

## DIMENSIONS OF FAMILY DYNAMICS IN CHILD ABUSING FAMILIES

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### ABSTRACT

Parents in families of abused children were given the Family Adaptability and Cohesion Scales (FACES II). They completed the questionnaire under two sets of instructions: how their family currently functioned and how they would like it to function in the future. Factor analyses showed (a) that five factors seemed stable in structure for both sets of instructions; (b) Olson's concepts of Adaptability and Cohesion were useful in this 'atypical' sample; (c) others using 'atypical' samples might profit by checking the factor structure when using the FACES II; and (d) five scales instead of two should be used in subsequent analyses of family dynamics. Tentative titles for the new scales are suggested based on Olson's original titles.

### INTRODUCTION

In a recent study on child abuse we had need of an instrument that would allow us to detect changes in family dynamics and interactions as a result of intensive in-home therapy with some of the families. Since the type of in-home therapy that we used involved specific attempts to improve communication skills among family members (Wood, Barton & Schroeder, 1988), we sought a measuring instrument that would specifically register such improvements, should they occur. The end product of our search was the Family Adaptability and Cohesion Scales (FACES) by Olson, Portner and Bell (1982). In addition to reasonable reliability and validity data being available for these scales, Olson et al have developed a widely used theoretical model: the Circumplex model of marital and family systems (e.g., Olson, Russell & Sprenkle, 1979; Olson, Sprenkle & Russell, 1979; Russell, 1979; and Sprenkle and Olson, 1978). Thus our choice was based on the excellence of the theoretical and psychometric properties of the instrument.<sup>1</sup>

Many recent studies have used the FACES II in a wide variety of clinical settings. The success of the measures in these widely different situations, given that our sample was unusual too, provided yet another reason for our choice of survey instrument. For example, Magill and Hurlbut (1986) used the FACES II to demonstrate self esteem differences in people with cerebral palsy. Friedman

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(1989) showed that families of adolescent drug users tended to score on the extremes of the FACES scales and Geber & Resnick (1988) found differences in family functioning for adolescents who were placed for adoption. The FACES scales have been used with families of retarded children (and PKU) (Kazak, 1987), Mexican American and Anglo family comparisons (Vega, 1986), negative life events (Walker & Greene, 1987), stepfamilies (Pink & Wampler, 1985) perception of families from an adolescent versus parent point of view (Noller & Callan, 1986), and family perceptions of students in intact, single, and blended families (Kennedy, 1985).

In spite of the many positive aspects of the FACES scales, two issues were matters of concern. First, previous attempts (Green, Kolevzon & Vosler, 1985) to relate the Circumplex model data to that of other 'family systems' models (e.g., the Beavers — Timberlawn model of family competence) had ended in failure. Second, the factor analyses reported in the manual were based on a mainly Lutheran, Caucasian sample. In short, we were unsure whether the factor structure found using Olson's sample would apply to our 'atypical' families with abused children. Hence major objectives of this study were to factor analyze the FACES II data and to compare the structure to that found by Olson et al (1982). In our analyses the second administration of the questions, under a new set of instructions ('how would you like your family to be?') was considered to provide a check on the structure obtained under the primary instructions (i.e., how is your family now?).

### PROCEDURE

#### The families

All families in the study came from one of three counties in Northern California. Two of the counties were much more rural than the third. All families had a member who had been convicted of some kind of child abuse, and all were offered participation in the study (involving one kind of help for another) as an alternative to out-of-home placement for their abused child. Of 151 returns of the FACES II questionnaires, 127 were fully completed and were used in the data analyses.

### METHOD

The parents were asked to fill out the FACES II questionnaire under two sets of instructions. The first time they answered the question, they were asked to describe their family 'as it is at the present time.' The second set of instructions asked 'how you would like your family to be in the future.' The instructional sets were always given in this same order, but depending on the schedule of the therapist and families, the time interval between the two sessions varied.

