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The Role of Familial Conflict in the Adaptation to Menarche: Sequential Analysis of Family Interaction

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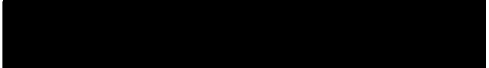
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The Role of Familial Conflict in Adaptation to Menarche:

Sequential Analysis of Family Interaction

A dissertation submitted in partial fulfillment of the requirements
for the degree of Doctor of Philosophy in Psychology
at Virginia Commonwealth University

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ABSTRACT

THE ROLE OF FAMILIAL CONFLICT IN ADAPTATION TO MENARCHE:

SEQUENTIAL ANALYSIS OF FAMILY INTERACTION

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Past research has suggested that temporary perturbations characterize parent-adolescent relations after the onset of pubertal change. The purpose of this study was to further delineate the characteristics of these disruptions in families with seventh-grade girls. Current operational definitions of family conflict in an observational context are inadequate and a potentially more useful definition was offered: conflict is believed to exist when there is the simultaneous occurrence of opposing interpersonal forces.

Two studies were conducted. A validation study was done to determine the psychosocial correlates of the following conflict variables: frequencies and reciprocal dyadic sequences of interruptions and disagreements. The affective nature of these variables was also assessed. The sample consisted of 17 families with seventh-grade girls and 20 families with seventh-grade boys who filled out questionnaires and participated in the Structured Family Interaction Task (SFIT). Z-scores were computed to represent the sequential variables.

Results revealed that interruptions and disagreements tap disruption and conflict in the family in certain contexts. Frequencies of interruptions tap power in the family, whereas frequencies and sequences

of disagreements tap both conflict _and_ power. When interruptions and positive affect co-occurred more frequently, there was less disruption and conflict within the family system.

The second study (Study 2) was conducted on 111 families with seventh-grade girls who participated in the SFIT. Relations between the observational measures and menarcheal status were assessed. The results supported the notion that familial adaptation to menarche involves a temporary period of conflict and withdrawl of positive affect in family relationships, especially in the mother-daughter dyad.

Although a number of researchers in this area have found similar results, explanations of the role of conflict in the process have not been forthcoming. It is argued here that conflict plays a role in the adaptation to pubertal change in the sense that it promotes adjustment to developmental change. There appear to be two processes--one intrapsychic and the other extrapsychic--that allow conflict to play this role and make moderate levels of conflict inevitable in healthy families.

INTRODUCTION

Central to the present study are questions of how families manage the transition of their first-born children from childhood to adolescence. More specifically, given that past research in this area has suggested that there is a period of temporary perturbations (or agitation) in parent-adolescent relations after the onset of pubertal development, the purpose of the study being discussed here is to further delineate the characteristics of these perturbations in families with seventh-grade girls.

At present, we do not know, for example, if the various perturbations observed coexist in the same families, if they are representative of a process we can call "conflict", what psychosocial variables correlate with such conflictual engagement, and whether such perturbations serve an adaptive function (Hill & Holmbeck, 1985; in press). In short, because previous work has demonstrated consistent findings with "frequency" data, it is now time to move on to microanalytic study of interactional sequences and the changes in such sequences as a function of pubertal status and psychosocial environment. In order to provide sufficient background for the study being proposed here, I will first review relevant literature bearing on familial adaptation to pubertal change. Although it appears that perturbations in family functioning do occur just after the onset of pubertal change, this line of research has raised more questions than it has answered.

Second, I will review the literature on operational definitions of familial conflict. In this review, it will be argued that many of the variables that are traditionally employed in studies of familial conflict could be indicative of something quite different or even antithetical to conflict in some situations. Third, given the inadequacy of current operational definitions, an examination of various theoretical definitions of conflict that may be suggestive of better operational definitions will be examined. I will assert that a better operational definition of conflict involves the notion that conflict exists when there is the simultaneous presence of opposing interpersonal forces. As a result, it appears that in order to be more certain that familial conflict is occurring after the onset of pubertal change, sequential analytic techniques must be employed and validation of measures of conflict must be pursued. Fourth, the historical antecedents and methodology of sequential analytic approaches will be described as will the background literature to the dependent variables of interest. Finally, hypotheses that emerge as a result of the review will be presented.

Pubertal Status and Family Interaction during Adolescence

Background

Most early studies of adolescents have focused primarily or exclusively on issues such as autonomy, sexuality, identity, intimacy, achievement, and the like. As has been pointed out by Hill

(1980c), however, none of these issues are important only during
adolescence. For example, autonomy becomes an issue when the infant
begins to walk and the interplay between and integration of intimacy
and sexuality is an issue throughout the life cycle (Sullivan, 1953).
It is clear, on the other hand, that there are certain changes in
these issues that are uniquely adolescent and that the specific
manifestations of these changes may vary as a function of the
universal changes which characterize adolescence, namely, pubertal
change, cognitive change, and cultural redefinition (Hill, 1980c).
Moreover, the effects of these universal or primary changes on the
classic adolescent issues may be mediated by reactions of significant
others (i.e., family, peers, teachers) as has been suggested by
Petersen and Taylor (1980) in their mediated-effects model of the
effects of biological change and in a framework for the study of
adolescence by Hill (1980c).

If we just examine the work that has been done on family
relations during adolescence, it appears that such study has
typically been done from at least one of two perspectives--the
psychosocial and the biosocial (Papini & Sebby, 1985). Those who take
a psychosocial approach to the study of familial relations examine
the interplay between family interaction variables and adolescent
psychological variables such as individuation (e.g., Cooper,
Grotevant, & Condon, 1983; Grotevant & Cooper, 1982, 1985) and ego
development (e.g., Hauser, Powers, Noam, Jacobson, Weiss, &
Follansbee, 1984; Powers, Hauser, Schwartz, Noam, & Jacobson, 1983).
In Cooper and Grotevant's work, for example, they have found,
contrary to the early detachment notions of adolescence (i.e., that

the separation-individuation process involves a stormy and stressful detachment from parents and an equally vigorous attachment to peers; Blos, 1962), that the "formulation of a distinctive sense of self appeared related to the adolescent's ability to express both openness to the views of others and differentness from others in the family" (Grotevant & Cooper, 1982, p. 103). Overall, studies that examine familial relations from the psychosocial perspective have yielded substantial evidence which suggests that adolescent psychological change is intimately related to changes (or lack of changes) in family interaction. Because the current study is not being done strictly from the psychosocial perspective, no more will be said about such studies.

Those who take a biosocial approach to the study of familial relations during adolescence are typically concerned with the effects of adolescent pubertal change on family interaction. More specifically, investigators who employ a biosocial approach are concerned with how biological change in one (or more) family member(s) affects changes in the manner in which others relate to them and are, as a result, developmental efforts. It is this approach that is the focus of the present study. Before reviewing the studies in this area, a brief overview of adolescent physical maturation will now be presented.

Adolescent Physical Maturation

Excepting those individuals with severe developmental difficulties, the onset of pubertal change is a universal phenomenon across geographical region and culture. Tanner (1962) has charted most of the characteristics of such changes in males and females. Beginning early in the second decade of life, individuals experience a number of internal and external bodily changes. Changes in body proportions, facial characteristics, voice, body hair, strength, and coordination are found in males and changes in body proportions, body hair, and menarcheal status are found in girls. Crucial to the understanding of this process is the knowledge that the peak of pubertal development occurs two years earlier in the modal female than in the modal male and that there are substantial variations between individuals in the time of onset, the duration, and the termination of the pubertal cycle. Thus, not only is there intraindividual variation in terms of the onset of the different pubertal changes but there is interindividual variation in the many parameters of these changes as well.

Given the universality and primacy of pubertal change during early adolescence and the emphasis that has been placed on these events in early theorizing concerning the adolescent period (Blos, 1962; Deutsch, 1944; Erikson, 1968; A. Freud, 1958; Hall, 1904; Rousseau, 1762/1911), it is quite surprising that so little empirical work has been done that investigates the impact of these changes on social development or, more specifically, family interaction. This is

even more surprising given that a methodology for studying family
interaction in the laboratory (see Riskin & Faunce, 1972, for a
review) has been available for over two decades. To date, most family
interaction studies involving adolescents have involved a comparison
of disturbed and normal families (see Doane, 1978; Jacob, 1975; and
Riskin & Faunce, 1972 for reviews). Unfortunately, even these studies
have not capitalized on the unique developmental characteristics of
early and middle adolescence and, in fact, very rarely draw on such
evidence to explain discrepant findings. Even more absent from the
literature on adolescence are studies that examine specifically the
effects of pubertal change on normal family interaction where
pubertal status is the principal independent variable (instead of
being employed as explanatory in a posthoc analysis of family
interaction data; Hill, 1983). The few studies that have been done
will now be reviewed. Although the present study involves girls only,
studies involving boys will be reviewed since such work is more
common and because these studies elucidate many issues relevant to
the present effort.

Empirical Studies of Adolescent Males

The first study to examine the effects of pubertal status on
family interaction was Steinberg and Hill's (Steinberg, 1977;
Steinberg & Hill, 1978) cross-sectional investigation of a small
sample of upper-middle class males. This sample was then followed
longitudinally by Steinberg (1981). The task employed was the
structured family interaction task (SFIT). Prior to the task, each

family member completes a decision-making questionnaire. The family members are then brought together and asked to come to a decision on each item. Such questions typically inquire as to the family members' preferences regarding where they would like to go on vacation, how they would spend money won in a lottery, etc. In the Steinberg studies, the "unrevealed differences technique" was employed (Ferreira, 1963) whereby disagreements between members (based on the results of the individually administered questionnaires) were not revealed to the family as a whole prior to the family discussion.

In general, the findings indicated that changes in family behaviors on the SFIT were significantly related to changes in adolescent sons' pubertal status. More specifically, Steinberg (1981) found that at the apex of puberty, mothers interrupted their sons more than they did either earlier or later in the pubertal cycle. With advancing pubertal development, sons interrupted their mothers more, deferred to them less, and both sons and mothers explained themselves less. Mothers also deferred more to their sons after the pubertal apex. With increasing maturity, sons interrupted their fathers less and deferred to them more and fathers interrupted their sons more and deferred to them less.

Longitudinal results (just reviewed) for mother-son interaction confirmed the findings of the earlier cross-sectional study with very few exceptions. That is, it appears that temporary perturbations occur in mother-son relations at or near the peak of pubertal growth. Longitudinal results for father-son interaction were somewhat different than the cross-sectional findings. Whereas the cross-sectional data had suggested patterns similar to those for mothers

and sons, the longitudinal data suggested, instead, a consistent theme of increasing dominance by the father and submissiveness by the son. As Steinberg (1981) points out, the results conform to accounts of dominance behavior in the primate literature. As the male matures to adult status, he is increasingly deferred to by females and he increasingly defers to males of higher status. Steinberg (1981) also suggests that these results are supportive of classical psychoanalytic theorizing regarding the revival of the Oedipal complex during adolescence.

In a more recent set of field-based studies with seventh-graders and their families, Hill, Holmbeck, Marlow, Green and Lynch (1985a, 1985b) sought to determine whether one would find conflictual relations as a function of pubertal status (similar to those found by Steinberg, 1981, and Steinberg and Hill, 1978) with a more modest cross-sectional questionnaire approach. In these studies, research assistants delivered questionnaires to families in their homes and remained with the family while the questionaires were completed. During the home visits, the assistants rated the adolescents on a global scale of physical development that was developed by Steinberg (1981) and was based on the regularities in the sequence of development of secondary sex characteristics described by Stolz and Stolz (1951) and Tanner (1962).

Results not unlike those found by Steinberg and Hill (1978) and Steinberg (1981) emerged. For the mother-son dyad, relations between observers' ratings of pubertal status and several rearing and child outcome variables were characteristically quadratic (Hill et al., 1985b). That is, the means of the dependent variables tended to form

a curve with one bend with respect to the different pubertal status levels. Family Rules and Standards (child report) and Child Oppositionalism (mother report) were at their highest levels and Family Activities (mother report) and Parental Satisfaction (mother report) were at their lowest levels in the pubertal apex group. On the other hand, less "conflict" was reported in the father-son dyad. To explain the lack of significant findings for this dyad, it may be helpful to examine these relations alongside those found in the observational studies. In the earlier Steinberg (1981) work it was found that, in general, father maintains his influence over the son (i.e., interruptions of sons by fathers increase and yielding to fathers by sons increases). That is, there does not seem to be a shift in the power hierarchy in the father-son dyad to the extent manifested in the mother-son dyad. It may be, then, that conflict is more prevalent in the mother-son dyad due to the mother's loss of power and, as a consequence, conflict indices are more readily endorsed in this dyad.

Another set of relevant studies by Papini (Papini & Datan, 1982, 1983; Papini & Sebby, 1985) have focused on the effects of pubertal change on family interaction and family relations for boys and girls. Although Papini and Datan (1983) did not find familial conflict indices to be related to pubertal status, they did find that families where the adolescents have recently experienced the onset of pubertal development exhibited fewer positive supportive statements than families with pre- or postpubertal offspring. They note that their findings are consistent with those of Steinberg and Hill (1978) and Steinberg (1981) and that "adolescent physical maturation is

associated with a transformation of pubertal family relations during the apex of the pubertal growth spurt" (Papini & Sebby, 1985, p. 8). They call their view "dialectical" insofar as the family develops through a process of transformations and redefinitions as a result of changes in individuals.

A later study by the same research group (Papini & Sebby, 1985) yielded additional findings that also supported those reported by Steinberg. That is, they found that family relations are transformed at the peak of pubertal change with the mother losing influence to the adolescent. (Unfortunately, they did not examine boys and girls separately so we can not be sure whether this result was more characteristic of one gender than the other.) Papini and Sebby also suggest (upon inspection of their group means) that the "affective nature" of the transformations is not necessarily negative or conflictual but instead appears to be less positive. This observation is similar to Montemayor's (1985) belief that any increased prevalence of conflict from childhood to adolescence may be trivial compared to decreases in the occurrence of positive behaviors. Clearly, and as will be seen later, the definition of conflict that one employs is critical to the interpretation of existing and new data in this research area.

A related study also demonstrates support for the notion that changes in family interaction characterize the transition into adolescence. In his cross-sectional study, Jacob (1974) sought to compare family interaction patterns of working-class and middle-class families with either 11-year-old or 16 year-old sons on an unrevealed differences task. Jacob found that sons interrupt their parents more

than they are interrupted. There was more father-son initial
agreement when the sons were 16, parents successfully interrupted 16-
year-olds more frequently than 11-year olds, and there were more
disagreements among families with 11-year-olds. Conversely, 16-year-
olds were more influential in family decision making than their 11-
year-old counterparts.

While sons' initial attempts at power assertion appear to have
met with conflict (at age 11), the 16-year-old sons seem to have
gained a more powerful position and the families seem to have been
able to adjust to the change. The increased influence of the 16-year-
old occurs at the expense of the mother in middle-class families and
at the expense of the father in working-class families. More
specifically, influence structure progresses from a father = mother >
son to a father > son > mother structure in middle class families and
to an unstable father = mother = son structure in working-class
families. (The self-report data of Bowerman and Elder (1964) support
Jacob's findings.) Jacob's study not only demonstrates a degree of
support for the interpretations suggested by Steinberg's results but
it also demonstrates that transformations in family relations may
differ qualitatively across socioeconomic status. Rather than discuss
implications of the findings presented thus far, I will go on to
present the findings for girls and reserve further analysis until
later.

Empirical Studies of Adolescent Girls

Unlike pubertal development in boys, physical maturation in
girls includes a sudden and dramatic event--menarche. Menarche as an
empirical variable has attracted researchers because of the ease with
which it is measured and the reliability with which it is placed in
time by different family members. Moreover, it is a social stimulus
which could conceivably have dramatic effects on social relations
(via significant others' reactions to the increasing maturity of the
female). Variables such as menarche and breast development (as
opposed to changes in hormone levels) may be preferred in biosocial
research because they are directly perceived by others.
(Intraindividual relations between hormone levels and behavior and
effects of hormone levels on the behavior of others are also of
interest and are currently being investigated; e.g., Susman,
Nottelmann, Inoff-Germain, Dorn, Cutler, Loriaux, & Chrousos, 1985.)
Whether or not menarche is experienced negatively has been found to
be a function of preparedness (Koff, Rierdan, & Sheingold, 1982) and
the timing of the event with respect to one's peers (see Grief &
Ulman, 1982, for a review). The impact of timing may vary as a
function of a number of factors such as reactions of peers and family
and one's subjective assessment of the degree to which one is, in
fact, off-time (Brooks-Gunn & Ruble, 1983; Grief & Ulman, 1982; Wilen
& Petersen, 1980).

Although the timing of pubertal events has profound effects on the development of male adolescents, it has been viewed as particularly important for girls, and more specifically, early maturing girls. For example, Peskin (1973) found that early maturing girls were more withdrawn and stressed. Others suggest that although early maturity may be a disadvantage for girls during early adolescence, it may become an asset later in adolescence (Faust, 1960). One could argue that early maturity is correlated with maladjustment because early maturers are less prepared for the event. In fact, Grief and Ulman (1982) imply that early maturity and preparedness are probably confounded in most studies. On the other hand, Ruble and Brooks-Gunn (1982) found that the early maturing girls in their sample were not less likely to be prepared for menarche but were more likely, than on-time girls, to demonstrate moderate levels of symptomatology. Thus, regardless of the degree of trauma that accompanies early-maturity in girls, it is clear that this group is at risk for some forms of adaptational difficulties.

Turning now to the issue of the relations between pubertal status and family relations, two issues are relevant: the impact of early maturity on family interaction, and the manner in which the results for girls could be expected to differ from those for boys. As Hill et al. (1985a) have suggested, early maturity in females may have specific effects on parents. That is, parental fears of dating and pregnancy may be particularly keen for these girls and may result in greater levels of conflict in family interaction than would be the case in families where the girls are maturing on time.

In order to discuss the possibility of gender differences vis-a-vis the manner in which pubertal status impacts on family relations, it is perhaps most appropriate to discuss a study by Hetherington, Stouwie, and Ridberg (1971) wherein they examined interactional differences between families with female and male nondelinquent and delinquent (categorized as psychopathic, neurotic, or socialized) offspring. Findings indicated that nondelinquent sons exerted more power in the family and evidenced higher rates of interruptions of and disagreements with their mothers than delinquent sons. Yet, contrary to the findings for boys, nondelinquent girls were more "nondominant and malleable" as compared to delinquent girls. It appears, then, that the findings for boys and girls match traditional sex-typing expectations (see Hill & Lynch, 1983, for a review). In terms of changes in family interaction patterns, such findings would lead one to predict that pubertal change will not bring with it increased assertiveness for girls as was the case for boys.

Given these somewhat different expectations for the girls' data, I will now review the findings of the first study where relations between pubertal status and family relations were examined for families of girls. Hill et al. (1985a) initially examined relations between menarcheal status and rearing and child outcomes as reported on questionnaires in families of seventh grade girls. Menarche was rated by parents and their seventh-grade daughters as: "has not yet begun," "has begun within the last six months," "has begun within the past 12 months," or "has begun longer than 12 months ago." As has been found in other studies that included parent and child ratings of menarcheal status (e.g., Petersen, 1983), Hill et al. found that

there was a high degree of agreement for each pair of respondents: mother-daughter, father-daughter, and mother-father. Correlations ranged from .87 to .91 and approximately 80% agreement was found for each pair. In their seventh grade sample, roughly 60% of the girls were premenarcheal with the remainder of the girls being distributed fairly evenly across the other three groups. It should be noted that because of the age of this sample, the longer-than-12-months-ago group is clearly an early-maturing subsample.

Unlike the findings for boys where quadratic trends tended to emerge, cubic trends were characteristic of the findings for girls. That is, the plots of the rearing and child outcome variables yielded curves with two bends with respect to menarcheal status level. Perturbations in Family Rules and Standards (child report), Parental Acceptance (child report of mother), Family Activities (mother report), and Parental Influence (child report of mother) seem to occur six months after menarche but by 12 months after, the mean values look very much like those of the premenarcheal group. (Negative trends were also found for some of the father variables.) When one then examines those families where daughters experienced menarche more than 12 months ago, the variable means look much like those of the six-month-ago group. In other words, the negative outcomes tended to yield a curve with an up-down-up shape and positive outcomes tended to yield a down-up-down shape.

In sum, then, for those girls whose menarche occurs relatively on time (within the past year), the relations look much like the quadratic relations reported by Hill et al. (1985b), Steinberg (1981), and Steinberg and Hill (1978) for boys. When menarche occurs

early (as was the case in the more-than-12-months-ago group),
however, it appears that the outcomes were rated less positively than
was the case for the premenarcheal or the within-the-past-12-months
groups. Hill et al. (1985a) posit two explanations for these results.
First, it may be that temporary perturbations do occur in families
where the girls are maturing relatively on time or late (the first
three groups). That is, when one inspects the means for the first
three groups there seems to be an increase in negative outcomes in
the six-months-ago group but that the means return to their
prepubertal levels in the 12-months-ago group. When girls are early,
however, the negative effects may persist as is suggested by the
higher means for negative outcomes in the more-than-12-months-ago
group. Thus, for girls who mature on time, the perturbations may be
adaptational and for girls who are early, the perturbations may
result in long-term chronic difficulties. A second possibility is
that the first bend in the curve could be attributed to menarche and
the other (one year later) could coincide with the onset of regular
menstrual periods. It is critical to note, however, that these
interpretations are based on cross-sectional data and, as a result,
caution is warranted pending further replication with longitudinal
data.

In another study that has come from the Hill research group,
Cantara (1983) investigated relations between menarcheal status and
family interaction in a laboratory video-tape study but on a
different sample than that which was employed by Hill et al. (1985a).
(Many of the video-tapes used by Cantara are the same as those that
were employed in the present investigation.) In Cantara's study, the

unrevealed differences approach was used in a manner identical to that employed by Steinberg (1977). Insofar as cubic trends were characteristic of the data, the observational data support and extend the questionnaire findings reviewed above. In the six-months-ago and the more-than-12-months-ago groups, mothers were rated as less affiliative, fathers were rated as more affiliative, and mothers and fathers interrupted other family members more frequently. Daughters in these groups yielded more to interruptions and talked and explained themselves more than those in the other groups. Unlike boys, girls did not appear to gain in influence at the expense of either the mother or the father.

Although perturbations in parent-daughter relations appear to characterize the period just after menarche, shifts in the dominance-submission patterns do not seem to occur in families with daughters in the same way and/or to the extent that they occur in families with sons. Such findings are supportive of the Gender Intensification Hypothesis (see Hill & Lynch, 1983, for a review) insofar as the girls in this sample seem to be responding to gender-differential socialization. The bulk of empirical evidence suggests that early adolescence and the accompanying pubertal changes bring with it an acceleration of traditional gender-related role expectations possibly causing girls to become more deferential and boys to become more assertive.

More generally, Cantara's (1983) results again demonstrate that temporary perturbations in parent-child relations occur just after the onset of pubertal growth (or menarche) and that such conflict or adjustment problems may persist for early-maturing girls. Although

this review of the relevant literature on the effects of pubertal change on family interaction suggests that pubertal change is a salient social stimulus (Petersen & Taylor, 1980), at least within the confines of family interaction sessions and questionnaires, we are left with a number of unanswered questions. The purpose of the next section is to review some of these questions.

Unanswered Empirical Questions

What do we know know about the effects of pubertal development on family interaction during adolescence? Given the data reviewed thus far, it appears that for those individuals where physical maturation occurs relatively on-time, the peak of pubertal change in boys and the period just after menarche in girls is characterized by temporary perturbations in parent-child relations (not only behaviorally but also in terms of self-report). That is, the system seems to be at rest prior to pubertal change and then, soon after the beginning of such change, the system is disrupted. During this period, there appears to be a redefinition of the relationships in the system followed by an abatement of the effects later in the cycle. Interestingly enough, these data not only provide preliminary and partial support for Petersen and Taylor's (1980) mediated-effects model of psychological adaptation to puberty but lend support to some of the claims of those from the psychoanalytic camp as well.

Because of the form of the relations, we know that investigators working in this area should be alert to curvilinear trends. It also appears that there are qualitative differences between the genders

for these relations. While quadratic trends were more characteristic of the data on boys, cubic relations characterized the data on girls. Because of the nature of these gender differences and the already noted gender differences in the modal age of pubertal onset, Hill et al. (1985a, 1985b) were actually more certain that these differences did in fact exist. That is, owing to the two year lag in physical development for boys, those boys who were rated as most physically mature were actually a more extreme group than the girls who were similarly rated. Thus, if difficulties resulted for early maturing boys and girls, Hill et al. (1985a, 1985b) might have found cubic tends for boys. Since they did not, one can be more convinced of the interpretations advanced thus far (Hill & Holmbeck, 1987).

Unfortunately, however, this line of research has raised more questions about the process than it has answered. First, we know little about the causal influences on and the mediators of these effects or the conditions under which such effects are likely to persist or be exacerbated (with the exception of the effects for early-maturing girls). Even the manner in which adolescent pubertal status impacts on parent and adolescent behaviors is virtually unknown. Pubertal changes could produce behavioral changes in the adolescent which, in turn, produce behavioral changes in the parents. Or, the impact of pubertal change on parental behaviors could be more direct and changes in parental behaviors could then produce changes in the adolescent's behavior (Boxer & Petersen, 1986). It has been argued elsewhere (Hill & Holmbeck, 1986) that the adolescent's peer group may also be implicated (also see Magnusson, Stattin, & Allen, 1985). One possibility is that changes in familial interactional

patterns may be a response to increases in assertive behavior exported from the peer group rather than to pubertal change. It is quite possible, for example, that early-maturing boys will tend to act more assertively in the company of boys whose maturity is delayed. To evaluate any of these possibilities, short-term longitudinal investigations are needed. Although these issues are worthy of extensive empirical attention, the discussion of direction-of-effects will end here because it does not bear directly on the study currently being proposed.

Second, although the changes that seem to occur in families as a function of pubertal development appear to be "perturbations", would one be in error to assume that these changes are indicative of increased "conflict"? (Hill & Holmbeck, 1987). Moreover, if the perturbations are conflictual, we would want to know if they are adaptive in the sense of promoting a healthy transformation in familial relations and attachments (e.g., conflict that causes a needed change in the dominance hierarchy in families of boys)? If it is not conflict, then what is it and what is its purpose? It may be that the family is less positive rather than more conflictual as others have suggested (Montemayor, 1985, 1986; Papini & Sebby, 1985). Regardless of whether it is or is not conflict, we also do not know what facilitates such perturbations, what some of the correlates are, and why they occur as a function of pubertal change. Many of these questions raise issues that are directly relevant to the study being proposed here. I will return to some of these issues later in this discussion.

Third, as a result of the questions just raised, there is also the issue of how to define conflict (Hill & Holmbeck, 1987)--especially as it occurs in the familial context. It is this issue to which I will now turn my attention.

Conflict and Definitional Issues

Definitional Confusion

As has been noted elsewhere (Hill & Holmbeck, 1987), the question of how to define conflict in the observational context (as opposed to approaches involving questionnaires; see Foster, Prinz, & O'Leary, 1983; Hill et al., 1985a, 1985b; Prinz, Foster, Lent, & O'Leary, 1979; Robin, 1981, for examples of self-report approaches to parent-adolescent conflict) has been addressed but is far from resolved. This problem is particularly relevant to the study of "normal" families where contentious interchanges in the form of intense arguments, threatening, name calling, and yelling rarely occur in laboratory settings or in nature (e.g., Douvan & Adelson, 1966; Montemayor, 1983; Montemayor & Hanson, 1985). Studies such as that by Prinz et al. (1979) demonstrates how such behaviors discriminate between distressed and nondistressed families. Thus, it appears that to adequately examine confict in normal families, more subtle indices are needed. Moreover, behavioral changes that occur as a function of pubertal change are probably quite subtle (Steinberg, 1981) and, as a result, subtle measures are preferred.

Riskin and Faunce (1972) noted that conflict has been defined in a number of ways ranging from the highly abstract (e.g., power struggles) to the more concrete (e.g., interruptions, disagreements, etc.). They go on to argue that current research on family interaction "is seriously handicapped by the lack of intermediate-level concepts" (p. 399). Although "interruptions", for example, are behaviors that require minimal inference, they have frequently been employed as a measure of the more abstract concept "conflict." Similar problems result when investigators attempt to operationally define abstract concepts such as double-bind, pseudomutuality, dominance, and communication, to name just a few. Riskin and Faunce (1972) are quite critical of this practice and believe that there is no justification for making "great leaps" from mechanical level measurements to abstract theorizing (also see Blakar, 1980, and Oliveri & Reiss, 1984). Unfortunately, they do not make clear the criteria for an adequate "intermediate" level concept that would provide a basis for linking a behavior with a construct. Perhaps the issue here is one of construct validity (Cronbach & Meehl, 1955) whereby the connections between observables and abstract constructs are made over a series of studies designed to construct a nomological network of evidence that supports the construct validity of the operational definition in question.

A host of examples can be found in the literature that demonstrate the problems outlined by Riskin and Faunce (1972). For example, O'Connor and Stachowiak (1971) employed the number of times one member interrupted another or was interrupted by another during a discussion (involving the "revealed differences technique;"

Strodtbeck, 1958) as an operational definition of conflict. In that

study, other behaviors were employed as measures of overt and covert

power. Leighton, Stollack, and Ferguson (1971), on the other hand,

employed interruptions as a measure of dominance hierarchies. Others

have used successful interruptions as an index of power (e.g.,

Hetherington, Stowie, Ridberg, 1971; Mishler & Waxler, 1968;

Zuckerman & Jacob, 1979). Mishler and Waxler (1968) believe that one

can exercise power in two ways: attention-control and person-control.

They believe that attempted and successful interruptions fall in the

latter category. Hadley and Jacob (1973) directly assessed the

relations among measures of family power by employing process and

outcome indices. They found no relationship between the process and

outcome measures of power or between the separate outcome measures.

The process measures (interruptions and talking time) were related,

however.

Given the findings of these studies, it is clear that there is

some confusion about just what it is that measured interruptions

index. Moreover, and as Marlow (1985) has pointed out, "interruptions

may appear at times of high excitement and creativity, and may

indicate a high level of flexibility in the family's interactions"

(p. 27). Still another possibility is that interruptions may occur

between two individuals who know each other well simply because these

individuals are able to anticipate what the other is going to say

before this individual has completed his/her utterance. Clearly,

then, interruptions may serve different purposes in different

situations and may not, therefore, always be assumed to tap conflict.

Consider, for example, the rather extreme family where one

member interrupts nearly every utterance made by other family members. Here it is probably safe to assume that either conflict is taking place or will ensue if this behavior continues. On the other hand, consider the family where no interruptions occur. What may come to mind here is a family that has an authoritarian member (perhaps the father) who will allow no interruptions and delivers sanctions when they occur. With this family, there may be no overt behavioral conflict but there may be considerable conflict reported on self-report questionnaires. The majority of families probably fall somewhere between these two examples. With these families, a given interruption could be indicative of any combination of a number of factors. Thus, in each case the goal is probably the same (to have one's opinion heard) but the antecedent motivator or attendant emotion probably varies considerably both within the same person and between people.

We can also argue, from a developmental perspective, that interruptions could serve different purposes at different developmental stages of the family. Although many family theorists/therapists have emphasized the notion of enduring patterns of interaction (Haley, 1977; Minuchin, 1974; Papp, 1977; Watzlawick, Weakland, & Fisch, 1974), rarely is a developmental perspective taken that allows for adaptive familial changes to occur as a function of intraindividual change in family members (Papini & Sebby, 1985). As is the case with many of the specific emphases in family research, this lack of attention to developmental issues in normal families has presumably taken place because of the almost exclusive focus on

studies involving disturbed family systems where normals are merely used as control groups (Jacob, 1975).

In summary, then, "conflict" in families appears to be an abstract concept that could conceivably have a number of operational referents. One such operational definition that has been employed by a number of investigators is "interruptions." It was pointed out that "interruptions" has been employed not only as a measure of conflict but as a measure of a number of other constructs as well. In fact, interruptions could be indicative of something quite different or even antithetical to conflict in some situations. Not only is it important to examine the purpose of a given behavior in a given situation but it may also be critical to examine its developmental significance. All of these issues will need to be considered as one interprets further the findings from studies that examine the relations between pubertal status and family interaction during adolescence.

General Definitions of Conflict

It should be clear by now that current operational definitions of family conflict in observational contexts are inadequate. As a result, it may be worthwhile to consider several theoretical definitions of conflict that may be suggestive of more useful operational definitions. Interestingly enough, conflict or conflict-like notions exist in nearly every area of psychology and in most related fields. Definitions may focus on intrapsychic conflict, cognitive conflict, social conflict, role conflict, conflict between

organizations, competitive conflict, interpersonal conflict, etc.
(see Peterson, 1983, for a review). Some definitions worth noting
come from sociologists. Hunt (1965/1976), for example, cites three
different definitions of conflict. First, "conflict refers to a
condition where an individual experiences the simultaneous (emphasis
added) arousal of two or more incompatible behavioral tendencies" (p.
286). Definitions similar to this have been offered by psychologists
as well (Hilgard, 1953; K. Lewin, 1935). Hunt's second definition is
that "conflict may refer to a situation in which the objective social
requirements would be such as to demand simultaneous (emphasis
added), incompatible responses from the person" (p. 286). The
definition most relevant to the present discussion involves the
notion that "dealing with role concepts is interpersonal and conflict
may exist...in the relationship where the resulting "tension" may be
expected to have behavioral consequences of great disruptive
potential" (p. 286).

At least two observations can be made about these definitions of
conflict. First, a given conflict can involve any one of a number of
intrapersonal, extrapersonal, or interpersonal processes. Given that
I am concerned with family interaction processes, I will focus on
interpersonal conflict. Second, the notion that conflict involves two
opposing forces that must occur simultaneously is important and will
prove to be influential in the design of the present study. It should
also be noted that there is some validity for this definition in
Gottman's (1979) and Margolin and Wampold's (1981) findings. Gottman
(1979) found that distressed couples were more likely than
nondistressed couples to reciprocate each other's behaviors. For

example, negative affect chains were more likely in distressed
couples--a good example of the simultaneous (or contiguous)
occurrence of opposing forces.

Because we are concerned here with an interpersonal definition,
it is also worthwhile to discuss in some detail Peterson's (1983)
notions of conflict in close relationships. He defines conflict as

> an interpersonal process that occurs whenever the actions of one
> person interfere with the actions of another...[whereby
> interference is believed]...to include not only outright
> obstruction of activity, but any reduction in effectiveness or
> benefit of one person's activity that is causally related to the
> actions of another. (p. 365)

He also draws a distinction between open conflict (overt opposition
between two people) and structural conflict (incompatibility between
the goals of two people). Also part of his conceptual framework is
the notion that conflict can be antecedent to "tense, aggressive,
hyperactive emotions" (p. 366). Moreover, Peterson outlines what he
believes to be the beginning, middle, and termination stages of
conflict. Given the proper predisposing conditions and initiating
events, a conflict can lead to engagement or avoidance. In the case
of engagement, the conflict can take one of two turns: negotiation
and resolution or escalation and intensification. Following these
middle phases, the conflict either terminates with structural
improvement, integrative agreement, compromise, domination, or
separation.

Although Peterson's model provides a great deal of information
that is consistent with empirical findings to date concerning major
conflicts that occur in close relationships, it tells us much less
about how to operationally define conflict in a structured family

interaction task where open engagement in conflict rarely (if ever)
occurs. Moreover, Hill and Holmbeck (1987) note that one problem with
employing laboratory tasks is that the option of "avoidance"--one of
the two initial conflict pathways in Peterson's model--is not
allowed. On the other hand, we can make use of his definitions of
conflict and interference. That is, interruptions and disagreements
(for example) do fit the definition of conflict at least insofar as
they interfer with the actions of another in terms of reducing the
effectiveness of that person's activity. It is worth noting, however,
that the notion that two forces must be simultaneously present is not
part of Peterson's definitional framework. For example, a passively
accepted interruption would fit with Peterson's definition--it does
interfer with the actions of the person being interrupted--even
though such an event does not seem particularly conflictual. Peterson
also does not discuss in any detail the manner in which accompanying
affect (positive or negative) plays a role in making an interaction
conflictual. Clearly, interruptions that elicit positive affect in
the person being interrupted have been received differently than
those that elicit negative affect. Finally, he devotes only two
paragraphs to the issue of conflict in the family context.

    As I will suggest later, it may be that the occurrence of a
sequence of interruptions or disagreements is more conflictual and
more true to the idea that there need to be two opposing forces for
conflict to be present. Such indices may be particularly conflictual
when accompanied by negative affect (Gottman, 1979) or the withdrawl
(or absence) of positive affect (Montemayor, 1985, 1986). In summary,
then, general definitions of conflict tend to fall into at least

three categories: intrapersonal, extrapersonal, and interpersonal. The definition of conflict that will be employed here involves the notion that conflict exists when there is the <u>simultaneous presence of opposing interpersonal forces.</u>

Conflict, Pubertal Status, and Family Interaction

Subsequent to my review of the relevant empirical literature on relations between pubertal status and family interaction, I presented a discussion of the confusion that currently exists in defining conflict as a construct and I also presented several general definitions of conflict. The goal of these latter sections was to provide the needed theoretical background for hypothesis development regarding further study of pubertal status and conflict in family interaction and to help explain the nature of the temporary perturbations that seem characteristic of familial responses to the onset of puberty. I will now discuss in more detail two of the unanswered questions cited earlier: (a) Are the observed perturbations in family functioning after the onset of puberty indicative of conflict?, and (b) Are the perturbations adaptive?

Are the Observed Perturbations Indicative of Conflict?

On a general level, we are confronted with the basic question of whether increases in interruptions after menarche, for example, suggest that there is more <u>conflict</u> in family interaction patterns. Given the previous discussion, and as will be seen shortly, this

question probably cannot be answered without further empirical study.

As already noted, various forms of interruptions have been employed as behavioral measures of conflict. It was concluded, however, that interruptions can probably serve different purposes in different situations. A review of the studies where interaction patterns in normal and disturbed families are compared emphasizes this point. According to Jacob's (1975) review, in all five of the studies he cites either no differences in interruption rates between normal and schizophrenic families emerged or normal families exhibited higher rates of interruptions. With regard to comparisons between normal and disturbed nonschizophrenic families, the results were more evenly mixed. In Doane's (1978) review (which included several of the studies reviewed by Jacob), three studies found no differences between normals and schizophrenics, three found normals to exhibit higher rates of interruptions, and one found disturbed families to exhibit more interruptions. Although the results for interruptions are mixed, it does appear that the evidence leans in the direction of normals displaying higher levels of interruptive behaviors. Mishler and Waxler (1968) contend that "normal family members are...able to use control strategies unambivalently and directly [in the form of interruptions] in order to maintain the recognized power structure" (p. 159). They argue further that disturbed families may avoid personal confrontations because they seem threatening or because it would imply greater "entanglement" with others than members of a schizophrenic family would wish to tolerate.

When we consider disagreements (another conflict variable included in the Jacob review) the results are again quite mixed. While most studies revealed no differences, those that did tended to indicate that there was more disagreement and less agreement in schizophrenic and disturbed nonschizophrenic families. On the other hand, Cooper, Grotevant, and Condon (1983) have found familial disagreements to be positively associated with adolescent outcomes such as identity exploration.

In light of this discussion and the preceding literature review, it appears that, at present, there is no solid evidence that interruptions, disagreements, or any other process measures are indisputable measures of conflict. What does this say about the findings reported to date that suggest that there are temporary perturbations in family relations at the apex of puberty in boys or just after menarche in girls? Clearly, one needs to interpret the results for the process measures (such as interruptions) in the context in which they occur. In males, for example, not only do there appear to be disruptions in the frequencies of interruptions (Steinberg, 1981) but there are changes in explanations, deference, and the like that seem to fit a "conflict" interpretation of the data. In addition, there is a degree of evidence which suggests that mothers report that oppositionalism peaks and that family activities and parental satisfaction are at their lowest levels during the pubertal apex. Males in the apex pubertal groups also report the highest levels of control in the home and that acceptance tends to level off (rather than increase) during this time period. Similar disruptions occur in families with girls, although it appears that

shifts in the power hierarchy do not occur to the same degree in families with girls as seem to occur in families with boys. Again, these data seem to fit with the notion that there is a period of temporary conflict during this period.

Given the preceding discussion, it appears that we may have some reason to believe that the perturbations that have emerged in past research are indicative of conflict. On the other hand, the current data in this area is limited in this regard in a number of important ways. We do not know, for example, whether the observed increases in interruption rates occur in the same families. That is, if the mothers who interrupt their sons more at the pubertal apex are in the same families with the sons who interrupt their mothers more at the pubertal apex, we would be safer in talking about "conflict." Correlational analyses would begin to get at this issue.

A better approach, however, may be to examine whether such interruptions are in fact linked sequentially in apex pubertal families (or immediately postmenarcheal families) or in families with early-maturing girls. As I noted earlier, interpersonal conflict may be best defined in terms of the simultaneous occurrence of opposing interpersonal forces. This definition is implicit in Leighton, Stollak, & Ferguson's description of their "clinic" family sample: "Once the necessity of interruption is established, a vicious circle is begun in which one interruption leads to another, with the breakdown in communication as the net result" (p. 255). Similarly, Powers et al. (1983) believe that "instead of simply focusing on the one-to-one association of discrete behaviors with developmental level, we should examine the overall interactive context in which a

particular behavior is exhibited when we investigate the relationship between behavior and development" (p. 21). Montemayor (1986) argues that "ultimately an understanding of parent-adolescent conflict requires an examination of process" (p. 21). Finally, Rogers, Millar, and Bavelas (1985) sum up the state of the art by stating that "most investigations of conflict have utilized neither sequential measures nor sequential analyses" (p. 181). They go on to recommend the use of such approaches. Thus, it appears that it is now time to move beyond mere "frequency counts" of behaviors when describing familial functioning (Gottman, 1979).

Clearly, the sequential occurrence of interruptions in family interaction comes closer to the definition of conflict adopted here than do simple frequency counts of attempted and successful interruptions (i.e., "Quantity and pattern are of different logical type and do not really fit together," Bateson, p. 58). In fact, many researchers only find differences between samples when sequential data are examined (Margolin & Wampold, 1981; Phelps & Slater, 1985). Margolin and Wampold (1981), for example, found that sequential variables significantly predicted dependent measures above and beyond their base rates. Fisher (1982) argues further that if researchers want to get at systemic issues they should avoid paper and pencil family assessment measures as well. On the other hand, recent studies demonstrate the utility of questionnaires in examining transactional aspects of the family (Green & Kolevzon, 1986; Green, Kolevzon, & Vosler, 1985; Olson, Russell, & Sprenkel, 1983).

It could be argued that those families where there is a recurrent pairing of reciprocally emitted dyadic interruptions and disagreements (perhaps a microanalytic definition of Peterson's "engagement" notion) are those very families that are the most conflictual. Although there is evidence that distressed couples, for example, do evidence more negative reciprocity (Gottman, 1979; Margolin & Wampold, 1981), it is important to examine systematically the concurrent validity (or construct validity) of such indices. Simply said, it is important to know if conflict in a laboratory setting is related to conflict in nature. It is expected that the present study will yield results similar to the research on couples. Relations between sequences of interruptions and disagreements and questionnaire measures of familial conflict will be examined to test this hypothesis (see Study 1 below).

Moreover, if families where the adolescent girl has just experienced menarche and families with early maturing daughters are more conflictual (as earlier research suggests) then one would expect higher frequencies of disruptive sequences in these families than in those where the adolescents are prepubertal or late pubertal. It is this hypothesis that will be the basis for another study being proposed here (see Study 2 below).

In a similar way, if the occurrence of menarche is in fact a time of conflict for families with adolescents, then interruptions and disagreements should be sequentially associated with less positive affect and more negative affect on the part of the person being interrupted during this time period. (Although the literature on affect will be reviewed in more detail shortly, let is be assumed

for the present discussion that positive affect is a correlate of familial health and that chronic negative affect is an indicator of family distress; Jacob, 1975.) Moreover, it is expected that when interruptions co-occur with positive affect in the same person, these interruptions are less indicative of conflict and will, therefore, occur less frequently in families with immediately post-menarcheal or early maturing girls. Simply said, what is being predicted here is that the relation between affect and interruptions (both within and between people) will vary across the different levels of pubertal status. Similar associations could also be predicted with affiliative nonverbal behaviors (e.g., gaze; Gottman, 1979; Margolin & Wampold, 1981). The basis for such predictions will become clear later (see description of Study 2 below) after I review the literature on sequential analyses and the specific literatures on each of the variables just discussed.

Are the Perturbations Adaptive?

Thus far it has been argued that: (a) there is little evidence that frequencies of interruptions or disagreements differentiate between normal families and distressed families, (b) in some cases, these measures may index positive family functioning (as in the case of the positive relations between disagreements and identity formation in a study by Cooper, Grotevant, and Condon, 1983), and (c) a better definition of conflict may be "the simultaneous occurrence of opposing forces" and that this type of conflict may be best measured via sequential analyses. Given these arguments, there are

still some unresolved issues. First, because the frequency measures do not differentiate between healthy and unhealthy families, it appears that both interruptions and disagreements do occur with some frequency in both types of families. If this is the case, it may be that they do not index conflict in either type of family, that they index different types of functioning in these families, or that they do index conflict in both types of families. In the latter case, it may be that other variables may, in fact, differentiate between these types of families (such as sequences of these variables, as has been found by Gottman, 1979, and Margolin & Wampold, 1981).

Second, when we then take Cooper, Grotevant, and Condon's (1983) finding into account, it may also be that these variables facilitate growth in some families. Their basic argument is that disagreements can facilitate identity formation because these behaviors are one way in which an individual can define oneself as distinct from others. In this case, disagreements may be indicative of conflict and healthy family functioning at the same time--thus indicating that such conflict may serve some adaptive purpose. It has always been an implicit assumption among many that conflict is something unhealthy and that the less of it the better. This is especially clear when one reads reviews of the family research literature (e.g., Jacob, 1975). What I would like to argue below is that conflict may be unhealthy in certain circumstances and may be adaptive (insofar as it facilitates growth) in others.

Interpretation of earlier findings (the notions of adaptation and transaction). As noted earlier, the results for girls suggest that there are perturbations in family functioning just after menarche and that negative effects may persist for early maturing girls. Hill et al. (1985a) have suggested that an adaptive process may be involved in families who have girls who mature relatively on time but that conflict may be more chronic in the families with early maturers. For on-time girls, "the observation of physical development during adolescence may set the occasion for the family to redefine interpersonal relations, transforming old styles of relating to one another into qualitatively newer styles" (Papini & Sebby, 1985, p. 4). Although longitudinal studies are required for a strong test of this hypothesis, I will be able to examine some of these issues in a modest manner in the present investigation. Given the results of previous research, I believe that familial responses to adolescent pubertal change do involve mild conflict, that this conflict is adaptive, and that this adaptation to change is a transactional process. The term adaptation in this context refers to changes that make a person(s) more fit for healthy living. The changes are adaptive because there appears to be an initial disruption followed by a return to harmony.

The term transactional (Bell, 1968; Brim, 1957; Dewey & Bentley, 1949; Glidewell, 1961; Parsons & Bales, 1955; Sears, 1951) is used to indicate that familial adaptation occurs via interindividual effects between ever-changing family members. The notion of transactional processes has been approached from a number of angles. Some have differentiated between different explanatory models of social

development (e.g., Sameroff & Chandler, 1975). Others have taken more

philosophical approaches by examining various meanings of "action" or

behavior (Dewey & Bentley, 1949; Spiegel & Papajohn, 1971).

Transactional notions have also been invoked by theorists to explain

phenomena that range from the development of personality disorders

(Millon, 1983) and depression (Coyne, 1976; Kiesler, 1986) to the

manner in which children elicit communication patterns from their

parents (Bugental & Shennum, 1984). They have also been used in more

general theories of communication (e.g., Watzlawick, Bavelas, &

Jackson, 1967). In the present case, I assume that familial

adaptation to pubertal change is a transactional process insofar as

family members change (or fail to change) in response to changes in

other family members. On a more complex level, I seek to determine

how the family changes as a system to intraindividual developmental

change. As Fisher (1982) notes, when a researcher is testing a

transactional hypothesis he/she is concerned with systemic variables

whereby:

> the sequence of family behavior...becomes the object of study
> rather than the presence or absence of any of the elements
> within the sequence, as in a relational [i.e., interactional]
> inquiry. Consequently, the patterns of behaviors a family
> exhibits under controlled conditions can be used to test
> transactional hypotheses. (p. 318)

Thus, a systemic/transactional approach to observational data

requires (among other things) attention to sequences of behaviors.

Prior research (e.g., Cantara, 1983; Steinberg, 1981) is not systemic

(owing to its individual or unidirectional/nonreciprocal focus), but

these investigators frequently have offered systemic-like

interpretations. One goal of the present effort was to provide a

systemic, transactional approach whereby the results could be interpreted as such. I now discuss relevant literature regarding the notion that conflict can facilitate growth.

Conflict as growth promotion. The idea that conflict facilitates development is not a new one. Piaget (1970), for example, argues that without cognitive conflict, cognitive development would come to a halt. Those who endorse hierarchical theories of social cognitive development (e.g., Kohlberg, 1969; Loevinger, 1976; Selman, 1980), also invoke conflict as an explanatory mechanism through which the higher stages of development are reached. In Loevinger's (1976) stage model of ego development (see Hauser, 1976, for a review), individuals who attain the highest stage ("autonomous") are described as follows: "The characteristic moral issue is coping with inner conflict, conflicting duties, conflicting needs, conflict between needs and duties, and so on" (Loevinger, 1976, pp. 199-200). The fully developed person does not merely accept inner conflict but cherishes it. Like Loevinger, Coser (1975) argues that fully functioning autonomous individuals have many roles with differing statuses. Moreover, they are continually challenged to articulate their roles in relation to others in the face of multiple and contradictory expectations. Given the preceding arguments, it seems clear that various forms of cognitive conflict have been linked with mental health. I now turn to the issue of interpersonal conflict in the family.

Every student of adolescence is quite familiar with the belief that adolescence is a time of storm and stress and that conflictual detachment from parents and a resulting orientation toward peers are characteristic of this developmental period (Blos, 1962; A. Freud, 1958; Hall, 1904). Reviews of the relevant literature, however, suggest that extreme detachment notions of familial relations during adolescence have not received empirical support (Hill & Holmbeck, 1986; Holmbeck & Hill, 1987; Montemayor, 1982, 1983; Rutter, 1980). In addition, it appears that adolescents who have problematic relationships with their parents also have similar relationships with their peers (Kandel & Lesser, 1972). Although some have argued that parent-adolescent conflict is not normal and is something to be avoided entirely (Ellis, 1986), a more moderate position is taken by Montemayor (1983). He argues that "perhaps in our attempt to be modern and repudiate this view we have lost sight of the fact that conflict is a part of any relationship, and that the ability to satisfactorily resolve differences is a key element to the continuation of a relationship" (p. 98).

Montemayor goes on to point out that we may need to move in the direction of talking about two or more types of conflict. That is, a mild form of familial conflict (subsequently referred to as Conflict A) may be essential for normal development (as illustrated above in the discussion of transformations in relationships as a function of pubertal change). On the other hand, a more severe form of conflict (subsequently referred to as Conflict B) may occur in troubled families and may be associated with adolescent psychopathology. What is referred to here as Conflict B has repeatedly been found to be

associated with a number of acting-out behaviors during adolescence
(see Montemayor, 1983, for a review). Although theorists in the area,
and particularly those from the psychoanalytic camp, argue that
Conflict B is normal, available research suggests that a "tumultuous"
adolescence is only characteristic of 15 to 20% of the population
(e.g., Montemayor, 1983, 1986; National Center for Health Statistics,
1974; Offer & Offer, 1975; Rutter, Chadwick, & Yule,
1976)--frequencies that do not differ from those found in families
with latency-aged children. In sum, then, there may be two types of
conflict (one healthy and one maladaptive) that may differentiate
well-adjusted from pathological family systems.

