

FAMILY ADAPTABILITY AND COHESION EVALUATION SCALES:
COUPLE FORM (FACES II-COUPLE FORM): ITS VALIDITY
AND RELIABILITY IN A MIDWESTERN SAMPLE

By

Bruce P. Kuehl

B.A. University of Wisconsin-Green Bay, 1982

A MASTER'S THESIS

submitted in partial fulfillment of the

requirements for the degree


MASTER OF SCIENCE

Department of Family and Child Development

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1984

Approved:


Major Professor

LD
2668
.T4
1984
K83
c. 2

AL1202 958755

TABLE OF CONTENTS

	Page
ACKNOWLEDGMENTS.....	iii
CHAPTER I: INTRODUCTION AND LITERATURE REVIEW.....	1
A Discussion of Reliability and Validity As They Relate to Measurement.....	3
The Circumplex Model of Marital and Family Functioning: A Theoretical Template for the FACES Scales.....	7
Table 1: Family Cohesion Dimension.....	9
Table 2: Family Adaptability Dimension.....	10
Figure 1: Circumplex Model.....	11
Development of FACES Scales.....	14
Hypotheses.....	17
CHAPTER II: METHODOLOGY.....	23
Sample Selection and Study Procedure.....	23
The Instruments.....	24
Table 3: Family Environment Scale.....	27
CHAPTER III: RESULTS.....	32
Demographic Description of the Sample.....	32
Comparability of Norms.....	35
Table 4: Family Life Cycle.....	34
Reliabilities.....	37
Table 5: Alpha Reliabilities.....	38
Concurrent Validity.....	39
Table 6: Pearson Correlations.....	40
Table 7: Pearson Correlations Controlling for Social Desirability.....	41

Table 8: General Nonlinearity.....	43
Table 9: General Nonlinearity Controlling for Social Desirability.....	44
Table 10: Specific Nonlinearity.....	46
Table 11: Specific Nonlinearity Controlling for Specific Desirability.....	48
Discriminate Validity.....	47
Table 12: Discriminant Validity.....	51
Construct Validity.....	50
Table 13: Pearson Correlation, General and Specific Nonlinearity, Including Controlling for Social Desirability.....	52
CHAPTER IV: DISCUSSION, IMPLICATIONS, AND CONCLUSION.....	55
Discussion.....	55
Figure 2: Shape of Distributions.....	60
Implications.....	64
Conclusion.....	67
Footnotes.....	70
References.....	71
APPENDIX A: The Questionnaire.....	74
APPENDIX B: The Cover Letter.....	87
APPENDIX C: The Postcard.....	89
APPENDIX D: Scoring Grid and Cutting Points for FACES Scales.....	91
APPENDIX E: Formula for General Nonlinearity.....	93
APPENDIX F: Formula Used in Discriminant Validity Section of Study.....	95

ACKNOWLEDGMENTS

Thank you Drs. Walter Schumm, Candyce Russell, and Anthony Jurich for sharing your expertise and providing me with continuous support throughout this project. Thank you Dr. Bollman for the Family Center's support during this project.

Thank you mother and father for your love, for your pride, for your tenacious work ethic which has allowed me to finish this thesis. Thank you my brother and sisters for being my three best friends. Thank you grandmother for your gentleness and faith.

Thank you Ted and Helen for your confidence and unending support. Thank you, especially, for making Julie. You are indeed a family of artists.

Thank you for Julie for being my wife. Without your unconditional love I would have never taken the risks which brought me to do this thesis. Without your support, patience, and understanding I would have never finished it.

You all have my greatest admiration.

CHAPTER I:
INTRODUCTION AND LITERATURE REVIEW

The Family Adaptability and Cohesion Evaluation Scale-Couple Form (FACES II-Couple Form) by Olson, Portner and Bell (1983) is designed as a marital assessment instrument. This scale is a modified version of the FACES II family assessment scale (Olson, Portner & Bell, 1982). Both scales are based on the Circumplex Model developed by Olson, Sprenkle and Russell (1979). The FACES scales are designed to help clinicians and researchers better distinguish those family or marital systems which are operating in functional of dysfunctional regions of the Circumplex Model (Olson et al., 1979).

The Circumplex Model is the result of a conceptual clustering of concepts from family sociology, psychiatry and other social science literature. This clustering was done in an attempt to delineate any underlying dimensions which might be present in the plethora of concepts found in the family field. This clustering revealed two central dimensions of family systems behavior, which are integrated into the Circumplex Model. The two central dimensions which emerged from this conceptual clustering are cohesion and adaptability. The first dimension, family cohesion, is conceptually defined as "the emotional bonding that family members have toward one another," (Olson, McCubbin, et al., 1983, p. 48). Family adaptability is conceptually defined as "the ability of a marital or family system to change its power structure, role relationships, and relationship rules in response to situational and developmental stress," (Olson, McCubbin, et al., 1983, p. 48). The FACES scales are made up of items designed to measure family functioning along these two dimensions.

Along the cohesion dimension the model predicts that families and marriages are likely to experience difficulty if members are very distant from one another (disengaged), or are extremely involved with one another (enmeshed). At the same time, along the adaptability dimension, those families and marriages that are likely to experience difficulty are those which cannot make adequate adjustments to situational or developmental stress (rigid), or those which are changing rapidly without adequate regulation or control (chaotic). According to the Circumplex Model, those families or marriages which are able to operate within the more balanced ranges of the cohesion and adaptability dimensions are more likely to be operating functionally. Those families which are operating at the extremes are hypothesized to have more difficulty coping with developmental and situational stressors. The Circumplex Model is a curvilinear model in that optimal functioning is predicted in the balanced or mid-regions of each dimension. In this model it is possible to be "too close" or "too flexible."

Olson and his colleagues (1982) developed the FACES II family form to measure the two major dimensions of the Circumplex Model in a relatively brief, easily administered pencil and paper format. An earlier version of the scale (FACES I) had been abandoned because of its length. The FACES II scale has been normed on a representative sample of 2,082 parents and 416 adolescents. The scale has demonstrated a Cronbach Alpha reliability of .90 and a test-retest reliability of .84. A factorial validity has been demonstrated with loadings ranging from .10 to .61 across the various subscales. However, other demonstrations of validity are lacking, and this is a major weakness of the Scale at this time.

The Couple Form of FACES II is revised to omit all references to children. However, Olson, Portner and Bell (1983) provide no empirical data

on its reliability and validity. The design and item content parallels that of the FACES II family form with minor changes in the wording of items so that they apply specifically to the couple system. This study is designed to collect empirical data on the psychometric qualities of the FACES II-Couple Form, including the appropriateness of using the distributions and cut-off points published for the FACES II family form with the Couple Form. In addition, data will be collected on the concurrent validity, discriminant validity, and construct validity of the FACES II-Couple Form.

A Discussion of Reliability and Validity As They Relate to Measurement

Assessment instruments must possess two basic characteristics if they are to be considered sound measuring instruments. These characteristics are reliability and validity (Carmines & Zeller, 1979; Carmines & Zeller, 1980; Sellitz et al., 1976; and Helmstadter, 1964). In a general sense, reliability is concerned with the degree to which an instrument consistently or repeatedly measures whatever it is intended to measure, while validity is concerned with how accurately the instrument measures what it is intended to measure. More specifically, reliability and validity are both concerned with measurement error. Two particular types of measurement error are of importance here: unsystematic or random error, and systematic or constant error (Helmstadter, 1964).

Reliability is particularly concerned with random error (Carmines & Zeller, 1980). Random error refers to the effect that random, chance disturbances will have upon a person's true score, with regard to how his or her obtained score varies around a hypothetical true score. Since these errors are random, we would expect that errors in a positive direction would be as likely to occur as errors in a negative direction, and therefore cancel each

other out over the long run. Such random errors may occur in the form of differences in the disposition of the test taker from one time to the next, or the conditions under which the instrument is administered. Of more concern to this study, sources of error may be attributable to the instrument itself, such as ambiguity in the wording of the items or the inclusion of items which do not clearly address the variable in question.

As such, there are different methods of assessing the amount of error in measurements (Carmines & Zeller, 1979). The test-retest method is concerned with the stability of an instrument across time, and compares the scores of the same instrument given to the same group of people after a period of some time has elapsed. It is presumed that if the instrument is a consistent measure of a true variable, the responses to the instrument will correlate across time. The alternate form method is similar to the test-retest method in that it is designed to measure the same variable, however, it is concerned with the equivalence of different forms of the same instrument. Rather than administering the same instrument twice, the alternate form of the instrument can be administered, expecting that if the two forms are measuring consistently, the two scores will be highly correlated. High correlations of the instrument(s) across time and between alternate forms is used as an indication of low disturbance due to measurement error, and thus high reliability.

Another form of reliability is concerned with the items themselves and how consistently they measure the variable they are supposed to measure. This is referred to as the homogeneity or internal consistency of test items. Tests such as factor analysis, splithalf, Cronbach's Coefficient Alpha, Hoyt reliability, and Kuder-Richardson are methods of assessing the internal consistency of instruments. If all of the items within an instrument

intended to measure a specific variable correlate highly with one another, the instrument is said to have high internal consistency.

While reliability is concerned with random error, Carmines and Zeller (1979) state that "nonrandom error lies at the very heart of validity," (p. 14). Again, validity is concerned with how accurately an instrument measures what it is intended to measure and does not measure what it is not supposed to measure. Systematic, nonrandom error threatens validity in that it includes a measure of what the instrument is not supposed to measure. For example, instruments which unintentionally measure aspects of sociocultural bias, cohort effects, or social desirability along with the intended variable contain systematic measurement error, or invalidity. nonrandom error effects validity in that, like random error, it is always present. Yet unlike random error, nonrandom error does not vary around a hypothetical true score in such a fashion as to cancel itself out.

An instrument may be a consistent measure of a variable other than the one it was intended to measure and could, therefore, be reliable but not valid. It follows that reliability is a necessary condition for validity (an accurate test must also be consistent) but it is not sufficient in-and-of itself.

Validity is a broad term which refers to a number of different types of validity (Selltitz et al., 1976). There are three major types of validity: criterion-related validity, content validity, and construct validity. In criterion-related validity an instrument is generally evaluated in terms of its ability to predict a subject's performance with reference to a particular criterion. If the instrument is accurately assessing the given criterion, the correlation between the instrument's prediction (or score) and the subject's level of success should be high. Another approach to criterion-

related validity addresses the relationship between a measure and a criterion at the same point in time, and is called concurrent validity. One approach, with regard to concurrent validity, involves administering different instruments, which purport to measure the same variable, to the same subjects at the same point in time. In this approach, one of the instruments substitutes for the criterion. A high correlation is expected between the two measures and is viewed as one piece of evidence for criterion-related validity. Conversely, two instruments which are not supposed to measure the same variable may be administered to a subject at the same point in time. No correlation is expected between these mutually exclusive measures. This approach is referred to as discriminant validity.

Content validity is concerned with how well an instrument with a finite number of items represents the universe of possible items they were chosen from. In other words, whether this instrument's selection of items accurately represents the variable as it exists in the universe of possible items. Because of its abstract nature, content validity is very difficult to assess, particularly in the social sciences where the variables to be represented are themselves quite abstract (Carmines & Zeller, 1980).

When the content of the variable to be represented in a measure cannot be proven as well as defined, construct validity becomes extremely important. The primary concern of construct validity is to provide evidence as to what variable the instrument does measure. It is for this reason that Carmines and Zeller (1979) state that "construct validity is woven into the theoretical fabric of the social sciences, and is thus central to the measure of abstract theoretical concepts," (p. 23). Because one cannot know the universe of the construct one wishes to measure, one must start with a theory and derive testable hypotheses from that theory. Data is then gathered in an

effort to confirm or disconfirm these hypotheses. Based on these results, the theory is then modified and new hypotheses are formulated for testing. The establishment of construct validity, then, is a continual one in which no set of data ever provides conclusive support for construct validity.

It follows from the above discussion that it is essential for any measuring instrument to be both reliable and valid. Yet no instrument is completely reliable or valid. It is at best a close approximation of that which it intends to measure. Some measurement error always exists, especially in the social sciences where concepts are often abstract and based on theory. Carmines and Zeller (1980) quote Blalock (1968, p. 12) who states that "sociological theorists often use concepts that are formulated at rather high levels of abstraction. These are quite different from the variables that are the stock-in-trade of empirical sociologists....The problem of bridging the gap between theory and research is then seen as one of measurement error" (p. 2). Carmines and Zeller then go on to define measurement as the process of linking empirical indicants to abstract concepts.

The Circumplex Model of Marital and Family Functioning: A Theoretical
Template for the FACES Scales

The FACES scales have been constructed with the intent of being the empirical indicants of the abstract concepts contained in the Circumplex Model of Marital and Family Systems. Olson et al. (1979) explain that the Circumplex Model is the result of the conceptual clustering of over fifty concepts from family theory and other social science literature. Many of these concepts come from theorists using a general systems theory perspective, and the Circumplex Model itself is built upon a systems theory foundation. The conceptual clustering of these concepts reveals two independent

dimensions of family system behavior which are integrated into the Circumplex Model. The two dimensions are that of cohesion and adaptability. The first dimension, family cohesion, is conceptually defined as "the emotional bonding that family members have toward one another," (Olson, McCubbin et al., 1983, p. 48). This dimension includes the interrelated concepts of emotional bonding, boundaries, coalitions, time, space, friends, decision making, interests and recreation (see Table 1). These concepts make up the subscales of the cohesion dimension of the FACES scales.

The second dimension of the Circumplex Model, family adaptability, is conceptually defined as "the ability of a marital or family system to change its power structure, role relationships, and relationship rules in response to situational and developmental stress" (Olson, McCubbin et al., 1983, p. 48). This dimension includes the interrelated concepts of assertiveness, control and discipline, negotiation style, role relationships, and relationship rules (see Table 2). These concepts make up the subscales of the adaptability dimension of the FACES scales.

These two dimensions are then placed into a circumplex model with cohesion occupying the horizontal axis and adaptability occupying the vertical axis (see Figure 1). There are four levels of cohesion ranging from low to high: disengaged, separated, connected, and enmeshed. Likewise, there are four levels of adaptability ranging from low to high: rigid, structured, flexible, and chaotic. The result of combining these dimensions into a circumplex allows for the identification and description of sixteen different marital and family typologies.

