

PARADOXICAL REGRESSION IN MORAL  
REASONING IN COLLEGE STUDENT  
SUBJECTS ARTIFACT OF  
MATERIAL REWARDS?

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LIST OF SYMBOLS AND ABBREVIATIONS

C-1	- Control group 1
C-2	- Control group 2
DIT	- Defining Issues Test
E-1	- Experimental Group 1
E-2	- Experimental Group 2
MJS	- Moral Judgment Scale
N	- Nonreward
R	- Reward
SRM-A	- Sociomoral Reflection Measure Form A
SRM-B	- Sociomoral Reflection Measure Form B
SRMS-A	- Sociomoral Reflection Maturity Score Form A
SRMS-B	- Sociomoral Reflection Maturity Score Form B

## INTRODUCTION

This project focused on the aspect of morality which involves determining what course of action would best fulfill a moral ideal--what ought to be done in a given situation. The rationale for this study was based in Kohlberg's six-stage theory of moral judgment (Kohlberg, 1969) and in recent theoretical conceptions of Lepper (1981) and Harter (1981) concerning the effects of extrinsic rewards on the process of internalization, a process related to moral reasoning, as well as work by McCullers and his associates (e.g., Fabes, McCullers & Moran, 1981) indicating that material rewards may produce temporary regression in developmental level and psychological functioning.

The purpose of this study was twofold: to explore the role and the effect of material rewards on moral reasoning, and to examine the possibility that observed reversals in level of moral reasoning (Kohlberg & Kramer, 1969, Rest, Cooper, Coder, Masanz, & Anderson, 1974) may be an artifact of research methodology. Specifically, the present study examined the effects of paying college students to perform moral reasoning tasks.

This dissertation deviates from the format called for in the Thesis Writing Manual (1982). The body of this

dissertation consists of a complete manuscript prepared for submission to a technical journal in accordance with the Publication Manual of the American Psychological Association (1983) In order that the dissertation be complete in terms of traditional university standards, materials which are usually present in the body of the report are presented in appendixes The appendixes include a review of the relevant literature in addition to supplemental materials, raw data, and selected statistical analyses

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Paradoxical Regression in Moral Reasoning in  
College Student Subjects Artifact of Material Rewards?

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### Abstract

To explore the effects of material rewards as a possible determiner of observed regression in moral judgment among college students (Kohlberg & Kramer, 1969, Rest, 1975), this study utilized a counterbalanced experimental design which consisted of two treatments that differed in terms of whether or not payment was offered to subjects for completion of the Sociomoral Reflection Measure (SRM). The sample consisted of 120 undergraduate students who were matched on age, sex, and moral maturity as assessed by the Moral Judgment Scale (MJS). Material rewards had an immediate and temporary adverse effect on subjects' scores whether measured between or within subjects. Scores were significantly lower ( $p < .001$ ) under reward conditions than under nonreward. Results, consistent with a developmental regression interpretation, are discussed in light of their implications for theories of moral judgment.



Paradoxical Regression in Moral Reasoning in  
College Student Subjects Artifact of Material Rewards?

The two leading cognitive developmental theorists of moral development, Jean Piaget and Lawrence Kohlberg, have proposed that there are developmental differences in the basic cognitive structures that underlie and organize moral reasoning. Both (Piaget, 1965, Kohlberg, 1969) assume that moral judgment has a cognitive-structural core and that there is a unidirectional sequential progression in moral development.

Kohlberg's (1969) 20-year longitudinal study of 50 boys, tested every three or four years, found that the subjects proceeded through a series of developmental stages in an orderly, sequential progression. Moral judgment was found to be positively correlated with age, socioeconomic status, IQ, and education (Colby, Kohlberg, Gibbs, & Lieberman, 1983).

In spite of evidence of an orderly age progression in moral reasoning, Kohlberg and Kramer (1969) found some surprising reversals and paradoxical regressions in the developmental level of some subjects between testings in high school and college. In high school, some students had scored at Stages 4 and 5, but as sophomores in college, they were scored at Stage 2. Rest (1975) also reported that

college student scores on the Defining Issues Test were unusually low. Logically, reasoning from Kohlberg and Piaget's theories of moral development, these age regressions should not exist because of theoretical assumptions of an invariant sequence of stages and a forward, unidirectional movement through them except under conditions of extreme trauma.

Kohlberg and Kramer (1969) initially accepted the findings of regression in college sophomores and interpreted them in terms of Erikson's concepts of moratorium, identity crisis, and renewed commitment. It was suggested that after individuals had formed the capacity for morally principled thought, they still had to commit themselves to these moral principles, this commitment often was part of the resolution of an identity crisis or moratorium in which the individual displayed retrogression in moral thought (Kohlberg, 1973). The appearance of Stage 2 reasoning in college sophomores was interpreted as a functional regression, a return to a lower stage level, but a structural advance. A questioning of previous commitments and standards was necessary before these standards could be internalized. Thus, it was suggested that individuals could regress in the service of development.

Turiel (1974) argued that the apparent regression in college-age subjects involved a disequilibrium of transition, which differed from a disorganization of

regression This prompted Kohlberg (1973) to make a distinction between content and structure in moral thought and to develop a new stage-scoring system

Kohlberg (1973) proposed that the reversals and regression observed in college students were an artifact of the original scoring system Kohlberg argued that the revised scoring system, which better differentiated structure from content, indicated the college student to be in a transitional state between conventional and principled morality, rather than in regression to a lower stage level (Kohlberg, 1973) Even so, moral judgment data from a longitudinal study (Murphy & Gilligan, 1980) of a small select sample of bright undergraduate students scored by Kohlberg's newly revised scoring manual revealed that a significant percentage of subjects appeared to regress from age twenty-two to age twenty-seven, repeating the violation of sequence that the new scoring system was designed to correct (Murphy & Gilligan, 1980)

A growing volume of literature in recent years on the adverse effects of extrinsic incentives prompts an interesting question could the observed reversal and regression in moral reasoning among college-age subjects be an artifact of a methodology that makes selective use of material rewards at this age? The basis for expecting a detrimental effect of extrinsic rewards on moral reasoning tasks is suggested by a host of studies (for general

reviews, see de Charms & Muir, 1978, Lepper, 1981, Lepper & Greene, 1978, Ryan, Mims, & Koestner, 1983) showing detrimental effects of material rewards on intrinsic interest and immediate task performance

It is not uncommon for college students to be offered extrinsic rewards for participation in research projects. In fact, the university-student subjects in the Kohlberg and Kramer study (1969) were paid for their participation (see Colby, Kohlberg, Gibbs, & Lieberman, 1983). Payment was explicitly identified as part of the experimental procedure. The university student volunteers who filled out the Defining Issues Test in the Rest studies (see Rest, Cooper, Coder, Masanz, & Anderson, 1974) were also paid.

Material rewards were not mentioned in the description of the research procedure for any other age groups in the Kohlberg and Kramer (1969) or Rest (1975) studies. It is noteworthy that, in these studies, reversals and regression were found only in those instances where subjects were paid to participate in the research.

Several theoretical mechanisms have been proposed that might account for an adverse effect of rewards on moral reasoning tasks. For example, from the perspective of attribution theory, Lepper (1981) has shown that extrinsic controls can undermine intrinsic motivation. From this perspective, the perception of being under salient extrinsic controls could cause the individual to lose interest in a task and to perform more poorly as a consequence. Thus, one

would expect that the quality of moral reasoning could be impaired under conditions in which individuals receive material rewards

From a somewhat different perspective, Harter (1981) has proposed a developmental model of effectance motivation which differentiates between the motivational and informational functions of reward and their effects on perceived competence and perception of control Harter (1978) examined the effects of extrinsic reinforcement upon children's preference for challenge and found that children derived maximum pleasure from optimally challenging tasks Harter subsequently proposed a curvilinear relationship between pleasure derived from mastery and task difficulty Harter's investigation revealed that preference for optimally challenging tasks was attenuated under conditions where children worked for extrinsic rewards in the form of grades This suggests the possibility that college subjects might opt for simpler and easier (less challenging) solutions to moral dilemmas under reward conditions

As a third alternative, McCullers, Fabes, and Moran (1981) have suggested that extrinsic rewards may shift subjects to a more primitive level of perceptual organization and psychological functioning These investigators found that rewarded subjects often performed at levels that ordinarily would have been expected of less mature subjects under nonreward conditions on tasks that are sensitive to developmental differences (Fabes, McCullers,

& Moran, 1985, Fabes, Moran, & McCullers, 1981, McCullers, Fabes, & Moran, 1981, Moran, McCullers, & Fabes, 1984) From this perspective, college students might be expected to perform at a less mature level on assessments of moral reasoning (tasks sensitive to developmental differences) when paid to participate

The purpose of this study was twofold to explore the role and the effect of rewards on moral reasoning, and to examine the possibility that reversals in level of moral reasoning may be an artifact of research methodology The present research examined the effects of material rewards on the moral reasoning of college students under reward and nonreward conditions The research design allowed for both within-subject and between-subject comparisons

#### Method

##### Subjects

The subjects were 120 undergraduate students enrolled in sophomore level courses--a psychology class and a human sexuality class--at a large state university and a junior college in the Midwest The students ranged in age from 18 to 22 years. All subjects received research participation (extra credit) points for participating in the research

The original sample consisted of 130 subjects Two students who did not complete the assessments were eliminated from the study as were all students over 24 years of age and those from foreign countries

## Instruments

Two instruments were used to measure moral reasoning the Moral Judgment Scale (MJS) and the Sociomoral Reflection Measure (SRM) These were selected because of ease of administration and because both involve the solution of moral dilemmas, the MJS also provides for objective scoring Since the SRM is considered to be comparable to Kohlberg's Moral Judgment Interview, it was not considered necessary to use Kohlberg's or Rest's specific instruments If reward does have an effect on moral reasoning tasks and is not a peculiarity of a particular assessment tool or scoring system, that effect should be evident on other comparable instruments as well

### Moral Judgment Scale

The MJS (Maitland & Goldman, 1974) is an objective instrument that is easily and quickly scored Subjects can complete the MJS in 40 minutes or less It is based upon the same theoretical notions as the original Kohlberg (1958) system The MJS consists of 15 vignette created from the original Kohlberg dilemmas Each vignette is followed by a question aimed at evoking one particular issue of moral judgment The subject is to choose one of six alternatives which represent characteristic modes of thought about the issue at each of the six stages of moral development The order of presentation of these stage-representative dilemmas has been randomized The dilemma situations are

personalized such that subjects are asked to make judgments on situations in which they are assumed to be involved themselves. Scores on the MJS are obtained by summing the numerical value of each stage option chosen by the subject. Thus, scores have a possible range of 15 to 90.

Reliability of the MJS assessed by the test-retest method over a ten-day period has a Pearson product-moment correlation of .83, a corrected split-half reliability of .71, and a Kuder-Richardson Formula 20 coefficient of .67 (Maitland & Goldman, 1974).

Maitland and Goldman did not compute a validity coefficient for the MJS but have indicated that MJS scores are comparable to Kohlberg Moral Maturity Scale scores. They compared MJS scores obtained by subjects in their study with Kohlberg Moral Maturity Scale scores for a sample of 25 subjects of similar age and academic preparation. Maitland and Goldman multiplied MJS scores by a factor of 100/15, which allowed direct comparison with the Moral Maturity Scale scores. The converted score on the MJS for the Maitland and Goldman sample was 365, as compared to a Kohlberg Moral Maturity Scale score of 364 for a group of similar age and preparation (Maitland & Goldman, 1974). Although this procedure is not ideal, it does indicate that the two measures appear to yield comparable scores.

#### Sociomoral Reflection Measure

The SRM (Gibbs, Widaman, & Colby, 1982b), developed by Kohlberg's colleagues, is a standardized paper-pencil



version of Kohlberg's Moral Judgment Interview The SRM is a production task measure of moral reasoning, subjects express their thinking with respect to moral dilemmas and associated normative values The SRM testing session averages about 45 minutes

The SRM protocol ratings represent the mean stage level of subjects' scores on eight sociomoral norms The SRM yields two primary types of overall protocol rating, (1) modal stage, which is the stage most frequently used by subjects in their protocol responses and (2) the Sociomoral Reflection Maturity Score, a psychometrically more differentiated rating which ranges from 100 to 400

Gibbs, Widaman, and Colby (1982a) report interrater reliability of .98 (highly trained raters), corrected test-retest reliability of .93, corrected parallel form reliability of .95, and Cronbach's coefficient alpha of .78 They found a substantial correlation (concurrent validity) of .85 between the SRM and Kohlberg's Moral Judgment Interview Gibbs, Widaman, and Colby (1982a) also report significant correlations (construct validity) between the SRM and age, grade, and socio-economic status

#### Procedure

The experimenters were white female graduate students who administered the instruments in four sessions at two-week intervals The MJS was administered in Sessions 1 and 4 to all subjects under standard, nonreward conditions

The scores from the initial administration of the MJS served as a baseline measure for moral reasoning as well as a basis for the assignment of subjects to groups. The results of the final administration of the MJS were used to assess pre and post-treatment effects on performance.

The subjects were matched according to age, sex, and MJS scores and assigned in an otherwise random fashion to one of four groups. These groups were randomly assigned to either a control or an experimental treatment. The Experimental groups (E-1 and E-2) completed the SRM, Forms A and B, during Sessions 2 and 3 respectively. Subjects in Group E-1 received a monetary reward in Session 2, Subjects in Group E-2 were given the monetary reward in Session 3. The Control groups, C-1 and C-2, performed without material reward. Group C-1 participated in all four sessions. The subjects in Group C-2 did not complete the SRM, Form A or Form B, they completed only the MJS in Sessions 1 and 4, providing a control for possible SRM effects.

Reward subjects were paid \$5.00 for completing the questionnaire and were instructed that they would receive payment at the end of the session. All subjects were asked not to discuss the task and, for reward subjects, the fact that they had been paid until the study was completed.

The amount of the payment provided to the Kohlberg subjects was not reported. The subjects in the Rest study

were paid \$10 00 for completion of the questionnaires (Rest, 1975) Subjects in the present study thus received a payment which, given the time factor, was somewhat less than that provided the Rest subjects

The mean scores on the MJS, Session 1, for the four groups were 65 47, 65 60, 66 30, and 65 23 respectively An analysis of variance confirmed that differences among the four groups on the matching variable of moral reasoning were not significant,  $F < 1 00$

Even though sex was not a variable of central interest, males and females were equally distributed among the groups in order to analyze possible sex differences Each group included 10 males and 20 females In order, the mean ages in years for groups E-1, E-2, C-1, and C-2 respectively were 19 70, 20 26, 19 60, and 19 56

At the close of the project, all subjects were debriefed At this time, subjects in the control groups who had participated in Session 2 and 3, which involved time outside of their scheduled class periods, received the same monetary payment as the Experimental groups

### Design

The final design was a four-group repeated-measures design, consisting of two experimental and two control groups with 30 subjects per group A diagram of the research design is included in Figure 1

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Insert Figure 1 about here

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This study utilized a counterbalanced experimental design in Session 2 and 3 which consisted of two treatments that differed in terms of whether or not rewards were offered for completion of the SRM. This design thus allowed for assessment of treatment effects within and between subjects.

#### Scoring

All assessments were scored blind by two female graduate students. Both raters were unaware of subjects' assigned groups. In order to ensure accuracy, each MJS was scored by both raters.

