The Ability of Selected Personality Variables to Distinguish between Three Levels of Principled Reasoning Scores on the Defining Issues Test

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THE ABILITY OF SELECTED PERSONALITY VARIABLES TO DISTINGUISH BETWEEN THREE LEVELS OF PRINCIPLED REASONING SCORES ON THE DEFINING ISSUES TEST

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Master of Arts

by
Gary L. Romich
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THE ABILITY OF SELECTED PERSONALITY VARIABLES
TO DISTINGUISH BETWEEN THREE LEVELS OF
PRINCIPLED REASONING SCORES ON THE DEFINING ISSUES TEST

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A population sample consisting of 110 college students was placed into one of three principled reasoning groups (low, medium, and high) based on individual P scores on the Defining Issues Test. Based on previous research, it was predicted that individuals low in principled reasoning would score high on measures of deference (conformity) and affiliation (social approval) and low on measures of autonomy, intraception (analytical ability), and abstractness. Those individuals in the high principled reasoning group would have opposite need structures. They should be low on measures of deference and affiliation and high on autonomy, intraception and abstractness in comparison to the low group. Those individuals with medium principled reasoning scores should be higher on measures of intraception and abstractness than the low principled reasoning group. Personality variable scores were obtained using the Edwards Personal Preference Scale and the Abstract Orientation Scale. None of the comparisons were significantly different on affiliation for any of the groups. In addition, none of the group comparisons between the low and medium groups were significantly different from one another. The results indicated the high group was significantly higher on deference and abstractness compared with the low group.
The high group was also significantly higher than the medium group on measures of intracception, autonomy and abstractness. The groups were also evaluated using the discriminant analysis procedure. The analysis combined the personality variables into two discriminant functions both of which contained significant discriminating power and were able to discriminate between the three principled reasoning groups. The first function contained 78% of the total discriminating power and was primarily composed of abstractness, deference, intracception and autonomy. The second function was composed of autonomy, deference and affiliation and contained the remaining 22% of discriminating power. In addition, the derived functions were able to correctly classify the correct principled reasoning group of 60% of the subjects.
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The Ability of Selected Personality Variables to Distinguish between Three Levels of Principled Reasoning Scores on the Defining Issues Test

Morality has long been a primary concern of philosophers and religious leaders. Within the last sixty years, psychologists have also become interested in the field of moral development. Their research includes both the components which comprise morality and links between morality and other aspects of one's general development.

Most moral development theorists would agree that the function of morality is to provide a system of social cooperation by defining individual limits and obligations (Rest, 1979b). Morality provides a plan to distribute the benefits and responsibilities of society by establishing rules for governing both acceptable and unacceptable behaviors. While most theorists agree on the function of morality, they do not agree on whether morality is a cognitive construct or part of one's personality development.

A number of theorists support the idea that morality is part of one's general personality. Erikson (1950) has defined eight stages which shape one's personality. Morality develops in stage three (autonomy versus shame and doubt). In line with the traditional psychoanalytical approach, morality (rule adherence) is viewed as a means of avoiding shame and guilt by adhering to strict codes of acceptable behavior. Without this code, an individual would not have direction and would suffer from a great deal of doubt and insecurity.
Erikson believes that everyone desires to be included within a societal group and accepts the limitations placed upon them by that group. Morality is believed to be, in part, the principle of law and order which allows one to have one's will affirmed and delineated within a societal order of things. This principle establishes an individual's privileges, limitations, obligations, and rights. Within this framework, as one matures, a sense of individual autonomy also develops which, combined with the principle of law and order, establishes a sense of justice. It is the sense of justice and fair play which Erikson defines as morality.

Hogan (1976) feels that moral development needs to be integrated within a general theory of personality, although he disagrees with Erikson on the manner in which morality develops. His theory is based on the assumptions that everyone has a need for approval and affiliation along with an attention-seeking, rule-following orientation. Individuals do what is deemed acceptable and worthy of approval. Morality develops from two personality orientations: a role structure and a character structure.

Role structure is based on the assumption that individuals are motivated toward social interaction. These interactions crystallize into role-typed ways of presenting oneself in order to facilitate interaction. Over time, each person develops a set of self-images or model personality types (honest versus dishonesty, kindness versus cruelty) and accepts that model as true of him/her self. These self-images eventually become lifestyles which govern moral behavior.

Character structure comprises the second orientation which determines moral development. Character structure develops with
regards to the conventional rules and sanctions of a culture. These attitudes are learned through identification with and imitation of significant others. Hogan believes that an individual's personality and need structure (need for approval and conformity) provides both the motivation and means by which morality is developed. Individuals are motivated to do those things which win approval and acceptance.

Lawrence Kohlberg (1958) has developed a theory of moral development which stresses both cognitive and affective components. Much of the research conducted by cognitive theorists has been based upon Kohlberg's cognitive-development approach. He views moral development as a cognitive process with strong ties to personality. He has developed a typology of definite and universal moral stages which he hypothesizes may form distinct personality types. While personality traits may provide some reinforcement to remain within a particular moral orientation, Kohlberg states that individuals move from one stage to the next through largely cognitive processes. He contends that each of his successive stages represents a higher and more adequate level of thinking. As one's environment changes, becoming more complex, one is motivated to pursue better ways to cope with these increased demands by utilizing a higher and more adequate stage of moral reasoning.

Kohlberg (1958) has elaborated six cognitive stages of moral judgement. These are based on subjects' resolutions of hypothetical moral dilemmas in which obedience to laws, rules and authority conflict with the needs and welfare of other individuals. Kohlberg feels that moral growth is the result of transformations that occur in an individual's form or structure of thought rather than an increased knowledge of cultural rules.
While moral content varies across cultures, Kohlberg (1976) contends that the underlying cognitive structures are universal and sequential. In other words, regardless of the dilemma, the underlying moral judgements and evaluations made by the individual will be relatively the same regardless of cultural influences. Kohlberg's typology contains three distinct levels of moral thinking, each of which has two related stages. (see table 1).

At the pre-conventional level, the child is responsive to cultural rules of good and bad or right and wrong, but responds to them in terms of the consequences of the action. For example, stage one individuals conform to rules and regulations to avoid punishment, while stage two individuals adhere to those actions which satisfy their own needs. The second level, the conventional level, is characterized by conformity to personal expectations and support of the social order. Stage three individuals exhibit behaviors which will gain them social approval by being "nice" people. The fourth stage is termed the law and order orientation correct behavior consists of doing one's duty and maintaining the existing social order. At the postconventional level of moral development, the emphasis is on moral principles that go beyond the social order. The fifth stage characteristically has utilitarian tones, while the sixth stage defines rights in terms of ethical principles similar to the Golden Rule.

Kohlberg (1973) has expanded the fifth stage into stages 5A and 5B because he feels that there are two different orientations within this stage. Stage 5A individuals make moral decisions using a utilitarian perspective which may go against existing laws. Stage 5B individuals recognize a higher law of inalienable rights which they scrupulously
Table 1
Definition of Moral Stages

I. Preconventional Level

At this level, the child is responsive to cultural rules and labels of good and bad, right and wrong, but interprets these labels in terms of either the physical or the hedonistic consequences of action (punishment, reward, exchange of favors) or in terms of the physical power of those who enunciate the rules and labels. This level is divided into the following two stages:

Stage 1: The punishment and obedience orientation.

The physical consequences of action determine its goodness or badness regardless of the human meaning or value of these consequences. Avoidance of punishment and unquestioning deference to power are valued in their own right, not in terms of respect for an underlying moral order supported by punishment and authority (the latter being stage 4).

Stage 2: The instrumental-relativist orientation.

Right action consists of that which instrumentally satisfies one's own needs and occasionally the needs of others. Human relations are viewed in terms like those of the marketplace. Elements of fairness, of reciprocity and equal sharing are present, but they are always interpreted in a physical pragmatic way. Reciprocity is a matter of "you scratch my back and I'll scratch yours," not of loyalty, gratitude or justice.
II. Conventional Level

At this level, maintaining the expectations of the individual's family, group, or nation is perceived as valuable in its own right, regardless of immediate and obvious consequences. The attitude is not only one of conformity to personal expectations and social order, but of loyalty to it, of actively maintaining, supporting, and justifying the order and of identifying with the persons or group involved in it. At this level, there are the following two stages:

Stage 3: The interpersonal concordance or "good boy-nice girl" orientation.

Good behavior is that which pleases or helps others and is approved by them. There is much conformity to stereotypical images of what is majority or "natural" behavior. Behavior is frequently judged by intention-"he means well" becomes important for the first time. One earns approval by being "nice."

Stage 4: The "law and order" orientation.

There is orientation toward authority, fixed rules, and the maintenance of the social order. Right behavior consists of doing one's duty, showing respect for authority and maintaining the given social order for its own sake.