#### The factor analyses

The oblique factor analysis in the SPSS statistical computer package was used. This was preferred to the more common Varimax orthogonal solution since there are at least theoretical reasons for expecting correlated factors. Both the Scree test and the Kaiser-Guttman unity rule indicated the extraction of six factors for

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both factor analyses. The oblique factor rotation resulted in acceptable simple structure (as can be seen in Tables 1 and 3).

### RESULTS

Separate factor analyses were performed for each of the instructional sets. Results for the instructions 'how is your family at the present time?' can be found in Tables 1 and 2 and results for the instructions 'how would you like your family to be in the future' are found in Tables 3 and 4.

A striking finding was that instead of observing a different structure under the two instructional sets, a very similar structure was noted. Indeed, five out of the six factors seem to be very similar in meaning over the two analyses. Of course this similarity in structure does not mean that the parents evaluated the present family situation as being similar to their wishes for the future, but rather that they found a similar set of dimensions (factors) to best describe the important family issues on both occasions. What are these issues? In Tables 2 and 4 an attempt to answer this question is made by assigning tentative names to the factors. At first the Olson et al procedure of considering the items as measuring 'adaptability' or 'cohesion' was used to try to label the factors. This proved useful in the case of the first two factors as the seven highest loading items on factor 1 were all 'cohesion' items and the three highest loadings on factor 2 were all 'adaptability' items. For the rest of the factors this system was not productive as all proved to be a mixture of 'cohesion' and 'adaptability' items. An alternative approach was found to be useful. The fourteen sub-scales of Olson's own factor analysis (of the 30 item FACES II scale) were matched with our own data. Of the eight 'family cohesion' sub-scales, six matched 100%. Of the family 'adaptability' sub-scales three out of six matched 100%. The sub-scales consist of only two or three items but the degree of matching that we found provides cross-validation evidence for many of Olson's concepts, as well as helping to derive sensible labels for the factors derived from our child abusing sample. In summary, the matching of Olson factors with our own resulted in a pattern which typically showed several of his sub-scales loading on one of our factors. For example, on factor 1 (our 'Togetherness' factor), all items on Olson's family 'boundaries,' 'coalition' and 'time' sub-scales loaded significantly. As a whole these items involved spending time together as a family, coalitions being formed among family members and an extension of family boundaries to include each other's friends. The sub-scale labels were thus instrumental in determining the final label for the factor: 'Togetherness.' We are well aware of the danger of describing a complex factor by a short label but feel that the following is a reasonable job of describing the factors resulting from the current analyses.

Factor 1, 'Togetherness:' These items illustrate a high degree of family interaction as described above. All the highest loading items on this factor are ones that Olson et al considered to measure aspects of family 'cohesion.' Factor 2, 'Child Input:' This factor seems to reflect a part of what Olson et al consider family 'adaptability.' The highest loading items reflect the issue of children having some say in their own discipline and in following children's suggestions in solving family problems. A low score on this factor would probably reflect a family in which a high degree of child obedience is expected. Factor 3 we titled 'Family Chaos Versus Unity,' since a high score on this factor would indicate a

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TABLE 1

Factor Pattern Matrix for FACES II (N = 127)

INSTRUCTIONS: 'HOW IS YOUR FAMILY AT THE PRESENT TIME?'