In the great majority of families, arguments are over rather
mundane issues rather than over values and morals (Hill, 1980a). It
may be, then, that such arguments are the arena where adaptation to
intraindividual change is acted out (Hill & Holmbeck, 1986). It is
interesting to speculate about how these findings may relate to the
evidence cited earlier regarding the occurrence of perturbations in
familial relationships during adolescent pubertal change. It may be
that the observed perturbations are indicative of mild conflict
(Conflict A) and that such conflict may serve an adaptive function
(rather than a "detachment" function) in families where girls are
maturing relatively on time. On the other hand, conflict B (conflict
of a more severe variety) may be more frequent in early maturing
girls, which would explain the apparent chronicity of conflict in
these families.

<u>General Conclusions</u>

What do these reviews tell us about conflict and familial adaptation to pubertal change? First, it appears that conflict can be adaptive or pathological. Second, it seems that familial adjustment to pubertal change may involve adaptive conflict, insofar as the changes that result make the members of the family more fit for healthy functioning. Of course, the conflict (regardless of whether or not it is adaptive) may be <u>unpleasant</u> and may be associated temporarily with disruption in the family. That is, adaptive conflict may still be negatively correlated with indices of positive family functioning. On the other hand, if the conflict is adaptive (Conflict A), it may serve to promote the type of adaptation needed to avoid more serious conflict (Conflict B).

Third, the reviews suggest that the best way to define conflict is with sequences of interruptions and disagreements. It appears, then, that these types of indices will be associated with, for example, less family cohesiveness, parental acceptance and the like. Regardless of the type of conflict that such sequences index (A or B), it is my belief that they are "conflictual" and that they will be associated with disruptions in family functioning.

On the other hand, the earlier reviews are less conclusive regarding frequencies of interruptions and disagreements as possible measures of conflict. For these variables, we may actually find positive relations with variables such as parental acceptance because the fact that interruptions and disagreements are allowed may

indicate that the family is less disrupted. In families where these behaviors are not allowed, more difficulties may be present. Conversely, one could argue that, in some family sytems, frequencies of interruptions and disagreements index more disruption and would therefore be negatively correlated with measures that tap family cohesiveness. Finally, one could argue that it is the families where there are moderate levels of interruptions and disagreement that are the most cohesive and free from disruption (and in this case, curvilinear trends would be predicted). In sum, then, no specific predictions regarding the validity of frequencies of interruptions and disagreements as measures of familial conflict will be offered. Although I have argued that frequencies and sequences of interruptions and disagreements can both serve adaptive functions, I also predict that only sequences of these behaviors will be negatively associated with family cohesiveness and the like.

Given that it now seems appropriate to begin taking a more sophisticated, sequentially-oriented approach to conflict during family interaction, I will now present an overview of this analytic approach by drawing on other literatures where sequential analytic approaches have already been employed (e.g., Bakeman, 1978; Castellan, 1979; Gottman, 1979; Gottman & Bakeman, 1979; Hertel, 1972; Patterson & Forgatch, 1985; Raush, 1965; Raush, Barry, Hertel, & Swain, 1974; Sackett, 1978, 1979, 1980; Vuchinich, 1984). I begin with a discussion of four family interaction research traditions and then present an overview of the mathematics involved in conducting sequential analyses (including a discussion of mutual exclusivity, autocorrelation, stationarity, and methods for comparing different

samples). I review the literature on the variables to be employed
and, finally, I present the hypotheses that were tested in the two
studies conducted here.

<u>History and Overview of Sequential Analytic Approaches</u>

<u>History of Interaction Research</u>

John Gottman's (1979) study of marital interaction in distressed and nondistressed couples is perhaps the most impressive effort to date that takes seriously the transactional perspective on social behavior. His contribution is twofold. First, in an attempt to test a structural model of marital interaction, Gottman presents model-building data that support many of his hypotheses regarding the patterns of interaction in the couples he studied. Second, he makes methodological contributions in the areas of observational research, the study of nonverbal behavior, reliability as conceptualized by Generalizability Theory (Cronbach, Gleser, Nanda, Rajratnam, 1972), and sequential analysis of observational data. His model of marital interaction is based on a review of four research traditions that have dealt with families and couples, namely: the sociological tradition; the family therapy tradition; the social learning tradition; and the developmental tradition. Some of the findings and empirical methods of these various traditions are relevant to this discussion on sequential analytic approaches. The traditions will be discussed in turn.

<u>Sociologists</u> (e.g., Burgess, Cooke, & Thomas, 1971; Hawkins & Johnson, 1969; Navran, 1967; Ort, 1950) contributed to the development of observational research and the sequential analyses that were applied to observational data in a rather indirect manner.

Sociologists do not typically use observational data. Instead, they employ questionnaires and examine, for example, relations between self-reported communication style and self-reported marital satisfaction (Navran, 1967). Although many of these correlational studies have yielded Pearson coefficients above .80, one cannot be certain that such strong correlations are not a function of method variance. Moreover, psychologists were quick to point out the innaccuracies of self-report retrospective data (e.g., Yarrow, Campbell, & Burton, 1968). Thus, many of the studies by sociologists are merely suggestive of actual processes that may be occurring. As a result, theorists in the area began recommending that sociological methodology (i.e., questionnaires which tap perceptions of relationships such as marital satisfaction scales) be combined with observational methodology (Parke, 1978). Also, dramatic findings that emerged in sociological research prompted many researchers from other fields to recognize the importance of examining a couple's ability to communicate and arrive at consensus.

Those who would form the family therapy tradition owe much to Norbert Wiener (1948), an MIT mathematician who coined terms such as feedback and cybernetics. As Gottman points out, Wiener and his colleagues, in their work on anti-aircraft artillary, "hoped to create a self-correcting device in which error--the difference between a predicted pattern and the one actually observed--becomes part of the new input to cause the regulated motion to correct itself" (p. 14). The notions of self-regulation (i.e., cybernetics) and feedback are quite consistent with a transactional perspective and were clearly influential to psychologists when multi-disciplinary

meetings on cybernetics were held in the 1940's. Bateson's notions
regarding the familial correlates of schizophrenia grew out of this
tradition (Bateson, Jackson, Haley, & Weakland, 1956). Although the
family therapists greatly advanced the theory of communication in
families (e.g., Lidz, Cornelison, Fleck, & Terry, 1957; Wynne,
Ryckoff, Day, & Hirsch, 1958) especially in terms of a transactional
perspective, it was really those from the social learning tradition
who were able to provide a methodology to further the empirical
validation of the notions arising from this theoretically-based
family therapy tradition.

Rather than merely comparing disturbed and nondisturbed families
with respect to frequency counts of process variables, the social
learning researchers took seriously the ideas suggested by those from
the cybernetics camp, and began to look for specific interactional
sequences that were typical in families with problem children (e.g.,
Patterson, 1976). In the same way, those from the developmentalist
tradition were demonstrating not only that it is important to examine
interactional sequences but that there is bidirectionality in
communication sequences such that child socialization involves two-
way effects between parent and child (e.g., Brazelton, Koslowski, &
Main, 1974).

In sum, what we see is a research area moving from the exclusive
use of questionnaires to the realization that questionnaires had a
number of serious limitations. Later, those employing observational
methodology began thinking in terms of feedback loops and other
transactionally-oriented notions. Then, a more sophisticated
observational approach (where researchers were concerned with such

things as the reliability and validity of their variables) was suggested and this was supplemented by the work of the developmentalists wherein they found that bidirectionality characterized the relations between individuals in close relationships.

As a result of the progress in these areas, the stage was set for sequential-analytic studies such as Gottman's on marital interaction. Gottman does note, however, that the family researcher actually could have employed sequential analyses far earlier because the necessary mathematics were available since the late 1940's (Miller & Frick, 1949; Shannon & Weaver, 1949). Interestingly enough (and for some unknown reason), family interaction researchers remained uninfluenced by these earlier developments. Even in Jacob's (1975) review of the family interaction research to date, none of the 57 studies cited contained analyses of sequences. Simply said, these early researchers "assumed that the more of something good, the better, and the more of something bad, the worse" (Gottman, 1979, p. 30). As was pointed out earlier, however, the same behavior (e.g., interruptions) can be indicative of a variety of family interaction patterns depending upon the behavioral context in which it occurs.

More generally, when frequency data is employed, the pattern and temporal, contingent quality of the conversation is lost (Rogers, Millar, & Bavelas, 1985). Family researchers in particular would wish to have access to sequential data given their theoretical focus on process patterns and family dynamics. (Clearly, a researcher would want to differentiate between couples who quarrel after they kiss and those that kiss after they quarrel--a case where frequencies may be identical but the processs is quite different; Hinde, 1979.) Gottman

also points out that the failure to look at "pattern" in observational data on the part of family interaction researchers is even more surprising because there have been a number of important contributions in the areas of primate research (Altman, 1965), aggression in children (Raush, 1965), and parent-infant interaction (Lewis & Rosenblum, 1974). Many writers have echoed his concern (e.g., Cousins & Power, 1986; Fisher, 1982; Rogers, Millar, & Bavelas, 1985). Breunlin and Schwartz (1986) even go so far as to argue that sequences and pattern in families constitute the common denominator of family interaction that should guide the observations of clinicians and researchers. They also note that most theories of families and family therapy focus on recurrent patterns in distressed families.

Given this historical detour, it seems clear that a transactional view of family interaction is recommended by most researchers in the field (e.g., Fisher, 1982). Moreover, it appears that sequential analysis is the statistical and data-reduction methodology of choice when attempting to analyze observational data of couples, families, parent-child dyads, or therapist-client dyads from this perspective (Cousins & Power, 1986; Gottman, 1979; Rogers, Millar, & Bavelas, 1985). As Cousins and Power (1986) have argued, "by investigating specific sequences, the building blocks of family therapy can be tested empirically and the richness of family theory simultaneously enhanced" (p. 90). Thus, the thrust of the field in general and the desirable direction of the research on relations between pubertal change and family interaction during adolescence have converged on one methodological/statistical approach--sequential

analysis. I will now discuss the specifics of the sequential analytic approach as it is to be used in the present study. Let it be said at the outset that I will discuss only those issues and mathematical equations that are necessary to test the hypotheses of the present study. In other words, the following review is not meant to be an exhaustive review of the sequential-analytic literature.

Sequential Analyses

Overview of the required mathematics. The fundamental postulate that is the basis of sequential analyses is the notion that "a behavior of one organism has communication value in a social sense if it reduces the uncertainty in the behavior of another organism" (Gottman, 1979, p. 31). For example, if knowledge that organism A exhibits behavior X allows us to then be more certain that organism B will exhibit behavior Y, then knowledge of A's behavior (X) reduces the uncertainty regarding B's subsequent behavior (Y). Whether the uncertainty of B's behavior is reduced can be assessed empirically by a comparison of the difference between the base rate of B's behavior (Y) with the conditional probability that B will exhibit behavior Y given that A exhibits behavior X. The base rate of a behavior is simply the probability that a behavior will be exhibited at any given point in time. Illustrating with a numerical example, suppose that the base rate of child positive affect (CA) is .10 (p(CA)=.10) and that the probability that CA will occur given the occurrence of mother positive affect (MA) is .40. The latter is signified by the conditional probability p(CA/MA). Thus, by knowing that a mother

exhibits positive affect, we are able to increase our ability to predict the occurrence of CA by .30.

It soon becomes clear that what is needed is some test of whether this increase (or decrease) in predictability is significant. The index that has been found useful by most researchers employing interactional data is the binomial z-test (Gottman, 1979; Sackett, 1979). This statistic simply evaluates the degree that the conditional probability of some behavior, given the presence of another behavior, differs from the base rate of the behavior. The statistic initially employed by (Sackett, 1979) was a typical z statistic where the difference between observed and expected probabilities is divided by the standard error of the difference:

$$(1) \qquad z = \frac{P_{obs} - P_{exp}}{SD_{expected}}$$

$$\text{where: } SD = [[P_{exp} \times (1 - P_{exp})] / N_{criterion}]^{1/2}$$

In terms of the numerical example above, p(CA/MA) is P(observed) and p(CA) is P(expected). N(criterion) is the number of instances that MA was detected. Traditionally, in a conditional probability such as p(CA/MA), CA is called the matching behavior and MA is called the criterion behavior (Sackett, 1978). (It should be noted that Gottman

(1979) used an equation that is easily derived from that cited above.)

In order to determine whether a z-score is significant, Sackett suggested several criteria. If z is equal to or greater than $\pm$1.96, it has reached the .05 level of significance and if it has reached $\pm$2.56, it has reached the .01 level of significance. If z is positive, then the matching behavior followed the criterion more often than would have been predicted by the base rate of the matching behavior (i.e., a positive dependency). If z is negative, then the matching behavior followed the criterion behavior less often than would be expected given the base rate of the matching behavior (i.e., a negative or inhibatory dependency). The assumptions underlying the z statistic are violated when the base rate of the criterion is close to .01 or .99 (Gottman, 1979; Patterson & Forgatch, 1985). Moreover, Bakeman and Gottman (1986) provide a fairly simple rule-of-thumb equation for determining if one has enough data points or sequences. They argue that NPQ should be greater than 9, where N is the total number of possible sequences, P is the probability for a particular sequence, and Q is equal to 1-P. Such an equation can be used to not only determine how many data points one needs to collect to obtain an adequate number of sequences, but it can also be employed as a post-hoc test of whether an adequate number of sequences emerged.

Unfortunately, the binomial z equations employed by Gottman (1979) and Sackett (1979) were incorrect (Allison & Liker, 1982; Gottman, 1980). Gottman (1980) and Allison and Liker (1982) modified this equation by adding a term to the denominator. First, we can rewrite equation (1) in terms of the variables already discussed (Gottman, 1980):

$$(2) \qquad z = \frac{P_{(CA / MA)} - P_{CA}}{[P_{CA} (1 - P_{CA}) / n_{MA}]^{1/2}}$$

where nMA is the number of occurrences that MA was detected (identical to N(criterion) in equation (1) above).
Equation (2) can be revised as follows:

$$(3) \qquad z = \frac{P_{(CA / MA)} - P_{CA}}{[P_{CA} (1 - P_{CA}) (1 - P_{MA}) / n_{MA}]^{1/2}}$$

It can be seen that (1-p(MA)) was added to the denominator. As Allison and Liker point out, equation (2) would only be correct if p(CA) "were the true probability and not merely an observed

proportion subject to sampling error" (p. 394). Equation (2) does not necessarily have a standard normal distribution whereas equation (3) does. Interestingly enough, the old z statistic was more conservative since z(equation 3) will equal z(equation 2)/SQR(1-pMA) where SQR is the square root. Allison and Liker go on to point out how some of Gottman's (1979) findings that were reported as nonsignificant would have been significant had he employed equation (3) rather than equation (2).

Lag-sequential analysis. Thus far, it has been implied that equation 3 can only be applied to behaviors that occur contiguously. This is not the case. Sackett (1978, 1979) has provided a useful approach, termed lag sequential analysis, where relations between a criterion behavior, X, and a matching variable, Y, can be computed as a function of various "lags" of Y from X. A lag is any time interval or event interval (i.e., window of observation) that is decided upon by the investigator. If one uses a 1-second lag, for example, one could compute binomial z scores for the occurrence of the matching variable Y at lag-1 (within 1 second of the criterion X), at lag-2 (between 1 and 2 seconds after X), up to lag-n (between n-1 and n seconds after X).

The issue of "lagged units" requires us to modify equation (3) (Allison & Liker, 1982; Gottman, 1979). It can be seen that nMA is in the denominator of the denominator of equation (3). It is clear, however, that since CA must occur after MA in order for it to be counted in the conditional probability, the lag of CA must be taken into account when determining nMA. For example, if MA is the last event in a given subject's record, CA cannot occur after MA since

there are no more events in which CA can occur. In a similar way, if we are computing a lag-3 conditional probability of CA following MA, then MA must occur several events prior to the end of the record for it to be counted in the total of "useable" MA events. As a result, equation 3 should be modified as follows (Gottman, 1980):

$$(4) \quad z = \frac{P_{(CA / MA)} - P_{CA}}{[P_{CA} (1 - P_{CA}) (1 - P_{MA}) / P_{MA} (N - k)]^{1/2}}$$

where N is the total number of events in the record and k is the number of lagged time units. If we did not have to take k into account, the denominator of the denominator would be (pMA x N) which would be equal to the nMA of equation (3). Although all of the conditional probabilites in the present study will be lag-1, k must still be taken into account. As a result, equation 4 will be employed in all analyses where z scores are required.

The lag sequential approach proposed by Sackett (1978) is, in many respects, an improvement over the Markov chain approach (e.g., Altman, 1965). With the latter approach, all possible combinations of variable pairings are investigated in what seems to be a rather atheoretical approach to data reduction. It becomes especially unweildy when one attempts to go beyond the simple two-variable sequential approach to examine triads or tetrads (e.g., MA followed

by CA followed by "mother interrupts child"). In a 10-variable coding system, there would be 10x10x10 (or 1000) possible triadic combinations and 10,000 tetradic combinations. Sackett's approach, however, provides a much needed information reduction function (Gottman, 1979). With his approach, criteria are specified in advance (based on theory) as are the matching variables. If one specifies triadic and tetradic combinations beforehand, one would then expect to find peaks in the z-scores of each matching variable at the lag at which it is expected to occur in the predicted triadic or tetradic sequence (see Bakeman, 1978, for examples). A predicted sequence is confirmed if all variables in this lag-n sequence (such as MA-CA-mother interrupt child-MA) have z-scores that are significant. Gottman (1979) recommends that when z-scores for sequences fall below significance level, the investigator should consider the sequence ended since the conditional probabilities are no longer significantly different than the base-rate unconditional probabilities of the matching variable under consideration. One can also see how more than one sequence could be associated with a given criterion behavior thus yielding a branching diagram with two (or more) possible pathways.

Types of data. As noted by Sackett (1979), not all data are easily amenable to sequential analysis. Different approaches have been taken to outlining the different types of observational data that are appropriate for sequential analytic study (e.g., Bakeman, 1978; Sackett, 1979). Bakeman (1978), for example, has described four types of data each of which vary along two dimensions: concurrent versus sequential and event versus time. The four types of data are

as follows: Type I (event based-sequential), Type II (event based-concurrent), Type III (time based-sequential), and Type IV (time based-concurrent). Each tend to be more complex than the one before. More specifically, event-based data involves coding the occurrence/nonoccurrence of a behavior without regard to duration. Time based data involves records of the duration of each behavior. Sequential data is generated from a coding system where behavioral codes are mutually exclusive (e.g., MA cannot occur at the same time as CA). Concurrent data preserves the nonmutual exclusivity of behaviors whereby behavioral codes can overlap and occur concurrently.

Another data issue is the form of the data "unit." Several options are available: thought units or utterances, time sampling approaches (i.e., where behaviors are sampled in time blocks), and real time (see Sackett, 1978, 1979, for reviews). Because thought units (or utterances) will be employed in the current study (in a manner similar to that employed by Gottman, 1979), no more will be said about data units.

The data for the present study fall into two categories: Type II data and Type IV data. That is, variables will be coded concurrently but in some cases event-based coding will be employed (Type II data), while in others, time-based coding will be employed (Type IV). The time-based coding that will be employed here is not true time-based coding, however, since duration is not coded in real time but in terms of "number of utterances." Given the nature of the data to be used in the present study, the issues of mutual exclusivity and autocorrelation need to be discussed in some detail.

Mutual Exclusivity. An issue that has attracted the attention of a number of researchers employing sequential analytic techniques is the problem of mutual exclusivity--a situation that occurs when a coding system is employed where codes are not mutually exclusive (e.g., Bakeman, 1978; Sackett, 1978, 1979). As Sackett points out, if one computes a total duration score by summing the durations of overlapping behaviors, the total can equal more than the total duration of the session. In this case, percentages of total time will be misleading as will probabilities. This concern is especially relevant when there is a large number of behaviors being coded and when the occurrence of simultaneous codes is frequent. In this case, Sackett (1978) recommends that the researcher create new variables out of concurrently occurring variables. For example, if MA and CA occur on the same utterance, the investigator could create a new variable called mother-child positive affect.

On the other hand, Sackett (1979) points out that concurrent data (i.e., data where more than one code can occur simultaneously) "can be studied sequentially if the simultaneous behaviors are independent and yield a true count of total occurrence" (p. 634). It appears, then, that mutual exclusiveness of data does not appear necessary if events are fairly infrequent (especially the simultaneous occurrence of different events), if the occurrence of one behavior does not indicate that another behavior is automatically present, and if one is not attempting to do a complete lag profile analysis where probabilities must sum to 1.00. Moreover, both Bakeman (1978) and Sackett (1979) conclude that the z technique can be

employed with concurrent behaviors. Given that the indices that will be examined here tend to be mutually exclusive and are infrequent, the nonmutual exclusiveness of the present coding system does not seem problematical.

Autocorrelation. Autocorrelation (or autoindependence) is an issue that has more recently been discussed and studied by researchers in this area (e.g., Allison & Liker, 1982; Gottman, 1980). The notion here is that if a person exhibits behavior X and then continues to exhibit this behavior merely because it was exhibited previously, it can be said that there is an autocorrelation between earlier displays of behavior X and later displays of the same behavior. Clearly, this will be a significant problem if behaviors that are sampled tend to have long latencies. In such cases, the assumption of nonautocorrelation would be quite misleading (Allison & Liker, 1982). One could also argue that any behavior, once exhibited, could be self-reinforcing and cause one to exhibit this behavior again at some later time that is not connected to the first. Most of the literature, however, focuses on the autocorrelation of contiguous behavior.

To deal with the case of autocorrelation of contiguous behaviors (i.e., behavior X at time t affecting the occurrence of behavior X at time t+1), methods have been developed where one can examine the effect of a behavior Y on the subsequent occurrence of behavior X by controlling for the prior occurrence of behavior X (see Allison & Liker, 1982, for a review). Interestingly enough, few investigators have been concerned with this issue even though methods have been

available. For example, Gottman (1979) did not apply any corrections for autocorrelation in his study on marital conflict (except in a portion of his research dealing with time series analysis--a technique where autocorrelation controls are more often "built-in").

In a more recent set of studies (Patterson & Forgatch, 1985; Phelps & Slater, 1985), the investigators employed the z index initially proposed by Sackett (1979) and later modified by Gottman (1980) and Allison and Liker (1982) with no control for autocorrelation. This z index does not completely control for the autocorrelation of the matching behavior (Gottman, 1980). In one sense, however, some control is built into equation (4) by controlling for unconditional probabilities. On the other hand, an example will demonstrate the lack of control this equation demonstrates. Using the positive affect example, suppose we seek to determine the degree that there is a dependency between mother positive affect and child positive affect (in the direction of CA following MA). Also suppose that, in a given interaction sequence, MA occurs at time t and CA occurs at times t-1, t, and t+1. If this is a recurring phenomenon, then it may be that the occurrence of CA at time t+1 is a function of the occurrence of CA at an earlier time (i.e., t-1) rather than a function of the previous occurrence of MA at time t. By merely subtracting the unconditional probability of CA from the conditional probability of CA given MA, one is not controlling for autocorrelation. That is, CA may have a certain probability of occurring but it may have a much higher probability of occurring (assuming autocorrelation is in effect) if CA had just occurred. Thus, controlling for the unconditional probability of CA

will underestimate the effect of causal contributions (or in this case--autocorrelation) other than that which the investigator is interested, namely, the prior occurrence of another variable.

Some investigators' concern over autocorrelation has been so great that they have proposed a method where its contribution (in terms of variance accounted for) is examined separately. Cook and Greenbaum (1985), for example, have proposed an analysis of variance (ANOVA) approach to the problem where the effect of the autocorrelation of the matching variable is employed as a main effect. Such an approach was particularly useful in their work owing to the type of variables they examined. They found that maternal agitation at time t-1 was predictive of child distress in an initial analysis. However, when the autocorrelation of child distress at time t-1 with child distress at time t was included in the analysis, maternal agitation was no longer predictive owing to the strong autocorrelation effect. Although the findings of Cook and Greenbaum's (1985) study were rather dramatic, it may be the case that less dramatic relations would emerge in other studies--particularly those where matching variables with shorter latencies are employed. In the present effort, only one of the behaviors being coded can have a latency longer than one utterance (i.e., positive affect). Even for this behavior, latencies of more than one utterance were quite rare. As a result, it may not be critical to control for autocorrelation in the present effort.

Because formally controlling for autocorrelation complicates statistical approaches to sequential data, it also seems clear that one should have a sound theoretical reason for doing so. As Kenny

(1979) has noted, partialling out variables without a clear
theoretical model can dramatically alter one's findings and can even
reverse the direction of the relationship of interest. Cousins and
Power (1986) argue that:

> Before autocontingency is routinely partialed out, decisions
> should be made beforehand on theoretical grounds as to whether
> autocontingency is actually a more basic phenomenon than cross-
> contingency is. Within the framework of family systems theory,
> this is a dubious assumption, since dyadic and triadic
> interactions, not the behavior of individuals, are posited to be
> the basic units of interactional structure...Although it has
> sometimes been assumed that autocontingency has logical
> precedence over cross-dependency (Allison & Liker, 1982;
> Gardner, Hartmann, & Mitchell, 1982), it makes more sense to
> leave it to the investigator to decide which is more relevant to
> the particular question being addressed. (p. 98-99)

Because there is no theoretical basis to assume autocorrelation
within any of the variables of interest in the present effort, no
formal controls will be instituted. What will be done, however, is to
"count" only those sequences where the matching behavior begins
during the lag <u>following</u> the criterion behavior. In other words, if
the matching behavior begins prior to the criterion behavior but
still continues past the criterion, it will not be counted as a
criterion behavior-matching behavior sequence. In this way, I will
reduce the effect of autocorrelation on computed conditional
probabilities.

  <u>Stationarity.</u> Another issue in the sequential analysis
literature that should be discussed briefly is the assumption of
stationarity. This assumption involves the notion that conditional
and unconditional probabilities will remain the same throughout a
given family's interaction session (Cousins & Power, 1986). Gottman

(1979), for example, found that couples will emit different types of sequences at different stages of an interaction (i.e., "arguing" sequences in the middle and "contractual" sequences at the end). In the present instance, however, it appears that stationarity can probably be assumed because families are discussing 5 separate issues that only require about one minute of conversation per issue. As a result, it is unlikely that there would be predictable shifts or stages in the types of sequences emitted during the discussion of each issue. On the other hand, the stationarity assumption will be tested if frequencies permit.

Comparison of samples. Given that one goal of the present study is to compare different groups of families (subsamples of families where the adolescent girls are at different menarcheal stages) in terms of the behavioral sequences that characterize them, some method of comparison is needed. A number of approaches to this issue have been suggested since Gottman's (1979) study of distressed and nondistressed couples. In his study, Gottman computed z-scores on aggregates (i.e., entire subsamples) of subjects thus yielding, for example, one z-score for distressed couples and one z-score for nondistressed couples per sequence. When his study was done (in 1979), the use of sequential analyses on aggregated data precluded the use of inferential statistics to compare samples since couple-specific z-scores were not computed. In short, Gottman drew his conclusions on the basis of eyeballing differences between aggregate z-scores. As Allison and Liker (1982) point out, however, it could be the case that one z-score could be significant and another

nonsignificant without there being a significant difference between the two z-scores. In this recent paper (wherein a log-linear approach to sequential analysis is proposed), Allison and Liker propose a logit transformation statistic which allows one to compare aggregated z-scores.

Margolin and Wampold (1981) advocate maintaining the integrity of the individual dyad (as does Hauser, Houlihan, Powers, Jacobson, Noam, Weiss, Follansbee, & Book, 1986). In this situation, statistics such as t-tests and ANOVA's can be used to compare groups. (In the present study, multiple regression would be appropriate so as to allow for a test of curvilinearlity between menarcheal status and the sequences of interest.) Although the inferential approach is superior to the aggregate approach in certain respects, the former becomes problematic when frequencies of the criterion behaviors are low. In such a case, the resulting dyad-specific z-scores would probably not be normally distributed and, as a result, the assumptions of the typical parametric statistical approaches would be violated. If this is the case, a nonparametric approach would be more appropriate. Cousins and Power (1986) advocate the use of the Mann-Whitney U test corrected for continuity and ties (Marascuilo & McSweeney, 1977) when one is not able to assume normality among the z-scores.

In addition, Hauser, Liebman, Houlihan, Powers, Jacobson, Noam, Weiss, Follansbee (1985) have proposed a new statistic that they refer to as the "proportion of matches" method. They employed this approach because their data were not mutually exclusive (although it is not entirely clear that this approach was necessary). With this approach, the number of sequences occuring in each family is computed

and this quantity is divided by the number of utterances spoken by each of the family members included in the sequence under study. For example, if one was examining the sequence MA-CA, one would count the number of occurrences of the sequence MA-CA in each family's record and then divide the result by the sum of the talking times of mother and child. This method will be employed here for a number of reasons (but only if the resulting indices are uncorrelated with the z-scores; see later discussion). First, it allows one to employ inferential statistics on family-specific data with fewer "frequency" concerns than is the case with z-scores. Second, it is worth testing the robustness of the findings of this study across analytic methods. Finally, it may be that a method that controls for base rates (i.e., z-scores) is not always the most appropriate. As Cousins and Power (1986) have argued,

> Finding the distribution of actual sequences that have occurred
> may, at times, be a more interesting question theoretically but
> is unanswerable when conditional probabilities are routinely
> corrected for base rates. (p. 99)

Thus, this new statistic may have great utility in family research.

In summary, a number of statistics are available for comparing subsamples. In the present study, the menarcheal status groups will be compared using inferential approaches. To employ inferential approaches, z-scores will be computed for each family. If these z-scores are normally distributed then multiple regression approaches can be employed (in Study 2). If these z-scores are not normally distributed, the multiple regressions will be employed in a set of exploratory analyses and the Mann Whitney U approach (Cousins & Power, 1986) will be used to supplement the conclusions based upon

the regression results. If the criteria for the use of inferential z's are consistently not met (e.g., low base rates and NPQ < 9--see above for a review), the aggregate approach will be employed. When comparing subsamples in aggregate, z-scores will be computed for each subsample (i.e., menarcheal group) and compared using Allison and Liker's (1982) log-linear statistic. In addition, the "proportion of matches" approach will be used to examine the robustness of our findings across statistical approaches, but only if this approach yields distinctly different indices of contingency. That is, if the "proportion of matches" variables are highly correlated with z-scores, the former will not be employed.

Now that a history and overview of sequential analyses have been presented, it is now appropriate to apply this vocabulary in developing hypotheses that are relevant to the study of relations between adolescent pubertal change and familial relations. Before doing so, I will review some of the relevant literature on the variables to be employed in this study. Some of the variables have not yet been discussed in any detail. Their relevance to the present effort will become clear later when the specifics of the study are described.

<div align="center">Review of Relevant Variables</div>

Measures of Positiveness

A dimension that will play an important role in the present study is positiveness. As Gottman (1979) notes, "positiveness is the first dimension that must be included in any basic conceptual model

about the content of interactional structure in marriages and
families" (p. 53). Also, in Jacob's (1975) review of the literature
comparing interactions in disturbed and normal families, affect is
one of the four major dependent variable dimensions that forms his
review. The study of positiveness, however, is fraught with
difficulties. Messages such as positiveness are meant for and
perceived by members who are close to the sender and the message is
not meant for strangers (or, in this case, experimenters). As a
result, inference is required in the interpretation of variables that
tap this dimension. Another problem involves the differences between
and the separation of verbal and nonverbal behavior. Positiveness
involves both and both must be measured. Dramatically different
characterizations of families can result when one is used as opposed
to the other (e.g., Schuham & Freshley, 1971).

In general, the findings to date indicate that nondistressed,
normal families are more "positive" than distressed, disturbed
families. Riskin and Faunce (1970) found that there is more humor and
laughter in normal families, that they are more spontaneous, that
there is more information sharing in such families, and that normal
families are more supportive. Similar findings have also emerged in
studies by Alexander (1973a, 1973b) and Mishler and Waxler (1968). It
appears, then, that "distressed couples and families are far more
negative to one another than nondistressed couples and families, and
that there is some (though less) support for the conclusion that
distressed couples and families are less positive to one another than
their nondistressed counterparts" (Gottman, 1979, p. 55). Given this
general review of the literature on positiveness, I would now like to

discuss variables that not only tap this dimension but are also those that will be employed in the present study.

    Positive affect. The findings discussed above regarding positiveness appear to apply to positive affect as well. (It should be noted at the outset that I could have used a term such as positive emotionality instead of positive affect, but positive affect is more consistent with the existing literature.) In Jacob's (1975) review of the studies on affect in the interactions of normal and disturbed families, he found that in comparisons of nonschizophrenic disturbed families and normal families, 17 of the 33 comparisons in the studies reviewed demonstrated significant differences. Five indicated more positive affect in normals and 10 indicated more negative affect in the nonschizophrenic disturbed families. In a more recent study, Margolin and Wampold (1981) found nondistressed couples to evidence more behaviors that fell into their global category "Verbal Positive." Thus, it appears that positive affect is associated with familial health.

    In spite of the consistency in the findings, there is far less consistency in the manner in which positive affect is defined and measured. Concepts such as expressiveness, emotionality, positivity, affiliation, affection, supportiveness, laughter, humor, number of jokes, and warmth have all been used as indicators of positive affect. Moreover, some researchers have used only the content of verbal statements as indicative of positive affect (e.g., Mishler & Waxler, 1968) while others have employed ratings of nonverbal behavior (e.g., Gottman, 1979).

Perhaps the most important early effort in the area of nonverbal behavior was that of Mehrabian (1972). As Gottman (1979) notes, however, most of Mehrabian's studies concerned interactions between strangers rather than between couples or families. On the other hand, Mehrabian's work is important primarily because of his theorizing regarding the channels through which affect is communicated. Based on his research findings, Mehrabian (1972) concluded that the transmission of affect is roughly 93% facial and vocal (i.e., nonverbal channels) and 7% verbal (i.e., based on the semantic content of speech). Similarly, Zahn (1975) found that vocal cues accounted for more variance in raters' judgments than did verbal cues. (Not all studies, however, are in agreement with the notion that nonverbal channels carry most of the affective information; Ekman, Frierson, O'Sullivan, Scherer, 1980; Krauss, Apple, Morency, Wenzel, & Winton, 1981; Vuchinich, 1984). In an interesting approach, Gottman (1979) has attempted to filter out the content of the speech via electronic distortion. Unfortunately, this process also distorts some of the emotionality in the message. Gottman advocates training coders to ignore the content of the speech and just focus on nonverbal behavior.

A strategy similar to Gottman's will be employed in the present effort. Gottman (1979; Couples Interaction Scoring System; CISS) and others (e.g., Patterson, 1985; Reid, Dishion, Patterson, Gabrielson, Thisodeaux, 1984; Family Interaction Code; FIC) code all familial utterances as either positive, negative, or neutral. In the case of Patterson (1985), affect ratings are based on voice tone and facial expressions. Gottman's (1979) more complex approach involves coding

both speaker and listener affect in a hierarchical manner based on Mehrabian's (1972) conclusions. That is, the rater examines each utterance (termed thought unit by Gottman) and makes a judgment of affect by first examining facial cues, followed by an examination of voice cues which is, in turn, followed by a consideration of body cues. If, after a review of the facial cues, the statement of the speaker (or the state of the listener) is codeable, the affect code for that thought unit is made. If the facial cues are unclear, the rater proceeds down the rating hierarchy. If the rater is unable to make a judgment after considering all three channels, the affect is coded as neutral. The process is, however, not as mechanical as it may seem. The task of the coder is to integrate all three channels in addition to using "relatively absolute cues and simultaneously to be able to calibrate the coding to fit each couple" (p. 88).

Interestingly enough, and most relevant to the present study, Gottman (1979) has reported that coders tend to stress voice tone cues in their coding. The data that will be employed in the present study has already been collected. Unfortunately, the quality of the tapes is such that facial cues are unusable. Moreover, given that the family members in the interaction sessions are seated at a table, measures such as forward lean, touching, and distance reduction (all forms of nonverbal displays of positive affect via the body channel in Gottman's system) are confounded with and attenuated because of one's position at the table and the placement of one's chair. As a result, only vocal cues will be emphasized in the present coding system. Given the primacy of this channel to a rater's perception (Gottman, 1979), it is likely that adequate measures of positive

affect can be obtained with this abbreviated version of Gottman's approach. It should also be noted that coders will observe the videotapes while following along with a transcript, thus providing the raters with additional information upon which to base their judgments. A specific rationale for the inclusion of this variable in the present study will be presented later.

I had intended to use negative affect as well as positive affect in this study but because of the extremely low frequencies with which negative affect occurred in the present families, it could not be employed. Such low frequencies probably occurred for at least two reasons. First, the families that are being examined in the present study are "normal" in the sense that they are intact families with no psychiatric history (on the part of the adolescents). Other researchers investigating such families have had similar problems. Patterson (1985), for example, found that 80 to 90% of the interactions in his sample of normal families were coded as affectively neutral. Of the remaining portion of codeable interactions, approximately 80% were affectively positive. Mothers in his sample displayed positive affect for only 12.6 seconds and displayed negative affect for only 3 seconds per one-hour session. Similarly, Gottman (1979) reported that neutral affect was coded for 85% of the thought units in his normal sample, positive affect was coded for 12% of the units, and negative affect was coded for 3% of the units.

Second, the problem is compounded in the present case by the use of a fairly innocuous stimulus for discussion. Families were asked to arrive at decisions on such issues as where they would like to eat or

where they would like to spend a vacation. (This approach was used because it was felt that it is these mundane issues about which most families will frequently argue outside of the laboratory.) Gottman's task, on the other hand, required couples to come to a mutually satisfactory resolution on their single most troublesome marital problem. As a result, our percentages of negative affect are even lower than those cited by Patterson or Gottman. In many families, no negative affect was coded.

Gaze. A second variable that will be used as a measure of positiveness is gaze towards another person (i.e., orienting one's head and direction of eye contact so that one is facing and looking at another person). As with positive affect, I could have employed another term to describe gaze, such as head orientation. The reader should recognize that I am actually assessing head orientation because the quality of the tapes limits our ability to determine where a family member's eyes are fixated. On the other hand, the term gaze will be used here because it is more frequently employed in studies where changes in head orientation are being measured. I am employing another nonverbal measure of positiveness because of the power with which such behaviors have discriminated distressed and nondistressed individuals, couples, and families in previous work (e.g., Gottman, 1979; Gottman, Markman, & Notarius, 1977; Margolin & Wampold, 1981). Interestingly enough, however, body orientation and movement has received little study in research involving family interaction tasks. Most notably, it is missing in both Riskin and Faunce's (1972) and Jacob's (1975) reviews.

As with indices such as interruptions, increased gaze can serve different purposes in different circumstances. Clearly, "the verbal content of interactions can obviously qualify generalizations about nonverbal exchange" (M. Patterson, 1983, p. 88). Or as Cousins and Power (1982) have argued, "verbal and nonverbal communication interact both simultaneously and separately" (p. 91). More specifically, depending on the nature of the conversation two (or more) individuals are having, increased gaze on the part of the listener can mean different things to the speaker. For example, if Person A is giving positive feedback to person B, person B's gaze could indicate affiliation. If the feedback is more negative, the gaze could transmit hostility (via an intense stare), aggression, or the intent to induce anxiety in the other. More generally, gaze could signal sexual attraction, clinical interest, or an attempt to dominate the conversation (Argyle, 1972; Knapp, 1978).

On the other hand, it does appear that increased gaze signals increased attentiveness (Kleinke, Staneski, & Berger, 1975). Gaze signals interest in the other and this can be accenuated by the accompanying facial expression. Individuals tend to look more at people they like (Exline & Winters, 1965) and at people who like them. Gaze can frequently be used to signal that a point is understood. Also, LaCrosse (1975) has found that increased gaze on the part of an interviewer (the speaker) has been related to higher ratings of attractiveness and persuasiveness. Another related variable--mutual gaze--has also been found to be at higher levels in strong-love partners than weak-love partners (Kleinke, Meeker, & LaFong, 1974; Rubin, 1970) even in periods where no conversation is

taking place. Thus, gaze can have a variety of positive implications.

More relevant to the present investigation is a study by Beier and Sternberg (1977). These investigators sought to examine differences between couples in conflict and those not in conflict with regard to their nonverbal involvement. Their findings suggest that couples who disagree with each other less manifested greater nonverbal involvement by: (a) sitting closer together, (b) looking at one another more and for longer periods of time, (c) touching each other more, (d) touching themselves less, and (e) maintaining a more "open" body position (e.g., legs apart). As M. Patterson (1983) points out, in relationships where the partners are more familiar with each other, very slight decreases in gaze or affection can be quite informative given that other patterns are more characteristic and known by the partner. Even small levels of tension or conflict can be signalled by lower levels of nonverbal involvement (e.g., decreased levels of gaze).

Thus, it appears that gaze and mutual gaze are, in many circumstances, associated with positive relations, feelings of affiliation, and other nonverbal behaviors that are also positive in nature. Unfortunately, and as has already been noted, this is not always the case. It appears that in any investigation where gaze is employed as an operational definition of a specific construct, some noise will be inherent in the coding system due to the multiplicity of meanings that a single gaze behavior can have. For example, it may be difficult to determine, especially in studies involving family interaction, if changes in gaze occur because of changes in positive feelings or because of changes in power status in the family (Exline,

1972; LaFrance & Mayo, 1978). On the other hand, one is safe in saying that gaze is associated with greater interpersonal involvement in the relationship and in this way it is a measure of positiveness. (Other variables can also change the degree of gaze and mutual gaze [e.g., proximity, physical characteristics, cultural background, topic of conversation; Knapp, 1978], but most of these variables are held constant in the present investigation. The degree that one turns his/her head away from another individual could also be employed as a separate variable but in order for someone to turn away, one must have initially turned towards the other person thus making the former confounded with the latter.)

Measures of Interference

Two variables that seem to fall into this category are interruptions and disagreements. Both fit Peterson's (1983) definition of interference in close relationships (i.e., outright obstruction or reduction in the effectiveness of another person's activity). In this study, however, they are not referred to as measures of conflict (as implied by the working definition of conflict discussed earlier and because each can have different meanings in different contexts). Although much of the research on interruptions and disagreements has already been discussed in some detail above, I will briefly summarize the findings again. In addition, other issues, previously undiscussed, will also be presented.

Interruptions. As argued above, interruptions clearly serve an interference function. Unfortunately, it is quite difficult to determine the purpose of a given interruption. Moreover, interruptions may serve different functions at different stages of development. That is, a latency age child may interrupt his/her mother for very different reasons than will the early adolescent who may be attempting to maintain or attain a more powerful position in the family.

The reviews by Jacob (1975) and Doane (1978) support the notion that interruptions can have many different meanings. In general, the results are mixed in studies that compared normal and disturbed families. The picture is complicated further by the fact that there are many types of interruptions. That is, interruptions can be successful (i.e., the person being interrupted stops talking) or unsuccessful (i.e., the person being interrupted does not stop talking and the person interrupting does not continue his/her interruptive statement). Also, both people can talk simultaneously. Finally, many investigators sum all three of these types of interruptions and refer to this indice as "attempted interruptions." As Jacob (1975) notes, attempted interruptions have been used as measures on conflict and the more specific measure of successful interruptions has been employed as an indicator of dominance whereby the person who is interrupted yields to the interruptor by discontinuing his/her statement.

To avoid much of the confusion and assumptions that have accompanied this variable since the 1960's, a somewhat different approach will be used in the present study. Frequencies of

interruptions will be viewed as a measure of interference and not as a measure of conflict or dominance. Clearly, one cannot assume that such behaviors are indicative of such abstract concepts without a nomological network of confirmatory construct validation. The purpose, then, of Study 1 in the present effort is to evaluate what meaning (with respect to many psychosocial and family process variables) we can attach to interruptions above and beyond their obvious interference function. It is also of interest in this initial study to determine if reciprocal sequences of interruptions (e.g., mother interrupts child followed by child interrupts mother) are better operational definitions of conflict than are frequencies of attempted interruptions. As a result, sequences will also be employed as a variable in the construct validation study. Given this information, I will then be able to make more informed interpretations of findings that emerge in subsequent analyses of relations between menarcheal status and family process. In Study 1, it will be predicted that sequences of interruptions will be positively related to disruptions in family functioning. No concrete predictions will be offered for frequencies of interruptions.

Disagreements. Like interruptions, disagreements also serve an interference function. When person A is attempting to assert an opinion, person B's disagreement lessens the efficiency with which person A's assertion is conveyed. Also, like interruptions, the data on frequencies of disagreements in family interaction are quite mixed. Although some of the studies reviewed by Jacob (1975) suggest that healthy families disagree less and agree more, findings by

Cooper, Grotevant, and Condon (1983) call this interpretation into question (see earlier discussion).

Once again, then, construct validation of a measure such as disagreements is an empirical question that has received far too little attention. As with interruptions, frequencies of disagreements and sequences of disagreements will be employed as separate variables in a construct validation study. Again, it will be predicted that sequences of disagreements will be positively related to disruptions in family functioning. No such predictions will be advanced for frequencies of disagreements.

Interruptions and disagreements will both be employed in the present study because they are clearly not interchangeable measures of interpersonal interference. Even Jacob (1975) includes interruptions as a quantitative measure of conflict and disagreements as a qualitative measure of conflict. I will not be surprised if the construct validation study (Study 1) yields very different findings for the two measures.

Now that I have discussed the mechanics of and theory behind sequential analyses and the primary family process variables that will be employed, I can now procede to a specific discussion of the two studies (and corresponding hypotheses) that will comprise the present investigation.

<u>Study 1: Description and Hypotheses</u>

<u>Description</u>

The purpose of the first study is to evaluate the correlates of interruptions, disagreements, sequences of interruptions, sequences of disagreements, and the co-occurrence (in the same person) of interference behaviors and positiveness. Essentially, this is a construct validation study that will inform us as to the meaning and familial contexts of these variables. More generally, the goal is to assess which of the observationally-based operational definitions of conflict are related to conflict as reported on questionnaires and to other observational measures. As should be clear by now, many have assumed that frequencies of interruptions and disagreements tap higher order abstract constructs such as conflict, power, and dominance. This assumption seems unjustified given the reviews in the area (Doane, 1978; Jacob, 1975) and, as a result, the construct validation of these indices becomes an empirical question. Perhaps a better operational definition of conflict is the simultaneous (or in the case of the present study--contiguous) occurrence of opposing forces. In concrete terms, it is argued here that reciprocal sequences of interruptions and disagreements imply greater levels of contentious interchange and, therefore, conflict.

The interference variables (and combinations thereof) will be correlated with a number of familial psychosocial and process variables. The psychosocial <u>and</u> process variables that will be employed were selected for a number of reasons. First, the

psychosocial variables are those that are traditionally used in studies of familial relations during childhood and adolescence (Maccoby & Martin, 1983; B. Martin, 1975). Many tap parenting behaviors that comprise circumplex models (Schaefer, 1955) such as parental warmth/hostility and control/permissiveness. Other psychosocial variables tap dimensions that involve the state of everyday familial functioning such as Involvement in Family Activities, Parental Satisfaction, and Oppositionalism. Second, the psychosocial variables that will be used have been employed producing significant and interesting results in other studies of pubertal status and family relations (Hill et al., 1985a, 1985b). Third, the process variables will inform us as to the interactional context in which the interference variables tend to occur. For example, are reciprocal sequences of disagreements associated negatively with positive affect in the family member being disagreed with?

The observational interference variables of principal interest are as follows:

1. Attempted interruptions

2. Interruptions where both individuals continue talking

3. Reciprocal sequences (between two family members) of attempted interruptions

4. Disagreements

5. Reciprocal sequences (between two family members) of disagreements

6. Co-occurrence of attempted interruptions and positive affect

in the same person.

7. Co-occurrence of disagreements and positive affect in the
   same person.

Of course, all indices will be computed separately for each dyad. It
should be noted that successful interruptions will not be studied
specifically because they have traditionally been viewed as a measure
of dominance--a construct that is not relevant to this study.
Behaviors 1, 2, and 4 are traditional measures of conflict, although
such a "conflict" label may not be justified. Behaviors 3, 5, 6, and
7 are measures developed for the current study. Unlike behaviors 3
and 5, behaviors 6 and 7 are believed to be indicative of a lack of
conflict.

The psychosocial questionnaire dependent variables of interest are as
follows:

   1. Mother Acceptance (child report)

   2. Father Acceptance (child report)

   3. Family Rules and Standards (child report)

   4. Child Oppositionalism (parent report)

   5. Involvement in Family Activities (parent report)

   6. Parental Influence (child report)

   7. Parental Satisfaction (parent report)

   8. Disagreements over Rules (parent report)

The family process observational dependent variables are as follows:

1. Positive Affect (individual member frequency scores)

2. Gaze or turning one's head toward another individual
   (individual member frequency scores)

3. Explanations (This variable has been found to be related to a
   host of indicies of familial health and adolescent autonomy;
   Baumrind, 1975; Elder, 1963; Kandel & Lesser, 1972.)

4. Rater's estimates of affiliation and control between family
   members by dyad.

Hypotheses

Given the literature review and variables of interest, the following
hypotheses will be tested:

1. Simple frequency counts of interruptions and disagreements
   are expected to be intercorrelated with each other but
   are not expected to be strongly related to the psychosocial
   and process measures, given the mixed empirical evidence
   regarding their status as "conflict" variables.

2. In accordance with the definition of conflict being employed
   in the present investigation, it is hypothesized that
   reciprocal sequences of interruptions and reciprocal
   sequences of disagreements will be positively correlated with
   each other and with the following psychosocial questionnaire

measures of family functioning: family rules and standards, oppositionalism, and disagreements over rules. They should be negatively associated with the following psychosocial variables: mother acceptance, father acceptance, involvement in family activities, parental influence, and parental satisfaction. They should also be negatively associated with all of the observational family process dependent variables (except control). Simply said, sequences of interruptions and disagreements should be positively associated with other perturbations in family functioning and negatively associated with positive family functioning.

3. Results for interference variables 6 and 7 (co-occurrence of interference behaviors and positive affect) are expected to be similar to those in hypothesis 2 except that they should be in the opposite direction since such co-occurrence should be indicative of a lack of conflict.

Although the overall goal of the present effort is to investigate the effects of menarcheal status on family conflict, families of boys and girls will be employed in this construct validity study because the purpose of this initial study is simply to investigate the correlates of specific variables of interest regardless of gender. No literature exists that would suggest that the correlates should differ remarkably for the two sexes. By using both genders, the power of the significance tests will be greatly increased. In addition, gender-

separate analyses are not possible because of the low number of
families that have questionnaire and observational data.

It should be noted that Study 2 was planned based on the
assumption that the Study 1 hypotheses would be confirmed. That is,
it is expected that sequences of interference behaviors will be
adequate measures of conflict and that the co-occurrence of
interference behaviors and positive affect will be indicative of a
lack of conflict. As a result, a contingency plan must be developed
in the event that the Study 1 hypotheses are not confirmed. Given
nonconfirmation, all of the interference variables will be employed
in Study 2. In this case, all analyses will be more exploratory than
they would have been had evidence for their construct validity
emerged in Study 1.

Study 2: Description and Hypotheses

Description

The purpose of the second study is to determine if there are
lawful and observable differences in family interaction between
families that have adolescent girls at different stages of menarcheal
status. Girls are studied because far less is known about familial
responses to pubertal change in girls than is the case for boys. As
should be clear from the literature review already presented, it
appears that there are perturbations in family psychosocial indices
and family interaction at the pubertal apex in boys and just after
menarche in girls. As already noted above, we are left with several

unanswered questions. Two of them that were considered earlier are as
follows:

1. Are the observed perturbations indicative of conflict?

2. Are the perturbations adaptive in the sense of promoting
   healthy and needed transformations in familial relations?

Given the literature already presented, it is clear that current
operational definitions of conflict (i.e., frequency counts of
interruptions and disagreements) are inadequate. The definition that
is proposed here is that conflict exists when there is the
simultaneous presence of opposing interpersonal forces. Correlational
studies begin to take this new definition into account but in a
limited sense only. That is, if mother interruptions of daughter are
correlated with daughter interruptions of mother we can be only
somewhat more certain that conflict in the form of opposing forces is
in fact occurring in the same families.

