-.26 p.01	-.06 p.55	-.16 p.11	-.14 p.14	-.19 p.06	-.01 p.96	-.16 p.11	+.04 p.72	+.00 p.99	0.00 1.00	+.36 p.00	+.29 p.00	+.20 p.04	+.33 p.00	+.37 p.00	+.20 p.05	+.45 p.00	+.41 p.00	+.04 p.68	+.49 p.00	+.55 p.00	+.42 p.00	+.73 p.00	1.00 p.00						
SUB1	-.13 p.18	-.25 p.01	-.04 p.72	-.11 p.25	-.15 p.13	-.15 p.13	-.14 p.16	-.09 p.36	-.09 p.37	-.10 p.32	0.00 1.00	+.27 p.01	+.18 p.07	+.11 p.28	+.08 p.40	+.09 p.35	+.04 p.67	+.12 p.23	+.07 p.48	+.03 p.77	+.02 p.85	+.02 p.86	+.51 p.00	+.21 p.04	+.24 p.02	1.00 p.00					
SUB2	-.17 p.09	-.31 p.00	-.09 p.34	-.11 p.26	-.05 p.62	-.22 p.03	-.07 p.45	-.21 p.04	-.11 p.28	-.10 p.34	0.00 1.00	+.41 p.00	+.27 p.01	+.16 p.11	+.45 p.00	+.23 p.02	+.13 p.19	+.33 p.00	+.21 p.04	+.09 p.36	+.40 p.00	+.30 p.00	+.09 p.37	+.43 p.00	+.33 p.00	+.19 p.06	1.00 p.00				
SUB3	-.22 p.03	-.30 p.00	+.06 p.52	-.25 p.01	-.02 p.83	-.24 p.01	-.03 p.76	-.10 p.30	+.03 p.83	-.11 p.26	0.00 1.00	+.31 p.00	+.36 p.00	+.12 p.22	+.22 p.03	+.17 p.08	-.02 p.82	+.19 p.06	+.23 p.02	-.05 p.65	+.23 p.02	+.35 p.00	+.22 p.03	+.31 p.00	+.46 p.00	+.40 p.00	+.53 p.00	1.00 p.00			
IMP1	-.31 p.00	-.16 p.11	-.06 p.58	-.18 p.06	+.03 p.75	-.11 p.27	-.03 p.76	-.09 p.38	-.08 p.41	-.19 p.05	0.00 1.00	+.25 p.01	+.19 p.06	+.27 p.01	+.21 p.03	+.31 p.00	+.15 p.14	+.24 p.02	+.16 p.11	+.17 p.08	+.12 p.23	+.09 p.36	+.16 p.11	+.30 p.00	+.18 p.08	+.14 p.17	+.06 p.60	+.05 p.59	1.00 p.00		
IMP2	-.21 p.04	-.34 p.00	-.10 p.31	-.19 p.06	-.05 p.58	-.04 p.68	-.04 p.70	-.25 p.01	-.06 p.52	-.16 p.12	0.00 1.00	+.54 p.00	+.36 p.00	+.11 p.26	+.37 p.00	+.32 p.00	+.03 p.79	+.31 p.00	+.13 p.18	+.16 p.10	+.34 p.00	+.20 p.05	+.13 p.18	+.30 p.00	+.11 p.27	+.21 p.02	+.40 p.00	+.23 p.02	+.57 p.00	1.00 p.00	
IMP3	-.21 p.03	-.37 p.00	-.13 p.18	-.28 p.00	-.04 p.67	-.02 p.80	-.05 p.59	-.32 p.00	-.02 p.05	-.10 p.33	0.00 1.00	+.53 p.00	+.50 p.00	+.04 p.70	+.30 p.00	+.34 p.00	-.01 p.91	+.34 p.00	+.21 p.03	+.11 p.25	+.38 p.00	+.30 p.00	+.16 p.10	+.33 p.00	+.29 p.00	+.11 p.29	+.33 p.00	+.26 p.01	+.49 p.00	+.80 p.00	1.00 p.00

Key to Pearson Correlation Table

Symbol	Variable
AGE-	Age of subject.
P%--	P score of subject of the Defining Issues Test.
SET-	Instructional set employed during the gaming interaction.
TRUS	Trustworthiness versus untrustworthiness dimension on the Philosophy of Human Nature Scale.
WILL	Strength of will and rationality versus external control and irrationality dimension on the Philosophy of Human Nature Scale.
ALTR	Altruism versus selfishness dimension on the Philosophy of Human Nature Scale.
INDE	Independence versus conformity to group pressures dimension on the Philosophy of Human Nature Scale.
COMP	Complexity versus simplicity dimension on the Philosophy of Human Nature Scale.
VARI	Similarity versus variability dimension on the Philosophy of Human Nature Scale.
PRES	Rating by confederate of the degree of pressure necessary to establish the cooperative contract with S.
RET1	Retaliatory responses by the subject during phase 1 of the gaming interaction.
RET2	Retaliatory responses by the subject during phase 2 of the gaming interaction.
RET3	Retaliatory responses by the subject during phase 3 of the gaming interaction.
FRU1	Self reported level of frustration indicated by the subject at the end of phase 1 of the gaming interaction.
FRU2	Self reported level of frustration indicated by the subject at the end of phase 2 of the gaming interaction.
FRU3	Self reported level of frustration indicated by the subject at the end of phase 3 of the gaming interaction.

Symbol	Variable
M001	Negative self reported mood indicated by the subject at the end of phase 1 of the gaming interaction.
M002	Negative self reported mood indicated by the subject at the end of phase 2 of the gaming interaction.
M003	Negative self reported mood indicated by the subject at the end of phase 3 of the gaming interaction.
COF1	Negative confederate related affect indicated by the subject at the end of phase 1 of the gaming interaction.
COF2	Negative confederate related affect indicated by the subject at the end of phase 2 of the gaming interaction.
COF3	Negative confederate related affect indicated by the subject at the end of phase 3 of the gaming interaction.
COP1	Self reported commitment to continued cooperation with the confederate at the end of phase 1 of the gaming interaction.
COP2	Self reported commitment to continued cooperation with the confederate at the end of phase 2 of the gaming interaction.
COP3	Self reported commitment to continued cooperation with the confederate at the end of phase 3 of the gaming interaction.
SUB1	Self reported degree of points subtracted (hypothetical) from the confederate at the end of phase 1 of the gaming interaction.
SUB2	Self reported degree of points subtracted (hypothetical) from the confederate at the end of phase 2 of the gaming interaction.
SUB3	Self reported degree of points subtracted (hypothetical) from the confederate at the end of phase 3 of the gaming interaction.
IMP1	Self reported importance of earning the most points at the end of phase 1 of the gaming interaction.
IMP2	Self reported importance of earning the most points at the end of phase 2 of the gaming interaction.
IMP3	Self reported importance of earning the most points at the end of phase 3 of the gaming interaction.