

## DEVELOPING A FORCED-CHOICE MEASURE OF CONFLICT-HANDLING BEHAVIOR: THE "MODE" INSTRUMENT<sup>1</sup>

RALPH H. KILMANN  
University of Pittsburgh

KENNETH W. THOMAS  
University of California, Los Angeles

This paper describes the rationale and development of a new measure of five interpersonal conflict-handling modes (competing, collaborating, compromising, avoiding, and accommodating), which attempts to control for the social desirability response bias. The instrument is entitled: "Management-of-Differences Exercise," or the MODE instrument. The results of this study indicate that the new instrument significantly reduces the social desirability bias for overall population tendencies in comparison to three other conflict behavior instruments, although all four instruments may still be susceptible to some individual tendencies in this response bias. This study also investigated other aspects of substantive validity and structural validity. Lastly, this paper presented emerging evidence on external validity, which, while encouraging, suggests the need for continuing research efforts to investigate this aspect of validity for the new MODE instrument.

IN the past few years, a five-category scheme for classifying interpersonal conflict-handling modes has emerged in social science research. First introduced by Blake and Mouton (1964), and reinterpreted by Thomas (1976), the scheme includes the five modes of competing, collaborating, compromising, avoiding, and accommodating.

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One of the advantages of this classification scheme is that the five specific modes reflect independent dimensions of interpersonal conflict behavior. As interpreted by Thomas (1976), the scheme is based upon the two separate dimensions of cooperation (attempting to satisfy the other person's concerns) and assertiveness (attempting to satisfy one's own concerns): competing is assertive and uncooperative, collaborating is assertive and cooperative, avoiding is unassertive and uncooperative, accommodating is unassertive and cooperative, and compromising is intermediate in both cooperativeness and assertiveness.

Several research studies have explored the relationships between the five conflict-handling modes and social and organizational variables (e.g., Blake and Mouton, 1964; Lawrence and Lorsch, 1967; Burke, 1970; Aram, Morgan, and Esbeck, 1971; Thomas, 1971; Thomas and Walton, 1971; Renwick, 1972; Ryan and Clemence, 1973). However, recent work by Thomas and Kilmann (1973, 1975) raises some major issues concerning the validity of existing instruments which purport to measure subjects' dispositions towards the five conflict-handling modes. The instruments examined were those developed by Blake and Mouton (1964), Lawrence and Lorsch (1967), and Hall (1969). Briefly, the results by Thomas and Kilmann indicate that the instruments are strongly susceptible to social desirability biases, that the scores on the Hall and Lawrence-Lorsch instruments are nonipsative, that reliabilities are modest, that the Blake-Mouton scores on competing and compromising are unstable, that the accommodating scores of the three instruments measure somewhat different constructs, and that the measures of compromising are of dubious validity.

Of these results, those concerning social desirability were quite striking. Thomas and Kilmann found that a sample's average responses were overwhelmingly responsive to the social desirability of the conflict-handling modes and their phrasings: on the average, more than 80% of the variance on items and over 90% of variance on mode scores could be accounted for in terms of the social desirability values of the items in the three instruments, as rated independently by another group. It was also noted that the social desirability of an individual's personal conflict behavior varied with his tendency to evaluate other personal qualities favorably or critically. Thomas and Kilmann concluded that these social desirability dynamics would tend to distort experimental results in rather predictable ways. First, the mean self-report scores on the more desirable conflict-handling modes would tend to be elevated. Second, ratings of desirable (undesirable) conflict-handling modes would tend to correlate with ratings of other desirable (undesirable) attributes as part of a halo effect (Thorndike, 1920). These conclusions led the authors to question several previous findings using these instruments.

Because of these difficulties with existing instruments, the authors decided to give special attention to developing an instrument which would more validly assess the five modes—particularly by minimizing the large social desirability factor found in other instruments. Unless such an instrument could be developed, the authors felt that further research investigations in the field of conflict management would be severely limited since most substantive findings would be subject to alternative explanations (i.e., a social desirability bias or a halo effect).