A somewhat different approach to the first question that gets
closer to the proposed definition would be to examine the degree to
which there is reciprocity (or recurring sequences) of interruptions
and disagreements in families with daughters who have just
experienced menarche. Although there is somewhat more evidence in the
literature that there is conflict at the pubertal apex in families
with boys, it may be that similar "engagements" occur just after
menarche in families with girls. If one can demonstrate that the
behavior of families where the adolescent girls have recently
experienced menarche is more linked or contingent (with respect to

sequences of interruptions and disagreements) one would then be much safer in speaking about conflict rather than perturbations. I would expect that this will be the case in families with early maturing girls as well.

The second question is far more difficult to answer with the cross-sectional data being employed here. On the other hand, I can contribute modestly by examining whether families having girls who have experienced menarche more than 6 months ago (the within-the past-12-months group) have similar reciprocity scores as those with families whose girls are premenarcheal. Given these findings, it may be that there is disruption in families with girls who have just experienced menarche (the within-the-past-6-months group) but that there is a return to harmony (back to premenarcheal levels) in families with girls who have experienced menarche more than 6 months ago.

Given that I will be referring to four menarcheal groups in the hypotheses to follow, it may be helpful for the reader if these groups are given numerical labels. Premenarcheal girls will be referred to as group 1, the menarche-within-the-past-6-months girls will be referred to as group 2, the menarche-between-6-months-and-12-months-ago girls will be referred to as group 3, and the menarche-more-than-12-months-ago girls will be referred to as group 4. It should be noted that group 4 is the early-maturing group. When I speak of negative and positive cubic trends, a negative cubic trend results when groups 1 and 3 have the highest values (or means) on the dependent variable of interest and a positive cubic trend results when groups 2 and 4 have the highest values (or means) on the

dependent variable of interest. The variables employed in the study
are: interruptions, disagreements, positive affect, and gaze.
Assuming that the results of Study 1 do not strongly suggest
otherwise, attempted interruptions will be employed without regard to
whether they were successful or not because the frequencies of
criterion behaviors are of concern when running sequential analyses
and because all forms of interruptions meet Peterson's (1983)
definition of interference.

Hypotheses

Given the literature review, the following hypotheses will be tested:

   1. Analyses will be run initially on the frequency data to
      determine how closely the results conform to earlier findings
      (e.g., Hill et al., 1985a). Given that for most of these
      variables there is no available data upon which to base my
      predictions, hypotheses are based on related findings and
      interpretations. It is expected that dyadic frequencies of
      mother, father, and daughter interruptions and disagreements
      will be at their highest levels in groups 2 and 4 and that
      the frequencies of positive affect and gaze will be at their
      highest levels in groups 1 and 3. Essentially what is being
      predicted is the presence of cubic trends.

   2. To examine whether the measures of interference occur in the

same families, mother, father, and daughter interruptions and mother, father, and daughter disagreements will be intercorrelated for each pubertal group. They are expected to more highly correlated for groups 2 and 4. For example, it is expected that father interruptions of daughters will be most highly correlated with daughter interruptions of fathers in groups 2 and 4.

3. To examine whether there are differences between the groups with respect to behavioral sequences, sequential analyses will be employed. It is expected that reciprocal sequences (e.g., mother interrupts child followed by child interrupts mother) of interference behaviors (i.e., interruptions and disagreements) should occur more frequently in groups 2 and 4. This hypothesis can be tested via the "proportion of matches" technique (Hauser et al., 1985)--assuming that these indices are not highly correlated with the z-scores. Similarly, z-scores (measures of contingency) between these variables should also be higher in these groups. (The aggregated approach will only be employed if the criteria for the inferential approach are consistently violated.)

4. It is predicted that dyadic sequential pairs of interference behaviors and positive behaviors (i.e., positive affect and gaze) will occur more frequently in groups 1 and 3 and that the z-scores for these pairings will also be higher for these groups. The pairings being tested are only uni-directional.

That is, I am only examining the occurrence of pairs where positive behaviors follow disruptive behaviors and not vice versa (e.g., mother interrupts child followed by child positive affect).

5. It is predicted that co-occurrences of interference behavior and positive affect <u>within the same person</u> will be more frequent and that the z-scores that represent these co-occurrences will be the highest in groups 1 and 3.

METHOD

Because two studies comprise the current investigation, separate
method sections are given for each. Before detailing the specifics of
each study, a brief overview of the larger research program will be
presented.

Overall Description of the Research Program

This research program was conducted between 1978 and 1981 by
John P. Hill at the Boys Town Center for the Study of Youth
Development, Boys Town, Nebraska. The program included two streams of
data collection: a field stream and a laboratory stream. Those
families participating in the field stream were given questionnaires
in their homes by "messengers" who were working on the project.
Families who participated in the laboratory stream were asked to fill
out questionnaires as well as perform various interactional tasks
that were videotaped. Data collected from those families who
participated in both the laboratory stream and the field stream were
employed in Study 1. This study included 20 families with sons and 17
families with daughters. Only those families with daughters who
participated in the laboratory stream were used in Study 2 ($\underline{N}$=111).

Families who participated in either stream had to meet the
following criteria: the family had to be intact such that the child
who was involved in the study was living with his or her natural
parents, the child had to be a seventh-grader, and he or she had to
be a first-born. The latter criterion was employed so as to control

for the effects of prior parenting. (The goal of the larger study was not to investigate the effects of birth order.) By using seventh-graders, Hill (1980b) was able to control for confounding between physical maturity and age. Other rationales for these criteria are detailed in Hill's (1980b) research proposal.

Method for Study 1

Subjects

Subjects for this study were 17 seventh-grade girls and 20 seventh-grade boys and their families who were recruited for the laboratory and field streams from eight school districts in Omaha, Nebraska. Because this subsample participated in both streams, it is referred to as the overlap sample. Approximately 275 families participated in the laboratory stream and 220 families participated in the field stream.

Principals of the schools in these districts were asked to provide lists of students who fit the criteria mentioned above. Letters were then sent out, with the principal's signature, to eligible families. Of the school districts which participated, 95-100% of the principals were cooperative. The letters to the families were followed up with phone calls requesting their participation. The staff members who made these calls provided the families with a brief description of the required tasks. Approximately 40% of the families agreed to participate. The most common reason for refusal was that the family did not have enough time. No differences in socioeconomic status were noted between those who agreed to participate and those

who declined. On a 1 to 100 scale of socioeconomic status (Duncan, 1977) families who agreed to participate ranged from 8 to 96 (mean = 59.62). Thus, the full range of socioeconomic status was represented. Approximately 31% of the sample was Catholic.

Procedure for the Laboratory Stream

All families who participated in the laboratory stream of the study came to the Boys Town Center to fill out the questionnaires and participate in the interaction sessions. A supervisor, an administrator, and an equipment operator were all present during the interaction sessions for each family. All families signed consent forms for video and audiotaping. Prior to beginning the interaction tasks, all families participated in a warm-up game of pick-up-sticks. This brief task was taped and played back to each family so as to aid the families in feeling more comfortable with the format of the interaction session.

The mother, father, and child all filled out questionnaires during the laboratory session. Since many of the interaction tasks were dyadic, the third family member could be filling out his or her questionnaire in a separate room while the other two members were participating in a task. The questionnaires employed in the laboratory stream were brief compared to those used in the field stream due to time constraints. Questionnaires in the laboratory stream included questions requesting demographic information, attitudes about one's role in the family, sex-role assessment, level of self-esteem, and an assessment of pubertal change. During the lab

visits, research assistants rated the adolescents on a global scale of physical development that was developed by Steinberg (1981) and was based on the regularities in the sequence of development of secondary sex characteristics described by Stolz and Stolz (1951) and Tanner (1962).

Six tasks were employed during the video-taped interaction session: the Structured Family Interaction Task (SFIT; Ferreirra, 1963), a blockstacking task (Rosen & D'Andrade, 1959), modified versions of the anagrams and patterns tasks (Rosen & D'Andrade, 1959), a variation of the anagrams task, and a Q-Sort of instrumental and expressive expectations and goals (Lynch, 1981). The only laboratory stream data of interest in this study is that obtained during the SFIT.

Prior to the SFIT, each family member was given a list of five multiple choice questions and they were asked to indicate independently their first and second choices to these questions. Such questions typically inquire as to the family members' preferences regarding where they would like to go on vacation etc. Three different versions of the form were employed to minimize the effects of families discussing the interaction session with families who had not yet participated. An example of one of these forms is included in Appendix A. Following independent completion of the preferences questions, family members were brought together and were asked to decide on a joint response. The family discussion that followed constituted the SFIT. The "unrevealed differences" procedure (Ferreira, 1963) was employed in that family members were not told prior to their joint discussion what each member's choices were. As a

result, families typically began the discussion of each question by verbalizing their choices. For all portions of the laboratory session, experimenters' instructions were standardized.

Because many content codes (in addition to the process codes) were going to be examined, the videotaped SFIT sessions were transcribed by trained transcribers. These coders were blind to the physical maturity level of the child and other information about the family. All statements by family members were coded in the form of "utterances", which were defined as complete thought units that were usually equivalent to a sentence. Interruptions were also preserved by placing an asterisk (*) at the point in an utterance where the interruption occurred and then following this with the interruptive statement (which was linked with the interrupted statement with brackets). An example of a transcript is included in Appendix B. An example of an interruption is included in lines 0004 and 0005 of that transcript.

Procedure for the Field Stream

Families that comprised the field stream were recruited in the same manner as those from the laboratory stream. Research assistants (referred to as "messengers") delivered the questionnaires to families in their homes and remained with the family while the questionaires were completed. In so doing, they were able to be certain that the questionnaires were completed correctly, answer any questions, and be certain that the questionnaires were completed independently by the parents and adolescents. They were particularly

helpful to fathers from lower class homes for whom the reading

entailed was burdensome. During the home visits, the assistants rated

the adolescents on the global scale of physical development discussed

earlier. Responses to the field stream questionnaires formed the

basis for many of the psychosocial variables employed in Study 1.

Laboratory Stream Variables

Interruptions. This variable (alone and in combination with

other variables) was employed as an index of interference. This

variable was coded by the SFIT transcribers prior to this study. The

manual for coding different types of interruptions (Hill, Sawin,

Shelton, Shiflet, 1978) is included in Appendix C. Four types of

interruptions were coded: successful interruptions, unsuccessful

interruptions, interruptions where both individuals continued

talking, and questionable interruptions. A successful interruption

occurs when the person being interrupted stops talking. An

unsuccessful interruption occurs when the person being interrupted

does not stop talking and the person interrupting does not continue

his/her interruptive statement. If neither the interruptor nor the

person being interrupted stops talking, then it was coded as a "both-

talk" interruption. If neither individual finishes his/her utterance,

then it was still coded as a successful interruption because the

person being interrupted was not able to complete his/her utterance.

The interruption was coded as taking place on the utterance of the

person who was interrupted. Both the person being interrupted and the

interruptor were noted.

Disagreements. Another interference variable is disagreements. The manual that was employed here (Hill, Holmbeck, Marlow, & Putterman, 1986; see Appendix D) was based, in part, on Gottman's (1979) coding approach. Although most of his categories have been included, more have been selected for this study because Gottman's definition of disagreements did not seem to include all possible forms of this variable. The coding manual is divided into two sections: structural criteria and content criteria. In general, structural criteria include issues relevant to the positioning requirements necessary to code a disagreement. Content criteria define the characteristics of various types of disagreements on a content level. The structural criteria section includes the following subsections: definition of speech, order requirements, and disagreements imbedded in a series of utterances. The content criteria section includes the following subsections: definition of a disagreement, reiteration of choice, indirect disagreements, statements of shock or surprise, doubting the wisdom of another's choice, and unwillingness to concede. Within each subsection, rules are listed followed by examples (when appropriate). If there were exceptions to these rules that arose during the coding process, they were dealt with at the end of each subsection in the form of Conventions. Conventions are arbitrary rules that were decided on by the authors of the manual to deal with special cases.

Two coders were employed for disagreements. Coders read the manual in its entirety prior to beginning a coding session. When a satisfactory reliability level (see below) was reached on a sample of

families not used in the present study, one coder then coded all of the useable families. The second coder randomly selected 12 families from the total (135 families) and did reliability checks. If reliability slippage had occurred, retraining would have been done and coding would have commenced where the slippage appeared to have occurred.

Reliability was examined by employing the kappa coefficient (Cohen, 1960, 1968, 1972; Hartmann, 1977; Hollenbeck, 1978; Landis & Koch, 1977). This coefficient appears to be the most widely accepted index when coding involves the presence or absence of infrequent codes. It is essentially a percent agreement coefficient that is corrected for chance agreement. Kappa is particularly useful for infrequent codes because the agreement level on nonoccurrence typically inflates other innappropriate coefficients such as percent agreement (Hollenbeck, 1978) whereas it does not inflate the Kappa coefficient. Landis and Koch (1977) provide the following strength-of-association benchmarks for various ranges of kappa values: <0.00 = Poor, 0.00-0.20 = Slight, 0.21-0.40 = Fair, 0.41-0.60 = Moderate, 0.61-0.80 = Substantial, and 0.81-1.00 = Almost Perfect. Given these guidelines, satisfactory kappa levels were assumed when raters agreed at the level of .70 or higher overall, which puts the agreement in the upper half of the Substantial range. It should be noted that much lower levels (in the Moderate range) have often been published in respectable journals (e.g., Hauser et al., 1984). On the basis of a preliminary estimate of reliability, kappa for disagreements was .75. More complete reliability information is given in the Results section.

Positive affect. This variable was employed as a measure of positiveness. The coding manual (Hill, Holmbeck, & Valentine, 1986; see Appendix E) was based, in part, on Gottman's (1979) coding scheme. Unfortunately, facial cues and many nonverbal displays of positive affect could not be used by the raters because of the quality of the videotapes. As a result, an abbreviated version of Gottman's approach was used.

For purposes of this study, affect was defined as "a feeling or emotion as distinguished from cognition, thought, or action. A strong feeling having active consequences" (American Heritage Dictionary, 1969). It was coded when there were laughs or rises in the voice. This included rises in the voice that were associated with surprises but did not include rises normally associated with asking a question. It is the experience of this author that achieving reliability merely on the basis of presence or absence alone is quite difficult, so the affect ratings did not include a weighting component (e.g., on a Likert scale). If affect bursts continued through a number of utterances, this continuation was noted with arrows.

The coding process involved three stages. First, two trained coders (with adequate pre-coding reliability rates based on at least 10 hours of training and reliability checks) rated all of the tapes. Second, on all families where a kappa of .60 or greater was obtained, a third rater (who was trained with the other two) resolved all disagreements between the two coders. The two original coders re-rated all tapes where .60 was not obtained. (This only occurred for two families.) Third, one of the three coders re-examined all

occurrences of affect that occurred on lines where an interruption also occurred. This coder made note of whether these affect bursts occurred prior to or after the interruption. This procedure was necessary for sequential analyses because affect that begins before an interruption, for example, can not be linked causally to the occurrence of the interruption.

The rationale behind the second stage of coding involved reliability issues. That is, coders have proven to be quite reliable regarding the occurrence or nonoccurrence of positive affect. On the other hand, they are less reliable with regard to the duration of affect. As a result, it was felt that disagreements between the coders should be resolved. Kappa's for positive affect were computed in two ways. The first approach involved an assessment of agreement based on occurrence/nonoccurrence. With this approach, if coder A, for example, codes mother affect on lines 80, 81, and 82 and coder B codes mother affect on lines 81 and 82, 1 agreement and 0 disagreements are observed. For this reliability index, I also noted an agreement if the codes were on contiguous lines. The second approach involved an assessment of agreement based on line-by-line agreement (a more conservative approach). In the example above, the second approach would yield 2 agreements (lines 81 and 82) and 1 disagreement (line 80). Depending on how one thinks about coder agreement, either approach can be defended. An initial assessment of reliability by these two approaches yielded a kappa of .79 for the first approach and a kappa of .60 for the second approach. More complete reliability information is given in the Results section.

Gaze. Gaze was the second index of positiveness. This manual
(Holmbeck & Hill, 1986; see Appendix F) was written for the current
study. To code gaze, coders were instructed to code all head turns by
each family member. The father's head, for example, can be in one of
three positions: looking at the child, looking at the mother, or
looking at some other area of the room ("other"). Head turns were
coded when one of the following head orientation changes occurred:
from "other" to some family member, movement from one family member
to another, or from a family member to "other." In other words, only
changes in head position were coded. Because of the quality of the
videotapes, changes in eye position could not be coded.

Two coders were trained to a satisfactory level of reliability
and then each rated half of the families. Reliability checks (similar
to that employed with disagreements) were done throughout on a
subsample (n=13) of randonly selected families. After reliability was
confirmed, a third coder (who was trained with the other raters)
assessed whether head turns that occurred on lines with interruptions
occurred before of after the interruption (in a manner similar to
that described above for positive affect).

Although there were a number of possible head turns in the
family as a whole, overall kappa rates for gaze were assessed because
there was no a priori reason to believe that head turns in any one
family member would be more difficult to code. (It should be noted,
however, that because the parents were sitting across from each
other, some head turns between the two parents were missed because
they really did not need to move their head to look at one another--
at least not to the same extent that was needed to look at the

child.) Kappas were be computed in a number of ways. First, line-by-line kappas were be computed. Because so many of the utterances were so brief, it was felt that this approach would prove to be too conservative. As a result, a second approach was used where if a specific head turn was observed by both coders but was entered on contiguous utterances, then an agreement was counted.

Another issue that had to be taken into account was the dependency of one code on another. If a coder observes the father look from "other" to mother, this same coder must observe the father look from mother to "other" if the father ends up looking at "other." If the second coder does not observe either head change, then two disagreements will be coded when using the reliability methods noted above. Unfortunately, this type of situation would result in an unjustified deflation of the kappa coefficient. In the case of the example just described, only one disagreement between coders should be recorded because the first coder's second observation was dependent on his/her first rating. As a result, it was intended that the two kappas above would be re-computed with this weighting factor taken into account (a la Cohen, 1968). Reliability information is given in the Results section.

Explanations. "Explanations" was used in Study 1 as an index of positive family functioning. The degree that family members explain their assertions has been found to be related to a number of indices of family health and adolescent autonomy (e.g., Baumrind, 1975; Elder, 1963; Kandel & Lesser, 1972). Also, Steinberg found that results for this variable were the opposite of those found for

traditional measures of conflict such as attempted interruptions. An explanation can be defined as an attempt to give a reason or rationale for an assertion or opinion. Coding of this variable was done previously on the data to be used in the present study as part of Cantara's (1983) master's thesis. Reliability for this variable based on the kappa coefficient was .74.

Rater's estimates of affiliation and control among family members. These global observational variables were employed to assess family process on a more macroanalytic level. Models of parental behavior (e.g., Schaefer, 1955) and, more generally, interpersonal behavior (e.g., Kiesler, 1983; Leary, 1957) typically involve circumplex conceptualizations where behaviors fall along two dimensions: control and affiliation. Given that the goal of Study 1 was to determine the "meaning" of behaviors such as interruptions and disagreements, it was believed that such ratings would be helpful in this effort. That is, a given family member who continually interrupts others may be rated as more controlling and/or as less affiliative. Because of the brevity of the interaction sessions, it appeared that it was not possible for raters to assess family members' functioning on an entire assessment instrument (e.g., The Impact Message Inventory, IMI; Kiesler, Anchin, Perkins, Chirico, Kyle, & Federman, 1976). As a result, an abbreviated approach based on the items of the IMI was used (Cantara, 1983). The manual for affiliation and control is given in Appendix G. Ratings of control and affiliation were made by coders who were trained to use Cantara's method. Cantara (1983) rated approximately 81 of the families

employed here (families with girls from middle class homes). The remainder (n=30) were rated for the present study. Cantara reported percent agreements of 83% for Control and 80% for Affiliation. In this study, agreement was assessed with percent agreement and Cronbach alphas.

Sequences of Laboratory Stream Variables

Because all Study 1 analyses were correlational, family-specific z-scores were computed. It was intended that both family-specific z scores and "proportion of matches" scores (Hauser et al., 1985) would be employed. Reciprocal sequences of attempted interruptions were assessed by counting all lag-1 occurrences of reciprocal interruptions (of any type). For example, if mother interrupts son and then son interrupts mother, this would count as one occurrence of this sequence. The same approach was used with reciprocal sequences of disagreements.

A decision was also made with regard to the "window of observation." A window of observation is the amount of time (or number of observations) that will comprise a single lag. For example, if the investigator rated the occurrence or nonoccurrence of behaviors in 5-second blocks and then sought to determine if a behavior in one 5-second block preceded another behavior in the next block, then the window of observation that comprised a lag would be 5 seconds. Similarly, one could decide that a lag could be 10 seconds,

5 utterances, or whatever seems appropriate. In other words, the investigator has considerable flexibility in determining what constitutes a legitimate lag and, therefore, a legitimate sequence.

This decision is much easier when one is investigating couples (e.g., Gottman, 1979) or any other kind of dyad. Here the investigator can examine sequences in terms of floor changes. That is, a lag can be defined as the next speaker's speech regardless of the length. In this study, the issue was much more complex. First, there were three people involved rather than two. As a result, one person's statement could follow another person's statement, but the statements may not be contiguous because of an input by the third family member.

Second, utterances rather than complete speeches (which can be made up of several utterances) were employed here. The rationale behind using these smaller units of behavior is that many of the nonverbal codes are quite microanalytic (e.g., gaze shifts and positive affect). If whole speeches were used as the most basic coding unit, then sequences between family members could occur within a speech, thus not being detected in the sequential analyses. By employing utterances, however, it appeared that the window of observation should be longer than a single utterance since a family member may disagree with another family member but may take three utterances to do so. As a result, if the window of observation was only one utterance, a reciprocated disagreement by the second family member would not be counted because the first person may have disagreed with this individual three utterances previously.

Third, it may be that an individual will require at least a small amount of time to formulate his/her disagreeing response. Thus, it would be unreasonable to expect reciprocal disagreements to occur in contiguous utterances--especially when the third person is also taken into consideration.

Given these preceding arguments, it appeared that it was unreasonable to use a single utterance as a lag. It was felt that a better lag was 5 utterances because this would give the person emitting the criterion behavior enough time to finish his or her speech and enough time for the person emitting the matching behavior (taking into account input by the third speaker) to respond if he/she decided to do so. For the co-occurrence variables, the window of observation was still 5 utterances, but simultaneous occurrence (i.e., on the same utterance) of criterion and matching behaviors was also counted.

Field Stream Variables

Acceptance and Family Rules and Standards. To assess the subjects' placement on dimensions of Love-Hostility and Autonomy-Control, Spence and Helmreich's (1978) Parental Attitudes Questionnaire was incorporated into the child questionnaire. The relevant portions of the child questionnaire are included in Appendix H. In a second-order factor analysis on eleven first-order parenting scales (Spence & Helmreich, 1978), three factors emerged for girls that were labelled Mother and Family Acceptance, Father Acceptance, and Family Rules and Standards. Low scores on the acceptance factors

were indicative of mother and father rejection. Thus, it appeared that the second-order acceptance factors could be used to assess the subjects' placement on the Love-Hostility dimension. (Acceptance-Nonacceptance might be a more accurate label, however.) Examination of the Family Rules and Standards items indicated that low scores on this factor were indicative of parental indifference, permissiveness, and lack of control versus high control and parental strictness for high scorers. This scale appears to tap the Schaefer Autonomy-Control rearing dimension (Schaefer, 1955).

In Hill et al.'s (1985a, 1985b) studies, items were maintained only on those first-order factors on which they had the highest loading. In the same way, the resulting first-order factors were maintained only on those second-order factors on which they had the highest loading. The factor label for Mother and Family Acceptance was changed to Mother Acceptance because very few of the items referred to parents in general, whereas the remainder referred to mothers. The Family Rules and Standards factor was not broken up into mother and father subfactors, given the small number of items involved. For daughters, Cronbach alphas for Mother and Father Acceptance were .85 and .86, respectively, and .75 and .83 for sons. The alphas for Family Rules and Standards were .56 for daughters and .60 for sons (Hill et al., 1985a, 1985b).

Because the scales were derived separately for boys and girls (Spence & Helmreich, 1978), different items comprised the scales for the two genders. Referring now to the child questionnaire items in Appendix H, the items for daughters' ratings of Mother Acceptance were: 8, 11, 13, 15, 20, 21, 25, 26, 28, 30, 31, 33, 34, 36, 37, 38,

39, 40, 42, 43 (20 items). For sons' ratings of Mother Acceptance, the items were: 8, 11, 13, 14, 15, 20, 21, 25, 26, 27, 28, 30, 31, 33, 36, 37, 38, 39, 30, 42, 43, 134, 138 (23 items). The items for daughters' ratings of Father Acceptance were: 127, 131, 132, 133, 134, 135, 136, 137, 139, 140, 142, 144, 145, 146, 148, 149 (16 items). The items for sons were: 127, 131, 132, 133, 135, 136, 137, 139, 140, 142, 144, 145, 146, 148, 149 (15 items). The items for daughters' ratings of Family Rules and Standards were: 9, 10, 12, 22, 29, 32, 41, 44, 128, 138, 147, 150 (12 items). For sons' ratings, the items were: 9, 12, 22, 29, 41, 44, 128, 147, 150 (9 items). Because different numbers of items were included in these scales for the two genders, a correction was applied to the totals for one of the genders. It should be noted that many of the items listed above had to be reverse-scored.

Involvement in Family Activities. This variable was measured with items developed by Blyth, Thiel, and Garbarino (1978), Kandel and Lesser (1972), and Garbarino (1978). These eight items, based on parental report, were tested (Hill et al., 1985a, 1985b) for internal consistency and the resulting Cronbach alphas were .59 for mothers' and .61 for fathers' ratings of daughter activities and .47 and .60 for son activities (Hill et al, 1985a, 1985b). Relevant portions of the parent questionnaire are included in Appendix I. The items that were included in this scale were the same for sons and daughters: 9, 10, 11, 12, 13, 14, 15, 16.

Parental Influence. These items were developed by Kandel and
Lesser (1972) and Spence and Helmreich (1978). The seven items were
included in the child questionnaire (see Appendix H). Cronbach alphas
were .83 for the daughters' report of mother's influence and .75 for
father's influence. The same indices for sons were .73 and .75 (Hill
et al., 1985a, 1985b).

Referring now to the child questionnaire items in Appendix H,
the items (which were the same for both genders) for Mother Parental
Influence were 13, 91, 92, 93, 100, 102, 103. The items for Father
Parental Influence were: 13, 97, 98, 99, 101, 102, 103. Again, many
of these items were reverse-scored.

Oppositionalism. Two items were written by the staff of Hill's
(1980b) project and one was borrowed from Kohn (1977) to assemble the
three item scales of mother's and father's reports of child
oppositionalism. Cronbach alphas were .53 for mother's report and .47
for father's report of daughters and .53 and .39 for sons (Hill et
al., 1985a, 1985b). These parent questionnaire items (see Appendix I)
were 23, 68, and 75. It is clear that the alphas for this variable
were quite low. In general, this appears to be due to the fact that
there was little variability in the family members' responses (i.e.,
everyone reported similarly). On the other hand, the variable was
maintained in the study because it has been included in earlier
efforts (Hill et al., 1985a, 1985b). It should, however, be regarded
as exploratory.

Disagreement over Rules. These items were developed by Kandel
and Lesser (1972) and our staff. These 15 items were included in the
parent questionnaire (see Appendix I). Cronbach alphas were .69 for
the mothers' report and .73 for the fathers' report of daughters
(Hill et al., 1985a) and .72 and .77 for sons. Items refer to
disagreements that occur over rules involving peer relations,
personal habits, and family obligations and were the same for sons
and daughters. They were 28-A to 28-O.

Parental satisfaction. These items were developed by the staff
of the project and were included in the parent questionnaire (see
Appendix I). For daughters, Cronbach alphas for mothers' and fathers'
ratings of their own satisfaction as parents were .68 and .56,
respectively, and .68 and .58 for sons (Hill et al., 1985b). The six
items in this scale were: 33, 34, 35, 36, 37, 38.

Analyses for Study 1

Analyses for Study 1 were correlational. The nonsequential
observational variables (i.e., attempted interruptions, interruptions
where both individuals continue talking, disagreements, positive
affect, gaze, and explanations) were divided by the talking time of
the person(s) involved. Talking time was computed by summing the
number of words spoken by a given individual. The sequential
variables (i.e., reciprocal sequences of interruptions, reciprocal
sequences of disagreements, co-occurrence of interruptions and
positive affect in the same person, and co-occurrence of

disagreements and positive affect in the same person) were computed
in two ways. Family-specific z-scores were computed as were
"proportion of matches" coefficients (the number of occurrences of
the sequence divided by the talking times of the two individuals
involved). All of the questionnaire variables were continuous
variables computed by summing the appropriate items (some of which
were reverse-scored).

Method for Study 2

Subjects

Subjects for this study were 111 seventh-grade females and their
families recruited for the laboratory stream. Included in this total
were the 17 overlap families with girls from the previous study
(Study 1).

Procedure

The procedure has already been described above under the section
"Procedure for Laboratory Stream." Data were derived from the
transcripts of the SFIT and the accompanying videotapes. Also, the
family estimates of the daughter's menarcheal status were taken from
questionnaires given to all laboratory stream families.

Measures

Observational variables (dependent variables). The actual
observational indices that were employed were determined after the
completion of Study 1 (see Results section). It should be noted that
new sequential variables (not used in Study 1) were created for this
study (Study 2). The dependent variables that were of interest in
this study were as follows:

1. Attempted interruptions

2. Interruptions where both individuals continue talking

3. Reciprocal sequences (between two family members) of
   attempted interruptions

4. Disagreements

5. Reciprocal sequences (between two family members) of
   disagreements

6. Co-occurrence of attempted interruptions and positive affect
   in the same person.

7. Co-occurrence of disagreements and positive affect in the
   same person.

8. Sequences of interruptions and positive affect (dyadic and in
   that order; e.g., mother interruption of child followed by
   child positive affect).

9. Sequences of interruptions and gaze (dyadic and in that
   order)

10. Sequences of disagreements and positive affect (dyadic and

in that order)

11. Sequences of disagreements and gaze (dyadic and in that order)

Menarcheal status (independent variable). Seventh-grade girls and their parents were asked to indicate whether menstruation had not yet begun (Group 1) or had begun within the past six (Group 2), within the past 12 (Group 3), or longer than 12 months ago (Group 4). In a previous study (Hill et al., 1985a), around 80% agreement in placing the time of menarche was characteristic of each pair of respondents: mother-father; mother-daughter; and father-daughter. (Correlations between pairs ranged from .87 to .91.) A copy of the pubertal change questions are included in Appendix J. In general, about 60% of the seventh-grade girls were placed in the premenarcheal group with the remainder being distributed evenly in the other groups. Because of the high reliability coefficients for this variable, menarcheal status was based on the child's report so as to avoid the confusion that would occur if different reports were used for different dependent variables.

Analyses for Study 2

So as to test hypothesis 1, multiple regression analyses were performed to assess the relations between menarcheal status and the frequency data (i.e., frequencies of interruptions, disagreements, positive affect, and gaze). Menarcheal status was treated as a continuous variable and was entered into a multiple regression

equation as a set of power polynomial terms. Such a procedure, when applied to a single variable, can be used to test the linearity and nonlinearity of the relation of this independent variable with a dependent variable. The terms are entered in a hierarchical fashion beginning with the linear term ($\underline{v}$) and continuing with the terms that test for a quadratic trend ($\underline{v}^2$), a cubic trend ($\underline{v}^3$) and other nonlinear trends. By first partialling out the linear term, the squared semi-partial correlation of $\underline{v}^2$ with the criterion is the increment in the cumulative $\underline{R}^2$ that is due to the addition of the quadratic variable to the equation. Thus, it "represents the pure quadratic variable (Cohen & Cohen, 1983, p. 226)." The same logic holds for all subsequent nonlinear terms.

It should also be noted that an $\underline{n}$th-order term yields a curve that has $\underline{n}$-1 bends. Given that the menarcheal status variable has four levels, only the linear, quadratic and cubic terms were entered. Therefore, only two bends at most could be encountered, if any. In all cases, cubic trends were predicted (see hypothesis 1 listed earlier).

Hypothesis 2 was tested by computing Pearson correlations between the variables of interest with adjustments for talking time as discussed earlier. Correlation coefficients were then compared for the menarcheal groups. To test hypotheses 3, 4, and 5, a number of statistics (e.g., z-scores, "proportion of matches" indices) were to be employed but changes were made in the planned analyses (see Results section).

RESULTS

This section will be subdivided as follows: (a) reliability of observational variables and the measure of menarcheal status, (b) descriptive statistics for the observational variables, (c) adequacy of data for sequential analyses, (d) relations between "proportion of matches" index and z-scores as indices of sequential relationships among variables, (e) summary of data set characteristics and changes in the planned analyses (f) results of Study 1, (g) a brief discussion of the results of Study 1 and implications of such results for Study 2, and (h) results of Study 2.

Reliability of Observational Variables and Menarcheal Status

Reliability data for the following variables are presented: disagreements, positive affect, gaze, affiliation, control, explanations, and menarcheal status. The Kappa coefficient for disagreements was .71 and was based on 12 families distributed evenly throughout the rating period. Based on Landis and Koch's (1977) guidelines, this coefficient indicated that there was a "substantial" strength of association between the raters' observations. For positive affect, Kappa was computed in two ways and was based on data from 135 families. Based on the more liberal reliability computation based on occurrence/nonoccurrence, Kappa was .80 ("substantial" strength of association; Landis & Koch, 1977). Based on line-by-line agreement (which takes into account the length of the affective burst), Kappa was .64.

Although it was argued above that a weighting factor would have
to be taken into account to compute Kappas for "gaze", such
adjustments were not necessary because adequate Kappas were found for
the more conservative computational approaches. That is, line-by-line
agreement for 13 families was .61 and Kappa for agreement based on
gaze codes entered on contiguous utterances (i.e., an agreement was
counted if the codes were either on the same line or on contiguous
lines) was .76.

For affiliation, agreement was computed in terms of percent
agreement. Reliability for the coder involved in this study was
determined by comparing her ratings with ratings made by 2 coders
from a study done with the same data by Cantara (1983). Because the
resulting data was not normally distributed (a high percentage of
ratings were "3's"), intraclass correlations (Winer, 1971) and alpha
coefficients were deemed innappropriate (although the average
Cronbach alpha coefficient across the family dyads was .64). Percent
agreement based on the full range of possible values (from 1 to 4)
for 10 families ranged from 55% to 67% (chance = 25%). When the
ratings were collapsed into a dichotomous 2-point scale (affiliative
vs. hostile), agreement ranged from 73% to 82% (chance = 50%). For
ratings of control, two raters were used for the present study and,
therefore, overall agreement indices were computed between these
raters and with the raters from the Cantara study. The mean alpha for
all of the raters (including those from the Cantara study) was .71.
The mean alpha between the two new coders used for this study was
.66. Percentage agreement for these new coders was 60% for agreement
across the 1 to 4 range of ratings and 77% for the dichotomous

(controlling vs. permissive) scale. For explanations, the overall Kappa was .74.

For menarcheal status (and as noted in the Method section), results from a previous study (Hill et al., 1985a) suggested that percent agreement averaged 80% between the dyads and that correlations between the pairs ranged from .87 to .91. In this study, and for the 82 families where all 3 ratings (mother, father, and daughter) were present, dyadic correlations ranged from .81 to .90 and the overall alpha coefficient was .94. In an additional analysis of the post-menarcheal girls (a rating of 2, 3, or 4) whereby only those girls who were rated as post-menarcheal by all three raters were included, the alpha was .75. Thus, when we only examine those girls who are menstruating, agreement concerning the time of onset was still quite high.

In sum, then, reliability coefficients for all observational variables and for menarcheal status were satisfactory.

Descriptive Statistics for the Observational Variables

Descriptive statistics were computed for those families with girls ($\underline{N}$=111) used in Study 2. Means and standard deviations for all observational variables are given in Table 1 (see Appendix K). These results will only be discussed briefly because they are not the focus of either Study 1 or Study 2. Also, they are presented in "raw" form (rather than in proportional form) so that the reader can determine the frequencies of these behaviors. In terms of talking time (computed in terms of number of words spoken), mothers spoke the most

followed by fathers and daughters, in that order. When computed in terms of number of utterances, the order from highest to lowest was daughters, mothers, and fathers. All family members averaged between 3.15 and 3.85 explanations with daughters exhibiting the fewest of these behaviors. On the other hand, daughters displayed more positive affect than fathers and mothers. With regard to dyadic disagreements, means ranged from 3.17 to 4.65 disagreements, with the highest mean emerging for daughters disagreeing with fathers. In general, unsuccessful interruptions were much less common than successful interruptions and interruptions where both individuals continued talking (with the latter being more frequent than successful interruptions). Thus, the frequencies for total interruptions are comprised primarily of interruptions where both individuals continued talking after the interruptive behavior. With respect to gaze, means ranged from 9.67 (father to child) to 20.09 (child to mother). Affiliation means ranged from 2.48 (father to mother) to 2.91 (mother to child and child to mother). Control means ranged from 2.58 (child to father) to 2.86 (father to child).

In general, this sample of "normal" families with seventh-graders can be characterized in the following manner. First, it appears that daughters tended to speak frequently but in short bursts and with much positive affect. They also explained themselves less than other family members. Although they appeared to be less controlling toward their fathers overall and they tended not to successfully interrupt them, they did appear to feel comfortable disagreeing with them. Second, fathers tended to talk less than others, displayed less positive affect, were less affiliative toward

mothers and daughters, and tended to look less at their daughters than was the case in other dyads. In addition, the highest means for successful interruptions and control were found in the direction of father to daughter. Thus, the relationship of fathers to daughters can best be characterized as one of high control on the part of the father and deference on the part of the daughter. Third, most of the warmth in the families appears to be shared between mothers and daughters, with daughters gazing at their mothers more frequently than in other dyads, and both mothers and daughters being more affiliative toward each other. Moreover, both displayed the highest frequencies of positive affect, although the target of such affect was not assessed. It is important to note that all of the relationships just discussed also emerged for the base rates of the behaviors (i.e., where the frequencies of the behaviors were divided by talking time computed in terms of number of words spoken). That is, in every case, the highest and lowest values occurred for the same dyads (or individuals) regardless of whether frequency data or base rates were examined. It should also be noted that because the proportional base rates of behaviors were, for the most part, normally distributed (i.e., skewness $< \pm 2.58$; Tabachnick & Fidell, 1983), arcsin transformations were not applied to these data in subsequent analyses.

Adequacy of Data for Sequential Analyses

Although a number of issues relevant to the adequacy of the data for sequential analyses have been discussed (i.e., mutual

exclusivity, autocorrelation, stationarity, and the manner in which one compares samples), other concerns were also relevant. First, and as was noted earlier, the base rates of the observational variables of interest are of concern. More specifically, the assumptions underlying the z statistic are violated when the base rates of the criterion behaviors are close to .01 or .99 (Patterson & Forgatch, 1985). This requirement is necessary because if the criterion behavior occurs infrequently, the sequences involving these criterion variables will be extremely rare thus making the frequencies of their occurrence quite unstable (i.e., the results could not replicated). In the present case, base rates were computed by dividing the frequency of a variable by the number of events (utterances) in the record.

Overall, the data tended to meet this criterion (i.e., they compare favorably to those reported in Patterson & Forgatch, 1985, where they found that 18% of their behaviors had base rates below .01). For total interruptions, base rates falling below .01 occurred for 2.7 to 9.0% of the sample depending on the dyad under consideration. For disagreements, base rates falling below .01 occurred for 7.2 to 16.2% of the sample. For gaze, the percentages ranged from 0 to 3.6% and for positive affect, the percentages ranged from 3.6 to 27.0%. The high percentage of low base rates for father positive affect (27%) is not of concern, however, because positive affect was never employed as a criterion variable in the analyses discussed below.

Mean base rates for interruptions ranged from .029 to .034 (depending on the dyad under consideration). For disagreements, they ranged from .016 to .024 and for gaze, they ranged from .049 to .109. Finally, for positive affect, they ranged from .022 to .056. Thus, although no behaviors tended to occur more than 10% of the time, base rates tended to be above .01. In terms of sequences, the frequencies of the sequences examined varied widely. In fact, the mean number of sequences for a given dyad for a given pair of behaviors ranged from .297 to 18.243 with the lowest means emerging for sequences of interference behaviors (interruptions or disagreements) and positive affect. The number of sequences that emerge is not of concern, however, because a low frequency may indicate that the behaviors under examination tend not to occur together, thus yielding negative z-scores.

Another criterion discussed by Bakeman and Gottman (1986) that is based on an equation presented by Siegel (1956), involves computing values for the following relationship: NPQ, where N is the total number of sequences categorized, P is the probability for a particular sequence, and Q is equal to 1-P. Bakeman and Gottman employed this indice as a way of predicting the number of events one needs to sample given estimated probabilities of particular sequences. They argue that this quantity should be greater than 9. In the present case, the mean value for NPQ was rarely greater than 9. In fact, it was only when variables were collapsed into general categories that the mean NPQ value did approach 9. When z-scores were computed for individual dyads and in specific directions (e.g., father interrupts daughter followed by daughter interrupts father),

the mean of NPQ ranged from .30 to 3.00 depending upon the criterion and matching behaviors employed. When disagreements and interruptions were collapsed into the general category of "interference" behaviors the mean dyadic NPQ values ranged from .78 to 4.90. (Combining variables in sequential analysis is a common practice.) Finally, when the data were further collapsed across dyads so that any family member could emit the criterion behavior and any family member could emit the matching behavior (family interference behavior followed by another family interference behavior), NPQ rose to 15.85. (It should be noted that the NPQ approach will not always be useful. If one is attempting to demonstrate that a particular sequence never occurs, then the NPQ coefficient will equal 0 no matter how many utterances are sampled.)

In sum, then, it appears that because of the low frequencies of all variables involved, NPQ was typically quite low unless data were collapsed into general categories. On the other hand, because base rates were deemed adequate, the analyses were run as planned and included both the specific variables (e.g., interruptions, disagreements) and more general variables (e.g., interference). Unfortunately, the assumption of stationarity (i.e., when z-scores do not vary across different portions of the family interaction session) could not be investigated because of low frequencies.

Relations between "Proportion of Matches" Index and Z-Scores

(Indices of Sequential Relationships among Variables)

As noted in the introductory sections, it is important to first establish that the "proportion of matches" and z-score indices provide distinctly different information before using them both. As a result, correlations between the scores generated by the two approaches were computed for all sequences of interest. The full sample from Study 2 ($\underline{N}$=111) was employed. In general, high correlations emerged. Pearson correlations ranged from .13 to .80 with a mean of .41 (although 1 of the 60 computed correlations was -.04). Given these findings, it appears that these two approaches yield similar types of information about the data. As a result, the proportion of matches approach will not be used in analyses involving sequential indices. (These two approaches also yielded similar results in Study 2 when the findings were dramatic.) The z-score approach was chosen because it provided a more accurate representation of the conditional nature of the relationship between two variables. Moreover, because the z-scores tended to be normally distributed, the Mann-Whitney U approach (Cousins & Power, 1986) was not needed to complete the analyses involving menarcheal status (for Study 2).

Summary of Data Set Characteristics and Changes

in the Planned Analyses

The purpose of this section is to summarize the findings noted
thus far and to list changes in the proposed analyses. With regard to
reliability, coefficients for all observational variables and
menarcheal status were adequate and thus no changes had to be made
because of reliability difficulties. With regard to frequencies and
descriptive statistics, all observational variables occurred with
adequate but varying frequencies. It was decided that arcsin
transformations would not be applied to the proportional data because
most variables were normally distributed. A summary of the means and
standard deviations was given.

With regard to the sequential analysis variables, a number of
changes in the planned analyses have been made:

1. Although the base rates were deemed adequate, other criteria for
sequential analyses were not satisfied. As a result, both specific
variables (e.g., interruptions and disagreements) as well as more
general variables (e.g., "interference" variables were created by
combining interruptions and disagreements) were employed. Sequences
involving the latter were much more common and thus met the frequency
criteria. Although the window of observation (in terms of number of
utterances) for sequences of disagreements and interruptions was 5
utterancces, the window for interference behaviors (where
interruptions and disagreements were combined) was 1 utterance.

2. Because of the low frequencies (base rates and rates of sequences), the assumption of stationarity could not be evaluated.

3. Because the "proportion of matches" indices and z-scores were highly correlated for corresponding sequences, only the z-score approach was employed in subsequent analyses.

4. Given that the family-specific z-scores appeared to be based on adequate base rates and because they allow one to apply inferential statistics to the data set, the aggregated z-score approach was not employed.

5. Finally, because the z-scores tended to be normally distributed, the Mann-Whitney U approach (Cousins & Power, 1986) was not needed to complete the analyses involving menarcheal status (for Study 2).

Results of Study 1

In order to test the hypotheses for Study 1, Pearson correlation coefficients (with two-tailed tests of significance) were run between the interference variables and the psychosocial (questionnaire) and family process (observational) dependent variables for the 37 families of males and females who comprised the overlap sample (i.e., those who participated in both the laboratory stream and the field stream). In order to make the presentation as organized as possible, results for the frequency data will be presented first followed by

the results for the sequential analysis variables. In all cases where correlations involved frequency data, frequency scores were divided by the talking time (computed in number of words spoken) of the individual(s) involved. As noted above, arcsin transformations were not applied to the data because, in nearly all cases, the resulting proportional data were normally distributed.

The possibility that some of the relations being tested here may have been curvilinear was considered and appropriate analyses were run. Curvilinear trends were tested for the relations between interruptions, disagreements, and interference behaviors and the questionnaire measures by employing the overlap sample. For the 210 computed correlations, curvilinear trends ($p<.10$) only emerged in 25 cases which is only somewhat above the number expected by chance (21). As a result, it will be assumed that the relations tend not to be quadratic. Given these findings, only linear trends will be tested in the analyses below.

Relations between Frequencies of Interruptions and Disagreements (Hypothesis 1)

According to hypothesis 1, it was expected that interruptions and disagreements (both presumed to be measures of interference) would be highly intercorrelated. For interruptions, both the total frequency of interruptions and the "both talk" interruptions were employed. For each relationship, six coefficients were computed--2 for each dyad because the direction of the interference behavior can

go in either direction (e.g., father interrupts daughter vs. daughter interrupts father).

As expected, total interruptions and "both talk" interruptions were highly intercorrelated (r's ranged from .63 to .82). "Both talk" interruptions were virtually uncorrelated with disagreements. Correlations ranged from -.13 to .24. Similarly, total interruptions and disagreements tended not to be correlated; coefficients ranged from -.16 to .24. Thus, families who emitted high rates of interruptive behaviors were not the same families who emitted high rates of disagreements. Given that "both talk" interruptions and total interruptions were highly intercorrelated, "both talk" interruptions were not employed as separate interference variables in subsequent analyses. In the discussion that follows, "interruptions" refers to total interruptions (unless noted otherwise).

For all subsequent sections, results will be presented in tabular form only if the number of significant findings was greater than 10% ("chance" when p < .10) of the total number of correlations computed. A p-value of .10 (based on two-tailed tests of significance) was used because of the exploratory nature of this study.

Relations between Interruptions/Disagreements and Psychosocial Questionnaire Variables (Hypothesis 1)

It was predicted that significant relations between interruptions and disagreements and the psychosocial variables would not emerge. The psychosocial questionnaire variables were as follows:

family rules and standards (child report), child oppositionalism
(mother and father report), disagreements over rules (mother and
father report), mother acceptance (child report), father acceptance
(child report), involvement in family activities (mother and father
report), mother parental influence (child report), father parental
influence (child report), mother parental satisfaction (mother
report), and father parental satisfaction (father report). For
involvement in family activities, mothers and fathers reported on
activities done with the entire family and activities done just with
the child.

Interruptions. For interruptions, 105 coefficients were computed
(15 psychosocial variables by 7 interruptions variables; the seventh
interruption variable was the sum of the six dyadic interruption
indices). Of these coefficients, only 5 were significant at $p < .10$
(i.e., the number of significant findings that emerged was less than
the 10% cutoff criterion of 11), thus indicating that there was
virtually no relationship between frequencies of interruptions and
the psychosocial questionnaire variables.

Disagreements. For disagreements, 16 of the 105 correlation
coefficients were significant at $p < .10$. These findings are given in
Table 2 (see Appendix K). As can be seen in the table, disagreements
(for some of the dyads) and total disagreements were negatively
related to father acceptance. Relations were most striking for mother
disagreements of father and child disagreements of mother.
Disagreements for many of the dyads were negatively related to family
rules and standards. In other words, the fewer the rules the more
disagreements in family interaction. Interestingly enough, for both

father acceptance and family rules and standards, mother disagreements of father was one of the best predictors. That is, in families where mothers frequently disagree with fathers, there is less control and less father acceptance. Maternal acceptance and paternal and maternal parental influence were unrelated to disagreements.

Mothers' report of activities with their children was negatively related to disagreements for four of the six dyadic pairs and these findings were particularly striking for disagreements involving mothers. Mother and father report of family activities with the entire family and father report of activities with their children tended to be unrelated to disagreements. Parental report of child oppositionalism also appeared to be unrelated to disagreements. With regard to parental satisfaction, an interesting set of findings emerged. It appears that father satisfaction is highest when their children disagree with them and that maternal satisfaction is highest when mothers disagree with their husbands. Finally, there was virtually no relation between disagreements in family interaction and disagreements over rules as reported by the parents.

Relations between Interruptions/Disagreements and Family Process Observational Variables (Hypothesis 1)

It was predicted that frequencies of interruptions and disagreements would not be correlated with the family process observational variables. The process variables were as follows: father, mother, and child positive affect, gaze (6 indices for both

directions for all three dyads), father, mother, and child
explanations, affiliation (6 indices for both directions for all
three dyads), and control (6 indices for both directions for all
three dyads). In all, there were 24 family process variables and 7
interruption variables and 7 disagreement variables. Thus, for both
interruptions and disagreements, there were 168 correlation
coefficients computed. Tables are given if there were more than 17
significant effects (greater than 10% of the computed coefficients).

Interruptions. For interruptions, there were 22 effects
significant at p<.10. These results are given in Table 3 (Appendix
K). In general, no coherent set of findings emerged for positive
affect, gaze, and explanations. In fact, most of the significant
effects emerged for affiliation and control. All of the effects for
the relations between affiliation and interruptions were positive.
For example, father interruptions of their children were positively
related to affiliation expressed from child to father, father to
child, and child to mother. Furthermore, affiliation expressed from
mother to child was positively related to mother interruptions of
child.

Interruptions tended to be positively related (with two
exceptions) to observers' ratings of control in the family. Father
interruptions of child were positively related to control expressed
from father to child, child to father, and child to mother. Mother
interruptions of father were related to control from mother to
father, mother to child, father to child, and father to mother.
Finally, child interruptions of father where positively related to
control expressed from father to mother and from father to child. The

two negative effects emerged for child interruptions of mother. This variable was negatively related to control expressed from child to mother and from child to father.

Disagreements. For frequencies of disagreements, 29 significant effects emerged and are given in Table 4 (Appendix K). As with interruptions, relatively few effects emerged for positive affect and explanations. On the other hand, 3 negative effects emerged for gaze and two of them occurred for father disagreements of mother. When children disagreed more with their fathers they also tended to look at them less. Also, when the rate of fathers' disagreements with mothers were higher, fathers looked less at their children, and children looked less at their mothers. Thus, although there were few findings, it appears that fewer gaze behaviors take place in certain dyads when disagreements are more frequent.

As with interruptions, most of the significant effects emerged for relations between disagreements and affiliation and control. Of the 42 correlations between the disagreement and affiliation variables, 19 were significant and all were in the negative direction. Thus, it seems clear that less affiliation is observed between family members in an environment where disagreements are frequent. With regard to control, positive and negative correlations emerged. Fathers were seen as more controlling when the following levels of disagreements were high: father to mother and child to mother. Also, when child control expressed toward mothers and fathers was low, mothers disagreed with fathers more. Finally, fathers' disagreements of child were positively related to both indices of mother control.