III. Post-Conventional, Autonomous, or Principled Level

At this level, there is a clear effort to define moral values and principles which have validity and application apart from the authority of the groups or persons holding these principles and apart from the individual's own identification with these groups. This level again has two stages:
III. Post-Conventional, Autonomous, or Principled Level

Stage 5: **The social-contract legalistic orientation.**

Generally with utilitarian overtones, right action tends to be defined in terms of general individual rights and in terms of standards which have been critically examined and agreed upon by the whole society. There is a clear awareness of the relativism of personal values and opinions and a corresponding emphasis upon procedural rules for reaching consensus. Aside from what is constitutionally and democratically agreed upon, the right is a matter of personal "values" and "opinion." The result is an emphasis upon the "legal point of view", but with an emphasis upon the possibility of changing law in terms of social utility (rather than freezing it in terms of Stage 4 "law and order"). Outside the legal realm, free agreement, and contract is the binding element of obligation. This is the "official" morality of the American Government and Constitution.

Stage 6: **The universal ethical principle orientation.**

Right is defined by the decision of conscience in accord with self-chosen ethical principles appealing to logical comprehensiveness, universality, and consistency. These principles are *abstract* and *ethical* (the Golden Rule, the categorical imperative), they are not concrete moral rules like the Ten Commandments. At heart, these are universal principles of justice of the reciprocity and equality of the human rights and of respect for the dignity of human beings as individual persons.

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*Note. (Adapted from L. Kohlberg, 1973)*
attempt to maintain. This could be referred to as a "conscience" orientation. A stage 5B individual would argue that a utilitarian model of law denies the rights of the minority while supporting the views of the majority.

Kohlberg's cognitive-developmental theory is a comprehensive theory of moral development for a number of reasons. In addition to incorporating both cognitive and affective components, his theory explains both the development of moral reasoning and the influence of environment factors throughout one's lifetime. Both of the theories of Erikson and Hogan overlook the role of cognition in the development of moral judgment. Kohlberg's theory incorporates elements of the theories of Erikson and Hogan within its framework. Erikson's third personality stage, in which morality develops, is roughly analogous to Kohlberg's fourth moral stage. According to Kohlberg, acceptable behavior consists of doing one's duty and maintaining the social order in much the same fashion as Erikson's principle of law and order.

Hogan's moral theory is based on the assumption that all individuals have a need for social approval. Kohlberg contends that this is the primary orientation among stage three individuals in his cognitive-developmental approach. In addition, two of Hogan's character traits are correlated with Kohlberg's stages. Tsujimoto and Nardi (cited in Rest, 1979b) found that there is a correlation of .27 between Hogan's character trait of empathy and Kohlberg's stage 5B and a correlation of .18 between Hogan's autonomy trait and Kohlberg's sixth stage. While these are not large correlations, they do indicate some commonality between these theories.
Hoffman (1970) observed that most research has investigated either the cognitive determinants or emotional factors of moral development. After reviewing the relevant research on moral development, he suggests that a theory should include both cognitive and affective components. Kohlberg’s cognitive-development approach is ideal for conducting research into the relationship between moral development and personality. His theory is both generally accepted and well researched. A number of instruments have been developed using Kohlberg’s theory in order to measure moral development. Elements of other theories of moral development can be found in Kohlberg’s cognitive-developmental approach. Finally, his theory can be used to predict a number of links between personality and moral development. If one can show a definite link between Kohlberg’s theory of moral development and personality, then the evidence would suggest that morality is composed of both personality and cognitive components. A failure to find this association would then presume that moral development, as defined by Kohlberg, is a largely cognitive process with no ties to personality.

The majority of the studies relating moral development and personality can be divided into three types of investigations. The first area of investigation involves the relationship between moral development and longitudinally-stable constructs such as locus of control, field independence-field dependence, and intelligence (Bloomberg, 1974; Bloomberg and Soneson, 1976; Janzen and Boersman, 1976; Lambert, DeJulio, and Cole, 1976; Mayshark, 1978; Ross 1978; Valle and Koeske, 1974). A second area of research involves the relationship between moral development and personality variables generally associated with Kohlberg’s cognitive-development approach.
such as conformity, autonomy, need for social approval, and abstractness (O'Connor, 1971; Saltzstein, Diamond, and Belensky, 1972; Sullivan and Quarter, 1972; Weber, 1974). Finally, a third group of researchers has correlated Rest's Defining Issues Test (1974) with personality inventories such as the California Personality Inventory and the Omnibus Personality Inventory (Rest, 1979b).

The studies relating moral development to longitudinally stable constructs have largely failed to show a clear relationship between them. In a recent study, Ross (1978) investigated the interrelationships between moral development and the following constructs: locus of control, creativity, field dependence-field independence and intelligence. She found that with the exception of intelligence, none of the other measures were correlated with moral development and concluded that moral development tapped a cognitive ability independent of the other measures. She reported a correlation of .30 between intelligence and moral development. Kohlberg (1969) also reported correlations in the .30 to .50 range between his Moral Judgement Scale and IQ. He concluded that subjects scoring higher on IQ tests, which presumably indicate how subjects compare with each other in speed of learning, in ability to think abstractly, and ability to grasp complex relationships, would be further along in the cognitive development of moral judgement. Moral development and intelligence would seem to be related to the extent that similar cognitive abilities are necessary to advance both in moral development and in intelligence level.

Lambert, DeJulio, and Cole (1976) investigated the relationship between locus of control (the extent to which an individual feels that one's own actions will result in the attainment of pursuit goals) and
moral development. An internal locus of control is the belief that one is in control of one's actions and future consequences while an external locus of control orientation is one in which an individual feels that one's destiny is largely determined by chance and external forces. The investigators found that locus of control is not significantly related to moral development using Rotter's I-E Scale as a measure of locus of control. A related study using Kohlberg's Moral Judgement Scale in conjunction with Rotter's I-E Scale reported no significance between moral development and locus of control (Janzen and Boersma, 1976). They concluded that society needs more individuals with a higher level of moral development, rather than individuals possessing an internal locus of control as has been previously suggested.

The Defining Issues Test (Rest, 1979a) has been used in conjunction with the I-E Scale to investigate the relationship between moral development and locus of control (Bloomberg, 1974). He hypothesized that there is a linear relationship between these constructs so that increasingly higher stages of moral development will be associated with an increase in internality. Bloomberg found that neither stage scores nor P scores were linearly correlated with locus of control. He reported that stage six individuals, however, were more internal than any of the lower stages. This conclusion was based on only five subjects and is relatively inconclusive.

Field independence-field dependence has also been investigated in relationship to moral development. A field independent individual possesses the ability to attend to relevant stimuli and screen out irrelevant stimuli. On the other hand, the field dependent individual is constantly drawn toward distracting stimuli. Bloomberg and Soneson
(1976) hypothesized that higher stages of moral development will be associated with an internal locus of control and a field independent orientation. They reported that stage five individuals possessed a greater field independent orientation in relation to lower stages of moral development based on a chi-square test of significance. The stage five cell only contained 4 subjects and does not provide clear evidence to support their hypothesis. In addition, they found that locus of control was not related with moral development which is consistent with previous findings.

Mayshark (1978) and Adelson (1975) reported that moral developmental stages are not related to field independence as measured by the Group Embedded Figures Test (Witkins, 1966). The Group Embedded Figures Test requires the subject to identify a figure which is hidden in a maze of other geometric shapes. Adelson (1975) hypothesized that the failure to find a relationship between moral development and field independence may be due to the different abilities required by these tasks. The Embedded Figures task requires spatial-analytical abilities while moral maturity is associated with verbal-analytical abilities.

As previously mentioned, the results of these studies would indicate that moral development taps a cognitive ability which is largely independent of longitudinally stable constructs with the exception of intelligence. In addition, the studies which have found links between a particular stage and field independence have been based upon very small subject populations rendering them inconclusive.

Kohlberg (1958) hypothesizes that autonomy may be related to moral reasoning. He distinguishes between life-style autonomy and moral autonomy in delineating this relationship. Life-style autonomy consists
mainly of resistance to social pressures to conform in matters of personal taste and preference while moral autonomy is resistance to social pressure to change one's moral orientation. Kohlberg contends that stage two individuals should be autonomous in the sense of being resistant to social pressure to conform (life-style autonomy) while stage six individuals should exhibit moral autonomy.

Kohlberg hypothesizes that there is a relationship between conformity and moral development. He feels that stage three individuals will exhibit a high need for conformity in relation to those individuals operating at the preconventional and postconventional levels. The need for social approval comprises the major orientation in this stage and provides the motivation for stage three individuals to conform. Stage four individuals will exhibit a high need for conformity although this is specific to those members of society who are in positions of authority.