The present study thus presents the development and initial validation of the "MODE" instrument (Management-of-Differences Exercise) which attempts to assess these same five conflict-handling modes. Validation of the MODE instrument sought to achieve: (a) substantive validity (defining the pool of relevant items for the instrument and the selection of items, testing the internal consistency and reliability of items identified with each dimension), (b) structural validity (that the format of the instrument and the calculation of individual scores is consistent with the intended definition of conflict-handling modes), and (c) external validity (investigating the expected relationships between the five conflict-handling modes and conflict behavior in a variety of situations, including relationships with other individual traits and dispositions). This is the validation framework suggested by Loevinger (1967), which incorporates the notions of reliability and construct validity discussed by Peak (1953), Cronbach and Meehl (1967), and Campbell (1967). Further, because of the existence of the three other instruments which purport to assess the same five conflict-handling modes, this validation study utilizes the comparison of these instruments with the new MODE instrument on a number of reliability and validity considerations.

#### *Substantive Validity: Designing the Mode Instrument*

Major emphasis was given to controlling social desirability in designing the MODE instrument for substantive validity, following the general strategy used by Edwards (1953, 1957). In designing the Edwards Personal Preference Schedule, Edwards (1959) paired "items indicative of different traits in terms of their social desirability scale values. If the subject is then forced to choose between the two items, his choice obviously cannot be upon the basis of the greater social desirability of one of the items" (Edwards, 1953).

The present study benefited from earlier criticisms of Edwards' strategy, however. Edwards (1957) noted difficulties in securing pairs of statements which were exactly matched on social desirability. In research on items from the EPPS, Corah, Feldman, Cohen, Gruen, Meadow, and Ringwall (1958) found that subjects could readily

choose one member of most pairs as more desirable. Moreover, there was a high correlation ( $r = .88$ ) between the proportion of subjects selecting one member of a pair as most desirable and the proportion of another set of subjects which selected that item in self-assessment, indicating the EPPS did not in fact control for social desirability. Feldman and Corah (1960) reasoned that this difficulty might result from imprecision in the initial matching of items and/or alteration in social desirability which occurs when items are viewed in the context of pairs. Accordingly, those authors recommended a stepwise design procedure of selecting items which had been individually rated nearly equal in social desirability, testing them in pairs, and then revising the items according to that testing. A variation of that stepwise procedure was used in the development of the present instrument.

The first operation was the generation of lists of items that operationalized the five conflict-handling modes. Specifically, "competing" items were generated to reflect an individual trying to win his own position; "collaborating" items were related to an individual involving the other in working out a solution, getting concerns out in the open, and being concerned with satisfying both his own and the other's wishes; "avoiding" was operationalized as an individual trying to avoid creating unpleasantness for himself, and trying to postpone or not worry about issues; "accommodating" items were phrased in terms of an individual's preoccupation with the other's welfare rather than his own; and "compromising" was related to either an individual trying to find a middle ground position, or to an exchange of concessions.

Initially, 10 statements were generated to describe each of the five modes. The 50 statements were then rated on social desirability, using Edwards' (1953) 9-point scale. Since perceptions of social desirability appear to be extremely similar across American subcultures (Klett and Yaukey, 1959) the selection of a sample for these ratings was not considered crucial. A convenience sample of 33 graduate students in management at UCLA was selected.

A first version of the instrument was then constructed by pairing statements whose mean ratings of social desirability were nearly identical—i.e., within a few hundredths of a scale unit. Each mode was paired with each other mode three times, for a total of 30 distinct pairs. Items describing a given mode were evenly distributed between the "A" or "B" choice over pairs, and pairs were randomly distributed throughout the instrument. Instructions were drafted which asked subjects to select the statement in each pair which best described their own response to situations in which they found that their wishes differed from the wishes of another person.

At this point, rather than testing the social desirability of paired items as Feldman and Corah (1960) advised, we chose to test the paired items for a 50-50 response distribution. Our rationale was twofold. First, it was felt that this procedure would pick up significant shifts in social desirability which stemmed from pairing, since the resulting differential in social desirability between statements would tend to be reflected in the predominant endorsement of one statement over the other. Second, having attended to social desirability, it was reasoned that a further contribution to eliminating the correlation between social desirability and response frequencies could be made by making the response frequencies on all pairs approximately the same—i.e., 50-50.

The first version of the instrument was administered to a sample of 35 professionals involved in a management training program operated through the UCLA extension. Their responses indicated that 7 of the 30 pairs deviated significantly from a 50-50 split (at  $p < .05$ ). Consequently, revised pairs were generated as candidates to replace these seven pairs. Many revised pairs were formed by adding modifiers—"frequently," "occasionally," etc.—to old sentence stems to adjust response distributions. The revised pairs were administered to a sample of 40 graduate students in management at UCLA. Replacement pairs were then selected which did not deviate from a 50-50 split for this sample.