Relations among Sequences of Interruptions and Disagreements
(Hypothesis 2)

It was predicted that z-scores representing sequences of
interruptions and disagreements would be highly intercorrelated. It
order to test this hypothesis, intercorrelations between six z-scores
representing all possible interruption sequences (e.g., father
interrupts child followed by child interrupts father) and six z-
scores representing all possible disagreement sequences were
computed. As with the frequency results already given above,
sequences of interruptions were virtually uncorrelated with sequences
of disagreements. The 36 computed Pearson correlations (a 6 by 6
correlational matrix) ranged from -.13 to .19. It could be concluded
that frequencies and sequences of interruptions and disagreements
clearly index varying forms of family process. More will be said
below concerning the degree to which interruptions and disagreements
tap interference (or conflict) between family members.

Relations between Sequences of Interruptions and Disagreements and
the Psychosocial Questionnaire Variables (Hypothesis 2)

It was predicted in Hypothesis 2 of Study 1 that reciprocal
sequences of interruptions and disagreements (assesed via z-scores)
would be positively correlated with family rules and standards,
oppositionalism, and disagreements over rules. It was also predicted
that they would be negatively related to mother and father

acceptance, involvement in family activities, parental influence, and parental satisfaction. Also included are z-scores involving reciprocal sequences of interference behaviors whereby interruptions and disagreements are treated as falling into the larger category of interference behaviors. For these sequences, it is possible to have, for example, a father interruption of mother follow a mother disagreement of father. Because there were 15 psychosocial variables and 6 z-scores for each of these variables, there were a total of 90 coefficients computed for interruptions, disagreements, and the interference variables. As a result, 9 significant effects (p < .10) were required for the results to be reported in tabular form.

Reciprocal sequences of interruptions. For the relations between sequences of interruptions and the psychosocial variables, 6 significant effects emerged. Given the criterion of 9 significant effects, these results will not be reported.

Reciprocal sequences of disagreements. As with interruptions, very few significant effects emerged for the z-scores representing reciprocal sequences of disagreements. Given that there were only 5 significant effects, it appears that reciprocal sequences of disagreements are not related to the psychosocial questionnaire variables.

Reciprocal sequences of interference behaviors (interruptions or disagreements). For sequences of interference behaviors, 10 significant effects emerged and the results for this set of findings are given in Table 5 (Appendix K). Of the 10 effects, 8 were in the predicted direction. Six of the effects emerged for sequences involving the mother-father dyad and five of these were in the

predicted direction. As predicted, "father interfer with mother" followed by "mother interfer with father" (FIM-->MIF) was negatively related to child report of mother acceptance, mother influence, and father influence. Also as predicted, MIF-->FIM was negatively related to father report of activities with their children and mother report of activities with the family. Contrary to predictions, MIF-->FIM was negatively related to rules and standards.

Other findings were also in the direction predicted. CIF-->FIC was negatively related to mother report of activities with their children, MIC-->CIM was negatively related to father report of parental satisfaction, and CIM-->MIC was positively related to mother report of disagreements over rules. Finally, FIC-->CIF was negatively related to father report of disagreements over rules (which was contrary to predictions).

Relations between Sequences of Interruptions and Disagreements and the Family Process Observational Variables (Hypothesis 2)

It was predicted that z-scores for sequences of interruptions and disagreements should be negatively related to the following family process observational variables: gaze behaviors, explanations, positive affect, and observers' ratings of affiliation. The z-scores should be positively related to observers' ratings of control. Because there were 24 variables and 6 z-scores, 144 coefficients were computed. Given 144 correlations, 15 significant effects were required for the results to be reported.

Reciprocal sequences of interruptions. For the relations
between sequences of interruptions and the family process
observational variables, 13 significant effects emerged which is less
than the required 15. As a result, it appears that sequences of
interruptions were not related to the other coded observational
variables.

Reciprocal sequences of disagreements. Given that 17 significant
effects emerged for the relations between sequences of disagreements
and the family process observational variables, these findings are
reported in Table 6 in Appendix K. Of the 17 effects, only two
emerged for the 36 gaze correlations and therefore they will not be
discussed further. In general, the findings for sequences of
disagreements indicated that such sequences were positively related
to affiliation, control, and positive affect and negatively related
to explanations. The findings for control and explanations are
consistent with the predictions and the findings for affiliation and
positive affect are contrary to the predictions.

Although the results for affiliation are contrary to those
predicted (and in the opposite direction from those that emerged for
frequencies of disagreements), the results are interesting when
examined closely. For example, z-scores representing child
disagreements with father followed by father disagreements with child
(CdF-->FdC) were positively related to affiliation expressed in the
following directions: mother to father, father to mother, and father
to child. These findings indicate that when fathers and their
children are engaged in reciprocal sequences of disagreements, there
is more warmth expressed in the marital dyad. Examining the findings

from a different perspective, it appears that fathers who tend to reciprocate their children's disagreements also tend to express more affiliation toward their spouse and their children. Given that 'MdF-->FdM is positively related to warmth expressed from father to child, it appears that fathers who are engaged in reciprocity of disagreements with their spouses express more affiliation toward their children. Finally, FdC-->CdF is positively related to affiliation expressed from child to father, a finding that is similar to that found between CdF-->FdC and affiliation expressed from father to child. More will be said about these relations later.

Three of the four significant effects for the relations between control and sequences of disagreements emerged for CdM-->MdC (i.e., child disagreements of mother followed by mother disagreements of child). This sequential variable was positively related to control expressed from mother to child, father to child, and father to mother. Thus, in a family where mothers reciprocate their children's disagreements, mothers are seen by observer's as more controlling. Moreover, fathers in these families are also more controlling.

For explanations, CdF-->FdC and CdM-->MdC were negatively related to mother explanations and MdC-->CdM was negatively related to mother explanations and father explanations. Thus, it appears that in a family where mothers are frequently engaged in reciprocal sequences of disagreements, they explain themselves less. For positive affect, FdM-->MdF was positively related to father positive affect and MdC-->CdM was positively related to child positive affect. These findings suggest that there is some evidence that individuals

who are engaged in reciprocal sequences of disagreements express more
positive affect.

   Reciprocal sequences of interference. As can be seen in Table 7
(Appendix K), 19 significant effects emerged for the relations
between reciprocal sequences of interference behaviors and the family
process variables. Of these effects, nine were found for the
affiliation variables, two were found for control, none were found
for positive affect, four were found for explanations, and four were
found for gaze behaviors. For affiliation, positive and negative
effects were found. As predicted, MIF-->FIM was negatively related to
affiliation expressed from child to mother, mother to child, and
mother to father. In other words, mothers who are engaged in
reciprocal interference behaviors with their spouses are less
affiliative toward both family members. For CIF-->FIC, positive
relations were found for affiliation expressed from mother to child,
father to child, mother to father, and father to mother. This set of
findings is virtually identical to that which emerged for CdF-->FdC
(discussed above) and is probably attributable to the contribution of
disagreements to these effects. Finally, there were also significant
positive effects between affiliation expressed from mother to child
and FIM-->MIF and MIC-->CIM. These findings indicate that mothers are
more affiliative toward their children when they reciprocate the
interference behaviors of their husbands and when their children
reciprocate their interference behaviors.

   For explanations, a set of findings similar to those that emerged
for disagreements emerged and, therefore, will not be discussed
further (i.e., they were most likely due to the contribution of the

disagreement effects). For gaze, and contrary to predictions, CIF--
>FIC was positively related to gaze from father to child and from
child to father. Thus, fathers and children tend to look at each
other more if they are engaged in reciprocal sequences of
disagreements. In addition, CIM-->MIC was positively related to gaze
from father to child and from child to mother. Again these findings
are contrary to predictions and indicate, for example, that when
mothers recirocate their children's interference behaviors, the
children look at their mothers more. (The reader is reminded that the
gaze variables were corrected for the frequency of talking time of
both parties involved.)

Relations between Co-Occurrence Variables (Co-Occurrence of
Interference Variables and Positive Affect within the Same Person)
and the Psychosocial Questionnaire Variables (Hypothesis 3)

It was predicted that the co-occurrence of
interruptions/disagreements and positive affect within the same
person would be negatively correlated with family rules and
standards, oppositionalism, and disagreements over rules. It was also
predicted that the z-scores representing such co-occurrence would be
positively related to mother and father acceptance, involvement in
family activities, parental influence, and parental satisfaction.
That is, such co-occurrence is assumed to be indicative of less
family conflict and disruptions. Again, there were a total of 90
coefficients computed for interruptions, disagreements, and the

interference variables. As a result, 9 significant effects ($p < .10$) were required for the results to be reported in tabular form.

Co-occurrence of interruptions and positive affect. Because there were 12 significant effects that emerged for this set of relationships, these findings are given in Table 8 in Appendix K. In general, the significant results that emerged were in the predicted direction (9 of the 12 effects). As predicted, child interruptions of father co-occurring with child positive affect (CiF-->CA) were positively related to mother acceptance, mother parental influence, father parental influence, father report of activities with the family, and father report of parental satisfaction. Also as predicted, positive relations emerged between FiC-->FA and father report of activities with their children and between MiC-->MA and mother report of parental satisfaction. In both of these cases, the parent whose "co-occurence" is being examined is more satisfied or more involved in activities with their children. Two negative relations were also in the predicted direction; the correlation of MiF-->MA with rules and standards and the correlation of CiF-->CA with rules and standards were negative. Three other effects emerged that were in the opposite direction from that predicted and they occurred for rules and standards (FiM-->FA; positive correlation), mother report of disagreements over rules (FiC-->FA; positive correlation), and father report of disagreements over rules (CiM-->CA; positive correlation).

Co-occurrence of disagreements and positive affect. Because only 5 significant results emerged for this variable, they are not presented in tabular form and it can therefore be assumed that no

relations between the co-occurrence of disagreements and positive affect and the psychosocial variables were found.

Co-occurrence of interference behaviors and positive affect. As with disagreements, fewer than 9 significant effects emerged (8) and, as a result, these findings will not be discussed.

Relations between Co-Occurrence Variables (Co-Occurrence of Interference Variables and Positive Affect) and the Family Process Observational Variables (Hypothesis 3)

It was predicted that z-scores for the co-occurrence of interruptions/disagreements and positive affect in the same person should be positively related to the following family process observational variables: gaze behaviors, explanations, positive affect, and observers' ratings of affiliation. The z-scores should be negatively related to observers' ratings of control. Because there were 21 variables (the 3 positive affect variables were not included) and 6 z-scores, 126 coefficients were computed. Given 126 correlations, 13 significant effects were required for the results to be reported.

Co-occurrence of interruptions and positive affect. Given that there were 13 significant effects for these relationships, the findings are presented in Table 9 (Appendix K). Of these effects, 9 were in the predicted direction. As predicted, CiF-->CA was negatively related to control expressed from child to mother and from child to father. That is, children who interrupted while exhibiting positive affect tended to express less control toward both parents. A

similar finding for child control also emerged for FiC-->FA. In addition, CiM-->CA was negatively related to control expressed from mother to child. That is, mothers are less controlling toward children who interrupt their mothers while exhibiting positive affect. Although 4 significant effects in the predicted direction emerged for gaze, the configuration of findings is quite difficult to interpret because, in every case, the dyad involved for the gaze variable was not the same dyad involved for the z-score variable.

Contrary to the hypotheses, MiC-->MA was negatively related to affiliation expressed from mother to child and from child to mother and CiM-->CA was negatively related to affiliation expressed from child to mother. Interestingly enough, this was the only set of significant findings for these co-occurrence variables that was contrary to predictions (for both the questionnaire and observational validation variables). As a result, they are difficult to interpret in the larger context of findings.

Co-occurrence of disagreements and positive affect. Because only 8 significant effects emerged, they will not be discussed further.

Co-occurrence of interference behaviors and positive affect. Again, there were fewer than 13 significant effects (9), thus indicating that no coherent set of findings emerged.

Discussion of the Results for Study 1

Because the findings for Study 1 were quite complex, interpretations will first be offered for each hypothesis and then more general interpretations will be offered for the entire study. Also included are the implications of the Study 1 findings for the Study 2 analyses.

Hypothesis 1

It was predicted that frequencies of interruptions and disagreements would be related to each other but would not be related to a set of psychosocial questionnaire and family process observational variables. With regard to the intercorrelations of interruptions and disagreements, correlations were quite low thus indicating that when family members emit high rates of interruptive behaviors they may or may not emit high rates of disagreement behaviors. In short, it does not appear that interruptions and disagreements are interchangeable measures of interference in the family. Although such a finding indicates that interruptions and disagreements are not measuring the same thing, it does not indicate that both are not measures of interference. It may be that different families find different interference strategies more useful or successful and that interruptions and disagreements serve different functions. As a result, it was decided at this point that both interruptions and disagreements would be maintained as measures of interference within the family in Study 2.

Turning now to the relations between interruptions and disagreements and the questionnaire variables, it appears that frequencies of disagreements were more highly related to these variables than were interruptions. In fact, the number of effects that emerged for interruptions was less than chance. The results for the relations between frequencies of disagreements and the psychosocial questionnaire variables can be summarized as follows: (1) For the child-report psychosocial variables, disagreements tend to be associated with less father acceptance and less rules and standards, (2) for the mother-report psychosocial variables, disagreements tend to be associated with less activities between the mother and the child and mothers were more satisfied when they were able to disagree with fathers, and (3) for the father-report psychosocial variables, paternal report of satisfaction was higher when children disagreed with them more.

One of the most interesting aspects of the relations between disagreements and the questionnaire variables is that family members react differentially to disagreements within the family. (Because the direction of causation can not be determined, it may also be that certain family members disagree with each other only when certain familial conditions are present.) Children tend to perceive high levels of disagreements as being indicative of less control (i.e., rules and standards) within the family and fathers are perceived as less accepting in such an environment. High levels of disagreements do not appear to produce similar child perceptions of mothers.

What is most noteworthy about these particular findings, however, is that it is <u>not</u> father disagreements that are related to less father acceptance. Rather, the significant effects for father acceptance are primarily for maternal disagreements and for child disagreements of mothers. Why would children perceive their fathers as less accepting when their mothers disagree more? At least two possibilites exist. First, it may be that maternal disagreements index more mother-child involvement and that fathers are, therefore, less involved in the family and less accepting of their children. Second, it may be that mothers who disagree are more powerful within the family hierarchy and that such disagreements undermine the power of fathers. Such a shift in power may produce increased levels of marital discord that may, in turn, produce less paternal acceptance of the children (or the children may view such fathers as less effective parents). The second interpretation assumes, of course, that in "normal" nondistressed families the power hierarchy is one of father > mother > child as has been found in a number of studies (e.g., Bodin, 1966; Jacob, 1974; Leighton, Stollak, & Ferguson, 1971; Schuham, 1970; see Jacob, 1975, for a review).

Perhaps we can learn more about the findings just discussed if we examine the relations for the maternal- and paternal-reported variables. For mothers, higher levels of disagreements (particularly in the marital dyad) are associated with less activities spent between mother and child. Also, mothers who disagree more with their spouses feel <u>more</u> satisfied. (We also know, however, that children report <u>fewer</u> rules and standards when mothers disagree more with their spouses.) Finally, fathers are <u>more</u> satisfied when their

children interrupt them more. Taken together, it appears that maternal disagreements have much meaning for family members but that such meaning varies depending on who you ask. Children feel that such disagreements make the family environment more chaotic and that it may undermine the father's role in the family. Mothers appear to feel more satisfied as a parent if they are able to disagree with their spouses but they also believe that such involvement with their spouses takes away from their involvement with their children. Finally, fathers do not seem affected by such disagreements but are more affected by disagreements directed toward them by their children. Fathers are more satisfied when their children disagree with them more and, as a result, these disagreements may be indicative of greater family involvement for a member of the family who typically may be less involved (Montemayor, 1982).

Turning now to the relations between frequencies of interruptions and disagreements and the family process observation variables, it appears that both interruptions and disagreements were related to these variables. With regard to interruptions, positive relations between interruptions and observers' ratings of affiliation and control emerged (with a few exceptions) whereas relatively few significant effects were found for the other observational variables. In order to examine these effects more carefully, a dyadic-level analysis is needed. Upon examination of the positive correlations between control and frequencies of interruptions, it was observed that: (1) mothers who interrupt fathers more frequently appear to be more controlling toward fathers, (2) fathers who interrupt their children more frequently appear to be more controlling toward their

children, but (3) children who interrupt their mothers more frequently appear to be less controlling toward their mothers. In addition, children who interrupt their fathers at higher rates appear to have fathers who are more controlling.

Thus, it appears that mother and father interruptions index more control in these family members but that child interruptions do not index greater child control. Rather, the latter may index less control on the part of the children and may, in fact, result in more control on the part of the parents. That is, these results may suggest that interruptions from parents are allowed and are part of their parental roles but that child interruptions are not received favorably by parents and may actually induce controlling behaviors from the parents. These findings are consistent with those that emerged in a study by Jacob (1974) where 16-year-old adolescents interrupted their parents more often and their parents, in turn, interrupted their adolescents more often than was the case in families with 11-year-olds. Jacob interprets these findings in the following manner: "these shifts in disruptiveness and assertiveness in the presence of an adolescent would suggest that the parents are attempting to retain control vis-a-vis the child's attempt to gain status in the family's changing influence structure" (p. 9). These findings are also consistent with the notion that there is a power hierarchy in "normal" families with children having the least power. Regardless of the explanation, it appears that these findings are quite complex and require systemic and transactional interpretations (as was the case with the relations between disagreements and the psychosocial variables).

Although fewer in number, the significant effects between interruptions and affiliation also demand an explanation. The results suggest that fathers and mothers who interrupt their children more frequently, also appear more warm toward their children. In addition, fathers who interrupt their children more frequently have children who are more affiliative. These results correspond well with the findings just discussed for control. That is, it appears that parental interruptions index higher levels of control (and this control is consonant with the parents' roles) and that these interruptions are received favorably by their children. The effects are strongest for paternal interruptions suggesting that this type of "power" interpretation is more applicable to fathers (which is what one would expect in a father > mother > child system).

Relations between disagreements and the observational variables were also strongest for affiliation and control. Perhaps the most consistent set of relations in Study 1 emerged between disagreements and affiliation. Nearly half of the computed correlations were significant and all were negative. These findings suggest that disagreements index less warmth and more interference in the family. This finding is interesting in light of Cooper, Grotevant, and Condon's finding that adolescent disagreements were positively associated with identity exploration--presumably an outcome that taps healthy functioning. Because our sample was younger (Cooper, Grotevant, and Condon's sample included high school seniors), such identity issues may not be relevant here. Disagreements may have a negative valence in families with younger adolescents where the adolescents' efforts to define "oneself as distinctive from others"

(Cooper, Grotevant, & Condon, 1983, p. 53) are not accepted by parents. Disagreements have also been linked with more disruption in family functioning in studies by Riskin and Faunce (1970).

For 6 of the 7 significant effects for the relations between frequencies of disagreements and control, the dyad involved in the disagreement did not include the family member whose control was significantly related to this disagreement. For example, child disagreements of mother occurred at higher rates when fathers' control over mothers was higher (i.e., fathers gain in power when children can disagree with their mothers). Similarly, mothers were more controlling when fathers disagreed more frequently with their children (i.e., mothers gain in power when fathers can disagree more with their children). Finally, children were less controlling when mother disagreements of father were more frequent. The seventh significant effect was a positive relation between father control of mother and father disagreements of mother. These findings taken together suggest again that fathers gain power at the expense of the mother (father > mother) and that mothers gain power at the expense of the children (mother > child).

Hypothesis 2

It was predicted that z-scores representing sequences of interruptions and disagreements would be highly intercorrelated and would be related to the questionnaire and observational variables. With regard to the intercorrelations between the z-scores for interruptive and disagreement sequences, relations were minimal thus

suggesting again (similar relations were found for the frequency data) that interruptions and disagreements are not interchangeable measures of interference. As noted above, however, both were maintained as measures of interference.

With regard to the relations between the z-scores and the questionnaire variables, the number of significant effects for sequences of interruptions and sequences of disagreements was not greater than chance. On the other hand, when disagreements and interruptions were both regarded as measures of interference and sequences of interference behaviors were computed, a number of significant effects emerged. These findings can be summarized as follows: (1) For the child-reported questionnaire variables, when mother acceptance, father influence, and mother influence were lower, z-scores representing FIM-->MIF (father interfer with mother followed by mother interfer with father) were higher (This was the only sequence that was consistently related to the child-reported variables.), (2) for the mother-reported questionnaire variables, they reported fewer activities with the family when z-scores representing MIF-->FIM were higher, fewer activities with their children when CIF-->FIC was higher, and more disagreements over rules when CIM-->MIC was higher, and (3) for the father reported questionnaire variables, fathers reported fewer activities with their children when MIF-->FIM was higher, less satisfaction with parenting when MIC-->CIM was higher, and fewer disagreements over rules when FIC--CIF was higher.

Aside from the last finding, all others were as predicted; more reciprocity of interference behaviors occurs in families where there is less parental acceptance, fewer activities, less parental influence, less parental satisfaction, and more disagreements over rules. Thus, it appears that the few results that did emerge suggest that reciprocity of interference behaviors are indicative of some disruption in family functioning. These findings are consonant with results that have emerged in Gottman's (1979) and Margolin and Wampold's (1981) studies of distressed and nondistressed marital partners where reciprocity of interference behaviors were more common in distressed dyads.

When the results are examined on a dyadic-level, further interpretations can be made. First, when mothers tend to reciprocate fathers' interference behaviors, children appear to perceive some disruption in the family as reported on questionnaires. (Again the reader is reminded that causation may go in the other direction or the relations reported may be attributable to other as yet uninvestigated variables.) It appears, then, that children are sensitive to maternal interference especially when it is directed at fathers. This finding is similar to those discussed above for frequencies of maternal disagreements of fathers; children perceive fewer rules and standards and less father acceptance when these disagreements occur at higher rates. Perhaps young adolescents believe that such maternal behaviors serve to disrupt the natural hierarchy that exists in nondisturbed families (father > mother > child). Second, the positive relation between CIM-->MIC and mother report of disagreements over rules is of interest. It appears that

mothers who find themselves involved in cycles of interference behaviors with their children in the laboratory session are the same mothers that report having frequent disagreements over rules with their children at home. Finally, it appears that sequences of marital interference behaviors are associated with fewer activities thus suggesting that disruption in the marital dyad impacts directly on children by taking away from activities that these children participate in.

In examining the relations between these sequences and the observational variables, we find few results for sequences of interruptions but many results for sequences of disagreements and interference behaviors. The findings for relations between sequences of disagreements and the observational variables can be summarized as follows: (1) fathers who reciprocate their spouses disagreements are more affiliative toward their children, (2) fathers who reciprocate their children's disagreements are more affiliative toward their spouses and their children, (3) when mothers reciprocate their children's disagreements, mothers are more controlling toward their children and fathers are more controlling toward both mothers and children, (4) mothers who are engaged in reciprocity of disagreements explain themselves less, and (5) there is some evidence that reciprocity of disagreements is positively associated with positive affect.

A number of interpretations can be offered for this set of findings. First, fathers tend to be more affiliative toward that individual with whom they are not engaged in reciprocal disagreements. That is, it appears that, for fathers, warmth and

disagreements tend not to be exhibited together. Second, and for mothers, disagreements appear to be associated with more power in the family. Moreover, it appears that these disagreements are associated with greater paternal power. It may be that fathers who observe their spouses disagreeing more find it necessary to express more power in the family so as to maintain their position in the hierarchy. Third, when mothers find themselves involved in more cycles of disagreements they have less opportunity to explain themselves. Perhaps these disagreements merely inform the other individual that she is disagreeing but they are accompanied by little or no explanation. Finally, the association of reciprocal disagreements and positive affect is contrary to predictions. What we may be seeing is that some reciprocal disagreements are necessary to give individuals information regarding power in the family, some disagreements index less affiliation in the family, whereas others occur in a context of much warmth and indicate that family members are highly engaged. To make the picture that much more complicated, it appears that each of these possible "meanings" of such reciprocity may occur more often in some dyads than in others.

The results for the relations between sequences of interference behaviors and the observational variables were virtually identical to those for disagreements with only a few exceptions. It appears, then, that these findings for the interference behaviors are attributable to the contribution of the disagreement results. The exceptions mainly involve affiliation, where less warmth was found in families where fathers reciprocated their spouses' interference behaviors. More specifically, when such sequences occurred, less affiliation was

expressed in the mother-child dyad and from mothers to fathers. Thus,
we again see that disruption in the marital dyad affects at least one
of the parent-child dyads. (Again, causation is assumed rather than
confirmed.) We also see that mothers whose interference behaviors are
reciprocated by their spouses show less affiliation toward their
spouses. This finding was predicted and suggests that reciprocity of
interference behaviors is conflictual and is associated with more
disruption in the family.

Hypothesis 3

It was expected that the co-occurrence of interference behaviors
and positive affect (in the same person) would be associated with
less disruption in the family as reported on questionnaires and as
observed in a laboratory session. It was reasoned that if individuals
can, for example, disagree and evidence positive emotion (e.g.,
laugh) at the same time, these types of disagreements would be less
indicative of familial upset. For the questionnaire data,
significant relations only emerged for the results involving the co-
occurrence of interruptions and positive affect. Most (90%) of these
relations were in the predicted directions. The results were as
follows: (1) when child positive affect co-occurred with child
interruptions of fathers, there was more maternal acceptance, more
mother and father influence, more paternal activities with the
family, more paternal satisfaction, and fewer rules and standards,
(2) when father positive affect co-occurred with father interruptions
of their children, fathers reported more activities with their

children, (3) when mother positive affect co-occurred with mother interruptions of child, mothers reported more parental satisfaction, and (4) there were fewer reported rules and standards when mother positive affect co-occurred with mother interruptions of father. Although there were two findings contrary to predictions, the overall set of results supports the hypothesis that interference behaviors take on a new meaning when they occur in conjunction with positive affect. Thus, it appears that the context in which a behavior occurs is as important as the behavior itself.

As with the questionnaire data, the only significant findings for the observational data involved the co-occurrence of interruptions and positive affect (i.e., few effects emerged for the co-occurrence of disagreements and positive affect and the co-occurrence of interference behaviors and positive affect). Again, most of the effects for interruptions were in the directions predicted and they can be summarized as follows: (1) when child positive affect co-occurred with child interruptions of father and when father positive affect co-occurred with father interruptions of child, children expressed less control toward their parents, (2) when child positive affect co-occurred with child interruptions of mother, mothers were less controlling toward their children, (3) contrary to predictions, when mother positive affect co-occurred with mother interruptions of child and when child positive affect co-occurred with child interruptions of mother, there was less affiliation in the mother-child dyad. The results for child control (#1 above) are interesting in that they suggest that when children and fathers can interrupt each other in a warm atmosphere, children find it less

necessary to seek power within the family. These children may feel
more comfortable accepting their role (i.e., the least powerful) in
the family. Mothers also find it less necessary to be controlling
toward their children (#2 above) when their children's interruptions
are tempered with positive affect. As noted above, the findings for
affiliation (#3 above) are the only set of results that ran contrary
to the predictions for the "co-occurrence" variables and therefore
will not be discussed further. In sum, then, we see once again that
interruptions appear to have the most "meaning" (with regards to
disruption in the family) when the affective context is taken into
account.

General Conclusions of Study 1 and Implications for Study 2

Of course it is impossible to summarize, in a few brief
statements, all of the results that emerged in Study 1, but several
general trends can be discussed. The results that did emerge suggest
that, although disagreements and interruptions are not
interchangeable measures of interference (in frequency or sequential
form), both appear to tap disruption in the family in certain
contexts. The results for interruptions, disagreements, and the more
general interference variables will be discussed in turn.

Interruptions. In the case of interruptions, significant
relations occurred for three sets of analyses: (1) the relations
between frequencies of interruptions and the observational variables,
(2) the relations between the co-occurrence of interruptions and

positive affect (in the same person) and the questionnaire variables, and (3) the relations between the co-occurrence of interruptions and positive affect (in the same person) and the observational variables. (Significant findings did not emerge when reciprocity of interruptions were examined or when the relations between frequencies of interruptions and the questionnaire measures were assessed.) In the first instance (#1 above), it was found that interruptions were positively related to control and affiliation. The pattern of results that emerged suggest that interruptions displayed by parents index higher levels of control but that child interruptions do not. In fact, child interruptions appear to induce more control on the part of the parents. Finally, children appear to be accepting of interruptions from their parents. More generally, these results are consistent with the work of Jacob (1974) and others (Bodin, 1966; Leighton, Stollack, & Ferguson, 1971; Schuham, 1970) in suggesting that in "normal" families there is a clear power hierarchy that can be represented as follows: father > mother > child. Thus, it appears that interruptions (in frequency form) index power within the family rather than overt conflict.

The most noteworthy findings for interruptions occurred when sequences of interruptions and positive affect within the same person were examined. Significant results for these co-occurrence variables were found in relation to the questionnaire variables and the observational variables. Interestingly enough, no such findings emerged for either the "co-occurrence" variables involving disagreements or those involving the interference variables. The results for those involving interruptions suggest that interruptions

take on a new meaning when their affective context is taken into account. That is, it appears that the co-occurrence of interruptions and positive affect within the same person is positively associated with mother acceptance, mother influence, father influence, activities within the family, and parental satisfaction. This variable was negatively associated with rules and standards and control as rated by trained observers. It is also noteworthy that these results emerged for child- and parent-reported measures and for questionnaire and observational measures. Taken together, these findings suggest that such "co-occurrence" of interruptions and positive affect indicates that there is less disruption, if not less conflict, within the family system. On the other hand, frequencies of interruptions and interruptive sequences do not appear to be as related to the assessed indices of family functioning as were these "co-occurrence" variables.

Disagreements. A different set of findings emerged for disagreements. Significant effects emerged for the following clusters of correlations: (1) relations between frequencies of disagreements and the questionnaire variables, (2) relations between frequencies of disagreements and the observational variables, and (3) relations between sequences of disagreements and the observational variables. With regard to frequencies of disagreements, there is much evidence that disagreements tap disruption and conflict within the family. Frequencies of disagreements (in various dyads) tend to be associated with less father acceptance, fewer rules and standards, fewer activities between mother and child, and less affiliation as rated by

trained observers. In fact, if we look at the correlation of familial

affiliation (the sum of all affiliation ratings across dyads) with

the total number of familial disagreements, the corrrelation was -.42

(p<.004). Moreover, frequencies of disagreements (like interruptions)

appear to tap power within the family as well. That is, the relations

between disagreements and control suggest that fathers gain in power

at the expense of the mother and mothers gain in power at the expense

of the child thus resulting in the now familiar hierarchy: father >

mother > child.

Similar, although less consistent, findings emerged for the

relations between sequences of disagreements and the observational

variables. Fathers tend to be more affiliative toward that individual

with whom they are not engaged in reciprocal disagreements and

mothers who are engaged in disagreement reciprocity explain

themselves less. Also, mothers who reciprocate their children's

disagreements are more controlling. What we have again, then, is the

tendency for disagreements to be indicative of increased disruption

and increased efforts at control within the family. It is possible,

of course, that disagreements may initially be employed as control-

gaining strategies that result in familial disruption and conflict or

they may be employed as control-gaining strategies in reaction to a

disrupted, chaotic, and conflictual family environment. It is also

worth noting that, unlike interruptions, the affective environment in

which disagreements was embedded was not critical in increasing their

predictive utility with regard to family conflict.

Interference. Because of the low frequencies that characterized the observational variables, it was decided that a variable would be created where interruptions and disagreements were combined. This variable ("interference") was employed in the sequential analyses. Significant relations emerged for the following sets of effects: (1) relations between sequences of interference behaviors and the questionnaire measures, and (2) relations between sequences of interference behaviors and the observational variables. The results for the questionnaire variables suggested, for example, that when mothers reciprocated their spouses interference behaviors, there was less mother acceptance of the child, and less mother and father parental influence. Other sequences of interference behaviors were related to fewer family activities, less parental satisfaction, and more disagreements over rules. The bulk of the findings suggest, then, that reciprocity of interference behaviors index disruption within the family as reported on questionnaires. With regard to the relations between sequences of interference behaviors and the observational variables, the findings were similar to those that emerged for sequences of disagreements in that these sequences appear to be associated with an increase in familial conflict. In addition to the findings for disagreements, there were also a number of findings that suggest that sequences of interference behaviors index less warmth in the family.

Given these findings for Study 1, it appears that eight conclusions can be made:

1. Interruptions and disagreements are not interchangeable measures of interference.

2. Frequencies of interruptions index power within the family rather than overt conflict.

3. When interruptions and positive affect tend to co-occur (within each family member) more frequently, there is less disruption and conflict within the family system.

4. Sequences of interruptions are not associated with measures of power or conflict.

5. Frequencies and sequences of disagreements appear to be indicative of increased conflict and increased efforts at control within the family.

6. The co-occurrence of disagreements and positive affect within the same person is not related to indices of power or conflict.

7. Sequences of interference behaviors index greater conflict in the family system.

8. In general, families in this sample tended to be organized in terms of the following power hierarchy: father > mother > child.

The results of Study 1 also highlight a number of other important points and they have several implications for Study 2, the results of which are to be reported next. One of the most noteworthy aspects of the findings of Study 1 were their complexity. For every set of findings, systemic interpretations were required to account for the observed effects. In many cases, the behavior of one individual was affected by the behaviors occurring in the other dyad. Moreover, a number of the findings that were contrary to predictions actually were in line with the predictions when examined more carefully. For example, sequences of disagreements in the marital dyad were associated with <u>more</u> affiliation as expressed from father to child. Although it was predicted that affiliation would be negatively related to sequences of disagreements, it is clear that this finding is not entirely contrary to the spirit of the hypotheses. As a result, this systemic approach to interpretation will be employed in Study 2 as well.

Also of interest was the decided lack of fingdings that emerged for the gaze variables. These variables were rarely related to any other variable. As a result, this variable as well as those sequential variables that include gaze will <u>not</u> be employed in Study 2. (Interestingly enough, a coherent set of findings did not emerge for these variables in Study 2.) It appears, then, that gaze does not tap a single dimension. Perhaps in another study, where the facial expressions that accompany head turn behaviors can be assessed, more significant relations with other indices of familial functioning will be found.

Finally, because most of the findings were in line with the predictions, all of the variables that were included as measures of familial conflict (including frequencies of interruptions and disagreements) were employed in Study 2. Although some of them did not yield significant effects (e.g., sequences of interruptions), it appears that the set of variables as a whole were predictive of familial conflict and power.

Results of Study 2

For Study 2, results will be given for each hypothesis. A more general summary of the findings will be saved for the Discussion section. As in Study 1, whenever correlations or regression analyses involved frequency data, these frequency scores were divided by the talking time of the individual(s) involved.

The purpose of the Structured Family Interaction Task (SFIT) was for the family, as a group, to come to some agreement on five questions after providing their choices privately. It is possible, then, that the degree that families agreed with each other prior to beginning the task could affect subsequent frequencies of the variables being considered here. In order to determine whether "initial agreement" affected the results of the regression analyses involving menarcheal status, the analyses were first run by controlling for initial agreement. In each case, the agreement variable for the dyad under consideration was employed. (Dyadic initial agreement was computed by summing the number of questions that a dyad agreed on based upon the private completion of their forms.) Out of 170 analyses, five of the significant menarcheal effects did not emerge after controlling for initial agreement and only six new effects emerged. Initial agreement was predictive in a number of instances, however. For example, prior to entering the menarcheal variables, initial agreement was (as expected) negatively related to frequencies of disagreements in most instances. In sum, the findings for initial agreement suggested that (although important

in its own right) this variable had a minimal effect on the findings for Study 2. Therefore, it was not partialled out in the analyses. As a result, all analyses were run as planned whereby linear, quadratic, and cubic trends for menarcheal status were tested (in that order) in multiple regression analyses for the 111 families of seventh-grade girls. In each instance, menarcheal status was the independent variable and the observational variables were the dependent variables.

Finally, there were many findings that emerged for Study 2 and they were quite complex. Some of the results support the predictions completely, some support the predictions in part, while some run entirely contrary to the predictions. As a result, and for the sake of simplicity and readability, the status of every finding with respect to the predictions will not be enumerated on every occasion. The predictions are always that menarcheal groups 2 and 4 will be characterized by more familial disruptions, more conflict, and less positiveness and that they will be similar to each other and will differ from menarcheal groups 1 and 3. In other words, cubic trends were always predicted. Given these guidelines, deviations from the predictions should be easily detectable.

Hypothesis 1

It was predicted that frequencies of interruptions and disagreements would be at their peak in menarcheal groups 2 and 4 and that the frequencies of positive affect would be at their peak in groups 1 and 3. (The reader is reminded that, given the results of

Study 1, gaze has been dropped from all Study 2 analyses.) In statistical terminology, it was predicted that cubic trends would emerge for the relations between these frequency variables and menarcheal status such that disruptions in family function would be at their peak in groups 2 and 4. In order to put these findings in the proper context and facilitate interpretation, other frequency findings will also be presented. That is, also included in the tables are results for talking time, the proportion of dyadic talking (i.e., the proportions of who talks to whom), affiliation, and control.

Interruptions. Although the "total interruptions" variable is of primary interest here, the results for all three types of interruptions (i.e., unsuccessful, successful, and interruptions where both individuals continue talking) are also given. These results are given in Table 10 in Appendix K. (As in Study 1, significant and marginally significant effects are noted.) Group means and all effects will be given in the tables, and the standardized beta weights ($\underline{B}$) and $\underline{t}$ values will be given in the text. As can be seen in Table 10, three effects emerged for unsuccessful interruptions. Contrary to predictions, negative cubic trends emerged for mother unsuccessful interruptions of father, $\underline{B} = -9.324$, $\underline{t}(3,107) = -2.535$, $\underline{p} < .01$, and daughter unsuccessful interruptions of mother, $\underline{B} = -7.964$, $\underline{t}(3,107) = -2.157$, $\underline{p} < .05$, with these interruptions being at their peaks in groups 1 and 3. In addition, for child unsuccessful interruptions of fathers, there was a negative quadratic trend, $\underline{B} = -1.067$, $\underline{t}(2,108) = -1.868$, $\underline{p} = .06$, with the highest means emerging for groups 2 and 3.

For the "both talk" interruptions, negative quadratic and cubic trends emerged for father interruptions of mothers ($\underline{B}$ = -1.324, $\underline{t}$(2, 108) = -2.337, $\underline{p}$ < .05; and $\underline{B}$ = -9.118, $\underline{t}$(3,107) = -2.535, $\underline{p}$ < .01, respectively) whereby such interruptions were at their peak in group 3 and at their lowest level in group 4. A negative quadratic trend emerged for mother interruptions of father, $\underline{B}$ = -1.816, $\underline{t}$(2,108) = -3.293, $\underline{p}$ < .001, and the means were at their peak in groups 2 and 3 and at relatively low levels in group 4. Negative linear trends emerged for mother interruptions of daughters and daughter interruptions of mother, $\underline{B}$ = -.180, $\underline{t}$(1,109) = -1.907, $\underline{p}$ = .06; and $\underline{B}$ = -.158, $\underline{t}$(1,190) = -1.671, $\underline{p}$ = .10, respectively. In addition, a negative quadratic trend emerged for child interruptions of mother, $\underline{B}$ = -1.357, $\underline{t}$(2,108) = -2.430, $\underline{p}$ < .05. These findings for the mother-child dyad suggest that "both talk" interruptions are at their peak for mother interruptions of daughters in groups 1 and 2 and at their lowest levels in group 4. For child interruptions of mothers, they are at their peak in group 2 and at their lowest level in group 4.

For successful interruptions, only two marginally significant negative quadratic trends emerged--for father successful interruptions of daughters, $\underline{B}$ = -.981, $\underline{t}$(2,108) = -1.714, $\underline{p}$ = .09, and for child successful interruptions of mother, $\underline{B}$ = -1.022, $\underline{t}$(2,108) = -1.787, $\underline{p}$ = .08. For both of these relationships, the interruptions were at their peak in groups 2 and 3 and at their lowest level in group 4.

Finally, for total interruptions (the sum of the three types of interruptions just discussed), five effects emerged, four of which were negative quadratic trends. These negative quadratic trends emerged for father interruptions of mother, $\underline{B}$ = -1.464, $\underline{t}(2,108)$ = -2.603, $\underline{p}$ < .01, mother interruptions of father, $\underline{B}$ = -1.244, $\underline{t}(2,108)$ = -2.204, $\underline{p}$ < .05, father interruptions of daughters, $\underline{B}$ = -1.155, $\underline{t}(2,108)$ = -2.031, $\underline{p}$ < .05, and child interruptions of mother, $\underline{B}$ = -1.669, $\underline{t}(2,108)$ = -3.023, $\underline{p}$ < .01. In all cases, interruptions were at their peak in groups 2 and 3 and at their lowest level in group 4. In addition to these quadratic effects, there was also a negative linear effect for mother interruptions of daughters, $\underline{B}$ = -.203, $\underline{t}(1,109)$ = -2.165, $\underline{p}$ < .05, whereby the interruptions were at their peak in groups 1 and 2 and at their lowest level in group 4. Finally, for "total interruptions in the family" (the sum of all six of the dyadic total interruptions variables), a negative linear effect, $\underline{B}$ = -.186, $\underline{t}$ (1,109) = -1.973, $\underline{p}$ < .05, and a negative quadratic effect, $\underline{B}$ = -1.613, $\underline{t}$ (2,108) = -2.938, $\underline{p}$ < .01, emerged. Levels of interruptions were highest in group 2 and lowest in group 4. As can be seen in Table 10, there were considerably fewer interruptions in group 4 as compared to the levels in the other groups.

Taken together, there were 17 effects across all of the interruption frequency variables and 11 of them were negative quadratic effects. Regardless of the type of interruption, the rates were at their lowest levels in group 4. Moreover, there was a tendency (except in the case of unsuccessful interruptions) for the interruptions to be at their peak in groups 2 and/or 3. Thus, the

hypothesis was confirmed for group 2 but the results were contrary to predictions for group 4.

Disagreements. The results for disagreements are given in Table 11 in Appendix K where it can be seen that significant effects emerged for four of the seven variables. For father disagreements of mothers, a negative quadratic trend, B = -.937, $t(2,108)$ = -1.635, p = .10, and a positive cubic trend, B = 6.826, $t(3,107)$ = 1.850, p = .07, emerged. For child disagreements of fathers, a positive linear trend, B = .190, $t(1,109)$ = 2.022, p < .05, and a positive cubic trend, B = 6.478, $t(3,107)$ = 1.763, p = .08, emerged. For child disagreements of mother, there was a marginally significant positive cubic trend, B = 6.409, $t(3,107)$ = 1.731, p = .09. Finally, for total disagreements, there was a significant positive cubic trend, B = 8.359, $t(3,107)$ = 2.273, p < .05. In general, the results for disagreements were as predicted; several positive cubic trends emerged. As predicted, and for most of the variables where there were significant effects, the highest rate of disagreements was found in group 2. In some cases, the rate for group 4 was also high as indicated by the positive cubic effects. The results for total disagreements were precisely as predicted whereby the highest rates were found in groups 2 and 4 and the lowest rates were found in groups 1 and 3.

Positive affect. As can be seen in Table 11, only one effect emerged for positive affect; a significant positive linear effect, B = .185, $t(1,109)$ = 1.968, p < .05, emerged for child positive affect.

This finding runs contrary to the predictions, and indicates that the highest rate of child positive affect occurred in group 4.

Talking time (in number of words spoken). As can be seen in Table 12, significant effects for talking time emerged for all variables. For father and child talking time, negative quadratic effects emerged, $\underline{B}$ = -1.249, $\underline{t}(2,108)$ = -2.200, $\underline{p}$ < .05; and $\underline{B}$ = -1.189, $\underline{t}(2,108)$ = -2.088, $\underline{p}$ < .05, respectively. A negative cubic effect emerged for mother talking time, $\underline{B}$ = -10.333, $\underline{t}(3,107)$ = -2.857, $\underline{p}$ < .01 and negative quadratic and cubic trends emerged for total talking time, $\underline{B}$ = -1.390, $\underline{t}(2,108)$ = -2.459, $\underline{p}$ < .05; and $\underline{B}$ = -6.279, $\underline{t}(3,107)$ = -1.722, $\underline{p}$ = .09, respectively. These findings for talking time and the groups means in Table 12 indicate that: (1) group 4 families talk much less than other families, (2) fathers and daughters in groups 2 and 3 talk more than daughters and fathers in the other groups, (3) mothers in group 3 talk the most, followed by mothers in group 1, group 2, and group 4, in that order, and (4) whereas fathers and children in the immediately post-menarcheal group (group 2) talk more than those in the pre-menarcheal group (group 1), mothers in group 2 talk less than those in group 1.

Proportion of dyadic talking. In order to determine who talks to whom for each of the four groups, proportions of dyadic talking were computed by summing the number of talking sequences for each dyad (in both directions) and dividing by the total number of sequences. For example, if mother utterances precede father utterances 10 times and there are 100 possible pairs in the record, then the proportion for

this dyad in the direction of mother to father is .10. These
proportions by menarcheal group (with accompanying effects) are given
in Table 12 in Appendix K. As can be seen in the table, there were
four marginal effects, all of them cubic. Negative cubic trends
emerged for father-mother talking sequences, B = -7.041, $t(3,107)$ =
-1.890, p = .06, and mother-father talking sequences, B = -6.459,
$t(3,107)$ = -1.729, p = .09. Positive cubic trends emerged for father-
daughter talking sequences, B = 6.654, $t(3,107)$ = 1.779, p = .08, and
daughter-father sequences, B = 6.366, $t(3,107)$ = 1.700, p = 09. These
results reveal that: (1) fathers talk to mothers and mothers talk to
fathers more in groups 1 and 3, (2) fathers talk to daughters and
daughters talk to fathers more in groups 2 and 4, and (3) mothers and
daughters talk to each other more than was the case in the other
dyads, but such talking does not vary as a function of menarcheal
status. The only exception to #3 is in group 2 where fathers and
daughters talk more than mothers and daughters.

Affiliation and control. The results for affiliation and
control are given in Table 13. A negative cubic trend emerged for
affiliation expressed from mother to father, B = -6.311, $t(3,107)$ =
-1.688, p = .09, a negative quadratic trend emerged for affiliation
expressed from father to child, B = -1.220, $t(2,108)$ = -2.150, p <
.05, and a negative linear effect emerged for affiliation expressed
from daughter to father, B = -.281, $t(1,109)$ = -3.061, p < .01. These
findings suggest that shortly after menarche, there is less
affiliation expressed from mothers to fathers and from daughters to
fathers and more affiliation expressed from fathers to daughters.

Finally, there is less affiliation expressed in group 4 for all dyads.

For control, negative quadratic trends emerged for control expressed from fathers to mothers and from fathers to daughters, $\underline{B} = -1.180$, $\underline{t}(2,108) = -2.082$, $\underline{p} < .05$; and $\underline{B} = -1.014$, $\underline{t}(2,108) = -1.787$, $\underline{p} = .08$, respectively. In addition, a negative linear effect emerged for control expressed from daughter to father, $\underline{B} = -.164$, $\underline{t}(1,109) = -1.732$, $\underline{p} = .09$. These findings indicate that fathers express more control toward mothers and daughters shortly after their daughters experience menarche. In addition, with increasing maturity, daughters tend to express less control toward their fathers.

Hypothesis 2

It was predicted that reciprocal mother, father, and daughter interruptions (i.e., in this case, total interruptions) would be more highly intercorrelated in groups 2 and 4 and that reciprocal mother, father, and daughter disagreements would be more highly intercorrelated in groups 2 and 4. For example, it was predicted that MiF (mother interrupts father) would be most highly correlated with FiM (father interrupts mother) in groups 2 and 4. In a sense, this analysis is preliminary to the sequential analysis results (to be presented next) insofar as one would expect higher rates of both MiF and FiM in families where there is more conflict in the same way as one would expect there to be higher z-scores representing MiF-->FiM in the same conflictual families.

Interruptions. Three sets of correlations were run for both
interruptions and disagreements. For interruptions, the following
correlations were computed for each of the four pubertal groups: the
correlation between FiM and MiF, the correlation between FiC and CiF,
and the correlation between MiC and CiM. The same correlations were
computed for disagreements. The correlations between FiM and MiF were
.46, .75, .16, and .48 for the four menarcheal groups from 1 to 4,
respectively. The corresponding correlations for FiC and CiF were
.24, .51, .43, and .44. Finally, the corresponding correlations for
MiC and CiM were .29, .31, .23, and .30. The means for the three sets
of correlations were .33, .52, .27, and .41. In all cases, the
highest correlations emerged for groups 2 and 4, thus supporting the
hypothesis for interruptions. That is, it appears that rates of
interruptive reciprocity were highest in families who have daughters
who are recently post-menarcheal (group 2) or early maturers (group
4).

Disagreements. As noted above, similar correlations were
computed for disagreements. The correlations for FdM (father
disagrees with mother) and MdF were .49, .32, .44, and .55. The
correlations for FdC and CdF were .38, .65, .41, and .70. Finally,
the correlations for MdC and CdM were .33, .53, -.28, and .20. The
means for the three sets were .40, .50, .19, and .48. Although, only
in the case of FdC and CdF were the correlations at their peak in
groups 2 and 4, they were at their peak in group 4 for FdM/MdF and in
group 2 for MdC/CdM. Also, the mean correlations were highest in

groups 2 and 4. Thus, once again it appears that reciprocity is more common in groups 2 and 4.

Hypothesis 3

It was predicted that reciprocal sequences of interference behaviors (i.e., interruptions and disagreements) would be more common in groups 2 and 4. More specifically, it was predicted that the z-scores that represent such sequences (and assess the contingent nature of these behaviors) should be highest in groups 2 and 4. (The reader is reminded that the aggregate and "proportion of matches" approaches were not used. See earlier section entitled "Relations between 'Proportion of Matches' Index and Z-Scores.") As was the case with the frequency data, these analyses were run with multiple regression analyses whereby menarcheal status was the independent variable entered as a set of power polynomial terms and the z-scores were the dependent variables. Analyses were run for interruptions, disagreements, and interference behaviors (i.e., interference refers to either an interruption or a disagreement).

Because there were two possible "directions" (e.g., MiF-->FiM and FiM-->MiF) for each dyad, there were six z-score variables for interruptions, six for disagreements, and six for interference behaviors. In addition, analyses were run for total interruptions, total disagreements, and total interference. These "overall" z-scores were computed by determining the reciprocity of, for example, interruptions emitted by any family member. That is, in the case of

these overall familial analyses, a "hit" would be counted if, for example, MiF preceded FiC. Thus, these latter analyses assessed the degree to which there was overall reciprocity within the family system.

It should be noted at the outset that only one effect emerged in all of the analyses (interruptions, disagreements, and interference behaviors) for the father dyads (father-mother and father-child). As a result, only the results for the mother-daughter dyad and the results for the overall familial analyses will be presented for this hypothesis.

Interruptions. The regression results for the z-scores that represent reciprocity of interruptions in the mother-daughter dyad and for the overall familial analysis are given in Table 14 in Appendix K. As predicted, a positive cubic trend emerged for the z-scores that represent MiC-->CiM (mother interrupts child followed by child interrupts mother), $\underline{B}$ = 6.777, $\underline{t}(3,107)$ = 1.812, $\underline{p}$ = .07, which indicates that the highest z's were found in groups 2 and 4. For the "total familial interruptions" variable, positive linear and quadratic effects emerged, $\underline{B}$ = .282, $\underline{t}(1,109)$ = 3.067, $\underline{p}$ < .01; and $\underline{B}$ = 1.250, $\underline{t}(2,108)$ = 2.297, $\underline{p}$ < .05, respectively. Upon inspection of the group means, these findings suggest that the z's were higher in group 4 than in any of the other groups.

Disagreements. The findings for disagreements are also given in Table 14. As can be seen in the table, a negative quadratic effect emerged for CdM-->MdC, $\underline{B}$ = -3.172, $\underline{t}(2,108)$ = -3.172, $\underline{p}$ < .01.

Inspection of the group means reveals that the highest z's were found

for groups 2 and 3 and the lowest mean emerged for group 4.