According to the model, it is hypothesized that marriages and families which fall into the central or balanced areas of the model are likely to operate more functionally, while those marriages and families which fall at

TABLE 1: FAMILY ORIENTATION DIMENSION: INDICATORS OF SEPARATENESS-CONNECTEDNESS BALANCE*

	SEPARATED (Low to Moderate)		CONNECTED (Moderate to High)		EMBEDDED (Very High)	
	Very Low	Low to Moderate	Moderate to High	Very High		
Emotional Bonding	Very Low	Low to Moderate	Moderate to High	Very High		
Independence	High independence of family members.	Moderate independence of family members.	Moderate dependence of family members.	High dependence of family members.		
Family Boundaries	Open external boundaries. Closed internal boundaries. Rigid generational boundaries.	Semi-open external and internal boundaries. Clear generational boundaries.	Semi-open external boundaries. Open internal boundaries. Clear generational boundaries.	Closed external boundaries. Blurred internal boundaries. Blurred generational boundaries.		
Coalitions	Weak coalitions, usually a family scapegoat.	Marital coalition clear.	Marital coalition strong.	Parent-child coalitions.		
Time	Time spent from family maximized (physically and/or emotionally).	Time alone and together is important.	Time together is important. Time alone permitted for approved reasons.	Time together maximized. Little time alone permitted.		
Space	Separate space both physically and emotionally is maximized.	Private space maintained; some family space.	Family space maximized. Private space minimized.	Little or no private space at home.		
Friends	Mainly individual friends seen alone. Few family friends.	Some individual friends. Some family friends.	Some individual friends. Scheduled activities with couple and family friends.	Limited individual friends. Mainly couple or family friends seen together.		
Decision Making	Primarily individual decisions.	Most decisions are individually based, able to make joint decisions on family issues.	Individual decisions are shared. Most decisions made with family in mind.	All decisions, both personal and relationship must be made by family.		
Interests and Recreation	Primarily individual activities done without family. Family not involved.	Some spontaneous family activities. Individual activities supported.	Some scheduled family activities. Family involved in individual interests.	Most or all activities and interests must be shared with family.		

*Olson, Sprenkle and Russell: "Circumplex Model of Marital and Family Systems: II, "Advances in Family Intervention, Assessment and Theory, JAI Press, 1980.

TABLE II: FAMILY ADAPTABILITY DIMENSIONS: INTER-RELATED CONCEPTS *

<u>Assertiveness</u>	<u>Control</u>	<u>Discipline</u>	<u>Negotiation</u>	<u>Roles</u>	<u>Rules</u>	<u>System Feedback</u>
<u>CHAOTIC</u> (Very High) Passive and Aggressive Styles	No leader- ship	Laissez-faires Very lenient	Endless nego- tiation. Poor problem solving.	Dramatic role shifts	Dramatic rule shifts. Many implicit rules. Few explicit rules. Arbitrarily enforced rules.	Primarily positive loops; few negative loops
<u>FLEXIBLE</u> Generally assertive	Equali- tarian with fluid changes	Democratic; Unpredictable Consequences	Good nego- tiation; good problem solving	Role making and sharing. Fluid change of roles	Some rule changes. More implicit rules. Rules often enforced	More positive than negative Loops
<u>STRUCTURED</u> Generally Assertive	Democratic with stable Leader	Democratic; Predictable consequences	Structured negotiations, good problem solving	Some role sharing	Few rule changes. More explicit than implicit rules. Rules usually enforced.	More negative than positive loops
<u>RIGID</u> Passive or Aggressive Styles	Authori- tarian leadership	Autocratic; Overly strict.	Limited negotiations; Poor problem solving	Role rigidity; stereo- typed roles	Rigid rules; Many explicit rules. Few implicit rules. Strictly enforced rules.	Primarily negative loops few positive loops

* Olson, Russell, and Sprenkle: "Circumplex Model of Marital and Family Systems, II", in J-Vincent (ed): Advances in Family Intervention, Assessment and Theory, JAI Press, 1980

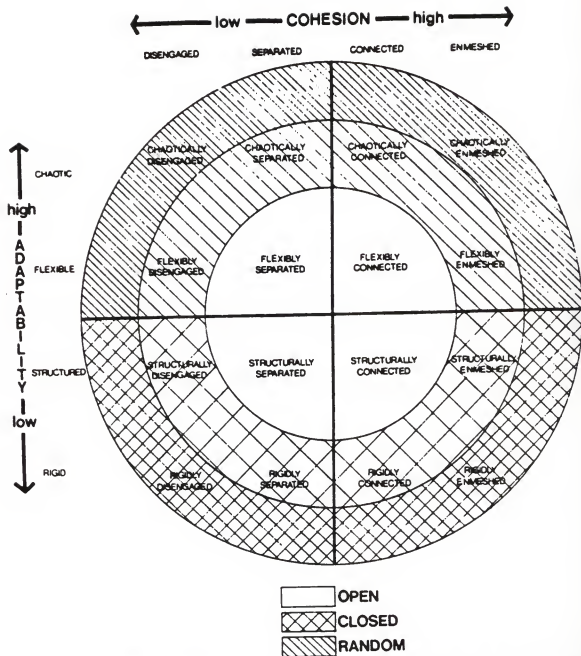


FIG. 1. Sixteen possible types of marital and family systems derived from the circumplex model

the extremes of the model are likely to operate less functionally. By this definition, then, the Circumplex Model is a curvilinear model where both high and low ends of the model are viewed negatively. For example, along the cohesion dimension, those families and marriages viewed as likely to experience difficulty are those whose members are distant from one another and show little involvement or commitment to one another (disengaged), and those marriages and families at the other extreme which are so close that there is little opportunity for family members to individuate from one another (enmeshed). At the same time, along the adaptability dimension, those marriages and families viewed as likely to experience difficulty are those which cannot make adequate adjustments to situational or developmental stress because of the system's inability to effect change (rigid), and those families and marriages at the other extreme which are changing rapidly without adequate regulation or control so that the system is unable to effect stability (chaotic).

A third dimension of the Circumplex Model is called family communication and is not placed geographically in the Circumplex Model because of its function as a facilitating dimension: "Communication is considered critical to movement on the other two dimensions" (Olson, McCubbin et al., 1983, p. 49). Empathy, reflective listening, and supportive comments are listed as positive communication skills which facilitate movement along the dimensions of cohesion and adaptability, while double messages, double binds, and criticisms are given as examples of negative communication skills which restrict a couple or family member's movement along the dimensions of cohesion and adaptability. It can be seen, then, that the Circumplex Model is also dynamic in that it views marital and family systems as able to change

along these two dimensions in response to situational and developmental stress.

Empirical studies have been done which lend support to the validity of the Circumplex Model. The first study, conducted by Sprenkle and Olson (1978) used the SIMFAM interaction game to assess 25 clinic and 25 nonclinic (control) couples on variables related to the adaptability dimension of the Circumplex Model. The findings showed that the nonclinic couples tended to share leadership under stressful conditions while clinic couples resorted to a more extreme wife-leadership pattern. Nonclinic couples were also significantly more creative, supportive, and responsive to each other than were clinic couples.

In another study, Russell (1979) divided 31 families with adolescent girls into two groups of high and low family functioning. When placed in the Circumplex Model using the SIMFAM game along with related questionnaires, it was found that all of the low functioning families fell at the extremes, while ten of the fifteen high functioning families fell in the moderate areas of the model.

Using the Family Environment Scale as a pre and postmeasure of family functioning, Druckman (1976) found that families involved in a program for delinquent adolescent girls moved from low family functioning prior to involvement in the program, to moderate family functioning following involvement in the program. This result is interpreted by Olson, McCubbin, et al. (1983) as evidence for the concept of curvilinearity--that the midrange is more functional than either of the extremes. On a linear scale the families should have moved from low to high, not low to moderate.

While many of the above studies offer support for the Circumplex Model, it has been seen that validity can never be completely proven or disproven.

There is always room to doubt a model's validity. This appears to be most apparent with reference to the Circumplex Model's construct of curvilinearity. Beavers and Voeller (1983) argue that the Circumplex Model's total reliance upon curvilinearity as an aspect of adaptation is inaccurate. They believe that adaptation is a linear construct. While the Circumplex Model is based on the organization of a large number of concepts from family theory and sociological research, Beavers and Voeller state that they are not aware of other models which view moderately adaptable families as better than families which are highly adaptable. Likewise, a study by Decastro (1982) found that interpreting the scores on the FACES I instrument in a linear fashion was a better predictor of delinquent family functioning than interpreting the scores in their intended curvilinear fashion. Finally, Broderick (1984), in a review of Olson, McCubbin et al.'s (1983) book, Families: What Makes Them Work, argues that the results of Olson's study have been misinterpreted as curvilinear when in reality the results show a strictly linear relationship between the FACES II family form subscales of cohesion and adaptability and every indicator of well family functioning.

Development of the FACES Scales

Attempting to bridge the gap between theorists, researchers, and clinicians (Olson, 1976), Olson et al. (1979) state that "one of the major goals in developing the Circumplex Model was to provide a framework that could be used by clinicians to make a more systematic diagnosis and to establish more specific treatment goals," (p. 20). The FACES scales have been developed in an effort to link empirical indicators with the abstract concepts of the Circumplex Model so that clinicians and researchers may

"bridge the gap" and place family members in the Model according to their responses to the FACES items.

The original FACES scales, FACES I (Olson, Bell & Portner, 1978), is a 111 item self-report scale developed to measure family functioning along the two major dimensions of the Circumplex Model--cohesion and adaptation. The FACES II scale (Olson, Portner & Bell, 1982) is a shortened and refined 30 item self-report version of the original FACES I scale. The newly developed 30 item FACES II-Couple Form (Olson, Portner & Bell, 1983) is a modified version of the FACES II scale, rewritten to apply specifically to couples.

Demonstrating validity for the scales has been difficult. Published studies with regard to the development and standardization of the FACES scales are lacking. In their manual, Olson, Portner and Bell (1982) report that clinical validity was established for the original 111 item FACES I scale using 35 marriage and family counselors (expert judgment of items) and 410 young adults (factor analysis of responses). They also report that a study of 210 parent/adolescent triads was undertaken. An Alpha reliability of .83 for cohesion and .75 for adaptability was established at that time. While data on construct validity is presented, data on concurrent and predictive validity is lacking.

Olson, McCubbin et al. (1983) also report that Portner (1981), in a study of 55 adolescent clinic families and 117 nonclinic control families, found nonclinic families more likely to fall into the moderate areas of the Circumplex Model than clinic families. She used FACES I as a measure of cohesion and adaptability.

Olson, Portner and Bell (1982) also describe a study by Bell (1982) which produced results similar to those of Portner above. Comparing the functioning of 33 families with runaways to Portner's 117 family control

group, Bell found that nonclinic (control) families were placed in the balanced areas of the Circumplex Model significantly more often than the clinic sample using the FACES I. However, it should be noted that both Portner (1981) and Bell (1982) found their clinic families to be over-represented in the chaotically-disengaged quadrant of the Circumplex Model. Thus only one extreme was represented in their clinic populations.

FACES II was developed in 1981, and is the shorter version of the FACES I instrument. The original 50 items of FACES II were administered to a national sample of 2,142 parents and adolescents. From this the scale was reduced to 30 items (using factor analysis) upon which reliability, validity, normative data and cutting points were published. The scale has demonstrated a Cronbach Alpha reliability of .90, and a test-retest reliability of .84. A factorial validity has been demonstrated with loadings ranging from .10 to .61 across the subscales. Other demonstrations of validity are lacking, however.

Olson, Portner and Bell (1982) state that the items of the FACES II scale can be revised for couples and single parents and, since then, has produced a scale for couples. The FACES II-Couple Form (1983) is a modified version of the 30 item FACES II scale for family assessment, and is the focus of this study. The FACES II-Couple Form parallels the FACES II family form in that the items are simply reworded to apply to the couple. For example, the item "In our family, everyone goes his/her own way," becomes "In our marriage, we each go our own way." Other items do not change at all, for example, "When problems arise, we compromise."

The FACES II-Couple Form was obtained in a personal communication from Olson et al. by the Marriage and Family Therapy program at Kansas State University. There is no psychometric data on the instrument other than what

might be generalized from its prototype, the FACES II family instrument. Olson and his associates, it appears, are confident that the psychometric qualities of the FACES II instrument are adequate for the Couple Form since they have published that a "Couple Form" is available (Olson, Russell & Sprenkle, 1983).

Forman and Hagman (1983), however, included the 111 item FACES I scale in their review of measures of family functioning. Their conclusion is that sparse evidence exists with regard to both the scale and the model it is based upon, and that a large part of the problem with the scale may be due to a lack of standardized procedures by which to operationalize the constructs. They call for an overall need to replicate and cross-validate such instruments, as well as a need to stick to the conventions of test construction and validation.

This study is designed with the intent of gathering empirical evidence with regard to the psychometric qualities of the Couple Form, including the appropriateness of using the distributions and cutting points from FACES II for the Couple Form, as well as gather independent measures of the instrument's reliability and validity.

Hypotheses

A topic of primary concern with regard to the administration of an assessment instrument such as the FACES II-Couple Form has to do with the interpretation of the scores once they are obtained (Helmstadter, 1964). The FACES scales are norm referenced. That is, where a person is placed within the Circumplex Model is determined in relation to the overall distribution of a larger sample. Based on the distribution of scores from the national sample, and assuming a normal distribution, it can be seen looking at the

means and standard deviations of the FACES II distribution (Appendix D) that respondents scoring approximately one standard deviation above or below the mean for both the adaptability and cohesion subscales are placed at the extremes of the Circumplex Model. Those respondents who score within one standard deviation of the mean on one dimension, but outside of one standard deviation on the other dimension are placed in the midrange areas of the model. Those respondents who score within one standard deviation of the mean on both dimensions are placed in the balanced areas of the model. Research problem one in this study will investigate whether the norms and related cutting points established for the FACES II family scale will be adequate for the FACES II-Couple Form as well.

As mentioned in the literature review, reliability is an essential characteristic of a sound measuring instrument. Because of the similarity of the items used in the two instruments, research problem two will look at the internal consistency of the FACES II-Couple Form as it compares to that of the FACES II family instrument.

While reliability is an essential characteristic of a sound measuring instrument, it has been shown that it is not sufficient. Validity is the second major component of a good measuring instrument. It can be recalled from the literature review that concurrent validity is a measure of criterion-related validity, and that one instrument can be defined as the criterion and compared at the same point in time to a second instrument which purports to measure the same criterion. Two such instruments have been identified which purport to measure the construct of cohesion. These two instruments include the cohesion subscales of the Dyadic Adjustment Scale (Spanier, 1976) and the cohesion subscale of the Family Environment Scale (Moos, 1974). Olson, McCubbin et al. (1983) also cite research by Moos and Moos (1976), and

conclude that the independence subscale of the Family Environment Scale may also be a measure of family cohesion. Research problem three will investigate the relationship of the above subscales to the cohesion subscale of the FACES II-Couple Form.¹

While no self report instruments have been identified in the literature which are designed with the intention of measuring adaptability, Olson, McCubbin et al. (1983) do state that the control and organization subscales of the Family Environment Scale may measure similar constructs (Moos & Moos, 1976). Research problem three will also investigate the relationship of these subscales as they relate to the adaptability subscale of the FACES II-Couple Form.

Although the FACES II-Couple Form has no subscale to specifically measure couple communication, it is viewed as a critical component of both cohesion and adaptability. Olson, McCubbin, et al. (1983) state that the Family Environment Scale's subscales of expressiveness and conflict may measure the construct of communication (Moos & Moos, 1976). Research problem three will also investigate the relationship of these subscales to the FACES II-Couple Form subscales of cohesion and adaptability.