After these replacements, the resulting instrument was entitled the "Management-of-Differences Exercise," or "MODE Instrument" (Thomas and Kilmann, 1974).<sup>2</sup> Administration time, including self-scoring, averaged approximately 12 minutes, compared with approximately 50 minutes for the Hall instrument, 7 minutes for the Lawrence-Lorsch and 1 minute for the Blake-Mouton (which simply asks subjects to rank-order five statements).

An individual's score on each of the five conflict-handling modes is simply the number of times which statements representing that mode are selected over other statements. Since each mode is paired with each other mode three times, the score for a given mode can range from 0 to 12.

### *Substantive Properties of the Mode Instrument*

Data on the MODE Instrument were collected along with the data reported earlier by Thomas and Kilmann (1973) on the instruments

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<sup>2</sup> The Thomas-Kilmann Conflict MODE Instrument can be obtained through XI-COM, Inc., Sterling Forest, Tuxedo, New York 10987.

designed by Blake and Mouton (1964), Lawrence and Lorsch (1967), and Hall (1969). Briefly, the study used 115 students in 3 sections of a graduate course in Behavioral Science for Management at the University of Pittsburgh. Eighty-six subjects completed packages of instruments consisting of the four conflict-handling mode instruments arranged in random order, followed by three response style measures. After an interval of four weeks, these subjects again completed the conflict instruments, with the order of instruments re-randomized for individual subjects. The remaining 29 subjects rated the individual statements in each of the conflict instruments according to their social desirability.

### *Social Desirability*

*Social desirability over items.* For each of the 30 pairs of statements, a social desirability differential was calculated by subtracting the mean social desirability rating of the "B" item from that of the "A" item, as rated by 29 subjects. These differentials were then correlated with the proportion of the remaining 86 subjects who selected the "A" over the "B" item in self-assessment, yielding a Pearson coefficient of .21 (nonsignificant for  $n = 30$  pairs). This correlation is in marked contrast to the equivalent correlations for the other conflict-handling instruments reported by Thomas and Kilmann (1973): .94 for the Blake-Mouton ( $p < .05$ ); .88 for the Lawrence-Lorsch ( $p < .001$ ); and .87 for the Hall ( $p < .001$ ). Stated differently, only 4% of the variance in this sample's aggregate self-ratings on the items of the MODE Instrument can be accounted for by the social desirability value of the items, whereas for the other three instruments, the average is over 80%.

*Social desirability over modes.* Average social desirability differentials between statements and their paired mates were calculated for the 12 statements representing each of the five conflict-handling modes. These values were correlated with average self-report scores across the five modes, yielding a Pearson coefficient of .41 (non-significant for  $n = 5$ ). Again, this figure contrasts markedly with comparable correlations reported by Thomas and Kilmann for the other instruments: .94 for the Blake-Mouton instrument ( $p < .05$ ), .96 for the Lawrence-Lorsch ( $p < .01$ ), and .98 for the Hall ( $p < .01$ ). Stated in terms of variance, approximately 17% of the variance among aggregate scores on the five modes in the MODE Instrument can be accounted for by social desirability in this sample, whereas the average for the other three instruments is over 90%.

*Individual differences in social desirability.* The subjects who rated

themselves on the conflict instruments also completed two measures of social desirability response set: the Edwards Social Desirability Scale (Edwards, 1961) and the Crowne-Marlowe Social Desirability Scale (Crowne and Marlowe, 1960). Both instruments measure the frequency with which subjects endorse socially desirable statements as descriptive of themselves.

Table 1 shows correlations between the two measures of social desirability response set and the five mode scores for each of the four conflict instruments. From these correlations, it cannot be said that the MODE instrument "guards" against personality tendencies to distort self-descriptions any better than the other instruments. There is a consistent tendency for individuals who describe themselves positively on either social desirability scale to rate themselves more collaborating on all four instruments. There is also a tendency for individuals who describe themselves positively on the Edwards Social Desirability Scale to score lower on avoiding on the four instruments.