Similarly, a negative quadratic effect emerged for "total familial

disagreements", $\underline{B}$ = -1.155, $\underline{t}(2,108)$ = -2.027, $\underline{p}$ < .05, indicating

that the z-scores were again highest in groups 2 and 3.

Interference behaviors. As can be seen in Table 14, a negative

quadratic trend emerged for CIM-->MIC, $\underline{B}$ = -1.056, $\underline{t}(2,108)$ = -1.851,

$\underline{p}$ = .07, where the group means were at their peak in groups 2 and 3

and at their lowest level in group 4. For the "total familial

interference behaviors" variable, there were positive linear and

cubic trends, $\underline{B}$ = .192, $\underline{t}(1,109)$ = 2.045, $\underline{p}$ < .05; and $\underline{B}$ = 8.128,

$\underline{t}(3,107)$ = 2.231, $\underline{p}$ < .05, respectively. As predicted, group means

were highest in groups 2 and 4 and lowest in groups 1 and 3.

Hypothesis 4

It was predicted that sequential pairs of interference behaviors

and positive affect would yield higher z-scores in groups 1 and 3 and

would yield lower z-scores in groups 2 and 4. In other words, it was

expected, for example, that a mother disagreement of the daughter

would be less likely to be followed by positive affect in the

daughter in groups 2 and 4. These are the menarcheal groups that have

been found to be characterized by perturbations in parent-child

relations in past research (Hill et al., 1985a). Once again, few

results emerged for the father dyads and, as a result, they will not

be reported. (In fact, no results emerged for these dyads.) As was

done with hypothesis 3, overall family effects will be reported. All

findings for this hypothesis are given in Table 15 in Appendix K.

Sequences of interruptions and positive affect. As can be seen

in Table 15, two effects emerged for the mother-daughter dyad.

Contrary to predictions, a positive cubic trend emerged for MiC-->CA

(mother interruption of daughter followed by daughter positive

affect), $\underline{B}$ = 7.158, $\underline{t}(3,107)$ = 1.927, $\underline{p}$ = .06, indicating that the

highest z-scores emerged for groups 2 and 4. A negative linear trend

emerged for CiM-->MA, $\underline{B}$ = -.224, $\underline{t}(1,109)$ = -2.404, $\underline{p}$ < .05,

suggesting that the z-scores decrease with increasing maturity. In

the latter instance, it appears that with increasing maturity,

interruptions and positive affect are less frequently clustered

sequentially. For the overall family analysis

(interruption-->positive affect), there was a significant positive

cubic trend, $\underline{B}$ = 6.946, $\underline{t}(3,107)$ = 1.878, $\underline{p}$ = .06, which appears to

be due almost entirely to the low z-score mean in group 3.

Sequences of disagreements and positive affect. For MdC-->CA, a

negative linear effect emerged (see Table 15), $\underline{B}$ = -.178, $\underline{t}(1,109)$ =

-1.889, $\underline{p}$ = .06, suggesting that the z-scores decrease with

increasing maturity. As was the case with one of the results for

interruptions, it appears that disagreements and positive affect are

less frequently clustered sequentially as the daughter matures. As

predicted, a negative cubic trend emerged, $\underline{B}$ = -6.598, $\underline{t}(3,107)$ =

-1.765, $\underline{p}$ = .08, for the overall family analysis

(disagreement-->positive affect) suggesting that the z-scores for these variables were lowest in groups 2 and 4.

Sequences of interference behaviors and positive affect. As can be seen in Table 15, a negative linear effect was found for CIM-->MA, $\underline{B}$ = -.188, $\underline{t}(1,109)$ = -2.002, $\underline{p}$ < .05, again suggesting that the z-scores that represent this sequence decrease with increasing maturity. Similarly, a negative linear effect emerged for the overall family analysis (interference-->positive affect), $\underline{B}$ = -.173, $\underline{t}(1,109)$ = -1.837, $\underline{p}$ = .07, again suggesting that the z-scores decrease with increasing maturity.

Hypothesis 5

The predictions for hypothesis 5 were the same as those for hypothesis 4 except that the hypothesis 5 predictions involve the co-occurrence of interference behaviors and positive affect in the same person. That is, it was predicted that the z-scores representing these co-occurrences would be most frequent in groups 1 and 3 and less frequent in groups 2 and 4. The results for this hypothesis are given in Table 16. Unlike the results for Hypotheses 3 and 4, there were significant findings for all dyads and, thus, all will be reported in Table 16.

Co-occurrence of interruptions and positive affect in the same person. As can be seen in Table 16, two significant positive cubic effects emerged for the co-occurrence of interruptions and positive

affect in the same person and both were contrary to predictions. That
is, a positive cubic effect emerged for CiF-->CA (child interrupts
father co-occurring with child positive affect), $\underline{B}$ = 8.065, $\underline{t}$(3,107)
= 2.171, $\underline{p}$ < .05, and a positive cubic trend emerged for MiC-->MA, $\underline{B}$
= 11.624, $\underline{t}$(3,107) = 3.207, $\underline{p}$ < .01. These findings suggest that
these co-occurrences for these dyads are more likely in groups 2 and
4 and less likely in groups 1 and 3.

Co-occurrence of disagreements and positive affect in the same
person. Significant effects emerged for three of the dyads and they
were as follows (see Table 16): (1) a positive quadratic trend for
MdF-->MA (mother disagreement with father co-occurring with mother
positive affect), $\underline{B}$ = 1.174, $\underline{t}$(2,108) = 2.080, $\underline{p}$ < .05, (2) negative
linear and quadratic trends for CdF-->CA, $\underline{B}$ = -.158, $\underline{t}$(1,109) =
-1.671, $\underline{p}$ = .10; and $\underline{B}$ = -1.229, $\underline{t}$(2,108) = -2.191, $\underline{p}$ <.05,
respectively, and (3) a negative cubic trend for MdC-->MA, $\underline{B}$ =
-8.797, $\underline{t}$(3,107) = -2.395, $\underline{p}$ < .05. The only finding that emerged
that supports the predictions was the negative cubic finding for
MdC-->MA in that the co-occurrence of these behaviors appears to be
less likely shortly after menarche (group 2) and in the early
maturing group (group 4). On the other hand, the findings for the
other two dyads were at variance with the predictions. Although the z-
scores representing MdF-->MA were at relatively low levels in group
2, they were at higher levels in group 4. Also, the z-scores
representing CdF-->CA were at their lowest levels in group 4 but at
their highest levels in group 2.

Co-occurrence of interference behaviors and positive affect
within the same person. As can be seen in Table 16, two significant
effects emerged for these co-occurrence variables: a negative linear
effect for MIF-->MA (mother interfers with father co-occurring with
mother positive affect), B = -.156, $t(1,109)$ = -1.645, p = .10, and a
negative quadratic effect for CIF-->CA, B = -1.095, $t(2,108)$ =
-1.938, p = .06. These findings only support the predictions in part.
That is, the z-scores for MIF-->MA were at relatively low levels in
group 2 (as predicted) but at a higher level in group 4 (contrary to
predictions). The opposite was true of CIF-->CA; the z-score means
were at their lowest level in group 4 (as predicted) and at their
highest level in group 2 (contrary to predictions).

DISCUSSION

This section will be subdivided as follows: (a) summary of the findings for Studies 1 and 2; (b) implications of the results for the immediately post-menarcheal group (group 2); (c) implications of the results for the early-maturing group (group 4); (d) findings for mothers versus findings for fathers; (e) the role of conflict in the adaptation to pubertal change; (f) limitations of the present study; (g) directions for future research.

Summary of Study 1 and Study 2 Results

Brief Review of Study 1 findings

Before discussing the results for Study 2, the findings for Study 1 and the implications of these findings for Study 2 are reviewed. Because these results were reviewed and discussed in considerable detail above, they are given only brief attention here. For interruptions, the findings suggest that frequencies of interruptions index power rather than overt conflict, although the latter may be produced by family members' attempts to gain power. In short, interruptions appear to be used to maintain the father > mother > child power hierarchy that has been found to characterize "normal" nondistressed families (Bodin, 1966; Jacob, 1974; Leighton, Stollack, & Ferguson, 1971; Schuman, 1970). On the other hand, the co-

occurrence of interruptions and positive affect within the same person does appear to be related (negatively) to conflict within the family. That is, when family members interrupt one another while exhibiting positive affect, as opposed to interrupting each other while exhibiting no positive affect or negative affect, there is more acceptance, parental influence, parental satisfaction, and family activities. In addition, fewer control-gaining strategies are employed in such families. Thus, such co-occurrence appears to index less disruption and conflict. Reciprocal sequences of interruptions tended to be unrelated to the family process or questionnaire measures.

For disagreements, the results of Study 1 suggest that frequencies of disagreements do appear to index greater conflict within the family. When disagreements are frequent, there is less paternal acceptance, fewer activities, fewer rules, and less affiliation. In addition, and as was found for frequencies of interruptions, disagreements appear to serve the function of maintaining the father-dominated power hierarchy within the family. Similar, although less compelling, findings emerged for reciprocal sequences of disagreements. Such sequences were associated with less affiliation, fewer explanations, and more control in certain dyads. The affective environment that accompanied disagreements did not appear critical in the prediction of family functioning.

Because of the relatively low frequencies of interruption and disagreement sequences, a third variable was created whereby interruptions and disagreements were viewed as representing a larger category referred to as "interference." Z-scores representing

sequences of interference behaviors were computed and the relations between these variables and the observational and questionnaire variables were examined. These z-scores were associated with less maternal acceptance, less parental influence, fewer activities, less parental satisfaction, and more disagreements over rules. The relations between these sequences and the observational variables were similar to those for sequences of disagreements, except that less affiliation was found in the family when mother reciprocated their spouses disagreements. Also similar to the findings for disagreements, sequences of positive affect and interference behaviors were not predictive of family functioning.

Although the frequency and magnitude of the significant findings in Study 1 were moderate and several of the findings ran contrary to the conclusions just discussed, it appears that many of these variables can be viewed as assessing conflict within the family. The effects were especially strong for frequencies of disagreements, sequences of disagreements, sequences of interference behaviors, and the co-occurrence of interruptions and positive affect within the same person. Thus, we now have much more information about the "meaning" of these variables when we seek to interpret the findings of Study 2.

Before proceeding to the results for Study 2, three other conclusions can be made upon examination of the Study 1 findings. First, the notion of "confirming the null hypothesis" is relevant to this discussion. That is, we have some evidence that many of the variables employed here index greater disruption within the family system. On the other hand, for those variables where no effects

emerged or where the effects were quite modest, it may be that these variables are related to as yet uninvestigated indices of family functioning. Just because they were unrelated to the measures employed here, does not indicate that they do not index family conflict. In other words, the null hypothesis (i.e., no relationship exists) was not and cannot be confirmed. On the other hand, the Study 2 findings for these variables (e.g., sequences of interruptions) will have to be interpreted more cautiously than will the other findings.

Second, besides tapping conflict, many of the variables examined here (e.g., frequencies of interruptions) appear to serve the purpose of maintaining power hierarchies (father > mother > child) within the family system or they appear to index both power and conflict (e.g., frequencies of disagreements). This finding is not suprising since disagreements, for example, can be used in a variety of different contexts for a variety of purposes. Thus, there is some ambiguity in the interpretation of some of the variables.

Finally, the results of Study 1 highlight the necessity of systems level interpretations of observational data. That is, there were several occasions where behaviors exhibited in one dyad were related to indices of family functioning in the third individual or in other dyads. These data would be lost if one was only to examine, for example, mother-child dyads as some investigators have been wont to do (e.g., Forehand, Brody, Slotkin, Fauber, McCombs, & Long, 1987).

Hypothesis 1 of Study 2

It was predicted that frequencies of interruptions and
disagreements would be at their peak in menarcheal groups 2 (the
immediately post-menarcheal group) and 4 (the early-maturing group)
and that frequencies of positive affect would be at their lowest
levels in groups 2 and 4. The notion here was that indices of
conflict would be higher in families with daughters that just
experienced menarche or in families with early maturing daughters.
The results for interruptions partially support the hypothesis. That
is, most of the effects were negative quadratic effects (curves with
an inverted U-shaped function) and there was a tendency for
interruptions to be at their peak in groups 2 and/or 3. Contrary to
predictions, the lowest frequencies of interruptions tended to emerge
in group 4. Thus, the hypothesis tended to be supported for group 2
but not supported for group 4.

For disagreements, the results were more in line with
predictions. Positive cubic trends (curves with an up-down-up
configuration) characterized the data with the highest frequencies of
disagreements emerging for group 2 (in most cases) and with high
frequencies also emerging for group 4 (in many cases). This
configuration was especially true for the "total disagreements"
variable.

Finally, for positive affect, one lone effect emerged and that
was a positive linear trend for child positive affect. This result
indicates that with increasing maturity, the daughter displays

increasing rates of positive affect. Given that the females in the families studied here tended to display considerably more positive affect than the males, this finding supports the Gender Intensification Hypothesis (see Hill & Lynch, 1983, for a review) whereby girls appear to act in a more gender stereotyped fashion with increasing maturity (to be discussed in more detail below).

Although there were also findings given for talking time, proportions of dyadic talking, affiliation, and control (for which no predictions were advanced), these findings will be referred to in subsequent sections of this discussion.

Hypothesis 2 of Study 2

Although the findings for frequencies inform us as to what types of behaviors are occurring at higher rates in families from certain menarcheal groups, they do not inform us as to whether these high rates for each family member are occuring in the same families. For example, frequency data may indicate that mothers disagree with daughters at higher rates in group 2 families and that daughters disagree with their mothers more in group 2 families, but they do not indicate whether such high rates co-exist in the same families. If such high rates did co-exist, we would be safer in talking about conflict in these "high rate" families. Thus, it was predicted that reciprocal mother, father, and daughter interference behaviors would be most highly correlated in groups 2 and 4. For example, it was expected that rates of MdC (mother disagrees with daughter) would be

more highly correlated with CdM (child disagrees with mother) in menarcheal groups 2 and 4 than in menarcheal groups 1 and 3.

Results for disagreements and interruptions supported this hypothesis. The mean correlations for interruptions (listed in order for groups 1 to 4) were: .33, .52, .27, and .41. For disagreements, the corresponding correlations were: .40, .50, .19, .48. Thus, high rates of these interference behaviors do tend to co-exist in the same families more frequently in groups 2 and 4.

Unfortunately, these correlational analyses do not actually assess "reciprocity." They only tell us, for example, that in groups 2 and 4, mothers who interrupt their children at high rates have children who interrupt their mothers at high rates. Using the same example, we do not know if mothers who interrupt their children at higher rates have daughters who more frequently reciprocate their mothers' interruptions immediately after they have occurred. Demonstrating this would allow us to be more convinced that dyadic conflict is occurring in these menarcheal groups. To determine whether this was the case, we needed to use sequential analytic techniques. The results of these analyses are presented next.

Hypothesis 3 of Study 2

It was predicted that reciprocal sequences of interference behaviors (i.e., interruptions and disagreements) would be more common in groups 2 and 4 and that the z-scores that represent such sequences would be highest in groups 2 and 4. Because of the high correlations between the "proportion of matches" indices and the z-

scores, the former were dropped from subsequent analyses. Thus, only the results for the z-scores were presented.

Interestingly enough, only one effect emerged in all of the analyses (for Hypothesis 3) for the father dyads (father-mother and father-child). Given this lack of findings for these dyads, only the results for the mother-child dyad and an overall familial analysis were given. This "overall" analysis was done by examining sequences of interference behaviors within the family. As a result, these sequences did not necessarily involve reciprocity within a dyad and could include sequences such as mother interrupts child followed by father interrupts mother.

For the mother-child dyad, relatively high z-scores representing reciprocity of interruptions, disagreements and interference behaviors were consistently found in group 2. This finding supports hypothesis 3. For group 4, however, the results varied. In the case of interruptions, the means for this group tended to be relatively high but in the case of disagreements, the means for group 4 were relatively low. In the case of interference behaviors, it appears that the significant effect for the mother-child dyad was due to the same effect for disagreements (thus making the mean for group 4 relatively low).

The significant effects for the overall interference variable (computed for the entire family) were due, of course, to the combined effects of disagreements and interruptions. In this analysis, the z-score means for groups 2 and 4 were relatively high (the latter being due to the strong overall effect for interruptions). Thus, when interruptions and disagreements were collapsed into a single variable

(interference) and when the results were examined on a family- rather than dyadic-level, the results supported the hypothesis.

Hypothesis 4 of Study 2

For hypothesis 4, it was predicted that sequential pairs of interference behaviors and positive affect would yield higher z-scores in groups 1 and 3 and would yield lower z-scores in groups 2 and 4. Thus, the purpose of this set of analyses was to determine, for example, whether father disagreements of daughter would be less frequently followed by daughter positive affect in groups 2 and 4. It was reasoned that in an environment where there is more conflict (presumably in groups 2 and 4), family members would be less likely to respond to another family member's interference behavior with positive affect. As in hypothesis 3, few effects emerged for the father dyads and were therefore not reported.

Of the seven significant effects for the mother-child dyad and the overall family analysis, four were negative linear effects. These trends suggest that, after menarche, there is a decreasing tendency for interference behaviors and positive affect to be linked within the mother-child dyad and within the family as the daughter matures. For disagreements, a negative cubic trend emerged in the overall family analysis that was in line with the predictions. That is, z-scores for disagreement-->positive affect sequences were lower in groups 2 and 4, thus suggesting that these behaviors were less likely to be linked shortly after menarche and in the early maturing group. Finally, two findings emerged for interruptions that were contrary to

the predictions. Positive cubic trends emerged in one dyadic analysis
as well as in the overall family analysis suggesting that the z-
scores were lower in groups 1 and 3. Closer inspection of these
findings, however, reveals that the means were quite similar in
groups 1, 2, and 4 and that the lowest mean emerged for group 3, thus
accounting for the effects. In sum, then, the findings for this set
of analyses tended to conform with the predictions advanced for
Hypothesis 4, at least for group 2 and especially for interference
behaviors and disagreements.

Hypothesis 5 of Study 2

It was predicted that the z-scores representing co-occurrences
of interference behaviors and positive affect in the same person
would be most frequent in groups 1 and 3 and less frequent in groups
2 and 4. In the case of hypothesis 5, significant findings emerged
for all dyads and, thus, all were reported.

Although these findings were complex and many ran contrary to
predictions, they were indicative of a number of interesting trends.
First, it appears that when positive affect accompanies interference
behaviors in one dyad, it may be withdrawn from such interference
behaviors in other dyads. Examining the interference co-occurrence
variables, for example, one finds that when the co-occurrence of
mother interfers with father and mother positive affect is more
likely, the co-occurrence of child interfers with father and child
positive affect is less likely. A similar result emerged for
disagreements. Given these findings, we again see that: (a) systemic

interpretations are probably required to account for the effects that have emerged, and (b) although some behaviors may occur as predicted, the reactions of other family members to these behaviors may be such that their results run contrary to predictions.

Second, and with regard to interruptions, the lowest z-scores for the co-occurrence of interruptions and positive affect (for the significant relations) tended to emerge for group 3 rather than for groups 2 and 4. Thus, it may be that these sequences occur developmentally at a time other than that which was expected. Whereas reciprocal sequences of interference behaviors appear to be at their peak in group 2, the co-occurrence of these behaviors with positive affect tended to be at relatively low levels in group 3. What may be happening, then, is that reciprocity of interference behaviors occurs earlier in the pubertal sequence (0-6 months after menarche) and that affect is withdrawn from interference behaviors later in the pubert sequence. That is, it may be that after experiencing repeated sequences of interference behaviors (i.e., conflict), family members may become less likely to temper their interference behaviors with positive affect. This "withdrawl" of positive affect may be done either to increase the potency of their interference behaviors or because conflict has become chronic thus causing individuals to feel less positive about the interaction as a whole, and therefore less likely to exhibit positive affect.

Implications of the Results for the Immediately

Post-Menarcheal Group (Group 2)

A fairly consistent pattern of results emerged in Study 2 for the immediately post-menarcheal group (less than six months since menarche; group 2). That is, when significant effects emerged, the following results characterized group 2 as compared to the premenarcheal group (or group 1):

1. Family members in group 2 interrupted each other more.

2. Family members in group 2 disagreed with each other more.

3. Family members in group 2 exhibited higher reciprocal rates of interruptions and disagreements as determined via correlational analyses (hypothesis 2).

4. For mothers and daughters in group 2, z-scores representing reciprocal sequences of interruptions tended to be greater.

5. For mothers and daughters in group 2, z-scores representing reciprocal sequences of disagreements tended to be greater.

6. For mothers and daughters in group 2, z-scores representing reciprocal sequences of interference behaviors tended to be greater.

7. For mothers and daughters in group 2, z-scores representing dyadic sequences of disagreements and positive affect tended to be lower.

8. For mothers and daughters in group 2, z-scores representing dyadic sequences of interference behaviors and positive affect tended to be lower.

It should also be noted that these findings also tended to hold up when comparing group 2 with group 3 as well. That is, group 2 tended (with some exceptions) to differ from group 3 (the 6-12 months-ago group) in the same manner in which it differed from group 1. The only set of findings that deviated remarkably from this three group pattern were the findings for co-occurrence of interference behaviors and positive affect in the same person. This latter finding was somewhat surprising given that the co-occurrence of interruptions and positive affect in the same person was highly related to the observational and questionnaire validation measures in Study 1.

Given these findings for group 2, it appears that a coherent set of results based upon observational data (i.e., frequency, correlational, and sequential data) has emerged. These results support the notion that familial adaptation to menarche involves a temporary period of perturbations in family relationships shortly after menarche. Moreover, they are consistent with findings of earlier studies from the same project but with different families. In the earlier Hill et al. (1985a) study, for example, we found that children in the immediately post-menarcheal group (group 2) reported less maternal acceptance, less paternal acceptance, more rules and

standards, less maternal influence, and less paternal influence than was the case for the girls in groups 1 or 3. Mothers in this group reported fewer activities with the family and more disagreements over rules than did mothers in groups 1 or 3. In fact, the results for girls are similar to those that have emerged for boys (Hill et al. 1985b; Steinberg, 1981). If we ignore menarcheal group 4, the pattern of the findings for the first three groups has the quadratic pattern (the inverted U-shaped curve) that characterizes the results for boys.

Our findings for girls are also similar to those that have emerged in other laboratories. Steinberg (1987) has found that "pubertal maturation increases emotional distance between youngsters and their parents" (p. 457; a notion that he refers to as the "distancing hypothesis"; Steinberg, in press). In families with adolescent girls and with child and parent report, Steinberg (1987) found that with increasing physical maturity, there is less cohesiveness with mothers and fathers, less maternal and paternal acceptance, fewer calm communications between parents and their adolescent daughters, increases in the intensity of conflicts with mothers, increases in maternal control, and increases in emotional autonomy. Clearly, such increasing "distance" may precede or follow what I have referred to as "conflict."

Although they did not analyze their data separately for each gender due to a small N, Papini and Sebby (1987) found that family members in their mid-pubertal group (referred to as the transpubertal group) felt less satisfied with family relations and they also evidenced fewer supportive interactions. Surprisingly, they did not

find an increase in conflictual realtions at mid-puberty. Finally, in another recent study, Aro and Taipale (1987) found, with a large sample of Finnish girls, that increasing physical maturity was related to increases in psychosomatic complaints and drinking. Although the latter study does not involve family relations, it does highlight the stressfulness of pubertal change (see also Ruble & Brooks-Gunn, 1982).

Thus, a number of investigators from several countries using a variety of measures (both observational and questionnaire as well as parent and child report) and research designs have found similar results. Given the similarity of the findings, what does the current study add to our knowledge? First, this is the first study of the relations between puberty and family relations where sequential analysis of indices of conflict was employed. Although there have been speculations in the literature that the perturbations observed after the onset of puberty are indicative of increased conflict (see Hill & Holmbeck, 1987), we have not been able to determine the nature of these perturbations. The fact that reciprocal sequences of interference behaviors were more likely in families with immediately post-menarcheal daughters suggests that conflict (in the sense of there being more "engagement") is more common in these families.

Second, because sequential analyses were employed, we also have evidence that disagreements and interference behaviors are less likely to be followed by positive affect (in the person being disagreed with, for example) in families with girls who have recently experienced menarche. That is, we now have information concerning the effect of pubertal change on the affective nature of family

interaction. Not only is there an increase in conflict but there also appears to be a withdrawl of positive affect as well. Montemayor (1985) and Papini and Sebby (1987) also report that decreases in positive behavior may characterize family relations during adolescence. This finding is also in line with Steinberg's "distancing hypothesis." In the present case, decreases in positive behavior per se were not found, but interference behaviors do appear to be delivered with less positive affect in physically mature girls.

Third, this study (particularly Study 1) also provides construct validity for the observational measures employed. Although Steinberg (1981), for example, found that "conflict" in the form of interruptions was at its peak in families with apex pubertal sons, we do not know what behavioral measures such as interruptions actually assess. This criticism applies to other studies involving observational variables as well (e.g., Hetherington, Stowie, & Ridberg, 1971). In the present study, preliminary evidence attesting to the validity of the conflict variables employed here was presented. Although, the most valid measures did not necessarily yield the most striking findings (e.g., the co-occurrence of interruptions and positive affect in the same person), the validation results of Study 1 provide considerable information about the effects that emerged in Study 2.

Although the bulk of the findings for group 2 suggested that family adaptation to menarche consists of conflict in family relationships shortly after menarche, another set of findings also emerged that makes the picture more complete especially with regard to the father-daughter dyad. In addition to reporting the findings

for the "conflict" measures, I also included a set of findings for talking time, the proportion of dyadic talking, affiliation, and control. Examining the means for group 2 in comparison to those for group 1, the following results emerged:

1. For talking time, fathers and daughters both talk more and mothers talk less in group 2 as compared to group 1.

2. For proportions of dyadic talking, fathers and daughters talk more to each other and fathers and mothers talk less to each other in group 2 as compared to group 1.

3. For affiliation, fathers show more affiliation toward daughters, but mothers and daughters show less affiliation toward fathers in group 2 as compared to group 1.

4. For control, fathers exhibit more control toward mothers and daughters in group 2 than in group 1. Moreover, daughters evidence less control toward fathers with increasing maturity.

These findings are important for a number of reasons. First, it appears that there is more "engagement" in the father-daughter dyad shortly after menarche. In this immediately post-menarcheal group, fathers and daughters are talking more and are talking more to each other than was the case in the premenarcheal group. Fathers are exhibiting more affiliation and control toward daughters as well. Thus, what we may be seeing in the fathers' increased talking and

warmth is some recognition on the part of the father that the
daughter is now a sexual being.

Although the observed findings will be discussed again in the
section on the role of conflict in the adaptation to menarche where I
compare the mother-daughter and father-daughter dyads from a
psychoanalytic perspective, let it be said that these findings for
fathers support current psychoanalytic theorizing regarding the role
of the father during the daughter's development. As Chodorow (1978)
points out, many in the psychoanalytic camp claim that it is "the
father's role to shape his daughter's sexuality" and that his input
is critical during periods when "a girl is supposed to be negotiating
her transition to heterosexuality" (p. 139). Similarly, Tessman
(1982) argues that "the contribution of the father in this process
revolves around his simultaneous role as object of her excitement and
model in its transformation" (p. 238). Finally, Hammer (1982)
believes that fathers "have to accept their daughters' sexuality;
even accept, however unconsciously, the fact that their daughters are
sexy. Yet they have to resist their own attraction" (p. 84).

We have other research support as well. Hetherington's (1972)
findings concerning daughters from father-absent homes are in line
with the psychoanalytic position. She found that the girls from
father-absent homes were less secure around males but that there were
no effects regarding their interactions with females. Thus, it
appears that fathers do play a role in their daughter's development
and that they do respond to their daughters' menarche. Shortly after
the event, they seem to pay more attention and provide more warmth in
a manner that may be characterized as flirtatious or even seductive,

but also in a way that appears to be adaptive insofar as it aids their daughters' "transition to heterosexuality."

Second, this set of findings is also interesting for the daughters. Although daughters also talk more to their fathers, they appear to be _less_ affiliative and _less_ controlling after menarche. The result for affiliation suggests that daughters may be somewhat uncomfortable with the "advances" made by their fathers. As will be discussed in more detail later, it may also be that daughters are quite involved with the individuation process that they are engaged in with their mothers (Chodorow, 1978) and that they do not expend as much energy in the father-daughter relationship. The finding for control reveals that daughters may also be more deferent toward fathers with increasing maturity. This finding is in line with the Gender Intensification Hypothesis. Hill and Lynch (1983) argue that available research data supports the notion that "there is an acceleration of gender-differential socialization during adolescence, perhaps at the onset of puberty or shortly after, and perhaps especially for girls" (p. 201). It appears that, shortly after menarche, girls may be rewarded for passivity and the like (Chodorow, 1978) and that these rewards may come principally from the father.

Third, the findings also have implications for the mother-father dyad. After menarche, it appears that there may be some tension in the marital dyad; mothers and fathers are talking less to one another, mothers are less affiliative toward fathers, and fathers are more controlling toward mothers. It is my belief that the engagement that seems to be occuring in the father-daughter dyad shortly after menarche may result in less engagement in the marital dyad. Fathers

are paying less attention to mothers and the mothers respond to this spousal withdrawl. In sum, then, these findings support psychoanalytic theorizing and I will return to these issues later when I describe the processes in more detail. (It is worth noting that the results described here for affiliation differ from those reported by Cantara, 1983, who used a subsample of the families employed here. He found that mother affiliation toward daughter was lower [with maternal rating of menarcheal status] and that father affiliation toward daughter was higher [with paternal rating of menarcheal status] shortly after menarche. Finally, he found that maternal affiliation toward father was higher [using a global rating of menarcheal status] in the second most mature group. Aside from the latter finding, the results are similar to those that emerged here for the larger sample with daughter report of menarcheal status, insofar as mothers are displaying less affiliation and fathers are displaying more affiliation shortly after menarche.)

Returning now to the issue of conflict, the most important question that remains unanswered after this examination of the results for group 2 is this: Why are there perturbations and increased conflict in family functioning shortly after the onset of certain pubertal changes? Possible answers to this question are reserved for a later section where I address the role of conflict in the adaptation to pubertal change.

Implications of the Results for the Early Maturing

Group (Group 4)

The set of significant findings for early maturers (group 4) is less coherent than the set of findings for group 2 (the immediately post-menarcheal group) and is, as a result, more difficult to interpret. On the other hand, most were in line with the hypotheses and those that were not seem to support the notion that families in group 4 (i.e., those with early maturing daughters) are less "engaged" or "cohesive" than are those in other groups. More will be said about this below. The following results emerged for group 4:

1. Family members in group 4 talked less than members of other families (groups 1, 2, or 3).

2. Group 4 family members interrupted each other less than was the case in other families (groups 1, 2, or 3).

3. In some dyads (esp., father-daughter), family members in group 4 disagreed with each other at rates similar to those for group 2 (thus yielding cubic trends). In other words, they tended to disagree with each other more than families in groups 1 and 3.

4. Affiliation and control were at their lowest levels in group 4
(most of the significant effects emerged for the father-daughter
dyad) as compared to the levels in all other groups. In fact, out of
36 possible comparisons, the group 4 means were lower than the means
for the other groups in 33 of the comparisons.

5. Child positive affect was at its highest level in group 4 (as
compared to groups 1, 2, and 3).

6. Fathers and daughters talked more and talked more to each other in
this group as compared to groups 1 and 3 (i.e., the means for
proportions of dyadic talking were similar for groups 2 and 4).
Similarly, mothers and fathers talk less to each other in group 4 as
compared to groups 1 and 3.

7. Family members in group 4 exhibited higher reciprocal rates of
interruptions and disagreements as compared to groups 1 and 3
(determined via correlation analyses; hypothesis 2).

8. For mothers and daughters in group 4, z-scores representing
reciprocal sequences of interruptions (in the direction of MiC-->CiM)
tended to be higher than was the case for groups 1 and 3. For the
"total familial interruptions" variable, the z-scores were higher in
group 4 than in any other group.

9. For mothers and daughters in group 4, z-scores representing reciprocal sequences of disagreements tended to be lower in group 4 as compared to all other groups.

10. For mothers and daughters in group 4, z-scores representing reciprocal sequences of interference behaviors tended to be greater (at least in the case of the overall family analysis).

11. For mothers and daughters in group 4, z-scores representing dyadic sequences of disagreements and positive affect tended to be lower.

12. For mothers and daughters in group 4, z-scores representing dyadic sequences of interference behaviors and positive affect tended to be lower.

Thus, on the one hand, we have lower levels of the following in group 4: talking, interruptions, affiliation, control, father-to-mother and mother-to-father talking, reciprocity of disagreements, dyadic sequences of disagreements and affect, and dyadic sequences of interference behaviors and positive affect. On the other hand, I found higher levels of: disagreements, child positive affect, reciprocity of interruptions, reciprocity of interference behaviors, and father-to-daughter and daughter-to-father talking. In general, most of these findings are consistent with the hypotheses; group 4 families (families with early maturing daughters) appear to be in more conflict than were the pre-menarcheal families or group 3

families. Not only do we find less affiliation, and lower z-scores for sequences of interference behaviors and positive affect but we also find higher frequencies of disagreements and reciprocity of interruptions and interference behaviors--all of which support a "conflict" interpretation. In other words, and in most cases, the group 4 means look much like those for group 2 and, as a result, these findings tend to support those found with questionnaires by Hill et al., 1985a. Finally, the finding for positive affect deserves mention. Child positive affect was quite elevated for this group and may indicate that girls in group 4 have begun to adopt a more gender-sterotyped behavioral repertoire--a finding that may be in line with the Gender Intensification Hypothesis (see Hill and Lynch, 1983, for a review).

Despite this general trend, exceptions did emerge; there were lower frequencies of interruptions and lower z-scores for reciprocity of disagreements in group 4. In addition to finding fewer interruptions, we have less talking and less control in families from this group. Mixed findings, such as these, are actually typical of studies where pubertal timing (early vs. late maturers) is the principal focus. As Steinberg (1987) has argued in a recent review, "studies of pubertal timing and family relationships are more equivocal than studies of pubertal status" (Steinberg, 1987, p. 451). In neither the Steinberg (1987) study nor the Aro and Taipale (1987) study, were there many effects of pubertal timing in girls (i.e., late versus early maturation) after controlling for the effects of pubertal status. On the other hand, Magnusson, Stattin, and Allen

(1985) found that early maturing girls were clearly at risk for a number of personal and social difficulties.

Although the findings that emerged in the current study are somewhat mixed, the bulk of the findings cohere rather well if interpreted from a perspective other than the "conflict" perspective. In group 4, there was less talking, affiliation, control, and interruptions. My argument, and the argument that I prefer, is that rather than being characterized exclusively by more conflict, per se, it appears that there may be a lack of "engagement" or "cohesiveness" in families with early maturing daughters as well. This "pulling away" could occur for at least two reasons. First, it may be that the lack of engagement is a consequence of considerable conflict lasting for some time because of the added stress resulting from early maturity. In short, these families may have found the chronic conflict to be highly aversive and therefore preferred to pull away to avoid such confrontations. Whether or not this is true of all families that have girls who began menstruating more than 12 months ago (rather than just those with early maturers) we do not know, owing to the cross-sectional nature of the study.

A second possibility is that these families have lacked cohesiveness for some time and that this type of interaction is typical for families with early-maturing daughters. Regardless of the explanation, a number of other data issues may also have played a role in the mixed nature of the findings. Because talking time levels were low for this group, rather unstable frequencies and z-scores may have emerged. Moreover, pubertal status and pubertal timing are confounded in group 4. That is, we do not know if the observed

effects are due to the fact that this group is early maturing or if
they emerged because these girls are more mature (biologically) than
the girls in the other groups. Finally, it is our experience that
parents and children exhibit nearly 100% agreement concerning whether
or not their daughter has experienced menarche. On the other hand,
they are somewhat less reliable at placing the timing of the event,
thus making placement in group 3 versus group 4 less reliable as
well.

A final question is: Why did the results for interruptions and
disagreements differ for group 4 (and not for group 2)? For group 4,
there were higher levels of disagreements but lower levels of
interruptions (although opposite trends were found for reciprocity of
interruptions and disagreements). The frequency findings suggest that
disagreements may take the place of interruptions as negotiation
strategies with more mature daughters. That is, we may have some
evidence for the notion that disagreements and interruptions serve
different purposes at different developmental levels. Certainly
Cooper, Grotevant, and Condon (1983) would agree with this notion,
given their finding that disagreements are associated with identity
development. Unfortunately, the findings for reciprocity were
contrary to this interpretation and these issues will therefore not
be discussed further.

Findings for Mothers Versus Findings for Fathers

In general, there were remarkable differences between the results for fathers and the results for mothers. Many of these differences were highlighted when I discussed the results for group 2. Although I will return to these issues again in the section on the role of conflict in the adaptation to pubertal change, it is worth discussing possible interpretations of the rather large discrepancies in this set of results. In general, the findings of the present study appear to indicate that mothers and daughters are in more conflict after menarche than are fathers and daughters. Moreover, fathers appear to respond to their daughters' menarche by paying more attention to their daughters in a somewhat affiliative manner.

The finding of more conflict in the mother-adolescent dyad than in the father-adolescent dyad is common in this literature (Hill et al., 1985a, 1985b; Montemayor, 1982; Steinberg, 1981, 1987). Steinberg (1987) cites four possible explanations for this consistent finding: (a) adolescents may find it easier to engage in conflict with the lower-status parent, (b) object relations theorists (e.g., Chodorow, 1978) have maintained that adolescents have a stronger need to individuate from their mother than from their father and therefore there may be more conflict with mothers (a more detailed discussion of these notions is given below in the section "The Role of Conflict in the Adaptation to Pubertal Change"), (c) because parent-adolescent conflicts tend to occur over mundane issues (Montemayor, 1983; Smetana, in press), and because mothers are more involved with such

matters, conflict may be greater with mothers, and (d) father-adolescent relationships tend to be emotionally flat and may therefore be less conflictual. Hill (in press) suggests a fifth reason based on the Gender Intensification Hypothesis (see Hill & Lynch, 1983, for a review). According to Hill, and based upon the findings of a number of studies, it appears that fathers do more of the "differentiating by gender" than do mothers. At least in the case of girls, then, conflict with fathers may not be allowed because it is not in line with their feminine gender role. I will now discuss the role that conflict may play in the adaptation to pubertal change.

The Role of Conflict in the Adaptation to Pubertal Change:
A Two-Factor Theory

In perhaps the most important section of this discussion, I propose a two-factor theory to explain how conflict appears to play a role in the adaptation to pubertal change. Thus far, I have documented that there is an increase in conflict, particularly in the mother-daughter dyad, shortly after menarche. Given this finding and similar findings of other investigators, it appears that we have begun to demonstrate that conflict plays a role in the adaptation to pubertal change but we have not specified what role it plays. I believe that conflict plays an adaptive role in healthy families in the sense that it promotes adjustment to developmental change, and that there are two processes--one intrapsychic and the other extrapsychic--that allow conflict to play this role and make moderate

levels of conflict inevitable in healthy families. With regard to the extrapsychic process, the conflict seems to play an information-providing role in that it informs the individuals involved that a more mature person is now living in the home. In the case of the intrapsychic process, the conflict appears to play a role in facilitating the individuation process that is triggered by reactions of the child and parents to pubertal change. As with any two-factor theory (e.g., the two-factor theory of avoidance conditioning), it is believed that the two processes that serve to promote the conflict are distinct but interrelated.

In the Introduction, I listed two unanswered questions that I would address in this study:

1. Are the observed perturbations indicative of conflict?

2. Are the perturbations adaptive in the sense of promoting healthy and needed transformations in familial relations?

Although we have at least a preliminary answer of "yes" to the first question, the second question has not really been addressed thus far in this Discussion. Before one can answer the question of whether conflict is "adaptive", one must first ask the question "Why does the conflict occur?" Conflict may be the result of a number of underlying factors in the individuals involved. If the "goal" of these underlying processes is adaptation and they occur in healthy families and these underlying processes also promote a form of conflict that makes the "goal" possible, then one is more safe in

assuming that the conflict is adaptive. Certainly this is the case with many cognitive-developmental theories (Kohlberg, 1969; Piaget, 1970; see Shantz, 1987 for a review) whereby conflict is "an essential impetus to change, adaptation, and development" (Shantz, 1987, p. 284). In the present case, it appears that conflict is the adaptive manifestation of the underlying processes that are responses to pubertal change. If the underlying processes and subsequent conflict actually made the parent-adolescent relationship more dysfunctional than it would have been without the conflict, then these processes that promote the conflict and the conflict itself would be _mal_adaptive.

Perhaps an example will make these points clear. Most individuals in this culture leave home at some time in their life and, for many, this home-leaving occurs toward the end of their teens or in their early twenties. We might ask if home-leaving is adaptive and why it occurs. One can speculate that the underlying process that leads to the home-leaving involves autonomy needs. The available research suggests that home-leaving is adaptive. Sullivan and Sullivan (1980) found that boys who left home to go away to college reported an increase in their affection for their parents and their parents' affection for them as compared to boys who did not leave home to attend college. In addition, their affection was greater than it was prior to the home-leaving. Thus, it appears that the underlying process, autonomy-seeking, is adaptive and that the behavioral manifestation of this process, home-leaving, is also adaptive. Both appear to enhance the relationship between the parents

and adolescents and it appears that the relationship would have worsened had the home-leaving not occurred.

In the present case, I propose that there are two processes that underlie and promote the occurrence of conflict subsequent to the onset of pubertal change. As noted above, I believe that these processes are adaptive and that they promote interpersonal conflict (the behavioral manifestation of the underlying processes) that is also adaptive--insofar as the attachment between the individuals and their relationship would suffer if these processes and the resulting conflict did not occur. I begin with an explication of the assumptions underlying this model and proceed to a discussion of the underlying extrapsychic and intrapsychic processes.

Assumptions

Before I discuss what I believe are the underlying processes that promote the adaptive parent-adolescent conflict that seems occur shortly after the onset of pubertal change, the assumptions of this theory will be given. First, I am assuming, based on the results of this and other studies that some form of conflict occurs in families shortly after the onset of pubertal change, at the peak of pubertal change, or after some main event such as menarche. In order to explain the role that such conflict plays in the process, one must assume that the conflict exists in the first place. I also believe that this conflict is greater and may be qualitatively different than any which has preceded it because the issues and the relative statuses of the family members have changed (see discussion of

Smetana's, in press, research below in the section on extrapsychic processes).

Second, although "conflict" is the focus of the present effort, findings by other investigators suggest that several other aspects of familial functioning also vary as a function of pubertal status, namely, autonomy, closeness, control, "distance" and the like. Although I have used the term conflict to describe the process, I have used this term interchangeably with other terms such as perturbations and disruptions. On the other hand, because the findings of this study suggest that the perturbations are, in fact, conflictual rather than mere changes or agitations (i.e., sequences of interference behaviors are more common in families with immediately post-menarcheal girls), I prefer the term conflict. These arguments aside, I have examined several non-conflict variables as well (e.g., affiliation, control, positive affect) and they show similar patterns. Moreover, and as will be seen when I discuss the intrapsychic processes that appear to underlie the observed conflict, issues such as autonomy also appear to come into play (in the form of individuation) along with conflict. Thus, it seems that there is an overall disruption (or "distancing" as Steinberg, 1987, would prefer to call it) of the family across a number of dimensions shortly after the onset of puberty. Although I will continue to employ the term conflict, I use the term loosely to be indicative of a general state of disruption in the family. Some of the observed changes in family functioning may be bi-products of conflict (e.g., less closeness) or may, in fact, cause the conflict (e.g., individuation or autonomy strivings). A more serious discussion of the interrelations between,

for example, conflict, autonomy, attachment, affiliation, and control is beyond the scope of this discussion.

Third, I am also assuming that the effects of pubertal change on behavior are not direct but are mediated and moderated by social-situational and individual factors (Peterson & Taylor, 1980; Richards & Peterson, 1980). Thus, factors such as gender, social norms, school transitions and the like can certainly interact with pubertal changes to produce specific types of behavior (e.g., Simmons & Blyth, 1987). Because I have assumed a transactional process all along, these notions are consistent with my stance and are clearly an integral part of the theorizing that is to follow.

Fourth, I am assuming that there are various forms of conflict, some of which are adaptive and some of which are not. As noted in the introduction, there appears to be one form of conflict that is typical of all families (referred to as conflict A) and another form that is only found in less healthy families (referred to as conflict B). The mild form "may be an essential component of the transformations of relations with parents that occurs during puberty" and the more extreme form "may or may not be associated with transitional stress, and may have its origins in earlier parent-child relations" (Montemayor, 1983, p. 98). The processes enumerated below refer to the milder form of conflict (conflict A) that I believe to be adaptive.

Finally, I am assuming that the processes that I will discuss apply to this culture only. In cultures where, for example, children are removed from one or both of their parents at the time of puberty, some of the processes that I propose could not occur. For example,

the extrapsychic processes may depend on there being parent-
adolescent interaction around the time of puberty. Because the
intrapsychic processes that appear to emerge during adolescence may
affect internal representations of significant others, it may be that
some of these transformations are, in fact, cross-cultural and are
not dependent on the presence of one's parents during puberty.

Extrapsychic Processes

A major task of developmental psychologists is to capture change
whereby they "trace the transformations that take place within the
individual over the periods of childhood, adolescence, and adulthood,
and...characterize the manner in which people remain identifiably the
same but also change radically as they grow older" (Gelfand &
Peterson, 1985, p. 65). Given that "change" is common to all humans
(and to all living things for that matter), it follows that there
will be interindividual differences in terms of how each individual
adjusts to their own change. In the same way, there will be
interindividual variability in how each individual adapts to change
in others as well. Thus, it follows from these arguments that there
exists a personality variable, that I will refer to as "adaptability
to change," for which there are (potentially) measurable individual
differences. It is this notion that underlies the extrapsychic
process that I now discuss. After describing the processes in more
detail below, I will make distinctions between this personality
variable and other similar variables such as "ego-resiliency" (Block

& Block, 1980) and "adaptability" (Olson, McCubbin, Barnes, Larsen, Muxen, & Wilson, 1983; Olson, Sprenkle, & Russell, 1979).

For some time, families have been regarded as systems that have some continuity over time but must also adapt to changes occurring within the system and to changes occurring outside the system that may impact on family functioning (e.g., Minuchin, 1974; Reiss, 1981). One could say that the system is at rest until it is confronted with an "insult" of some sort. Although the system must adapt in its own way, each individual within the system also has his/her own abilities and limitations in confronting such stressors. Simply said, some individuals adapt to changes in themselves and in others in more adaptive ways than other individuals. When a child begins to experience pubertal changes (menarche being perhaps the most dramatic), individuals vary in terms of how well they cope with these changes.

Before their child becomes pubertal, parents have probably developed a pattern of behaving with their children that is fairly entrenched. Even in the healthiest of families, these patterns of behaving are probably fairly rigid and resistant to change. I believe that these patterns of behavior between parent and child slowly change over time but that certain events lead to large increments of change. One such event is pubertal change. On the other hand, I believe that pubertal change by itself will not cause a change in these rather rigid patterns of behavior. Rather, it seems that parents must be "told" by their children that they are now older individuals and that they expect to be treated as such. Parent-

adolescent conflict seems to be the vehicle through which this information is conveyed.

A similar process seems to occur in many traditional marriages where the individuals marry at young ages, the husband assumes the "provider" role, and the wife assumes the "housewife" role. In this case, we have a fairly stable system that could probably continue for some time with no apparent conflict or change in roles. On the other hand, if they, for example, begin to feel financial pressure and the wife returns to school and then begins to work, she has changed. She probably feels different about herself and becomes accustomed to others (peers) treating her differently as well. The husband is certainly aware that his wife is working and that she now has a new role in the family but he may not change his behavior toward her. As a result, conflict probably ensues over various issues regarding the manner in which the husband behaves toward the wife. This conflict is adaptive, however, because it informs the husband that he needs to change his behavior.

In a healthy system, individuals experiencing change within themselves or within other members of their family will change in response to the conflict that results and they do so in a manner that enhances or protects the relationship. They see that their old roles are no longer appropriate and that conflict is resulting from their maintenance of these old roles--so they change. These individuals probably have a high level of "adaptability to change." Other responses to change are also possible. In fact, it seems that one of the following four responses are most likely:

1. A lack of recognition of the change and a lack of responsiveness to the subsequent conflict.

2. Recognition of the change but an innappropriate response to the change (e.g., employing a more severe authoritarian parenting style in response to pubertal change in one's male child).

3. Recognition or acknowledgement of the change but a refusal to change.

4. Recognition of the change with an appropriate response to the change.

It appears that many families respond to male pubertal change, and the subsequent increases in adaptive conflict, with a shift in the power hierarchy within the family (as described earlier). In a parallel process, families with girls appear to intensify their gender role expectations and reward passivity in their daughters. Other families may find equally adaptive responses to their child's pubertal change; there is no one appropriate response to pubertal change.

Returning now to the issue of conflict, it appears that there is an underlying process at work here that is not intrapsychic. The notion here is simply that the adolescent wishes his/her parents to recognize the changes that he/she is intimately aware of. Because of the rigidity of the roles other family members presumably adopt, change in response to change is not automatic. When a child's

pubertal changes do not lead to behavioral changes in others and are therefore not assimilated into their existing modes of behavior, then pressure is placed on these behaviors to change. Given a lack of change, the pressure increases, conflict ensues, and finally, others modify their behaviors to reduce the conflict. This process is not unlike the cognitive processes of assimilation and accomodation as spelled out by Piaget (1970; Ginsberg & Opper, 1969).

Thus, conflict appears to play a role in the process of adaptation to pubertal change. It provides information to all those involved that some form of behavioral change is needed so as to return the system to a resting state. Without conflict, no one would know when, if, or how to change their behaviors in response to change in others. Conflict appears to play an adaptive role in the sense that it facilitates needed transformations in parent-adolescent interaction and parenting behaviors. If certain behavioral changes do not reduce the level of conflict, then this "conflict feedback system" will provide feedback that further behavioral modifications are needed.

These notions are supported by existing empirical data. Most relevant here are Smetana's data concerning parent-adolescent conflict as studied within a social-cognitive framework (Smetana, in press; Turiel, 1983). She believes that "conflicts between parents and children are seen to emerge...[when]...the boundaries of legitimate authority are renegotiated during adolescence" (p. 2). More specifically, she discriminates between issues that are personal and issues that are conventional (and there are other issues as well such as: moral, pragmatic, psychological, and egoistic). She believes

that these issues constitute distinct domains of social judgment. A set of examples will help to illustrate her points. Social conventions include such behavioral uniformities as modes of dress, manners, and sex roles that are influenced by societal norms. Personal issues are those issues that are viewed by the individual as being beyond societal regulation and restriction. The types of friends one chooses, one's recreational activities, and behaviors such as smoking are sometimes thought of as personal issues and they "represent an important aspect of the individual's autonomy or distinctness from others" (Smetana, in press, p. 5).

As might be expected, some behaviors appear to fall within the jurisdiction of both the social convention domain and the personal domain; thus, they contain components of both. In fact, the often heated debate over whether women should be able make their own decisions concerning abortion is one example of the conflict that can occur between domains. Similar conflicts occur in families. One of Smetana's (in press) examples is as follows: "parents may justify the regulation of certain activities, like telvision viewing, on the basis of conventional concerns, while adolescents might view such issues as under personal jurisdiction and consider their parents' reasons to be misattributed" (p. 7). In fact, this is what she found. Adolescents tend to view more issues as falling within the personal domain than do parents (roughly 50% vs. 1%) and parents tend to view more as falling within the conventional domain than do adolescents (roughly 40% vs. 11%). Moreover, these discrepancies became more marked with increasing age (Smetana, 1987).