It is essential that trained raters score the SRM, an open-ended assessment. The two female graduate students worked through the SRM self-training materials (Gibbs, Widaman, & Colby, 1982b) and independently scored 30 randomly selected protocols. The respective protocol ratings were then compared in order to determine interrater reliability. In each scoring category, the raters surpassed the minimum standards for acceptable interrater reliability as set forth in the scoring manual (Gibbs, Widaman, & Colby, 1982b). The raters obtained interrater reliabilities of 100% modal stage agreement, 98 SRMS discrepancy, and 96.7% global agreement within a one-third interval. Upon establishing interrater reliability, the raters scored the remaining protocols. The protocols to be scored by each

rater were selected at random

### Results

Mean MJS and SRM scores and their standard deviations are presented in Table 1 for each group and testing session

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Insert Table 1 about here

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As indicated earlier, Table 1 shows that the initial matching based on MJS scores yielded comparable treatment groups

In Session 2, the group (E-1) that was paid for their participation had a lower mean score than the groups (E-2 and C-1) that were not paid. This was also true of Session 3 (E-2 vs E-1 and C-1). In Sessions 2 and 3 both nonreward groups had higher mean scores than the reward groups. The group (E-1) that received reward on the SRM-A had a lower score relative to their own nonrewarded performance on SRM-B, the group (E-2) that received reward on the SMR-B had a lower score relative to their performance on SRM-A.

These results reflect a clear detrimental effect of reward on SRM performance. As predicted, a within-subject analysis revealed that SRM scores were significantly lower when the subjects were rewarded for their participation. Significant differences were found within subjects between the SRM-A and the SRM-B mean scores for Group E-1 and Group E-2 respectively,  $t(29) = -8.71$ ,  $p < .001$ ,  $t(29) = 10.37$ ,  $p < .0001$ .

Group C-1 SRM mean scores did not reflect significant change within subjects. The C-1 group did not receive payment for either session, and showed only a 2.29 mean point difference between Sessions 2 and 3. The SRM-A and SRM-B mean scores of the Control group C-1 showed high stability over Sessions 2 and 3,  $r(28) = .9030, p < .001$ , indicating comparability (parallel-form reliability) of Forms A and B.

A one-way analysis of variance and Scheffe tests confirmed the presence of a significant reward effect by group for Session 2 and Session 3 scores,  $F(2,2) = 15.35, p < .001$ ,  $F(2,2) = 42.95, p < .001$  respectively. In both sessions, the mean scores of the reward groups were significantly lower than the scores of the nonreward groups, reflecting an adverse effect of reward on SRM scores.

Because of recent controversy (Gilligan, 1982, Walker, 1984) concerning the presence of sex differences in moral reasoning tasks, an examination of sex differences was included in the present analysis. Also, the SRM scores of subjects who had high scores on the initial administration of the MJS were compared with subjects who had low scores on the MJS. It has been speculated that rewards are more likely to have an adverse effect on subjects at a higher developmental level (Moran, McCullers, & Fabes, 1984). Therefore, the groups were divided into a top half (high scorers) and a bottom half (low scorers).

Two three-way analyses of variance were performed on the SRM-A and the SRM-B mean scores respectively. The scores were analyzed in terms of reward group, sex, and initial MJS scores (high or low). The results indicated that, in addition to the reward group differences in Session 2 and 3, there was also a reward difference by MJS level in Session 3. However this difference was not consistent across Sessions 2 and 3. There were no main effects of sex on either the SRM-A or the SRM-B.

To determine if the obtained reward effects were general ones that applied to most subjects, crosstabulations of modal stage scores on the SRM-A and SRM-B were analyzed by group. The results are displayed in Table 2. There was a significant relationship between reward group and SRM-A

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Insert Table 2 about here

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modal stage scores,  $\chi^2(8, N = 90) = 19.71, p < .05$ , Cramer's  $V = .33$ , and between reward group and SRM-B modal stage scores,  $\chi^2(8, N = 90) = 36.88, p < .001$ , Cramer's  $V = .45$ . Upon inspection of Table 2, it is apparent that under nonreward, there was a greater proportion of subjects reasoning from a modal stage higher than Stage 3. Under reward, there was a greater proportion of subjects reasoning from a modal stage lower than Stage 3.

A one-way analysis of variance was performed on the MJS scores obtained during Session 4. There were no statistically significant differences between groups, indicating that for this project there were no adverse effects of material rewards on subsequent task performance. The detrimental effects of material rewards were confined to immediate task performance only.

#### Discussion

The present data implicates material rewards in the paradoxical regression in moral reasoning found among college student subjects by Kohlberg and Kramer (1969) and Rest (1975). This project demonstrated that college students' SRM scores were significantly lower under reward than under nonreward, whether measured between or within subjects. The SRM scores of Group C-1 were stable over the same two testing sessions. Further, the effect of material rewards was immediate, temporary, and did not extend beyond the context of the immediate task to the subsequent sessions scheduled at two-week intervals.

The question remains as to what mechanisms may best account for the observed reward effects. According to Lepper (1981), extrinsic controls may alter an individual's perceived locus of control. The perception of being under salient, extrinsic controls may cause the individual to lose interest in a task or activity and to perform poorly as a consequence. According to Harter (1978), extrinsic rewards



affect intrinsic motivation by decreasing an individual's tendency to choose tasks of optimal challenge, decreasing the pleasure derived from performance, and creating anxiety over the possibility of not obtaining the reward

Both of these interpretations could easily explain a decline in moral reasoning scores under reward conditions. These views, based on changes in intrinsic motivation, would have greater difficulty, however, in accounting for the rapid recovery to higher levels of moral reasoning under nonreward conditions and the fact that the reward effects were both immediate and temporary.

McCullers, Fabes, and Moran (e.g., Fabes, Moran, & McCullers, 1981) have shown that material rewards may shift subjects temporarily to a more primitive level of psychological functioning. Given the immediate and temporary decline in SRM scores under reward, it seems reasonable to propose that rewards can produce a regression in moral reasoning, and that the regression in college student subjects observed by Kohlberg and Kramer (1969) and Rest (1975) could have been an unsuspected consequence of using material rewards.

These findings have important theoretical implications. It may no longer be necessary to call the Kohlberg and Kramer (1969) findings "disconfirming data." The observed inconsistencies may have been simply an artifact of research methodology. If regression in college-student subjects can

be accounted for as a result of research procedure, then the longitudinal and cross-sectional data can be said to provide strong evidence for Kohlberg's assumption of an orderly sequential progression in the development of moral judgment

While it seems reasonable to conclude that material rewards can produce regression in the moral reasoning of college students, this does not mean that all such regression is necessarily due to rewards. For example, Murphy and Gilligan (1980) do not mention incentives as part of their research methodology. Gilligan recently indicated (B. Bardige, personal communication, November 22, 1985) that incentives were not used in their study. This leaves open the possibility that regression in young adulthood can occur for other reasons.

A question may be raised concerning the effect of the extra credit points offered to the students for participation in the project. Extra credit points are not tangible, and they are a traditional feature of university-student research participation. Nevertheless, extra credit points may function as extrinsic rewards. If so they could have had a negative effect on all groups across all sessions. Although MJS mean scores reflected a Stage 4 orientation, consistent with Kohlberg's model, it is possible that these scores might have been even higher if there had not been an offer of extra credit points.

The present findings also have implications that reach beyond moral development research. It is not an uncommon practice to pay college students for their participation in research. It is important that researchers working with human subjects be aware of the possible effects of material rewards on immediate task performance. The practice of paying students to participate in research may affect both the data and our theoretical understanding of them by underestimating adult performance in tasks that are sensitive to developmental differences.

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Table 1

Moral Judgment Scores by Group and by Session

Group	<u>n</u>	Session			
		1 MJS	2 SRM-A	3 SRM-B	4 MJS
E-1 (N/R/N/N)	30				
	<u>M</u>	65 47	292 97	341 20	66 47
	<u>SD</u>	7 51	35 43	28 16	7 63
E-2 (N/N/R/N)	30				
	<u>M</u>	65 60	333 63	261 73	67 13
	<u>SD</u>	7 70	24.43	44 05	7 71
C-1 (N/N/N/N)	30				
	<u>M</u>	66 30	315 13	312.83	67 33
	<u>SD</u>	7 30	24 05	25 79	8 40
C-2 (N/-/-/N)	30				
	<u>M</u>	65 23	-	-	66 77
	<u>SD</u>	10 34	-	-	6 78



Table 2

Numbers of Subjects with SRM Modal Stage Scores by Group and by Session

Group	Modal Stage Scores				
	2	2/3	3	3/4	4
	Session 2		SRM-A		
E-1 (R)	6	2	17	1	4
E-2 (N)	0	0	17	6	7
C-1 (N)	2	0	23	1	4
	Session 3		SRM-B		
E-1 (N)	0	1	15	3	11
E-2 (R)	16	1	12	0	1
C-1 (N)	4	1	20	2	3

Figure Caption

Figure 1 Research Design

		<u>Session and Instrument</u>			
		1	2	3	4
Group		MJS	SRM <sub>A</sub>	SRM <sub>B</sub>	MJS
		E	E <sub>1</sub>	N	R
E <sub>2</sub>	N		N	R	N
C	C <sub>1</sub>	N	N	N	N
	C <sub>2</sub>	N			N

n = 30 subjects per group

MJS = Moral Judgment Scale

SRM<sub>A</sub> = Sociomoral Reflection Measure Form A

SRM<sub>B</sub> = Sociomoral Reflection Measure Form B

N = Nonreward

R = Reward

APPENDIXES

APPENDIX A  
REVIEW OF LITERATURE

## REVIEW OF LITERATURE

## Moral Reasoning

The Cognitive Developmental Approach

The two leading theorists of the cognitive developmental approach to moral development are Piaget and Kohlberg. Therefore this review will focus on the literature which directly relates to their research. Kohlberg's theory of moral judgment is an expansion of Piaget's early research (1965) that structural change in moral judgment is promoted by cognitive disequilibrium and peer interaction. In contrast to Durkheim's (1961) emphasis on the influence of society in shaping the behavior of individuals to conform to social norms, Piaget proposed that there are developmental differences in the underlying organization of people's thinking. Piaget suggested that as a child develops, an understanding of the possibilities and conditions of cooperation in the social world develops. The fundamental nature of morality changes.

Justice, a concern for reciprocity and equality among individuals, is central to Piaget's concept of moral development. Piaget (1965) contends that there are two broad stages of moral development: a morality of constraint and a morality of cooperation. Piaget implies that the different structures of moral thinking are developmentally sequenced. Over time, people shift from a morality of

respect and submission to authority to a morality of self government and control

Piaget (1965) investigated dimensions of children's moral thinking by presenting hypothetical moral stories to the children. He interviewed the children and demonstrated that the young child's thinking differs from that of the older child along the dimensions of absolutism, flexibility of rules, immanent justice, objective responsibility, focus of punishment, expiatory punishment, and obedience to authority (Piaget, 1965, 1968). Piaget's research and subsequent follow-up studies are reviewed by Hoffmann (1970), Karniol (1978), Keasey (1978), Lickona (1976), and Rest (1983).

According to Kohlberg (1969), moral judgment is a function of a person's cognitive organization and role-taking opportunities. Like Piaget, Kohlberg's theory (1969) emphasizes basic cognitive structures that underlie and organize moral reasoning. Kohlberg's theory of moral development is based on two assumptions: 1) moral judgment has a cognitive-structural core which explains why there is a universal directed sequential progression in moral judgment, and 2) moral stages represent the interaction between the child's structuring tendencies and the structural features of the environment.

In contrast to Piaget, Kohlberg (1969) describes three levels of moral development: pre-conventional,

conventional, and postconventional. A preconventional person is one for whom rules and social expectations are external to the self, the conventional person is one who has internalized the rules and expectations of others, and a postconventional person is one who has differentiated his self from the rules and expectations of others and defines his values in terms of self-chosen principles. Within these three levels, Kohlberg proposed six specific stages of development that represent successive transformations in the way an individual's thinking is organized from childhood to adulthood. Stages are operationalized by responses to a set of verbal moral dilemmas. Each stage in the sequence is considered to be progressively more differentiated and integrated. With development, each new stage employs cognitive operations that are more reversible and equilibrated. With development, each stage has a more encompassing perspective on society.

Stages are "structured wholes" or organized systems of thought. Individuals are consistent in level of moral judgment. Kohlberg assumes that stages form an invariant sequence. Under all conditions except extreme trauma, movement is considered to always be forward, never backward. Kohlberg (1969, 1973) contends that individuals never skip stages, movement is always to the next stage up. Stages are "hierarchical integrations." Thinking at a higher stage includes or comprehends within it lower-stage thinking.



Kohlberg (1969) maintains that there is a tendency to function at or to prefer the highest stage available

Kohlberg (1969) hypothesized that the level of moral judgment, the product of continuous reaction to the whole social world, is related to IQ and to chronological age, or to age-linked experience. When a child moves from a lower stage of moral thinking to a higher one, he does it through a transformation of his system of thought--a reorganization--not a simple addition of new thoughts (Kohlberg, 1969). However, even though these shifts in moral judgment reflect new cognitive capacities, moral reasoning cannot be reduced to general cognitive development.

#### Research in Support of Kohlberg's Theory

Age-trend data is the primary empirical support for Kohlberg's six-stage model. Kohlberg has collected both longitudinal and cross-sectional data. Kohlberg's 20-year longitudinal study of fifty boys, who were tested every three or four years, found that the subjects proceeded through the developmental stages in the hypothesized sequence. Moral judgment was found to be positively correlated with age, socioeconomic status, IQ, and education. Stage scores in childhood correlated significantly with adulthood scores (Colby, Kohlberg, Gibbs & Lieberman, 1983).

Experimental and cross-cultural studies have supported the six-stage theory (Blatt & Kohlberg, 1975, Colby et al, 1983, Edwards, 1981). Snarey (1985) has reviewed the

cross-cultural research literature and evaluated the support for each of Kohlberg's assumptions. Recent correlational studies reviewed by Blasi (1980) have generally found significant associations between moral judgment level and moral conduct.

Cross-sectional and longitudinal studies have shown that older subjects display higher stage reasoning than younger subjects (Holstein, 1976, Kohlberg, 1969, Kohlberg & Kramer, 1969, Kramer, 1968, Kuhn, 1976, Rest, 1975, Rest, Cooper, Coder, Masanz & Anderson, 1974). The comprehension and preference findings by Rest (1973) also support the cognitive developmental theory of a hierarchy of stages. Walker (1980, 1982) has reviewed the published intervention studies as well as the research pertaining to sex differences in the development of moral reasoning.

#### Research Issues Related to Kohlberg's Theory

Several writers (Gilligan, 1982, Haan, 1977, Holstein, 1976) have criticized Kohlberg's theory of moral development as being biased against women. Walker (1984) has examined and summarized the research studies which compare the development of moral reasoning of males and females. Walker (1984) found the overall pattern one of nonsignificant sex differences in the development of moral reasoning. A recent study (Gibbs, Arnold & Burkhart, 1984) also confirmed the lack of moral stage difference between males and females. The results supported Kohlberg's speculation that orientational preference rather than level of stage

structure may be the primary area where sex differences in moral judgment are manifested

Piaget and Kohlberg assess moral judgment by the clinical interview technique. Kohlberg's procedure of gathering data, however, is more open-ended than Piaget's. Piaget's moral stories are focused on one dimension and the discussion is limited to gaining information about that one feature. Kohlberg's stories are open-ended and the discussion can cover a large number of features and topics.