Saltzstein, Diamond, and Belensky (1972) used a group conformity situation to determine the relationship between conformity and moral development. Subjects participating in the group conformity situation were placed in either one of two treatments: interdependent or independent. In the interdependent treatment, subjects functioned as a member of a group which had to reach a consensus while competing with the other groups. The independent treatment required subjects to compete as individuals against all other individuals. They reported a curvilinear relationship between moral judgment level and the overall frequency of conforming responses. Stage three individuals were more likely to conform than those individuals operating at a higher or lower stage of moral development. They interpreted this as a high need for social approval which is consistent with Kohlberg's descriptive nomenclature for stage three individuals.
Kanter (1975) used a number of different measures to investigate the relationship between moral development and personality with an adult offender population. Using the Marlowe Crowne Social Desirability Scale (designed to measure the extent to which a subject is answering the way he feels is socially correct), the Defining Issues Test (an objective measure of moral development), and the Lanyons Psychological Screening Inventory (a written format, objective instrument designed to measure "normal" psychological characteristics like alienation and affiliation), he reported that stage three individuals exhibited a high need for social desirability which he interpreted as a high need for social approval.

Both of these studies provide evidence which relates moral development to conformity. One must note, however, that both studies may not be able to be generalized to all conformity situations. The Kanter study is specific to the prison population who served as subjects. In the group conformity study, it is unclear whether the greater number of conforming responses were the result of the group's desire to reach a consensus quicker than the other group or for social approval. While these studies may not present conclusive evidence linking conformity and moral development, they provide a basis for formulating hypotheses and conducting additional research.

A number of studies have related moral development to measures of autonomy. Sullivan and Quarter (1972) found that postconventional (stages 5 & 6) and preconventional (stages 1 & 2) subjects scored higher than conventional (stages 3 & 4) subjects on a measure of autonomy using the Omnibus Personality Inventory, an instrument which includes scales assessing autonomy, complexity, impulse expression, practical outlook, theoretical orientation and others. They reported that of the six stages,
stage two individuals were highest on autonomy. The results of two additional studies also indicated that stage two individuals exhibited strong needs for autonomy (Haans, Stroud, and Holstein, 1973; Haans, Smith, and Block, 1968). O'Connor (1971) found somewhat different results using the Edwards Personal Preference Schedule (EPPS) autonomy scale and Kohlberg's (1958) Moral Judgement Scale (MJS) global scores. The EPPS is a forced-choice objective instrument designed to provide measures of a number of relatively independent "normal" personality variables. He reported a rank ordering of global scores from high to low as follows: 5-6, 3, 1-2, and 4.

The differences between these studies seem to indicate that the results are not conclusive or consistent. They do suggest that individuals operating at the conventional level of moral development, and stage four in particular, can be associated with low autonomy scores. However, further studies need to be conducted to confirm this.

O'Connor (1971) reported that abstractness is related to moral development. He developed an abstractness orientation scale which assesses the degree to which one's orientation is on an abstract level as opposed to a concrete level. He reported a rank ordering of MJS global scores from high to low as follows: 5 & 6, 1 & 2, 3 and 4. In addition, he found that there was a significant difference between the scores obtained by individuals in the fifth and sixth stages and the scores of individuals in the fourth stage. Kohlberg (1969) discusses abstractness when relating moral development to intelligence. He hypothesizes that one's level to think abstractly (one of the attributes that he feels is part of intelligence) will be positively correlated with one's level of cognitive development in regards to moral development.
He hypothesizes that each successive level of moral development should be associated with increases in the level of abstractness.

Rest (1979b) has surveyed a number of studies relating the Defining Issues Test and various personality inventories. Blackner (cited in Rest, 1979b) found that self-esteem, as measured by the Tennessee Self Concept Scale, was not related to moral development. None of the correlations between self concept and moral development were above .20 indicating that they are not related. Hartwick (cited in Rest, 1979b) correlated the DIT with the California Personality Inventory using 98 undergraduate college students. He found a correlation of .48 between the DIT and the variable Achievement via Independence and a correlation of .48 with Intellectual Efficiency. Hartwick also reported correlations of .32 with Psychological Mindedness, .33 with Responsibility, and .39 with Tolerance. Schomberg (cited in Rest, 1979b) correlated the Omnibus Personality Inventory with the DIT and found significant positive correlation at the .01 level with Complexity (.45), and Autonomy (.47), and a significant negative correlation with Practical Outlook (-.51).

After reviewing these studies, Rest (1979b) concluded that moral development is not related to personality in general, but rather to those personality variables which involve cognitive processes. He suggests that the variables Achievement via Independence, Intellectual Efficiency, and Complexity may be viewed as related to general cognitive development. The remaining variables all would seem necessary in order to make principled moral judgements. He feels that while there is a link between moral development and personality, morality and the DIT are strongly related to cognitive processes. The results of these studies support this conclusion.
In general, the research relating moral development to personality lends support to Kohlberg's cognitive developmental approach. Based on the results of these studies, one can hypothesize that moral development will be associated with both specific personality variables relating to Kohlberg's moral stages or those variables involving cognitive processes. However, many of the results of these studies are not conclusive. The majority of the studies which reported positive or negative correlations did not report whether the correlations were significant. Without this information, one cannot critically evaluate the results. In addition, many of the studies used different indices of moral development. Kohlberg alone has developed four different scoring techniques for his Moral Judgement Scale. Rest has developed both a stage score and a principled reasoning score for his Defining Issues Test. Naturally, the results may vary depending on the scoring technique employed. A further problem with much of the current research is that some researchers correlate a measure of moral development and a collection of personality variables without having a theoretical basis to do so. Instead, they conduct research on a "lets see what happens" basis. It is no small wonder that moral development is usually not significantly related to these variables.

A number of instruments have been constructed in an attempt to provide an assessment of moral judgement. In order to ascertain the validity of his cognitive-developmental stage theory, Kohlberg (1958) developed a moral judgement measure termed the Moral Judgement Scale (MJS). The MJS is a structured projective test consisting of a series of stories involving moral dilemmas to which the subject responds. The test is presented in a verbal interview format with a series of questions.
following each dilemma. The subject is instructed to state his moral resolution of the dilemma and, more importantly, reasons supporting this moral judgement. The responses are scored for the structure of reasoning (justification of resolution) and for consistency of the responses across the various dilemmas.

The subject's results can be reported for each dilemma or the dominant stage across dilemmas (global rating). The detailed scoring system is more complex. Scores are assigned to each thought content unit, defined as "all of a subject's utterances which, taken together, seem to express a single moral idea" (Fodor, 1972, p. 258). These responses are assigned scores in accordance with an elaborate coding system based on 30 "general aspects of morality" (Kohlberg, 1963).

Kurtines and Greif (1974) have extensively reviewed the psychometric properties of the MJS. They reported a number of methodological difficulties associated with the instrument. While the free response mode is an advantage when assessing the subject's style of response, it introduces material not comparable from subject to subject and allows for interviewer and scorer bias. Kurtines and Greif reported that due to the complexity of the scoring techniques and administration difficulties, there is little standardization of either administration or scoring. In addition, they could find no test-retest reliabilities, or any internal consistency estimates in previous studies using the MJS. Rubin and Trotter (1977) have since reported internal consistency estimates of .77, .73, and .82 for the first three of Kohlberg's dilemmas. Wilmoth and McFarland (1977) reported interrater reliabilities of .68 and .58 for the first two MJS dilemmas. The differences between these reliabilities in the two studies indicate that the scoring ability of the raters affects the reliability of the MJS because it does not have an objective scoring system.
Many of the limitations of the MJS have been avoided with the development of the Defining Issues Test (Rest, Codor, Cooper, Masanz, and Anderson, 1974). The DIT employs an objective written format as opposed to a verbal interview format similar to the MJS. Subjects are presented six dilemmas with 12 statements following each dilemma. The subject's task is to rate the issue statements in terms of their perceived importance in making a decision about the dilemma using a five position Likert scale: no importance, little importance, some importance, much importance, and great importance. Following this, the subject ranks the four issue statements which he considers are most relevant in resolving the moral dilemma. Statements characteristic of stages two through six are represented by two issue statements each, with the remaining issue statements serving as nonsense items. Each subject is assigned both a stage score (stage of moral reasoning most frequently used) and a principled reasoning score (assessing the extent to which the individual's level of moral development reflects usage of ethical standards characteristic of stages 5 and 6). The principled reasoning score (P score) is derived by doing the following: (a) give weights of 4, 3, 2, and 1 to the issues ranked first, second, third, and fourth, respectively; (b) sum the weights attributed to the principled issues (items keyed as stage 5 and 6) over all six stories; (c) express the results in terms of the percentage of weights attributed to the principled stages. This number can range from 0 to 95 and is interpreted as the relative importance a subject gives to morally principled considerations in making moral judgements.

