

The Measurement of Principled Morality by the Kohlberg Moral Dilemma Questionnaire

Alfred B. Heilbrun, Jr., and Melissa Georges
Emory University

The four stages preceding the postconventional level in the Kohlberg (1958, 1971, 1976) system of moral development are described as involving moral judgments that conform to external conditions of punishment, reward, social expectation, and conformity to the law. No special level of self-control seems necessary to behave in keeping with these conditions of external reinforcement. In contrast, the two stages of postconventional (principled) morality involve defiance of majority opinion and defiance of the law—actions that would seem to require greater self-control. This study was concerned with whether postconventional moral reasoning, as measured by the Kohlberg Moral Dilemma Questionnaire (MDQ), can be associated with higher self-control. If so, prediction of principled moral behavior from the MDQ would be based not only on postconventional moral reasoning but bolstered by the necessary level of self-control as well. College students who came the closest to postconventional moral reasoning showed better self-control than college students who were more conventional or preconventional in their moral judgments. These results support the validity of the MDQ for predicting principled moral behavior.

Waterman (1988) recently provided a set of definitions that distinguish among the various aspects of personal ethics. Individual *moral values* represent the criteria used by the person as standards for determining what is moral. *Moral reasoning* embraces the cognitive processes utilized in reaching decisions that have moral implications and in how individuals apply their values in reaching moral judgments. *Moral behavior* refers to the actual overt activity displayed within a situation calling for some level of moral commitment. Although reviews of the research bearing on personal morality have concluded that some prediction of moral behavior from moral reasoning is possible (Blasi, 1980; Waterman, 1988), the literature reveals limited predictability.

Prediction problems may originate to some extent within the measurement procedures that are used to assess individual differences in moral conviction. This study was concerned with only one type of measurement procedure, so the results may not be generalized to all measures of moral status. However, Kohlberg's (1958, 1971, 1976) cognitive theory of moral development and the Moral Dilemma Questionnaire (MDQ) that evolved from his work probably represent the most widely utilized approach to investigating individual morality. For this reason, implications of our study may merit some general interest.

Kohlberg's psychometric procedures for determining individual differences in morality involve presenting moral dilemmas and asking subjects to resolve them. Although the presentation format and scoring procedures have varied to some extent over time and among investigators, the usual approach has been to administer all or some of a standard set of stories and to ask subjects how they would resolve the moral dilemmas involved in each. The maturity of moral reasoning represented in the resolution for each story is scored in terms of Kohlberg's proposed levels and stages of moral development. An alternative measurement technique, the Defining Issues Test (Rest, Cooper, Coder, Masanz, & Anderson, 1974), objectively scored rather than requiring scoring judgments like the MDQ, also involves the solution of moral dilemmas within a standard set of stories and also takes its scoring lead from Kohlberg's theory of moral development.

The Kohlberg (1981, pp. 18-19) theory that serves as the basis for scoring his measure of moral reasoning is crucial to our study and is described in some detail. According to the theory, what is morally right depends on the following:

Preconventional level

Stage 1 (heteronomous morality) . . . to avoid breaking rules that are backed by punishment

Stage 2 (individualism, instrumental purpose, and exchange) . . . following rules in order to receive rewards or fulfill needs

Conventional level

Stage 3 (mutual interpersonal expectations, relationships, and interpersonal conformity) . . . doing what is right because people expect it

Stage 4 (social system and conscience) . . . conforming to laws of the broader group, institution, or society

Postconventional level

Stage 5 (social contact or utility and individual rights) . . . awareness of the relativity of group values but respect for certain nonrelative values *regardless of majority opinion* (italics added)

Stage 6 (universal ethical principles) . . . willingness to follow *self-chosen principles despite violation of laws* (italics added)

We propose that the first four stages within Kohlberg's developmental scheme depict levels of morality in which right and wrong depend primarily on external reinforcement. This is readily seen in the first two stages of the preconventional level, in which one avoids breaking rules to escape extrinsic punishment or follows rules to obtain extrinsic rewards. Reference is made to internalized "expectations" and "conscience" as the basis for moral values at Stages 3 and 4 of the conventional level. This might suggest a decreased dependence on external reinforcement in determining actual moral conduct. Yet further consideration reveals that conformity to what people expect of us is at the heart of Stage 3 morality and conformity to law defines Stages 4 morality. Conformity behavior of both types is maintained by external social reinforcement. People tend to behave in keeping with interpersonal expectations because they are rewarded if they do and are punished if they do not. People tend to obey group laws because they are punished if they do not and even are occasionally rewarded if they do. To the extent that individuals are heavily influenced by external reinforcement at the preconventional and conventional levels of moral development, no extraordinary degree of self-control is required to explain the moral conduct expected at these four stages.