Due to the problems posed by scoring free response data to open-ended dilemmas, one of the Kohlberg group's major research efforts in recent years has been to revise the scoring system. The Kohlberg group has used longitudinal data to devise a scoring scheme that would produce scores consistent for a subject across dilemmas and would show each subject's stepwise movement through the stages without reversals or skipping of stages. Colby (1978) has traced the rationale and the development of the family of scoring systems.

Another motivation to revise the 1958 scoring system was the occurrence of disconfirming data. Kohlberg and Kramer (1969) discovered reversals in the developmental sequence of some subjects between testings in high school and college. In high school, some of the subjects had been scored at Stages 4 and 5, as sophomores in college, they were scored at Stage 2. Other subjects moved from Stage 4

to Stage 3 or skipped from Stage 3 to Stage 5 (Kohlberg, 1976) Kohlberg responded by revising the scoring system, assuming that content had been confused with stage differentiations The recent scoring systems hold content constant by a four-tier classification system of issues, norms, elements, and stages (Kohlberg, Colby, Gibbs & Speicher-Durbin, 1978)

Using the newer scoring system (Kohlberg et al , 1978) on the longitudinal data of subjects tested at three to four year intervals over 20 years, fifty-six of 58 subjects showed upward change with no subjects skipping any stages Most subjects moved up less than two full stages, one full stage shift took an average of 13 9 years Most subjects started out at Stage 2 and ended up at Stage 4 Stage 5 was rare, Stage 6 was nonexistent Only 6% of the 195 comparisons showed reversal between two testings Even so, Kohlberg's data may not indicate stage consistency in a person's moral reasoning Rest (1983) suggests that because the scoring rules have been changed to weed out stage mixture and reversals, the scoring procedure is biased toward stage consistency

#### The Defining Issues Test

Rest (1975) devised an objective method of assessment of moral judgement based on Kohlberg's approach The Defining Issues Test (DIT) is an objectively scorable assesment tool which is based on subjects' ratings and

rankings of stage-prototypical statements concerning six moral dilemmas. Three of the six moral dilemmas were taken from Kohlberg's Moral Judgment Interview (1958). The DIT can be easily administered to groups. Since the development of the DIT in 1974, several hundred studies have been completed. These are reviewed and summarized by Rest (1979, 1980) and Rest, Davison and Robbins (1978).

DIT research assumes that the basic organizations of moral thinking are different schemes of cooperation--generalized views of how people cooperate in social relationships. Six schemes portray development in terms of the progressive understanding of how rights and duties are balanced and the conditions that sustain the cooperative schemes.

Since the DIT is a recognition task and Kohlberg's Moral Judgment Interview is a production task, the DIT credits subjects with more advanced thinking than does Kohlberg's assessment (Rest, 1973). Kohlberg's Moral Judgment Interview and the Defining Issues Test produce similar longitudinal trends with about the same amount of regression (Davison, Robbins, & Swanson, 1978), similar correlates with other cognitive and attitudinal variables, and similar changes in response to educational and experimental interventions (Rest, 1979). Like the Moral Judgment Interview, the DIT shows a predominant upward trend in individual stage change patterns (Rest et al., 1978).

There is one exception to the predominant upward trend of stage change. In the subgroup of 19 to 21 year olds, 39% of the subjects had upward movements and 39% had downward movements (Rest et al , 1978). These findings are comparable to the Kohlbergian studies of Holstein (1976) and Kramer (1968) in which 42% and 63% of subjects respectively moved upward to the next stage over a three year period. Both the Kohlberg and DIT data suggest that subjects at the adult level seem to plateau or slow down in development, while a percentage of the college students actually slip downward to a lower stage. The downward change of the college students is inconsistent with developmental change, accounting for 17% of the sample in the DIT studies (Rest, 1975).

#### Moral Reasoning in the College Years

Kohlberg and Kramer (1969) contended that the college students were responding to their new awareness of the relativity of moral expectations and actual moral behavior. Kohlberg and Kramer (1969) proposed that the college students were actually taking a developmental step forward even though their stage scores reflected a lower stage level. Kohlberg and Kramer (1969) suggested that college students are living in a late adolescent psycho-social moratorium in which new and non-conforming patterns of thought and behavior are being tried out.

Four years later Kohlberg (1973) rejected such explanations to propose that there are moral stages unique to young adulthood as a result of young adults' experiences of personal choice and responsibility. Kohlberg explained that a scoring system which better differentiated structure from content indicated that the skeptical relativism of the college student is a transitional state between conventional and principled morality rather than a regression (Kohlberg, 1973). Kohlberg also suggested that the high school reasoning scored as principled morality in 1969 was only an advanced form of conventional reasoning.

Turiel (1974) analyzed in detail stage transition in adolescent moral judgment. Turiel concluded that transition from one stage to the next involves a phase of conflict or disequilibrium during which the existing mode of thinking is re-evaluated and a new mode is constructed.

Holstein's investigation (1976) of 52 middle-class American adolescents and their parents was designed to evaluate the cognitive-developmental position (Kohlberg, 1969, 1973, Kohlberg & Kramer, 1969) that changes in moral judgment follow a stepwise, invariant sequence of six irreversible stages. Holstein found that, over a three year period, developmental sequences for the adolescents and adults supported the stepwise sequence requirement in the movement from level to level--but not from stage to stage. These findings held true for the first two levels only. Regression was evident at the higher stage levels.

Conceptual and methodological problems related to research on Kohlberg's theory have been reviewed and discussed by Broughton (1978), Kurtines and Greif (1974) and Simpson (1974). While Kurtines and Greif (1974) claim that more than a decade of empirical research has failed to provide the data necessary to confirm Kohlberg's theory, other critics have focused on Kohlberg's conception and scoring of the higher stages as problematic (Brown & Hernstein, 1975, Gilligan, 1977, Gilligan & Murphy, 1979, Sullivan, 1977).

Moral judgment data from a longitudinal study (Murphy & Gilligan, 1980) of 26 undergraduates scored by Kohlberg's newly revised manual replicate his original finding that a significant percentage of subjects appear to regress from adolescence to adulthood. The same interview data (Murphy & Gilligan, 1980) was recoded based on a reconstruction of Kohlberg's theory around the adult cognitive stage hypothesis of Perry (1968). The results revealed developmental progression where the Kohlberg manual found regression. Murphy and Gilligan (1980) thus suggest that it is possible to code such data and that it is not the scoring manual which needs revision but the theory itself.

Perry's nine-position scheme (1968) is based on a progression from early formal operations (Multiplicity) through a transitional crisis (Relativism) to a post formal operational equilibrium in which the structures of cognition have been transformed (Commitment in Relativism). Perry's



model (1968) of ethical development portrays the progression of moral reasoning through nine positions in a sequential but not invariant movement. Regression to earlier positions is an empirical feature of the theory. Murphy and Gilligan (1980) propose that their findings of developmental sequence in Perry's system support a model of cognitive development that postulates progression in late adolescence towards more dialectical or contextual structures of thought. Therefore, Gilligan and Murphy (1979) conclude that the longitudinal data suggest that moral reasoning in its real life context relies on cognitive structures other than those deriving solely from formal logic.

#### Summary

This section has focused on the major research efforts concerned with the cognitive developmental approach to moral development. There are hundreds of studies which have used Kohlberg's Moral Judgment Interview and Rest's Defining Issues Test to assess the development of moral judgment. In general, the research has indicated that moral judgment is positively correlated with age, socioeconomic status, IQ, and education (Colby et al , 1983). There does not appear to be a significant stage difference between males and females (Walker, 1984, Gibbs et al , 1984). Sex differences are more likely to be manifested in orientational preference rather than the level of stage structure.

Research with the Defining Issues Test and Kohlberg's Moral Judgment Interview shows a predominant upward trend of

stage change over the years until the subjects reach college age. Studies of college students reveal that approximately one-third remain at the same level as during the high school testing, one-third show upward change, and one-third of the students show downward change. Interview data recoded according to the adult cognitive stage hypothesis of Perry (1968) shows a developmental progression where the Kohlberg Standard Scoring System shows a downward shift (Murphy & Gilligan, 1980). However, regression to earlier positions is an empirical feature of Perry's nine-position model.

Investigations using the Defining Issues Test have found that the acquisition of cognitive structures is gradual rather than abrupt and that subjects fluctuate in their use of a stage structure even on the same tasks (Rest, 1983). Research with DIT has shown that varying the specific type of testing material, instructions, procedures, scoring criteria, and stringency produces variance in stage scores (Rest, 1983). Rest (1983) proposes that the organization of thinking imposed on a problem is related to the type of task and the type of response that are used in assessment. Rest (1983) suggests that different tasks and response modes made a difference in stage scores and is thus further empirical disconfirmation of a simple stage model.

Rest (1983) notes that the basic question of assessment should not be concerned with what stage a subject is in but rather "to what extent and under what circumstances does a subject display various organizations of thinking?" This

question is the basis for inclusion of the following section which reviews research literature concerned with the effects of extrinsic rewards on motivation and task performance

Effects of Extrinsic Rewards  
on Motivation and Task Performance

Extrinsic Rewards and Intrinsic Motivation

"To what extent and under what circumstances does a subject display various organizations of thinking (Rest, 1983)?" In response to this question and in order to explore the potential relationship between material rewards and the observed regression (Kohlberg & Kramer, 1969, Rest, 1975) in moral judgment among college students, this section of the literature review will focus on the research concerned with the effects of material rewards on intrinsic motivation and task performance

There is an increasing interest in exploring the effects of material rewards on intrinsic motivation and human behavior (Crano & Sivacek, 1984, Harackiewicz, Manderlink & Sansone, 1984, Harackiewicz, Sansone & Manderlink, 1985) Harackiewicz and Manderlink (1984) have recently completed a process analysis of the effects of performance contingent rewards on intrinsic motivation. The effect of extrinsic incentives on the use of test anxiety as a self-handicapping strategy has been assessed by Greenberg, Pyszcznski, and Paisley (1985) A study of Kunda and Schwartz (1983) investigated the effect of payment for helping others on subjects' sense of moral obligation or

motivation In each case, material rewards were found to undermine intrinsic motivation or behavior

Current research is being undertaken in related areas Components of reward in social dilemmas have been examined (Komorita & Barth, 1985), Amabile (1985) has explored the effects of motivational orientation on creative writers, and Manderlink and Harackiewicz (1984) examined the effect of goal proximity on intrinsic motivation when initial task interest was high

Several authors (Koestner, Ryan, Bernieri, & Holt, 1984) have recently addressed the question of whether limits on behavior can be set without undermining intrinsic motivation for the activity being limited. Their research findings, that limits can be set without undermining intrinsic motivation if they are informational in nature, have implications for research related to material reward effects

Recently, Quattrone (1985) has re-examined the theories of attribution and cognitive dissonance and attempted to resolve the incongruity between self-report and behavior effects He presented theoretical considerations and empirical evidence to show that self-report effects are significant and congruent with behavior effects more frequently than previous reviewers indicated Quattrone (1985) has noted that incongruity and other problems are symptomatic of there being no sophisticated theoretical account of how internal states mediate behavior As the

potential relationship between material rewards and regression in adolescent moral reasoning is explored, various accounts of how internal states might mediate behavior will be examined

In the last decade, a number of researchers have been exploring the effects of material rewards on intrinsic interest and motivation as well as on immediate task performance. Related research has been reviewed by Lepper and Greene (1978b), deCharms and Muir (1978), Williams (1980), and Lepper (1981)

#### The overjustification effect

Rewards promised to subjects for engaging in an activity and implying no performance demands have consistently produced an overjustification effect (Lepper & Greene, 1976, Lepper, Sagotsky, Defoe & Greene, 1982). From the perspective of attribution theory, Lepper (1981) suggests that extrinsic controls may undermine intrinsic interest and task performance. An individual's perception of being under extrinsic controls may cause one to lose interest in the task and to perform poorly.

Attribution theory developed within social psychology as a means of dealing with questions of social and self perceptions (Kelley, 1973). The major tenets of attribution theory are reviewed and summarized by Heider (1958), Jones and Davis (1965), Bem (1972), and Kelley (1973). A broad survey of the field of attribution theory has been reported

by Jones, Kanouse, Kelley, Nisbett, Valins, and Weiner (1972)

Attribution theory is similar to the dissonance theory in that both theories suggest that experimental manipulations result in subjects making inferences about the cause of their behavior. These influences then lead to new attitudes, traits, emotions, and motives which in turn lead to new behaviors. The discounting principle of attribution theory (Kelley, 1972) suggests that a person will be more likely to perceive himself as extrinsically motivated rather than intrinsically motivated if he is provided with a salient reward for engaging in an activity. A study of preschool children by Lepper, Greene, and Nisbett (1973) provides evidence that a person's initial intrinsic interest in an activity may be undermined by inducing that person to engage in the activity as an explicit means to some extrinsic goal. The investigators found that the provision of extrinsic rewards turned "play" into "work". An activity which would be engaged in only when extrinsic incentives for engaging in the activity were present.

Additional research with subject populations varying from preschool children to college students indicate similar results (Calder & Straw, 1975, Deci, 1971, 1972, Pallak, Costomiris, Sroka, & Pittman, 1982, Ross, 1975). Intrinsic interest in an enjoyable activity declined when the person was induced to engage in the activity as an explicit means to a salient, extrinsic reward. It appears that the

extrinsic reward caused the individuals to discount intrinsic interest as a possible motivating factor and to perceive themselves as extrinsically motivated

Lepper (1981) proposed that extrinsic controls alter the individual's perception of locus of control. The perception of being under salient extrinsic controls may cause the individual to lose interest in a task or activity and to perform more poorly as a consequence. According to Lepper, internalization, as a form of intrinsic control, would be expected to be impaired by material rewards. From this perspective, college students who are paid to participate in moral judgment research can be expected to lose interest in the task at hand and to perform more poorly than when they are not paid to participate. Subjects can also be expected, if internalization processes have been affected, to perform poorly in subsequent research sessions.