In view of the construction of the MODE instrument and the above findings of reduced social desirability impact upon population tendencies, these findings are surprising. In constructing items for the MODE instrument, the authors encountered the greatest difficulty in phrasing less desirable collaborating statements and more desirable avoiding statements. One interpretation of the present finding may be that individuals who are most sensitive to issues of social desirability are still able to discriminate the desirability and undesirability of these two modes despite our phrasings.

However, other interpretations are also possible. For example, Thomas and Kilmann (1975) observe that it is not clear precisely what

TABLE 1  
*Correlations between Conflict-Handling MODE Scores on Four Instruments and the Edwards and Crowne-Marlowe Social Desirability Scales (N = 86)*

Conflicting-handling MODE Scores	Correlations with Edwards S.D.S.				Correlations with Crowne-Marlowe S.D.S.			
	MODE	L-L	Hall	B-M <sup>a</sup>	MODE	L-L	Hall	B-M <sup>a</sup>
Competing	.04	-.06	.13	.00	-.05	-.07	-.05	-.12
Collaborating	.26*	.35***	.27*	.16*	.21*	.24*	.10	.23***
Compromising	.18	.15	.17	.13	.08	-.14	-.11	-.04
Avoiding	-.31**	-.20	-.26*	-.16*	-.08	-.02	-.03	-.07
Accommodating	-.16	-.03	-.18	-.12	-.18	.36***	.11	-.06

<sup>a</sup> Blake-Mouton correlations are Kendall's Tau, others are Pearson correlations. Since B-M data are ranks, signs have been changed so that positive correlations now indicate positive relations between S.D.S. scores and endorsement of modes.

\*  $p < .05$ , two-tail.

\*\*  $p < .01$ , two-tail.

\*\*\*  $p < .001$ , two-tail.

the two social desirability scales are measuring. The correlation between the two instruments is only  $+.21$  in the present study, which suggests that they are measuring largely different things. The Crowne-Marlowe appears to be assessing response distortions based upon the need for approval (Crowne and Marlowe, 1960). Socially desirable responses on this measure require subjects to *deny* undesirable traits which nearly everyone has. On the other hand, inspection of the Edwards scale items, taken from the MMPI, suggests that they may be partially assessing self-regard.

It is also possible that a substantive factor may be causing a relationship between these social desirability scales and the conflict mode instruments. In particular, people who feel most confident about themselves (and respond accordingly on the social desirability scales), may tend to collaborate more with other individuals and to avoid less—the two modes which also happen to be the most and least socially desirable over the four conflict-handling instruments, respectively. Such alternative explanations are not likely with the social desirability analysis involving correlations between aggregate responses in the conflict instruments and *independent* ratings of the desirability of the items on the instruments. This latter analysis, as was suggested, has given the most support to the MODE instrument relative to the other conflict instruments.

#### *Reliability and Concurrent Test Validity*

*Reliabilities.* Table 2 contains internal consistency coefficients (coefficient alpha, Cronbach, 1951) and test-retest reliabilities for the MODE instrument. On the whole, internal consistency coefficients are in the moderate range with the exception of the accommodating mode. However, these coefficients compare well to those of the other instruments: The average alpha coefficient for the MODE instrument is  $.60$ , while the average for the Lawrence-Lorsch and Hall instruments were  $.45$  and  $.55$ , respectively.

TABLE 2  
*Internal Consistencies and Test-Retest Reliabilities for the MODE Instrument*

Modes	Internal Consistency ( $N = 86$ )	Test-Retest Reliability ( $N = 76$ )
Competing	.71	.61
Collaborating	.65	.63
Compromising	.58	.66
Avoiding	.62	.68
Accommodating	.43	.62

The test-retest reliabilities shown in Table 2 are moderately high and consistent across the modes. These coefficients also compare favorably with the other instruments: the average test-retest coefficient for the MODE instrument is .64, while the average for the Lawrence-Lorsch instrument is .50, the Blake-Mouton .39, and the Hall .55. Thomas and Kilmann (1973) noted that compromising showed least stability of the five mode scores across the other three instruments, the average test-retest coefficient being only .29. For the MODE Instrument, however, the coefficient is .66, a considerable increase in stability.

*Concurrent test validities.* Table 3 contains intercorrelations between the MODE Instrument and the other three conflict-handling instruments on each of the five conflict modes. Also shown for each mode are the average correlation between the MODE instrument and the other three instruments, and the average intercorrelations among those three instruments as reported by Thomas and Kilmann (1973). Since the modest size of some of these correlations are partially due to limited reliabilities, the correlations were also corrected for attenuation (Nunnally, 1967) to provide an estimate of the overlap between the non-error portion of these scores. The corrected correlations are shown in parentheses.