Rest et al. (1974) reported a test-retest correlation of .81 with college students who completed the test and were retested after 2 months.
Rest (1975), in a longitudinal study with adolescents, reported a two-year stability of .68 for the junior high group and .54 for those individuals graduating from high school. Panowitsch (1975) reported a test-retest reliability of .89. Rest et al. (1974) also reported a Chronbach's alpha of .77 for the index. Davidson and Robbins (cited in Rest 1979b) found that alpha was also .77 in a sample of 1080 subjects. The DIT is more reliable than the MJS because of its more objective scoring procedure. The DIT appears to be a relatively stable and interally consistent instrument well adapted for research purposes.

While both the MJS and the DIT have been developed from Kohlberg's cognitive-developmental theory, there are a number of differences between these instruments. As mentioned previously, the MJS uses a free response mode, whereas the DIT presents the subject with a set of standardized alternatives representing the scoring categories. While the free response mode allows the examiner to discern the subject's mode of thinking (reasons for the resolution), the disadvantages of this response style are increased interviewer and scoring bias and lack of standardization in administration and scoring.

Another difference between these instruments is that the DIT consistently scores subjects' levels of moral reasoning approximately 1.5 stages higher than the MJS (Rest, 1975). Rest attributes this to the different formats employed by the two instruments. He contends that the DIT requires the individual to only recognize the various moral orientations, which is much easier than verbally producing them on the MJS. Therefore, subjects will be able to recognize higher moral orientations than they will be able to verbally produce. The DIT also offers greater reliability and stanldization in administration and scoring. In addition,
the DIT produces both stage scores and P scores, whereas the MJS only produces stage scores.

Kurtines and Greif (1974) and Rest (1976, 1979b) have criticized the dominant stage scoring method because these stage classifications are not as distinct as they appear to be. In other words, the criterion for classification in a specific stage is that over 50% of an individual's responses can be classified at that stage. Individuals who exhibit 51% to 100% of their responses at a particular stage will all be classified the same although there may be a large difference in the extent to which they use this stage of moral reasoning when solving moral dilemmas. Rest (1976, 1979b) contends that P scores are better indicators of moral development because they gauge the extent to which individuals utilize postconventional moral reasoning by expressing this as a percentage of the total responses. Rest's P score allows general comparisons between conventional and principled reasoning. The preconventional reasoning group is not an important consideration when interpreting P scores because Rest has found that only a very small percentage of adults exhibit either stage one or two moral reasoning. Rest (1979b) has established cutoff points for dividing subjects into groups based on their P scores. By using these cutoff points for all studies using these group divisions, researchers will be able to compare studies with one another inasmuch as the definitions of low and high will be constant across studies. The Defining Issues Test and accompanying P scores provide an objective measure of moral judgement which is comparable across studies. For these reasons, they will both be used in this investigation.
In addition to choosing a measure of moral judgement, one must choose one or more instruments designed to assess personality traits which can be used in conjunction with Kohlberg's cognitive developmental theory and the Defining Issues Test. At this point, one must decide on which variables to include in the investigation and whether to use separate measures for each variable or opt for a multiple scale instrument. The following variables will be used to ascertain the relationship between moral development and personality: conformity, autonomy, analytical thinking, need for approval, and abstractness. All of these variables have been chosen because they can be theoretically related either to Kohlberg's theory or general cognitive processes associated with making moral judgements.

It was decided that a multiple scale inventory would be used instead of separate measures for each variable. Separate measures usually contain more test items which increase reliability and are usually more independent from one another than are multiple scale inventories. However, separate measures require a great deal more time both to administer and score. Due to the number of variables which will be included in this investigation, some increased reliability and independence may have to be sacrificed in order to use a multiple scale inventory which is much easier and quicker to administer and score. An ideal personality inventory would be both reliable and composed of relatively independent scales which assess all or most of the variables to be included in this study.

Of the multiple scale personality inventories, the Edwards Personal Preference Scale fits all of these requirements (Edwards, 1959). Edwards has reported an average split-half reliability of .76 and a test-retest
reliability coefficient average of .82 for his fifteen scales. He also stated that the intercorrelations between the scales are quite low indicating that the variables being measured by the EPFS are relatively independent. The EPFS contains scales which assess conformity (deference), autonomy, analytical thinking (intraception), and need for approval and acceptance (affiliation). The Abstract Orientation Scale (O'Connor, 1971) will be administered to assess abstractness.

Many of the studies relating moral development to personality have used Kohlberg's stage scoring system rather than Rest's P score system. While these scoring systems are different, predictions based on Kohlberg's moral stages can be used to relate P score levels and personality. Rest (1979b) has established cutoff points for dividing P scores into one of the following three groups based on his experience with the Defining Issues Test: low principled reasoning group (0 to 27 P score), medium principled reasoning group (28 to 41 P score), and the high principled reasoning group (42 and up P score).

The low group largely exhibits conventional moral reasoning which is analogous to Kohlberg's stages three and four. Individuals within this group respond to moral dilemmas at least 73% of the time with conventional level reasoning. This group should have both a high need for conformity and high need for social approval characteristic of the need structure of stage three and four individuals. By contrast, individuals in the high principled reasoning group operate from a post-conventional level of moral reasoning characteristic of stages five and six. They make moral judgments based on social utility and ethical considerations after analyzing all aspects of the moral dilemma rather than based on peer pressure or approval. Therefore, the high group should
have low needs for conformity and social approval. In addition, the high group should have a high need for autonomy whereas the low group should have a low need for autonomy. The medium principled reasoning group predominantly uses conventional moral reasoning although a number of their responses may be at the principled level of moral reasoning. Therefore, individuals within this group should exhibit some personality needs characteristic of both the conventional and principled levels of moral development. As a result, the medium group should exhibit moderate needs for conformity, social approval and autonomy.

Kohlberg (1969) hypothesized that analytical ability and abstract thinking was positively correlated to cognitive development. He also suggested that each successive moral stage represented a higher level of cognitive development. As an individual's principled reasoning increases, as measured by increases in P scores on the Defining Issues Test, the use of abstract and analytical reasoning should also increase. This should produce a relationship between P scores and the selected personality needs with the high group being highest on these variables and the low group being lowest on them. As before, the medium group should show moderate needs for both analytical and abstract thinking.

In order to verify the proposed relationships between variables, two principled reasoning levels and the selected personality variables, two questions need to be resolved. The first question to be answered is whether the individuals within the three groups will exhibit different personality needs based on their level of moral development. To answer this, one need only compare the means for each group on the five personality variables and determine whether the differences are significant in
the predicted directions. The second issue to be answered is whether these variables can be combined in a way that will discriminate between the three groups. This would determine whether the groups are statistically different from one another on a collection of variables which measure characteristics on which the groups are expected to differ. In addition to confirming the proposed links between moral development and personality, these variables could be used to predict one's level of moral development based on one's personality needs.

The specific hypotheses to be investigated are as follows:

1. Those individuals in the low principled reasoning group will be significantly lower on measures of autonomy, intraception, and abstractness and significantly higher on deference and affiliation in comparison to those individuals in the high principled reasoning group.

2. The high principled reasoning group will be significantly higher on measures of intraception and abstractness when compared with the medium principled reasoning group.

3. Those individuals in the medium principled reasoning group will be significantly higher than the low principled reasoning groups on measures of intraception and abstractness.

4. The discriminant analysis procedure will combine the variables to produce one or more discriminate functions which will contain statistically significant discrimination power.
Method

Subjects

The sample consisted of 110 college students enrolled in upper level psychology classes at Western Kentucky University. There were 80 females and 30 males in the sample with a mean age of 22.5. Those subjects who volunteered were given credit toward their final grade as an incentive to participate.

The membership in the three moral reasoning groups is as follows: 23 subjects were placed in the low principled reasoning group (21%), 43 were placed in the medium principled reasoning group (39%), and 44 were placed in the high principled reasoning group (40%). The average P score for the sample population was 38.7.