Condry and Chambers (1978) have reviewed the effects of extrinsic rewards on intrinsic motivation and concluded that, in certain contexts, subsequent interest in a task may be reduced by the imposition of task-extrinsic rewards. They noted that reward contingency is one context which contributes to an undermining effect. Harackiewicz (1979) has reviewed the research concerned with task-contingent and performance-contingent rewards. Harackiewicz's study (1979) of high school students found that performance-contingent rewards undermined intrinsic motivation more than task-contingent ones, which produced decrements relative to

control conditions of no reward This is supportive of Deci's position (1975) that performance-contingent rewards should decrease intrinsic motivation even more than task-contingent ones because a reward is perceived to be more controlling when it is contingent on some level of performance

Karniol and Ross (1977) and Deci (1975) contend that rewards have both controlling and informational aspects and that the more salient of the two will be responsible for the subsequent changes in perceptions and feelings They propose that there will be changes in perceptions of the instrumentality of behavior when controlling aspects of the reward are salient or changes in feelings of competence and self-determination when informational aspects are salient

#### Effectance motivation

Harter (1978, 1981) examined the hypothesis that children derive maximum pleasure from optimally challenging tasks Harter (1978) found a curvilinear relationship between pleasure and task difficulty for correctly solved items where the subject had no choice of the problems to be solved It was also discovered that children working for grades chose significantly easier anagrams to perform Not only did the subjects working for grades respond below their optimal level, but they also manifested less pleasure and verbalized more anxiety. Pearlman's research (1984) is consistent with Harter's findings that students with higher



effectance were more likely to choose hard problems under nonreward circumstances than under reward Harter (1978, 1981) noted that effects of extrinsic motivators such as grades on intrinsic motivation should be considered

Harter's findings are consistent with the tenets of cognitive evaluation theory (deCharms, 1968, Deci, 1975) which suggest that extrinsic rewards affect intrinsic motivation by altering one's perceived locus of causality from one's self to the environment and/or decreasing one's sense of self-determination and competence Deci (1971) reported results from two laboratory experiments and one field experiment which revealed that when money was used as an external reward, intrinsic motivation decreased, when verbal reinforcement and positive feedback were used, intrinsic motivation tended to increase

Danner and Lonky (1981) conducted two experiments involving four to ten-year-old children to examine the relationships between cognitive level, intrinsic motivation, and responses to extrinsic rewards and praise It was found that rewards had little effect on intrinsic motivation among children whose motivation was initially low and decreased it among children whose motivation was initially high Danner and Lonky's findings were supportive of the hypothesis that intrinsic motivation depends on the match between cognitive level and task demands This is in agreement with Harter's proposal (1978) that only those tasks which present a realistic challenge to a child, relative to his or her

cognitive level, are likely to engage persistent interest

Harter's research in the development of competence (1981) reveals that adult reinforcement leads to a dependency on external approval and externally-determined goals. Consequently the individual's perception of being controlled by external forces is considered to interfere with the development of an internal perception of control, affecting the internalization of values. Thus, college students who are paid to participate in a moral judgment research project might be expected to reflect externally-determined moral values due to loss of internal control.

#### Extrinsic Rewards and Task Performance

Extrinsic rewards have also been found to have detrimental effects on immediate task performance (Condry & Chambers, 1978, Daniel & Esser, 1980, Kruglanski, Friedman, & Zeevi, 1971, McGraw, 1978). McGraw (1978) and Lepper (1981) have reviewed the recent findings of the effects of reward on task performance. Studies by Lepper and Greene (1978a) demonstrate that extrinsic rewards have an adverse effect on immediate task performance when the external rewards are salient and unambiguous. Studies of children's art work showed that the children drew more pictures under reward conditions but the pictures were of a poorer quality (Greene & Lepper, 1974).

Condry and Chambers (1978) have explored the adverse

effect of extrinsic rewards on the entire learning process. Condry and Chambers speculate that rewards distract attention from the process of task activity to the product of getting a reward. They suggest that the reward effects are related to task engagement, the actual process of the task, task disengagement, and possible task re-engagement. It has been noted that under reward conditions, students make guesses, use information inefficiently, and focus on the "right answer" (Condry & Chambers, 1978).

#### Psychological regression

Fabes, Moran and McCullers (1981) have found that material rewards may produce a temporary developmental regression in psychological functioning. The investigators administered six subscales of the Wechsler Adult Intelligence Scale--three subscales identified as heuristic tasks and three subscales identified as algorithmic tasks. It was discovered that, on the heuristic subscales, college students who were matched on age, sex, and initial IQ under reward conditions performed at an intellectual level that might normally have been expected of less mature subjects under nonreward conditions (Fabes, Moran & McCullers, 1981). These results were interpreted as a primitization of psychological functioning due to the adverse effects of reward on performance.

A more recent study of the effects of rewards on selected Wechsler subscales indicates that the effects of

extrinsic rewards on performance varied with age (Moran, McCullers, & Fabes, 1984) At the nursery school level, rewards enhanced performance on heuristic subscales and impaired performance on the algorithmic subscales Rewards had no effect on performance at the fourth grade level At the adult level, rewards had a detrimental effect on performance on the heuristic subscales Since regression effects would be expected to be greater at higher levels of developmental maturity, the findings for the fourth graders and the adults are consistent with the regression interpretation of the effects of rewards on task performance

McCullers, Fabes, and Moran (1981) reported two studies that yielded results showing the detrimental effect of reward on the Peabody Picture Vocabulary Test and the Goodenough-Harris Draw-A-Man Test, tests sensitive to developmental differences Fabes, McCullers, and Moran (1985) examined the effects of material rewards on perceptual organization and found that lower scores on all 10 Holtzman Inkblot Technique variables were in the predicted direction of a lower level of functioning under reward These findings in variables that are sensitive to developmental change support the possibility of developmental regression produced by extrinsic controls

Based on the findings of the above studies, it is reasonable to consider the possibility that regression in

moral judgment among college student subjects may be an artifact of the effect of material rewards on an assessment of moral judgment, one that is sensitive to developmental differences

### Summary

This second section of the literature survey has focused on the chief ways in which extrinsic rewards may affect human motivation and performance. Extrinsic incentives can undermine intrinsic motivation (Lepper & Greene 1981) which may in turn affect performance. Material rewards may affect the internalization process (Harter, 1981, Lepper, 1981). Recently, several researchers have suggested that extrinsic rewards may alter the developmental level at which the individual functions (McCullers, Fabes & Moran, 1981). Under reward conditions, the individual may perform at a level expected of less mature subjects under nonreward conditions.

If material rewards affect the internalization process, as proposed by Harter and Lepper, it would be expected that material rewards would have long-term effects on individuals' moral judgement. However, if material rewards lower the developmental level of psychological functioning, immediate and temporary effects of material reward would be expected. Since moral judgment theory assumes a forward, sequential progression of development and moral judgment assessments are sensitive to developmental differences, it

is proposed that material rewards will have an immediate and temporary effect on moral judgment in college student subjects

The research literature, which shows a regression of moral judgment during the college years as well as the effects of extrinsic rewards on immediate task performance, is the basis for this investigator's proposal that the common practice of paying college students to participate in research projects may explain the paradoxical regression and reversals in moral reasoning among college student subjects

#### Conclusions

In general, cognitive developmental research in moral development has supported Kohlberg's theory of moral development (1969) which assumes that moral judgment has a cognitive-structural core, there is a universal sequential progression in moral development, and movement through the stages is always forward except under conditions of extreme trauma. Studies have shown that moral judgment is positively correlated with age, socioeconomic status, IQ, and education (Colby et al , 1983). There does not appear to be a significant developmental difference between males and females (Gibbs et al , 1984, Walker, 1984)

Research with the Defining Issues Test (1975) and Kohlberg's Moral Judgment Interview (1973) shows a predominant upward developmental trend until the subjects reach college age. Kohlberg and Kramer (1969) found some surprising reversals in the developmental levels of some

subjects between testings in high school and college. In high school, some students had scored at Stages 4 and 5, but as sophomores in college, they were scored at Stage 3. Rest (1975) reported that college student scores on the Defining Issues Test were also unusually low. Kohlberg and Kramer (1969) initially attributed their findings of regression in college sophomores to an identity crisis of adolescence and suggested that a functional regression could accompany a structural advance. Later, Kohlberg (1973) proposed that the college student is in a transitional stage between conventional and principled morality rather than a regression to a lower stage level. As a consequence, Kohlberg revised the original scoring system, noting that the scoring system needed to better differentiate structure from content. Even so, a select sample of bright undergraduate students scored by Kohlberg's newly revised scoring manual appeared to regress from age twenty-two to age twenty-seven, repeating the violation of sequence that the new scoring system was designed to correct (Murphy & Gilligan, 1980).

As the review of the reward literature has shown, extrinsic rewards may affect human motivation and task performance. Extrinsic incentives can undermine intrinsic motivation which may in turn affect performance (Lepper & Greene, 1981). Extrinsic controls may alter an individual's perception of locus of control. The perception of being

under salient extrinsic controls could cause the individual to lose interest in a task and to perform poorly Harter's (1978, 1981) research in effectance motivation revealed that extrinsic rewards in the form of school grades attenuated intrinsic motivation by decreasing the child's tendency to choose optimally challenging tasks, attenuating the pleasure derived from performance, and creating anxiety over the possibility of obtaining poor grades

McCullers, Fabes, and Moran (1981) have suggested that extrinsic rewards may be responsible for shifting subjects to a more primitive level of perceptual organization and psychological functioning They have shown that material rewards can alter the developmental level at which individuals function (Fabes, Moran & McCullers, 1981, Fabes, McCullers & Moran, 1985, Moran, McCullers & Fabes, 1984) Rewarded subjects in the studies cited performed at levels that ordinarily would have been expected of less mature subjects under nonreward conditions From this perspective, college students, when paid to participate, might be expected to perform moral reasoning tasks at a level that ordinarily would be expected of less mature subjects under nonreward

It is noteworthy that, in the Kohlberg and Kramer (1969) and Rest (1975) studies, stage reversals and regression were found only in university-student subjects, and these were the only subjects who were paid to participate in the research



This raises, then, an interesting research question could the observed reversal and regression in moral reasoning among college-age subjects be an artifact of a methodology that makes selective use of material rewards at this age? With this question in mind, the present study will explore the role and the effect of rewards on moral reasoning, and examine the possibility that reversals of levels of moral reasoning may be an artifact of research methodology

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APPENDIX B  
MORAL JUDGMENT SCALE

APPENDIX B  
MORAL JUDGMENT SCALE

Explanatory Note

Appendix B contains a copy of the face sheet, the Moral Judgment Scale, and the Scoring Key for the Moral Judgment Scale

Contents

- Appendix B-1 Face Sheet
- Appendix B-2 Moral Judgment Scale
- Appendix B-3 Scoring Key for Moral Judgment Scale

Appendix B-1

Face Sheet



NAME \_\_\_\_\_

Sex        female                      male                      Age

\_\_\_\_\_

Date \_\_\_\_\_

Course Number \_\_\_\_\_

Telephone Number \_\_\_\_\_

Mailing Address \_\_\_\_\_

\_\_\_\_\_

#### Directions

I am interested in the opinions you have about controversial issues. Different people have different opinions.

Please do not discuss the issues or your answers until the research has been discussed in class later in the semester.

Please fill in the information on the top of this sheet. This sheet will later be removed and coded. Your answers will not be identified by name, they will remain confidential.

There are 15 dilemmas (problems) presented in this questionnaire. There is one dilemma on each page. Please circle the one response on each page that most closely resembles your opinion. Circle only one response for each dilemma.

Thank you for your participation in the research!

Appendix B-2  
Moral Judgement Scale

1.

You want very much to go on a trip with your youth group. Your father promises that you can do it if you save up the money for the trip yourself. So you work hard at your part-time job and save up the money it will cost to go on the trip, and a little more besides. But just before the time of the trip, your father changes his mind. Some of his friends have decided to go on a special fishing trip, and your father is short of the money it will cost. So he asks you to give him the money you have saved from your job. You don't want to give up going on your trip so you think about refusing to give your father the money.

Does it matter that it is your father involved here, rather than someone else? Why?

- (1) Yes, though only as an issue of greater emotional concern because of the nature of this relationship. My affection for him and the expectation of mutual interest would lead me to expect more from the "contract" which we made.
- (2) Yes, my father is in the position to do something nice for me in return for a favor or to punish me for not doing what he asks. Others do not have as much power to do this.
- (3) Yes, I have a responsibility to my father and an obligation to honor his wishes. This is an opportunity for me to repay him for things he has done for me in the past.
- (4) Yes, obligations here are defined by conscience. Love or affection for my father is a value which I have chosen and I should be aware of the implications of that choice.
- (5) Yes, I should feel gratitude and appreciation for what my father has done for me in the past. His affection is important to me. I should be concerned for his feelings and willing to act unselfishly.
- (6) Yes, it is my duty to do what my father asks and give him the money. Obedience to my father is essential.

2.

You want to go on the trip but you are afraid to refuse your father the money. So you give him \$10 and tell him that is all you have made. You take your remaining \$40 and pay for your trip with it. You tell your father that the director said you could pay later. So you go off on your trip and your father doesn't go on his fishing trip.

Before you leave on your trip, you tell your younger brother that you really have made \$50 and that you lied to your father and said that you had made only \$10. He is now wondering if he should tell your father or not.

Why would you think your brother should not tell your father what he knows?

- (1) I won't trust him anymore if he does and he may very well need me to do the same thing for him someday.
- (2) Keeping secrets is a necessary part of maintaining friendships. He knows that I won't desire his friendship if I can't trust him.
- (3) He shouldn't see the need to tell him. He should respect my rights as those of anyone else and respect my ability to make decisions and to tell whomever I choose.
- (4) He has a right to privacy, if my father doesn't ask he's really not doing anything wrong. He is merely withholding information which has not been requested.
- (5) He shouldn't tell because he is younger than I am and therefore shouldn't break his word to me. I have more power and authority than he does. If he breaks his word he risks the consequences of going against that authority.
- (6) I told him because I trusted him and thought I could rely on him. If he tells, he'll force reconsideration of that trust.

3.

Your mother is near death from a special form of cancer. There is one drug that the doctors think might save her. It is a form of radium that a druggist in your town has recently discovered. The drug is expensive to make, but the druggist is charging ten times what the drug costs him to make. He pays \$200 for the radium and charges \$2000 for a small dose of the drug. You have gone to everyone you know to borrow the money, but you can only get together about \$1000, which is half of what it costs. You tell the druggist that your mother is dying and ask him to sell it to you cheaper or let you pay later. But the druggist says, "No, I discovered the drug and I'm going to make money from it." So you get desperate and break into the man's store to steal the drug for your mother.

Why shouldn't you steal the drug?

- (1) I am quite desperate in this situation and I may not truly realize I'm doing wrong when I steal the drug. But I'll certainly know I've done wrong after I'm punished and sent to jail. I'll always feel guilty about being dishonest and breaking the law.
- (2) I may not get much of a jail term if I steal the drug, but my mother will probably die before I get out so it won't do me much good. If my mother dies, I shouldn't blame myself, it isn't my fault she has cancer.
- (3) I'll get caught and sent to jail if I do it. If I get away my conscience will bother me thinking about how the police will catch up with me at any minute.
- (4) It isn't just the druggist who will think I am a criminal, everyone else will too. After I steal it, I'll feel bad thinking how I've brought dishonor on my family and myself. I won't be able to face anyone again.
- (5) If I stole the drug, I wouldn't be blamed by other people but I'd condemn myself because I wouldn't have lived up to my conscience and standards of honesty.
- (6) I would lose my standing and respect in the community and violate the law. I'd lose respect for myself if I'm carried away by emotion and forget the long term effects of my action.

4.

The drug didn't work and there is no other treatment known to medicine which can save your mother, so you know she has only about six months to live. She is in terrible pain, but she is so weak that a good dose of pain killer would make her die sooner. She is delirious and almost crazy with pain and in her calm periods she asks you to give her enough of her medicine to kill her. She says she can't stand the pain and she is going to die in a few months anyway.

How would the law influence your decision in this instance?

- (1) I'd consider the rules about killing, but with the view that they should not be finally determinative here. The sympathetic nature of my killing her out of mercy makes the action not really murder.
- (2) No one has the right to take someone else's life and mercy killing is in fact violation of the law, but I would expect modification of the law in this situation.
- (3) I would hesitate to institutionalize or legalize mercy killing since human life retains its value even under conditions of pain, but I would be conscious of the necessity of valuing human personality and life in other than physical terms.
- (4) Killing her wouldn't be bad because it has no effects, she would die anyway. I could avoid legal complications by getting her permission in writing, suggesting suicide, or making the death look natural.
- (5) I wouldn't see murder rules or laws as binding in this situation. It is hardly murder when agreement and consent of the "victim" are involved.
- (6) It is against the law to torture people and make them suffer. By refusing to give her the drug, I'm violating this law.