In general, the correlations provide evidence of convergence. For example, each of the MODE instrument scores correlates significantly with the corresponding score on the Hall instrument. The unadjusted intercorrelations involving the MODE Instrument are moderately high for competing, modest for collaborating, avoiding and accom-

TABLE 3  
*Pearson Correlations between the MODE Instrument and Other Instruments on the Five Conflicting-Handling Modes. (N = 86)*

Modes	Correlations with other instruments			Average Correlations with MODE instrument	Average Intercorrelations of other instruments
	Blake-Mouton	Lawrence-Lorsch	Hall		
Competing	.59** (1.00)	.35*** (.69)	.41*** (.62)	.45*** (.77)	.40*** (.92)
Collaborating	.23* (.38)	.21* (.41)	.22* (.32)	.22* (.37)	.40*** (.74)
Compromising	.11 (.39)	.02 (.04)	.24* (.47)	.12 (.30)	.03 (.09)
Avoiding	.09 (.17)	.32** (.60)	.39*** (.80)	.27** (.52)	.31** (.71)
Accommodating	.16 (.35)	.17 (.34)	.27** (.54)	.20* (.41)	.16 (.29)

Note—Correlation coefficients in parentheses have been corrected for attenuation (Nunnally, 1967)

\*  $p < .05$ , one-tail.

\*\*  $p < .01$ , one-tail.

\*\*\*  $p < .001$ , one-tail.

modating, and low for compromising. When these intercorrelations are corrected for attenuation, the results indicate considerable agreement between the competing score on the MODE Instrument and the other three instruments, while only modest agreement on the other four conflict modes. For these latter four modes, then, the instruments seem to be assessing somewhat different substantive aspects or interpretations of the modes.

*Structural Validity: Assessing the Relative  
Frequency of Conflict-Handling Modes*

“Structural validity” refers to assuring that the format of the instrument and the calculation of individual scores is consistent with the intended definition of the concept being assessed (Loevinger, 1967).

The authors have argued (Thomas and Kilmann, 1973) that the primary use of the other three instruments by researchers is to assess the *relative* frequency of the five conflict-handling modes rather than their absolute frequency. “Relative frequency” involves conclusions regarding the approximate proportion of total conflict-handling behavior devoted to each mode, the frequency of each mode relative to the others, the order of frequency of the modes, etc. For example, Hall (undated) makes it clear that his interest is in determining the “response family hierarchy” of conflict modes for an individual—their relative strength as predispositions. By contrast, the absolute frequency of a given mode is a product of both its relative frequency and the total frequency of conflict in a given setting.

According to the underlying theory upon which the instruments are based, the five modes are mutually exclusive and exhaustive. Thus, if the instruments assess the relative frequency of the modes, the five mode scores on an instrument should be approximately ipsative—that is, a higher score on one mode would mean a correspondingly decrease across the scores of the other modes. The average intercorrelation of scores on an ipsative instrument with  $n$  scales will be equal to  $-1/(n - 1)$  (Radcliffe, 1970). Thus, if the five mode scores were strictly ipsative, the average intercorrelation between modes would be  $-.25$ . The scoring format of the MODE instrument, like that of the Blake-Mouton instrument, makes the mode scores ipsative, assuring an average intermode correlation of  $-.25$ . By contrast, Thomas and Kilmann (1973) found that the Lawrence-Lorsch and Hall instruments showed average intermode correlations of  $.12$  and  $.06$ , which were significantly greater than  $-.25$  ( $p < .001$  and  $p < .01$ , respectively). On these instruments, then, a higher self-rating on one mode did not tend to be accompanied by correspondingly lower self-ratings across the other modes. In fact

there was a non-significant tendency for the other modes to *increase* on the average. When Burke (1970) asked 74 subjects to use the Lawrence-Lorsch items to rate conflict-handling behavior in relationships with supervisors, the average intercorrelation of the modes was in fact significantly greater than zero ( $r = .25, p < .05$ , two-tail). This intercorrelation was comparable in size to the correlations obtained between the conflict-handling modes and Burke's other measures.