ITEM #	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	FACTOR 6
1	0.34	0.02	-0.41*	-0.20	0.15	0.06
2	0.15	0.23	-0.20	0.06	0.37	-0.45*
3	-0.37	0.11	-0.18	0.58*	-0.08	-0.07
4	0.14	-0.05	-0.17	-0.41*	0.31	-0.05
5	0.74*	0.04	0.22	-0.05	0.00	-0.16
6	0.11	0.80*	0.21	0.07	0.11	-0.02
7	0.64*	0.31	-0.28	0.10	0.11	0.04
8	0.31	0.19	-0.39*	-0.36*	0.13	0.09
9	-0.71*	0.10	0.21	0.04	0.22	-0.12
10	-0.29	0.25	-0.07	-0.61*	-0.13	-0.04
11	0.22	-0.05	-0.14	-0.15	0.32*	-0.31*
12	0.06	0.10	0.73*	0.01	0.00	0.01
13	0.05	-0.28	0.04	-0.45*	0.13	-0.42
14	0.06	0.10	0.24	-0.07	0.07	-0.77*
15	-0.09	0.07	0.64*	-0.07	0.13	0.16
16	-0.08	0.78*	0.18	-0.12	0.06	-0.08
17	0.27	0.03	-0.39*	-0.22	-0.03	-0.30
18	0.25	-0.03	-0.15	-0.41*	0.10	-0.01
19	-0.52*	0.01	0.18	0.18	-0.05	0.16
20	-0.03	0.48	-0.34	-0.13	-0.35	-0.01
21	0.09	-0.16	-0.62*	-0.22	-0.10	0.18
22	0.18	0.03	-0.26	-0.44*	0.01	0.04
23	0.44*	-0.06	-0.29	-0.07	0.10	-0.25
24	-0.18	0.06	0.12	0.12	0.73*	0.15
25	-0.15	0.16	0.29	0.13	0.34	0.44*
26	-0.02	-0.00	0.09	-0.78*	-0.16	-0.12
27	-0.17	0.04	-0.45*	-0.05	0.39	-0.40
28	-0.02	-0.06	0.07	-0.02	0.23	0.76*
29	-0.72*	0.06	-0.08	0.02	0.09	0.10
30	0.25	0.31	-0.38*	0.01	-0.13	-0.20

\* Salient loadings ('markers' for factors)

TABLE 2

Factor loadings obtained when parents told to answer question:  
'How your family is at the present time.'

Factor 1

Item #	Togetherness	Factor Loadings
5.	Our family gathers together in the same room	0.74*
7.	Our family does things together	0.64*
9.	In our family everyone goes his/her own way	-0.71*
19.	Family members feel closer to people outside the family than to other family members	-0.52
23.	Family members like to spend their free time with each other	0.44*
29.	Family members pair up rather than do things as a total family	-0.72
3.	It is easier to discuss problems with people outside the family than with other family members	-0.37*
1.	Family members are supportive of each other during difficult times	0.34
8.	Family members discuss problems and feel good about the solutions	0.31*

Factor 2

Item #	Child Input	Factor Loadings
6.	Children have a say in their discipline	0.80*
16.	In solving problems the children's suggestions are followed	0.78*
20.	Our family tries new ways of dealing with problems	0.48*
7.	Our family does things together	0.31
30.	Family members share interests and hobbies with each other	0.31

Factor 3

Item #	Family Chaos vs. Unity	Factor Loadings
12.	It is hard to know what the rules are in our family	-0.73*
15.	We have difficulty in thinking of things to do as a family	-0.64*
21.	Family members go along with what the family decides to do	0.62*
1.	Family members are supportive of each other during difficult times	0.42
8.	Family members discuss problems and feel good about solutions	0.39
17.	Family members feel very close to each other	0.39
27.	We approve of each other's friends	0.45
30.	Family members share interests and hobbies with each other	0.38
20.	Our family tries new ways of dealing with problems	0.34

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Factor 4

Item #	Shared Responsibilities and Opinions	Factor Loadings
3.	It is easier to discuss problems with people outside the family than with other family members	-0.58
10.	We shift household responsibilities from person to person	0.61*
26.	When problems arise we compromise	0.78
4.	Each family member has input in major family decisions	0.41
8.	Family members discuss problems and feel good about solutions	0.36*
13.	Family members consult other family members on their decisions	0.45
18.	Discipline is fair in our family	0.41
22.	In our family everyone shares responsibilities	0.44*

Factor 5

Item #	Difficulty in Rule Changing	Factor Loadings
24.	It is difficult to get a rule changed	0.73
2.	In our family it is easy for everyone to express his/her opinion	0.37
20.	Our family does not try new ways of dealing with problems	-0.35
27.	We approve of each other's friends	0.39
4.	Each family member has input in major family decisions	0.31
11.	Family members know each other's close friends	0.32
25.	Family members avoid each other at home	0.34

Factor 6

Item #	Assertiveness	Factor Loadings
14.	Family members say what they want	-0.77*
28.	Family members are afraid to say what is on their minds	0.76*
2.	In our family it is easy for everyone to express his/her opinion	-0.45
13.	Family members consult other family members in their decisions	-0.42
25.	Family members do avoid each other at home	0.44*
27.	We approve of each other's friends	-0.40*
11.	Family members know each other's close friends	-0.31*
17.	Family members feel very close to each other	-0.30

\*Indicates overlapping items that define factors found in factor analysis in Table 4.