5.

Imagine your country has been attacked in war. You are fighting in a company of troops which is way outnumbered and is retreating before the enemy. Your company has crossed a bridge over a river, but the enemy is still on the other side. If someone goes back to the bridge and blows it up, with the head start the rest of the company would have, they could probably escape alive, there will be about a 4 to 1 chance that this person will be killed. You, the leader, are the one who knows best how to lead the retreat. You ask for a volunteer, but no one will volunteer. If you go yourself, the troops will probably not get back safely and you are the only one who knows how to lead the retreat.

Do you have the right to order a man to go if you think that that is the best thing to do? Why?

- (1) Yes, it is part of my job to see that respect is maintained. Respect for my position is a symbol of respect for the rules and laws of society. It is therefore my duty to exercise the power associated with my position.
- (2) Yes, in this instance I am aware of what is in the best interest of all. I can better understand the circumstances than my subordinates as well as being more aware of their point of view.
- (3) Yes, I have been placed in command of the company. Anything I have the power to command I also have the right to command.
- (4) Yes, I have the right in that the others in the company, including the man ordered to go, would see the necessity for my order. I give the order with the understanding that my request is something the man under such an order would himself choose to do.
- (5) Yes, I have the right to order my troops to do whatever I consider necessary. They may not respect my authority, but they must obey my commands.
- (6) Yes, according to the rules of military command I have the right to order a man to do this. However, I must also recognize that individual autonomy of a subordinate allows him the right to refuse to comply.

6.

You have finally decided to order one of the men to stay behind. You think it is best to pick one of your two demolition men. Both of these men have been trained to use dynamite to blow up bridges and fortifications at the least risk to themselves. One of the demilition men has a lot of strength and courage, but is a bad troublemaker. He is always stealing things, beating up on the other men, and not doing his work. The second demolition man has gotten a bad disease and is likely to die in a short time anyway, though he is strong enough now to do the job.

How should either of these men feel about obedience to your orders, as opposed to a request from another person to do the same thing?

- (1) It is worse not to obey my official orders because it does more harm. It is deviation against the government, or public service, rather than against an individual.
- (2) Although my request may be more directly relevant to the general social system, one man's request or order holds no more weight than that of another.
- (3) My position of authority comes from the trust and respect which the company has placed in my judgment--the exercise of that authority is like the return of an act of trust. It would seem most important to be consistent with this trust in obeying my orders.
- (4) He should feel that it is not that bad to refuse my order because a refusal would not affect me that much. I am in the position to order another man to do the same thing.
- (5) It would be worse not to obey my order because I give so much in my responsibility for the company and work so hard to get things done in the ways that are best for all.
- (6) He should realize that it is always worse to disobey the request of an authority than that of anyone else.



7.

In your town a few years ago there was a poor man who could find no work. Without money, he stole food and medicine that he needed for himself and his family. He was captured and sentenced to prison for six years. After a year, he escaped from prison and went to live in another part of the country under a new name. He saved money and slowly built up a great factory. He gave his workers the highest wages and used most of his profits to build a hospital for people who could not afford good medical care. A number of years has passed since that time. You see the factory owner and recognize him as being the same man--the escaped convict whom the police had been looking for back in your hometown.

What would be your feelings about the punishment he now deserves?

- (1) It would be very wrong to punish a man who thought he was doing the correct and moral thing. He has more than adequately demonstrated his respect for other men and his commitment to the right. He should not be punished.
- (2) He broke the law and was sentenced. The rest of his life is yet to be served.
- (3) Neither his motives nor intent at the time of the crime were evil. Minimal punishment would be sufficient to indicate that stealing is not a practice to be followed.
- (4) Illegal acts are wrong, regardless of the motive. In spite of the fact that he has acted favorably since the time of the crime, I can appreciate the position of the victim of his crime and see the need for his punishment.
- (5) He has undone the harm which he caused and there would therefore be little need to punish him.
- (6) Someone should not be punished in a situation where everyone would be expected to do the same thing, laws come from the will of the community and the will of the community in this instance would be not to punish.

8.

You are involved in war and your city is often bombed by the enemy. So each person in the city has been given a post to go to right after the bombing to help put out the fires the bombs started and to rescue people in burning buildings. You have been made the chief in charge of one fire engine post. The post is near your place of work so that you can get there quickly during the day, but it is a long way from your home. One day there is heavy bombing and you leave the shelter in the place you work and go toward your fire station. However, when you see how much of the city is burning, you get worried about your family. You decide you should go home first to see if your family is safe, even though your home is a long way off and the station is nearby and there is somebody assigned to protect your family's area.

Was it right for you to do this? Why?

- (1) No, I should respect all persons equally. By leaving my post I am showing that I do not have that respect. It is inconsistent with equal regard for all men and the rights of all to equal treatment.
- (2) No, the authority and power of those above me requires me to go to my post under such circumstances. I act here in violation of those commands.
- (3) No, if I am to expect protection for myself and my family I must earn that by doing my assigned job.
- (4) No, if I do this I am violating the rights of others to protection. My personal rights can only come from a general social order.
- (5) No, I am putting myself in a lot more danger by going across the city. My first duty is to myself, not others. I should stay at my post.
- (6) No, I am expected by others in the town to be at my post. I am not doing my expected job in deserting my station.

9.

Imagine that you are living before the Civil War and that there are laws that allow slavery. According to the law, if a slave escapes, he has to be returned to his owner like a runaway horse. You do not believe in slavery and disobey the law and hide runaway slaves and help them to escape.

Relate your feelings about slavery to your actions in this situation.

- (1) Laws should not interfere with individual rights. I have a responsibility to protect those rights for others since they form the basis of our whole system of justice.
- (2) Every human life has a right to respect and equal treatment. Slavery laws violate these rights and go against the principles of human dignity and conscience.
- (3) Slavery is wrong, you cannot own other people. However, as the law stands, it is wrong to help escaped slaves.
- (4) People with more power have a right to control those with less. The law says that slavery is legal, by acting in this way I break the law.
- (5) I did break the law, but I do not know if it is right to have laws which restrict other rights.
- (6) Everyone has a right to do what he wants, and the law cannot tell me how to live my life.

10

Imagine that you are the owner of a rooming house which holds seven rooms. The rent from the rooming house provides you with just enough money to make ends meet.

All of your roomers are white and you know them very well. They have told that if you ever rent a room to a Negro they would move out. If this happens you will receive much less money than the small amount you now receive. But you also know that if you refuse a Negro a room you could get into trouble because the open housing law makes it illegal for you to refuse to rent a room to a person because of his race.

A young black man, Mr. Jones, has just received a job in town. He has looked around the town all day for housing without success and toward evening notices the sign "Room for Rent" in front of your house. When he asks you about the room, you tell him that you have just rented the room and there are no more rooms left. In fact, there are two vacant rooms in your house at the time.

Should you have the right to say who lives in your rooming house? Why?

- (1) Yes, I work hard for the small amount I receive from the house. I have a right to what I earn and no one can ask me to give that up for them.
- (2) Yes, ideally, but property cannot be owned and controlled outside of a system of general justice where each man's rights and duties are respected equally; discrimination goes totally against that equality.
- (3) Yes, I have the right to control my property. It is none of the business of the people to whom the house does not belong. I have absolute rights in matters concerning my house.
- (4) Yes, I should be able to expect my tenants to value my property and appreciate my need to maintain a full rooming house, an impossibility if I allow a black man to move into the house.
- (5) Yes, but I must recognize that property rights come only from individual rights and by not equally respecting the rights of all I risk forfeiting the right to control my property.
- (6) Yes, I own the house and people who live there are under my authority.

11.

You have a very close relationship with a (boy) girl, (girl) boy during your senior year in high school. Separated for the summer, you grow apart and return with very mixed feelings about one another. One evening, feeling again your former closeness and attraction, you go further and further and have sexual intercourse. A few weeks later you find out that (boys) she is (or girls) you are pregnant.

What would be your feelings about abortion in this instance?

- (1) It is not really killing. The fetus is not really alive. It is killing something that never was really there. The life is not worth anything to the baby and it can only cause trouble for me.
- (2) It is an unborn baby--that is the whole point. If a child is not born I cannot see how anyone can say he is alive. Even little children (babies when they are newly born) are alive only because someone owns them. Thus, the only people they are really hurting if they die are their parents. However, if this child is not yet born, then neither I nor anyone else owns him. It would not be hurting anyone.
- (3) Life is a universal human right. The life of the fetus, apart from all of the considerations of difficulty for me, has value in its own right, and deserves the equal treatment of any human being.
- (4) Life should be considered in the context of the baby's future. It should be viewed not as a biological phenomenon but as an attitude of respect for personality and justice. The fetus exhibits only the biological aspects of life and the chances for respect for its personality and justice for it in the future under these circumstances seem limited.
- (5) Physically, the fetus hardly exists, one way or the other it really makes very little difference.
- (6) An unborn baby has just as much right to life as anyone else and I do not think that I nor anyone else has the right to decide whether it should live or not. Life is sacred and humans do not have the right to terminate it.

12.

Your parents are away for the weekend and you are alone in the house. Unexpectedly, on Friday evening your (girls) boyfriend (or boys) girlfriend comes over. You spend the evening together in the house and after a while start necking and petting and have sexual intercourse.

What considerations would lead you to think your behavior wrong in this instance?

- (1) It would be wrong if we had sexual intercourse without any thought about pregnancy because of the inconvenience--a child could cause a lot of disturbance--especially to kids in high school.
- (2) If we did not have intercourse we would show discipline and our ability to wait for marriage when sex will be more meaningful for us and more satisfying because it will not be in violation of social and religious norms.
- (3) Because of our youth and even minimally dependent relationships on our parents, we cannot fully respond to conditions of personal dignity and responsibility most necessary under such circumstances.
- (4) If pregnancy resulted from intercourse in this instance, my parents would be most upset and even my friends might shy away from me.
- (5) Since we are not totally convinced of the rightness of our actions and are unable to fit them into a logical thought pattern, we would be apt to be bothered by conscience or other considerations.
- (6) Sex in this instance could be an example of our using each other for personal advantage. It would be very difficult at this age to have built a relationship of real honesty and trust which would eliminate the difficulties of personal advantage seeking.

13

You are thinking about putting out a mimeographed newspaper for students in your school which would express many of your strong feelings. In particular, you want to voice your opposition to the war in Viet Nam and to many of the school's regulations.

Before publishing your newspaper, you ask your principal for permission. The principal agrees on the condition that you submit all of your articles to him for approval. You agree and begin to submit your articles. The principal approves all of them and you publish two issues of the paper in the next two weeks.

However, the principal has not thought about the great attention your newspaper would receive. Students read the paper eagerly and are beginning to organize against school rules. Many classes are spent talking about the paper and rallies are held before and after school. Furthermore, many parents who favor the Viet Nam War are phoning the principal and angrily telling him that the newspaper is unpatriotic and should not be published.

As a result of the commotion, the principal considers ordering you to stop publishing the paper. He gives as a reason that your activities are disruptive to the operation of the school.

If you had advocated the dropping of nuclear bombs on North Viet Nam and China, what difference, if any, should this have made on the consideration of your rights to continue publication?

- (1) Rights and duties are very different. It would seem in this case that I would legally have the right to publish what I want, but the rightness of my actions in the latter case would be doubtful. My rights here come from equal respect for others' rights. Publication of the latter articles would not show that respect.
- (2) It is no one else's business what I write in my newspaper. I have absolute rights to write and publish whatever I desire.
- (3) It is all in the hands of the Principal. If the latter positions were less acceptable to him, then my rights to their publication would also be less.
- (4) I have worked to publish this newspaper. That right to publish is mine in spite of others' interpretations of my use of it as good or bad. I have the right to publish what I choose to publish.
- (5) A student newspaper should express the views of students in general. The latter positions do not fairly represent these views and therefore I do not have as much right to publish them.
- (6) Equal rights have meaning only within a system of general justice for all. The latter positions are in violation of the principles of that justice. I can expect the rights to consistently publish what I want only if I am personally consistent in upholding an equal justice structure for all.

14.

You have gotten into serious trouble. You are secretly leaving town in a hurry and need money. You cannot get it from anyone you know and are faced with going to a retired old man who is known to help people in the town. If you tell this man that you are very sick and need \$500 to pay for an operation, he will give it to you. You really are not sick at all and have no intention of paying the man back. Although he does not know you very well, he would loan you the money.

How important is it that you tell the truth in this instance?

- (1) The old man gives money to people he does not even know. It really should not matter to him for what purpose the money is used. It is not as if I would be lying to someone I know and who depends on me. What I say to him really makes little difference.
- (2) My telling the truth is essential. Truth forms the whole basis of our social order. It is something I have the right to expect and people have the right to expect it from me.
- (3) Since I need the money so badly, the truth matters very little. I should do and say what I have to in order to get the money.
- (4) The value of my word goes beyond situational considerations. Justice and respect for human dignity can only be upheld in the context of consistent truth.
- (5) If this man is willing to give me money, he has earned the right to expect the truth from me.
- (6) He has lots of money and power. Therefore, his word is important. I do not have any money or power, so my word is worth very little one way or the other.



15.

One day the air raid sirens begin to sound. Everyone realizes that a hydrogen bomb is going to be dropped on the city by the enemy and that the only way to survive will be in a bomb shelter. Not everyone has bomb shelters, but those who do run quickly to them. Since you have built a shelter, you go quickly to it. You have enough air space inside to last you and your family for five days. You know that after five days the fallout will have diminished to the point where you could safely leave the shelter. If you leave before that, you will die. There is enough air for you and your family alone. Your next door neighbors have not built a shelter and are trying to get in yours. You know that you will not have enough air if you let the neighbors in, and that you will all die if they come inside. So you refuse to let them in.

Now the neighbors are trying to break the door down in order to get inside. You take your rifle and tell them to go away or else you will shoot. They will not go away. So you either have to shoot them or let them come into the shelter.

Why should you shoot?

- (1) I have the most power in this situation and I must do what will be required to hold that position.
- (2) Society is based upon living up to special obligations of contract or agreement. The special obligations to my family require that I see first to their protection in this instance.
- (3) There is nothing to be gained from letting them inside and much to be lost from their entrance. I have no responsibility to protect them.
- (4) I have placed myself in a position where my family depends upon me. In spite of all other considerations, I owe more to those who depend upon me than I owe to humans in general. I must protect my family first.
- (5) My family is more important to me and personal affection makes my duty to protect them the most binding.
- (6) My rights to property are essential here. My family must see me as responsible and reliable in my care for them.

Appendix B-3  
Scoring Key for Moral  
Judgment Scale

## Scoring Key for Moral Judgment Scale

<u>Situation</u>	<u>Item Selection</u>					
	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>
1	5	2	4	6	3	1
2	2	3	6	4	1	5
3	4	2	1	3	6	5
4	3	4	6	2	5	1
5	4	3	1	6	2	5
6	4	5	6	2	3	1
7	6	1	3	4	2	5
8	6	1	4	5	2	3
9	5	6	4	1	3	2
10	4	6	2	3	5	1
11	2	3	5	6	1	4
12	1	3	5	2	6	4
13	5	2	1	4	3	6
14	3	5	2	6	4	1
15	1	5	2	6	3	4

Note: Stages are entries in body of table.