Thomas and Kilmann suggest that these interscale correlations may result from the intrusion of two factors into subjects' ratings—(a) perceptions of the *amount* of conflict present (and hence the absolute frequency of the five conflict modes) and (b) subjects' constant errors in using the response scales. Because of its ipsative scoring format, the MODE instrument avoids the intrusion of these factors.

### *External Validity: Predicting Relationships with Conflict Behavior*

Evidence on external validity is generally the most rigorous and demanding test of the usefulness of an instrument in empirical research. Investigations of external validity are also an ongoing process of applying the instrument in new and different settings while substantive and structural validity can generally be ascertained in the early stages of instrument construction.

To date, the MODE instrument has only been applied in a few settings other than the research already reported in this paper, and consequently, we do not have as yet the kind of results which would give strong evidence for external validity. Nevertheless, in this section we can briefly summarize some studies which do give some tentative external validity to the MODE instrument, realizing that many more studies will have to be conducted.

The external validity data reported in this section consists of the following: (1) mean scores on the five modes across students in different levels of education and across sex differences, (2) an empirical study of the two dimensions which theoretically define the five conflict-handling modes (i.e., assertiveness and cooperativeness), and (3) meaningful correlations of the MODE instrument with other personality tests.

### *Educational Samples*

A recent study by Jamieson and Thomas (1974) administered the MODE instrument along with other measures to students in three levels of education: high school, undergraduate, and graduate. In this study the instructions to the MODE instrument were modified to have

students respond with respect to their conflict behavior toward teachers, rather than toward others in general. Table 4 shows the mean MODE instrument scores for this sample, broken down by sex and level of education. For comparison, the last column of the table also shows the mean scores of a sample of 196 graduate students in the Graduate School of Management, UCLA, under standard instructions—i.e., rating their conflict behavior towards people in general.

Although the samples are not strictly comparable, comparison of the last two columns suggests that graduate students rated themselves as generally less assertive in dealing with teachers than with others in general—as significantly lower in competing and collaborating and higher in avoiding and accommodating. In fact, students of both sexes at all three levels of education uniformly rated themselves higher on avoiding under these “teacher” instructions than any group to which we have given the MODE instrument under standard instructions. Jamieson and Thomas suggest that the norms and structure in most schools generally reinforce the students to play a passive role with their instructors (i.e., avoiding conflict), regardless of students’ typical dispositions (i.e., towards others in general).

Table 4 also shows the MODE scores for males versus females in the same study. Consistent with Thomas’ (1971) findings in inter-departmental relations, males rated competing significantly higher than females ( $p < .05$ ), while females reported compromising significantly more than males ( $p < .01$ ). These latter results are also consistent with Terhune’s (1970) conclusions from the gaming literature.

### *Support for the Two-Dimensional Model*

In a recent research effort by Ruble and Thomas (1976), two studies were conducted to investigate the meaningfulness of the basic two-dimensional scheme for classifying the five conflict-handling modes according to cooperativeness and assertiveness. In Study I, 150 subjects engaged in a negotiation task. Each subject rated his opponent’s use of five conflict-handling modes and also described that person on a semantic differential. A factor analysis of the semantic differential ratings yielded an evaluative factor and a dynamism factor. Ratings of the other’s five conflict-handling modes were then collapsed into indices of cooperation and assertiveness based upon their hypothesized location along these two dimensions. The index of cooperation was found to be correlated with the evaluative factor ( $+ .61$ ;  $p < .001$ ) but not with the dynamism factor ( $-.16$ ; n.s.). In contrast, the index of assertiveness was correlated with the dynamism factor ( $+ .45$ ;  $p < .001$ ) but not the evaluative factor ( $-.15$ ; n.s.). Thus the two under-

TABLE 4  
*Mean Conflict-Handling Mode Scores of Students, with Breakdowns by Sex and Level of Education*

	Toward Teachers				Toward Others in General	
	SEX		High School N = 103	LEVEL Under-Graduate N = 55	Graduate N = 41	Graduate N = 196
	Males N = 87	Females N = 118				
Competing	5.40	4.57*	5.02	4.90	4.72	5.94 <sup>††</sup>
Collaborating	5.38	5.93	5.79	5.73	5.42	6.46 <sup>†</sup>
Compromising	6.18	6.99**	6.80	6.62	6.32	6.39
Avoiding	7.20	7.08	6.96	7.36	7.23	5.93 <sup>††</sup>
Accommodating	5.86	5.92	5.91	5.68	6.14	5.20 <sup>††</sup>

\* Difference between males and females at the .05 level (2 tail).