Transition to the postconventional level was viewed by Kohlberg (1981) as the only clear effort on the part of the individual to consider moral values and principles that are truly personal and not sanctioned by external authority. Postconventional or principled moral judgment was deemed exceptional even in adulthood. Based on our analysis of reinforcement sources, the transition also would involve a shift in the importance of self-control in mediating moral conduct. Preconventional and conventional moral behaviors need not involve exceptional self-control, because they are sustained by positive and negative external reinforcement. Postconventional morality requires the person to act in keeping with a personal principle despite the negative consequence attending unpopular or illegal behavior; this does seem to necessitate exceptional self-control.

Thus, some of the problems in predicting moral behavior from level of moral reasoning on the MDQ or in understanding the basis of moral action within the Kohlberg system could have resulted from the fact that principled moral conduct requires not only postconventional levels of moral reasoning (which is explicitly measured) but also exceptional self-control (which is not explicitly measured). If this were true, prior efforts to predict principled behavior from principled moral reasoning could have been attenuated by the failure to limit this prediction to those who have the self-control to act on their principles despite possible repercussions.

This study considered the question of whether moral reasoning level on the MDQ is positively related to degree of self-control. If maturity of moral judgement is positively related, with subjects at the postconventional level demonstrating greater self-control than subjects at the preconventional or

conventional levels, it would indicate some degree of validity for the MDQ in predicting principled moral behavior. Principled moral reasoning on the MDQ would be accompanied by the higher level of self-control required to behave in defiance of popular opinion or legal sanctions. On the other hand, if maturity of moral reasoning is accompanied by more effective self-control, then greater theoretical concern would be necessary in interpreting principled moral action than would be predicted from principled moral reasoning. The confounded nature of principled reasoning and effective self-control on the MDQ would obscure how much of the principled action was due to moral values and how much was due to self-control.

METHOD

Subjects

The sample included 45 undergraduates (24 men, 21 women) of Emory University. Participation was voluntary, although subjects received class credit for doing so. Average age of the subjects was 18.49 years, and they were predominantly from White, middle-class (or higher) backgrounds.

Measures

MDQ (Kohlberg, 1976, 1981). Four of the nine stories included in this questionnaire along with their standard probes were presented to the subject in written form, and the subjects were allowed to answer the questions at their own pace. Three of the moral dilemmas involved "Heinz" and the fourth story concerned the 14-year-old "Joe." The substitution of written inquiry into Kohlberg's moral reasoning levels for the original interview method has ample precedent (Gibbs, Widamson, & Colby, 1982; Rest, 1979).

Scoring by one of the investigators (Melissa Georges) proceeded by comparing the written responses to the story-related questions with standard examples included in a scoring guide (Porter, 1972). Responses to each story provided by the subject were assigned a stage score in keeping with the recommendation of the guide: The first stage was given a score of 1, the second stage a score of 2, up to a score of 6 for sixth-stage reasoning. The stage scores for the four moral dilemmas were averaged for each subject, and this mean stage score was used as the best estimate of moral-reasoning maturity.

Scoring reliability for this moral-reasoning score was checked by having a second college undergraduate independently rate the moral-maturity levels for the stories provided by 20 of the subjects, using identical procedures to reach the final score. Interjudge reliability for the mean stage scores was extremely high ($r = .99$).

Self-control battery. Factor analysis of scores from several cognitive tasks along with demographic features presented by a sample of adult alcoholics and nonalcoholics (both sexes) led Heilbrun, Tarbox, and Madison (1979) to propose three types of cognition that independently contribute to self-control. These included: (a) *Impulse Control*—the ability to defer an habituated impulse to respond by using competing self-instructions, (b) *Internal Scanning*—the degree to which inner sensations and symbolic information relevant to an act are considered prior to responding, and (c) *Self-Reinforcement*—the extent to which individual self-evaluation influences subsequent behavior.

Most of the self-control tasks included in this study were among those considered in the original factor analysis and investigation of self-control deficit in alcoholics (Heilbrun et al., 1979). The one exception, a task added more recently, is noted in the following. Tasks representing the three cognitive components of self-control include the following:

1. Impulse-Control was measured by performance on two tasks, each requiring the subject to inhibit an habituated response through self-instruction. *Mirror-tracing* (Heilbrun et al., 1979) involves tracing with a pencil between two lines spaced by a quarter inch and serving as the boundary of a star. The subject must perform this task by using visual cues provided by the mirror image of the drawing hand and the star pattern. The mirror reverses lateral hand movement without affecting cues provided by vertical movement. Effectiveness of performance depends primarily on how well the subject, through self-instruction, can ignore impulses to move laterally in keeping with habituated eye-hand coordination. Errors are defined by breaks through the boundaries of the star pattern. Subjects were given ample time to complete the task, although they were instructed to work as quickly as possible.