Procedure

Each subject was told that data were being collected for a master's thesis investigating the relationship between personality and one's views on selected social issues. The test battery was administered in group form over two one-hour class periods. During the first period, subjects completed the Edward Personal Preference Schedule and the Abstract Orientation Scale. The average length of time needed to complete both of these instruments was about 45 minutes. During the second period, students completed the Defining Issues Test (entitled the Opinion About Social Problems Test). This instrument requires about an hour to complete. Appropriate instructions preceded the various instruments according to the standardized format outlined in the manuals for both the DIT and the EPPS (See Appendix A). Two weeks after the second testing period, subjects were given profiles of their test results in order to provide them with adequate feedback. The procedures used to score the three instruments are presented in the Appendices.
Design

The subjects were placed into either the low, medium or high principled reasoning groups based on their P scores on the Defining Issues Test using Rest's (1979b) cutoff points. Those individuals with a P score ranging from 0 to 27 were placed in the low principled reasoning group. Subjects with a P score ranging from 28 to 41 were placed in the medium principled reasoning group. Finally, those individuals with P scores of 42 and above were placed in the high principled reasoning group. Group means for all subjects within a particular group were then computed for each of the personality variables. The group means of the subjects in each of the three principled reasoning groups were compared to determine whether these groups were significantly different from one another on the personality variables. These same three groups were also used for the discriminant analysis procedure in order to determine whether the discriminant functions were able to discriminate between the principled reasoning groups.

Analysis

During the course of this investigation, two separate analyses were conducted. In order to determine whether subjects within the three principled reasoning groups are significantly different from one another on any of the five variables, one-way analyses of variance were performed on each set of group means. In addition, separate S tests (Scheffé, 1958) were conducted on each set of group means with a significant F ratio. Scheffé's S test was used for two reasons. The S test allows the researcher to compare groups which have unequal numbers of subjects. Because the S test is conservative, one can conduct more than one S test on the same set of subjects without substantially violating the principle of independency of testing. Three separate S tests were conducted on the group means for each personality variable which has a
significant F-ratio. This determined which of the three possible pairings of two group means were significantly different from one another for that variable.

In addition to the analysis of variance procedure, the three principled reasoning groups were evaluated using a discriminant analysis procedure. The variables used in this investigation were selected because they measure characteristics on which the three groups should differ. The function of the discriminant analysis was to combine these variables in some fashion which made the groups as statistically distinct as possible. The discriminant analysis combined the discriminating variables into functions which formed dimensions on which the groups differed. The discriminant analysis procedure (Klecka, 1975) provided both an analysis aspect and a classification aspect. The analysis aspect provided statistical tests for measuring the success with which the variables discriminated between the principled reasoning groups when combined into discriminant functions. The classification aspect was used to test the effectiveness of the derived functions by classifying those members of the three principled reasoning groups to see how many of the members were correctly classified using the discriminant functions. The classification aspects can also be used to classify subjects of unknown group memberships into one of the three groups based on their personality variables scores.

In the discriminant analysis, a stepwise procedure was used in order to select those personality variables which best discriminated among the three principled reasoning groups. This procedure began by selecting the variable which best discriminated among the three groups when each variable was evaluated individually. The second variable selected was
the variable which when combined with the first variable best improved
the discriminating power of the function. The third and subsequent
variables were selected in the order in which they contributed to further
discrimination when combined with previously selected variables. At each
step, variables previously selected may be removed if they reduce the
overall discrimination power of the function when combined with more
recently selected variables. The stepwise procedure continued until
all of the variables were either included in the analysis or did not
contribute to further discrimination. The remainder of the discriminant
analysis procedure was performed only on those variables which were
selected for inclusion in the discriminant functions.

The criterion used to determine which of the variables were included
in the discriminant analysis was Rao's V. Rao's V is a generalized
distance measure which is appropriate when one is interested in the
overall separation of the groups irregardless of the proximity of any
two groups to one another. With the exception of the Wilks' lambda para-
meter, parameters which are available in the discriminant analysis pro-
cedure are largely concerned with maximizing the distance between the
two closest groups rather than the overall separation of the groups as
is the case with Rao's V. With these other parameters variables may be
included which not only help separate the two closest groups but also
decrease the distance between other groups. With Rao's V only those
variables which increase the change in V when added to previously
selected variables are included. Therefore, this parameter maximally
separates the groups according to total overall distance irregardless of
the positions of any particular groups in relation to one another. In
addition, the Rao's V parameter can be tested for statistical significance
using a chi-square distribution with one degree of freedom. By using the 
chi-square distribution, one can evaluate the importance of the change in 
$V$ attributable to each of the variables. This can be important when one 
has a number of variables which offer only minimal increases in discrim-
ination.

As previously mentioned, the discriminant analysis can be used to 
predict the likely group membership of a subject when the only information 
known was the subject's scores on the discriminating variables. In addition, 
by classifying the subjects which were used to form the derived functions 
and comparing the predicted group memberships with the actual group 
memberships, one can test the adequacy of the derived functions by 
observing the proportion of correct classifications. Subjects were 
assigned to the groups for which they had the greatest probability of 
membership.

Results

The group means and standard deviations for each of the five 
personality variables are presented in table 2. The results of the 
analyses of variance which were performed on each of the personality 
variables are presented in table 3. Deference, autonomy, intraception, 
and abstractness were significant at the .01 level while affiliation was 
not significant.

In order to determine whether the three groups exhibited homogeneity 
of variance on the analyses of variance, Bartlett's test for several 
groups with unequal n's (1937) was performed on each of the four signifi-
cant variables. The results of the tests on deference ($X^2=1.493$), autonomy 
($X^2=0.5135$), intraception ($X^2=0.6010$), and abstractness ($X^2=3.378$) are all 
less than the tabled value of 5.991 (p < .05) indicating homogeneity of
Table 2

Principled Reasoning Group Means and Standard Deviations for each of the Personality Variables

<table>
<thead>
<tr>
<th>Variables</th>
<th>Principled Reasoning Groups</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>Deference</td>
<td>63.73913</td>
</tr>
<tr>
<td>Standard</td>
<td>28.38889</td>
</tr>
<tr>
<td>Deviation</td>
<td>49.79070</td>
</tr>
<tr>
<td>Standard</td>
<td>30.10738</td>
</tr>
<tr>
<td>Deviation</td>
<td>25.36259</td>
</tr>
<tr>
<td>Affiliation</td>
<td>52.39130</td>
</tr>
<tr>
<td>Standard</td>
<td>33.85630</td>
</tr>
<tr>
<td>Deviation</td>
<td>49.79070</td>
</tr>
<tr>
<td>Standard</td>
<td>30.10738</td>
</tr>
<tr>
<td>Deviation</td>
<td>25.36259</td>
</tr>
</tbody>
</table>
### Table 3
Analysis of Variance Comparisons Between Principled Reasoning Groups on each of the Personality Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Source</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deference</td>
<td>Groups</td>
<td>2</td>
<td>5524.72</td>
<td>6.53*</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>107</td>
<td>846.167</td>
<td></td>
</tr>
<tr>
<td>Autonomy</td>
<td>Groups</td>
<td>2</td>
<td>3441.17</td>
<td>5.28*</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>107</td>
<td>651.74</td>
<td></td>
</tr>
<tr>
<td>Affiliation</td>
<td>Groups</td>
<td>2</td>
<td>592.30</td>
<td>.71</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>107</td>
<td>836.18</td>
<td></td>
</tr>
<tr>
<td>Intraception</td>
<td>Groups</td>
<td>2</td>
<td>4938.09</td>
<td>6.27*</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>107</td>
<td>788.06</td>
<td></td>
</tr>
<tr>
<td>Abstractness</td>
<td>Groups</td>
<td>2</td>
<td>6143.43</td>
<td>8.36*</td>
</tr>
<tr>
<td></td>
<td>Error</td>
<td>107</td>
<td>734.45</td>
<td></td>
</tr>
</tbody>
</table>

*P < .01

N = 110
variance. Post-hoc comparisons of the differences between the group means were made using Scheffé's S test. The difference between the low group mean and the high group mean was significant at the .05 level on deference and abstractness. The difference between the medium group mean and the high group mean was significant at the .05 level on intraception, autonomy, and abstractness. None of the differences between the low and medium groups were significant. The S test comparisons are presented in table 4.

The variables were entered into the discriminant analysis using the stepwise procedure. Abstractness was the first variable to be included in the analysis because it best discriminated between the three groups when each of the variables were evaluated separately. Abstractness had a change in Rao's V from 0 to 16.56 which is significant at the .001 level. Deference was the second variable entered in the analysis. It changed in V from 16.56 to 28.62 (12.06) which is significant at the .002 level. Autonomy was entered third with a change in V of 10.23 from 28.62 to 38.85 which is significant at the .006 level. Intraception was the fourth variable to be included in the analysis with an associated change in V of 7.25 from 38.85 to 46.10 which was significant at the .027 level. Affiliation entered the analysis last with a change in V of 3.33 from 46.10 to 49.43 which was not significant.