Just as instruments which purport to measure the same variable or construct should correlate with one another, instruments which purport to measure different constructs should not correlate with one another. Research problem four will investigate the discriminant validity of the FACES II-Couple Form. This will be accomplished using the same procedure in research problem three above (concurrent validity), with the exception that subscales not expected to measure adaptability will be compared with the adaptability subscale of the FACES II-Couple Form, and subscales not expected to measure cohesion will be compared to the cohesion subscale. One other subscale of

the Family Environment Scale has been included in this study for this purpose, it is the achievement-orientation subscale. This subscale does not appear to be related to either the cohesion or the adaptability subscales of the FACES II-Couple Form and has been included in this study for the sole purpose of discriminant validity.

According to the Circumplex Model, couples which fall into the more balanced ranges of the model should be more functional than those falling at the extremes. If the Circumplex Model is correct in its curvilinear hypothesis, one would expect couples in the more balanced areas of the model to report higher levels of marital satisfaction. This is an issue of construct validity. Research problem five investigates the relationship of marital satisfaction as measured by the Kansas Marital Satisfaction Scale (Mitchell et al., 1983) to couple cohesion and adaptability as measured by the FACES II-Couple Form.

Hypothesis I: Comparability of Norms.

a) The distribution and cutting points established for the FACES II family instrument will be adequate for the FACES II-Couple Form.

Hypothesis II: Reliability

a) Internal consistency on the FACES II-Couple Form will be adequate, and will be comparable to the level of internal consistency reported for the FACES II family form.

Hypothesis III: Concurrent Validity

a) The cohesion subscale of the FACES II-Couple form will be positively correlated with the cohesion subscale of the Dyadic Adjustment Scale.

b) The cohesion subscale of the FACES II-Couple Form will be positively correlated with the cohesion and independence subscales of the Family Environment Scale.

c) The adaptability subscale of the FACES II-Couple Form will be positively correlated with the control and organization subscales of the Family Environment Scale.

d) Both the cohesion and adaptability subscales of the FACES II-Couple Form will be positively correlated with the expressiveness and conflict subscales of the Family Environment Scale.

Hypothesis IV: Discriminant Validity

a) The cohesion subscale of the FACES II-Couple Form will not be significantly correlated with the control, organization, or achievement-orientation subscales of the Family Environment Scale.

b) The adaptability subscale of the FACES II-Couple Form will not be significantly correlated with the cohesion subscale of the Dyadic Adjustment Scale, or the cohesion, independence, or achievement-orientation subscales of the Family Environment Scale.

c) The differences between the correlations of the FACES II-Family Form's subscales of cohesion and adaptability with the independent scales not predicted to correlate with both of these subscales will be significant.

d) Neither the adaptability or cohesion subscales of the FACES II-Couple Form will be significantly correlated with the Edmonds' Marital Conventionalization Scale (Edmonds, 1967).

Hypothesis V: Construct Validity

a) The construct of marital satisfaction as measured by the Kansas Marital Satisfaction Scale will be positively correlated with both the cohesion and adaptability subscales of the FACES II-Couple Form, and this correlation will be of a quadratic form.

CHAPTER II:

METHODOLOGY

Sample Selection and Study Procedure

Questionnaires² made up of 129 items, including demographic data and items taken from the instruments described below, were mailed to a random sample of 400 predominantly middle-aged couples with adolescent children. The sample consisted of both urban and rural couples in a midwestern state. These couples were randomly selected from a list of over 600 married couples, all in the state of Kansas. The list was provided to the research department within the Department of Family and Child Development at Kansas State University by the Donnelley corporation, a marketing firm. Demographic items included on the questionnaire concerned the respondents' sex, age, marital status, racial heritage, number and age of children, education, and income. This information was solicited in order to compare the characteristics of this sample to the characteristics of the sample used by Olson, Portner and Bell (1982) to norm the FACES II scale.

Each couple was mailed one packet which contained a cover letter, two questionnaires, and two stamped, self-addressed return envelopes. The cover letter explained the purpose of the study and implied consent (Appendix B). The respondents were asked to fill out the questionnaires separately and return them in the separate envelopes provided. The questionnaires were mailed during the third week in April. One week later a post card was mailed to each of the 400 couples thanking those which had returned the questionnaires, and urging those who hadn't to do so (Appendix C). The returns stopped coming in approximately seven weeks after mailing out the question-

naires. It was at this point the data began being coded for empirical analysis.

The Instruments

Instruments chosen for inclusion in this study include: the cohesion subscale from the Dyadic Adjustment Scale (Spanier, 1976), seven subscales from the Family Environment Scale (Moos, 1974), the Edmonds' Marital Conventionalization Scale (Edmonds, 1967), The Kansas Marital Satisfaction Scale (Mitchell, et al., 1983), and the FACES II-Couple Form (Olson, Portner & Bell, 1983). The Marlowe-Crowne Scale of Social Desirability (1964) and twelve rewritten items from the FACES II-Couple Form have also been included in the data collection but are not intended for use in this study.³

The cohesion subscale of the Dyadic Adjustment Scale (Spanier, 1976) was chosen for inclusion in this study as a concurrent measure of marital cohesion. The 32 item Dyadic Adjustment Scale is the result of a process of test construction which began with a pool of approximately 300 items from 17 different scales used to measure marital adjustment or similar concepts. The scale is comprised of four empirically verified components which can be used as subscales. These include: dyadic satisfaction, dyadic cohesion, dyadic consensus, and affectional expression. The Dyadic Adjustment Scale is a linear scale which views marital adjustment as occurring along a continuum from well adjusted to maladjusted. Marital cohesion is viewed as one aspect of this process of marital adjustment.

Spanier (1976) does provide data with regard to the scale's reliability and validity. The issue of content validity has been addressed in the test development process by having three independent judges examine the items with

reference to their quality as indicators of marital adjustment. Unacceptable items were eliminated.

Criterion-related validity for the scale has been investigated using a sample of 94 divorced individuals and 218 married couples. It was found that the mean scores for the two samples were significantly different at the .001 level using a t-test procedure. Furthermore, each of the scale's 32 items were significantly correlated with the predictor variable of married versus divorced status.

Construct validity was investigated by correlating the Dyadic Adjustment Scale with the Locke-Wallace Marital Adjustment Scale (Locke & Wallace, 1959), a frequently used measure of marital adjustment. The results showed a correlation of .86 among the married respondents, and .88 among the divorced respondents. Both correlations are significant at the .001 level. A factorial construct validity has also been demonstrated with only items loading above .30 being retained for use in the scale. The reliability of the scale was assessed using the Cronbach Alpha measure of internal consistency. The scale demonstrated a coefficient of .96 for the 32 items of the scale.

The five item cohesion subscale of the Dyadic Adjustment Scale has been chosen for inclusion in the concurrent validity section of this study for use as a criterion for the construct of cohesion as measured by the FACES II-Couple Form. It will also be used as a measure of discriminant validity with regard to the adaptability subscale of the FACES II-Couple Form. The cohesion subscale has demonstrated factor loadings ranging from .50 to .71, and a reliability of .86 as demonstrated by Cronbach's Coefficient Alpha.

The Family Environment Scale (Moos, 1974) is a 90 item, true-false, self-report measure of family functioning. It contains ten subscales

constructed to measure family member interaction on the dimensions of family member relationships, personal growth and system maintenance. The ten subscales are: cohesion, expressiveness, conflict, independence, achievement-orientation, intellectual-cultural orientation, active-recreational orientation, moral-religious emphasis, organization, and control (see Table 3 for descriptions of the subscales as found in Moos, 1974, p. 4).

Moos (1974) explains that the original 200 item Form A of the Family Environment Scale was administered to a sample of over 1,000 individuals from 285 families. An ethnic minority and a clinic sample was also included in the study. From this data the items were factor analyzed into a 90 item instrument of ten subscales, the current instrument, upon which normative data was established.

Very little data or specific information is given with regard to the psychometrics of the instrument. The author does state that criteria used to demonstrate validity includes low to moderate subscale intercorrelations, maximum correlation of items within subscales, maximum discrimination among families (random, ethnic, and clinic), and an item split which avoided items characteristic of extreme families. The average item to subscale correlations range from .45 for the independence subscale to .58 for the cohesion subscale. Internal consistency reliabilities range from .64 to .78 by subscale as computed by the Kuder-Richardson Formula 20. Test-retest reliability for the subscales range from .68 to .86.

Seven of the ten subscales of the Family Environment Scale are included in this study. Of these, the cohesion subscale of the Family Environment Scale yields an internal consistency of .78, a test-retest reliability of .86, and an average item to subscale correlation of .58. The expressiveness subscale yields an internal consistency of .71, a test-retest reliability of

Table 3
Family Environment Scale Subscale Descriptions

Relationship Dimensions	
1. Cohesion	The extent to which family members are concerned and committed to the family and the degree to which family members are helpful and supportive of each other.
2. Expressiveness	The extent to which family members are allowed and encouraged to act openly and to express their feelings directly.
3. Conflict	The extent to which the open expression of anger and aggression and generally conflictual interactions are characteristic of the family.
Personal Growth Dimensions	
4. Independence	The extent to which family members are encouraged to be assertive, self-sufficient, to make their own decisions and to think things out for themselves.
5. Achievement Orientation	The extent to which different types of activities (i.e., school and work) are cast into an achievement oriented or competitive framework.
6. Intellectual- Cultural Orientation	The extent to which the family is concerned about political, social, intellectual and cultural activities.
7. Active Recreational	The extent to which the family participates actively in various kinds of recreational and sporting activities.
8. Moral- Religious Emphasis	The extent to which the family actively discusses and emphasizes ethical and religious issues and values.

Table 3 (Continued)

System Maintenance Dimensions

9. Organization Measures how important order and organization is in the family in terms of structuring the family activities, financial planning, and explicitness and clarity in regard to family rules and responsibilities.
10. Control Assesses the extent to which the family is organized in a hierarchical manner, the rigidity of family rules and procedures and the extent to which family members order each other around.

.73, and an average item to subscale correlation of .58. The conflict subscale yields an internal consistency of .75, a test-retest reliability of .85, and an average item to subscale correlation of .56. The independence subscale yields an internal consistency of .64, a test-retest reliability of .68, and an average item to subscale correlation of .45. The achievement-orientation subscale yields an internal consistency of .65, a test-retest reliability of .74, and an average item to subscale correlation .49. The organization subscale yields an internal consistency of .78, a test-retest reliability of .76, and an average item to subscale correlation of .52. The control subscale yields an internal consistency of .70, a test-retest reliability of .77, and an average item to subscale correlation of .51.

Moos and Moos (1976) administered the Family Environment Scale to a representative sample of 100 families selected from the original group of 285 families upon which the instrument was normed on. Using the technique of cluster analysis, these authors established an empirically based taxonomy of families as identified from six distinctive clusters, these were: Expression-Oriented, Structure-Oriented, Independence-Oriented, Achievement-Oriented, Moral/Religious Oriented, and Conflict-Oriented. Olson, McCubbin et al. (1983) conclude that six of the ten subscales of the Family Environment Scale (as identified in the cluster analysis) related directly to the three dimensions of the Circumplex Model as measured by the FACES II instruments. Olson and his colleagues see the cohesion dimension of the Circumplex Model as being measured by the cohesion and independence subscales of the Family Environment Scale; the adaptability dimension of the Circumplex Model as being measured by the control and organization subscales of the Family Environment Scale; and the communication dimension of the Circumplex Model as being measured by the expressiveness and conflict subscales of the Family

Environment Scale. The Family Environment Scale's subscales of achievement-orientation, intellectual-cultural orientation, active-recreational orientation, and moral religious emphasis were not seen as having a relationship to the Circumplex Model.

The following subscales of the Family Environment Scale have been chosen for inclusion in the concurrent and discriminant validity sections of this study for use as criterion for the constructs of adaptability and cohesion as measured by the FACES II-Couple Form. The cohesion and independence subscales of the Family Environment Scale are included in this study for use as criterion for the dimension of cohesion as measured by the FACES II-Couple Form. The control and organization subscales of the Family Environment Scale are included in this study for use as criterion for the dimension of adaptability as measured by the FACES II-Couple Form. The expressiveness and conflict subscales of the Family Environment Scale are included in this study for use as criterion for the dimensions of cohesion and adaptability as measured by the FACES II-Couple Form. As discussed earlier, the Circumplex Model views communication (in this case, expressiveness and conflict) as facilitating movement along the two dimensions of cohesion and adaptability. This achievement-orientation subscale of the Family Environment Scale has been included in this study for the sole purpose of serving as a discriminant criterion since it is not expected to relate to the dimensions of cohesion and adaptability as measured by the FACES II-Couple Form. The Family Environment Scale's subscales of intellectual-cultural orientation, active-recreational orientation, and moral-religious emphasis are not included in this study. A total of 63 items from the Family Environment Scale are included in this study.

Because the Family Environment Scale is written to apply to families, it has had to be rewritten for purposes of this study to apply to couples. The wording of the items has been altered minimally so that this "couple form" of the instrument parallels the family form. This process is the same as that utilized to convert the FACES II instrument to the FACES II-Couple Form. As such, this process also brings into question the re-written Family Environment Scale's reliability and validity.

The Kansas Marital Satisfaction Scale (Mitchell et al., 1983) has been chosen for inclusion in the construct validity section of this study. The Kansas Marital Satisfaction Scale has been chosen because of its brevity, as well as its evidence of reliability and validity. The scale is a three item measure of marital satisfaction and reports a Cronbach Alpha estimate of internal consistency of .96 and a ten week test-retest reliability of .71. Concurrent validity for the scale has been demonstrated using the satisfaction subscale of Spanier's (1976) Dyadic Adjustment Scale. Correlations were significant at the .001 level with six of the seven items on the scale (Grover et al., 1984).

When doing research with couples, one must be aware of the possibility of scores being contaminated by a socially desirable response set (Snyder, 1979). The Edmonds' Marital Conventionalization Scale (Edmonds, 1967) has been included in this study as a measure of social desirability, based on findings by Schumm et al. (1981). In a study investigating the construct validity of the scale, Schumm et al. found the Edmonds' Marital Conventionalization Scale to be more a measure of social desirability than marital conventionalization. The assessment of social desirability is the intended use of the scale in this study.

CHAPTER III:

RESULTS

Demographic Description of the Sample

The Donnelley Corporation, a marketing firm, provided a list of over 600 married couples in the Adolescent and Launching Families stages of the family life cycle, all residing in the state of Kansas. Of the 800 questionnaires sent out to a random sample of 400 couples, a total of 265 were returned for a response rate of 33 percent. Of these 265, nine were returned blank, three were returned from widows, and two from divorced individuals. This lowered the response rate to 251 usable questionnaires, or 31 percent. Included in the study were 110 couples where both the husband and the wife returned the questionnaire (n=220). These couples made up 87.6 percent of the study.

One-hundred-and-fourteen, or 45.4 percent of the final sample was made up of husbands. They ranged in age from 18 to 81, with a mean age of 46. One was black, one native American, and 112 were white. There were 338 children reported across all husbands, with a mean of 2.9 per respondent. In terms of education, the husbands ranged from 18 to 22 years, with a mean of 13 years of education. Eight percent reported net family incomes under \$9,999 per year, 15.5 percent reported family incomes between \$10,000 and \$19,999, 27.3 percent reported family incomes between \$20,000 and \$29,999, and 49.1 percent reported family incomes over \$30,000 per year.