APPENDIX C  
SOCIOMORAL REFLECTION MEASURE

APPENDIX C  
SOCIOMORAL REFLECTION MEASURE

Explanatory Note

Appendix C contains a copy of the directions of reward and nonreward subjects, Forms A and B of the Social Reflection Questionnaire, and the Social Reflection Questionnaire Protocol Stage Rating Form

CONTENTS

Appendix C-1	Directions to Reward Subjects
Appendix C-2	Directions to Nonreward Subjects
Appendix C-3	Social Reflection Questionnaire Form A
Appendix C-4	Social Reflection Questionnaire Form B
Appendix C-5	Social Reflection Questionnaire Protocol Stage Rating Form

Appendix C-1  
Directions to Reward Subjects

DIRECTIONS TO SUBJECTS (Reward)

I am interested in the opinions you have about controversial issues.

Different people have different opinions.

Please do not discuss the issues or your answers with anyone until they have been discussed in class later in the semester.

Please fill in the information on the cover sheet. This sheet will be removed and coded. Your answers will not be identified by name, they will remain confidential.

There are funds available to pay you for today's participation. This research project consists of four sessions. During some of the sessions, some students will receive a small payment. We are unable to pay all. Therefore, some will receive payment, some will not.

Today, your group has been selected to be paid for filling out the questionnaire. At the end of today's session, you will receive \$5.00 for completing your questionnaire.

Since everyone is not being paid, please keep this information confidential.

Please do not discuss the questionnaire or the fact that you were paid until the study is completed.

You may begin!

Appendix C-2  
Directions to Nonreward Subjects



DIRECTIONS TO SUBJECTS

I am interested in the opinions you have about controversial issues.

Different people have different opinions.

Please do not discuss the issues or your answers with anyone until they have been discussed in class later in the semester.

Please fill in the information on the cover sheet. This sheet will be removed and coded. Your answers will not be identified by name, they will remain confidential.

Appendix C-3

Social Reflection Questionnaire Form A

**SOCIAL REFLECTION QUESTIONNAIRE****Instructions**

In this booklet are two social problems with questions for you to answer. We are asking the question not just to find out your opinions about what should be done in the problems, but also to understand why you have those opinions. Please answer all the questions, especially the "why" questions. Feel free to use the backs of the pages to finish writing your answers if you need more space.

Name: \_\_\_\_\_

Age \_\_\_\_\_

Sex (circle one) • male/female

Date \_\_\_\_\_

**PROBLEM ONE**

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 wanted people to pay ten times what the drug cost him to make.

The sick woman's husband, Heinz, went to everyone he knew to borrow the money, but he could only get together about half of what the druggist wanted. Heinz told the druggist that his wife was dying and asked him to sell it cheaper or to let him pay later. But the druggist said, "No. I discovered the drug, and I'm going to make money from it." So the only way Heinz could get the drug would be to break into the druggist's store and steal the drug.

Heinz has a problem. He should help his wife and save her life. But, on the other hand, the only way he could get the drug she needs would be to break the law by stealing the drug.

What should Heinz do?

should steal/should not steal/can't decide (circle one)

Why?

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Let's change things about the problem and see if you still have the opinion you circled above (should steal, should not steal, or can't decide). Also, we want to find out about the things you think are important in this and other problems, especially why you think those things are important. Please try to help us understand your thinking by **WRITING AS MUCH AS YOU CAN TO EXPLAIN YOUR OPINIONS—EVEN IF YOU HAVE TO WRITE OUT YOUR EXPLANATIONS MORE THAN ONCE**. Don't just write "same as before." If you can explain better or use different words to show what you mean, that helps us even more. Please answer all the questions below, especially the "why" questions.

1. What if Heinz's wife asks him to steal the drug for her? Should Heinz

steal/should not steal/can't decide (circle one)?

1a. How important is it for a husband to do what his wife asks, to save her by stealing, even when he isn't sure whether that's the best thing to do?

very important/important/not important (circle one)

1b WHY is that very important/important/not important (whichever one you circled)?

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2. What if Heinz doesn't love his wife? Should Heinz

steal/not steal/can't decide (circle one)?

2a. How important is it for a husband to steal to save his wife, even if he doesn't love her?

very important/important/not important (circle one)

2b. WHY is that very important/important/not important (whichever one you circled)?

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3. What if the person dying isn't Heinz's wife but instead is a friend (and the friend can get no one else to help)? Should Heinz:

steal/not steal/can't decide (circle one)?

3a. How important is it to do everything you can, even break the law, to save the life of a friend?

very important/important/not important (circle one)

3b. WHY is that very important/important/not important (whichever one you circled)?

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4a What about for a stranger? How important is it to do everything you can, even break the law, to save the life of a stranger?

very important/important/not important (circle one)

4b. WHY is that very important/important/not important (whichever one you circled)?

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5. What if the druggist just wants Heinz to pay what the drug cost to make, and Heinz can't even pay that? Should Heinz

steal/not steal/can't decide (circle one)?

5a. How important is it for people not to take things that belong to other people?

very important/important/not important (circle one)

5b. WHY is that very important/important/not important (whichever one you circled)?

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6a. How important is it for people to obey the law?

very important/important/not important (circle one)

6b. WHY is that very important/important/not important (whichever one you circled)?

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7 What if Heinz does steal the drug? His wife does get better, but in the meantime, the police take Heinz and bring him to court. Should the judge

jail Heinz/let Heinz go free/can't decide (circle one)?

7a. How important is it for judges to go easy on people like Heinz?

very important/important/not important (circle one)

7b WHY is that very important/important/not important (whichever one you circled)?

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8. What if Heinz tells the judge that he only did what his conscience told him to do? Should the judge

jail Heinz/let Heinz go free/can't decide (circle one)?

8a. How important is it for judges to go easy on lawbreakers who have acted out of conscience?

very important/important/not important (circle one)

8b. WHY is that very important/important/not important (whichever one you circled)?

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9. What if Heinz's wife never had cancer? What if she was only a little sick, and Heinz stole the drug to help her get well a little sooner? Should the judge

jail Heinz/let Heinz go free/can't decide (circle one)?

9a. How important is it for judges to send people who break the law to jail?

very important/important/not important (circle one)

9b. WHY is that very important/important/not important (whichever one you circled)?

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**PROBLEM TWO**

Joe is a fourteen-year-old boy who wanted to go to camp very much. His father promised him he could go if he saved up the money for it himself. So Joe worked hard at his paper route and saved up the \$40 it cost to go to camp and a little more besides. But just before camp was going to start, his father changed his mind. Some of his father's friends decided to go on a special fishing trip, and Joe's father was short of the money it would cost. So he told Joe to give him the money Joe had saved from the paper route. Joe doesn't want to give up going to camp, so he thinks of refusing to give his father the money.

Joe has a problem. Joe's father promised Joe he could go to camp if he earned and saved up the money. But, on the other hand, the only way Joe could go would be by disobeying and not helping his father.

What should Joe do?

should refuse/should not refuse/can't decide (circle one)

Why?

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Let's change things about the problem and see if you still have the opinion you circled above (should refuse, should not refuse, can't decide). Also, we want to find out about the things you think are important in this and other problems, and especially why you think those things are important. Please try to help us understand your thinking by WRITING AS MUCH AS YOU CAN TO EXPLAIN YOUR OPINIONS--EVEN IF YOU HAVE TO WRITE OUT YOUR EXPLANATIONS MORE THAN ONCE. Don't just write "same as before." If you can explain better or use different words to show what you mean, that's even better. Please answer all the questions below, especially the "why" questions.

1. What if Joe hadn't earned the money? What if the father had simply given the money to Joe and promised Joe could use it to go to camp--but now the father wants the money back for the fishing trip? Should Joe:

refuse/not refuse/can't decide (circle one)?

1a. How important is it for parents to keep their promises about letting their children keep money--even when their children never earned the money?

very important/important/not important (circle one)

1b WHY is that very important/important/not important (whichever one you circled)?

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2a. What about keeping a promise to a friend? How important is it to keep a promise, if you can, to a friend?

very important/important/not important (circle one)

2b. WHY is that very important/important/not important (whichever one you circled)?

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3a. What about to anyone? How important is it to keep a promise, if you can, even to someone you hardly know?

very important/important/not important (circle one)

3b. WHY is that very important/important/not important (whichever one you circled)?

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4. What if Joe's father hadn't told Joe to give him the money but had just asked Joe if he would lend the money? Should Joe-

refuse/not refuse/can't decide (circle one)?

4a. How important is it for children to help their parents, even when their parents have broken a promise?

very important/important/not important (circle one)

4b WHY is that very important/important/not important (whichever one you circled)?

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5. What if Joe did earn the money, but Joe's father did not promise that Joe could keep the money?

Should Joe

refuse/not refuse/can't decide (circle one)?

5a. How important is it for parents to let their children keep earned money --even when the children were not promised that they could keep the money?

very important/important/not important (circle one)

5b. WHY is that very important/important/not important (whichever one you circled)?

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6. What if the father needs the money not to go on a fishing trip but instead to pay for food for the family? Should Joe

refuse/not refuse/can't decide (circle one)?

6a. How important is it for children to help their parents--even when it means that the children won't get to do something they want to do?

very important/important/not important (circle one)

6b. WHY is that very important/important/not important (whichever one you circled)?

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Appendix C-4

Social Reflection Questionnaire Form B

**SOCIAL REFLECTION QUESTIONNAIRE****Instructions**

In this booklet are two social problems with questions for you to answer. We are asking the question not just to find out your opinions about what should be done in the problems, but also to understand why you have those opinions. Please answer all the questions, especially the "why" questions. Feel free to use the backs of the pages to finish writing your answers if you need more space.

Name \_\_\_\_\_

Age \_\_\_\_\_

Sex (circle one) male/female

Date \_\_\_\_\_

PROBLEM ONE

Mrs. Jefferson had no more than four months to live because of a very bad cancer. She was in terrible pain, and she was so weak that an extra amount of a special painkiller would make her die quickly and with no pain. She was sometimes delirious and almost crazy with pain. During the times when she was calm, she would ask the doctor to give her enough of the painkiller to kill her. She said she couldn't stand the pain, and she was going to die in a few months anyway. But the doctor said no, so Mrs. Jefferson started asking her husband to do it. The only way Mr. Jefferson could get enough painkiller to kill her would be to steal several bottles of the special drug from the doctor's bag the next time the doctor comes

Mr. Jefferson has a problem. His wife has asked him to help her by killing her, since she is in terrible pain and is going to die in a few months anyway. But, on the other hand, the only way he could do this would be to break the law by stealing the special drug.

What should Mr. Jefferson do?

should steal/should not steal/can't decide (circle one)

Why?

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Let's change things about the problem and see if you still have the opinion you circled above (should steal, should not steal, can't decide). Also, we want to find out about the things you think are important in this and other problems, especially why you think those things are important. Please try to help us understand your thinking by WRITING AS MUCH AS YOU CAN TO EXPLAIN YOUR OPINIONS--EVEN IF YOU HAVE TO WRITE OUT YOUR EXPLANATIONS MORE THAN ONCE. Don't just write "same as before." If you can explain better or use different words to show what you mean, that helps us even more. Please answer all the questions below, especially the "why" questions.

1. What if Mr. Jefferson's wife pleads with him to steal the special painkiller? Should Mr. Jefferson:

steal/not steal/can't decide (circle one)?

1a. How important is it for a husband to do what his wife asks, even when he isn't sure whether that's the best thing to do?

very important/important/not important (circle one)

1b. WHY is that very important/important/not important (whichever one you circled)?

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2. What if Mr. Jefferson doesn't love his wife? Should Mr. Jefferson steal/not steal/can't decide (circle one)?

2a. How important is it for a husband to steal to help his wife end her pain, even if he doesn't love her?

2b. WHY is that very important/important/not important (whichever one you circled)?

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3. What if the person dying is not Mr. Jefferson's wife but instead is a friend (and the friend can get no one else to help)? Should Mr. Jefferson steal/not steal/can't decide (circle one)?

3a. How important is it to do everything you can, even break the law, to help a friend die sooner to escape terrible pain?

very important/important/not important (circle one)

3b. WHY is that very important/important/not important (whichever one you circled)?

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4. What if the woman isn't dying? What if she is not sick but instead is unable to walk--a cripple--and wants to die? Should Mr Jefferson steal/not steal/can't decide (circle one)?

4a How important is it for people to live even when they don't want to?

very important/important/not important (circle one)

4b. WHY is that very important/important/not important (whichever one you circled)?

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5. What if Mr. Jefferson isn't sure what he should do but thinks of the fact that the only way he could get the special painkiller would be by stealing it? Should Mr. Jefferson

steal/not steal/can't decide (circle one)?

5a. How important is it for people not to take things that belong to other people?

very important/important/not important (circle one)

5b. WHY is that very important/important/not important (whichever one you circled)?

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6a. How important is it for people to obey the law?

very important/important/not important (circle one)

6b. WHY is that very important/important/not important (whichever one you circled)?

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7. What if Mr. Jefferson does steal the drug? His wife does die quickly and without pain, but soon after that the police take Mr. Jefferson and bring him to court. Should the judge

jail Mr. Jefferson/let Mr. Jefferson go free/can't decide (circle one)?

7a. How important is it for judges to go easy on people like Mr. Jefferson?

very important/important/not important (circle one)

7b. WHY is that very important/important/not important (whichever one you circled)?

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8. What if Mr. Jefferson tells the judge that he only did what his conscience told him to do? Should the judge

jail Mr. Jefferson/let Mr. Jefferson go free/can't decide (circle one)?

8a. How important is it for judges to go easy on lawbreakers who have acted out of conscience?

very important/important/not important (circle one)

8b. WHY is that very important/important/not important (whichever one you circled)?

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9. What if Mrs. Jefferson never had cancer? What if she was only a little sick, and Mr. Jefferson stole the special drug to help her get well a little sooner? Should the judge:

jail Mr. Jefferson/let Mr. Jefferson go free/can't decide (circle one)?

9a. How important is it for judges to send people who break the law to jail?

very important/important/not important (circle one)

9b WHY is that very important/important/not important (whichever one you circled)?

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## PROBLEM TWO

Judy is a twelve-year-old girl. Her mother promised her that she could go to a special rock concert coming to their town if she saved up from babysitting and lunch money so she would have enough money to buy a ticket to the concert. She managed to save up the five dollars the ticket cost plus another four dollars. But then her mother changed her mind and told Judy that she had to spend the money on new clothes for school. Judy was disappointed and decided to go to the concert anyway. She bought a ticket and told her mother that she had only been able to save four dollars. That Saturday she went to the performance and told her mother that she was spending the day with a friend. A week passed without her mother finding out. Then Judy told her older sister, Louise, that she had gone to the performance and had lied to their mother about it. Louise wonders whether to tell their mother what Judy did.

Louise has a problem. Louise knows that Judy doesn't want to be told or, and their mother did promise Judy she could go to the rock concert if she earned and saved up the money. But, on the other hand, their mother would want to know about Judy's lying and disobeying.

What should Louise do?

should tell/should keep quiet/can't decide (circle one)

Why?

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Let's change things about the problem and see if you still have the opinion you circled above (should tell, should keep quiet, or can't decide). Also, we want to find out about the things you think are important in this and other problems, especially why you think those things are important. Please try to help us understand your thinking by WRITING AS MUCH AS YOU CAN TO EXPLAIN YOUR OPINIONS--EVEN IF YOU HAVE TO WRITE OUT YOUR EXPLANATIONS MORE THAN ONCE. Don't just write "same as before." If you can explain better or use different words to show what you mean, that helps us even more. Please answer all the questions below, especially the "why" questions.