Although the type of development under consideration in the Smetana study (i.e., the development of social conventional concepts) is different than that studied here (i.e., pubertal change), the adaptational process seems to be virtually identical. In both cases, the children change developmentally and the parents' behaviors do not appear to change as a consequence. As a result, conflict ensues which provides information to the parents that the child has changed and that the parents' behaviors must also change. Clearly, extreme rigidity and refusal to change in either instance will result in more extreme maladaptive conflict (conflict B) and perhaps family psychopathology. Also, in both cases, the conflict is adaptive in the sense that changes would either not be observed or acknowledged without it; thus, the conflict is adaptive and necessary. (It is worth noting that many of these arguments are similar to those advanced by Vuchinich [1984]. Vuchinich argues that "some kind of boundary is always at issue in an oppositional interchange" [p. 219]. Consequently, oppositional interchange not only involves the transfer of hostility but also the exchange of interpersonal boundary information. From this perspective, the perturbations observed in families where adolescents are experiencing pubertal change may result from changes in the adolescent's expression of these new boundaries (or in Smetana's framework, the adolescents believe that more issues fall within their personal jurisdiction.) The parents, who also have boundaries at stake, react to this new information with opposition and, as a result, conflict ensues. Later in the pubertal cycle, boundaries are clarified and the system becomes less conflictual.)

The theorizing up to this point is also in line with Steinberg's (1987) data reviewed earlier and his "distancing hypothesis" (i.e., Steinberg proposes that the distance between family members increases after the onset of pubertal change). Although this "distancing" may occur for a number of reasons, one major contributor may be the lack of recognition on the parents' part of biological change in their adolescent. Thus, the increases in conflict and autonomy and the decreases in closeness observed by Steinberg may be the result, in part, of the conflict that emerges whereby the children inform their parents that they are changing.

In sum, then, we seem to have evidence that an adaptive underlying extrapsychic process (e.g., the observation and acknowledgement of biological change and greater maturity resulting in behavioral changes in other family members) and adaptive conflict (which results when behavioral change does not occur in response to the biological change) emerge in response to the physical changes of the early adolescent.

As implied above, I believe that the healthiness of the response to biological change (or any change for that matter) is governed by the degree that someone (either the parent or the adolescent) has "adaptability to change." If the individual is quite rigid, he/she is low in adaptability to change and if the individual is more flexible (or elastic, Lewin, 1951; or resilient, Block & Block, 1980) then he/she is high in adaptability to change. This construct is clearly central to the study of change and could be measured in its own right. Of course, I should distinguish between it and other related constructs. First, there is the Block's (Block & Block, 1980) notion

of ego-resiliency. This notion, which corresponds well to Lewin's
(1951) notion of boundary elasticity, is defined by the Blocks as:

"the dynamic capacity of an individual to modify his/her modal
level of ego-contol [i.e., impulse control], in either
direction, as a function of the demand charactersitics of the
environmental context...Ego-resiliency, when dimensionalized, is
defined at one extreme by resourceful adaptation to changing
circumstances and environmental contingencies, analysis of the
"goodness of fit" between situational demands and behavioral
possibility, and flexible invocation of the available repertoire
of problem-solving strategies (p. 48).

The Blocks (1980) go on to list the qualities of the ego-resilient
person, and they include such diverse abilities as "is better able to
process two or more competing stimuli" and "is engaged in the world
but not subservient to it." My notion of "adaptability to change" is
certainly one of the abilities of the ego-resilient person; after
all, the words "adaptation to change" are part of the Blocks'
definition. Yet, the notion of ego-resiliency is an all-inclusive
construct as can be demonstrated by the Blocks measurement strategy.

In their longitudinal study of the continuity of ego-resiliency
and ego-control over time, they have followed children since they
were 3 years old (beginning in 1968). The have included a broad range
of personality and cognitive measures, with multiple types of data
(self-report, observer, standardized testing) and multiple measures
for each type of data. They have also varied their measures (in a

developmentally appropriate manner) as the children get older.
Measures in the ego-resiliency category include: the Peabody Picture
Vocabulary Test (a measure of receptive vocabulary), the digit span
backwards subtest of the Wechsler tests (a test where the individual
recalls a series of orally presented numbers in the reverse sequence
from that presented), a motor inhibition test, a test of incidental
learning, a Q-sort, an object sorting task, a premature decision
making task, and many others.

It can be seen from this list of measures (which they combine
into a single composite), that they are attempting to measure a much
"larger" construct than that which I have attempted to describe here.
My notion of "adaptability to change" refers to the ability to change
one's behavior in response to changes in one's own self, to changes
in others, or to changes in their environment. The measurement task
for this construct could probably be accomplished with a single
measure including, for example, vignettes of situations where some
change has occurred for which the respondent would indicate what
their response to the situation would be. In short, I believe that
the personality characteristic "adaptability to change" is a subset
of the Block's (1980) notion of "ego-resiliency."

Second, my notion of "adaptability to change" should be
distinguished from what David Olson and his colleagues refer to as
"family adaptability" (Olson, McCubbin, Barnes, Larsen, Muxen, &
Wilson, 1983; Olson, Sprenkle, & Russell, 1979). Olson defines family
adaptability 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,

Barnes, Larsen, Muxen, & Wilson, 1983, p. 48). This construct is part
of a larger Circumplex Model of Families wherein families are thought
to differ on three fundamental dimensions: family cohesion, family
adaptability, and family communication. Family cohesion is defined as
"the emotional bonding that the family members have toward one
another" (p. 48) and family communication is described as a
facilitating dimension which is critical to change on the other two
dimensions; it is defined as the ability of the family to "share with
each other their changing needs and preferences as they relate to
cohesion and adaptability" (p. 49).

The Circumplex Model is typically presented graphically as a
standard bi-axial plot with two dimensions serving as the x- and y-
axes. Thus, families can be high or low in family cohesion and family
adaptability. In fact, there are four levels of each from low to
high. For example, family adaptability ranges from rigid to
structured to flexible to chaotic and family cohesion ranges from
disengaged to separated to connected to enmeshed. Thus, in a 4 x 4
matrix, there are 16 types of family systems (e.g., flexibly
enmeshed, structurally disengaged) with extreme ratings (low or high)
on either scale making them more pathological. Moderate levels of
both are desirable. Family communication is not included in the graph
because it is a moderating or facilitating variable.

Given this brief summary of Olson's system, it is clear that the
notion of family adaptability is similar to my notion of adaptability
to change. On the other hand, there is an important difference that
distinguishes them. Olson employs the notion family adaptability as a
family variable and he believes that the family as a system varies on

the dimension of adaptability. I am using the notion of adaptability
to change as an individual differences variable (i.e., an individual
personality trait) that presumably is affected by early temperament
and the like. (In fact, Thomas, Birch, Chess, Hertzig, & Korn, 1963,
employed adaptability as one of their dimensions of early personality
and temperament.) Thus, my notion is individual-focused and Olson's
is family-focused in terms of unit of measurement. Olson's family-
focus is illustrated by a listing of a few of the "family
adaptability" items from his Likert-scale quesionnaire (Family
Adaptability and Cohesion Scale III, FACES III, Olson, McCubbin,
Barnes, Larsen, Muxen, Wilson, 1985): Our family changes its way of
handling tasks, different persons act as leaders in our family,
parents and children discuss punishment together, and rules change in
our family. Given the fundamental differences between the notion of
"adaptability to change" and the other constructs discussed, it
appears that it is distinguishable from other similar notions and may
be highly predictive of responses to pubertal change.

Before proceeding to the section on intrapsychic processes, I
will review the arguments that I have described above. It appears
that there is an adaptive process that is primarily conscious (or
extrapsychic) that facilitates familial adjustment to pubertal
change. Although the changes may be observed by the individual
himself/herself and the family members involved, it seems likely that
the physical changes themselves do not induce behavioral changes.
Rather, the adolescent recognizes that behavioral changes in the
family are not forthcoming and, as a result, he/she engages in
adaptive conflict with the relevant family members so that they will

change. The conflict that emerges is adaptive because it provides
information to all members of the family that an older and now more
mature individual resides in the home who should, as a consequence,
be treated differently. Whether or not the individuals involved with
the adolescent change their behaviors in response to the conflict is
dependent on their level of "adaptability to change", an individual
differences variable that is distinguishable from other similar
constructs. I now summarize the companion intrapsychic process that
promotes conflict within the family as an adaptive response to
biological change.

Intrapsychic Process

Two implicit assumptions of the extrapsychic process just
described are that adaptive conflict arises in families with pubertal
early adolescents because of the information-providing role that this
conflict plays and that the responses to it are determined by the
personality traits (e.g., "adaptability to change") of the
individuals involved. Thus, this process is extrapsychic insofar as
intrapsychic mechanisms are not implicated in the process (i.e., what
is involved is the observation and acknowledgement of biological
change resulting in behavioral changes in other family members--all
of which is extrapsychic). It is my belief that adaptive conflict
also arises, in part, because of intrapsychic changes that occur
within the adolescent (although there are also changes within the
parents that coincide with the changes within the adolescent; Greene
& Boxer, in press; Stierlin, 1981). I begin this discussion with an

historical overview of the psychodynamic viewpoint and then proceed
to a discussion of how intrapsychic processes produce familial
conflict.

    Historical perspective. As pointed out by Howard Lerner (1987)
in the recently published Handbook of Adolescent Psychology, the
psychoanalytic theory of adolescence has evolved in much the same
fashion as the more general psychoanalytic theory. That is, the early
emphasis was on drive theory which was followed by a more intensive
focus on ego development and, perhaps most importantly, object
relations (Richards & Petersen, 1987). There are new trends in the
area of psychoanalytic theory and the overall thrust of these trends
is directed toward the integration of developmental psychology,
cognitive-developmental psychology, attachment theory, as well as ego
psychology. Writers in the area recognize that the developmental
tasks of adolescence are many (e.g., psychosexual development,
identity development, cognitive development, separation-
individuation, ego development, moral development) and that the
integration of all of these is perhaps the most important task (e.g.,
H. Lerner, 1987). These psychoanalytic thinkers no longer ignore
other psychologies and it appears that some are attempting to provide
us with a larger theory of adolescence.

    Despite the increasingly expansive canvas upon which current
psychoanalytic theorists are attempting to write, a number of basic
tenets still remain, especially in regards to adolescence. First,
puberty is held by many (Blos, 1962, 1979; Deutsch, 1944; Erikson,
1968; Freud, 1958; S. Freud, 1905/1957; Hall, 1904; H. Lerner, 1987;

Rousseau, 1762/1911) to be a significant event for the adolescent
that triggers a host of physical, intrapsychic, and social changes.
In a summary of S. Freud's view on the subject, Esman (1975) notes
that "puberty is, he suggests, the critical point at which all these
tributaries [pregenital aims of sexuality] merge to form the great
river of adult genital heterosexuality" (p. 11). As A. Freud (1958)
has argued, the ego is threatened by the upsurge of drives and
instincts that results from the onset of puberty and these changes
prompt a regression to a more primitive level of functioning.

Second, the recapitulation theory of adolescence is also alive
and well, although it has been altered dramatically in recent
writings (Blos, 1979; Chodorow, 1978; Kaplan, 1984). The original
recapitulation theory was first advanced by Ernest Jones (1922/1948),
his argument being that, during adolescence, the child
intrapsychically relives the first five years of his/her life. As H.
Lerner (1987) argues, the combination of S. Freud's drive/instinct
theory with Jones' recapitulation theory gave rise to the notion that
adolescence is a "period of normative storm and stress" (p. 57; also
see A. Freud, 1958).

Perhaps because the "storm and stress" notion was one of the
most testable hypotheses to come out of the psychoanalytic camp, some
researchers have discussed this notion. Although most studies were
not designed with the theory in mind, the bulk of the available
findings fail to support this early notion (Douvan & Adelson, 1966;
Grinker & Werble, 1974; Kandel & Lesser, 1972; Montemayor, 1982;
Offer, 1969; Offer & Offer, 1975; Offer, Ostrov, & Howard, 1981;
Rutter, Graham, Chadwick, & Yule, 1976). Even some psychoanalytic

writers have backed off from this traditional stance (Masterson, 1968). On the other hand, Hill and Holmbeck (1986) argue that such empirical evidence does not mean that we should forget about the role that parent-adolescent conflict may play during adolescence, and particularly during the adaptation to pubertal change. A number of reasons are cited: (a) existing studies tend not to test psychoanalytic theory, (b) respondents to questionnaires may not acknowledge the presence of conflict, (c) although conflicts within the family are typically over mundane issues, these conflicts may have great developmental significance, (d) investigators tend not to examine the adolescent's intrapsychic representations of parents (moreover, and as Kaplan (1984) notes, researchers employ questionnaires that tend not to tap inner dynamic changes and, after all, storm and stress "can occur without making a sound", p. 355), and (e) definitional issues regarding conflict are rarely attended to.

It is also the case that interpersonal "conflict" is rarely viewed as something "adaptive." As a result, in their efforts to argue against the notion that conflict is normative during adolescence, researchers have forgotten about the possible facilitative aspects of certain forms of conflict. Psychoanalysts, on the other hand, have always viewed parent-adolescent conflict as normative and adaptive. Unfortunately, however, many psychoanalytic writers (excepting, perhaps, Chodorow, 1978, Greene & Boxer, in press; and Kaplan, 1984) have forgotten that close familial relationships continue ("connectedness"; Cooper, Grotevant, & Condon, 1983) despite efforts at individuation on the part of the adolescent.

Some (Cohler & Geyer, 1982; Cooper, Grotevant, & Condon, 1983; Greene & Boxer, in press; Papini & Sebby, 1987; Stierlin, 1981) have argued that both connectedness and individuation can co-exist. Stierlin seems to have said it best when discussing his dialectical model (also see Papini & Sebby, 1982) of the separation process: "Optimally, this spiraling [of mutual individuation and differentiation occurring on various emotional, cognitive, and moral levels] leads to relative independence for both parties, yet is an independence based upon 'mature interdependence'" (p. 3).

Reconciliation between analysts and researchers could be accomplished if it is recognized that there are several forms of parent-adolescent conflict (Montemayor, 1983). One form of conflict appears to be typical of all families (referred to as conflict A) and another form appears to be found only in less healthy families (referred to as conflict B). Thus, psychoanalysts need to be more clear about what type of conflict they are referring to when they speak of "normative storm and stress" and researchers should be careful not to "lose sight of the fact that conflict is a part of any relationship, and that the ability to satisfactorily resolve differences is a key element to the continuation of a relationship" (Montemayor, 1983, p. 98).

This historical detour suggests that: (a) psychoanalytic writers are quite attentive to developments within the larger field of psychology, (b) there are basic and unique propositions in psychoanalytic theory that can aid us in explaining conflict at the time of puberty, (c) reconciliation between researchers and psychoanalytic theorists is possible if researchers attend to the

adaptive nature of conflict, if psychoanalytic writers recognize that parent-child attachment continues despite conflict and that detachment is probably more typical of highly disfunctional systems, and if there is the recognition that there are different forms of conflict. Given that psychoanalytic theory does have much to offer to researchers attempting to interpret their data, I will now proceed to a discussion of the intrapsychic processes that appear to produce the conflict that arises shortly after the onset of puberty.

Intrapsychic processes that produce adaptive conflict. Perhaps the best place to start in explicating these processes, is to describe Peter Blos' (1962, 1979) views concerning adolescence. In doing so, I will also draw upon recent theorizing by Nancy Chodorow (1978) and Louise Kaplan (1984). I will then describe how this theory can aid us in understanding the familial conflict that seems to emerge after the onset of pubertal change.

Blos has greatly advanced the recapitulation theory of adolescence and has provided much needed revisions of the theory. According to Blos, the goal of adolescence is to successfully negotiate the "second individuation process" by reworking early internalized and conflictual relationships. In this way, adolescents will be able to properly initiate nonincestuous relationships (H. Lerner, 1987). Regression occurs in the service of development and occurs following the onset of puberty. This "nondefensive" regression produces significant intrapsychic anxiety that presumably causes the remarkable behavioral changes (i.e., storm and stress) that Blos views as characterizing adolescence.

Blos' (1979) theory is based heavily on Mahler's (1971; Mahler, Pine, & Bergman, 1975) theory of the separation-individuation process of infancy. According to Mahler, there are several phases (symbiosis, differentiation, practicing, and rapprochement) whereby the infant gradually establishes a sense of self and a sense of distinctness from mother. During adolescence, these phases are translated into adolescent issues. For example, "differentiation" becomes the "shedding of family dependencies" (Blos, 1979, p. 142). The "second individuation process" involves the relinquishment of infantile parental ties. Not only does the regression (discussed above) lead to behavioral manifestations, but this relinquishment of infantile ties (a form of loss) also brings with it, for example, adolescent sadness and moodiness.

It is worth noting that Blos and other current writers (e.g., Kaplan, 1984) do not view adolescence as a complete recapitulation of infancy. Nor do they believe that these early representations remain fixed during the latency period. As Kaplan (1984) argues, "Adolescent individuation, which involves the reconciliation of genitality with morality, is altogether different from the separation-individuation of infancy. Separation-individuation occurs once and only once, during the first three years of life" (p. 95). Chodorow (1978) maintains that mother-daughter conflict during adolescence "concerns pre-oedipal issues, though it is replayed at a later time, informed by the development which has gone on and the conflicts which have emerged since the early period" (p. 137). Thus, current thinkers do not endorse the recapitulation theory wholesale.

A fundamental component of the "second individuation process" involves the notions of idealization and de-idealization. In order to further the individuation process, adolescents reportedly adopt a rather black-white view of the world (not unlike that attributed to adults with borderline personality conditions; Kernberg, 1976) whereby individuals outside of the family are idealized ("good" objects) and family members are de-idealized ("bad" objects). Peers, nonfamilial adults, celebrities and the like are thought to replace parents as significant objects (i.e., detachment from parent results in a reorientation to peers; H. Lerner, 1987), a process that Blos (1962) refers to as "object relinquishment and object finding" (p. 75). It is assumed that this detachment process results in considerable parent-adolescent conflict. It should result in considerable intrapsychic conflict as well since the adolescent is giving up those very ties that provided safety earlier in life (Kaplan, 1984).

Thus, we have regression and individuation, both of which are thought to produce considerable intrapsychic stress and familial conflict. Interestingly enough, the process is thought to differ for males and females. The task for males is to relinquish infantile ties to mother and to identify with father. Such identification is, in a sense, an identification with the aggressor (i.e., the one whom the son is competing with for the affection of the mother). The father-son relationship becomes critical for the maintenance of the son's self-esteem and the mother-son relationship undergoes a rather dramatic transformation. Klein (1984) argues in her book, Mothers and Sons, that "as the boy whom a mother has nurtured and protected all

these years tries out his masculine power, he can, for example, begin to take on the role of protector" (P. 126). Given these transformations, it is not surprising that research findings (e.g., Hill et al., 1985b; Steinberg, 1981) suggest that there is a shift in the power hierarchy in families with adolescent sons from a father > mother > son hierarchy to a father > son > mother hierarchy.

The task for females is somewhat different than that for males and requires considerably more space to describe. Although psychoanalytic theory tends to be male-dominated (Adelson & Doehrman, 1980), a number of thinkers have recently begun writing on the topic of girls (e.g., Blos, 1979; Chodorow, 1978; Hammer, 1975, 1982; Kaplan, 1984). For daughters, and according to Blos (1979), "the mother remains the central identificatory object" (H. Lerner, 1987, p. 66). Although this identification seems more intense for females, females (like males) desire autonomy from the mother. In fact, most who write about mothers and daughters, actually argue that considerable conflict can occur in this dyad. Chodorow (1978) is one who has written extensively on this topic.

According to Chodorow (1978), girls are mothered by women, and are, as a result, less separate than are boys. She argues that "girls come to define themselves mo_e in relation to others" (p. 93). The female integrates her relationship with her father with the existing relationship with her mother. S. Freud (1925), on the other hand, maintained that the girl blames her mother for her own "atrophied" state of lacking a penis. To make matters worse, the mother is seen as a rival because she possesses the daughter's father. Freud goes on to assert that the daughter comes to totally reject her mother.

Chodorow (1978) prefers to argue, however, that separation issues are particularly salient for the mother-daughter dyad because both mothers and daughters each tend to view the other as extensions of oneself. Hammer (1975) argues similarly: "for the vast majority of mothers and daughters, this emergence [i.e, individuation] remains only partial. At some level mothers and daughters tend to remain emotionally bound up with each other in what might be called a semisymbiotic relationship". Thus, Chodorow and others believe (unlike S. Freud) that because of the daughter's strong maternal attachment, she never really detaches from her mother (Chodorow, 1978; Deutsch, 1944; Hammer, 1975).

Although the daughter does evidence an attachment to her father, she frequently seeks the safety of the maternal attachment. It could be said, then, that the father does not become as complete an oedipal object for girls as the mother does for boys (Chodorow, 1978). In fact, many have argued that bisexuality is less conflictual an issue for girls because of their ability to oscillate between mother and father (Blos, 1979; Chodorow, 1978; Deutsch, 1944). Interestingly enough, Winch (1962) has found that attachment to the opposite sex parent retards courtship progress in late adolescent males but facilitiates it for girls; appears that boys need to detach themselves from mothers more than is the case for girls. In fact, psychoanalytic theory helps us to explain why conflict should be more common in the mother-son dyad than in the father-son dyad. Sons must detach from mothers and must assume a more powerful role within the family. Fathers do not lose any power in the process, so conflict with fathers is less.

But what of <u>girls'</u> conflict with their parents? As noted earlier, several writers have discussed the intensity of conflict that can occur in the mother-daughter dyad during adolescence (Chodorow, 1978; Kaplan, 1984). Because daughters must finally abandon the safety of the maternal attachment (at least to some degree) in order to procreate <u>outside</u> of the family, some transformations must occur (Steinberg, in press). Although the adolescent girl will take some of this relationship with her when she seeks a mate ("a maternal introject"; Tessman, p. 235) who can provide similar forms of nurturance (Kaplan, 1984), she must also "leave room for new possibilities" (Kaplan, 1984, p. 165). Thus, the girl must, at some point, "confront her entanglement in familial relationships" (Chodorow, 1978, p. 135). Chodorow goes on to argue that:

It is not surprising, then, that...the pubertal/adolescent transition is more difficult and conflictual for girls than for boys, and that issues during this period concern a girl's relationship to her mother (p. 135).

Similarly, Blos (1962) argues that:

The girl struggles with object relations more intensely during her adolescence: in fact, the prolonged and painful severance from the mother constitutes the major task of this period.

(p.66)

The difficulties that the daughter has in managing individuation from the mother are mirrored by the mother's reactions to the daughter during this developmental stage (Chodorow, 1978). Mothers also are ambivalent and feel compelled to both push their daughters away _and_ to pull them in closer.

In order for individuation from the mother to proceed for the daughter, two processes seem necessary: (a) the advent of pubertal change, and (b) the use of several strategies (or "ploys"; Chodorow, 1978) employed by the daughter that cause conflict and a lessening of the mother-daughter attachment. As her body changes and as she changes from a girl into a woman, she is confronted with societal expectations and her attachment to her mother begins to feel uncomfortable (Chodorow, 1978). (It is important to note that Chodorow, 1978, is aware that there are "mediating" variables between physical and psychological changes. Her statements are clear exceptions to Petersen & Taylor's, 1980, and Richards & Petersen's, 1987, argument that psychoanalytic writers do not posit the existence of such mediating variables.) As a result of these changes in her body and the changing perceptions of others, daughters begin to experience themselves as _over_attached and _un_individuated. In order to individuate, daughters (according to Deutsch, 1944) begin to do at least one of the following: (a) the daughter becomes highly critical of the family (similar to Blos' notion of de-idealization), (b) she may try to be unlike her mother thus establishing a negative identification (I am what she is not), or (c) the daughter may select a best friend (similar to Sullivan's, 1953, notion of chumship). In the case of the latter, the daughter can continue to feel merged but

does so outside of the family. Clearly, more extreme reactions will occur in overly attached daughters.

Regardless of the strategy employed, any of them will cause the predicted conflict between the daughter and the mother and will result in a transformation in their attachment. We see, then, that puberty puts the process in motion but that the effects of puberty on the mother-daughter attachment are mediated by reactions of others to the daughter's new-found maturity. The end result is that mother-daughter conflict ensues and the daughter begins the "second individuation process." This conflict is adaptive insofar as the resulting transformation of the attachment is necessary for the relationship to continue and for the daughter to develop extrafamilial relationships (and, therefore, procreate outside of the family).

Thus, we would expect, from a psychoanalytic perspective, that mother-daughter conflict will be greater than father-daughter conflict because of the difficult individuation process that must occur in this dyad--and this is what I found. Although fathers may not be involved in extreme conflict with their daughters (for the reasons already discussed in an earlier section on the difference between the results for mothers and fathers), they do play an important role (Chodorow, 1978; Deutsch, 1944; Hammer, 1982). Fathers appear to be responsible for shaping their daughter's sexuality. In fact, Deutsch goes so far as to claim that the love and tenderness that the father gives to the daughter is provided, in part, because it is a bribe to motivate the daughter to renounce her masculine qualities such as instrumentality, aggressiveness, and the like. It

is as if Deutsch believes that the father's affection is conditional
on the daughter assuming a traditional and passive role. These
notions are similar to those presented by Hill and Lynch (1983) in
their discussion of the Gender Intensification Hypothesis. Although
Chodorow cites Deutsch's arguments and believes them to be played out
in healthy families, she believes that this state of affairs is
unfortunate. She argues strongly that the differences between
daughters' relationships with their mothers and daughters'
relationships with their fathers are a result, in part, of the mother
being the sole caretaker. She believes that fathers and mothers
should share their parenting duties and that this would result in
daughters having fewer separation problems with their mothers and
would allow mothers to invest considerably more intrapsychic energy
in behaviors other than mothering. Because daughters experience this
sole, single attachment, they are doomed to repeat the process with
their daughters.

Fit between the Theory and Available Data

Do the findings of the current study support the psychoanalytic
notions regarding families with adolescent girls? Interestingly
enough, the findings that emerged for the daughter dyads are highly
supportive of psychoanalytic theory. I found that conflict (in the
form of sequences of interference behaviors) is much more likely in
the mother-daughter dyad than in the father-daughter dyad shortly
after menarche. Moreover, we have some evidence that the father
appears to reinforce and help to produce greater levels of

passivity in the daughter as she matures. It also appears that the father reacts (seductively?) to the daughters more sexually-mature body and that the daughter appears somewhat uncomfortable with this affiliation expressed from the fathers. Thus, it appears that the second individuation process as spelled out by Blos (1962, 1979), Chodorow (1978), Kaplan (1984), Deutsch (1944), and Hammer (1975, 1982) provides a useful theoretical framework for organizing the existing data on familial adaptation to pubertal change.

There are two other sets of data that also support the psychoanalytic notions discussed here. First, there is a dissertation done by Diamond (1983; cited in H. Lerner, 1987). Diamond, in perhaps the only study of the pubertal effects on intrapsychic process, employed quesionnaires and projective tests so as to assess adolescents' experiences of regression, anxiety, and changes in self-image as a function of pubertal development. This was a cross-sectional study of 74 "normal" seventh- and eighth-graders who rated their own menarcheal status. His results suggest that regression in psychosexual level does occur but without the storm and stress that would be predicted by many psychoanalytic writers. That is, he found that "menarche triggers regression to preoedipal modes of object relations, with a marked increase in oral nurturant longings for the fantisized 'good mother'" (H. Lerner, 1987, p. 62). On the other hand, anxiety and changes in self-image were not related to menarche. Unfortunately, Diamond only assessed "storm and stress" intraindividually and did not look at conflict within the family. The results do suggest, however, that pubertal change is associated with transformations in the intrapsychic representation that the daughter

has for the mother, thus supporting my claim that the underlying process is intrapsychic as well as extrapsychic and that the process may be adaptive in healthy adolescents.

The second piece of evidence appears in a chapter by Steinberg (in press) wherein he reviews some of his own current research on pubertal change and family adaptation as well as the relevant findings with nonhuman primates. Steinberg summarizes the data on nonhuman primates as follows:

> Taken together, these studies of other primates indicate that there may be an evolved basis for individuals to distance themselves from their parents sometime shortly after puberty. The emigration of adolescents from natal groups would, in theory, be most important among monogamous species, since mating within the natal group would amount to inbreeding and therefore have the most deleterious repercussions. And, indeed, it is in monogamous species that conflict between pubertal adolescents and parents is most likely to occur when emigration does not take place (p. 25-26).

Thus, we find that conflict between adolescents and parents does occur among nonhuman primates, that the underlying instinctual process is adaptive in the sense that it promotes the propagation of the race, and that it is particularly keen among monogamous species-- or species that are most similar to humans. In fact, Steinberg (1987) argues that "it seems reasonable to conclude that biological maturation accelerates the process through which youngsters become

autonomous from their parents" (p. 459). Thus, there appears to be a
growing body of evidence that this instinct-driven and perhaps
intrapsychic process promotes a form of overt adaptive conflict which
insures that the "goal" (i.e., individuation) of this underlying
process is manifested.

I also have support for the extrapsychic process portion of the
theory insofar as I found conflict to be at its peak shortly after
menarche. The conflict may serve to inform the daughter's parents
that the daughter is maturing physically and needs to be treated
differently. On the other hand, I have not assessed "adaptability to
change", so a true test of the theory has not been done. Moreover,
many of the effects that did emerge did not involve the "conflict"
variables (e.g., changes in affiliation as a function of menarcheal
status). Such additional effects may either accompany the "conflict"
effects or may precede or follow them. If these additional effects
are distinct, the theory may need to be revised to take such effects
into account.

Finally, I believe that the intrapsychic processes interact with
the proposed extrapsychic processes. This is the focus of the next
section.

Integration of the Extrapsychic and Intrapsychic Factors

Although I believe that there are (at least) two distinct
factors involved in the onset of parent-adolescent conflict that
emerges as an adaptive response to biological change, I also believe
that these two factors interact in important ways. If there is
interaction, as I have maintained, it is probably in the direction of

intrapsychic to extrapsychic. It is this set of interactions that I will focus on here.

It seems likely that one's own object relations history will affect the manner in which one adapts to biological change. This is probably true of the adolescent's response to his/her own pubertal change and it probably applies to the parent's reaction to his/her child's pubertal change as well. In the case of the former, it is reasonable to assume that adolescents vary in terms of their investment in their role as "child" in the family. For some, the relinquishment of infantile ties is a reasonably simple task and for others it is quite painful, and these differences are probably related to the manner in which adolescents managed their relationships with parents during infancy.

On the basis of these arguments, it appears that there are probably interindividual differences in the manner in which adolescents manage the "second individuation process" (Blos, 1979). As a consequence, those adolescents who are not prepared for this process may exhibit low levels of "adaptability to change" during this stage of their life. They will feel comfortable in maintaining their current place in the family system and they may fail to respond to the biological changes that they experience. In so doing, they will not induce the adaptive parent-adolescent conflict that will lead to a transformation of these relationships. (Although all of this may be true, the reader is reminded that I have previously referred to "adaptability to change" as a personality characteristic. As a result, the examples given here will apply only to those individuals who have the types of object relations histories I have

described and low levels of "adaptability to change", the latter of which develops for a variety of reasons, many unrelated to object relations.)

For parents, the notions are similar. Of course, parents have their own object relations histories that not only have effects on their own lives and the ways in which they manage their relationships with their spouse or peers, but they also have an effect on their relationships with their children (Chodorow, 1978). In fact, it is this very process that Chodorow focuses on in her book, which she titled The Reproduction of Mothering. As noted above, her argument is that mothering is "reproduced" because of the "semi-symbiotic" relationship that mothers have with their daughters. This relationship is similar to the relationship that these mothers had with their mothers and so on. Clearly, if lack of individuation characterizes the relationship that a daughter has with her mother, this daughter will bring that way of relating into a relationship with her daughter. That is, for mothers who experienced an overly attached relationship with their mothers, they may be quite invested in maintaining a similar type of relationship with their daughters. Thus, these mothers will be invested in their daughters remaining attached and would probably attempt to stall the individuation process. These feelings may be manifested in low levels of "adaptability to change" and a lack of responsiveness to their daughters' changing bodies and the subsequent parent-adolescent conflict. Thus, in these examples, we see that although the underlying processes that promote conflict are distinct, they also

interact. I now proceed to the final sections of this discussion; the limitations of the current study and directions for future research.

Limitations of the Current Study

As with any empirical effort, there are a number of limitations in the current study. First, this study is cross-sectional, which limits the conclusions we can make in a number of important ways. Because we are comparing menarcheal groups, we do not know if our results will hold up for a group of girls followed longitudinally over time. (In fact, I frequently discussed the current results as if they were longitudinal. This is, of course, not the case.) Longitudinal research is clearly needed in this area so as to document the direction of effects and to determine the sequence of the various manifestations of the transformations that seem to be taking place. In fact, Steinberg (in press) has argued recently that the quality of family relations may actually affect pubertal change. Moreover, we do not know, for example, whether conflict precedes the decreases in affiliation or whether the opposite is true.

Second, the results reported here are limited in the sense that the data were gathered on intact families. Although this information is valuable for comparison purposes, other types of families should also be investigated (e.g., stepfamilies, single parent families etc). On the other hand, because we found that conflict varies as a function of menarcheal status with a "normal" sample, we are now in a better position to begin discussing "adaptive conflict" notions.

Third, although we have employed sequential analysis, these analyses do not help us when we attempt to make causal statements concerning the effects of menarcheal status on family relations. Also, the results for Study 1 are merely correlational and therefore tell us nothing about causation. (Do disagreements affect parental acceptance or does lack of parental acceptance produce more disagreements?) Again, longitudinal data are required to begin to answer these questions.

Fourth, another limitation of this study involves the appropriateness for sequential analysis of the family interaction task employed here. Frequencies of the conflict variables were quite low and this appears to be a function of the task. A task that would have induced more conflict between parents and adolescents may have been more appropriate. For example, we could have had the family discuss an issue that they rated as one which causes considerable conflict in the home. Alternatively, we could have had the families "re-live" a conflict that they had had in their home recently. This latter approach has been found to induce considerable conflict (Montemayor, personal communication). On the other hand, the tasks employed here were chosen because they require the families to have discussions similar to those that they probably have every day-- decisions regarding mundane family activities. Unfortunately, these tasks are probably not as appropriate when "conflict" is the principal interest.

Fifth, although I interpreted the z-scores in this study as indicating that certain groups were more likely to exhibit certain sequences than other groups, many of these z-scores were not

significant. On the other hand, a higher mean z-score will indicate that more of the families in this group will have significant z-scores. Perhaps the low frequencies played a role in the attentuation of these z-values.

Sixth, although a number of significant effects emerged, the amount of variance accounted for was quite small. In fact, the percent of variance accounted for in the analyses involving pubertal change was rarely above 15%. These types of effects are typical of this literature. On the other hand, why would we expect pubertal change to account for large percentages of variance? In this literature, we are predicting dependent variables that develop throughout the lifespan of the child and are therefore not determined solely from biological changes.

Finally, the findings for Study 1 should be replicated with a larger sample. Although the current sample was too small to take pubertal change into account in these analyses, it may be that these observational conflict variables are correlated with family functioning in different ways at different stages of the pubertal sequence.

Directions for Future Research

I believe that this is a potentially fruitful area of research that can continue to yield fascinating developmental and clinical results in future years. I summarize some of the potential directions for future research. First, and as should be clear from the discussion regarding limitations, longitudinal research is needed.

With longitudinal research, we could investigate the following: whether pubertal change impacts on family functioning or family functioning impacts on pubertal change (or both; Steinberg, in press), whether the adolescents' peer groups are implicated in the sequence of transformations, if the effects we observed for group 4 were due to the early maturity of this sample or to the greater maturity of the group, and whether the adaptive conflict discussed here leads to healthier functioning after the pubertal changes are complete (thus demonstrating the adaptiveness of the conflict).

Second, other developmental variables, in addition to pubertal change, should be included in the same design (as has already been done by Steinberg & Hill, 1978, and Simmons & Blyth, 1987). Other "contexts" of adolescence should also be included in addition to the family environment (e.g., peers). In this way, we could determine what developmental variables account for the most variance in what types of outcomes.

Third, the use of sequential analyses should continue in this research area as well as in others. A methodological paper on sequential analysis with families has finally been written (Gottman, 1987) and I look forward to the increase in productivity that is bound to occur in this area. In the present case, the data was much more interesting when sequences of behavior were taken into account (particularly for the mother-daughter dyad). If we are going to be serious about taking a systems or transactional approach to family relations, we must use process approaches where effects of each member on the other family members are taken into account. Clearly, this approach could have much utility in treatment studies of

families. Moreover, because of the dramatic improvement in the technology (i.e., we now have portable and programmable event recorders that yield sequential data), we can now gather such data quickly.

Fourth, we need to study conflict more carefully (also see Shantz, 1987). Clearly, behaviors such as disagreements and interruptions can "mean" different things in different contexts. We need to begin taking these intra-variable differences into account in observational research. Moreover, we found virtually no significant effects for positive affect as a frequency variable. As was the case with interruptions and disagreements, positive affect could also be indicative of a variety of emotions. Certainly, positive affect can include nervous laughter as well as sarcastic laughter. The target of the postive affect should also be recorded. Finally, we need to employ situations that induce greater levels of conflict so that we can examine chains of conflictual behaviors rather than just sequence pairs (Gottman, 1979). Moreover, with high frequencies of these behaviors, we could also test the assumption of stationarity.

Fifth, although a number of studies have been done in this area that include questionnaire and observational measures of family functioning, little attention has been paid to intrapsychic processes except when researchers discuss their findings. As far as I know, the dissertation by Diamond (1983) is the only existing study in the area of pubertal change that examines these processes.

Sixth, it is important (as Montemayor, 1983, has suggested) for us to determine which families manage their children's adolescence with moderate conflict and which families have more difficulty and

tend to experience higher levels of conflict. It may be that adaptation to pubertal change is particularly stressful in families where such changes exacerbate existing sexual concerns. For example, a study of how families where sex abuse has occurred manage the pubertal changes of their abused offspring would be quite interesting. It may also be interesting to examine differences between distressed and nondistressed families or differences between such families and those with a chronically-ill child in terms of how they mange the transition into adolescence. Also, the role that PMS may play in the effects we are finding would be of interest.

Seventh, naturalistic approaches may also be useful here. Montemayor's (1982) "phone call" approach is also an interesting strategy. We need to determine if what we are finding on questionnaires and in the laboratory actually happens in the real world as well.

Eighth, we need to take seriously the notion that adolescents can individuate and maintain close relations with their parents at the same time. Clearly, we need to begin examining the effects of autonomy and attachment within the same design.

Ninth, we need to determine whether conflict is the primary adaptive response to pubertal change or if the observed decreases in acceptance (and the like) involve a separate process that either precedes or follows the adaptive conflict. I would predict that the conflict precedes what Steinberg refers to as the "increasing distance" between parents and adolescents.

Finally, it is clear that I did not take a truly systems approach when formulating the hypotheses for the present study. We need to be aware that there are more than two individuals in most families and that what happens in one dyad can affect the interaction in other dyads. Clearly, future designs, hypotheses, and analyses will have to be as complex as the process appears to be.

REFERENCES

Adelson, J., & Doehrman, M. J. (1980). The psychodynamic approach to adolescence. In J. Adelson (ed.), Handbook of Adolescent Psychology. New York: Wiley.

Alexander, J. F. (1973). Defensive and supportive communication in family systems. Journal of Marriage and the Family, 35, 613-617. (a)

Alexander, J. F. (1973). Defensive and supportive communications in normal and deviant families. Journal of Consulting and Clinical Psychology, 40, 223-231. (b)

Allison, P. D., & Liker, J. K. (1982). Analyzing sequential categorical data on dyadic interaction: A comment on Gottman. Psychological Bulletin, 91, 393-403.

Altmann, S. A. (1965). Sociobiology of rhesus monkeys. II. Stochastics of social communication. Journal of Theoretical Biology, 8, 490-522.

American Heritage Dictionary. (1969). New York: Houghton Mifflin.

Argyle, M. (1972). Nonverbal communication in human social communication. In R. A. Hinde (Ed.), Nonverbal communication. New York: Cambridge University Press.

Aro, H., & Taipale, V. (1987). The impact of timing of puberty on psychosomatic symptoms among fourteen- to sixteen-year-old Finnish girls. Child Development, 58, 261-268.

Bakeman, R. (1978). Untangling streams of behavior: Sequential analyses of observation data. In G. P. Sackett (Ed.), Observing behavior: Vol II. Data collection and analysis methods. Baltimore: University Park Press.

Bateson, G. (1979). Mind and nature: A necessary unity. New York: Bantam Books.

Bateson, G., Jackson, D. D., Haley, J., & Weakland, J. (1956). Toward a theory of schizophrenia. Science, 1, 251-264.

Baumrind, D. (1975). Early socialization and adolescent competence. In S. E. Dragastin & G. H. Elder, Jr. (Eds.), Adolescence in the life cycle: Psychological change and social context (pp. 117-140). New York: Halsted Press.

Beier, E. G., & Sternberg, D. D. (1977). Marital communication: Subtle cues between newlyweds. Journal of Communication, 27, 92-103.

Bell, R. Q. (1968). A reinterpretation of the direction of effects in

studies of socialization. Psychological Bulletin, 75, 81-95.

Blakar, R. M. (1980). Statistical significance versus theoretical clarification: A comment on the Doane-Jacob and Grounds Dispute. Family Process, 19, 291-294.

Block, J. H., & Block, J. (1980). The role of ego-control and ego-resiliency in the organization of behavior. In A. Pick (Ed.), Fourteenth annual Minnesota symposium on child psychology. Minneapolis: University of Minnesota Press.

Blos, P. (1962). On adolescence. New York: Free Press.

Blos, P. (1979). The adolescent passage. New York: International Universities Press.

Blyth, D. A., Thiel, K., & Garbarino, J. (1978). Parent telephone interview from transition to adolescence study. Unpublished manuscript, Boys Town Center for the Study of Youth Development, Boys Town, NB.

Bodin, A. (1966). Family interaction, coalition, disagreement, and compromise in problem, normal, and synthetic triads. Unpublished doctoral dissertation, State University of New York at Buffalo.

Bowerman, C. E., & Elder, G. H. (1964). Variations in adolescent perception of family power structure. American Sociological Review, 29, 551-567.

Boxer, A. M. & Petersen, A. C. (1986). Pubertal change in a family context. In G. K. Leigh & G. W. Peterson (Eds.), Adolescents in families. Cincinnati, OH: South-Western Publishing.

Brazelton, T. B., Koslowski, B., & Main, M. (1974). The origins of reciprocity: The early mother-infant interaction. In M. Lewis & L. A. Rosenblum (Eds.), The effect of the infant on its caregiver. New York: Wiley.

Breunlin, D. C., & Schwartz, R. C. (1986). Sequences: Toward a common denominator of family therapy. Family Process, 25, 67-87.

Brim, O. G. (1957). The parent-child relation as a social system: I. Parent and child roles. Child Development, 28, 343-364.

Brooks-Gunn, J., & Ruble, D. N. (1983). The experience of menarche from a developmental perspective. In J. Brooks-Gunn & A. C. Petersen (Eds.), Girls at puberty: Biological and Psychosocial Perspectives. (pp. 155-178). New York: Plenum.

Bugental, D. B., & Shennum, W. A. (1984). "Difficult" children as elicitors and targets of adult communication patterns: An attributional-behavioral transactional analysis. Monographs of the Society for Research in Child Development, 49. (Serial No. 205)

Burgess, E. W., Locke, H. J., & Thomes, M. M. (1971). The family. New York: Van Nostrand Reinhold.

Cantara, A. R. (1983). Pubertal status and assertiveness in family interaction in early adolescent girls. Unpublished master's thesis, Virginia Commonwealth University, Richmond.

Castellan, N. J. (1979). The analysis of behavior sequences. In R. B. Cairns (Ed.), The analysis of social interactions: Methods, issues, and illustrations. Hillsdale, NJ: Lawrence Erlbaum.

Chodorow, N. (1978). The reproduction of mothering: Psychoanalysis and the sociology of gender. Berkeley, CA: University of California Press.

Cohen, J. (1960). A coefficient of agreement for nominal scales. Education and Psychological Measurement, 20, 37-46.

Cohen, J. (1968). Weighted kappa: Nominal scale agreement with provision for scaled disagreement or partial credit. Psychological Bulletin, 70, 213-220.

Cohen, J. (1972). Weighted chi-square: An extension of the kappa method. Education and Psychological Measurement, 32, 61-74.

Cohen, J., & Cohen, P. (1983). Applied multiple regression/correlation analysis for the behavioral sciences. Hillsdale, NJ: Erlbaum.

Cohler, B. J., & Geyer, S. (1982). Psychological autonomy and interdependence within the family. In F. Walsh (ed.), Normal family processes. New York: Guilford.

Cook, E. W., & Greenbaum, P. E. (1985). A general least squares approach to sequential analysis: Untangling patterns of dominance and cross-dependence. Unpublished manuscript, University of Florida, Gainsville.

Cooper, C. R., Grotevant, H. D., & Condon, S. M. (1983). Individuality and connectedness in the family as a context for adolescent identity formation and role-taking skill. In H. D. Grotevant & C. R. Cooper (Eds.), Adolescent development in the family (pp. 43-59). San Francisco: Jossey-Bass.

Coser, R. L. (1975). The complexity of roles as a seedbed of individual autonomy. In L. A. Coser (Ed.), The idea of social structure: Papers in honor of Robert K. Merton. New York: Harcourt.

Cousins, P. C., & Power, T. G. (1986). Quantifying family process: Issues in the analysis of interaction sequences. Family Process, 25, 89-105.

Coyne, J. C. (1976). Toward an interactional description of depression. Psychiatry, 39, 28-40.

Cronbach, L. J., Gleser, G. C., Nanda, H., & Rajaratnam, N. (1972). The dependability of behavioral measurements: Theory of generalizability for scores and profiles. New York: Wiley.

Cronbach, L. J., & Meehl, P. E. (1955). Construct validity in psychological tests. Psychological Bulletin, 52, 281-302.

Deutsch, H. (1944). The psychology of women. New York: Grune & Stratton.

Dewey, J., & Bentley, A. (1949). Knowing and the known. Boston: Beacon Press.

Doane, J. A. (1978). Family interaction and communication deviance in disturbed and normal families: A review of research. Family Process, 17, 357-376.

Douvan, E., & Adelson, J. (1966). The adolescent experience. New York: Wiley.

Duncan, O. D. (1977). A socioeconomic index for all occupations. In A. J. Reiss, Jr. (Ed.), Occupations and social status. (pp. 109-138). New York: Arno Press.

Ekman, P., Friesen, W. V., O'Sullivan, M., & Scherer, K. (1980). Relative importance of face, body, and speech in judgments of personality. Journal of Personality and Social Psychology, 38, 270-277.

Elder, G. H. (1963). Parental power-legitimation and its effect on the adolescent. Sociometry, 25, 241-262.

Ellis, G. J. (1986). Societal and parental predictors of parent-adolescent conflict. In G. K. Leigh & G. W. Peterson (Eds.), Adolescents in families. Cincinnati, OH: South-Western Publishing.

Erikson, E. (1968). Identity: Youth and crisis. New York: Norton.

Esman, A. (1975). The psychology of adolescence. New York: International Universities Press.

Exline, R. V. (1972). Visual interaction: The glances of power and preference. In J. K. Cole (Ed.), Nebraska Symposium on Motivation (Vol. 19). Lincoln, NB: University of Nebraska Press.

Exline, R. V., & Winters, C. C. (1965). Affective relations and mutual gaze in dyads. In S. Tomkins & C. Izzard (Eds.), Affect, cognition, and personality. New York: Springer.

Faust, M. S. (1960). Developmental maturity as a determinant of prestige of adolescent girls. Child Development, 31, 173-184.

Ferreira, A. J. (1963). Decision making in normal and pathological families. Archives of General Psychiatry, 8, 68-73.

Fisher, L. (1982). Transactional theories but individual asseessment: A frequent discrepancy in family research. Family Process, 21, 313-320.

Forehand, R., Brody, G., Slotkin, J., Fauber, R., McCombs, A., Long, N. (1987). Young adolescent and maternal depression: Assessment, interrelationship, and family predictors. Unpublished manuscript.

Foster, S. L., Prinz, R. J., & O'Leary, K. D. (1983). Impact of problem-solving communication training and generalization procedures on family conflict. Child and Family Behavior Therapy, 5, 1-23.

Freud, A. (1958). Adolescence. Psychoanalytic Study of the Child, 13, 231-258.

Freud, S. (1925). Some psychical consequences of the anatomical distinction between the sexes. Standard edition of the complete psychological works of Sigmund Freud (Vol. 19; pp. 243-258). London: Hogarth Press and Institute of Psycho-Analysis.

Freud, S. (1957). Three essays on the theory of sexuality. In J. Strachey (Ed. and Trans.), The standard edition of the complete psychological works of Sigmund Freud. London: Hogarth Press and Institute of Psycho-Analysis. (original work published 1905).

Garbarino, J. (1978). Family and neighborhood interview. Unpublished manuscript. Boys Town Center for the Study of Youth Development, Boys Town, NB.

Gardner, W., Hartmann, D. P., & Mitchell, C. (1982). The effects of serial dependence of the use of chi-square for analyzing sequential data in dyadic interactions. Behavioral Assessment, 4, 75-82.

Gelfand, D. M., & Peterson, L. (1985). Child development and psychopathology. Beverly Hills, CA: Sage.

Ginsburg, H., & Opper, S. (1969). Piaget's theory of intellectual development: An introduction. Englewood Cliffs, NJ: Prentice-Hall.

Glidewell, J. C. (1961). On the analysis of social intervention. In J. C. Glidewell (Ed.), Parental attitudes and child behavior. Springfield, IL: Charles C. Thomas.

Gottman, J. M. (1979). Marital interaction: Experimental investigations. New York: Academic Press.

Gottman, J. M. (1980). Analyzing for sequential connection and assessing interobserver reliability for the sequential analysis of observational data. Behavioral Assessment, 2, 361-368.

Gottman, J. M. (1987). The sequential analysis of family interaction.

In T. Jacob (Ed.), Family interaction and psychopathology: Theories, methods, and findings. New York: Plenum.

Gottman, J. M., & Bakeman, R. (1979). The sequential analysis of observational data. In M. E. Lamb, J. J. Suomi, & G. R. Stephenson (Eds.), Social interaction analysis: Methodological issues (pp. 185-206). Madison, WI: University of Wisconsin Press.

Gottman, J. M., Markman, H., & Notarius, C. (1977). The topography of marital conflict: A sequential analysis of verbal and nonverbal behavior. Journal of Marriage and the Family, 39, 461-477.

Green, R. G., & Kolevzon, M. F. (1986). The correlates of healthy family functioning: The role of consensus and conflict in the practice of family therapy. Journal of Marital and Family Therapy, 12, 75-84.

Green, R. G., Kolevzon, M. S., & Vosler, N. R. (1985). The Beavers-Timberlawn model of family competence and the circumplex model of family adaptability and cohesion: Separate, but equal? Family Process, 24, 385-398.

Greene, A. L., & Boxer, A. M. (in press). Daughters and sons as young adults: Restructuring the ties that bind. In N. Datan, A. L. Greene, & H. W. Reese (Eds.), Life-span developmental psychology: Intergenerational networks. Hillsdale, NJ: L. Erlbaum.

Grief, E., & Ulman, K. H. (1982). The psychological impact of menarche on early adolescent females: A review of the literature. Child Development, 53, 1413-1430.

Grinker, R. R., & Werble, B. (1974). Mentally healthy young men (homoclites): Fourteen years later. Archives of General Psychiatry, 30, 701-704.

Grotevant, H. D., & Cooper, C. R. (1982). Identity formation and role taking skill in adolescence: An investigation of family structure and family process antecedents (Contract No. N01-HD 92819). National Institute of Child Health and Human Development.

Grotevant, H. D., & Cooper, C. R. (1985). Patterns of interaction in family relationships and the development of identity exploration in adolescence. Child Development, 56, 415-428.

Hadley, T., & Jacob, T. (1973). Relationship among measures of family power. Journal of Personality and Social Psychology, 27, 6-12.

Haley, J. (1977). Problem-solving therapy. San Franciso: Jossey-Bass.

Hall, G.S. (1904). Adolescence: Its psychology and its relations to physiology, anthropology, sociology, sex, crime, religion, and education. Englewood Cliffs, NJ: Prentice-Hall.

Hammer, S. (1975). Daughters and mothers: Mothers and daughters. New

York: Quadrangle, New York Times Book Co.

Hammer, S. (1982). Passionate attachments: Fathers and daughters in America today. New York: Rawson Associates.