The wives numbered 137, making up 54.6 percent of the final sample. They ranged in age from 21 to 82, with a mean age of 43. One was black, three were native American, and 133 were white. There were 405 children reported across all wives, with a mean of 2.9 children per respondent. In

terms of education, the wives ranged from 8 to 19 years, with a mean of 13 years. Nine-and-one-half percent reported net family incomes under \$9,999 per year, 16 percent reported family incomes ranging from \$10,000 to \$19,999, 25.6 percent reported family incomes ranging from \$20,000 to \$29,999 and 48.8 percent reported family incomes over \$30,000 per year.

In terms of stages of the family life cycle (Table 4), 2.4 percent of the total sample fell into the Young Couples without Children stage, 3.6 percent fell into the Families with Preschoolers stage, 3.2 percent fell into the Families with School-age Children, 53.8 percent fell into the Families with Adolescents stage, 20.1 percent fell into the Launching families stage, 5.2 percent fell into the Empty Nest Families stage, and 1.6 percent fell into the retired couples stage.

This sample differed noticeably from the sample used by Olson, Portner and Bell (1982) to norm the family version of the FACES II scale. The primary difference is that this sample is made up primarily of couples in stages four and five of the family life cycle while Olson's sample covered the whole family life cycle. Eighty-four-point-one percent of this study's sample was made up of Families with Adolescents and Launching Families, as compared to 39.7 percent of Olson's population representing families who had adolescents or were in the Launching stage. The sample used in this study was similar to the sub-sample representing stages four and five in Olson's study in terms of average age, number of children, income, and education.

The demographics of the sample used in this study have also been compared to the 1980 Kansas Census data (U.S. Bureau of Census). Ninety-seven-point-six percent of the respondents in this study were white, .8 percent were black, and 1.6 percent were American Indian. Ninety-one-point-seven percent of Kansas residents are white, 5.3 percent are black, and .64

Table 4

Percentages of Current Sample Falling into Stages of the
Family Life Cycle as Compared to the Sample Used to Norm the
Faces II Instrument

Stage of the Family Life Cycle	FACES II (N=1,140)	Current Sample (N=251)
Stage 1		
Young Couples Without Children	10.6	2.4 (N=6)
Stage 2		
Families With Preschoolers (Ages 0-5)	13.0	3.6 (N=9)
Stage 3		
Families With School Age Children (Ages 6-12)	11.3	3.2 (N=8)
Stage 4		
Families With Adolescents (Ages 13-18)	22.9	53.8 (N=135)
Stage 5		
Launching Families (First Adolescent 19)	16.8	30.3 (N=76)
Stage 6		
Empty Nest Families (All Children Gone)	12.6	5.2 (N=13)
Stage 7		
Retired Couples (Male over 65)	12.8	1.6 (N=4)

percent are American Indian. The average number of years of education was 13 years for this sample, compared to an average of 12.6 years of education for residents of Kansas. The average family income for this sample fell somewhere around \$20,000, while the average family income for residents of Kansas was reported at \$22,755. There were an average of 1.9 children under the age of 18 in families in this sample, compared to an average of 2.0 children under the age of 18 in families in Kansas. The sample used in this study, then, is quite similar to the overall demographic characteristics of Kansas, and therefore appears to be a representative sample.

Comparability of Norms

The distribution of husbands and wives on the FACES II-Couple Form were calculated using the scoring procedure provided by Olson, Portner and Bell (1982). The mean score for the husbands on the cohesion dimension was 68.7 (S.D.=7.7), while for the wives the mean was 68.2 (S.D.=10.4). The mean for the husbands on the adaptability dimension was 56.8 (S.D.=7.9), while for the wives it was 55.8 (S.D.=8.9). This compares to Olson, Portner and Bell's (1982) reported total sample mean of 64.9 (S.D.=8.4) on the cohesion dimension, and 49.9 (S.D.=6.6) on the adaptability dimension of the FACES II family form. The higher means of the current sample, which consists primarily of families in the Adolescent and Launching stages of the family life cycle, is in direct opposition to Olson, McCubbin, et al.'s (1983) findings which showed these two stages to score the lowest of any of the stages of the family life cycle in their study.

In order to compare the suitability of using the cutting points provided for the FACES II (see Appendix D) with the FACES II-Couple Form, the respon-

dents of this study were placed into the Circumplex Model using the cutting points for the FACES II family scale as provided by Olson, Portner and Bell (1982). Then, using the percentages of respondents found in each cell of the Circumplex Model with regard to the FACES II sample, an expected frequency was calculated for each cell for use in this study. A Pearson Chi-Square goodness of fit test was then used to test each of the sixteen cells of the Circumplex Model in an effort to see whether there were any significant differences between the expected frequency based on the distribution of scores for the FACES II and the observed scores obtained in this study using the FACES II-Couple form. The results showed that there were significant differences for both the husbands and the wives.

The husbands differed significantly in two of the sixteen cells. Seven percent of the original FACES II family sample fell into the chaotically-connected cell of the Circumplex Model. From this an expected frequency of seven was calculated for the husbands in this study based on a sample size of 100. The actual observed frequency for the husbands was 20. This difference is significant at the .005 level. Likewise, seven percent of the FACES II family sample fell into the chaotically-enmeshed cell of the Circumplex Model. Based on a sample size of 100, an expected frequency of seven was expected in this study. The actual observed frequency was 31. This difference is significant at the .001 level.

The wives differed significantly in one of the sixteen cells. An expected frequency of 8.7 was computed for the chaotically-enmeshed cell of the Circumplex Model, based on a sample size of 124. An observed frequency of 43 was found for the current sample. This difference is significant at the .001 level.

The cutting points for the FACES II family instrument are based on a normal distribution, with respondents scoring more than two standard deviations above or below the mean considered extreme (as discussed in the literature review section). Because of the significant differences found at the extremes with regard to the goodness of fit test, the current sample was tested for the shape of its distribution. The results showed that the wives' distribution along the dimension of cohesion was significantly different ($p < .003$) from a normal distribution. The kurtosis of the wives' distribution along the cohesion dimension as assessed by the FACES II-Couple Form was 1.943 with a skew of -1.415. The mean is 68 (on a range from 31 to 80) with a median of 71. This signifies a leptokurtic peak on the high end of the cohesion scale. This trend was also seen for the husbands along the cohesion dimension, but was not significantly different from the normal curve. Neither the husbands' or wives' distributions are significantly different from normal along the adaptability dimension, yet the wives' scores do tend in a negatively skewed direction.

Reliabilities

The reliabilities for the scales used in this study have been computed using Cronbach's Coefficient Alpha. The reliabilities are reported in Table 5, along with the reliabilities reported by the scale's developer. The reliabilities for the FACES II-Couple Form and the Kansas Marital Satisfaction Scale appear very strong. The reliabilities for the other scales are generally weak, particularly the subscales of the Family Environment Scale.

Table 5
Alpha Reliabilities

Scale	Husbands (N=97-115)	Wives (N=106-135)	Reported
FACES II-Couple Form	.90	.92	.90*
FACES II-Couple Form -- Cohesion	.81	.85	.87*
FACES II-Couple Form -- Adaptability	.85	.86	.78*
Dyadic Adjustment Scale -- Cohesion	.70	.77	.86
Family Environment Scale			
-- Cohesion	.65	.73	.78
-- Expressiveness	.57	.72	.71
-- Conflict	.80	.60	.75
-- Independence	.45	.43	.64
-- Achievement Orientation	.56	.36	.65
-- Organization	.76	.74	.78
-- Control	.45	.50	.70
Edmonds' Marital Conventionalization Scale	.74	.75	**
Kansas Marital Satisfaction Scale	.94	.95	.96

* These reported reliabilities are based on the FACES II family assessment instrument.

**No reliability reported.

Concurrent Validity

To assess the degree of relationship between the FACES II-Couple Form subscales of cohesion and adaptability with the independent criterion scales, a scattergram and Pearson Product-Moment Correlation Coefficient were computed for both the husbands and the wives (Table 6). This was also done controlling for social desirability. The results show that the FACES II-Couple Form subscales of cohesion and adaptability correlate strongly ($p < .001$) for both the husbands and the wives, with the Edmonds' Marital Conventionalization Scale, the Dyadic Adjustment Scale cohesion subscale, and the Family Environment Scale subscales of cohesion, expressiveness and conflict. In addition, the husbands correlate significantly with the Family Environment Scale subscales of organization ($p < .001$) for both cohesion and adaptability, and control ($p < .01$) for the adaptability dimension only. The wives also correlate significantly with the Family Environment Scale subscales of independence ($p < .01$) on the adaptability subscale, organization on the adaptability ($p < .05$) and cohesion ($p < .01$) subscales, and control on both the cohesion ($p < .01$) and adaptability ($p < .001$) subscales.

Controlling for social desirability reduced the significance of the correlations only slightly (Table 7). Although the levels of significance dropped somewhat for some of the scales, the FACES II-Couple Form subscales of cohesion and adaptability still correlate significantly for both the husbands and the wives with the Edmonds' Marital Conventionalization Scale, the Dyadic Adjustment Scale cohesion subscale, and the Family Environment Scale subscales of expressiveness and conflict. The husbands also correlate ($p < .05$) with the Family Environment Scale subscales of independence, organization, and control on the adaptability subscale, while the wives correlate

Table 6
Pearson's Correlations

Scale	FACES II-Couple Form			
	Cohesion		Adaptability	
	Husband (N=101-106)	Wife (N=122-130)	Husband (N=97-101)	Wife (N=115-122)
Edmonds' Marital Conventionalization Scale	.52***	.48***	.43***	.55***
Dyadic Adjustment Scale-- Cohesion	.71***	.72***	.64***	.71***
Family Environment Scale				
--Cohesion	.60***	.74***	.60***	.74***
--Expressiveness	.45***	.61***	.61***	.68***
--Conflict	-.37***	-.46***	-.37***	-.57***
--Independence	-.07	.09	.02	.26**
--Achievement Orientation	-.07	-.10	.04	-.10
--Organization	.36***	.22**	.34***	.17*
--Control	-.10	-.21**	-.23**	-.32***

*** = Significant at .001 or above

** = Significant at .01

* = Significant at .05

Table 7

Pearson's Correlations Controlling for Social Desirability

Scale	FACES II-Couple Form			
	Cohesion		Adaptability	
	Husband (N=34-36)	Wife (N=42-46)	Husband (N=35-37)	Wife (N=40-43)
Edmonds' Marital Conventionalization Scale	.38**	.30**	.36**	.36**
Dyadic Adjustment Scale--				
Cohesion	.78***	.77***	.67***	.70***
Family Environment Scale				
--Cohesion	.60***	.83***	.70***	.78***
--Expressiveness	.49**	.54***	.67***	.67***
--Conflict	-.25(.07)	-.40**	-.35*	-.49***
--Independence	.13	.08	.35*	.24(.07)
--Achievement Orientation	-.14	-.13	.01	-.17
--Organization	.28 (.06)	.0	.30*	-.05
--Control	-.11	-.25(.06)	-.31*	-.38*

*** = Significant at .001 or above

** = Significant at .01

* = Significant at .05

with the Family Environment Scale subscale of control ($p < .01$) on the adaptability subscale.

While the Pearson correlation is a measure of linear relationships, the theory underlying the FACES II-Couple Form is curvilinear in nature. That is, the best fitting line of regression with regard to the correlation of cohesion and adaptability to any measure of family well being may not be a straight one. Therefore, an eta coefficient (a correlation coefficient associated with general curvilinear regression), as well as a Pearson coefficient, was computed for each of the relationships among the scales. These two correlation coefficients were then compared using a mathematical formula (Appendix E) to see if the relationship between the scales was linear or non-linear. The results show (Table 8) that the relationships are significantly different from linear for the husbands on both the cohesion and adaptability subscales, as they relate to the cohesion subscale of the Dyadic Adjustment Scale and the Family Environment Scale subscales of cohesion, expressiveness, conflict, independence, and achievement-orientation. The relationships were significantly different from linear for the wives on both the cohesion and adaptability subscales as they related to the cohesion subscale of the Dyadic Adjustment Scale and the Family Environment subscales of conflict and achievement-orientation. The wives' cohesion subscale was also significantly different from linear with regard to the Edmonds' Marital Conventionalization Scale and the Family Environment Scale subscales of cohesion and expressiveness. The wives' adaptability subscale also differed significantly from the Family Environment Scale subscale of independence.

Many of the nonlinear relationships disappear, however, when social desirability is controlled for (Table 9). The husband's subscale of cohesion does remain significantly different from linear in relation to the Family

Table 8
Eta Minus Pearson's Correlation as a Test for
Curvilinear Regression₁

Scale	FACES II-Couple Form			
	Cohesion		Adaptability	
	Husband (N=101-106) (F)	Wife (N=122-130) (F)	Husband (N=97-101) (F)	Wife (N=115-122) (F)
Edmonds' Marital Conventionalization Scale	1.2	2.17**	1.25	1.26
Dyadic Adjustment Scale				
--Cohesion	2.42**	1.86**	1.4*	1.7**
Family Environment Scale				
--Cohesion	3.1**	1.58**	2.98**	.95
--Expressiveness	1.4*	2.2**	1.74**	.82
--Conflict	2.87**	4.12**	2.27**	1.95**
--Independence	2.1**	1.04	1.74**	2.1**
--Achievement Orientation	2.4**	2.2**	1.62**	3.09**
--Organization	1.36	.66	.85	.81
--Control	.49	.63	.61	1.26

** = Significant at the .01 level or above

* = Significant at the .05 level

1) Formula is found in Appendix E

Table 9

Eta Minus Pearson's Correlation as a Test for Curvilinear Regression
Controlling for Social Desirability₁

Scale	FACES II-Couple Form			
	Cohesion		Adaptability	
	Husband (N=34-36) (F)	Wife (N=42-46) (F)	Husband (N=35-37) (F)	Wife (N=40-43) (F)
Edmonds' Marital Conventionalization Scale	.09	.47	.29	0
Dyadic Adjustment Scale				
--Cohesion	1.2	.84	2.4**	1.2
Family Environment Scale				
--Cohesion	3.06**	1.56	.66	.66
--Expressiveness	.43	1.36	.42	.86
--Conflict	1.8*	2.6**	2.18*	1.2
--Independence	1.1	.55	1.03	.84
--Achievement Orientation	1.17	1.2	1.15	2.1**
--Organization	.49	.39	.4	.54
--Control	.37	.29	.41	.53

** = Significant at the .01 level or above

* = Significant at the .05 level

1) Formula is found in Appendix E

Environment Scale subscales of cohesion and conflict, while the husband's adaptability subscale remains significantly different from the cohesion subscale of the Dyadic Adjustment Scale and the Family Environment Scale subscale of conflict. The wives' cohesion subscale remains different from linear with regard to the Family Environment subscales of conflict, while the wives' adaptability subscale remains significantly different from the Family Environment Scale subscale of achievement-orientation.