1. What if Judy hadn't earned the money? What if the mother had simply given the money to Judy and promised Judy she could use it to go to the concert--but now the mother wants the money back to help with buying Judy her school clothes? Should Louise

tell/keep quiet/can't decide (circle one)?

1a. How important is it for parents to keep their promises about letting their children keep money, even when the children never earned the money?

very important/important/not important (circle one)

1b WHY is that very important/important/not important (whichever one you circled)?

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2a. Louise thinks about the fact that her sister is her friend. How important is it to keep a promise, if you can, to a friend?

very important/important/not important (circle one)

2b. WHY is that very important/important/not important (whichever one you circled)?

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3a. What about to anyone? How important is it to keep a promise, if you can, even to someone you hardly know?

very important/important/not important (circle one)

3b. WHY is that very important/important/not important (whichever one you circled)?

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4 What if Judy has earned a lot of money--so much money that she could have gone to the rock concert and still given her mother enough money to help pay for new school clothes? Should Louise

tell/keep quiet/can't decide (circle one)?

4a How important is it for children to help their parents, even when their parents have broken a promise to them?

very important/important/not important (circle one)

4b. WHY is that very important/important/not important (whichever one you circled)?

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5. What if Judy did earn the money, but their mother did not promise that Judy could spend the money she earned the way she wants? Should Louise

tell/keep quiet/can't decide (circle one)?

5a. How important is it for parents to let their children keep earned money --even when the children were not promised that they could spend the money the way they wish?—

very important/important/not important (circle one)

5b. WHY is that very important/important/not important (whichever one you circled)?

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6. What if the mother needs the money to pay for food for the family? Should Louise

tell/keep quiet/can't decide (circle one)?

6a How important is it for children to do everything they can to help their parents--even when it means that the children won't get to do something they want to do?

very important/important/not important (circle one)

6b. WHY is that very important/important/not important (whichever one you circled)?

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Appendix C-5  
Social Reflection Questionnaire  
Protocol Stage Rating Form

PROTOCOL STAGE RATING

CODE # \_\_\_\_\_  
 FORM A/B (circle one)  
 RATER \_\_\_\_\_  
 DATE \_\_\_\_\_

MODAL \_\_\_\_\_  
 SRMS \_\_\_\_\_  
 GLOBAL \_\_\_\_\_

Problem	Norm (question)	Question Referent	Aspect Citation	Level	Comments (e g , Orientation A or B)
One	1 Affil (1b, 2b, 3b)				
	2 Life (4b)				
	3 LwPrp (5b, 6b)				
	4 Legal Justice (7b, 9b)				
	5. Con-science (8b)				
Two	6 Fam. Affil. (1b, 4b, 6b)				
	7 Contract (2b, 3b)				
	8 Property (5b)				

Stage Weightings

Computational Space

1 \_\_\_\_\_  
 2 \_\_\_\_\_  
 3 \_\_\_\_\_  
 4 \_\_\_\_\_  
 Total \_\_\_\_\_  
 TR \_\_\_\_\_ A \_\_\_\_\_  
 TP \_\_\_\_\_ B \_\_\_\_\_



APPENDIX D

RAW DATA

## APPENDIX D

### RAW DATA

#### Explanatory Note

Appendix D contains the raw data for all subjects for the four sessions

Appendix D-1 contains information concerning the variable code and measurement key

Appendix D-2 contains the raw data sample for interrater reliability

Appendix D-3 contains the raw data for the Moral Judgment Scale and the Social Reflection Questionnaire

#### CONTENTS

Appendix D-1	Variable Code and Measurement Key
Appendix D-2	Raw Data    Interrater Reliability
Appendix D-3	Raw Data    MJS and SRM

Appendix D-1  
Variable Code and Measurement Key

Appendix D-1

Variable Code and Measurement Key

Subject Identification Information

<u>Code</u>	<u>Variable Name</u>	<u>Key</u>
ID	Subject Number	
Group	Group Number	1 = E-1 2 = E-2 3 = C-1 4 = C-2
MJS Clas	Subject score category on MJS	1 = above median 2 = below median
Age	Age of subject	shown in years
Sex	Sex of subject	1 = male 2 = female

Data

<u>Code</u>	<u>Session</u>	<u>Variable Name</u>	<u>Range</u>
MJS Pre	1	Moral Judgment	15 - 90
MJS Post	4	Moral Judgment	15 - 90
SRMS-A	2	Moral Maturity	100 - 400
SRMS-B	3	Moral Maturity	100 - 400

  

<u>Code</u>	<u>Session</u>	<u>Variable Name</u>	<u>Key</u>
Mod A	2	Modal stage	1 = Stage 1 2 = Stage 2
Mod B	3	Modal stage	3 = Stage 3 4 = Stage 4 5 = Stage 1/2 6 = Stage 2/3 7 = Stage 3/4

Appendix D-2

Raw Data    Interrater Reliability

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 SRMS by Subject and by Rater
 

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<u>Subject</u>	<u>Rater #1</u>		<u>Rater #2</u>	
	<u>Modal</u>	<u>SRMS</u>	<u>Modal</u>	<u>SRMS</u>
1	3	325	3	325
2	3	269	3	269
3	2/3	250	2	243
4	4	358	4	358
5	3	306	3/4	312
6	3	319	3	319
7	3	329	3	329
8	3	310	3	310
9	2	181	2	178
10	2	235	2	242
11	2	200	2	212
12	4	331	4	337
13	2/3	250	2/3	250
14	3	275	3	275
15	2	237	2	237
16	3	293	3	300
17	2	228	2	228
18	3	312	3/4	331
19	3	326	3	318
20	3	331	3/4	350
21	3	278	3	285
22	3	285	3	300
23	2	275	3	293
24	3	278	3	278
25	2	258	2	258
26	3	337	3	312
27	4	378	4	378
28	2/3	250	3	271
29	3	328	3	328
30	3	328	3	331

Appendix D-3

Raw Data Moral Judgment Scale  
and Sociomoral Reflection Measure

* 1	2	3	4	5	6	7	8	9	10	11
001	1	2	21	2	64	2	258	3	300	61
002	1	1	19	2	75	2	292	4	356	67
003	1	2	18	2	58	3	278	3	321	58
004	1	2	18	1	65	3	285	3	321	56
005	1	2	21	1	62	3	300	3	325	62
006	1	1	21	2	80	3	312	4	364	83
007	1	2	19	2	65	2	237	3	337	65
008	1	1	20	1	74	2	237	7	331	68
009	1	1	20	2	76	4	350	4	362	80
010	1	1	21	1	75	4	378	4	387	79
011	1	1	20	2	70	3	285	4	385	71
012	1	2	22	1	55	3	328	7	350	55
013	1	2	19	2	65	6	250	3	300	72
014	1	1	20	1	72	3	283	3	325	72
015	1	1	22	2	66	3	307	3	328	71
016	1	1	18	2	65	3	300	3	333	63
017	1	1	18	2	71	3	306	4	371	76
018	1	2	18	2	54	3	250	6	271	52
019	1	2	22	2	57	4	331	3	335	63
020	1	1	19	1	70	3	278	3	340	68
021	1	2	18	2	62	3	290	3	328	61
022	1	1	18	2	66	2	278	4	368	75
023	1	1	22	2	78	3	325	4	368	71
024	1	1	21	2	68	7	331	4	366	65
025	1	1	19	2	65	4	337	4	357	69
026	1	2	19	1	60	3	300	4	390	68
027	1	2	21	2	61	2	255	7	350	64
028	1	2	20	1	56	3	275	3	337	60
029	1	2	18	2	56	3	283	3	300	60
030	1	2	19	1	53	6	250	3	330	59
031	2	1	20	1	71	7	331	2	256	71
032	2	1	21	1	73	4	368	2	275	69
033	2	1	20	2	71	3	314	2	235	55
034	2	2	19	2	58	7	350	6	250	71
035	2	1	22	2	71	4	356	3	293	71
036	2	2	22	2	63	7	350	3	275	78
037	2	1	19	2	65	3	321	2	237	64
038	2	2	20	1	63	7	328	3	312	62
039	2	2	19	1	55	3	325	2	206	47
040	2	2	20	1	64	4	368	3	321	61
041	2	2	19	2	54	3	292	2	200	56
042	2	2	19	2	62	3	318	2	243	55
043	2	1	21	2	67	3	283	2	221	67
044	2	1	22	1	83	4	350	2	208	76
045	2	2	19	2	64	7	350	3	306	75
046	2	1	18	2	66	3	316	3	314	69
047	2	1	22	2	76	7	350	2	214	76
048	2	1	20	2	78	3	337	3	300	76
049	2	1	20	2	72	3	312	2	228	65
050	2	1	19	2	68	3	341	2	181	77



	1	2	3	4	5	6	7	8	9	10	11
051	2	2	19	2	55	3	314	2	250	70	
052	2	2	20	2	62	4	387	4	331	70	
053	2	2	22	1	52	3	330	3	290	65	
054	2	2	19	2	49	3	328	3	300	60	
055	2	1	20	2	78	4	362	3	312	76	
056	2	1	22	1	70	4	360	3	310	67	
057	2	2	21	2	63	3	331	3	306	68	
058	2	2	22	2	60	3	337	2	221	72	
059	2	1	20	1	67	3	300	2	257	67	
060	2	2	22	2	58	3	300	2	200	58	
061	3	2	19	1	67	3	308	3	300	69	
062	3	2	19	2	62	3	314	3	325	72	
063	3	2	19	2	51	3	312	3	285	55	
064	3	1	20	2	80	3	318	3	328	77	
065	3	1	21	2	73	4	350	4	343	70	
066	3	2	19	2	65	3	335	3	325	69	
067	3	2	22	2	65	4	335	7	328	68	
068	3	1	19	2	75	3	312	3	312	78	
069	3	2	21	2	64	4	321	3	318	48	
070	3	2	18	2	59	3	329	3	331	64	
071	3	1	19	1	72	3	319	3	333	74	
072	3	2	18	1	54	7	312	3	325	57	
073	3	1	18	2	74	3	314	3	307	68	
074	3	1	20	2	78	3	337	3	325	81	
075	3	2	21	2	59	3	325	3	337	60	
076	3	1	22	1	71	4	358	7	350	69	
077	3	1	22	1	69	3	342	3	337	70	
078	3	2	18	2	63	3	290	3	314	71	
079	3	2	18	1	67	2	283	2	283	58	
080	3	1	20	1	67	3	285	2	268	53	
081	3	2	18	2	58	2	243	2	241	69	
082	3	2	21	1	56	3	300	4	292	69	
083	3	1	20	1	68	3	314	3	307	75	
084	3	1	20	2	68	3	310	3	300	71	
085	3	1	18	2	67	3	300	2	278	72	
086	3	2	18	2	65	3	269	6	271	82	
087	3	2	21	1	56	3	325	4	335	56	
088	3	1	20	2	71	3	331	3	331	57	
089	3	1	18	1	78	3	335	3	335	68	
090	3	1	21	2	67	3	328	3	321	70	
091	4	1	19	2	79					72	
092	4	1	19	2	78					67	
093	4	1	20	1	77					69	
094	4	1	21	2	75					81	
095	4	1	20	1	75					75	
096	4	1	20	1	73					62	
097	4	1	21	1	73					73	
098	4	1	21	2	72					75	
099	4	1	20	1	71					68	
100	4	1	22	2	70					78	

1	2	3	4	5	6	11
101	4	1	20	2	75	74
102	4	1	19	2	69	66
103	4	1	20	2	69	69
104	4	1	18	2	68	63
105	4	1	18	2	67	63
106	4	2	19	2	66	68
107	4	2	22	1	65	63
108	4	2	18	2	64	69
109	4	2	18	2	64	67
110	4	2	19	2	64	60
111	4	2	18	2	63	56
112	4	2	20	2	63	70
113	4	2	20	2	62	68
114	4	2	18	1	60	62
115	4	2	19	1	59	55
116	4	2	19	2	58	60
117	4	2	21	2	57	75
118	4	2	20	1	57	57
119	4	2	19	1	54	60
120	4	2	19	1	51	58

\* Column 1 - ID

Column 2 - Group

Column 3 - MJS Clas

Column 4 - Age

Column 5 - Sex

Column 6 - Pre-test MJS

Column 7 - SRM-A Modal Stage

Column 8 - SRMS-Form A

Column 9 - SRM-B Modal Stage

Column 10- SRMS-B

Column 11- Post-test MJS

APPENDIX E  
SELECTED STATISTICAL ANALYSES

APPENDIX E  
SELECTED STATISTICAL ANALYSES

Explanatory Note

Appendix E contains selected statistical analyses for all subjects for the four sessions

Appendix E-1 contains t-tests for the Sociomoral Reflection Measure, Forms A and B, for Groups E-1, E-2, and C-1 as well as t-tests for the Moral Judgment Scale pre-test and post-test for Group C-1

Appendix E-2 contains selected one-way, two-way, and three-way analyses of variances with related Scheffe tests

Contents

Appendix E-1 Selected T-tests

Appendix E-2 Analyses of Variances

Moral Judgment Scale Pre-test Scores by Group

Moral Judgment Scale Post- test Scores by Group

Sociomoral Reflection Measure, Form A, Scores by Group

Sociomoral Reflection Measure, Form B, Scores by Group

Sociomoral Reflection Measure, Form A, Scores by Group and  
by Sex

Sociomoral Reflection Measure, Form B, Scores by Group and  
by Sex

Sociomoral Reflection Measure, Form A, Scores by Group,  
Sex, and Moral Judgment Scale Class

Sociomoral Reflection Measure, Form B, Scores by Group,  
Sex, and Moral Judgment Scale Class

Appendix E-1  
Selected T-Tests

-----T-TEST-----										
Group E-1										
VARIABLE	N	MEAN	STD DEV	STD ERROR	DIFF MEAN	STD DEV	STD ERROR	T	DF	PROB
SRMSA	30	292.967	35.431	6.469						
SRMSB		341.200	28.159	5.141	-48.233	30.332	5.538	-8.71	29	0.000
-----										
Group E-2										
VARIABLE	N	MEAN	STD DEV	STD ERROR	DIFF MEAN	STD DEV	STD ERROR	T	DF	PROB
SRMSA	30	333.633	24.428	4.460						
SRMSB		261.733	44.052	8.043	71.900	37.969	6.932	10.37	29	0.000
-----										
Group C-1										
VARIABLE	N	MEAN	STD DEV	STD ERROR	DIFF MEAN	STD DEV	STD ERROR	T	DF	PROB
SRMSA	30	315.133	24.048	4.391						
SRMSB		312.833	25.788	4.708	2.300	11.105	2.027	1.13	29	0.266
MJSPRE	30	66.300	7.302	1.333						
MJSPOST		67.333	8.397	1.533	-1.033	7.863	1.436	-0.72	29	0.477
-----										

Appendix E-2  
Analyses of Variance

----- O N E W A Y -----

VARIABLE MJSPPE  
BY VARIABLE GROUP

ANALYSIS OF VARIANCE

SOURCE	DF	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB
BETWEEN GROUPS	3	18 9366	6 3122	0 094	0 9646
WITHIN GROUPS	116	8002 32,5	68 9855		
TOTAL	119	8021 2578			

  