The discriminant analysis produced two separate discriminant functions. The first function accounted for approximately 78% of the variance existing in the discriminating variables with an associated eigenvalue of .35. The second function accounted for 22% of the variance in the discriminating variables with an eigenvalue of .10. Eigenvalues are roots derived from the equations used to determine the discriminant functions. By
Table 4
Scheffé Test Comparisons Between Personality Score Means for the Principled Reasoning Groups

<table>
<thead>
<tr>
<th>Variable</th>
<th>Principled Group Mean Differences</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low/Med</td>
</tr>
<tr>
<td>Deference</td>
<td>17.14</td>
</tr>
<tr>
<td>Autonomy</td>
<td>9.47</td>
</tr>
<tr>
<td>Affiliation</td>
<td>----</td>
</tr>
<tr>
<td>Intraception</td>
<td>2.49</td>
</tr>
<tr>
<td>Abstractness</td>
<td>12.31</td>
</tr>
</tbody>
</table>

*P < .05
n = 110
expressing these eigenvalues as percentages of the total sum of eigenvalues, one can assess the relative importance of each of the functions. The second function has only one-fourth the discriminating power of the first function.

The canonical correlation for each of the discriminant functions can also be used to evaluate the function’s ability to discriminate between the groups. The canonical correlations are associated with the eigenvalues and represent how closely the discriminant functions are related to the set of dummy variables which comprise the canonical variate that defines the group memberships. By squaring these correlations, one can determine the proportion of variance in the discriminant functions explained by the groups. The groups accounted for 26% of the variance in function one and 9% of the variance in function two. Together the groups accounted for 35% of the variance present in the discriminant functions. Therefore, 65% of the variance present in the functions was due to causes unrelated to the variance produced by the principled reasoning groups. In spite of this, both discriminant functions were found to contain significant discriminating power using Wilks’ lambda. Wilks’ lambda tests the significance of discriminating information existing in a function which is not already accounted for by earlier functions. Lambda is an inverse measure of the discriminating power in the personality variables which have not been accounted for by previous discriminant functions. Therefore as lambda increases, there is less information remaining. The lambda statistic was then transformed into a chi-square statistic by the discriminant analysis procedure in order to test for significance. Before either of the functions were removed, Wilks’ lambda was .667 which corresponds to a chi-square distribution of 42.486
with 10 degrees of freedom. This is significant at the .001 level.

After the first function was removed, lambda increased to .907. This corresponds to a chi-square distribution of 10.216 with 4 degrees of freedom which is significant at the .037 level.

Both of the functions are comprised of discriminant function coefficients which are associated with each of discriminating variables. These coefficients represent the relative contributions of the variables to the functions. The signs in front of the coefficient merely denote whether the variables are making positive or negative contributions.

Remember, of course, that the functions are arranged in order of decreasing importance so that the contributions of the variables to the first function are more meaningful than the contributions on the second function.

The coefficients which correspond with the discriminating variables on the first function are as follows in decreasing order: Abstractness - .579, deference + .455, intraception - .401, autonomy - .384, and affiliation - .182. This indicates that abstractness makes the largest contribution the the discriminating power on the first function of all of the variables. In addition, abstractness can be interpreted as being about one and a half times as important as intraception, for example, on the first function. Deference, intraception, and autonomy all make large contributions to the first function. Affiliation is relatively unimportant on the first function. The coefficients which correspond with the discriminating variables on the second function are as follows in decreasing order: Autonomy - .688, deference - .561, affiliation - .454, abstractness + .291, and intraception - .256. On the second function, autonomy makes the largest contribution while deference and affiliation make smaller but more important contributions. Abstractness and intraception do
not make important contributions to the discriminating power of the second function in comparison to the other variables. These coefficients are important because they identify the dominant variables and characteristics which comprise both of the functions. On the first function, which accounted for 78% of the variance, abstractness, intraception, and autonomy make strong negative contributions of discriminating power while deference makes a strong positive contribution. These variables account for the majority of the discriminating power present in both of the functions and are very important variables for this investigation. They can be grouped under a principled reasoning (abstractness, intraception, and autonomy) versus conventional reasoning (deference) continuum. Abstractness, intraception, and autonomy all contain characteristics which are needed in order to make principled moral judgements while deference measures the conforming orientation which comprises the conventional level of moral development.

The second function appears to be comprised of those variables which are linked with Kohlberg's moral development (affiliation, autonomy, and deference) and can be named the Kohlbergian variables function. Both of the variables which are linked to general cognitive processes (abstractness and intraception) make relatively small contributions on this function. While this function contributes only about one fourth as much discrimination power as the first function, there is a significant amount of discrimination power in this function.

In order to better understand the effect of the discriminant functions on separating the principled reasoning groups, one needs to examine the means for the groups on each function. By averaging the discriminant scores for each subject within a particular group on one of the functions,
we arrive at the group mean on that respective function. For a single group, the means on all of the functions are referred to as the group centroid. A comparison of the group means on each function tells one how far apart the groups are along that dimension. The group centroids are presented in standard form in Figure 1.

A comparison of the distances between the three group means on the first discriminant functions indicated that the variables which comprise this function primarily separated the high principled reasoning group from the other two groups. The distance between the low and medium group means was small when compared to the distances between the high group and either the low or medium group means. Therefore, the variables important in the first function as indicated by the discriminant function coefficients (abstractness, intraception, autonomy, and deference), in conjunction with one another, best discriminate the high principled reasoning group from the low and medium principled reasoning groups.

A comparison of the distances between the group means on the second functions reveals that this function primarily separated the low principled reasoning group from the medium principled group. The distances between the high group and both the low and medium groups were approximately equal. Therefore, those variables that are important on the second function (autonomy, deference, and affiliation) primarily discriminated between the low principled reasoning group and the medium principled reasoning group with some discrimination between the high principled reasoning group and the low and medium groups.

After the functions were derived, the subjects used to form these functions were classified into one of the three principled reasoning groups based on the subjects personality variable scores. Their predicted
Figure 1

Group Centroids

Canonical Discriminant Function 1

<table>
<thead>
<tr>
<th>Group</th>
<th>Function 1</th>
<th>Function 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.67757</td>
<td>-0.49557</td>
</tr>
<tr>
<td>2</td>
<td>0.36473</td>
<td>0.34219</td>
</tr>
<tr>
<td>3</td>
<td>-0.71062</td>
<td>-0.07536</td>
</tr>
</tbody>
</table>
group memberships based on the discriminant functions were compared to their actual group memberships in order to evaluate the effectiveness of the derived functions. The results of this classification procedure are presented in table 5. The functions correctly classified 60.9% of group one individuals, 53.5% of group two individuals, and 63.6% of group three individuals. The overall percentage of correctly classified subjects was 59%. One can expect 33% of the subjects to be correctly classified based on chance. The functions correctly classified 26% more subjects than one would expect to classify without the use of the functions. The factors which probably contributed to the 41% overall misclassifications will be elaborated upon in the discussion section.

Discussion

All of the hypotheses except the third hypothesis were at least partially support based on the results of this investigation. At least two of the three group means were significantly different from one another on four of the five personality variables. In addition, the discriminant analysis procedure was able to both produce two functions with significant discrimination power and correctly classify 59% of the subjects into their correct principled reasoning group based solely on their personality scores.

As predicted, individuals in the low group were significantly higher on deference and significantly lower on abstractness in comparison with the high group based on the results of the Scheffé test. There were also large differences between the low and high groups on autonomy and intraception in the predicted direction although they were not significant. None of the differences on autonomy were significant for any of the group comparisons. Individuals in the medium group were significantly
<table>
<thead>
<tr>
<th>Actual Group</th>
<th>No. of Cases</th>
<th>Predicted Group Membership</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low</td>
<td>Medium</td>
</tr>
<tr>
<td>Low</td>
<td>23</td>
<td>14</td>
</tr>
<tr>
<td></td>
<td>60.9%</td>
<td>26.1%</td>
</tr>
<tr>
<td>Medium</td>
<td>43</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>18.6%</td>
<td>53.5%</td>
</tr>
<tr>
<td>High</td>
<td>44</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>18.2%</td>
<td>18.2%</td>
</tr>
</tbody>
</table>

Percent of subjects correctly classified 59.09%
lower on abstractness and interception in comparison to the high group as predicted. The medium group was also significantly lower than the high group on autonomy.

The Scheffé group comparison results did not support the third hypothesis concerning the relationship between the low and medium principled reasoning groups. While the medium group was higher than the low group on the measure of abstractness, the difference was not significant. None of the other variables produced significant differences between the low and medium group means. The failure of the variables to produce significant differences between the low and medium groups was probably due to two factors. The established cutoff point between the two groups did not separate the subjects into distinct and different groups. In addition, the personality variables were not sensitive to any differences which were present between the low and medium groups. Instead, the variables which produced significant results were most sensitive to differences between either the low and high groups or the medium and high groups.