In order to test for the specific form of the nonlinearity detected in the above calculations, the distribution of scores for each relationship were collapsed into five sequential groups consisting of approximately 20 percent each. A one-way analysis of variance was then run producing an F probability as to whether linear, quadratic, or cubic trends were being detected among these groups. The results show that a linear trend is strongest overall (Table 10). This trend is confounded in a number of instances, however, where a quadratic trend is also present in the same distribution. This occurs in the husbands' cohesion subscale as it relates to the cohesion subscale of the Dyadic Adjustment Scale and the Family Environment Scale subscale of expressiveness. For the husbands' adaptability dimension this dual relationship only occurs with regard to the Family Environment Scale subscale of expressiveness. Two cubic trends have been detected with regard to the Family Environment Scale subscale of independence as it relates to both the husbands' cohesion and adaptability subscales.

This dual linear-quadratic trend occurs more frequently for the wives. Along the cohesion subscale this trend is seen in relation to the Edmonds' Marital Conventionalization Scale, the cohesion subscale of the Dyadic Adjustment Scale and the Family Environment Scale subscales of cohesion and expressiveness. For the wives' adaptability subscale this trend is seen in

Table 10
Specific Nonlinearity as Assessed Using
One-Way Analysis of Variance

Scale	FACES II-Couple Form											
	Husband (N=101-106)			Cohesion (N=122-130)			Wife (N=97-101)			Adaptability (N=115-122)		
	L	Q	C	L	Q	C	L	Q	C	L	Q	C
Edmonds' Marital Con- ventionalization Scale	22.7***			10.9**	4.7*		12.8***			24.8***		
Dyadic Adjustment Scale	66.6***	10.0**		94.1***	5.5		49.7***			86.2***	4.2*	
Family Environment Scale	27.6 ***			86.1***	15.8***		23.7***			86.8***	5.6*	
--Cohesion	14.4***	5.4*		37.6***	19.8***		30.3***	10.6**		63.5***	7.9**	
--Expressiveness	14.2***			16.5***			8.1**			32.5***		
--Conflict			8.4**						5.1*	7.1**		
--Independence			5.2*							5.2*		
--Achievement Orientation	13.9***			5.3*			10.7**					
--Organization												
--Control												5.5*

Values listed are F Ratios

*** = Significant at the .001 level or above

** = Significant at the .01 level

* = Significant at .05 level

L = Linear Relationship

Q = Quadratic Relationship

C = Cubic Relationship

relation to the cohesion subscale of the Dyadic Adjustment Scale, and the Family Environment Scale subscales of cohesion and expressiveness. No cubic trends have been found for the wives. The forms of the above relationships do not change after controlling for social desirability (Table 11). This is true for both the husbands and the wives.

With the distributions of scores still collapsed into five sequential groups of approximately 20 percent each, a further analysis was undertaken which consisted of multiple comparisons among the means of these groups. This was done in an effort to detect where in the distribution of scores the above linear and nonlinear trends occurred. The results of this analysis reveals a predominant trend where significant differences are seen between the means of the groups at the extreme ends of the scale. For example, the mean for group one on the lower end of the scale is almost always significantly different from the means for groups four and five at the upper end of the scale.

To investigate more closely the effect social desirability might be having on the linear/quadratic trends found above, the pattern of means for both the total and low social desirability groups were compared. The results showed that while controlling for social desirability lowered significance levels somewhat, it had virtually no effect on the pattern found among the means of the group. It is possible the lower levels of significance are due to the smaller sample size following the control for social desirability.

Discriminant Validity

Discriminant validity is assessed using two approaches. The first approach simply predicts that each of the FACES II-Couple Form subscales will

Table 11
Specific Nonlinearity as Assessed Using
One-Way Analysis of Variance Controlling for Social Desirability

Scale	FACES II-Couple Form														
	Husband (N=98-103)			Cohesion			Wife (N=118-124)			Husband (N=94-97)			Wife (N=110-119)		
	L	Q	C	L	L	Q	C	L	L	Q	C	L	L	Q	C
Edmonds' Marital Con- ventionalization Scale	22.7***			10.9**	4.7*			12.8***				24.8***			
Dyadic Adjustment Scale --Cohesion	74.9***	12.7 ***		89.8***	5.7*			49.6***				81.9***	4.8*		
Family Environment Scale --Cohesion	27.3***			78.7***	14.3***			23.1***				81.2***	5.1*		
--Expressiveness	13.7***	4.1*		37.7***	18.3***			26.6***	9.5**			63.4***	7.7**		
--Conflict	11.9***			15.6***				5.8*				34.4***			
--Independence			10.7**								5.9*	6.4*			
--Achievement Orientation				5.0*				9.7**				5.2*			
--Organization	11.8***			4.8*											
--Control															5.2*

Values listed are F Ratios

*** = Significant at the .001 level or above

** = Significant at the .01 level

* = Significant at .05 level

L = Linear Relationship

Q = Quadratic Relationship

C = Cubic Relationship

not be significantly correlated with the independent scales they were not predicted to correlate with in the concurrent validity section of this study. For the cohesion subscale this includes the Family Environment Scale subscales of achievement-orientation, organization and control. For the adaptability subscale this includes the Family Environment Scale subscales of independence, achievement-orientation, and cohesion, as well as the cohesion subscale of the Dyadic Adjustment Scale. The results show that the husbands' cohesion subscale does significantly correlate with the Family Environment Scale subscale of organization, but this relationship disappears after controlling for social desirability. The wives' cohesion subscale correlates significantly with both the Family Environment Scale subscales of organization and control, and only the relationship with organization falls out after controlling for social desirability. The husbands' subscale of adaptability does correlate significantly with the cohesion subscales of both the Dyadic Adjustment Scale and Family Environment Scale. When controlling for social desirability these significant relationships remain, and a significant relationship with the Family Environment Scale subscale of independence emerges. The wives' adaptability subscale correlates significantly with the cohesion subscales of both the Dyadic Adjustment Scale and the Family Environment Scale as well as the independence subscale of the Family Environment Scale. When controlling for social desirability, only the relationship with independence disappears.

The discriminant validity of the cohesion and adaptability subscales of the FACES II-Couple form was also investigated by testing for significant differences between the correlation coefficients of the cohesion and adaptability subscales as they relate to the same independent scale. This was done using a formula provided by Cohen and Cohen (1975; Appendix F) which computes

a t probability as to whether the cohesion and adaptability subscales of the FACES II-Couple Form do differ significantly. As can be seen in Table 12, there are few instances where the FACES II-Couple Form subscales do differ significantly in their correlations with the other scales.

The cohesion and adaptability subscales of the FACES II-Couple Form do differ significantly with regard to their correlations with the Family Environment Scale subscales of expression and control for the husbands, and conflict, expressiveness, and control for the wives. When social desirability is controlled for the husbands, the only significant difference which remains are the cohesion and adaptability correlations with the Family Environment Scale subscale of expressiveness. When social desirability is controlled for the wives, the cohesion and adaptability subscales do not differ significantly with regard to their correlations with any of the other scales.

Construct Validity

To assess the strength of the relationship between marital satisfaction as measured by the Kansas Marital Satisfaction Scale, and cohesion adaptability using the FACES II-Couple Form, a scattergram and Pearson Product-Moment Correlation was computed for both husbands and wives (Table 13). This was also done controlling for social desirability. The results show that the subscales of cohesion and adaptability both correlate significantly with marital satisfaction, and this relationship remains after controlling for social desirability.

An eta coefficient was calculated for the above relationships as a measure of general nonlinearity. Comparing the eta coefficient with the

Table 12

Discriminant Validity: The Significance of the Difference Between the
 FACES II-Couple Form's Subscales as they Correlate with the Independent
 Scales¹, Including Partialing Out Social Desirability¹

Scale	FACES II-Couple Form		Controlling for Social Desirability	
	Husband	Wife	Husband	Wife
	(N=97-106) (t)	(N=115-130) (t)	(N=34-37) (t)	(N=40-46) (t)
Edmonds' Marital Con- ventionalization Scale	1.55	-1.45	.18	-.66
Dyadic Adjustment Scale				
--Cohesion	1.51	.27	1.52	1.14
Family Environment Scale				
--Cohesion	0	0	-1.21	.95
--Expressiveness	-3.0**	-1.67	-2.15*	-1.78*
--Conflict	0	2.35*	.93	1.06
--Independence	-1.36	-3.2**	.80	-1.74*
--Achievement Orientation	-1.65	0	1.15	.415
--Organization	.32	.85	-.18	-.583
--Control	2.0*	2.0*	1.85*	1.45

** = Significant at the .01 level or above

* = Significant at the .05 level

1) Formula is found in Appendix F

Table 13
 Pearson's Correlations of FACES II-Couple Form With
 the Kansas Marital Satisfaction Scale

Scale	FACES II-Couple Form			
	Cohesion		Adaptability	
	Husband (N=110;36)	Wife (N=131;45)	Husband (N=104;37)	Wife (N=124;43)
Kansas Marital Satisfaction				
Scale	.52***	.55***	.50***	.60***
--Controlling for Social Desirability	.48***	.55***	.46***	.60***

*** = Significant at the .001 level or above

Eta Minus Pearson's Correlation as a Test for
 Curvilinear Regression¹

Scale	FACES II-Couple Form			
	Cohesion		Adaptability	
	Husband (N=110;36) (F)	Wife (N=131;45) (F)	Husband (N=104;37) (F)	Wife (N=124;43) (F)
Kansas Marital Satisfaction				
Scale	5.3**	4.5**	2.84**	5.19**
--Controlling for Social Desirability	1.64	.85	.53	.46

¹Formula found in Appendix E

** = Significant at .01 level or above

Table 13 (Continued)
Specific Nonlinearity as Assessed Using One-way
Analysis of Variance

Scale	FACES II-Couple Form											
	Husband (N=110; 36)			Wife (N=131; 45)			Husband (N=104; 37)			Wife (N=124; 43)		
	L	C	Q	L	C	Q	L	C	Q	L	C	Q
Kanaas Marital Satisfaction Scale	47.0***	5.9**	8.7**	54.0***	10.3**	32.4***	7.8**	74.4***	7.7**	4.6*		
--Controlling for Social Desirability				7.1*		3.9*		9.5*				

L = Linear Relationship
Q = Quadratic Relationship
C = Cubic Relationship

Values listed are F Ratios

*** = Significant at the .001 level or above
** = Significant at the .01 level
* = Significant at .05 level

Pearson coefficient, using the formula found in Appendix E, it was found that the relationship of cohesion and adaptability with marital satisfaction is significantly different from linear at the .001 level for both the husbands and the wives. However, these nonlinear trends become non-significant when controlling for social desirability.

In order to test for the specific form of nonlinearity detected above, a one-way analysis of variance was run producing an F probability as to whether linear, quadratic, or cubic trends exist. Consistent with the eta calculations, a significant linear-quadratic relationship was found for both husbands and wives on both the cohesion and adaptability subscales. A cubic relationship was found as well for the husbands' cohesion subscale and the wives' adaptability subscale. Controlling for social desirability once again eliminated all nonlinear trends in the above relationships, leaving only significant linear trends in all the scales, except the husbands' cohesion subscale where no significant trend was identified.

With the distribution of scores collapsed into five sequential groups of 20 percent each, a further analysis was undertaken in an effort to detect where in the distribution of scores the above linear and nonlinear trends occurred. This consisted of multiple comparisons among the means of these groups. The results reveal a predominant trend where significant differences are seen between the means of the groups (or group) at the lower end of the scale, and those at the upper end of the scale. This trend, while still existent, becomes much less evident after controlling for social desirability.

CHAPTER IV:
DISCUSSION, IMPLICATIONS, AND CONCLUSION

Discussion

Looking at the results it appears there is little evidence which can be used to support the circumplex Model's assertion of curvilinearity. While evidence exists which supports the FACES II-Couple Form levels of reliability and concurrent validity, evidence of discriminant and construct validity (with regard to curvilinearity) is lacking. Furthermore, these findings remain after controlling for social desirability. Evidence also exists which casts some doubt upon the appropriateness of using the cutting points for the FACES II family instrument with the FACES II-Couple Form.

Hypothesis I:

Hypothesis I predicts that the distribution and cutting points established for the FACES II family instrument will be adequate for the FACES II-Couple Form. The results failed to support this hypothesis for three of the sixteen cells. The Chi-Square goodness of fit test reveals that the husbands differ significantly in two of the sixteen cells, and the wives in one of the sixteen cells. These significant differences appear in the moderately extreme chaotically-connected cell for the husbands, and the extreme chaotically-enmeshed cell for both the husbands and the wives.

Because the cutting points established by Olson, Portner and Bell (1983) are based on the assumption of a normal distribution, and because of the significant differences found at the one extreme in this study, the current population was tested for the shape of its distribution. It was found that the wives' distribution along the cohesion dimensions differed significantly from a normal distribution, being skewed in a negative direction with a

leptokurtic peak at the high end of the distribution. While not significant, the wives' adaptability dimension tends toward this direction also. The same is true of the husbands' cohesion dimension. This negative skewing may account for the significant differences found between the expected frequencies of these extreme cells based on the distribution of Olson's sample measured using the FACES II (assuming normalcy) and the observed frequencies for the distribution of this sample, as measured by the FACES II-Couple Form.

Hypothesis II:

Hypothesis II predicts that the internal consistency of the FACES II-Couple Form will be adequate, and will be comparable to the level of internal consistency reported for the FACES II family form. The results of this study lend some support to this hypothesis. The reliability for the total FACES II-Couple Form is .90 for the husbands, and .92 for the wives. This level is adequate and meets or exceeds the .90 reported for the FACES II family instrument.

The reliability for the cohesion subscale of the FACES II-Couple form is .81 for the husbands, and .85 for the wives. This estimate of reliability falls somewhat below the .87 reported for the FACES II family form but, none the less, is adequate. The reliability for the adaptability subscale of the FACES II-Couple form is .85 for the husbands, and .86 for the wives. This level of reliability is adequate and exceeds the .78 reported for the FACES II family instrument.

Hypothesis III:

Hypothesis IIIa predicts that the cohesion subscale of the FACES II-Couple Form will be positively correlated with the cohesion subscale of the Dyadic Adjustment Scale. This hypothesis is supported. The cohesion subscale of the FACES II-Couple Form is significantly correlated with the

cohesion subscale of the Dyadic Adjustment Scale for both the husbands and the wives. Furthermore, this relationship remains after controlling for social desirability.

Hypothesis IIIb predicts that the cohesion subscale of the FACES II-Couple Form will be positively correlated with the cohesion and independence subscales of the Family Environment Scale. Partial support is found for this hypothesis. The cohesion subscale of the FACES II-Couple Form is significantly correlated with the cohesion subscale of the Family Environment Scale for both the husbands and the wives, but does not correlate significantly with the independence subscale of the Family Environment Scale for either the husbands or the wives. These findings remained after controlling for social desirability.

Hypothesis IIIc predicts that the adaptability subscale of the FACES II-Couple Form will be positively correlated with the control and organization subscales of the Family Environment Scale. Partial support is found for this hypothesis. The adaptability subscale of the FACES II-Couple Form is significantly correlated with the Family Environment Scale subscales of organization and control, except that the wives' correlations are negative. This relationship remains after controlling for social desirability, except for the organization subscale's correlation with adaptability for the wives. This suggests that the husbands perceive high adaptability as also being higher in levels of organization and control, while the wives perceive high adaptability as being higher in organization, but lower in control.