GROUP	COUNT	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	95 PCT CONF INT FOR MEAN
GRP01	30	65 4667	7 5097	1 3711	53 0000	80 0000	62 6625 TO 68 2708
GRP 2	30	65 6000	7 6950	1 4049	52 0000	83 0000	62 7266 TO 68 4734
GRP03	30	66 100	7 3021	1 3352	51 0000	80 0000	63 5733 TO 69 0266
GRP04	30	65 2333	10 3447	1 8887	26 0000	79 0000	61 3705 TO 69 0961
TOTAL	120	65 6500	8 2101	0 7495	26 0000	83 0000	64 1660 TO 67 1340

TESTS FOR HOMOGENEITY OF VARIANCES

COCHRAN'S C = MAX VARIANCE/SUM (VARIANCES) = 0 7978 P = 0 048 (APPROX )  
 BARTLETT-BOX F = 1 547 P = 0 177  
 MAXIMUM VARIANCE / MINIMUM VARIANCE = 2 007

SCHEFFE PROCEDURE  
 RANGES FOR THE 0 050 LEVEL =  
 4 01 4 01 4 01

THE RANGES ABOVE ARE TABLE RANGES THE VALUE ACTUALLY COMPARED WITH MEAN (J) - MEAN (I) IS  
 5 8731 RANGE\* SQRT (1/N (I) + 1/N (J))

HOMOGENEOUS SUBSETS (SUBSETS OF GROUPS WHOSE HIGHEST AND LOWEST MEANS DO NOT DIFFER BY  
 MORE THAN THE SHORTEST SIGNIFICANT RANGE FOR A SUBSET OF THAT SIZE)

SUBSET 1

GROUP	GRP04	GRP01	GRP02	GRP03
MEAN	65 2333	65 4667	65 6000	66 3000

----- O N E W A Y -----

VARIABLE MJSP05P  
BY VARIABLE GROUP

ANALYSIS OF VARIANCE

SOURCE	DF	SUM OF SQUARES	MEAN SQUARES	F RATIO	F PROB
BETWEEN GROUPS	3	13 4196	4 4732	0 076	0 9726
WITHIN GROUPS	116	6792 9,56	58 5600		
TOTAL	119	8021 2578			

  

GROUP	COUNT	MEAN	STD DEV	STD ERROR	MINIMUM	MAXIMUM	95 PCT CONF INT FOR MEAN
GRP01	30	66 4667	7 6327	1 3935	52 0000	83 0000	63 6166 TO 69 3167
GRP02	30	67 1333	7 7135	1 4083	47 0000	78 0000	64 2530 TO 70 0136
GRP03	30	67 3333	8 3968	1 5330	48 0000	82 0000	64 1979 TO 70 4687
GRP04	30	66 7667	6 7807	1 2380	55 0000	81 0000	64 2347 TO 69 2986
TOTAL	120	66 9250	7 5628	0 6904	47 0000	83 0000	65 5580 TO 68 2920

TESTS FOR HOMOGENEITY OF VARIANCES

COCHRAN'S C = MAX VARIANCE/SUM (VARIANCES) = 0 3010 P = 0 727 (APPROX )  
 BARTLETT-BOX F = 0 434 P = 0 729  
 MAXIMUM VARIANCE / MINIMUM VARIANCE = 1 533

SCHEFFE PROCEDURE  
 RANGES FOR THE 0 050 LEVEL =  
 4 01 4 01 4 01

THE RANGES ABOVE ARE TABLE RANGES THE VALUE ACTUALLY COMPARED WITH MEAN (J) - MEAN (I) IS  
 5 4111 RANGE SQRT (1/N (I) + 1/N (J))

HOMOGENEOUS SUBSETS (SUBSETS OF GROUPS WHOSE HIGHEST AND LOWEST MEANS DO NOT DIFFER BY  
 MORE THAN THE SHORTEST SIGNIFICANT RANGE FOR A SUBSET OF THAT SIZE)

SUBSET 1

GROUP	GRP01	GRP04	GRP02	GRP03
MEAN	66 4667	66 7667	67 1333	67 3333



## \*\*\*\*\* ANALYSIS OF VARIANCE \*\*\*\*\*

SRMSA  
BY GROUP

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIF OF F
MAIN EFFECTS	24873.887	2	12436.941	15.352	0.000
GROUP	24873.887	2	12436.941	15.352	0.000
EXPLAINED	24873.938	2	12436.969	15.352	0.000
RESIDUAL	70479.875	87	810.113		
TOTAL	95353.813	89	1071.391		

## \*\*\*\*\* MULTIPLE CLASSIFICATION ANALYSIS \*\*\*\*\*

SRMSA  
BY GROUP

VARIABLE + CATEGORY	N	UNADJUSTED		ADJUSTED FOR INDEPENDENTS		ADJUSTED FOR INDEPENDENTS + COVARIATES	
		DEV'N	ETA	DEV'N	BETA	DEV'N	BETA
GRAND MEAN = 313.91							
GROUP							
1	30	-20.94		-20.94			
2	30	19.72		19.72			
3	30	1.22		1.22			
			0.51		0.51		

MULTIPLE R SQUARED 0.261  
MULTIPLE R 0.511

SCHEFFE PROCEDURE  
RANGES FOR THE 0.050 LEVEL -  
4.01 4.01 4.01

-----  
SUBSET 1

GROUP GRP01  
MEAN 292.9666

-----  
SUBSET 2

GROUP GRP03  
MEAN 315.1333

-----  
SUBSET 3

GROUP GRP02  
MEAN 333.6333

\*\*\*\*\* ANALYSIS OF VARIANCE \*\*\*\*\*

SRMSB  
BY GROUP

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIF OF F
MAIN EFFECTS	97308.250	2	48654.125	42.949	0.000
GROUP	97308.250	2	48654.125	42.949	0.000
EXPLAINED	97308.250	2	48654.125	42.949	0.000
RESIDUAL	98557.186	87	1132.841		
TOTAL	195865.438	89	2200.735		

\*\*\*\*\* MULTIPLE CLASSIFICATION ANALYSIS \*\*\*\*\*

SRMSB  
BY GROUP

GRAND MEAN = 305.26		UNADJUSTED		ADJUSTED FOR		ADJUSTED FOR	
VARIABLE + CATEGORY	N	DEV'N	ETA	DEV'N	BETA	DEV'N	BETA
GROUP							
1	30	35.94		35.94			
2	30	-43.52		-43.52			
3	30	7.58		7.58			
			0.70		0.70		
MULTIPLE R SQUARED					0.497		
MULTIPLE R					0.705		

SCHEFFE PROCEDURE  
RANGES FOR THE 0.050 LEVEL -  
4.01 4.01 4.01

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SUBSET 1

GROUP GRP02  
MEAN 261.7332  
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SUBSET 2

GROUP GRP03  
MEAN 312.8333  
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SUBSET 3

GROUP GRP01  
MEAN 341.2000  
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## \*\*\*\*\* ANALYSIS OF VARIANCE \*\*\*\*\*

SRMSA  
BY GROUP  
SEX

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIF OF F
MAIN EFFECTS	25032.148	3	8344.047	10.028	0.000
GROUP	24961.211	2	12480.605	15.000	0.000
SEX	158.262	1	158.262	0.190	0.664
2-WAY INTERACTIONS	430.031	2	215.016	0.258	0.773
GROUP SEX	430.031	2	215.016	0.258	0.773
EXPLAINED	25462.188	5	5092.438	6.120	0.000
RESIDUAL	69891.625	84	832.043		
TOTAL	95353.813	89	1071.391		

## \*\*\*\*\* MULTIPLE CLASSIFICATION ANALYSIS \*\*\*\*\*

SRMSA  
BY GROUP  
SEX

VARIABLE + CATEGORY	N	UNADJUSTED		ADJUSTED FOR INDEPENDENTS		ADJUSTED FOR INDEPENDENTS + COVARIATES	
		DEV'N	ETA	DEV'N	BETA	DEV'N	BETA
GRAND MEAN = 313.91							
GROUP							
1	30	-20.94		-20.94			
2	30	19.72		19.82			
3	30	1.22		1.13			
			0.51		0.51		
SEX							
1	30	1.26		1.88			
2	60	-0.63		-0.94			
			0.03		0.04		
MULTIPLE R SQUARED					0.263		
MULTIPLE R					0.512		

## \*\*\*\*\* ANALYSIS OF VARIANCE \*\*\*\*\*

SRMSF  
BY GROUP  
SEX

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIF OF F
MAIN EFFECTS	98120.375	3	32706.789	28.210	0.000
GROUP	96530.250	2	48265.125	41.630	0.000
SEX	812.123	1	812.123	0.700	0.405
2-WAY INTERACTIONS	356.500	2	178.250	0.154	0.858
GROUP SEX	356.505	2	178.252	0.154	0.858
EXPLAINED	98476.875	5	19695.375	16.988	0.000
RESIDUAL	97388.563	84	1159.387		
TOTAL	195865.438	89	2200.735		

## \*\*\*\*\* MULTIPLE CLASSIFICATION ANALYSIS \*\*\*\*\*

SRMSB  
BY GROUP  
SEX

GRAND MEAN = 305.26		UNADJUSTED		ADJUSTED FOR		ADJUSTED FOR	
VARIABLE + CATEGORY	N	DEV'N	ETA	DEV'N	BETA	DEV'N	BETA
GROUP							
1	30	35.94		35.94			
2	30	43.52		43.31			
3	30	7.58		7.30			
			0.70		0.70		
SEX							
1	30	5.94		4.25			
2	60	-2.97		-2.13			
			0.09		0.06		
MULTIPLE R SQUARED					0.501		
MULTIPLE R					0.708		

## \*\*\*\*\* ANALYSIS OF VARIANCE \*\*\*\*\*

SRMSA  
BY GROUP  
SEX  
MJSCLAS

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIF OF F
MAIN EFFECTS	30383.660	4	7595.914	10.117	0.000
GROUP	24961.211	2	12480.605	16.623	0.000
SEX	158.262	1	158.262	0.211	0.647
MJSCLAS	5351.508	1	5351.508	7.128	0.009
2-WAY INTERACTIONS	4255.102	5	851.020	1.133	0.350
GROUP SEX	279.540	2	139.770	0.186	0.831
GROUP MJSCLAS	3719.121	2	1859.561	2.477	0.091
SEX MJSCLAS	361.623	1	361.623	0.482	0.490
3-WAY INTERACTIONS	2153.406	2	1076.703	1.434	0.245
GROUP SEX MJSCLAS	2153.407	2	1076.703	1.434	0.245
EXPLAINED	36792.168	11	3344.742	4.455	0.000
RESIDUAL	58561.645	78	750.790		
TOTAL	95353.813	89	1071.391		

## \*\*\*\*\* MULTIPLE CLASSIFICATION ANALYSIS \*\*\*\*\*

SRMSA  
BY GROUP  
SEX  
MJSCLAS

VARIABLE + CATEGORY	N	UNADJUSTED		ADJUSTED POP		ADJUSTED FOR INDEPENDENTS + COVARIATES DEV'N
		DEV'N	ERR	DEV'N	ERR	
GRAND MEAN = 313.91						
GROUP						
1	30	-20.94		-20.95		
2	30	19.72		19.82		
3	30	1.22		1.13		
			0.51		0.51	
SEX						
1	30	1.26		1.88		
2	60	-0.63		-0.94		
			0.03		0.04	
MJSCLAS						
1	45	7.71		7.71		
2	45	-7.71		-7.71		
			0.24		0.24	
MULTIPLE R SQUARED					0.319	
MULTIPLE R					0.564	

## \*\*\*\*\* ANALYSIS OF VARIANCE \*\*\*\*\*

SRMSB  
BY GROUP  
SEX  
MJSCLAS

SOURCE OF VARIATION	SUM OF SQUARES	DF	MEAN SQUARE	F	SIGNIF OF F
MAIN EFFECTS	100281.250	4	25070.313	22.883	0.000
GROUP	96530.250	2	48265.125	44.054	0.000
SEX	812.123	1	812.123	0.741	0.392
MJSCLAS	2160.900	1	2160.900	1.972	0.164
2-WAY INTERACTIONS	8304.313	5	1660.862	1.516	0.194
GROUP SEX	409.606	2	204.843	0.187	0.830
GROUP MJSCLAS	7032.160	2	3516.080	3.209	0.046
SEX MJSCLAS	1130.777	1	1130.777	1.032	0.313
3-WAY INTERACTIONS	1824.000	2	912.000	0.832	0.439
GROUP SEX MJSCLAS	1824.000	2	912.004	0.832	0.439
EXPLAINED	110409.563	11	10037.230	9.161	0.000
RESIDUAL	85455.875	78	1095.588		
TOTAL	195865.438	89	2200.735		

## \*\*\*\*\* MULTIPLE CLASSIFICATION ANALYSIS \*\*\*\*\*

SRMSB  
BY GROUP  
SEX  
MJSCLAS

GRAND MEAN = 305.26		UNADJUSTED		ADJUSTED FOR INDEPENDENTS		ADJUSTED FOR INDEPENDENTS + COVARIATES	
VARIABLE + CATEGORY	N	DEV'N	ETA	DEV'N	BETA	DEV'N	BETA
GROUP							
1	30	35.94		35.94			
2	30	-43.52		-43.31			
3	30	7.58		7.36			
			0.70		0.70		
SEX							
1	30	5.94		4.25			
2	60	-2.97		-2.13			
			0.09		0.06		
MJSCLAS							
1	45	4.90		4.90			
2	45	-4.90		-4.90			
			0.11		0.11		
MULTIPLE R SQUARED					0.512		
MULTIPLE R					0.716		

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VITA

Angeline Joy O'Malley  
Candidate for the Degree of  
Doctor of Philosophy

Thesis. PARADOXICAL REGRESSION IN MORAL REASONING IN COLLEGE  
STUDENT SUBJECTS ARTIFACT OF MATERIAL REWARDS?

Major Field Home Economics-Family Relations and  
Child Development

Biographical

Personal Data Born in Midwest City, Oklahoma,  
December 22, 1944, the daughter of William R and  
Vivian P. Gommel Married to John Steven O'Malley  
on June 11, 1966 Birthed two daughters, Sarah  
Joy and Karen Rachel O'Malley.

Education Graduated from University High School,  
W Los Angeles, California, in June, 1962,  
received Bachelor of Science degree in Vocational  
Home Economics Education from Purdue University in  
June, 1966, received Master of Arts degree in Home  
Economics Education from Montclair State College  
in June, 1970, completed requirements for the  
Doctor of Philosophy degree at Oklahoma State  
University in May, 1986

Professional Experience Home Economics teacher, Dag  
Hammarskjold Junior High School, Wallingford,  
Connecticut, 1966 to 1967, Home Economics teacher,  
Lafayette Middle School, Chatham, New Jersey, 1967  
to 1970, Lecturer Child Development, Butler  
University, Indianapolis, Indiana, 1970 to 1972,  
Family Life Teacher, Oklahoma Bible Academy, Meno,  
Oklahoma, 1974 to 1976, Three-year-old  
Coordinator, First United Methodist Church, Tulsa,  
Oklahoma, 1978 to 1980, Nursery School teacher,  
New Haven Day School, Tulsa, Oklahoma, 1982 to

1983, Family Life and Home Economics teacher, Life  
Christian School, Tulsa, Oklahoma, 1983 to 1985,  
member of American Home Economics Association,  
National Council on Family Relations, and Omicron  
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