One of the assumptions underlying the proposed hypotheses was that increases in the degree of principled reasoning used by the subjects would be generally associated with increases in the levels of intraception, autonomy, and abstractness and decreases in the levels of deference and affiliation exhibited by the subjects. This trend held true for both the deference and abstractness variables although the differences between the low and medium groups were not significant. However, the medium groups were lower in mean percentile score than the low groups for both autonomy and interception indicating that for these two variables increases in their levels were not associated with increases in principled
reasoning. In fact, none of the differences between the personality variable means for the low and medium groups were significantly different from one another indicating that the two groups were composed of individuals who were similar to one another and who both primarily utilize conventional reasoning. Since the low and medium groups are similar, they can be considered to be in fact one large group rather than two distinct groups as was first thought. Therefore, if we assume this to be the case, then there are only the high group comprised of individuals relying heavily on principled reasoning and the conventional reasoning group composed of individuals in the low and medium groups. Since four of the five personality variables produced significant differences between the high group and either the low or medium groups, the assumption previously mentioned would generally be true. The results would indicate that using this two group schema, increases in the degree of principled reasoning are associated with increases in the levels of intraception, autonomy, and abstractness, and a decrease in the level of deference. In addition, the variables were primarily sensitive to differences between the high group representing principled reasoning and the low and middle groups representing conventional reasoning.

The results of the discriminant analysis also tend to support the notion that there were really only two principled reasoning groups instead of the three which were proposed in this investigation. By examining the group means for a particular discriminant function, one can determine how far the group are from one another along that dimension. The first discriminant function primarily discriminated between the high group and the other two groups. The second discriminant function largely
discriminated between the low and medium groups with some discrimination between the high group and the low and medium groups. It should be remembered that the second function contains only about one fourth of the discriminating power of the first function. Therefore, while the overall goal of the discriminant analysis was to find a combination of variables which would separate the three groups from one another, the principle result was to separate the high group from the remaining low and medium groups.

Those variables which produced significant differences on the analyses of variance were also important on the discriminant analysis. Abstractness, deference, intraception, and autonomy all made large contributions to the first function. Deference, and autonomy also make large contributions on the second function. The results of both the discriminant analysis and the analyses of variance would indicate that these four variables are definitely related to moral development as measured by the Defining Issues Test. Each of these variables have been strongly associated with aspects of either conventional or principled reasoning. The results for deference and to a lesser degree, autonomy, provide support for Kohlberg's (1958) cognitive developmental approach. Deference can be related to conventional reasoning while increased autonomy is associated with principled reasoning. In addition, they concur with previous studies conducted with these variables (O'Connor 1971; Saltzstein, Diamond, and Belensky, 1972; Sullivan and Quarter, 1972).

The results on abstractness and intraception indicate that both of these cognitively oriented personality variables can be associated with increases in principled reasoning. This evidence supports Rest's (1979b) contention that of the studies he has reviewed, moral development was
associated with those personality characteristics that incorporate cognitive processes. Rest concluded that moral development was more closely related to cognitive processes than to personality characteristics. The fact that the discriminant functions only accounted for a third of the variance found within the three groups would surely indicate that personality and morality are not analogous constructs. Indeed, morality may be a relatively distinct construct which interfaces with personality only in those areas where there is strong theoretical link to either principled reasoning or to conventional reasoning based on Kohlberg's cognitive development theory.

The present investigation has contributed to the research on moral development in a number of ways. This investigation is one of only a few studies to utilize a discriminant analysis procedure in order to evaluate the relationship between personality and morality. Many of the previous studies have simply reported a few correlations between certain personality traits and a measure of moral development without a theoretical rationale for doing so. In addition, previous studies have reported correlations using stage scores or an overall P score average for all subjects rather than the three P score groups similar to the present study. By using different levels of principled reasoning, one is able to discern the interrelationships between various levels of principled reasoning and personality. A correlation based on an overall P score average is too general a measure in order to determine whether personality variables are associated with morality. A correlation only informs one as to whether principled reasoning is generally related to personality rather than delineating the specific relationship as does the analysis of variance in conjunction with the discriminant analysis procedure.
Certainly both the analysis of variance and the discriminant analysis imply causality upon which predictions can be based.

The present investigation has supplied support for both Kohlberg's (1958) cognitive developmental theory and Rest's (1979b) contention that morality is strongly related to cognitive processes. A number of questions remain, however. Some of the questions relate to the present investigation while others have not yet been addressed by any research in the area. Initially one would want to know whether the results of this investigation can be successfully replicated. If this is the case, then additional research needs to be directed toward the relationship between personality and morality. While the three principled reasoning groups were divided based on the recommendations by Rest (1979a), other divisions could also be used to see whether any differences occur. The results of the present investigation indicate that the low and medium groups were composed of individuals with similar personality needs. Therefore, there were only two groups instead of three groups based on the personality variables used in this study. One interesting division of groups would be using 50 as the cutting score on the P score scale to see whether there would be differences between individuals operating at the conventional morality level and those individuals operating at the principled reasoning level. In addition, there may be other variables which are better related to moral development than those used in this investigation.

Rest (1979a) has noted a number of factors which influence one's moral development level. Some of these include age, socioeconomic status, level of education, religious affiliation and IQ. Additional studies need to be performed with different populations to establish whether the
results which were found using college students are generalizable to other populations. It is interesting to note that Rest (1979a) found that sex differences were not a factor in determining moral development.

Another possible area of investigation is whether variables such as deference and abstractness will show developmental trends similar to those of moral development. Since both deference and abstractness are related to moral development, they may change as one's level of moral reasoning also changes. This may be especially true for abstractness as it is also related to cognitive processes like IQ which also show developmental trends.

The results of this investigation provide a strong basis for conducting further research. There seems to be support for both Kohlberg's cognitive developmental approach and Rest's cognitive approach to morality. Both of these approaches seem to be good theoretical orientations to employ when investigating the relationship between personality and moral development.
Appendix A

Test Administration Instructions

The following instructions were discussed before administering the Defining Issues Test:

- We are interested in finding out what student's opinions are about controversial social issues.

- Please consider each item carefully and answer all of the questions by pacing yourself so that you finish in an hour.

- Every story has twelve issues. After reading the story, read each item or issue at the end of the story and rate it in importance. After rating each item individually, then consider the set of 12 items and rank the four most important items.

- Note that there is a sample problem to practice on.

- In this sample case, items 4 and item 6 do not make sense and should be marked as "no importance." All other items such as these should be rated low.

- If you do not understand a word, I will give you a dictionary definition of the word. Otherwise you will have to make your best judgement.

- The items should be ranked and rated in terms of how important that issue is in making a moral decision. Some issues may be very important, but you should ask yourself whether the decision should rest on that issue.

The following instructions were given before administering the EPFS and the Abstract Orientation Scale.

- After you receive a booklet and answer sheet, please read the directions on the cover.

- Remember that you should read and answer every question. Some of the choices may be difficult to make, but you should choose between them.

- The test takes approximately 40 minutes to finish. After you complete this test, please complete the Abstract Orientation Scale.

- For each statement, circle the letter which most closely fits your degree of
agreement or disagreement with the statements.

- At the end of the hour, please turn in all tests and answer sheets.
- Two weeks from now I will give each of you a report on your test results for your own enlightenment.
OPINIONS ABOUT SOCIAL PROBLEMS

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

Please give us the following information:

Name ________________________________       __ female

Age ___  Class and period ________________________       __ male

School ________________________

*   *   *   *   *   *   *

In this questionnaire you will be asked to give your opinions about several stories. Here is a story as an example. Read it, then turn to the next page.

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

If you were Frank Jones, how important would each of these questions be in deciding what car to buy?
PART A. (SAMPLE)

On the left hand side of the page check one of the spaces by each question that could be considered.

<table>
<thead>
<tr>
<th>GREAT Importance</th>
<th>MUCH Importance</th>
<th>SOME Importance</th>
<th>LITTLE Importance</th>
<th>NO Importance</th>
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</thead>
</table>

1. Whether the car dealer was in the same block as where Frank lives.

2. Would a used car be more economical in the long run than a new car.

3. Whether the color was green, Frank's favorite color.

4. Whether the cubic inch displacement was at least 200.

5. Would a large, roomy car be better than a compact car.

6. Whether the front connibilies were differential.

PART B. (SAMPLE)

From the list of questions above, select the most important one of the whole group. Put the number of the most important question on the top line below. Do likewise for your 2nd, 3rd, and 4th most important choices.

Most important 5
Second most important 2
Third most important 3
Fourth most important 1
HEINZ AND THE DRUG

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

Should Heinz steal the drug? (Check one)

___ Should steal it
___ Can't decide
___ Should not steal it
### HEINZ STORY

On the left hand side of the page check one of the spaces by each question to indicate its importance.