The Stroop Color-Word Test (Stroop, 1935) requires the subject to name aloud the color (yellow, red, blue, green, or brown) in which each of 144 words is printed. The words, in turn, are themselves the names of the same five colors, but the words are never printed in the color that they name. Effective performance requires that the subject maintain a self-instructional set to respond to the color of the print and avoid the highly familiar impulse to read the printed word. Subjects were instructed to perform as rapidly as possible. The error score represents the number of lapses into reading responses.

2. Internal Scanning also was measured by two tasks. The Unusual Meaning Vocabulary Test (UMVT; Willner, 1965) was not part of the original battery of cognitive tasks but was added later as a promising procedure (Heilbrun, Cassidy, Diehl, Haas, & Heilbrun, 1986) after demonstrating sufficient correlation with an original internal-scanning measure. The UMVT assesses knowledge of secondary (less popular) word meanings. Better knowledge of secondary meanings indicates that the subject is inclined to consider alternative interpretations of symbolic cues and to more fully utilize information. The test is comprised of 42 common terms followed in each case by five words, one being the correct

secondary meaning (e.g., shoot: rifle, *sprout*, cap, duck, door). Scores represent the number of correct answers.

The Wisconsin Card-Sorting Test (WCST; Grant & Berg, 1948) represents the second internal-scanning measure. It requires the subject to identify the correct concept from among three alternatives (number, color, or shape) by placing stimulus cards under appropriate standards. Each stimulus card bears some combination of the three concepts (e.g., two red triangles). The subjects must place the card under the standard corresponding to what they think is the correct one (i.e., under a standard bearing two designs if number is thought to be correct, under a standard showing red designs if color is believed to be the correct solution, or under a standard presenting triangles if shape is chosen as the correct concept). The experimenter reinforced each card placement as "right" or "wrong" depending on the correct solution. Two 48-card decks of stimulus cards (counterbalanced across subjects) were used with color and number representing the two solutions. A given concept was considered to be correctly identified following 10 consecutive correct sorts, and the error score was given by the number of incorrect sorts over both decks prior to the 10 correct sequences. Effective performance on the WCST depends in part on the subjects' willingness and ability to utilize past information provided by experimenter reinforcement in making their judgments.

3. *Self-Reinforcement effectiveness* was measured by the extent to which subjects' reinforcement of their own performance influenced subsequent achievement levels. The task (Heilbrun & Norbert, 1972) requires subjects to complete a difficult 20-trial, angle-matching exercise in which each stimulus angle had to be matched for size with one of five display angles on a board placed at a distance of 8 ft. These display angles varied by 10° intervals from 45° to 85° and were mounted in a standard but randomized order. Subjects were instructed to reinforce themselves as "right" when they were certain of their choice and "wrong" when they were less than certain. Prior to beginning the series of 20 stimulus angles, the subjects were told that the average person gets 10 out of 20 correct (a bogus figure), and they were asked to predict their own scores.

When the trials were completed, subjects were reminded of their initial prediction, given the number they felt they had gotten correct (i.e., had self-reinforced as "right"), and asked to predict the number out of 20 they would get correct if the task were repeated. Determination of the self-reinforcement score involved two steps. First, the absolute difference between initial and final prediction was obtained. Then a plus or minus was assigned depending on whether the change in prediction was or was not in the direction of (and presumably influenced by) self-reinforcement. For example, if Subject S had an initial prediction of 12 correct, self-reinforced at 15 correct, and then predicted 14 correct, the self-reinforcement score would be +2. If Subject S initially predicted 12 correct, self-reinforced at 15 correct, and then predicted 10 correct, self-reinforcement would be scored -2.

The validity of the self-control components has been confirmed in studies that differentiated adult alcoholics, who have demonstrated deficits in self-control, from other nonalcoholic adults (Heilbrun & Norbert, 1972; Heilbrun et al., 1979; Tarbox, 1979). Two other studies involving alcoholic patients (Heilbrun & Abraham, 1987; Heilbrun et al., 1986) provide evidence for the functional independence of the three cognitive self-control factors originally disclosed by factor analysis. They suggest that the type of self-control deficiency demonstrated by the alcoholic varies depending on the chronicity of the condition. Self-control deficit in alcoholism is most clearly revealed by limited Internal Scanning in the early stage, Self-Reinforcement declines especially in the middle stage, and Impulse Control is most seriously compromised in the late stage of chronic alcoholism.