TABLE 3

Factor Pattern Matrix for FACES II (N = 123)

INSTRUCTIONS: 'HOW WOULD YOU LIKE YOUR FAMILY TO BE IN THE FUTURE'

ITEM #	FACTOR 1	FACTOR 2	FACTOR 3	FACTOR 4	FACTOR 5	FACTOR 6
1	0.57*	-0.12	0.21	-0.03	0.10	0.04
2	0.74*	0.01	0.05	-0.08	0.00	0.17
3	0.12	0.11	-0.31	-0.03	0.16	-0.37*
4	0.06	0.01	0.19	-0.21	0.41*	-0.13
5	-0.06	0.22	0.74*	-0.08	0.02	-0.02
6	-0.14	0.02	-0.06	-0.90*	-0.07	-0.01
7	0.05	-0.17	0.75*	0.03	-0.10	-0.03
8	0.30	-0.11	0.50*	0.06	-0.12	0.27
9	0.43*	0.29	-0.39	-0.16	-0.22	0.03
10	0.50*	-0.03	-0.04	-0.03	-0.01	-0.15
11	0.04	-0.19	-0.16	-0.25	0.32	0.62*
12	-0.17	0.82*	0.04	-0.03	0.11	0.07
13	0.29	-0.31	-0.04	-0.40*	0.06	0.06
14	0.30	0.17	0.13	-0.12	0.54*	-0.13
15	-0.44	0.65*	0.12	-0.15	-0.20	0.14
16	0.17	0.13	0.08	-0.73*	-0.04	0.17
17	0.41*	-0.04	0.34	0.05	0.14	0.13
18	0.12	0.18	-0.11	0.07	0.72*	0.27
19	0.26	0.52*	0.06	-0.15	0.08	-0.35
20	0.01	-0.13	0.45*	-0.33	0.08	-0.13
21	0.00	-0.56*	-0.05	-0.26	0.10	0.32
22	0.47*	-0.11	0.16	-0.01	-0.03	0.29
23	0.07	0.07	0.70*	0.10	0.20	-0.06
24	0.04	0.35*	-0.11	0.04	0.01	-0.01
25	0.21	0.29	-0.11	0.17	-0.40*	0.11
26	0.05	-0.13	0.40*	-0.26	0.03	0.01
27	0.16	0.18	0.08	-0.07	0.21	0.75*
28	0.08	0.36	-0.04	0.08	-0.41*	-0.06
29	0.14	0.14	-0.08	-0.26	-0.63*	-0.14
30	0.04	0.09	0.59*	-0.02	0.04	0.11

\* Salient loadings ('markers' for factors)

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TABLE 4

Factor loadings obtained when parents told to answer question  
'how you would like your family to be in the future'

Factor 1

Item #	Shared Responsibilities and Opinions	Factor Loadings
1.	Family members are supportive of each other during difficult times	0.57
2.	In our family it is easy for everyone to express his/her opinion	0.74
10.	We shift household responsibilities from person to person	0.50*
9.	In our family everyone goes his/her own way	0.43
15.	We have difficulty in thinking of things to do as a family	-0.44
17.	Family members feel very close to each other	0.41
22.	In our family everyone shares responsibilities	0.47*
8.	Family members discuss problems and feel good about solutions	0.30*
14.	Family members say what they want	0.30

Factor 2

Item #	Family Chaos vs. Unity	Factor Loadings
12.	It is hard to know what the rules are in our family	0.82*
15.	We have difficulty in thinking of things to do as a family	0.65*
19.	Family members feel close to people outside the family than to other family members	0.52
21.	Family members go along with what family members decide to do	-0.56*
24.	It is difficult to get a rule changed in our family	0.35
28.	Family members are afraid to say what is on their minds	0.36
13.	Family members consult other family members on their decisions	-0.31