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

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

- Most important
- Second most important
- Third most important
- Fourth most important
STUDENT TAKE-OVER

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

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

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

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

_____ Yes, they should take it over

_____ Can't decide

_____ No, they should not take it over
1. Are the students doing this to really help other people or are they doing it just for kicks.
2. Do the students have any right to take over property that doesn’t belong to them.
3. Do the students realize that they might be arrested and fined, and even expelled from school.
4. Would taking over the building benefit more people to a greater extent.
5. Whether the president stayed within the limits of his authority in ignoring the faculty vote.
6. Will the takeover anger the public and give all students a bad name.
7. Is taking over a building consistent with principles of justice.
8. Would allowing one student take-over encourage many other student take-overs.
9. Did the president bring this misunderstanding on himself by being so unreasonable and uncooperative.
10. Whether running the university ought to be in the hands of a few administrators or in the hands of all the people.
11. Are the students following principles which they believe are above the law.
12. Whether or not university decisions ought to be respected by students.

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

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<th>Most important</th>
<th>Second most important</th>
<th>Third most important</th>
<th>Fourth most important</th>
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<tr>
<td>11</td>
<td>10</td>
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GREAT importance
MUCH importance
SOME importance
LITTLE importance
NO importance
ESCAPED PRISONER

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

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

____ Should report him

____ Can't decide

____ Should not report him
ESCAPED PRISONER

1. Hasn't Mr. Thompson been good enough for such a long time to prove he isn't a bad person?

2. Everytime someone escapes punishment for a crime, doesn't that just encourage more crime?

3. Wouldn't we be better off without prisons and the oppression of our legal system?

4. Has Mr. Thompson really paid his debt to society?

5. Would society be failing what Mr. Thompson should fairly expect?

6. What benefits would prisons be apart from society, especially for a charitable man?

7. How could anyone be so cruel and heartless as to send Mr. Thompson to prison?

8. Would it be fair to all the prisoners who had to serve out their full sentences if Mr. Thompson was let off?

9. Was Mrs. Jones a good friend of Mr. Thompson?

10. Wouldn't it be a citizen's duty to report an escaped criminal, regardless of the circumstances?

11. How would the will of the people and the public good best be served?

12. Would going to prison do any good for Mr. Thompson or protect anybody?

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

Most important
Second most important
Third most important
Fourth most important
THE DOCTOR'S DILEMMA

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

What should the doctor do? (Check one)

- _He should give the lady an overdose that will make her die
- _Can't decide
- _Should not give the overdose
1. Whether the woman's family is in favor of giving her the overdose or not.

2. Is the doctor obligated by the same laws as everybody else if giving an overdose would be the same as killing her.

3. Whether people would be much better off without society regimenting their lives and even their deaths.

4. Whether the doctor could make it appear like an accident.

5. Does the state have the right to force continued existence on those who don't want to live.

6. What is the value of death prior to society's perspective on personal values.

7. Whether the doctor has sympathy for the woman's suffering or cares more about what society might think.

8. Is helping to end another's life ever a responsible act of cooperation.

9. Whether only God should decide when a person's life should end.

10. What values the doctor has set for himself in his own personal code of behavior.

11. Can society afford to let everybody end their lives when they want to.

12. Can society allow suicides or mercy killing and still protect the lives of individuals who want to live.

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

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

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

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

- Should have hired Mr. Lee
- Can't decide
- Should not have hired him
<table>
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<tr>
<th>GREAT IMPORTANCE</th>
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<th>SOME IMPORTANCE</th>
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**WEBSTER**

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

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

- Most important
- Second most important
- Third most important
- Fourth most important
NEWSPAPER

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

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

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

Should the principal stop the newspaper? (Check one)

_ Should stop it
_ Can’t decide
_ Should not stop it
1. Is the principal more responsible to students or to parents?

2. Did the principal give his word that the newspaper could be published for a long time, or did he just promise to approve the newspaper one issue at a time?

3. Would the students start protesting even more if the principal stopped the newspaper?

4. When the welfare of the school is threatened, does the principal have the right to give orders to students?

5. Does the principal have the freedom of speech to say "no" in this case?

6. If the principal stopped the newspaper would he be preventing full discussion of important problems?

7. Whether the principal's order would make Fred lose faith in the principal.

8. Whether Fred was really loyal to his school and patriotic to his country.

9. What effect would stopping the paper have on the student's education in critical thinking and judgment?

10. Whether Fred was in any way violating the rights of others in publishing his own opinions.

11. Whether the principal should be influenced by some angry parents when it is the principal that knows best what is going on in the school.

12. Whether Fred was using the newspaper to stir up hatred and discontent.

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

Most important __

Second most important __

Third most important __

Fourth most important ___
Scoring Key for the Defining Issues Test

Corresponding Stage Scores for each Dilemma

<table>
<thead>
<tr>
<th>Story</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
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<tr>
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<td>4</td>
<td>3</td>
<td>2</td>
<td>M</td>
<td>3</td>
<td>4</td>
<td>M</td>
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<td>3</td>
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<td>2</td>
<td>5A</td>
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<td>6</td>
<td>4</td>
<td>3</td>
<td>A</td>
<td>5B</td>
<td>4</td>
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<td>4</td>
<td>A</td>
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<td>3</td>
<td>5B</td>
<td>5A</td>
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</table>
Appendix C

Abstract Orientation Scale

O'Connor (1971)

A= Strongly Disagree  C=Neutral  D=Moderately Agree
B=Moderately Disagree  E=Strongly Agree

1. Man is a being in search of meaning. ABCDE
2. Art teaches the significance of life. ABCDE
3. I feel that nothing is "off limits" for exploration of Psychology. ABCDE
4. People should not be allowed to say irresponsible things. ABCDE
5. Most things should be done for the sheer joy of it. ABCDE
6. I feel the American way of life is the only way. ABCDE
7. Many of the values we have today are based on myth. ABCDE
8. I have just about the same values now as I did some time ago. ABCDE
9. Morality can best be determined by the individual and not the society at large. ABCDE
10. Publicizing our differences weakens our country's image. ABCDE
11. If I wanted to find out information about Communism I would ask information from a Communist. ABCDE
12. Most people who take "LSD" are trying to escape from responsibility. ABCDE
13. Life begins at any moment through the act of realization. ABCDE
14. Children should measure up to the standards set by their parents. ABCDE
15. The only real worthwhile learning comes from within. ABCDE
16. Quotas in our immigration laws are necessary to preserve the minimum wage. ABCDE
17. Whatever there is of progress in life comes not through adjustment
but through daring. \hspace{2cm} A \hspace{0.2cm} B \hspace{0.2cm} C \hspace{0.2cm} D \hspace{0.2cm} E
18. You should receive government penalties for advocating bad
causes. \hspace{2cm} A \hspace{0.2cm} B \hspace{0.2cm} C \hspace{0.2cm} D \hspace{0.2cm} E
19. All phenomena, including man and his thought about himself
are in constant movement and change. \hspace{2cm} A \hspace{0.2cm} B \hspace{0.2cm} C \hspace{0.2cm} D \hspace{0.2cm} E
20. Frank portrayals of sex in movies and books should be subject
to strict censorship. \hspace{2cm} A \hspace{0.2cm} B \hspace{0.2cm} C \hspace{0.2cm} D \hspace{0.2cm} E
21. The only learning which significantly influences behavior is
self discovered. \hspace{2cm} A \hspace{0.2cm} B \hspace{0.2cm} C \hspace{0.2cm} D \hspace{0.2cm} E
22. Rebels and student activists make more noise than is warranted. \hspace{2cm} A \hspace{0.2cm} B \hspace{0.2cm} C \hspace{0.2cm} D \hspace{0.2cm} E
23. You never really learn anything unless you experience it
yourself. \hspace{2cm} A \hspace{0.2cm} B \hspace{0.2cm} C \hspace{0.2cm} D \hspace{0.2cm} E
24. I let my experience carry me towards goals that I can but
dimly define. \hspace{2cm} A \hspace{0.2cm} B \hspace{0.2cm} C \hspace{0.2cm} D \hspace{0.2cm} E
25. To learn to think, feel, and see in my own way is the most
important thing. \hspace{2cm} A \hspace{0.2cm} B \hspace{0.2cm} C \hspace{0.2cm} D \hspace{0.2cm} E

**Scoring Procedure**

1. Items 1, 2, 13, 15, 17, 19, 21, 23, 24, and 25 are distractor items and are
not used in the scoring procedures.
2. Items 3, 5, 7, 9, and item 11 are scored so that A=1, B=2, C=3, D=4, and E=5.
3. Items that remain are reversed scored so that A=5, B=4, C=3, D=2, and E=1.
4. The summation of the 15 items is the final raw abstract score.
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CORRECTION

PRECEDING IMAGE HAS BEEN REFILMED
TO ASSURE LEGIBILITY OR TO CORRECT A POSSIBLE ERROR
B4, F5