\*\* Difference between males and females significant at the .01 level (2 tail)

<sup>†</sup> Difference between graduate samples (last two columns) significant at the .05 level (2 tail)

<sup>††</sup> Difference between graduate samples (last two columns) significant at the .01 level (2 tail).

lying dimensions of assertiveness and cooperativeness appeared to have relatively independent connotational meaning for these individuals. In Study II, 65 subjects completed semantic differentials in response to hypothetical conflict-handling behaviors used by another person. A factor analysis again identified evaluative and dynamism factors in the semantic differential ratings. The mean ratings on the evaluative and dynamism factors for the five conflict-handling modes were generally consistent with expectations based on the two-dimensional model. Thus, two studies using different designs yielded rather consistent results supporting the two-dimensional model providing some construct validity for the meaningfulness of these two dimensions and the five conflict-handling modes.

#### *Correlations with Other Personality Instruments*

An exploratory study by Kilmann and Thomas (1975) yielded some intuitively meaningful relationships between MODE instrument scores and Jungian personality dimensions (Jung, 1923), as measured by the Myers-Briggs Type Indicator (Myers, 1962). As part of the study, which used 76 graduate students in management at the University of Pittsburgh, scores on the conflict-handling modes were combined to yield indices of the integrative and distributive dimensions of conflict behavior discussed by Walton and McKersie (1965). "Integration" refers to attempts to increase the realization of both parties' objectives; while "distribution" refers to attempts to realize ones own objectives at the other party's expense. Indices were calculated by

combining the scores on the two conflict modes hypothesized by Thomas (1976), to be extreme on each of these dimensions: the integrative index was formed by subtracting avoiding from collaborating, while the distributive index subtracted accommodating from competing. The integration index was found to be positively correlated with the introversion-extraversion dimension, ( $r = .29, p < .01$ ) indicating, for example, that a more introverted individual would be more likely to avoid than collaborate in conflict situations. The distribution index was found to be negatively related to the thinking-feeling dimension ( $r = -.38, p < .001$ ), indicating, for example, that a more feeling individual would be more likely to accommodate than compete. As a check for consistency, the Lawrence-Lorsch and Hall instruments, which were also included in the study, showed similar relationships with these personality dimensions.

Data is also available on the correlations between MODE scores and Machiavellianism scores in a sample of 43 graduate students in management at UCLA. The latter measure indicates to what extent the respondent believes that people can be manipulated (Christie and Geis, 1970). While there is a weak tendency for Mach scores to correlate negatively with accommodating scores, the strongest association is between compromising and Mach scores ( $r = +.38; p < .01$  for  $N = 43$ ). This seems consistent with the image of the Machiavellian as the "practical maker of deals—the person who is able to "rise above his principles" to arrive at the best settlements he can get.

### *Summary and Conclusions*

The present study has described the design of a new instrument to measure five conflict-handling modes. Several studies have been reported which investigated the substantive, structural, and external validity of the MODE instrument, with particular attention given to its comparison with the other three instruments designed to assess the same conflict-handling modes (Blake-Mouton, Lawrence-Lorsch, Hall). Reasonable support was found for substantive validity for the new MODE instrument, especially its ability to control for overall population tendencies in social desirability. By and large, the MODE instrument also compared well on the criteria of internal consistency and test-retest reliabilities. In addition, the forced-choice format appears to contribute to the instrument's structural validity.

The major concern of research instruments is generally external validity which is also the most difficult to rigorously assess. The present study, while admittedly an early documentation of the MODE instrument, reported on a number of findings giving some support to

the external validity of the MODE instrument. These findings indicate that the instrument can discriminate expected differences in male versus female respondents, and differences between student behavior towards teachers versus generalized others. The MODE instrument also exhibited meaningful correlations with certain personality measures. Finally, independent support was cited for the meaningfulness of the two-dimensional model which defines the five conflict-handling modes.

This paper concludes by recommending further tests of the MODE's external validity. One such test will be to utilize the instruments in studies which include *independent* measures of behavior and of conflict outcomes which are not affected by, or which are controlled for, social desirability. The four instruments can then be compared more straight-forwardly on their relative ability to document and explain relationships, and on the extent to which social desirability biases in the other three instruments confound or contaminate their assessment in comparison to the MODE Instrument.

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