Hypothesis IIIId holds that both the cohesion and adaptability subscales of the FACES II-Couple Form will be positively correlated with the expressiveness and conflict subscales of the Family Environment Scale. Partial support was found for this hypothesis. The cohesion and adaptability

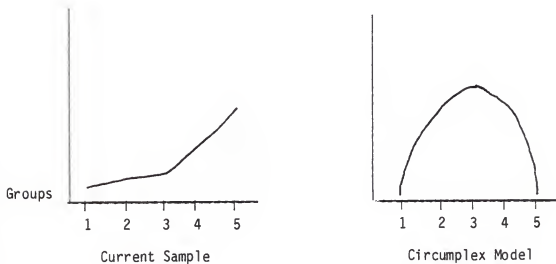
subscales of the FACES II-Couple Form are significantly correlated with both the Family Environment Scale subscales of expressiveness and conflict, for both the husbands and the wives. However, the wives' correlations are negative. This relationship remains even after controlling for social desirability, except for the correlation of the conflict subscale with cohesion for the wives. These results suggest that the husbands perceive higher levels of cohesion and adaptability to be related to higher levels of expressiveness and conflict, while the wives perceive higher levels of cohesion and adaptability to be related to higher levels of expressiveness, but lower levels of conflict.

While unpredicted, several other significant relationships appear in Table 6: 1) the independence subscale of the Family Environment Scale correlates significantly with the adaptability subscale of the FACES II-Couple form for wives; 2) the organization subscale of the Family Environment Scale correlates significantly with the FACES II-Couple Form subscale of cohesion for both the husbands and wives; 3) the control subscale of the Family Environment Scale correlates significantly with the cohesion subscale of the FACES II-Couple Form for the wives. All of these relationships fall out, however, when controlling for social desirability. It is also important to note that the cohesion and adaptability subscales of the FACES II-Couple form correlated significantly with the Edmonds' Marital Conventionalization Scale. More importantly, these significant relationships remained after taking out the respondents who scored in the most socially desirable two-thirds of the sample. This finding suggests that the sample used in this study responded in a highly socially desirable manner.

Because the Circumplex Model is a curvilinear model, the form of the above relationships have also been tested for general nonlinearity. The

results show that a significant degree of nonlinearity exists for 22 of the 36 possible relationships (Table 7). After controlling for social desirability, six of these general nonlinear relationships remain (Table 8). It is for this reason that all of the relationships in the concurrent validity section of this study have been tested for specific nonlinearity. The results of this analysis reveals that, by far, the predominant form among the correlations is best represented by a linear line of regression. A number of relationships show significant linear and quadratic forms within the same relationship, however. This is true of seven of the wives' correlations, and three of the husbands' (Table 9). This is understandable when one considers the degree of negative skewness encountered in the distribution, especially for the wives. How this dual linear-quadratic relationship can occur in the same correlation becomes clear when an investigation of the distribution of scores within each scale is considered more closely. In this part of the study each consecutive 20 percent of the scores in each scale's range of scores was compressed into one group. This resulted in a total of five groups of scores which could then be paired off with one another in an effort to see if the means between any of these groups differed significantly from one another. The results showed that significant differences occurred most predominantly between the extreme pairs of groups (see Figure 2). Wherever a quadratic relationship was found occurring with a linear relationship, groups four and five on the high end of the scale always differed significantly from group one on the low end of the scale. This suggests that (going from low to high) the slope of the relationship generally proceeds in a linear fashion across groups one, two, and three, but then dramatically increases at groups four and five, thus accounting for the negatively skewed, curvilinear relationship. It is important to note here, as well, that both the Family

Figure 2: Shape of Distribution of Current Sample as It Compares to the Shape Predicted by the Circumplex Model



Environment Scale and the Dyadic Adjustment Scale are based on linear models. Unlike the Circumplex Model, these two scales assume "the more the better," and view these results in a positive light. Thus, this section of the study provides evidence supporting the concurrent validity of the FACES II-Couple Form, but the relationships among the scales are linear in nature.

Hypothesis IV:

Hypothesis IVa predicts that the cohesion subscale of the FACES II-Couple form will not be significantly correlated with the control, organization, or achievement-orientation subscales of the Family Environment Scale. The results of this study offer some support for this hypothesis. Looking at Tables 11 and 12, it can be seen that the husbands' cohesion subscale does correlate significantly with the above mentioned subscale of organization, but this relationship disappears when social desirability is controlled for. For the wives, significant correlations are found with the organization and control subscales, but both of these also drop out when social desirability is controlled for. What this suggests is that those respondents more sensitive to social desirability may perceive higher levels of cohesion as being related to higher levels of organization and/or control.

Hypothesis IVb predicts that the adaptability subscale of the FACES II-Couple Form will not be significantly correlated with the cohesion subscale of the Dyadic Adjustment Scale or the cohesion, independence or achievement-orientation subscales of the Family Environment Scale. There is minimal support for this hypothesis. The adaptability subscale of the FACES II-Couple Form is significantly correlated with the cohesion subscale of both the Dyadic Adjustment Scale and the Family Environment Scale for both the husbands and the wives. This holds true even after controlling for social desirability. One explanation for this finding may be that both the cohesion

subscales of the Dyadic Adjustment Scale and the Family Environment Scale may contain "support" as well as "cohesion" items and thus facilitate both cohesion and adaptability. Furthermore, the Family Environment Scale subscale of independence is also significantly correlated with the FACES II-Couple Form subscale of adaptability for the wives. However, this relationship disappears for the wives after controlling for social desirability, but emerges for the husbands.

Hypothesis IVc predicts that the differences between the correlations of the FACES II-Couple form subscales of cohesion and adaptability with the independent scales not predicted to correlate with both of these subscales will be significant. Little support is found for this hypothesis. Looking at Table 12 it can be seen that the differences between correlations with the independent scales are only significant for the husbands with regard to the Family Environment Scale subscales of expressiveness and control. This finding remains after controlling for social desirability. For the wives, significant differences are found between the correlations of the adaptability and cohesion subscales as they correlate with the Family Environment Scale subscales of conflict, independence, and control (before controlling for social desirability), and expressiveness (after controlling for social desirability). The correlations of the FACES II-Couple Form subscales of cohesion and adaptability do not differ significantly with regard to any of the other independent scales used in this study. These findings appear to be due to the results of hypothesis IVb above which finds that the adaptability subscale does significantly correlate with many of the independent subscales it was not predicted to correlate with.

Hypothesis IVd holds that neither the adaptability nor cohesion subscales of the FACES II-Couple Form will be significantly correlated with the

Edmonds' Marital Conventionalization Scale. There is no support for this hypothesis. Both the cohesion and adaptability subscales are significantly correlated with the Edmonds' Marital Conventionalization Scale. Furthermore, as discussed under hypothesis IIId above, this relationship is still significant after taking out those respondents who scored in the most socially desirable two-thirds of the sample. Again, the sample used in this study appears to be responding in a highly socially desirable manner.

Overall there is little support for the discriminant validity of the cohesion and adaptability subscales of the FACES II-Couple Form. Part of the reason for this may be due to the confounding effect of social desirability bridging the gap between the two subscales. Another explanation may be the "support" items which may be contained in the cohesion subscales of the Dyadic Adjustment Scale and the Family Environment Scale which also bridge the gap between cohesion and adaptability.

Hypothesis V:

Hypothesis V holds that the construct of marital satisfaction as measured by the Kansas Marital Satisfaction Scale will be positively correlated with both the adaptability and cohesion subscales of the FACES II-Couple Form, and this correlation will be of a quadratic form. There is support for this hypothesis with regard to the linear Pearson correlation only. The Pearson correlations for both the cohesion and adaptability subscales, for both husbands and wives, are significant. This significant relationship remains after controlling for social desirability. However, the presence of a curvilinear relationship as predicted by the Circumplex Model is not supported. The primary form of the relationship is not quadratic, as predicted, but is linear. Where a dual quadratic-linear relationship does exist, the quadratic relationship appears to be due to the population's

distribution of scores clustering at the upper end of the scales, producing a negative skew, rather than being due to a difference between the balanced and extreme regions as predicted by the Circumplex Model. Furthermore, once social desirability is controlled for, the significant Pearson correlations remain, but the nonlinear relationships disappear all together.

Implications of the Study

For this study to be considered valid, one primary condition needed to be met. This condition was that the sample be a representative sample, comparable in demographic characteristics to the sample used to norm the FACES II family instrument. The sample did fit the demographic perimeters asked for when purchasing it from the Donnelley Corporation. That is, the sample did consist primarily of families in the Adolescent and Launching stages of the family life cycle, and does appear to be representative of the population of Kansas. Furthermore, based on the respondents' ages, education, income, and number of children, the couples in this sample were similar to the parents in the two stages of the family life cycle mentioned above used in Olson's FACES II family study. Therefore, differences between Olson's findings and the findings of this study do not appear to be due to differences between the samples used.

The distribution differences appear to be due to the effect of social desirability. Social desirability appears to be a pervasive confound in this study. Why this is so is less clear. As reported in the results section of this study, the construct of social desirability as measured by the Edmonds' Marital Conventionalization Scale is significantly correlated with both the adaptability and cohesion subscales of the FACES II-Couple Form for both

husbands and wives. This significant relationship remains even after taking out those respondents who scored in the most socially desirable two-thirds of the sample. It can be recalled from the literature review that instruments which unintentionally measure constructs such as socio-cultural bias, cohort effects, or social desirability, along with the intended construct, contain systematic measurement error, or invalidity. This is the case with the study using the FACES II-Couple Form. Olson and his colleagues do not include a measure of social desirability in the FACES II family instrument. Therefore, one cannot know if the responses to the FACES II family form were affected by a social desirability confound. In the same study, however, Olson and his colleagues did find a correlation of .73 between measures of marital satisfaction and conventionalization. These two findings suggest that the inclusion of a measure of social desirability may be necessary for the FACES II-Couple Form as well as the FACES II family form.

This confounding effect of social desirability is clearly evident, beginning with the significant negative skewing of the wives' distribution of scores along the cohesion dimension. This trend (though not significant) is also seen for the wives' distribution along the adaptability subscale, and the husbands' distribution along the cohesion subscale. The means of the scores for this sample are higher in both dimensions than the means of scores established during the FACES II family study. This rise in means is directly opposite to the results reported by Olson, McCubbin et al. (1983) who found that the means dropped for parents in the Families with Adolescents and Launching Families stages. The negative skewing found in this study results in a significant difference between the expected and observed frequency of respondents scoring in the moderately extreme chaotically-connected and the extreme chaotically-enmeshed cells of the Circumplex Model, with the present

sample scoring much higher than expected in these cells. This is the direction one might expect the scores to fall if social desirability is a factor. If social desirability was not such a pervasive confound, this sample's distribution may not have differed significantly from normal or from Olson's distribution.

This negative skewing effects other sections of the study as well. In the concurrent validity section, 27 of 35 possible correlations are significant. After controlling for social desirability 23 correlations still remain significant. In the analysis of curvilinearity which followed, it became clear that any curvilinearity which existed was of a secondary nature due to the negative skewing of the scores toward the high end of the scale. The most predominant relationship was linear. This relationship remains after controlling for social desirability. Only in the construct validity section of this study did controlling for social desirability eliminate this dual linear-quadratic relationship and produce an exclusively linear relationship.

Finally, this confounding effect also helps to explain the inability of the cohesion and adaptability subscales to significantly differentiate between themselves in terms of their relationships with the independent scales used in this study. The construct of social desirability may serve to artificially bridge any gap that may exist between the constructs of cohesion and adaptability.

One primary intent of this study was to investigate the validity of viewing the Circumplex Model, as measured by the FACES II-Couple form as a curvilinear model. There is no evidence in this study which can be used to support the Circumplex Model's assertion of curvilinearity. Support for this supposition is evident in that the predominant relationship of the cohesion and adaptability subscales with the other instruments is primarily linear.

The only quadratic effects which do occur are with regard to the distribution of scores along the upper two-fifths of the FACES II-Couple Form's scales. Furthermore, controlling for social desirability generally does not change this relationship. This suggests that the linear relationships found in this study are not artifacts of social desirability. The strongest evidence that the FACES II-Couple form is assessing linear constructs is seen in its relationship to marital satisfaction as measured by the Kansas Marital Satisfaction Scale. After controlling for social desirability, the relationship of the FACES II-Couple form to the Kansas Marital Satisfaction Scale is significant and exclusively linear.

Conclusion

Besides being a problem within the scale itself, other explanations for the presence of social desirability are possible. One explanation may be the wording of the cover letter (Appendix B). In it the respondents were essentially asked to help "us" (the experts) to establish the quality of this marital assessment instrument. It may be that the respondents misunderstood the intent of this study as being one of shaping an instrument which reflects the ideal marriage. Their responses may not have been reflective of their marriage, but of how they perceive the ideal marriage should be. Evidence for this (and one suggestion for further research) would be to look at the relationships between the socially desirable responses obtained in this study as they compare to other couples' perceptions of how they would like their marriages to be. Olson, Portner and Bell (1982) include in their inventories of family assessment just such a measure. They claim that the difference between the way families see themselves now, and how they would like to see

themselves ideally, is one measure of family satisfaction. It is interesting to note that the only exclusively linear relationship which remained in this study after controlling for social desirability was with regard to marital satisfaction.

A second, and perhaps more plausible reason for the high level of social desirability in this sample, may be due to the low return rate. Only 31 percent of the total number of questionnaires sent out were returned in a usable fashion. It may be that those who are more likely to respond in a socially desirable fashion are also more likely to return the questionnaire. It should also be noted that this survey sampling technique differs from the technique used by Olson, Portner and Bell (1982). These researchers used an exclusively Lutheran sample and administered the questionnaires in a live, supervised setting.

A third explanation may have to do with the wording of the items themselves. The FACES II family instrument and the Family Environment Scale are family assessment instruments. The term "we" in these instruments is used to refer to the whole family. The term "we" in the couple form refers to two specific individuals. Since 87.6 percent of the respondents who returned questionnaires consisted of complete couples (where both partners returned the questionnaire), there may have been a greater pressure on these respondents to reflect well vis-a-vis their partner. Anecdotal support for this explanation was seen written on the back of one of the questionnaires, "After filling out this questionnaire, my wife and I both agree that you should include one final question - 'Now your marriage; (1) Sucks, (2) Is on the rocks, (3) Is over.'"

A final, and perhaps more interesting explanation, has to do with a possible distinction between the way a clinical sample perceives cohesion and

adaptability as compared to the way a random sample perceives cohesion and adaptability. The Circumplex Model is the result of a clustering of concepts from family sociology, psychiatry, and other social science literature. As such, it is designed for use with a clinical sample. It may be that, having experienced the extremes, the clinical sample recognizes the balanced regions as more functional. On the other hand, the person on the street (a random sample) may not have actually experienced the extremes and may therefore perceive the extreme to be more desirable. This sample would then respond to the FACES scales in a linear fashion. If Broderick (1984) is correct in his assertion that the data in Olson's FACES II family study is really of a linear nature, combining these results with the results of this study (both studies having used a random sample) might suggest that the FACES scales are better clinical instruments than survey instruments.