Factor 3

Item #	Togetherness	Factor Loadings
5.	Our family gathers together in the same room	0.74*
7.	Our family does things together	0.75*
8.	Family members discover problems and feel good about solutions	0.50*
23.	Family members like to spend their free time together	0.70*
30.	Family members share interests and hobbies with each other	0.59
9.	In our family everyone goes his/her own way	-0.39*
20.	Our family tries new ways of dealing with problems	0.45

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## Factor 3 (continued)

26.	When problems arise we compromise	0.40
3.	It is easier to discuss problems with people outside the family than with other family members	-0.31*
17.	Family members feel very close to each other	0.34

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## Factor 4

Item #	Child Input	Factor Loadings
6.	Children have a say in their discipline	0.90*
16.	In solving problems childrens suggestions are followed	0.73*
13.	Family members consult other family members on decisions	0.40
20.	Our family tries new ways of dealing with problems	-0.33*

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## Factor 5

Item #	Assertiveness	Factor Loadings
14.	Family members say what they want	0.54*
18.	Discipline is fair in our family	0.72
29.	Family members pair up rather than do things as a total family	-0.63
4.	Each family members has input in major family decisions	-0.41
25.	Family members avoid each other at home	-0.40*
28.	Family members are afraid to say what is on their minds	-0.41*
11.	Family members know each other's close friends	0.32

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## Factor 6

Item #	Close Friends	Factor Loadings
11.	Family members know each other's close friends	0.62*
27.	We approve of each other's friends	0.75*
3.	It is easier to discuss problems with people outside the family than with other family members	-0.37
19.	Family members feel closer to people outside the family than to other family members	-0.35
21.	Family members go along with what the family decides to do	0.32

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\* Indicates overlapping items that define factors found in factor analysis in Table 2.

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difficulty in knowing what roles operate in the family, a tendency to not know what to do as a family group and members who take no notice of what the rest do. All the items that Olson considered as having to do with interests, recreation and negotiation loaded significantly on this factor and contribute to its 'Chaos vs. Unity' nature.

Factor 4 was difficult to label but the term 'Shared Responsibilities and Opinions' was settled on since both items concerning sharing responsibilities were found to load this factor in both analyses, as was the item dealing with family discussions and feeling good about solutions. Other items loading on this factor referred to the importance of input into family decisions.

Factor 5 seemed to be defined mainly by the single item concerning difficulty in getting family rules changed. This factor did not appear in the second factor analysis and may not be of much importance.

Factor 6 was named 'Assertiveness' because all Olson's items from his 'assertiveness' sub-scale loaded this dimension.

The fact that five of the six factors are replicated in structure in the second factor analysis provides some evidence that these dimensions emerge regardless of the type of instructional set within our sample of abusing families.

### CONCLUSIONS

From the above analyses it is concluded that:

1. At least with the current child abusing sample, four or possibly five dimensions are needed to best describe relevant family dynamic variables.
2. These four or five factors show stability in structure over the two factor analyses. It should be noted that the stability referred to here is with respect to two solutions using data from the same subjects or two different occasions with different instructional sets.
3. Olson's concepts of 'adaptability' and 'cohesion' are still useful. Factor 1 in our analyses involved 100% 'cohesion' items, and Factor 2 involved 100% 'adaptability' items.
4. When 'atypical' samples are used, it is desirable to conduct factor analyses based on those data to test any differences in structure.
5. Subsequent analyses exploring possible changes in family dynamics, as a function of therapy given, should involve five scales rather than Olson's two.

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### Footnote

1. The FACES has evolved through three versions: I, II and III. The major changes were made going from I to II. We used version II since we had collected a year's data before learning of the third version, and we decided to keep with version II for the rest of our study since (a) we would then be able to make consistent within study comparisons, and (b) because the major difference between II and III lay in the instructions given for the second administration which was not a focal point in our objectives.