Perhaps most importantly, the self-control measures have shown sufficient power to make predicted discriminations within grossly normal samples of adolescents and college students. The measures have differentiated those with incipient alcoholic problems and their controls (Heilbrun et al., 1986), young college women admitting to uncontrolled eating binges and normal eaters (Heilbrun & Bloomfield, 1986), and Type A students on a college campus whose behavior seemingly generates substantial levels of stress and Type As who are normal with regard to reported stress (Heilbrun & Friedberg, 1988).

Procedure

Subjects were given the four moral dilemmas in small groups ($n = 8-12$); the three stories relating to "Heinz" were given first in the order prescribed by their content. The self-control battery was administered in individual sessions within a week using a standard order of mirror-tracing, UMT, WCST, Stroop, and self-reinforcement. Performance in both sessions was self-paced with Melissa Georges as the experimenter throughout.

RESULTS

Preliminary Considerations

Correlation of self-control battery tasks. It was expected that the self-control components would represent independent factors, based on the original factor analysis (Heilbrun et al., 1979) and the asynchrony of component deficit over the course of alcohol addiction (Heilbrun & Abraham, 1987; Heilbrun et al., 1986). This expectation was tested by determining the product-moment correlations between task scores. The eight correlations among tasks representing different components (i.e., Impulse-Control, Internal Scanning, and Self-Reinforcement) fell between $-.08$ and $+.17$, all failing to depart significantly from zero.

Independence of tasks representing different self-control components was replicated.

The other expectation would be that task scores representing the same component would be positively correlated. Impulse-Control was measured by the mirror-tracing and Stroop tasks, and these scores were positively correlated ($r = .34, p < .05$). Similarly, the WCST and UMVT represented different approaches to testing Internal Scanning. Their correlation ($r = .41, p < .01$) was the same as reported in an earlier investigation involving juvenile offenders (Heilbrun et al., 1986). Measures of the same component were positively correlated but far from redundant.

Sex differences. Gilligan (1977, 1982) proposed that differences exist between the sexes in moral thought, although a review of research has given little support to her claim that women score lower within the Kohlberg stage progression (Walker, 1984). Because it was our interest to combine moral-maturity groups over gender in order to increase cell size, preliminary analyses were conducted to consider possible differences between men and women in moral reasoning, self-control, and the relationship between moral reasoning and self-control. No significant differences were found ($ps > .10$) between male and female subjects (a) on the Kohlberg MDQ score, (b) on any of the five individual self-control scores or the overall self-control index used in this study, or (c) in the relationship between moral-reasoning level and self-control. Accordingly, sexes were combined within moral-maturity levels.

Composite self-control score. The five sets of self-control raw scores for the entire sample were transformed independently into standard score distributions with a mean of 50 ($SD = 10$). The transformations were such that higher scores on each task reflected better self-control. Impulse-Control scores represented the average of the mirror-tracing and Stroop standard scores and Internal-Scanning scores the average of UMVT and WCST standard scores. The overall composite self-control score, equally weighted for each factor, represented the sum of these averaged standard scores for the Impulse-Control tasks and the Internal-Scanning tasks plus the standard score for the Self-Reinforcement task.

Assignment to moral-reasoning levels. An effort was made to assign subjects to moral-reasoning groupings in a way that best conformed to Kohlberg's three levels (preconventional, conventional, and postconventional) but still maintained a sufficient number of subjects at the postconventional level to allow for reliable statistical analysis. Gibbs et al. (1982) reported that less than 10% of adults achieve Stage 5 at the postconventional level of morality.

Preconventional status was assigned to 14 subjects (6 women, 8 men) whose average story scores fell below 3.00, the value designating the first stage of the next higher (conventional) level. The conventional-level group included 21

subjects (11 women, 10 men) with average moral-reasoning scores falling between 3.00 and 4.00, values representing the two stages at that level. Postconventional subjects, typically the most difficult to locate in studies of Kohlberg's theory, were defined by average story scores that exceeded 4.00; 10 subjects (4 women, 6 men) met this criterion.

These decision rules guaranteed that all subjects in the preconventional group had responded to some of the stories with preconventional reasoning; by observation, none had provided postconventional responses. Similarly, the rules provided a postconventional group in which all subjects had provided some postconventional reasoning in resolving the dilemmas and for whom inspection indicated no preconventional responses. The conventional group could have been attained by a combination of preconventional and postconventional moral reasoning, but this was not the case. Conventional subjects presented homogeneous responses to the stories that were concentrated within that level. The mean moral-reasoning scores for subjects within the three levels constituted for this study were as follows: preconventional = 2.49, conventional = 3.54, and postconventional = 4.60. Subjects in the preconventional and conventional groups were combined for analysis, because it had been proposed that people at both levels (Stages 1-4) are dependent on external reinforcement for their moral behavior and do not require exceptional self-control.