The forthcoming analysis of the twelve rewritten FACES II-Couple Form items included on this questionnaire may shed more light on this issue. These items have been rewritten so that the negativness of scoring at the extremes might become more evident to the respondent, thus allowing he or she to recognize the midrange as the more optimal response. These responses can then be compared to the responses found on the FACES II-Couple Form itself. If the responses to the rewritten items are different from the responses to the FACES II-Couple Form, this may suggest that the FACES II-Couple Form is not worded explicitly enough for a nonclinical sample. The results of this study will be published later.

Footnotes

¹Since the Family Environment Scale is a family assessment instrument, its items have had to be rewritten for this study to fit couples; all of the instruments used in this study will be discussed in further detail in the methodology section.

²See the Appendix A for a copy of the total questionnaire.

³These twelve items from the FACES II-Couple Form are rewritten in an attempt to make more explicit the negative connotations associated with answering at the extreme ends of the response scale. Responses to these more explicit items will then be checked against responses to the original items in an effort to clarify whether the respondents are really comprehending the intended curvilinear nature of the scale. If they perceive the scale to be linear, with the optional response at one extreme, nonrandom measurement error would appear to be a problem. This section of the study, then, is a further investigation of the construct validity of the FACES II-Couple Form and will be addressed in a later paper.

Also included on the questionnaire are six items from the Marlowe-Crowne Scale of Social Desirability (Marlowe and Crowne, 1964). This scale has been dropped from the study because of the adequacy of the Edmonds (1967) scale as a measure of marital social desirability.

References

- Beavers, R.W., & Voeller, M.N. Comparing and contrasting the Olson circumplex model with the Beavers systems model. Family Process, 1983, 22, 85-98.
- Bell, R. Parent-adolescent interaction in runaway families. Unpublished doctoral dissertation, University of Minnesota, St. Paul, 1982.
- Blalock, H.M. Jr. Social statistics. McGraw-Hill, 1972.
- Broderick, C.B. Book review of Families: What Makes Them Work. By Olson, McCubbin and Associates, Sage, 1983, found in Journal of Marriage and the Family, 1984, 436, 501-502.
- Carmines, C.G., & Zeller, R.A. Reliability and validity assessment. Sage, 1979.
- Carmines, C.G., & Zeller, R.A. Measurement in the Social Sciences: the link between theory and data. Cambridge University Press, 1980.
- Cohen, J., & Cohen, P. Applied multiple regression/correlation analysis for the behavioral sciences. Hillsdale, N.J.: Lawrence Erlbaum Associates, 1975.
- Decastro, F. Circumplex model of marital and family systems: Empirical test with families of delinquent and non-delinquent adolescent boys. Unpublished master's thesis, Kansas State University, Manhattan, 1982.
- Druckman, J.A. Family oriented policy and treatment program for juvenile status offenders. Journal of Marriage and the Family, 1979, 41, 627-636.
- Edmonds, V.H. Marital conventionalization: Definition and measurement. Journal of Marriage and the Family, 1967, 29, 681-688.
- Forman, B.D., & Hagan, B.J. A comparative review of total family functioning measures. The American Journal of Family Therapy, 1983, 11, 25-40.

- Grover, K.J., Paff-Bergen, L.A., Russell, C.S., & Schumm, W.R. The Kansas Marital Satisfaction Scale: A further brief report. Psychological Reports, 1984, 54, 629-630.
- Helmstadter, G.C. Principles of psychological measurement. Appleton-Century-Crofts, 1964.
- Locke, H.J. & Wallace, K.M. Short marital adjustment tests: Their reliability and validity. Marriage and Family Living. 1959, 21, 251-255.
- Marlowe, D., & Crowne, D.P. The approval motive. New York: Wiley and Sons, 1964.
- Mitchell, S.E., Newell, G.K., & Schumm, W.R. Test-retest reliability of the Kansas marital satisfaction scale. Psychological Reports, 1983, 53, 567-572.
- Moos, R.H. Family Environment Scale. Palo Alto: Consulting Psychologists, 1974.
- Moos, R.H., & Moos, B. A typology of family social environments. Family Process, 1976, 15, 357-371.
- Olson, D. Bridging research, theory and application: The triple threat in science. In Olson, D. (Ed.), Treating Relationships. Lake Mills: Graphic Publishing, 1976.
- Olson, D., Bell, R., & Portner, J. Family adaptability and cohesion evaluation scales. Unpublished inventory, University of Minnesota, 1978.
- Olson, D., McCubbin, H.I., Barnes, H., Larsen, A., Musen, M., & Wilson, M. Families: What makes them work. Sage, 1983.
- Olson, D., Portner, J., & Bell, R. Family inventories. University of Minnesota Press, St. Paul, 1982.

- Olson, D., Portner, J., & Bell, R. Family adaptability and cohesion evaluation scales II-couple form. University of Minnesota Press, St. Paul, 1983.
- Olson, D.H., Russell, C.S., & Sprenkle, D.H. Circumplex model of marital and adaptability dimensions, family types and clinical applications. Family Process, 1979, 18, 3-28.
- Portner, J. Parent-adolescent interaction of families in treatment. Unpublished doctoral dissertation, University of Minnesota, St. Paul, 1980.
- Russell, C. Circumplex model of marital and family systems III: Empirical evaluation with families, Family Process, 1979, 18, 29-45.
- Schumm, W.R., Bollman, S., & Jurich, A. Validity of Edmonds' marital conventionalization scale. Journal of Psychology, 1981, 109, 65-71.
- Selltiz, C., Wrightsman, L.S., & Cook, S.W. Research methods in social relations. Holt, Rinehart and Winston, 1976.
- Snyder, D.K. Multidimensional assessment of marital satisfaction. Journal of Marriage and the Family, 1979, 41, 813-873.
- Spanier, G.B. Measuring dyadic adjustment: New scales for assessing the quality of marriage and similar dyads. Journal of Marriage and the Family, 1976, 38, 15-28.
- Sprenkle, D., & Olson, D. Circumplex model of marital systems IV: Empirical study of clinic and nonclinic couples. Journal of Marriage and Family Therapy, 1978, 4, 59-74.
- United States. Bureau of the Census. 1980 census of the population. Chapter C. General Social and Economic Characteristics.

APPENDIX A

The Questionnaire

Questionnaire # _____

This study is being conducted under guidelines established by Kansas State University. By cooperating, you will help researchers and clinicians to improve the quality of their work with couples. Your honest and thoughtful consideration is greatly appreciated.

We would like to ask a few questions about yourself for statistical purposes.

Q-1. Your sex. (Circle number)

1. MALE
2. FEMALE

Q-2. Your present age: _____ YEARS

Q-3. Your present marital status. (Circle number)

1. NEVER MARRIED
2. MARRIED
3. DIVORCED
4. SEPARATED
5. WIDOWED

Q-4. Which of the following best describes your racial or ethnic identification? (Circle number)

1. BLACK
2. CHICANO (MEXICAN-AMERICAN)
3. NATIVE AMERICAN (AMERICAN INDIAN)
4. WHITE (CAUCASIAN)
5. ORIENTAL
6. OTHER -- SPECIFY _____

Q-5. How many children do you have total? (Write in) _____ CHILDREN

If you have children, how many of each age are still living at home?
(Write in)

Number of Children

- _____ 0-5 YEARS OF AGE
 _____ 6-12 YEARS OF AGE
 _____ 13-18 YEARS OF AGE
 _____ OVER 19 YEARS OF AGE

Q-6. How many years of education have you completed? (Circle number)

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22

Q-7. What was your approximate net family income from all sources, before taxes, in 1983? (Circle number)

1. \$0 - 9,999
2. \$10,000 - 19,999
3. \$20,000 - 29,999
4. MORE THAN \$30,000

Please read each statement and circle the response number which best describes your marital relationship at the present time.

	ALMOST NEVER	ONCE IN A WHILE	SOMETIMES	FREQUENTLY	ALMOST ALWAYS
1. We are supportive of each other during difficult times.	1	2	3	4	5
2. In our relationship it is easy for both of us to express our opinion.	1	2	3	4	5
3. It is easier to discuss problems with people outside the marriage than with my partner.	1	2	3	4	5
4. Each of us has input regarding major "family" decisions.	1	2	3	4	5
5. We spend time together when we are home.	1	2	3	4	5
6. We are flexible in how we handle differences.	1	2	3	4	5
7. We do things together.	1	2	3	4	5
8. We discuss problems and feel good about the solutions.	1	2	3	4	5
9. In our marriage, we each go our own way.	1	2	3	4	5
10. We shift household responsibilities between us.	1	2	3	4	5
11. We know each others close friends.	1	2	3	4	5
12. It is hard to know what the rules are in our relationship.	1	2	3	4	5

	ALMOST NEVER	ONCE IN A WHILE	SOMETIMES	FREQUENTLY	ALMOST ALWAYS
13. We consult each other on personal decisions.	1	2	3	4	5
14. We freely say what we want.	1	2	3	4	5
15. We have difficulty thinking of things to do together.	1	2	3	4	5
16. We have a good balance of leadership in our family.	1	2	3	4	5
17. We feel very close to each other.	1	2	3	4	5
18. We operate on the principle of fairness in our marriage.	1	2	3	4	5
19. I feel closer to people outside the marriage than to my partner.	1	2	3	4	5
20. We try new ways of dealing with problems.	1	2	3	4	5
21. I go along with what my partner decides to do.	1	2	3	4	5
22. In our marriage, we share responsibilities.	1	2	3	4	5
23. We like to spend our free time with each other.	1	2	3	4	5
24. It is difficult to get a rule change in our relationship.	1	2	3	4	5
25. We avoid each other at home.	1	2	3	4	5
26. When problems arise, we compromise.	1	2	3	4	5
27. We approve of each other's friends.	1	2	3	4	5
28. We are afraid to say what is on our minds.	1	2	3	4	5
29. We tend to do more things separately.	1	2	3	4	5
30. We share interests and hobbies with each other.	1	2	3	4	5

How often would you say the following events occur between you and your mate? (Circle number)

	NEVER	LESS THAN ONCE A MONTH	ONCE OR TWICE A MONTH	ONCE OR TWICE A WEEK	ONCE A DAY	MORE OFTEN
31. Have a stimulating exchange of ideas.	0	1	2	3	4	5
32. Laugh together	0	1	2	3	4	5
33. Calmly discuss something	0	1	2	3	4	5
34. Work together on a project	0	1	2	3	4	5
		ALL OF THEM	MOST OF THEM	SOME OF THEM	VERY FEW OF THEM	NONE OF THEM
35. Do you and your mate engage in outside interests together?		4	3	2	1	0

Please indicate whether the following statements are more TRUE or more FALSE as applied to your marriage. (Circle letter)

36. My spouse and I really help and support one another.		T		F
37. In our marriage, we often keep our feelings to ourselves.		T		F
38. We fight alot in our marriage.		T		F
39. We don't do things on our own very often in our marriage.		T		F
40. We feel it is important to be the best at whatever you do.		T		F
41. Activities in our marriage are pretty carefully planned.		T		F
42. In our marriage, we rarely order each other around.		T		F
43. We often seem to be killing time at home.		T		F
44. We say anything we want to around each other at home.		T		F

- | | | |
|---|---|---|
| 45. In our marriage, we rarely become openly angry. | T | F |
| 46. In our marriage, we are strongly encouraged to be independent. | T | F |
| 47. Getting ahead in life is very important in our marriage. | T | F |
| 48. We are generally very neat and orderly. | T | F |
| 49. There are very few rules to follow in our marriage. | T | F |
| 50. We put a lot of energy into what we do at home. | T | F |
| 51. It's hard to "blow off steam" at home without upsetting my spouse. | T | F |
| 52. In our marriage, we sometimes get so angry we throw things. | T | F |
| 53. We think things out for ourselves in our marriage. | T | F |
| 54. How much money a person makes is not very important to us. | T | F |
| 55. It's often hard for us to find things when we need them in our house. | T | F |
| 56. One of us makes most of the decisions. | T | F |
| 57. There is a feeling of togetherness in our marriage. | T | F |
| 58. We tell each other about our personal problems. | T | F |
| 59. In our marriage, we hardly ever lose our tempers. | T | F |
| 60. We come and go as we want to in our marriage. | T | F |
| 61. We believe in competition and "may the best man win." | T | F |
| 62. Being on time is very important in our marriage. | T | F |
| 63. There are set ways of doing things in our marriage. | T | F |

- | | | |
|--|---|---|
| 64. We rarely volunteer when something has to be done at home. | T | F |
| 65. If we feel like doing something on the spur of the moment, we often just pick up and go. | T | F |
| 66. We often criticize one another. | T | F |
| 67. There is very little privacy in our marriage. | T | F |
| 68. We always strive to do things just a little better the next time. | T | F |
| 69. We change our minds often in our marriage. | T | F |
| 70. There is a strong emphasis on following rules in our marriage. | T | F |
| 71. In our marriage, we really back each other up. | T | F |
| 72. One of us usually gets upset if you complain in our marriage. | T | F |
| 73. In our marriage, we sometimes hit each other. | T | F |
| 74. We almost always rely on ourselves when a problem comes up. | T | F |
| 75. We rarely worry about job promotions, school grades, etc. | T | F |
| 76. In our marriage, we make sure our room(s) are neat. | T | F |
| 77. We both have an equal say in our marital decisions. | T | F |
| 78. There is very little joint spirit in our marriage. | T | F |
| 79. Money and paying bills is openly talked about in our marriage. | T | F |
| 80. When we disagree, we try hard to smooth things over and keep the peace. | T | F |
| 81. We strongly encourage each other to stand up for our rights. | T | F |
| 82. In our marriage, we don't try that hard to succeed. | T | F |
| 83. Each person's duties are clearly defined in our marriage. | T | F |

- | | | |
|--|---|---|
| 84. We can do whatever we want to in our marriage. | T | F |
| 85. We really get along well with each other. | T | F |
| 86. We are usually careful about what we say to each other. | T | F |
| 87. In our marriage, we often try to one-up or out-do each other. | T | F |
| 88. It's hard to be by yourself without hurting someone's feelings in our marriage. | T | F |
| 89. "Work before play" is the rule in our marriage. | T | F |
| 90. Money is not handled very carefully in our marriage. | T | F |
| 91. Rules are pretty inflexible in our marriage. | T | F |
| 92. There is plenty of time and attention for both of us in our marriage. | T | F |
| 93. There are a lot of spontaneous discussions in our marriage. | T | F |
| 94. In our marriage, we believe you don't ever get anywhere by raising your voice. | T | F |
| 95. We are not really encouraged to speak up for ourselves in our marriage. | T | F |
| 96. In our marriage, we often compare ourselves with others as to how well we are doing at work or school. | T | F |
| 97. Dishes are usually done immediately after eating. | T | F |
| 98. You can't get away with much in our marriage. | T | F |
| 99. Every new thing I have learned about my spouse since we were married has pleased me. | T | F |
| 100. My marriage is a very happy one. | T | F |
| 101. There are times when my spouse does things that make me unhappy. | T | F |

- | | | |
|--|---|---|
| 102. There are some things about my spouse that I do not like. | T | F |
| 103. My marriage is a perfect success. | T | F |
| 104. I believe our marriage is reasonably happy. | T | F |
| 105. My spouse and I get angry with each other sometimes. | T | F |
| 106. My spouse has all of the qualities I've always wanted in a spouse. | T | F |
| 107. I have never regretted my marriage, not even for a moment. | T | F |
| 108. I have known very little happiness in our marriage. | T | F |
| 109. I sometimes feel resentful when I don't get my way. | T | F |
| 110. On a few occasions, I have given up doing something because I thought too little of my ability. | T | F |
| 111. No matter who I'm talking to, I'm always a good listener. | T | F |
| 112. I'm always willing to admit it when I make a mistake. | T | F |
| 113. There have been occasions when I felt like smashing things. | T | F |
| 114. I have never deliberately said something that hurt someone's feelings. | T | F |

The following items concern your evaluation of your marriage in terms of satisfaction/dissatisfaction. (Circle number)

- | | <u>Low</u> | <u>High</u> |
|---|---------------|-------------|
| 115. How satisfied are you with your marriage? | 1 2 3 4 5 6 7 | |
| 116. How satisfied are you with your relationship with your spouse? | 1 2 3 4 5 6 7 | |
| 117. How satisfied are you with your husband/wife as a spouse? | 1 2 3 4 5 6 7 | |

Please read each statement and circle the letter of the response which best describes your marital relationship (next page).