Hartmann, D. P. (1977). Consideration in the choice of interobserver reliability estimates. Journal of Applied Behavior Analysis, 10, 103-116.

Hauser, S. T. (1976). Loevinger's model and measure of ego development: A critical review. Psychological Bulletin, 83, 928-955.

Hauser, S. T., Houlihan, J., Powers, S. I., Jacobson, A. M., Noam, G. G., Weiss-Perry, B., Follansbee, D., Book, B. K. (1986). Adolescent ego development within the family: Family styles and family sequences. Unpublished manuscript, Harvard University, Boston, MA.

Hauser, S. T., Liebman, W., Houlihan, J., Powers, S. I., Jacobson, A., Noam, G. G., Weiss, B., Follansbee, D. (1985). Family correlates of pubertal timing. Journal of Youth and Adolescence, 14, 317-337.

Hauser, S. T., Powers, S. I., Noam, G. G., Jacobson, A. M., Weiss, B., Follansbee, D. J. (1984). Familial contexts of adolescent ego development. Child Development, 55, 195-213.

Hawkins, J. L., & Johnson, D. (1969). Perception of behavioral conformity, imputation of consensus, and marital satisfaction. Journal of Marriage and the Family, 31, 507-511.

Hertel, R. K. (1972). Application of stochastic process analyses to the study of psychotherapeutic processes. Psychological Bulletin, 77, 421-430.

Hetherington, E. M. (1972). Effects of father absence on personality development in adolescent daughters. Developmental Psychology, 7, 313-326.

Hetherington, E. M., Stouwie, R., & Ridberg, E. H. (1971). Patterns of family interaction and child-rearing attitudes related to three dimensions of juvenile delinquency. Journal of Abnormal Psychology, 77, 160-176.

Hilgard, E. R. (1953). Introduction to psychology. New York: Harcourt, Brace.

Hill, J. P. (1980). The family. In M. Johnson (Ed.), Toward adolescence: The middle school years. The seventy-ninth yearbook of the National Society for the Study of Education (pp. 32-55). Chicago: University of Chicago Press. (a)

Hill, J. P. (1980). Research proposal: Family relations in early adolescence. Boys Town Center for the Study of Youth Development, Boys Town, NB. (b)

Hill, J. P. (1980). Understanding early adolescence: A framework. Chapel Hill, NC: Center for Early Adolescence. (c)

Hill, J. P. (1983). Early adolescence: A research agenda. Journal of Early Adolescence, 3, 1-21.

Hill, J. P. (in press). Adapting to menarche: Familial control and conflict. In M. R. Gunnar (Ed.), 21st Minnesota Symposium on Child Psychology. Hillsdale, NJ: Lawrence Erlbaum.

Hill, J. P., & Holmbeck, G. N. (1985, April). Familial adaptation to pubertal change: The role of conflict. In W. A. Collins (Chair), Parent-child relations in the transition to adolescence: Family adaptations to pubertal change. Symposium conducted at the meeting of the Society for Research in Child Development, Toronto.

Hill, J. P., & Holmbeck, G. N. (1986). Attachment and autonomy during adolescence. In G. J. Whitehurst (Ed.), Annals of Child Development. Greenwich, CN: JAI Press.

Hill, J. P., & Holmbeck, G. N. (1987). Familial adaptation to biological change during adolescence. In R. M. Lerner & T. T. Foch (Eds.), Biological-psychosocial interactions in early adolescence: A life-span perspective. Hillsdale, NJ: Erlbaum.

Hill, J. P., Holmbeck, G. N., Marlow, L., Green, T. M., & Lynch, M. E. (1985). Menarcheal status and parent-child relations in families of seventh-grade girls. Journal of Youth and Adolescence, 14, 314-330. (a)

Hill, J. P., Holmbeck, G. N., Marlow, L., Green, T. M., & Lynch, M. E. (1985). Pubertal status and parent-child relations in families of seventh-grade boys. Journal of Early Adolescence, 5, 31-44. (b)

Hill, J. P., Holmbeck, G. N., Marlow, L., & Putterman, J. (1986). Coding manual for disagreements. Technical Report #2, Virginia Commonwealth University, Richmond.

Hill, J. P., Holmbeck, G. N., & Valentine, M. (1986). Coding manual for affect. Technical Report #3, Virginia Commonwealth University, Richmond.

Hill, J. P., & Lynch, M. E. (1983). The intensification of gender-related role expectations during early adolescence. In J. Brooks-Gunn & A. C. Petersen (Eds.), Girls at puberty (p. 201-228). New York: Plenum.

Hill, J. P., Sawin, D. B., Shelton, K., Shiflet, D. (1978). A manual for the coding of achievement-related instruction. Unpublished manuscript. Center for the Study of Youth Development, Boys Town, NB.

Hinde, R. (1979). Towards understanding relationships. New York:

Academic Press.

Hodgson, J. W., & Lewis, R. A. (1979). Pilgram's progress: III. A trend analysis of family therapy and methodology. Family Process, 18, 163-173.

Hollenbeck, A. R. (1978). Problems of reliability in observational research. In G. P. Sackett (Ed.), Observing behavior: Vol. II. Data collection and analysis methods. Baltimore: University Park Press.

Holmbeck, G. N., & Hill, J. P. (1986). Coding manual for gaze. Technical Report #4, Virginia Commonwealth University, Richmond.

Holmbeck, G. N., & Hill, J. P. (1987). Storm and stress beliefs about adolescence: Prevalence, antecedents, and effects of an undergraduate course. Unpublished manuscript.

Hunt, R. G. (1976). Role and role conflict. In E. P. Hollander & R. G. Hunt (Eds.), Current perspectives in social psychology (4th ed.). New York: Oxford University Press. (Reprinted from Focus on change and the school administrator, 1965, In H. J. Harley, & G. E. Holloway (Eds.), Buffalo, NY: University of New York, School of Education.)

Jacob, T. (1974). Patterns of family conflict and dominance as a function of child age and social class. Developmental Psychology, 10, 1-12.

Jacob, T. (1975). Family interaction in disturbed and normal families. Psychological Bulletin, 82, 33-65.

Jones, E. (1922/1948). Some problems of adolescence. In E. Jones (Ed.), Papers on psychoanalysis. London: Bailliere, Tindall, & Cox.

Kandel, D., & Lesser, G. S. (1972). Youth in two worlds. San Francisco: Jossey-Bass.

Kaplan, L. (1984). Adolescence: The farewell to childhood. New York: Simon and Schuster.

Kelley, H. H., Berscheid, E. Christensen, A. Harvey, J. H., Huston, T. L. Levinger G., McClintock, E., Peplau, L. A., & Peterson, D. R. (1983). Close relationships. New York: W. H. Freeman.

Kenny, D. A. (1979). Correlation and causality. New York: Wiley.

Kernberg, O. (1976). Borderline conditions and pathological narcissism. New York: International Universities Press.

Kiesler, D. J. (1983). The 1982 interpersonal circle: A taxonomy for complementarity in human transactions. Psychological Review, 90, 185-200.

Kiesler, D. J. (1986). Interpersonal methods of diagnosis and

treatment. In R. Michels & J. O. Cavenar (Eds.), Psychiatry.
Philadelphia: Lippincott.

Kiesler, D. J., Anchin, J. C., Perkins, M. J., Chirico, B. M., Kyle,
E. M., & Federman, E. J. (1976). The impact message inventory.
Virginia Commonwealth University, Richmond.

Klein, C. (1984). Mothers and sons. Boston: Houghton Mifflin.

Kleinke, C. L., Mecker, F. B., & LaFong, C. (1974). Effects of gaze,
touch, and use of name on evaluation of "engaged" couples. Journal
of Research in Personality, 1, 368-373.

Kleinke, C. L., Staneski, R. A., & Berger, D. E. (1975). Evaluation of
an interviewer as a function of interviewer gaze, reinforcement of
subject gaze, and interviewer attractiveness. Journal of
Personality and Social Psychology, 31, 115-122.

Knapp, M. C. (1978). Nonverbal communication in human interaction
(2nd ed.). New York: Holt, Rinehart, and Winston.

Koff, E., Rierdan, J., & Sheingold, K. (1982). Memories of menarche:
Age, preparation, and prior knowledge as determinants of initial
menstrual experience. Journal of Youth and Adolescence, 11, 1-9.

Kohlberg, L. (1969). Stage and sequence: The cognitive-developmental
approach to socialization. In D. A. Goslin (Ed.), Handbook of
socialization theory and research (pp. 347-480). Chicago: Rand-
McNally.

Kohn, M. L. (1977). Class and conformity (2nd ed.). Chicago:
University of Chicago Press.

Kraus, R. M., Apple, W., Morency, N., Wenzel, C., & Winton, W. (1981).
Verbal, vocal, and visable factors in judgments of another's
affect. Journal of Personality and Social Psychology, 40, 312-320.

LaCrosse, M. B. (1975). Nonverbal behavior and perceived counselor
attractiveness and persuasiveness. Journal of Counseling
Psychology, 22, 563-566.

LaFrance, M., & Mayo, C. (1978). Moving bodies: Nonverbal
communication in social relationships. Monterey, CA: Brooks-Cole.

Landis, J. R., & Koch, G. C. (1977). The measurement of observer
agreement for categorical data. Biometrics, 33, 159-174.

Leary, T. (1957). Interpersonal diagnosis of personality. New York:
Ronald.

Leighton, L., Stollak, G., & Fergusson, L. (1971). Patterns of
communication in normal and clinic families. Journal of Clinical
and Consulting Psychology, 36, 252-256.

Lerner, H. (1987). Psychodynamic models. In V. B. Van Hasselt, & M. Hersen (Eds.), Handbook of Adolescent Psychology. New York: Pergamon.

Lewin, K. (1935). A dynamic theory of personality. New York: McGraw-Hill.

Lewin, K. (1951). Field theory in social science. New York: Harper.

Lewis, M., & Rosenblum, L. A. (1974). The effect of the infant on its caregiver. New York: Wiley.

Lidz, T., Cornelison, A., Fleck, S., & Terry, D. (1957). The intrafamilial environment of schizophrenic patients: II. Marital schism and marital skew. American Journal of Psychiatry, 114, 241-248.

Loevinger, J. (1976). Ego development: Conceptions and theories. San Francisco: Jossey-Bass.

Lynch, M. E. (1981). Parental androgyny, daughters' physical maturity level, and achievement socialization in early adolescence. Unpublished doctoral dissertation, Cornell University, Department of Human Development and Family Studies, Ithaca, NY.

Maccoby, E. E., & Martin, J. A. (1983). Socialization in the context of the family: Parent-child interaction. In P. H. Mussen (Ed.), Handbook of Child Psychology (Vol. 4; pp. 1-101). New York: Wiley.

Magnusson, D., Stattin, H., & Allen, V. L. (1985). Biological maturation and social development: A longitudinal study of some adjustment processes from mid-adolescence to adulthood. Journal of Youth and Adolescence, 14, 267-283.

Mahler, M. (1971). A study of the separation-individuation process and its possible application to borderline phenomena in the psychoanalytic situation. The Psychoanalytic Study of the Child, 26, 403-424.

Mahler, M., Pine, F., & Bergman, A. (1975). The psychological birth of the human infant. New York: Basic Books.

Marascuilo, V. A., & McSweeney, M. (1977). Nonparametric and distribution-free methods for the social sciences. Monterey, CA: Brooks-Cole.

Margolin, G., & Wampold, B. E. (1981). Sequential analysis of conflict and accord in distressed and nondistressed marital partners. Journal of Consulting and Clinical Psychology, 49, 554-567.

Marlow, E. L. (1985). The effect of perceived family harmony and pubertal development on compliance-gaining in families of adolescents. Unpublished doctoral dissertation, Virginia Commonwealth University, Richmond.

Martin, B. (1975). Parent-child relations. In F. D. Horowitz (Ed.), Review of child development research (Vol. 4; pp. 463-540). Chicago: University of Chicago Press.

Masterson, J. (1968). The psychiatric significance of adolescent turmoil. American Journal of Psychiatry, 124, 240-268.

Mehrabian, A. (1972). Nonverbal communication. New York: Aldine-Atherton.

Miller, G. A., & Frick, F. C. (1949). Statistical behavioristics and sequences of responses. Psychological Review, 56, 311-324.

Millon, T. (1983). Theories of personality and psychopathology. New York: Holt, Rinehart, & Winston.

Minuchin, S. (1974). Families and family therapy. Boston: Harvard University Press.

Mishler, E., & Waxler, N. (1968). Interaction in families: An experimental study of family process and schizophrenia. New York: Wiley.

Montemayor, R. (1982). The relationship between parent-adolescent conflict and the amount of time adolescents spend alone and with parents and peers. Child Development, 53, 1512-1519.

Montemayor, R. (1983). Parents and adolescents in conflict: All families some of the time and some families most of the time. Journal of Early Adolescence, 3, 83-103.

Montemayor, R. (1985). Some thoughts about conflict and power in the parent-adolescent relationship. Paper presented at the Third Biennial Conference on Adolescent Research, Tuscon, AZ.

Montemayor, R. (1986). Family variation in parent-adolescent storm and stress. Journal of Adolescent Research, 1, 15-31.

Montemayor, R., & Hanson, E. (1985). A naturalistic view of conflict between adolescents and their parents and siblings. Journal of Early Adolescence, 5, 23-30.

National Center for Health Statistics. (1974). Parent ratings of behavioral patterns of youths 12-17 years (DHEW Publication No. HRA 74-1619, Series 11, No. 137). Washington, D.C.: U.S. Government Printing Office.

Navran, L. (1967). Communication and adjustment in marriage. Family Process, 6, 173-184.

O'Connor, W., & Stachowiak, J. (1971). Patterns of interaction in families with high adjusted, low adjusted, and mentally retarded members. Family Process, 10, 229-241.

Offer, D. (1963). The psychological world of the teenager. New York: Basic Books.

Offer, D., & Offer, J. B. (1975). From teenage to young manhood. New York: Basic Books.

Offer, D., Ostrov, E., & Howard, K. I. (1981). The adolescent: A psychological self-portrait. New York: Basic Books.

Oliveri, M. E., & Reiss, D. (1984). Family concepts and their measurement: Things are seldom what they seem. Family Process, 23, 33-48.

Olson, D. H., McCubbin, H. I., Barnes, H. L., Larsen, A. S., Muxen, M. J., & Wilson, M. A. (1983). Families: What makes them work. Beverly Hills, CA: Sage.

Olson, D. H., McCubbin, H. I., Barnes, H. L., Larsen, A. S., Muxen, M. J., & Wilson, M. A. (1985). Family Inventories. St. Paul, MN: Family Social Science.

Olson, D. H., Russell, C. S., & Sprenkle, D. H. (1983). Circumplex model of marital and family systems: IV. Theoretical update. Family Process, 22, 69-83.

Olson, D. H., Sprenkle, D., & Russell, C. (1979). Circumplex model of marital and family systems I: Cohesion and adaptability dimensions, family types and clinical applications. Family Process, 18, 3-28.

Ort, R. S. (1950). A study of role-conflicts as related to happiness in marriage. Journal of Abnormal and Social Psychology, 45, 691-699.

Papini, D., & Datan, N. (1982, October). Mutual regulation in family relations: Parental imperatives and adolescents in transition. Paper presented at the Fifth Annual Communication, Language, and Gender Conference, Ohio University, Athens, OH.

Papini, D. R., & Datan, N. (1983, April). The transition into adolescence: An interactional perspective. Paper presented at the Biennial Meetings of the Society for Research in Child Development, Detroit, MI.

Papini, D. R., & Sebby, R. A. (1985, April). Multivariate assessment of adolescent physical maturation as a source of change in family relations. Paper presented at the Biennial Meeting of the Society for Research in Child Development, Toronto.

Papini, D. R., & Sebby, R. A. (1987). Adolescent pubertal status and affective family relationships: A multivariate assessment. Journal of Youth and Adolescence, 16, 1-15.

Papp, P. (1977). The family that had all the answers. In P. Papp

(Ed.), Family therapy: Full length case studies. New York: Gardner Press.

Parke, R. D. (1978). Parent-infant interaction: Process, paradigms, and problems. In G. P. Sackett (Ed.), Application of observational-ethological methods to the study of mental retardation. Baltimore: University Park Press.

Parsons, T., & Bales, R. F. (1955). Family, socialization, and interaction process. Glencoe, IL: Free Press.

Patterson, G. R. (1976). Parents and teachers as change agents: A social learning approach. In D. H. Olson (Ed.), Treating relationships. Lake Mills, IO: Graphic Publishing.

Patterson, G. R. (1985). A microsocial analysis of anger and irritable behavior. In Chesney & Rosenman (Eds.), Anger and hostility in behavioral and cardiovascular disorders. Washington, D. C.: Hemisphere Publishing.

Patterson, G. R., & Forgatch, M. S. (1985). Therapist behavior as a determinant for client noncompliance: A paradox for the behavior modifier. Journal of Consulting and Clinical Psychology, 53, 846-851.

Patterson, M. (1983). Nonverbal behavior: A functional perspective. New York: Springer-Verlag.

Peskin, H. (1973). Influence of the developmental schedule of puberty on learning and ego functioning. Journal of Youth and Adolescence, 2, 273-290.

Petersen, A. C. (1983). Menarche: Meaning of measures and measuring meaning. In S. Golub (Ed.), Menarche. Lexington, MA: Lexington Books, D. C. Heath.

Petersen, A. C., & Taylor, B. (1980). The biological approach to adolescence: Biological change and psychological adaptation. In J. Adelson (Ed.), Handbook of adolescent psychology. New York: Wiley.

Peterson, D. R. (1983). Conflict. In H. H. Kelley, E. Berscheid, A. Christensen, J. H. Harvey, T. L. Huston, G. Levinger, E. McClintock, L. A. Peplau, & D. R. Peterson (Eds.), Close relationships (pp.360-396). New York: W. H. Freeman.

Phelps, R. E., & Slater, M. A. (1985). Sequential interactions that discriminate high- and low-problem single mother-son dyads. Journal of Consulting and Clinical Psychology, 53, 684-692.

Piaget, J. (1970). Piaget's theory. In P. H. Mussen (Ed.), Carmichael's manual of child psychology (2nd ed.). New York: Wiley.

Powers, S. I., Hauser, S. T., Schwartz, J. M., Noam, G. G., Jacobson, A. M. (1983). Adolescent ego development and family interaction: A

structural-developmental perspective. In H. D. Grotevant & C. R. Cooper (Eds.), Adolescent development in the family (pp. 5-25). San Francisco: Jossey-Bass.

Prinz, R. J., Foster, S., Kent, R. N., & O'Leary, K. D. (1979). Multivariate assessment of conflict in distressed and nondistressed mother-adolescent dyads. Journal of Applied Behavioral Analysis, 12, 691-700.

Raush, H. L. (1965). Interaction sequences. Journal of Personality and Social Psychology, 2, 487-499.

Raush, H. L., Barry, W. A., Hertel, R. K., & Swain, M. A. (1974). Communication, conflict, and marriage. San Francisco: Jossey-Bass.

Reid, J. B., Dishion, T., Patterson, G. R., Gabrielson, P., & Thibodeaux, S. (1984). Family interaction code. Oregon Social Learning Center Technical Report.

Reiss, D. (1981). The family's construction of reality. Cambridge, MA: Harvard University Press.

Richards, M., & Petersen, A. C. (1987). Biological theoretical models of adolescent development. In V. B. Van Hasselt, & M. Hersen (Eds.), Handbook of Adolescent Psychology. New York: Pergamon.

Riskin, J., & Faunce, E. E. (1970). Family interaction scales: III. Discussion of methodology and substantive findings. Archives of General Psychiatry, 22, 527-537.

Riskin, J. & Faunce, E. (1972). An evaluative review of family interaction research. Family Process, 11, 365-456.

Robin, A. L. (1981). A controlled evaluation of problem-solving communication training with parent-adolescent conflict. Behavior Therapy, 12, 593-609.

Rogers, L. E., Millar, F. E., & Bavelas, J. B. (1985). Methods for analyzing marital conflict discourse: Implications of a systems approach. Family Process, 24, 175-187.

Rosen, B., & D'Andrade, R. (1959). The psychosocial origins of achievement motivation. Sociometry, 22, 185-218.

Rousseau, J. (1911). Emile. (B. Foxley, Trans.) London: Dent. (Original work published 1762)

Rubin, Z. (1970). Measurement of romantic love. Journal of Personality and Social Psychology, 16, 265-273.

Ruble, D. N., & Brooks-Gunn, J. (1982). The experience of menarche. Child Development, 53, 1557-1566.

Rutter, M. (1980). Changing youth in a changing society: Patterns of

adolescent development and disorder. Cambridge, MA: Harvard University Press.

Rutter, M., Graham, P., Chadwick, O., & Yule, W. (1976). Adolescent turmoil: Fact or fiction? Journal of Child Psychology and Psychiatry, 17, 35-56.

Sackett, G. P. (1978). Measurement in observational research. In G. P. Sackett (Ed.), Observing behavior: Vol. II. Data collection and analysis methods. Baltimore: University Park Press.

Sackett, G. P. (1979). The lag sequential analyses of contingency and cyclicity in behavioral interaction research. In L. J. Osofsky (Ed.), Handbook of infant development (pp. 623-649). New York: Wiley.

Sackett, G. P. (1980). Lag sequential analysis of a data reduction technique in social interaction research. In D. Sawin, R. Hawkins, L. Walker, & J. Penticuff (Eds.), Exceptional infant (Vol. 4). New York: Brunner/Mazel.

Sameroff, A. J., & Chandler, M. J. (1975). Reproductive risk and the continuum of caretaking causality. In F. D. Horowitz (Edf.), Review of child development research (Vol. 3), Chicago: University of Chicago Press.

Schaefer, E. S. (1955). A circumplex model for maternal behavior. Journal of Abnormal and Social Psychology, 59, 226-235.

Schuham, A. (1970). Activity, talking time, and spontaneous agreement in disturbed and normal family interaction. Journal of Abnormal Psychology, 79, 68-75.

Schuham, A., & Freshley, H. (1971). Significance of the nonverbal dimensions of family interaction. Proceedings of the 79th Annual Convention of the American Psychological Association, 455-456.

Sears, R. R. (1951). A theoretical framework for personality and social behavior. American Psychologist, 6, 476-482.

Selman, R. L. (1980). The growth of interpersonal understanding. New York: Academic Press.

Shannon, C. E., & Weaver, W. (1949). The mathematical theory of communication. Urbana: The University of Illinois Press.

Shantz, C. U. (1987). Conflicts between children. Child Development, 58, 283-305.

Siegel, S. (1956). Nonparametric statistics for the behavioral sciences. New York: McGraw-Hill.

Simmons, R. G., & Blyth, D. A. (1987). Moving into adolescence: The impact of pubertal change and school context. New York: Aldine De

Gruyter.

Smetana, J. G. (1987). Parent factors in family relations in adolescence. Paper presented at the biennial meetings of the Society for Research on Child Development, Baltimore, MD.

Smetana, J. G. (in press). Concepts of self and social convention: Adolescents' and parents' reasoning about hypothetical and actual family conflicts. In M. R. Gunnar (Ed.), 21st Minnesota Symposium on Child Psychology. Hillsdale, NJ: Erlbaum.

Spence, J. T., & Helmreich, R. L. (1978). Masculinity and femininity: Their psychological dimensions, correlates, and antecedents. Austin: University of Texas Press.

Spiegal, J., & Papajohn, J. (1971). Transactions: The interplay between individual, family, and society. New York: Science House.

Steinberg, L. (1977). A longitudinal study of physical growth, intellectual growth, and family interaction in early adolescence. Unpublished doctoral dissertation, Cornell University, Ithaca, NY.

Steinberg, L. (1981). Transformations in family relations at puberty. Developmental Psychology, 17, 833-840.

Steinberg, L. (1987). Impact of puberty on family relations: Effects of pubertal status and pubertal timing. Developmental Psychology, 23, 451-460.

Steinberg, L. (in press). Pubertal maturation and family relations: Evidence for the distancing hypothesis. In G. Adams, R. Montemayor, & T. Gullotta (Eds.), Advances in adolescent development (Vol. 1). Beverly Hills, CA: Sage.

Steinberg, L., & Hill, J. P. (1978). Patterns of family interaction as a function of age, the onset of puberty, and formal thinking. Developmental Psychology, 14, 683-684.

Stolz, H., & Stolz, L. (1951). Somatic development of adolescent boys. New York: MacMillan.

Strodtbeck, F. L. (1958). Husband-wife interaction and revealed differences. American Sociological Review, 16, 468-473.

Sullivan, H. S. (1953). The interpersonal theory of psychiatry. New York: Norton.

Sullivan, K., & Sullivan, A. (1980). Adolescent-parent separation. Developmental Psychology, 16, 93-99

Susman, E. J., Nottelmann, E. O., Inoff-Germain, G. E., Dorn, L. D., Cutler, G. B., Loriauz, D. L., & Chrousos, G. P. (1985). The relation of relative hormonal levels and physical development and social-emotional behavior in young adolescents. Journal of Youth

and Adolescence, 14, 245-264.

Tanner, J. (1962). Growth at adolescence (2nd ed.). Springfield, IL: Charles C. Thomas.

Tessman, L. H. (1982). A note on the father's contribution to the daughter's ways of loving and working. In S. H. Cath, A. R. Gurwitt, & J. M. Ross (Eds.), Father and child: Developmental and clinical perspectives. Boston: Little, Brown.

Thomas, A., Birch, H. G., Chess, S., Hertzig, M. E., & Korn, S. (1963). Behavioral individuality in early childhood. New York: New York University Press.

Turiel, E. (1983). The development of social knowledge: Morality and convention. Cambridge: Cambridge University Press.

Vuchinich, S. (1984). Sequencing and social structure in family conflict. Social Psychology Quarterly, 47, 217-234.

Watzlawick, P., Bavelas, J. H., & Jackson, D. D. (1967). Pragmatics of human communication: A study of interactional patterns, pathologies, and paradoxes. New York: W. W. Norton.

Watzlawick, P., Weakland, J., & Fisch, R. (1974). Change: The principles of problem formation and problem resolution. New York: W. W. Norton.

Wiener, N. (1948). Cybernetics. Cambridge, MA: MIT Press.

Wilen, J. B., & Petersen, A. C. (1980, September). Young adolescents' responses to timing of pubertal changes. Paper presented at the Annual Meeting of the American Psychological Association, Montreal.

Winch, R. F. (1962). Identification and its familial determinants. New York: Bobbs-Merrill.

Winer, B. J. (1971). Statistical principles in experimental design (2nd ed.). New York: McGraw-Hill.

Wynne, L. C., Ryckoff, I., Day, J., & Hirsch, S. (1958). Pseudo-mutuality in the family relations of schizophrenics. Psychiatry, 21, 205-220.

Yarrow, M. R., Campbell, J. D., & Burton, R. V. (1968). Child rearing: An inquiry into research and methods. San Francisco: Jossey-Bass.

Zahn, L. G. (1975). Verbal-vocal integration as a function of sex and methodology. Journal of Research in Personality, 9, 226-239.

Zuckerman, E., & Jacob, T. (1979). Task effects in family interaction. Family Process, 18, 47-53.

Appendix A

SFIT Questions--Form III

Form III   *1230107037 3*

DECISION-MAKING QUESTIONS

1. Its warm and sunny and you have all day free. What will you do with your family?

   _/_ A. Go on a picnic
   ___ B. Play tennis
   ___ C. Bike riding
   ___ D. Play golf
   _2_ E. Swimming

2. The family is planning on a new addition to the house. What should the family select?

   ___ A. A stereo system
   ___ B. A large projection television screen
   _/_ C. A redwood hot soak tub
   _2_ D. A pool table
   ___ E. A pinball machine

3. The family is going to attend an event at the Civic Auditorium this month. Which would your family prefer?

   _1_ A. Home Show
   ___ B. Circus
   ___ C. Basketball game
   _2_ D. Boat, Sports and Travel Show
   ___ E. Rock Concert

4. The family has just won its choice of one of the following fine cars. Which one do you think the family should get?

   ___ A. Volkswagen camper bus
   _/_ B. Pontiac station wagon
   ___ C. Corvette
   _2_ D. Blazer pick-up truck
   ___ E. Cadillac

5. The family is visiting the Smithonian Institute in Washington, D.C. and the museum closes in one hour. You have time to visit only one of five exhibits. Which should the family select?

   ___ A. Interiors of colonial homes.
   ___ B. America's Army of 1812
   _2_ C. Walt Disney's most famous works
   ___ D. Future living in America
   _1_ E. King Tutankhamen Exhibit

Appendix B

Example of SFIT Transcript

Family ID#: __418__

Coder #: __11__

Date: __12-4-80__

SF311.418 (2)

<u>SFIT CODESHEETS</u>
(good clear demonstration tape)

0	0	0	1	M:	Which is it Carrie?
0	0	0	2	C:	I had swimming.
0	0	0	3	F:	That was one.
0	0	0	4	[F:	And going * on a picnic tóo.
				[	
0	0	0	5	[C:	I don't know how to play golf.
0	0	0	6	[C:	We can't ... we all don't know to * play.
				[	
0	0	0	7	[M:	That's what I have.
0	0	0	8	[M:	I had going on a picnic /1/ and * swimming.
				[	
0	1	0	1	[C:	Sw. (the attempted interruption only got out part of the first word).
0	1	0	2	[C:	I had *.
				[	
0	1	0	3	[M:	Going on a picnic first?
0	1	0	4	C:	Uh-uh. (-)
0	1	0	5	C:	I had swimming first.
0	1	0	6	C:	And I had picnic second.
0	1	0	7	F:	That's the way we did that.

```
0   1   0   8   [C: I ... I have picked the large projection /2/ television *.
                [
0   2   0   1   [F: What was you first choice?

0   2   0   2   F:   What was your first choice on these?

0   2   0   3   [C: Mine was the television and *.
                [
0   2   0   4   [M: Mine too.

0   2   0   5   F:   Mine was too.

0   2   0   6   [F: So we have *.
                [
0   2   0   7   [C: Bcause I remember *.
                [
0   2   0   8   [F: What was * your second choice?
                [
0   2   0   9   [C: Then I /3/ put the stereo.

0   3   0   1   C:   But we already had a whole bunch of.

0   3   0   2   C:   It wouldn't be a pool table.

0   3   0   3   [C: Cause we got rid * of it.
                [
0   3   0   4   [M: I have a soak tub.

0   3   0   5   M:   I thought that would be fun.

0   3   0   6   [F: Well I had * the pinball machine.
                [
0   3   0   7   [C: I was going to put /4/.

0   3   0   8   [C: I put the /4/ stereo * system.
                [
0   4   0   1   [M: Maybe I put that.

0   4   0   2   M:   I don't remember.

0   4   0   3   C:   No. (-)

0   4   0   4   [C: You put *.
                [
0   4   0   5   [F: Maybe I did.
```

SF311.418

SFIT CODESHEETS

0	4	0	6	F:	And she had the stero.
0	4	0	7	F:	Huh?
0	4	0	8	M:	You had the stero?
0	4	0	9	[C:	I didn't know what else. *
0	4	1	0	[F:	You already had it.
0	4	1	1	[C:	We wouldn't get a pool table.
0	4	1	2	[C:	Because we * already got rid of one.
0	4	1	3	[M:	Yeah.
0	4	1	4	C:	Mumble. /5/
0	5	0	1	M:	Let's put the pinball machine.
0	5	0	2	C:	Yeah.
0	5	0	3	C:	Those are fun.
0	5	0	4	M:	OK.
0	5	0	5	[M:	Then *.
0	5	0	6	[C:	We'd end up /6/ going to a circus.
0	6	0	1	[C:	Definitely not * a boat, sports and travel show.
0	6	0	2	[M:	Circus.
0	6	0	3	C:	Those are so boring.
0	6	0	4	C:	What did you say?
0	6	0	5	M:	I said circus first and home show second.
0	6	0	6	C:	Yean.
0	6	0	7	C:	So did I.

SF311.418

SFIT CODESHEETS

0 6 0 8   [F: I said circus first /7/ and home boat sports * and travel
       [show second and home show third.
       [

0 7 0 1   [C: Those are so boring.

0 7 0 2   [C: I won't go to * that.
       [

0 7 0 3   [F: So but since you two you know * that would be the one. /8/
       [

0 7 0 4   [M: OK.

0 8 0 1   [F: I'm surprised that you guys * wouldn't go to a basketball
       [game.
       [

0 8 0 2   [M: OK.

0 8 0 3   [M: Let's try.
       [

0 8 0 4   [C: One of them.

0 8 0 5   C: Oh yeah.

0 8 0 6   C: That's just it.

0 8 0 7   C: Yeah.

0 8 0 8   [F: I put down ah ah first choice cadillac * second choice *
       [pontiac * station wagon.
       [

0 8 0 9   [M: Me too.
       [

0 8 1 0   ↘[C: No.

0 8 1 1   ↘[C: I put /19/ ... * I put station wagon first.
       [

0 9 0 1   [M: Me too.

0 9 0 2   [F: Well *.
       [

0 9 0 3   [C: I think * those kind of.
       [

0 9 0 4   [F: You already had this.

SF311.418

SFIT CODESHEETS

0	9	0	5	[C: I know *. (frustrated) [
0	9	0	6	[F: We, look * we don't want a volkswagon camper * bus. [
0	9	0	7	[C: But. [
0	9	0	8	[C: No. (+) (agree with the negative of the father, but is still frustrated)
0	9	0	9	[F: We do we would take * /10/. [
1	0	0	1	\[C: We want a new station wagon for our new car. (pouty)
1	0	0	2	F: We got we have a station wagon.
1	0	0	3	[C: But we're * going to get rid of it. [
1	0	0	4	[F: And we have a corvette.
1	0	0	5	C: Right?
1	0	0	6	F: We don't have a cadillac.
1	0	0	7	F: Since we're just winning it we have to put down cadillac first. /11/
1	1	0	1	C: Mh-m. (+)
1	1	0	2	F: And a station wagon next.
1	1	0	3	F: And that's what we want.
1	1	0	4	F: We alrady have the corvette and everything else.
1	1	0	5	C: I had the station wagon first.
1	1	C	6	C: Then I put /12/ corvette.
1	2	0	1	C: I didn't know.
1	2	0	2	F: I know you put corvette down.
1	2	0	3	F: I like them.
1	2	0	4	M: This one.

SF311.418

SFIT CODESHEETS

1   2   0   5   [F: Carrie and me had the same * number picked.
                    [
1   2   0   6   [C: I know the first one would be the Disneys of any /13/ that
                    I'd want to go to.

1   3   0   1   F: Future Living in America.

1   3   0   2   C: Huh uh. (+)

1   3   0   3   [F: That's * it too.
                    [
1   3   0   4   [M: I had future living in America.

1   3   0   5   M: And I think I had the Walt Disneys second.

1   3   0   6   [C: I * had Walt Disney one and future.
                    [- M:
1   3   0   7   [F: But since we had /14/ we kinda agree on those * mumble be
                    like.
                    [
1   4   0   1   [M: Walt Disney one.
                    [
1   4   0   2   [M: Yeah.

1   4   0   3   F: So that's the way we would end up.

1   4   0   4   [C: * Yeah. (+)
                    [
1   4   0   5   [M: O.K.

1   4   0   6   F: We're finished! (to administrator)

Appendix C

Coding Manual for Interruptions

INTERRUPTIONS CODING MANUAL

This manual is based largely on: Hill, J. P., Sawin, D. B.,
Shelton, K., & Shifflet, D. (1978). A manual for the coding
of achievement interaction. Boys Town Center for the Study of
Youth Development. Boys Town, Nebraska.

INTERRUPTIONS CODING MANUAL

List of possible codes:

    (1) a non-interrupting utterance   (code = 00)
    (2) an interrupting utterance--unsuccessful   (code = 1A)
    (3) an interrupting utterance--successful   (code = 1S)
    (4) both speakers are successful ("Both Talk") (code = 1B)
    (5) a questionable interruption   (code = 1Q)

Our operational definition of an interruption is the same one that has been used by Steinberg (1977). An interruption is "an attempt to make an assertion or ask a question while another individual is speaking."

1) A non-interrupting utterance (00): The person speaking does not interrupt another speaker when he/she begins his/her utterance.

    Examples:

      M: But I like pizza.   00
      F: Do you think Joel would like it? 00

    NOTE: In the cases where two or more people begin speaking simultaneously, the speakers will receive 00 if they do not interrupt any other speaker. If you can detect that either speaker starts speaking while another is speaking, it must be coded as an interruption.

        Examples:

      F: What did you put?   00
      C: I put ABC movie.   00
      M: I said the Waltons.   00

      Here there is no interruption because the child and mother begin speaking simultaneously.

2) Unsuccessful interruption (1A): Situation in which a person tries to make an assertion or ask a question while another person is speaking. The interruptor is not able to complete his/her speech.

    Examples:

    M: I think we should * go swimming.   00
    C: I want   1A
    M: The younger kids should be * around water. 00
    C: But I   1A
    F: I think so, too.   00

      a) An asterisk (*) denotes the interruption of one utterance by another. The asterisk is placed at the point of interruption. If the interruptor begins speaking and the

first speaker continues. transcribe the first utterance
on one line until the utterance is completed. Place
the interrupting utterance on the next line.

b) When two family members speak simultaneouly, the
utterances must be marked with a bracket ([) on the
left-hand side. This will occur most frequently with
interrupting utterances. Occasionally, two or more
members will begin speaking at exactly the same time
(as in the example above). In these cases, mark the
simultaneous speech with a bracket but do not use an
asterisk.

c) More than one interruption may occur during one utterance.
The same rules apply for use of the asterisk and
bracket in this situation. More than one asterisk can
occur within an utterance if the speaker does not pause
for two seconds or more.

Example:

```
┌F: I think swimming * should be * the family choice.   00
│C: I don't.                                            1B
└M: I don't either.                                     1B
```

d) No period at the end of an utterance indicates that the
person has interrupted his/her own original utterance or
that the person has stopped in midsentence without
completing his/her thought.

Example:

```
F: I think we're doing this the
F: Stop doing that.
```

3) Succcesful interruption (1S): Situation in which a person
makes an assertion or asks a question while another person
is speaking. The person who is interrupted is unable to
complete his/her speech.

Examples:

```
┌M: I think we should * go                         00
└C: I want a picnic.                               1S
 M: But swimming would be more fun.                00
┌M: I think *                                      00
└F: We can go swimming later in the season.        1S
 F: A picnic is better now.                        00


┌M: I think we should * go                         00
└C: I want                                         1S
```

In the last example. neither speaker completes his/her

speech but the child's statement is still coded as a
successful interruption because the mother does not
complete her speech.

4) Both speakers successful (1B): Situation in which a person
makes an assertion or asks a question while another person
is speaking. Both the interruptor and the interrupted person
complete their speeches.

Examples:

```
M: I think that we should * go swimming.        OO
C: I want a picnic.                             1B
M: The younger kids should not be * around water.  OO
C: But I want a picnic.                          1B
```

5) Questionable interruption (1Q): As you must be able
to understand the content of the utterances to determine
whether a speaker completes his/her speech, mumbled
interruptions can present special problems. If you know an
interruption occurred but you cannot determine whether
one of the speakers completed a speech due to mumbling,
code the interruption as 1Q (Interruption-Questionable).

Example:

```
M: I think we should * go on a picnic.          OO
C: I want (mumble)                              1Q
```

The above example could be coded 1A or 1B depending on
whether the child completes his/her speech. Code this 1Q
because it can not be determined whether the child
completes his/her speech or not.

IMPORTANT: The rules above come from the original Hill
et al. (1978) manual. In that manual interruptions were
coded on the line of the interruptor. For purposes of
sequential analysis, the interruption should be coded
on the line of the person being interrupted.

Appendix D

Coding Manual for Disagreements

DISAGREEMENTS CODING MANUAL
Draft #5: April 15, 1986

Technical Report #2 from the "Family Relations during Early
Adolescence" research project. Principal Investigator:
John P. Hill, Ph.D.

Contributors (in alphabetical order):
        John P. Hill
        Grayson N. Holmbeck
        Lynn Marlow
        Janet Putterman

DISAGREEMENTS CODING MANUAL

A. STRUCTURAL CRITERIA

   I. DEFINITION OF SPEECH

       A speech consists of an uninterrupted string of utterances made by the same indivudual. It may not be interrupted by a statement by any other individual, whether or not the interrupting statement is codeable.

   II. ORDER REQUIREMENTS

       Most disagreements occur in the codeable speech immediately following the speech which contains the codeable utterance being disagreed with. Implied here is the requirement that the disagreement AND the statement being disagreed with must be codeable. The statement being disagreed with can in some circumstances be uncodeable if the context is such that one can be certain that a disagreement has occurred. Also implied is that, in general, explanations or innocuous statements by the same speaker may come between a statement and the disagreement. Codeable statements by a third speaker may also come in between a statement and the disagreement. Uncodeable statements by a third speaker, however, may not come between the statement being disagreed with and the disagreement. (For an exception to the latter rule, see Convention 2.3 below). When coding a disagreement, the subject (the person disagreeing) and the object (the person being disagreed with) should be coded (e.g., mother disagrees with child).

      Ex. 2.0.1. M: I put Barbara Streisand.
                 M: I love her voice.
                 M: I just love the way she sings "Evergreen"
                 C: She also sings "Memories."
                 C: And her voice stinks.

      In this case the child's second utterance disagrees with the mother's second utterance and is coded.

      Ex. 2.0.2. M: I put Barbara Streisand.
                 M: I love her voice.
                 F: So you want Streisand second.
                 F: Now, which sports event would you pick?
                 C: Why must you put Barbara Streisand?

      In this example the father's second utterance changes the subject and occurs between the statement (mother's first) and the disagreement (child's first). However, since the father's statements are codeable, the child's

statement is coded.

Ex. 2.0.3. F: I had rock concert first.
            M: Me too.
            F: Then boat show.
            C: I like boats.
            C: But I don't want to go to a rock concert.

In this case, the child's second utterance disagrees with
the father's first utterance and is coded (even though
third party statements occur in between the father's first
speech and the child's speech.

Ex. 2.0.4. F: I had rock concert first.
            M: Mumble.
            C: I don't want to go to a rock concert.

In this case, because the mother interrupts with an
uncodeable statement, the child's disagreement is
not coded since one cannot be certain that the child is
disagreeing with the father.

CONVENTION 2.1: If two family members both disagree **with**
    the same utterance by the third family member, and those
    codeable disagreements are contiguous with the utterance
    and with each other, both disagreements are coded.

    Ex: 2.1.1. F: I had Bob Hope.
                M: Nooo. (-)
                C: He's awful.

    Both the mother's utterance and the child's
    utterance are coded.

CONVENTION 2.2: (Yes, But...) If a person's first
    utterance within a speech agrees with the previous
    person's statement, subsequent criticisms or
    elaborations within that speech can be coded.

    Ex: 2.2.1 M: Don't you think we'd want the pickup?
               F: Yeah.
               F: But not necessarily as a first choice.

    In this case, the father initially agrees but then
    disagrees. As a result, the father's second statement
    is coded.

CONVENTION 2.3: As stated above, if an uncodeable
    statement by a third person occurs in between
    the statement being disagreed with and the
    disagreement, the disagreement is not coded
    since one cannot be certain who the person is
    disagreeing with. However, if the third person's
    statement is uncodeable because it is interrupted,

the disagreeing person's statement can be coded
if one can now be certain who the object of the
disagreement is.

    Ex: 2.3.1   F: I had Bob Hope.
                M: But he's not *.
                C: He's not funny.

    In this case, the mother's interrupted utterance is
not codeable but it is clear that the child is
disagreeing with the father since the interruption
occurs before the mother completes her thought. As a
result, the child's statement is coded.

    Ex: 2.3.2   C: Me and dad put down Corvette and
                     Cadillac.
                F: I was thinking is we're gonna *.
                M: You gotta be kidding.

    The mother's statement interrupts the
father's statement before he finishes his thought.
Although the father's statement is uncodeable, the
mother's statement occurs at a point where one can
be certain that she is disagreeing with the child.
Therefore, the mother's statement is coded.

    CONVENTION 2.4: Occassionally it is clear that a
        disagreement has occurred but it is not as clear
        who the object of the utterance is. When this occurs,
        the most recent utterance is considered the object
        of the disagreement.

    Ex: 2.4.1   M: I think we should go on a vacation.
                C: I think we should put the money in a
                   bank.
                F: No. (-)

    It is clear that the father is disagreeing
but the object of the disagreement is not as clear.
As a result, the object is considered to be the
child.

III.   DISAGREEMENTS IMBEDED IN A SERIES OF UTTERANCES

    Occasionally, a person repeats the same disagreement,
either in a different way, or with a string of utterances
all of which contribute to his or her disagreement with a
previously stated assertion. In these cases, the
first expression of disagreement is coded, and subsequent
utterances by the same speaker, disagreeing with the same
original assertion, are not coded.

Ex. 3.0.1.　M:　I put Barbara Streisand.
　　　　　　　C:　I hate Barbara Streisand.
　　　　　　　C:　Barbara Streisand is awful.

　　In this case the child's second utterance supports and emphasizes her first utterance, and both disagree with the mother's utterance.　The child's first utterance is coded.

Ex. 3.0.2.　M:　I put Barbara Streisand.
　　　　　　　C:　I hate her.
　　　　　　　F:　I put Streisand too.
　　　　　　　C:　Streisand is awful.

　　Here the child's first utterance disagrees with the mother and is coded.　The child's second utterance disagrees with the father and is coded also.

Ex. 3.0.3.　M:　I put Barbara Streisand.
　　　　　　　C:　She's the one who sang "Evergreen."
　　　　　　　C:　I hate her.

　　The child's first utterance is not a disagreement on its own, but the child's second utterance definitely is. As a result, only the child's second utterance is coded.

CONVENTION 3.1:　In the case of a sequence of utterances consisting of a brief exclamation followed by a brief explanation, generally the exclamation will be coded.

Ex. 3.1.1.　M:　I put kitchen.
　　　　　　　C:　Oh.
　　　　　　　C:　I didn't put that.

　　The child's first utterance is coded.

Ex. 3.1.2.　C:　You had vacaton.
　　　　　　　F:　No.
　　　　　　　F:　I didn't.

　　The father's first utterance is coded.

B.　CONTENT CRITERIA

　I.　　Definition of Disagreement

　　Any statement which directly contradicts the assertion made　by the previous speaker is generally coded as a disagreement.　Statements which convey disapproval, dissatisfaction or negative evaluation of the previous assertion are also coded as disagreements.

Ex: 1.0.1.　F:　I picked Steve Martin.
　　　　　　　F:　He's funny.

```
        M:  No, he's not.
```

In this case the mother's statement directly contradicts the father's second statement, so it is coded.

```
    Ex. 1.0.2.  C:  I had pizza.
                F:  I wish you hadn't put that.
                F:  You know how I hate pizza.
```

The father's first statement expresses obvious disapproval of the child's choice. It is coded as a disagreement. The father's second utterance is not coded because it does not communicate a new occasion of disagreement.

```
    Ex. 1.0.3.  M:  I put Bob Hope.
                C:  He's stupid.
```

The child's utterance constitutes a negative evaluation of the mother's choice, as so it is coded.

```
    Ex. 1.0.4  F:  I put M.A.S.H.
               C:  I didn't.
```

The child's utterance directly contradicts the father's utterance and, as a result, is coded.

```
    Ex: 1.0.5  C:  I put down the American's Army of 1812.
               F:  I put that last.
```

The father's utterance is coded since it is a negative evaluation of the child's statement. This would have been the case even if the father had said that he put it third, fourth, or fifth since the family is only required to record their first two choices.

```
    CONVENTION 1.1:  The word "no" is not counted as a
        disagreement if it is said in response to another
        person's question unless disagreement is clearly
        implied (see Ex 1.1.3 below)

        Ex. 1.1.1  C:  Do you want to put Grease first?
                   F:  No.

        Ex. 1.1.2  F:  Were we just supposed to put our
                       first choice?
                   F:  First choice only?
                   M:  No.
    None of the above statements are coded.

        Ex 1.1.3:  F:  How about Pinocchio?
                   C:  Pinocchio?
```

M: No. (-)

Here the child's and the mother's utterances are coded in spite of the fact that they are answers to a question. Implicit in the father's question is his desire to see Pinocchio. As a result, the answers to his question are a negative evaluation of his suggestion.

CONVENTION 1.2: A statement in which a person contradicts him- or herself is not coded as a disagreement.

       Ex 1.2.1: C: Italian.
                C: No.
                C: Pizza.

II.   REITERATION OF CHOICE

A statement which consists of a reiteration of one's choice or assertion when that choice or assertion is incompatible with one expressed by another family member IN THE PREVIOUS SPEECH is coded as a disagreement. Thus, reiterations which do not disagree with an utterance contained in an IMMEDIATELY prior statement are not coded unless the context dictates otherwise.

       Ex. 2.0.1. M: I put steakhouse.
               F: So did I.
               C: I put pizza.
               F: I put steakhouse.

In this example the father's second statement is coded as a disagreement because it is incompatible with the child's choice and is a reiteration of a previous statement of choice.

CONVENTION 2.1: The repeated statement of choice is not coded as a disagreement if it is elicited by a question from another family member.

       Ex. 2.1.1. C: I put Billy Joel.
               M: I had Streisand.
               F: So did I.
               F: Who did you put again, Chip?
               C: I had Billy Joel

CONVENTION 2.2: If a person is stating a choice for the first time, it generally can not be coded as a disagreement. The notion here is that the person's first assertion of choice is simply to make his/her choice known. Assuming that the disagreeing speaker has previously made clear his or her choices, any statement of choice which is in any way inconsitent with the previous speaker's utterance is coded.

  Ex. 2.2.1. M: I had picnic first and swimming
         second.
       C: I had swimming first and picnic
         second.

  Ex. 2.2.2. M: I had picnic first and swimming
         second.
       C: I had the opposite.

  Ex. 2.2.3. M: I had picnic first and swimming
         second.
       C: I had picnic first and bike riding
         second

  Ex. 2.2.4. M: I had picnic first and swimming
         second.
       C: I had swimming first.

    In each of the above cases, the child's statement
is coded as a disagreement providing that he or she
stated those choices previously.

  CONVENTION 2.3: Choices may be made clear without being
    stated in so many words. These utterances are treated
    in the same way as statements of choice. Examples
    of this type of utterance include agreement with
    another's choice, (e.g., "same here," "Me too,"
    "That's what I put"), or references to the opposite of
    another's choice ("I had just the opposite"). These
    statements also include any reference to a choice by
    the letter on the SFIT form ("I had A + B") or by
    the following type of statement: "I had that and that".
    In the latter case, the coder will have to refer to the
    SFIT form to determine which choice is being expressed.

III. INDIRECT DISAGREEMENTS

    Statements made immediately following one speaker's
assertion, which consist of arguments or explanations in
indirect opposition to that statement are generally coded
as disagreements.

  Ex. 3.0.1. F: I'd say if we were planning a new
         addition we'd plan and try to go for
         a pool table first.
       C: We already have a pool table.

    The child's statement is in indirect opposition to the
father's choice and is coded.

  Ex. 3.0.2. M: I picked hot tub.

```
          M:  I figured we'd all enjoy it.
          C:  Those are huge.
          C:  I think they're stupid.
```

In this case the child's second assertion is coded because his first does not necessarily imply negative evaluation. His second statement, however, makes clear the strong negative reaction.

Ex. 3.0.3. C: I pick hamburgers.
            F: We've got to think of the whole family.

The father may be implying that the child has not considered the rest of the family, and, if so, he is expressing disagreement and his statement should be coded. If, however, his statements to this point have been consistent with the child's, this statement does not imply disagreement and is not coded. It is important to examine the preceding context. If it is impossible to determine from the context whether the speakers agree or not, don't code.

IV.   STATEMENTS OF SHOCK OR SURPRISE

        Statements which convey shock or surprise in response to another's assertion are coded if that shock or surprise has a negative quality. In the case of this type of disagreement, it is essential to scan the transcript for evidence of previous agreement or disagreement. Again, if there is insufficient evidence, don't code.