Table 1 presents the self-control scores for the subjects whose moral convictions and conduct are theoretically more dependent on extrinsic reinforcement and the subjects more dependent on themselves for their moral principles and behavior. Scores are given by individual self-control factors as well as by overall composite, although only the latter was used for statistical analysis. Comparison of the composite self-control scores for the postconventional group ($M = 156.75$) and the conventional/preconventional group ($M = 145.66$) revealed a significant difference, $t(43) = 2.18$, $p < .05$. Postconventional college students

TABLE 1
Self-Control as a Function of Level of Moral Reasoning

Self-Control Factor	Moral Reasoning Level			
	Postconventional ^a		Conventional Preconventional ^b	
	M	SD	M	SD
Impulse-Control ^c	52.20	5.86	47.47	7.54
Internal Scanning ^d	51.45	6.83	49.55	7.39
Self-Reinforcement	53.10	9.26	48.64	10.07
Composite self-control score	156.75	14.12	145.66	13.76

^a $n = 10$. ^b $n = 35$. ^cAverage mirror-tracing and Stroop scores. ^dAverage of UMVT and WCST scores.

did display superior self-control. Parenthetically, the self-control scores for conventional ($M = 145.26$, $SD = 14.58$) and preconventional ($M = 146.25$, $SD = 12.51$) subjects, considered independently, were almost identical.

DISCUSSION

This study considered whether a positive relationship might exist between level of moral reasoning, as measured by the MDQ, and self-control. Evidence revealed that college students with the highest moral-reasoning scores, including some representation of postconventional judgment, performed in superior fashion on a battery of self-control tasks relative to other college students whose moral reasoning was less mature, being concentrated within the conventional and preconventional levels. It had been proposed that because postconventional or principled morality, as specified within Kohlberg's developmental theory, required moral behavior that ran counter to social pressure or legal constraints, more self-control would be required. Conventional or preconventional morality could depend more on extrinsic reinforcement as a source of control. The results confirm that the proposed importance of effective self-control for principled moral behavior is in fact characteristic of subjects who best exemplify principled moral reasoning on the MDQ. This suggests that the MDQ may be an especially useful instrument in predicting postconventional moral behavior in that people who demonstrate the reasoning required for principled action also would be expected to show the self-control that this behavior would seem to demand. Although this association seems to qualify as validation support for the MDQ, it does raise a concern over theoretical accountability given valid prediction of principled moral action. To what extent does principled moral behavior depend on mature ethical judgment or on the self-control that seems required to confront social pressure or the legal system?

Perhaps the most interesting question raised by these results, from a measurement perspective at least, is why high self-control should covary with postconventional moral reasoning. The rationale for the importance of self-control was based upon the requirements for acting on personal principle when the individual expects reprisals or other punishment. Obviously, it takes no special self-control to endorse postconventional values in the protected atmosphere of a questionnaire session. Anyone could claim to be principled as long as it would not be necessary to behave in keeping with such principles. Our guess would be that a positive relation between self-control and moral judgment was found, because the MDQ involves sampling procedures like other projective storytelling instruments. Subjects, in completing the MDQ stories by answering the standard probes, are offering a version of the kind of moral behaviors that to some extent have occurred in the past. Those subjects with better self-control are more likely to have a history that includes some postconventional moral

behavior and are more likely to assign this level of conduct to the central figure in the story.

Finding that principled morality, as measured by the MDQ, is accompanied by the high self-control that would foster individual confrontation with society may be somewhat of a Pyrrhic victory for this instrument. The MDQ stories used in this study involve scenarios in which individuals, acting alone, are required to contemplate defiance of social or legal sanctions to do what they believe is right. Defiant action involving strong moral overtones in today's world is frequently shared with others (e.g., sit-ins, strikes, mass political rallies). What might appear to be moral conduct based on individual principle may be evidence of a somewhat less mature level of morality according to the Kohlberg theory in which the individual is motivated by social approval within the defiant group. Under these circumstances of conventional morality, self-control may be a less necessary commodity. The point here is that the association between principled moral reasoning on the MDQ and superior self-control may only emphasize the narrow range of moral behavior that is actually postconventional and can be predicted from this instrument. Valid prediction of principled moral conduct from the MDQ may be largely restricted to individual action in which self-control should count.

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Alfred B. Heilbrun, Jr.
Department of Psychology
Emory University
Atlanta, GA 30322

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