118. HOW SUPPORTIVE ARE YOU OF YOUR SPOUSE DURING DIFFICULT TIMES?

- A. I am almost never supportive of my spouse during difficult times, I almost always stand back and let him or her handle the difficulty alone.
- B. Once in a while I am supportive of my spouse during difficult times, but usually I stand back and let him or her handle the difficulty alone.
- C. Sometimes I am supportive of my spouse during difficult times, but sometimes I think it is best to stand back and let him or her handle the difficulty alone.
- D. I am frequently supportive of my spouse during difficult times, I seldom seem to be able to stand back and allow him or her to handle the difficulty alone.
- E. I am almost always supportive of my spouse during difficult times, I am almost never able to stand back and allow him or her to handle the difficulty alone.

119. HOW SUPPORTIVE IS YOUR SPOUSE OF YOU DURING DIFFICULT TIMES?

- A. My spouse is almost never supportive of me during difficult times, he or she almost always stands back and lets me handle the difficulty alone.
- B. Once in a while my spouse is supportive of me during difficult times, but usually he or she stands back and lets me handle the difficulty alone.
- C. Sometimes my spouse is supportive of me during difficult times, but sometimes he or she thinks it is best to stand back and let me handle the difficulty alone.
- D. My spouse is frequently supportive of me during difficult times, he or she seldom seems able to stand back and allow me to handle the difficulty alone.
- E. My spouse is almost always supportive of me during difficult times, he or she is almost never able to stand back and allow me to handle the difficulty alone.

120. HOW OFTEN DO YOU FEEL EMOTIONALLY CLOSE TO YOUR SPOUSE?

- A. I almost never feel emotionally close to my spouse, I feel like we're almost always emotionally separate.
- B. Once in a while I feel emotionally close to my spouse, but I usually feel like we're emotionally separate.
- C. Sometimes I feel emotionally close to my spouse, but sometimes I feel like we're able to be emotionally separate as well.
- D. I frequently feel close to my spouse, I feel like we're seldom able to be emotionally separate.

- E. I almost always feel emotionally close to my spouse, I feel like we're almost never able to be emotionally separate.
121. HOW OFTEN DO YOU THINK YOUR SPOUSE FEELS EMOTIONALLY CLOSE TO YOU?
- A. I think my spouse almost never feels emotionally close to me, I think he or she feels like we're almost always emotionally separate.
- B. I think that once in a while my spouse feels emotionally close to me, but I think he or she usually feels like we're emotionally separate.
- C. I think that sometimes my spouse feels emotionally close to me, but I think that sometimes he or she feels we're able to be emotionally separate as well.
- D. I think my spouse frequently feels emotionally close to me, I think he or she feels like we're seldom able to be emotionally separate.
- E. I think my spouse almost always feels emotionally close to me, I think he or she feels like we're almost never able to be emotionally separate.
122. HOW OFTEN DO YOU APPROVE OF YOUR SPOUSE'S FRIENDS?
- A. I almost never approve of my spouse's friends, there are none whom I really enjoy.
- B. Once in a while I approve of my spouse's friends, but there are only a few whom I really enjoy.
- C. Sometimes I approve of my spouse's friends, there are some whom I really enjoy and others whom I don't enjoy.
- D. I frequently approve of my spouse's friends, I really enjoy almost all of them.
- E. I almost always approve of my spouse's friends, I really enjoy almost all of them.
123. HOW OFTEN DOES YOUR SPOUSE APPROVE OF YOUR FRIENDS?
- A. My spouse almost never approve's of my friends, there are none whom he or she really enjoys.
- B. Once in a while my spouse approves of my friends, but there are only a few whom he or she really enjoys.
- C. Sometimes my spouse approves of my friends, there are some whom he or she really enjoys and others that he or she doesn't enjoy.
- D. My spouse frequently approves of my friends, he or she really enjoys most of them.
- E. My spouse almost always approves of my friends, he or she really enjoys almost all of them.

124. HOW OFTEN DO YOU FREELY SAY WHAT YOU WANT TO YOUR SPOUSE?
- A. I almost never say what I want to my spouse, I keep most of my thoughts to myself.
 - B. Once in a while I say what I want to my spouse, but more often I feel it is necessary to keep my thoughts to myself.
 - C. Sometimes I say what I want to my spouse, but I also feel free to keep some thoughts to myself.
 - D. I frequently say what I want to my spouse, I am able to keep few thoughts to myself.
 - E. I almost always say what I want to my spouse, I am able to keep almost no thoughts to myself.
125. HOW OFTEN DO YOU THINK YOUR SPOUSE FREELY SAYS WHAT HE OR SHE WANTS TO YOU?
- A. I think my spouse almost never says what he or she wants to me, I think he or she keeps most thoughts to his or herself.
 - B. I think that once in a while my spouse says what he or she wants to me, but I think that more often he or she feels it is necessary to keep thoughts to his or herself.
 - C. I think that sometimes my spouse says what he or she wants to me, but I think he or she also feels free to keep some thoughts to his or herself.
 - D. I think my spouse frequently says what he or she wants to me, I think he or she is able to keep few thoughts to his or herself.
 - E. I think my spouse almost always says what he or she wants to me, I think he or she is able to keep almost no thoughts to his or herself.
126. HOW WOULD YOU DESCRIBE THE BALANCE OF LEADERSHIP IN YOUR MARRIAGE?
- A. I am almost never the leader in our marriage, my spouse is almost always the leader.
 - B. Once in a while I will be the leader in our marriage, but more often my spouse is the leader.
 - C. Sometimes I am the leader in our marriage, and sometimes my spouse is the leader.
 - D. I am frequently the leader in our marriage, more often than my spouse is the leader.
 - E. I am almost always the leader in our marriage, my spouse is almost never the leader.

127. HOW WOULD YOUR SPOUSE DESCRIBE THE BALANCE OF LEADERSHIP IN YOUR MARRIAGE?
- A. My spouse would say he or she is almost never the leader in our marriage, that I am almost always the leader.
 - B. My spouse would say that once in a while he or she is the leader in our marriage, but that I am more often the leader.
 - C. My spouse would say that sometimes he or she is the leader in our marriage, and that sometimes I am the leader.
 - D. My spouse would say that he or she is frequently the leader in our marriage, more often than I am the leader.
 - E. My spouse would say that he or she is almost always the leader in our marriage, and that I am almost never the leader.
128. WHEN YOU AND YOUR SPOUSE ENCOUNTER PROBLEMS, HOW OFTEN DO YOU COMPROMISE TO ARRIVE AT A SOLUTION?
- A. I almost never compromise with my spouse, we almost always use my solutions to problems.
 - B. Once in a while I will compromise with my spouse, but more often we will use my solutions to problems.
 - C. Sometimes I will compromise with my spouse, and sometimes we will use my solutions to problems.
 - D. I frequently compromise with my spouse, we seldom use my solutions to problems.
 - E. I almost always compromise with my spouse, we almost never use my solutions to problems.
129. WHEN YOU AND YOUR SPOUSE ENCOUNTER PROBLEMS, HOW OFTEN WOULD HE OR SHE SAY THAT HE OR SHE COMPROMISES TO ARRIVE AT A SOLUTION?
- A. My spouse would say that he or she almost never compromises with me, that we almost always solve problems using his or her solutions.
 - B. My spouse would say that once in a while he or she compromises with me, but that more often we use his or her solutions to problems.
 - C. My spouse would say that sometimes he or she compromises with me, and sometimes we use his or her solutions to problems.
 - D. My spouse would say he or she frequently compromises with me, and that we seldom use his or her solutions to problems.
 - E. My spouse would say that he or she almost always compromises with me, and that we almost never use his or her solutions to problems.

THANK YOU VERY MUCH FOR YOUR TIME AND CAREFUL ANSWERS TO THE QUESTIONS. THIS COMPLETES THE SURVEY.

APPENDIX B

The Cover Letter

Kansas State University is currently evaluating the quality of a marital assessment instrument whose purpose is to aid researchers and clinicians in improving the quality of their work with couples. Before this instrument can be used in such important work, however, we must be sure that it measures what it intends to measure. This is why we are sending these questionnaires to you. You and your spouse have been randomly selected from the population of couples in Kansas to respond to these questionnaires. Your responses will be combined with the responses of a large number of Kansas couples. These analyses will help us to assess the quality of the instrument we are evaluating.

Your responses are indeed voluntary and will be held totally confidential. Please do not write your names on the questionnaires. You may omit any questions which you feel unduly invade your privacy or are offensive to you. Once you and your spouse have independently completed the questionnaires, we ask that you return them to us separately in the two stamped return envelopes we have provided. The return of these questionnaires to us will be taken as evidence of your consent to participate in this study.

Once you have filled out and returned the questionnaires to us we will not follow-up asking for more information. Furthermore, at the conclusion of this study, the final results will be available to you upon request.

Thank you very much for your cooperation in this study.

Sincerely,

Candyce S. Russell, Ph.D.
Associate Professor

Bruce P. Kuehl
Project Director

APPENDIX C

The Postcard

Last week questionnaires investigating the quality of a marital assessment instrument were sent to you and your spouse. If you have already completed and returned the questionnaires, please accept our sincere thanks. If not, please do so today. Because it has been sent to only a limited number of Kansas couples, it is extremely important that you be included in the study if the results are to accurately represent Kansas couples.

If by some chance you did not receive the questionnaires and would be willing to participate in the study, we will mail others to you immediately if you write: Research Project, Dept. Family and Child Development, College of Home Economics, Manhattan, KS 66506.

Sincerely,

Candyce S. Russell
Associate Professor

Bruce P. Kuehl
Project Director

APPENDIX D

Scoring Grid and Cutting Points for

FACES II Scales

FACES II: Cutting Points

C O H E S I O N

DISENGAGED SEPARATED CONNECTED ENMESHED
 PARENTS (56.9 or below) PARENTS (57.0-65.0) PARENTS (65.1-73.0) PARENTS (73.1 and above)
 ADULES (47.9 or below) ADULES (48.0-56.0) ADULES (56.1-64.0) ADULES (64.1 and above)

CHAOTIC PARENTS 56.1 or above ADULES 52.1 or above			
FLEXIBLE PARENTS 50.1-56.0 ADULES 45.1-52.0			
STRUCTURED PARENTS 44.0-50.0 ADULES 38.0-45.0			
RIGID PARENTS 43.9 or below ADULES 37.9 or below			

ADAPTABILITY

NAME: _____
 FAMILY MEMBER: _____ AGE: _____
 SEX: _____
 DATE: _____
 EVALUATION: _____
 (Pre/Post/FU)
 TOTAL COHESION: _____
 TOTAL ADAPTABILITY: _____
 FAMILY TYPE: _____

In plotting the couple or family's cohesion and adaptability scores into the Circumplex Model, try to mark the specific location within the particular type that most accurately reflects the actual scores.

	Parents (n=2,030)		Adolescents (n=416)	
	\bar{X}	SD	\bar{X}	SD
Cohesion	64.9	8.4	56.3	9.2
Adaptability	49.9	6.6	45.4	7.9

APPENDIX E

Formula for Assessing General Nonlinearity

$$F (K-2, N-K) = \frac{(\eta^2 - r^2) (N-K)}{(1-\eta^2) (K-2)}$$

E = Eta coefficient

r = Pearson coefficient

N = Cases

K = Number of categories

(Reference: Blalock, H.M., Jr. Social Statistics, 1972, McGraw Hill, p. 412)

APPENDIX F

Formula for Assessing the Significance of the Difference Between the
Calculations of Two Scales as they Correlate to a Third Independent Scale

$$t = \frac{(r_{xy} - r_{vy}) \sqrt{(n-3)(1 + r_{xv})}}{2(1 - r_{xy}^2 - r_{xy}^2 - r_{xv}^2 + 2r_{xy}r_{xv}r_{vy})}$$

r = Pearson coefficient

n = Cases

x = Scale 1

y = Independent Scale

v = Scale 2

(Reference: Cohen, J., & Cohen, P. Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences. Hillsdale, N.J.: Lawrence Erlbaum Associates, 1973, p. 53.)

FAMILY ADAPTABILITY AND COHESION EVALUATION SCALES:
COUPLE FORM (FACES II-COUPLE FORM): ITS VALIDITY
AND RELIABILITY IN A MIDWESTERN SAMPLE

By

Bruce P. Kuehl

B.A. University of Wisconsin-Green Bay, 1982

AN ABSTRACT OF A MASTER'S THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

Department of Family and Child Development

KANSAS STATE UNIVERSITY
Manhattan, Kansas

1984

Abstract

This study was designed to collect empirical data on the psychometric qualities of the Family Adaptability and Cohesion Evaluation Scales-Couple Form (FACES II-Couple Form), including the appropriateness of using the distributions and cut-off points published for the FACES II family form with the FACES II-Couple Form. This was done using a Chi-Square test to compare the distribution of scores for the FACES II-Couple Form with the distribution of scores obtained for the FACES II family form. In addition, data was collected on the concurrent, discriminant, and construct validity of the FACES II-Couple Form. Other instruments included for this section of the study included the cohesion subscale of the Dyadic Adjustment Scale, the Kansas Marital Satisfaction Scale, various subscales from the Family Environment Scale, and a measure of social desirability.

The results of the study showed that the use of published distribution and cut-off points for the FACES II family form are not completely adequate for the FACES II-Couple Form in the midwestern sample used for this study. Furthermore, while reliability was high, evidence regarding the validity of the instrument was less impressive. Some support was seen for concurrent validity but discriminant validity was lacking. Concerning construct validity, the FACES II-Couple Form was found to relate to marital satisfaction in a linear fashion. This is contrary to the curvilinear relationship predicted by the Circumplex Model, on which the scale is based. It must be cautioned, however, that the results of this study are equivocal due to a low return rate and a confounding social desirability effect.