        Examples of common reactive statements are, "You did?" "Really!" "You would?", "You wouldn't!", "Did you really?", "Why?", "No!", "Oh, my!," "Did you?". A reaction statement can also consist of a repitition of another person's stated choice, followed by a "?". With the latter type of disagreement, the disagreer's choice must be different than the other person's choice.

        Ex. 4.0.1. C: I had boat show and basketball.
                    F: I put rock concert for second.
                    C: You did?

In this case the child's second statement reflects shock at the father's choice, which is incompatible with her own. It is coded.

        Ex. 4.0.2. C: I had rock concert and boat show.
                    F: I put rock concert for second.
                    C: Rock concert?

In this example, the child's second statement reflects surprise with the father's choice, which is consistent with her own. It is not coded.

CONVENTION 4.1: Generally, comments which follow
the stated choice of another person, and which consist
of requests for information or clarification are not
coded. If there is any possibility that the questioner
is really seeking information, the utterance is not
coded.

Ex. 4.1.1   M: I put boat show.
            F: I had circus.
            M: Circus for number one?
            M: That's a stupid choice!

In this case the mother's second utterance is not coded
because she may simply be seeking clarification. However,
her third utterance is coded.

CONVENTION 4.2: If the transcriber has noted positive or
negative tone by following exclamatory statements with
(+) or (-), you may use these as a guideline for
coding disagreements. Generally, those marked (+) will
not be coded, and those marked (-) will be, unless
there are strong contextual cues to the contrary.

CONVENTION 4.3: If a family member makes the statement
"What?", this does not necessarily indicate shock or
surprise. That is, it could indicate that the person
did not understand or hear the previous utterance.
As a result, it is not coded.

V.   DOUBTING THE WISDOM OF ANOTHER'S CHOICE

Statements which doubt the wisdom of a person's choice
are generally coded as disagreements. These include
statements which request a rationale for a choice or
assertion, and statements which convey an inability to
comprehend the rationale for the choice or assertion.
Generally, any "Why...." question which follows someone
else's assertion is coded.

Ex. 5.0.1. C: I picked rock concert.
            F: Why would you want to do that?

Ex. 5.0.2. C: I picked pinball.
            M: I don't see why.

In both cases above the second statement is coded as
a disagreement.

Ex. 5.0.3. M: I had kitchen.
            C: I don't know why I should've picked
                the kitchen.
            C: I don't like the kitchen that much.

The child's first utterance is coded. His second
utterance serves an elaborative function and is not
coded.

    Ex. 5.0.4. F: Let's put football first.
              M: I don't see why we have to watch
                  Monday night football.

The mother's utterance is coded.

CONVENTION 5.1: If a speaker questions the wisdom of
his or her own choice, then the statement is not
coded.

    Ex. 5.1.1. M: I picked Steve Martin.
              M: I don't know why.

The mother's second statement does not express
disagreement with any statement made by another
person. It is not coded.

VI.   UNWILLINGNESS TO CONCEDE

Statements within the context of an argument which are
incompatible with the previous statement made by another
speaker, and which convey an unwillingness to concede the
argument are generally coded as disagreements.

    Ex: 6.0.1. F: I think Walt Disney should be first.
              C: Now you just wait a minute Dad.
              F: Well why not?

In this case the child's statement is coded as a
disagreement, as is the father's second statement.
Both convey unwillingness to concede the point.

    Ex 6.0.2: F: I think we should take a vacation.
            C: Take a vacation?
            F: Yes.

The child's statement questions the wisdom
of the father's assertion and as a result the child's
statement is coded. The father then retaliates with a
statement which is incompatible with the child's negative
evaluation of the father's first utterance. Since the
father is also demonstrating an unwillingness to concede,
the father's second statement is coded as a disagreement.
In other words, just as the word "No" indicates an
unwillingness to concede, the word "Yes" can as well
in some situations.

CONVENTION 6.1: Correcting another is counted as a

disagreement.

Ex. 6.1.1. F: You like camping.
            M: No I don't.
            F: Oh, I thought you did.

The mother's statement is coded.

Ex. 6.1.2. F: I had "fix up the house."
           C: You had "take a vacation."
           F: No I didn't.
           C: Yes you did.
           C: I saw it on the paper.

In this example, the child's first two statements, and the father's second statement are all coded as disagreements.

Appendix E

Coding Manual for Positive Affect

AFFECT CODING MANUAL
Draft #3: April 18, 1986

Technical Report #3 from the "Family Relations during Early
Adolescence" research project. Principal Investigator:
John P. Hill, Ph.D.

Contributors (in alphabetical order):
          John P. Hill
          Grayson N. Holmbeck
          Maryanne Valentine

I. DEFINITIONS

Affect is defined as "a feeling or emotion as distinguished from cognition, thought, or action. A strong feeling having active consequences." It is the latter portion of this definition which seems most appropriate for our purposes.

Positive affect
is coded when there are laughes, or rises in the voice. This includes rises in the voice which are associated with surprises but does not include the part of a rise normally associated with questions. Thus, affect could be coded as a result of verbal or nonverbal cues.

Negative affect
is coded when there is sarcasm, a sudden change of voice tone in a negative direction, or objection to another person's assertion which carries a negative tone. It is not coded when the person is expressing boredom or when there is merely an increase in volume due to a person's attempt to avoid being interrupted.

When coding positive or negative affect, the coder should attempt to determine the impact of the statement on himself/herself. If that person said that comment to you, would it feel positive or negative?

II. BASIC RULES

1. When in doubt, no code is made. Rarely will we have perfectly monotonic statements, so we would like to code only obvious displays of affect (if for no other reason than to increase reliability).

2. No weighting (i.e., degree of affect) will be assigned.

3. Affect is not coded on the basis of the transcript content. Do not use the (-) and (+) codings on the transcripts as guides for affect coding.

    Ex. 2.0.1.   M: I picked Steve Martin.
                 C. So did I. He's my favorite (+)

    The child's statement is only coded for positive affect if it includes a rise in the voice, laughing or if it meets the criteria defined in positive affect.

    Ex. 2.0.2.   M: I had Bob Hope.
                 F: Nooo. He's awful. (-)

    Here the father's statement would not necessarily be coded as negative affect unless it included a negative tone or a voice change in a negative direction.

4. If an affect "burst" carries over to more than one statement, the burst is coded as a +A (or -A) on the line on which it begins and then as an arrow to the utterance at which the affective burst terminates. Also, a given person's affective "burst" can be coded on his or her own utterances or on another family member's utterances as well.

> Ex. 2.0.3. +A M: I put the pool table.
>   C: I put the stereo and large T.V.
>   M: And the tub second.

The mother's positive affect starts with her first statement and continues on to her next statement as shown by the arrow.

> Ex. 2.0.4. F: I put the redwood hot tub. ⊂ A+
>   M: Did you?
>   C: I put that second.   ↓

Here the child's positive affect begins with the father's statement and ends after his/her statement.

5. The tape should be viewed one time prior to coding and with the aid of the transcript.

6. Do not code facial expressions (i.e., smiling) because there is so much variability in videotape quality.

7. Code each family using the same criteria. In other words, do not try to establish relative levels of affect for each family.

8. If you have a situation where affect occurs with interruptions imbedded, code the affect as continuing through the imbedded interruptive comments.

> Ex. 2.0.5. F: What would you like to see?
>   +A M: I put circus ' for number one
>   C: So did I.
>   M: And home show for number two.

The mother's positive affect in this case began with her statement and was interrupted by the child. Her affect is coded as continuing through the interruption until her statement was complete.

9. Code nasal exhaling (i.e., quiet laughter) if obvious and pronounced.

10. If a given person's affective burst continues through
    a number of utterances but this burst is not continuous,
    code as two separate bursts.

      Ex. 2.0.6. +↗ C: I put rock concert first.
              ↓ C: What did you put?
                F: I put the circus.
                M: I did too.
        +↗ C. I put the circus second.
          | F: And then I put rock concert.
         ↓ C: Yeah.

Here the child emits two bursts of positive affect and they
are coded separately.

11. All uncoded utterances are assumed to have a neutral
    affective valence.

Appendix F

Coding Manual for Gaze

GAZE CODING MANUAL
Draft #1: April 18, 1986

Technical Report #4 from the "Family Relations during Early Adolescence" research project. Principal Investigator: John P. Hill, Ph.D.

Contributors:
Grayson N. Holmbeck
John P. Hill

I.   DEFINITIONS

Gaze occurs when one individual looks at another individual.
Mutual gaze occurs when two individuals look at each other.
Although there are a number of ways to code gaze, this manual
instructs the coder how to code "head turns." A head turn occurs
when an individual re-orients his/her head.

II. Rules

1. Each individual in the videotape can have three possible
   head positions. For example, the father can look at
   the child, the mother, or at some other area of the room.
   The last position will be referred to as "other."

2. A code should be made whenever an individual re-orients
   his/her head to a new position. For example, the father
   can move his head from mother to child, from child to
   mother, from "other" to child, from "other" to mother,
   etc.

3. A head turn is NOT coded if the individual moves his/her
   head from one "other" position to another "other" position.
   For example, if the father is looking at the table and then
   turns his head to look at the wall, no code is made.

4. Because of the quality of the videotapes, eye movements
   without accompanying head movements should not be coded.

5. The code should be made on that utterance where the head
   began moving towards its new destination.

6. If the head begin moving between utterances, code on the
   earlier utterance.

7. Do not code a head turn if you are in doubt about the
   movement or are in doubt about where its destination was.

Appendix G

Coding Manual for Affiliation and Control

MANUAL FOR AFFILIATION AND CONTROL

Overall Description

Each coder is to become familiar with the definitions of the two
dimensions of interpersonal behavior. These definitions were obtained
from Kiesler (e.g., 1983). Coders will be instructed to view
videotapes of family decision-making tasks. They will be given a
transcript of the interaction to assist them in following the
discussion in case any of the utterances are unclear. After they have
viewed the discussion, the coder is to enter a score (for each dyad)
that corresponds with the definitions in the manual. For each
dimension (Control and Affiliation), the range of ratings is from 1 to
4:

Affiliation: 1 = very hostile/cold;   2 = somewhat hostile/cold;
             3 = somewhat warm/friendly; 4 = very warm/friendly

Control: 1 = very submissive;   2 = somewhat submissive;
           3 = somewhat dominant; 4 = very dominant

The coder will rate every possible dyad in both directions (e.g.,
mother to child <u>and</u> child to mother).

Definitions

The following definitions were employed:

1. Friendly/Warm = to be cooperative, agreeable, courteous, and
   helpful to others

     a. Cooperative = ready to work with, facilitate, aid, or assist
        others; to express friendliness, agreeableness, and
        respect for others. Defining adjectives: congenial, agreeable,
        cooperative, helpful, obliging to others, works well with
        others, friendly.

     b. Agreeable = to agree, consent, or conform to others; to accede
        or assent to, to concur or be of one mind with the opinions,
        feelings or actions of others. Defining adjectives: speaks
        accomodatingly to others, talks cordially to others, seldom
        dissatisfied with situations, difficult to rile, usually
        unruffled.

     c. Courteous = to show awareness of, regard for, or thoughtful
        consideration for the feelings or circumstances of others; to
        speak or act toward others in a polite, well-mannered, non-
        rude, non-curt fashion. Defining adjectives: thinks of others'
        feelings, gracious to others, courteous, grateful to others,
        well-mannered.

    d. Helpful = to aid, assist, succor, support, be of service to others; to expend one's energy, time, or resources to facilitate the actions or tasks of others. Defining adjectives: often helps others, encourages others, typically helpful, readily supports others, usually gentle.

2. Hostile/Cold = to be antagonistic, quarrelsome, impolite, and harmful toward others

    a. Antagonistic = to oppose, strive against, resist, stand in the way of, obstruct, or hinder the desires, plans, or goals of others; to feel hostile and unfriendly toward, or dislike and disrespect others. Defining adjectives: antagonistic, uncooperative, oppositional, unfriendly, resistant to others' requests, collaborates poorly with others, and hostile.

    b. Quarrelsome = to be contentious, argumentative, and disputative with others; ready to dispute, argue, disagree, altercate, squabble, wrangle, complain, or verbally disagree with others. Defining adjectives: argumentative, quarrelsome, often complains and gripes, carries a chip on shoulder, and easily irritated.

    c. Impolite = to show a minimum of awareness and regard for the feelings, circumstances of others; to speak or act toward others in a discourteous, inconsiderate, curt, brusque, or ill-mannered fashion. Defining adjectives: inconsiderate, discourteous, sometimes rude to others, usually unappreciative, ill-mannered.

    d. Harmful = to criticize or attack others, or be ready to act offensively, injure, or damage others with or without provocation. Defining adjectives: can hurt others, harasses others, often harmful, often obstructs others, can be aggressive.

3. Dominant = to be leading/influencing, active/self-assertive, strong/managing toward others. One who takes charge.

    a. Leading/Influencing = to tell or show the way by instruction, helpful information, or advice; to guide another's direction, course, action, opinion, etc.; to exercise power over the minds or behavior of others; to affect, sway, move, or impel another to some action by direct or indirect means. Defining adjectives: able to give orders, talks others into doing what he/she wants, often assumes responsibility, influential, good leader, persuasive, shows initiative.

    b. Active/Self-Assertive = to be busy or frequently engaged in action; to be quick and diligent in doing, acting, performing, or working; to put oneself forward boldly and insistently and to resist influence from others. Defining adjectives: active, bold, firm with others, assertive with others.

    c. Strong/managing = to be mentally or morally powerful, firm, and courageous; to direct others toward a goal; to make decisions for others, for groups, or for organizations; to manipulate resources and expenditures to accomplish a purpose. Defining adjectives: forceful and insistent, decisive with others, strong, unbreakable, compelling.

    d. Taking charge = to command, order, instruct, direct others to do or not do something; to exercise direction or restraint over others. Defining adjectives: able to give orders, controlling, volunteers advice and information, takes charge of activities, dominant.

4. Submissive = to be following/complying, passive/acquiescent, weak yielding, and obedient.

    a. Following/Complying = to easily accept another as a guide or leader; to accept the authority of, give allegiance to, or act in accord with the directions of others; to accept the directions, decisions, opinions, advice, etc. of others. Defining adjectives: easily led, lets others make decisions, avoids responsibility, ineffective with others, follows, vacillating, wants to be led.

    b. Passive/Acquiescent = to be inactive, inert, quiescent, nonparticipating, unreactive, etc.; to be the object of action rather than to cause action; to submit, comply, agree, assent, etc. quietly. Defining adjectives: passive, timid, usually gives in, concedes to others' wishes.

    c. Weak/Yielding = to come across to others as lacking force, potency, efficacy, moral strength, or as deficient in firmness, resolution, or force of character; to give way to or give up under minimal pressure from another. Defining adjectives: weak and yielding, acquiescent, fragile, wishy-washy.

    d. Obedient = to readily follow the commands, directives, instructions, orders, restrictions, etc., of others. Defining adjectives: usually obedient, compliant, seldom offers an opinion, does whatever the group wants, submissive.

Appendix H

Relevant Portion of Child Questionnaire

BOYS TOWN CENTER FOR THE STUDY OF YOUTH DEVELOPMENT

Project on Social Relations in Early Adolescence

John P. Hill, Ph.D., Director

████████████

Questionnaire Study

Dear Seventh Grader:

So far we have talked on the telephone to one of your parents but not directly to you. Following this letter to you is a questionnaire that we hope, with your parents' permission, you will fill out for us.· As you go through the questionnaire, you make your own decision about answering any questions that are on it. There are no right or wrong answers to any of these questions. We just want to know how YOU feel and think about things.

After you fill it out, and we hope that you will, please seal it in the envelope .

Before the questionnaire starts and before you decide about filling it out, there is some information on the next page about the purposes of our study and why we are asking the questions we are asking. Please read this information. We have tried to answer all of the questions about this study that we could think of. If you have questions, please call Mary Ellen Lynch at ████████ or ask your parents to do so.

Thank you for your help.

On the following pages you will find several different kinds of questions. We would like you to fill out these questions in different ways.

For a question that looks like this:

	Very Like			Very Unlike

A) I like football   A......B......C......D......E

Circle the letter closest to the term that best describes how you feel. For example, if your liking football is very like you, circle A.

If the question looks like this: .

B) I like football

_____ A. All of the time
_____ B. Some of the time
_____ C. Not at all

Place a (✓) in front of the answer that best describes how you feel.

But if a question looks like this:

C) I talk about football with

Place a (✓) in each column that applies. If you cannot think of anyone, put a check in the column marked "No One." If you thought of it yourself, check the column marked "Self." If the persons you are thinking of are not on the list, write in their name or title in the column marked "Others."

If you still have any further questions, please ask the person that brought this questionnaire to your house. He or she will be able to help you.

1. I go to _____ School.

2. My teacher's name is _____.

3. I was born _____.
                  Month   Day   Year

4. I am a
        _____1. Boy
        _____2. Girl

    THE NEXT FEW QUESTIONS ARE ABOUT THE THINGS YOU LIKE TO DO:

5. What are the three programs you best like to watch on television?

        1._____

        2._____

        3._____

6. What sports or games do you best like to play?

        1._____

        2._____

        3._____

7. Do you have favorite people that you see on T.V. or in the movies or
   listen to on the radio? Who are they?

        1._____

        2._____

        3._____

	Very Like	Very Unlike

8. Members of my family are very close and get along amazingly well.

1......2......3......4......5.

9. When I was little, my parents thought it was their business to know what I was doing all the time.

1......2......3......4......5.

10. At home I have a very definite daily schedule I am expected to follow.

1......2......3......4......5.

11. If I go on after I finish my education and have a very successful career, my parents will be very pleased.

1......2......3......4......5.

12. Compared to friends my age, there are fewer family rules and regulations I am expected to follow.

1......2......3......4......5.

13. If I have any children, I expect to bring them up the same way I was brought up.

1......2......3......4......5.

14. Our family has always done lots of things together.

1......2......3......4......5.

15. My parents encourage me to stick up for my rights and to fight back if anybody tries to push me around.

1......2......3......4......5.

ALL THE QUESTIONS IN THIS SECTION REFER TO YOUR MOTHER. PLEASE CIRCLE THE
NUMBER THAT BEST DESCRIBES YOUR MOTHER FROM 1 VERY LIKE TO 5 VERY UNLIKE
HER.

	Very Like	Very Unlike

20. My mother believes there is no reason why she should have her own way all the time any more than I should have mine.
1......2......3......4......5

21. My mother tries to get me to talk to her about my troubles.
1......2......3......4......5

22. There are rules in my family but lots of time my mother doesn't really care if I live up to them.
1......2......3......4......5

23. I feel that I should not question my mother's way of thinking or doing things.
1......2......3......4......5

24. My mother didn't mind if I played with toys that were supposed to be for the opposite sex.
1......2......3......4......5

25. When I do something I shouldn't my mother tries to get me to understand why I am wrong rather than simply punishing me.
1......2......3......4......5

26. My mother tries to get me to do my best on everything I do.
1......2......3......4......5

27. My mother doesn't want me to bother her with unimportant little problems.
1......2......3......4......5

28. I receive a good deal of physical attention (pat on the head or shoulder, hug or squeeze) from my mother.
1......2......3......4......5

29. I would describe my mother as a strict person.
1......2......3......4......5

30. I think my mother criticizes me or punishes me a lot more than I deserve.
1......2......3......4......5

31. I am expected to do what my mother tells me to without talking it over or knowing why.
1......2......3......4......5

Very Like   Very Unlike

32. My mother always sets up high standards for me to meet.

1......2......3.....4......5

33. I am expected to tell my mother if I believe a family rule is unfair.

1......2......3.....4......5

34. I feel that my mother approves of me and the things I do.

1......2......3.....4......5

35. My mother is very supportive of "women's lib."

1......2......3.....4......5

36. My mother often praises me for doing well.

1......2......3.....4......5

37. My mother tries to impress upon me that getting along with people is one of the most important things I can learn.

1......2......3.....4......5

38. My mother and I argue a lot about what I should be doing or how I should behave.

1......2......3.....4......5

39. My mother always takes an interest in my activities.

1......2......3.....4......5

40. My mother often criticizes what I am doing.

1......2......3.....4......5

41. My mother is always careful and cautious about what she lets me do for fear I'll get hurt.

1......2......3.....4......5

42. My mother changes her mind so often in what she expected of me I just gave up trying to understand her.

1......2......3.....4......5

43. My mother believes I have a right to my own point of view and allows me to express it.

1......2......3.....4......5

44. When I do something I'm not supposed to and my mother finds out about it, she very often lets me get away with it.

1......2......3.....4......5

45. My mother tries to get me to keep working at something when I am ready to give up.

1......2......3.....4......5

Very Like   Very Unlike

46. My mother thinks it's better to   1......2......3.....4......5
    keep my ideas to myself rather
    than argue with someone.

47. My mother talks about the kind of   1......2......3.....4......5
    job I will have when I'm out of
    school.

48. My mother tries to get me to think   1......2......3.....4......5
    that I can have a job that isn't
    usually held by someone of my sex.

49. My mother acts unhappy when I get   1......2......3.....4......5
    worse grades than I should have.

50. My mother won't let me solve   1......2......3.....4......5
    my problems for myself.

51. My mother treats me as though   1......2......3.....4......5
    I'm younger than I really am.

52. My mother tells me that people   1......2......3.....4......5
    won't like me if I show them
    I'm mad at them.

53. My mother worries about me a lot.   1......2......3.....4......5

54. My mother always wants to know   1......2......3.....4......5
    where I'm going.

55. My mother warns me against going   1......2......3.....4......5
    anywhere with someone I don't know.

56. My mother almost always takes me   1......2......3.....4......5
    to the doctor when I'm not very
    sick.

57. My mother gets upset if I come   1......2......3.....4......5
    home a few minutes late for
    dinner.

58. My mother tells me that I have   1......2......3.....4......5
    to be home at a certain time after
    school or in the evening.

59. My mother tells me not to talk   1......2......3.....4......5
    to strangers.

60. My mother thinks that I should   1......2......3.....4......5
    walk with someone to school or
    on errands rather than walking
    alone.

61. My mother does not like to   1......2......3.....4......5
    leave me at home alone at night.

62. My mother thinks that I should be   1......2......3.....4......5
    driven home rather than walk
    home from any activities that
    end after dark.

63. My mother thinks that I should   1......2......3.....4......5
    get a ride rather than take city
    buses to go shopping, to movies,
    etc.

64. My mother thinks it's important   1......2......3.....4......5
    for me to have lots of friends.

65. My mother gives me the feeling   1......2......3.....4......5
    that I can talk to her honestly.

66. My mother gives me enough   1......2......3.....4......5
    freedom.

67. My mother trusts me to use my   1......2......3.....4......5
    own judgment.

88. How are most decisions made between you and your <u>mother</u>? (Check one)

     _____ 1. My mother just tells me what to do.
     _____ 2. She listens to me, but she makes the final decision
                herself
     _____ 3. We made the decision together
     _____ 4. I listen to her, but I make the final decision
     _____ 5. I just decide what I will do myself

89. When you don't know why your <u>mother</u> makes up her mind about something or has certain rules for you to follow, will she tell you the reason? (Check one)

     _____ 1. Never
     _____ 2. Once in a while
     _____ 3. Sometimes
     _____ 4. Usually
     _____ 5. Yes, always

90. Are there many things that you enjoy doing with your <u>mother</u>? (Check one)

     _____ 1. Yes, almost everything
     _____ 2. Many things
     _____ 3. Quite a few things
     _____ 4. Hardly anything
     _____ 5. Nothing

91. Do you feel that you can talk over your personal problems with your <u>mother</u>? (Check one)

     _____ 1. None of them
     _____ 2. Very few of them
     _____ 3. Some of them
     _____ 4. Most of them
     _____ 5. All of them

92. How close is your relationship with your <u>mother</u>? (Check one)

     _____ 1. Extremely close
     _____ 2. Quite close
     _____ 3. Moderately close
     _____ 4. Not particularly close
     _____ 5. Not at all close

93. How much do you depend on your <u>mother</u> for advice and guidance? (Check one)

     _____ 1. Not at all
     _____ 2. A little
     _____ 3. Quite a bit
     _____ 4. Very much
     _____ 5. Completely

THE FOLLOWING QUESTIONS ARE ABOUT YOU AND YOUR FATHER

94. How are most decisions made between you and your _father_? (Check one)

    _____ 1. My father just tells me what to do
    _____ 2. He listens to me, but he makes the final decision
               himself
    _____ 3. We make the decision together
    _____ 4. I listen to him, but I make the final decision
    _____ 5. I just decide what I will do myself

95. When you don't know why your _father_ makes up his mind about something or has certain rules for you to follow, will he explain the reason?

    _____ 1. Never
    _____ 2. Once in a while
    _____ 3. Sometimes
    _____ 4. Usually
    _____ 5. Yes, always

96. Are there many things that you enjoy doing with your _father_? (Check one)

    _____ 1. Yes, almost everything
    _____ 2. Many things
    _____ 3. Quite a few things
    _____ 4. Hardly anything
    _____ 5. Nothing

97. Do you feel that you can talk over your personal problems with your _father_? (Check one)

    _____ 1. None of them
    _____ 2. Very few of them
    _____ 3. Some of them
    _____ 4. Most of them
    _____ 5. All of them

98. How close is your relationship with your _father_? (Check one)

    _____ 1. Extremely close
    _____ 2. Quite close
    _____ 3. Moderately close
    _____ 4. Not particularly close
    _____ 5. Not at all close

99. How much do you depend on your _father_ for advice and guidance? (Check one)

    _____ 1. Not at all
    _____ 2. A little
    _____ 3. Quite a bit
    _____ 4. Very much
    _____ 5. Completely

100. When you have problems, whose ideas and opinions do you respect more, your _mother's_ or your _best friends'_? (Check one)

    _____ 1. Mother's, much more
    _____ 2. Mother's, a little more
    _____ 3. About equal
    _____ 4. Best friends', a little more
    _____ 5. Best friends', much more

101. When you have problems, whose ideas and opinions do you respect more, your _father's_ or your _best friends'_? (Check one)

    _____ 1. Father's, much more
    _____ 2. Father's, a little more
    _____ 3. About equal
    _____ 4. Best friends', a little more
    _____ 5. Best friends', much more

102. Some young people think their parents are somewhat old-fashioned or out of step in their ways of looking at things. Are your parents like this? (Check one)

    _____ 1. Almost always
    _____ 2. Quite often
    _____ 3. Once in a while
    _____ 4. Never

103. Are your opinions about most things similar to the opinions of your parents, or are they different? (Check one)

    _____ 1. Opinions are similar
    _____ 2. Opinions are different

104. Do your parents give you as much freedom as you think you _should_ have? (Check one)

    _____ 1. Yes, both do
    _____ 2. Mother does
    _____ 3. Father does
    _____ 4. Neither does

ALL THE INSTRUCTIONS IN THIS SECTION REFER TO YOUR FATHER. PLEASE CIRCLE
THE NUMBER THAT BEST DESCRIBES YOUR FATHER FROM 1 VERY LIKE TO 5 VERY
UNLIKE HIM.

	Very Like			Very Unlike

126. My father believes there is no reason why he should have his own way all the time any more than I should have mine.

1......2......3......4.....5

127. My father tries to get me to talk to him about my troubles.

1......2......3......4.....5

128. There are rules in my family but lots of times my father doesn't really care if I live up to them.

1......2......3......4.....5

129. I feel that I should not ever question my father's way of thinking or doing things.

1......2......3......4.....5

130. My father didn't mind if I played with toys that were supposed to be for the other sex.

1......2......3......4.....5

131. When I do something I shouldn't my father tries to get me to understand why I am wrong rather than simply punishing me.

1......2......3......4.....5

132. My father tries to get me to do my best on everything I do.

1......2......3......4.....5

133. My father doesn't want me to bother him with unimportant little problems.

1......2......3......4.....5

134. I receive a good deal of physical attention (pat on the head or shoulder; a hug or a squeeze) from my father.

1......2......3......4.....5

135. I would describe my father as a a strict parent.

1......2......3......4.....5

136. I think my father criticizes me or punishes me a lot more than I deserve.

1......2......3......4.....5

137. I am expected to do what my father tells me to do without talking it over or telling me why.

1......2......3......4.....5

	Very Like	Very Unlike

138. My father always sets up high
standards for me to meet.

1......2......3......4.....5

139. I am expected to tell my father
if I believe a family rule is
unfair.

1......2......3......4.....5

140. I feel that my father approves
of me and the things I do.

1......2......3......4.....5

141. My father is very supportive of
"women's lib."

1......2......3......4.....5

142. My father praises me for doing
well.

1......2......3......4.....5

143. My father tries to impress upon
me that getting along with people
is one of the most important
things I can learn.

1......2......3......4.....5

144. My father and I argue a lot about
what I should be doing or how
I should behave.

1......2......3......4.....5

145. My father always takes an interest
in my activities.

1......2......3......4.....5

146. My father often criticizes what
I am doing.

1......2......3......4.....5

147. My father is always careful and
cautious about what he lets me
do for fear I'll get hurt.

1......2......3......4.....5

148. My father changes his mind so
often about what he expects of
me that I just give up trying
to understand him.

1......2......3......4.....5

149. My father believes I have a
right to my own point of view
and allows me to express it.

1......2......3......4.....5

150. When I do something I am not
supposed to and my father finds
out about it, he very often lets
me get away with it.

1......2......3......4.....5

151. My father tries to get me to
keep working at something when
I am ready to give up.   1......2......3......4.....5

152. My father thinks it's better to
keep my ideas to myself rather
than to argue with someone.   1......2......3......4.....5

153. My father talks about the kind
of job I will have when I'm out
of school.   1......2......3......4.....5

154. My father tries to get me to
think that I can have a job
that isn't usually held by
someone of my sex.   1......2......3......4.....5

155. My father acts unhappy when I
get worse grades than I should
have.   1......2......3......4.....5

156. My father won't let me solve
my problems for myself.   1......2......3......4.....5

157. My father treats me as though
I'm younger than I really am.   1......2......3......4.....5

158. My father tells me that people
won't like me if I show them I'm
mad at them.   1......2......3......4.....5

159. My father worries about me
a lot.   1......2......3......4.....5

160. My father always wants to know
where I'm going.   1......2......3......4.....5

161. My father warns me against
going anywhere with someone
I don't know.   1......2......3......4.....5

162. My father almost always takes
me to the doctor when I'm not
very sick.   1......2......3......4.....5

163. My father gets upset if I come
home a few minutes late for
dinner.   1......2......3......4.....5

164. My father tells me that I have to
be home at a certain time after
school or in the evenings.   1......2......3......4.....5

165. My father warns me about   1......2......3......4.....5
     talking to strangers.

166. My father thinks that I should   1......2......3......4.....5
     walk with someone to school or
     on errands rather than walking
     alone.

167. My father does not like to   1......2......3......4.....5
     leave me at home alone at night.

168. My father thinks that I should   1......2......3......4.....5
     be driven home rather than walk
     home after any activities that
     end after dark.

169. My father thinks that I should   1......2......3......4.....5
     get a ride rather than take
     city buses to go shopping, to
     movies, etc.

170. My father thinks it's important   1......2......3......4.....5
     for me to have lots of friends.

171. My father gives me the feeling   1......2......3......4.....5
     that I can talk to him honestly.

172. My father gives me enough   1......2......3......4.....5
     freedom.

173. My father trusts me to use my   1......2......3......4.....5
     own judgment.

Appendix I

Relevent Portion of Parent Questionnaire

WHAT IS IN IT FOR US?

You will get a copy of the results and you will be invited to the Boys Town Center for an informal presentation and a question and answer period. We are trying to set up workshops on parenting adolescents for those who may wish to attend them. Participants in our study will have an opportunity to join these workshops if they wish.

WILL YOU BE REQUIRED TO PARTICIPATE ANY FURTHER?

The return of this questionnaire does not obligate you to participate in any further research unless you desire to do so.

WILL YOU BE ASKED TO DO ANYTHING IN FUTURE STUDIES?

We will select a small number of families and ask them to come to the Boys Town Center at a later point in time. These families will be asked to participate in some problem-solving and family decision-making tasks that are generally considered to be fun and interesting by those who have done them in the past. Just as you do not have to answer any question you do not wish to answer on the present questionnaire, so you will have the opportunity to decline participation in the tasks after hearing a description of them.

HOW ABOUT THIS QUESTIONNAIRE?

Take some time to leaf through the questionnaire before you fill it out. You will notice that there are questions on how you handle certain situations with your child, on how decisions get made in your family, on how you feel about being a parent at this point of transition in your child's life. Since we feel that all of these things might be quite different in families with different kinds of involvement in the world of work, we have included questions about this too.

Some of the most important questions in this questionnaire deal with your identification of what the situations are that you will be facing as the parent of an early adolescent child. Having information on these issues from a number of families will enable us to put it together and give it back to parents. We think it could be very helpful to families to know what other families "in the same boat" see as problems and solutions at this point in their family lives.

Naturally we hope that you will complete the questionnaire but you, of course, have the right to choose not to do so. The majority of questions in it have been used before in studies of families with older adolescents. We hope that none of the questions are offensive or embarrassing to you. Please remember that you do not have to answer any question that you do not want to answer and that your participation is voluntary.

We know from experience that families differ a lot in the problems and concerns they experience during this period. Some families must deal with some kinds of issues and worries, others with other kinds. In order to cover all kinds, our lists of issues and concerns have to be pretty long.

IF YOU ARE NOW WORKING AT A FULL- OR PART-TIME JOB PLEASE ANSWER THE NEXT THREE QUESTIONS. IF NOT GO ON TO QUESTION 8.

3. Name of the organization you work for

4. Title of your job

What are your most important activities or duties? (For example: kept account books, filed, sold cars, operated printing press, finished concrete.)

5. Is the organization that you work for

_____ 1. Business
_____ 2. Government
_____ 3. Nonprofit
_____ 4. Other (What? _____)

6. Is your work

_____ 1. Full-time?
_____ 2. Part-time?

7. Are you

_____ 1. Self-employed
_____ 2. Working for salary or wages
_____ 3. Own business no incorporated (or farm)
_____ 4. Own business incorporated

8. What is your age?

_____ 1. Under 30 years
_____ 2. 31-35 years
_____ 3. 36-40 years
_____ 4. 41-45 years
_____ 5. 46-50 years
_____ 6. Over 50 years

FOLLOWING ARE SOME QUESTIONS ABOUT _____'S ACTIVITIES WITH THE FAMILY. BY
ACTIVITIES WITH THE FAMILY, WE MEAN ACTIVITIES INVOLVING ONE OR BOTH PARENTS
AND ANY OF _____'S BROTHERS AND SISTERS. PLEASE INDICATE YOUR ANSWER BY
CHECKING THE COLUMN THAT COMES CLOSEST TO YOUR IMPRESSIONS. IF _____ HAS
HAD NO OPPORTUNITIES TO DO THESE THINGS WITH THE FAMILY RECENTLY PLEASE
CHECK THE COLUMN MARKED N.O.

	Very Often	Sometimes	Rarely	Never	N.O.
9. In the past few months how often has _____ gone on vacation trips, or outings with the family?	_____	_____	_____	_____	_____
10. In the past few weeks how often has _____ gone to social gatherings with the family away from home (e.g., go visiting another family; to a club meeting, to parties)?	_____	_____	_____	_____	_____
11. In the past few weeks how often has _____ played games with the family (e.g., sports, board games)?	_____	_____	_____	_____	_____
12. In the past few weeks, how often has _____ worked on a project around the house or yard with the family?	_____	_____	_____	_____	_____

13. In the past few weeks, how often did _____ eat the evening meal with the family?

  _____ 1. About every night
  _____ 2. Most of the time
  _____ 3. About half the time
  _____ 4. Rarely
  _____ 5. Hardly ever

14. In general, how much do you think _____ likes doing things with the family? Does _____ like doing things with the family...

  _____ 1. Very much
  _____ 2. Somewhat
  _____ 3. Not very much
  _____ 4. Not at all

15. How much time has _____ spent with the family within the last week? (Actively involved with the family, for example, eating, games, watching T.V. together, outings.)

  _____ 1. 0-5 hours
  _____ 2. 6-10 hours
  _____ 3. 11-15 hours
  _____ 4. 16-20 hours
  _____ 5. 21-30 hours
  _____ 6. More than 30 hours

16. Within the last week would you describe the time _____ spent in activities with the family as being generally:

  _____ 1. Very enjoyable for everybody
  _____ 2. Enjoyable for everybody
  _____ 3. Enjoyable for some but not for others
  _____ 4. Enjoyable for everybody at times
  _____ 5. Not very enjoyable for anybody

17. Are there some activities that just _____ and you enjoy doing together? Please list.

  1. _____

  2. _____

  3. _____

  4. _____

  5. _____

18. About how many times did you and _____ get involved in any of these activities together in the last week?

_____ 1. No opportunity
_____ 2. One time
_____ 3. Twice
_____ 4. Three times
_____ 5. Four times
_____ 6. Five times
_____ 7. More than five times

19. How much time did you and _____ spend together on any of these activities last week?

_____ 1. No opportunity
_____ 2. 1 hour
_____ 3. 1 or 2 hours
_____ 4. 3 or 4 hours
_____ 5. 5 or 6 hours
_____ 6. more than 6 hours

20. Would you say that your relationship with your child is:

_____ 1. Extremely close
_____ 2. Quite close
_____ 3. Somewhat close
_____ 4. Not particularly close
_____ 5. Not at all close

21. Do you show your affection toward _____ quite a bit or are you very reserved?

_____ 1. Show affection quite a bit
_____ 2. Show affection somewhat
_____ 3. Fairly reserved
_____ 4. Very reserved

22. Does _____ show affection toward you quite a bit or is reserved?

_____ 1. Show affection quite a bit
_____ 2. Show affection somewhat
_____ 3. Fairly reserved
_____ 4. Very reserved

23. Some parents feel that they do not understand their child's ways of looking at things. Do you ever feel this way?

_____ 1. Almost always
_____ 2. Quite often
_____ 3. Once in a while
_____ 4. Never

ON THE NEXT PAGE IS THE SAME LIST OF SITUATIONS AS BEFORE. BESIDE EACH ARE
PLACES TO MAKE CHECK-MARKS IN ANSWER TO THE FOLLOWING QUESTIONS (REMEMBER THAT
THESE ARE QUESTIONS ABOUT YOUR RULES FOR _____ AND NOT OTHER CHILDREN)

28. Look at the column marked 28. Please put a check-mark in this column
     beside each situation about which you have had some disagreement with
     _____ in the past few weeks.

29. Look at the column marked 29. Please put a check-mark in this column
     beside each situation about which you have had many or serious dis-
     agreements with _____ in the past few weeks.

30. Look at the column marked 30. Please put a check-mark in this column
     beside each situation where the rule was not obeyed and you had to
     punish _____ for it in the past few weeks.

31. Look at the column marked 31. Please put a check mark in this column
     beside each situation about which you have had to remind
     about the rules in the past few weeks.

32. Look at the column marked 32. Please put a check mark in this column
     beside each situation where you punished _____ in the past few
     weeks and also explained what the reason was for the rule or the
     punishment.

Situation	28 Disagree?	29 Serious or Many?	30 Punish?	31 Remind?	32 Explain?
A. Time for being in at night on weekends	___	___	___	___	___
B. Amount of dating	___	___	___	___	___
C. Against going steady	___	___	___	___	___
D. Limiting time spent watching television	___	___	___	___	___
E. Time spent on homework	___	___	___	___	___
F. About _____'s grooming	___	___	___	___	___
G. The neatness or cleanliness of _____'s room	___	___	___	___	___
H. Going around with certain boys	___	___	___	___	___
I. Going around with certain girls	___	___	___	___	___
J. Doing things with the family	___	___	___	___	___
K. Meeting religious obligations	___	___	___	___	___
L. What _____ does to help around the house	___	___	___	___	___
M. How _____ spends money	___	___	___	___	___
N. About _____'s eating habits	___	___	___	___	___
O. About what _____ wears	___	___	___	___	___

THE NEXT SELECTION INCLUDES QUESTIONS ON HOW YOU FEEL ABOUT BEING A PARENT TO
_____. PLEASE PUT A CHECK-MARK IN THE COLUMN THAT COMES CLOSEST TO YOUR
FEELINGS.

	(1) Very Much	(2) Somewhat	(3) A little	(4) Not at all
33. Do you find that being a parent to this child is a satisfying experience?	___	___	___	___
34. Do you worry about this child's behavior, attitude, or development?	___	___	___	___
35. Do you frequently feel proud of this child?	___	___	___	___
36. Do you feel uncomfortable about discussing certain issues with this child, like choice of friends, dating, etc.?	___	___	___	___
37. Do you feel glad to be a parent to this child?	___	___	___	___
38. Does parenting this child make you tense or anxious?	___	___	___	___

39. In what ways do you find parenting your child to be a satisfying
    experience?

40. Have any events occurred in the last year that have made you
    particularly glad to be _____'s parent?

    _____ 1. Yes
    _____ 2. No

41. If so, what are they?

65. Thinking realistically, what job do you think your child will <u>actually</u> hold 15 years from now?

66. Among the possibilities listed below, which do you prefer in a job for your child? (<u>Rank</u> in order of importance from 1 to 5: 1 for the highest in importance, 2 for the <u>second highest</u>, 3 for the <u>third highest</u>.

_____ A. High income
_____ B. No danger of being fired
_____ C. Short working hours and lots of free time
_____ D. Chances for advancement
_____ E. The work gives a feeling of accomplishment

67. What three activities in your life give you the most satisfaction? <u>Rank</u> the three most important to you from 1 to 3.

_____ A. Your career or occupation
_____ B. Your spouse's career or occupation
_____ C. Leisure-time recreational activities
_____ D. Religious beliefs or activities
_____ E. Participation as a citizen in the affairs of your community
_____ F. Participation in activities directed toward national and international betterment
_____ G. Your family life

68. Would you say that _____ confides in you

_____ 1. A lot; keeps no secrets from me
_____ 2. Quite a bit; most often I know what's going on inside _____
_____ 3. About half the time
_____ 4. Rarely do I know what's going on in _____'s life
_____ 6. Not at all; I never know what he/she is thinking

69. We all have a "bad day" occasionally. When _____ has a bad day how likely is he/she to come to you for "moral support" or affection.

_____ 1. Never
_____ 2. Rarely
_____ 3. Sometimes
_____ 4. Frequently
_____ 5. Most of the time

OCC ___ ___ ___   DS ___ ___ ___

75. Some parents feel that their child at times does the opposite of what they suggest just because they suggested it. Do you ever feel this way?

_____ 1. Almost always
_____ 2. Quite often
_____ 3. Once in a while
_____ 4. Never

Appendix J

Pubertal Change Questions

Physical Development

ADOLESCENCE IS THE PERIOD OF GREATEST PHYSICAL GROWTH SINCE INFANCY. ADOLES-
CENTS' BODIES GROW AT DIFFERENT RATES AND THERE IS WIDE VARIATION IN THE ONSET
OF PHYSICAL CHANGES SUCH AS THE HEIGHT SPURT, CHANGE IN BODY PROPORTIONS, ETC.

IF YOUR CHILD IS A GIRL, PLEASE COMPLETE THIS SECTION; IF YOUR CHILD IS A BOY,
PLEASE GO ON TO QUESTION 47.

PLEASE CHECK (√) WHEN THE FOLLOWING PHYSICAL DEVELOPMENTS OCCURRED IN
YOUR DAUGHTER:

	Not Yet	Within the last six Months	Within the last year	Prior to this time a year ago
42. My daughter has grown several inches taller.				
43. My daughter's figure has begun to develop.				
44. My daughter has started her menstrual periods.				
45. My daughter has developed skin problems.				

46. In comparison to other girls her age, I would say that my daughter looks:

_____ 1. Much more mature
_____ 2. Somewhat more mature
_____ 3. About the same
_____ 4. Somewhat less mature
_____ 5. Much less mature

Appendix K

Tables

Table 1

Means and Standard Deviations for Observational Variables for the Full
Sample of Families with Seventh-Grade Females (N=111)

Variable	Mean	SD	Variable	Mean	SD
Ftt (words)	278.07	162.49	FboM	3.14	2.94
Mtt (words)	288.70	152.46	MboF	3.00	2.70
Ctt (words)	265.38	149.01	FboC	2.76	2.40
			CboF	3.11	3.21
Ftt (utt)	58.28	29.57	MboC	2.83	2.38
Mtt (utt)	61.27	28.26	CboM	3.49	3.29
Ctt (utt)	66.95	32.45			
			FiM	5.87	4.53
Fexplain	3.73	3.12	MiF	5.74	4.86
Mexplain	3.85	2.78	FiC	5.68	4.74
Cexplain	3.15	2.79	CiF	5.74	5.20
			MiC	5.72	4.01
Faffect	4.17	5.18	CiM	6.56	5.07
Maffect	8.64	7.40			
Caffect	10.24	8.18	FMgaze	13.64	8.40
			MFgaze	15.08	8.46
FMdisag	3.17	2.85	FCgaze	9.67	8.24
MFdisag	3.64	2.96	CFgaze	16.81	12.54
FCdisag	4.29	4.22	MCgaze	12.35	9.33
CFdisag	4.65	4.55	CMgaze	20.09	13.26
MCdisag	4.34	3.34			
CMdisag	3.90	2.74	FMaffil	2.48	.60
			MFaffil	2.78	.61
FuiM	.60	1.05	FCaffil	2.61	.59
MuiF	.51	.76	CFaffil	2.81	.60
FuiC	.46	.82	MCaffil	2.91	.63
CuiF	.47	.80	CMaffil	2.91	.60
MuiC	.53	.86			
CuiM	.58	.85	FMcontrol	2.76	.76
			MFcontrol	2.75	.62
FsiM	1.64	1.68	FCcontrol	2.86	.71
MsiF	1.73	2.20	CFcontrol	2.58	.63
FsiC	1.91	2.10	MCcontrol	2.82	.61
CsiF	1.55	1.89	CMcontrol	2.72	.59
MsiC	1.73	1.77			
CsiM	1.74	1.95			

Note. F = father; M = mother; C = child (daughter); tt = talking time;
(words) = words spoken; (utt) = utterances spoken; explain =
explanations; affect = positive affect; disag = disagreements; ui =
unsuccessful interruptions; si = successful interruptions; bo =
interruptions where both individuals continue talking; i = total
interruptions (ui + si + bo); gaze = head turns; affil = affiliation.

Table 2

Pearson Correlations between Disagreements (Observational) and the
Psychosocial Questionnaire Variables for the Overlap Sample (N=37)

	Disagreements						
	FMdis	MFdis	FCdis	CFdis	MCdis	CMdis	Tdis
Quest Variables							
Faccept	-.26	-.36**	-.25	-.22	-.30*	-.39**	-.42***
Maccept	.06	.06	.04	.09	.07	-.01	.07
Rulstan	-.24	-.48***	.02	-.31*	-.07	-.15	-.27*
Fparinfl	-.02	-.03	.07	-.06	-.02	-.16	-.05
Mparinfl	-.04	-.15	.01	-.15	-.00	-.17	-.11
Fact-chi	.10	.01	.22	.26	.29*	.20	.25
Mact-chi	-.53***	-.47***	-.20	-.27*	-.16	-.28*	-.42***
Fact-fam	.04	.09	-.14	.18	.14	-.08	.06
Mact-fam	.05	.17	.16	.26	.00	.27*	.18
Oppos (Fa)	.03	-.06	.01	-.14	-.10	-.04	-.06
Oppos (Mo)	-.13	-.04	-.06	-.10	.03	-.07	-.06
Fparsat	-.12	.05	.15	.35**	.25	.04	.16
Mparsat	.13	.30*	.27	.19	.11	-.00	.22
Fdisrule	-.19	.02	.04	-.13	.15	-.20	-.05
Mdisrule	-.10	-.04	.09	-.06	-.14	-.16	-.09

Note. Quest = questionnaire; F = father; M = mother; C = child; dis =
"disagreement" (e.g., FMdis = father disagrees with mother); Tdis = total
disagreements for the family; accept = acceptance (child report); rulstan
= rules and standards (child report); parinfl = parental influence (child
report); act-chi = activities with child (parental report); act-fam =
activities with family (parental report); oppos = child oppositionalism
(parental report); parsat = parental satisfaction (parental report);
disrule = disagreements over rules (parental report).

* p < .10   ** p < .05   *** p < .01   (two-tailed).

Table 3

Pearson Correlations between Attempted Interruptions (Observational) and the Family Process Observational Variables for the Overlap Sample (N=37)

	Interruptions						
	FiM	MiF	FiC	CiF	MiC	CiM	Ti
Observ Variables							
FMaffil	.10	.12	.18	-.06	.01	.07	.13
MFaffil	.00	.14	.09	-.11	.18	.14	.14
FCaffil	.16	.15	.28*	-.04	.07	.01	.19
CFaffil	.03	.16	.38**	-.05	.04	.18	.24
MCaffil	.22	.22	.10	-.02	.27*	.19	.31*
CMaffil	.05	-.00	.38**	-.01	.00	.03	.13
FMcontrol	.16	.38**	.24	.34**	.08	-.09	.34**
MFcontrol	.07	.41***	-.25	.03	.14	-.04	.18
FCcontrol	.03	.30*	.41***	.46***	.11	.08	.39**
CFcontrol	-.05	.06	.27*	-.07	.13	-.42***	-.01
MCcontrol	.22	.39**	-.20	.12	.12	-.01	.22
CMcontrol	-.05	.06	.27*	-.07	.13	-.42***	-.01
Faffect	.01	-.05	-.12	-.23	-.18	.06	-.14
Maffect	-.14	.06	.22	.01	.05	.04	.10
Caffect	-.10	.08	-.03	-.10	.04	-.10	-.02
Fexplain	.21	.09	.05	.26	-.12	-.00	.14
Mexplain	.07	-.18	-.14	-.33**	-.18	-.01	-.23
Cexplain	-.11	-.10	.09	-.20	-.00	.23	-.07
FMgaze	-.03	-.11	.18	.01	-.14	.07	-.01
MFgaze	.16	-.13	-.16	.16	.30*	-.12	.12
FCgaze	.05	-.02	-.26	.06	-.05	-.12	-.05

Table 3 (continued)

Interruptions

Observ Variables	FiM	MiF	FiC	CiF	MiC	CiM	Ti
CFgaze	.11	.00	.02	.07	.24	-.11	.15
MCgaze	-.03	-.13	.02	.04	.00	-.07	-.02
CMgaze	-.12	-.31*	.33**	.06	-.00	-.20	-.07

Note. Observ = observational; F = father; M = mother; C = child; i = "interrupts" (e.g., FiM = father interrupts mother); Ti = total interruptions for the family; explain = explanations; affect = positive affect; gaze = head turns; affil = affiliation.

* $p < .10$ ** $p < .05$ *** $p < .01$ (two-tailed).

Table 4

Pearson Correlations between Disagreements (Observational) and the
Family Process Observational Variables for the Overlap Sample (N=37)

Disagreements

	FMdis	MFdis	FCdis	CFdis	MCdis	CMdis	Tdis
Observ Variables							
FMaffil	.01	-.19	-.16	-.27	-.16	-.24	-.21
MFaffil	-.11	-.37**	-.24	-.35	-.21	-.16	-.30*
FCaffil	-.08	-.32**	-.20	-.45***	-.25	-.30*	-.35**
CFaffil	-.06	-.40**	-.22	-.48***	-.51***	-.33**	-.45***
MCaffil	-.17	-.32**	-.18	-.10	-.33**	-.20	-.30*
CMaffil	-.26	-.43***	-.09	-.10	-.32**	-.28*	-.34**
FMcontrol	.36**	.09	.15	.05	.07	.31*	.24
MFcontrol	.04	.04	.29*	.07	.04	.13	.15
FCcontrol	.26	.14	.24	.12	.17	.38**	.30*
CFcontrol	-.11	-.27*	.01	-.23	-.27	.12	-.19
MCcontrol	.11	.15	.28*	.19	.09	.17	.22
CMcontrol	-.11	-.27*	.01	-.23	-.27	.12	-.19
Faffect	.07	.14	.20	-.02	.12	-.20	.08
Maffect	-.05	-.08	.09	-.02	.01	.10	-.00
Caffect	-.11	-.10	.14	.10	.05	-.06	-.00
Fexplain	.13	.07	.08	.07	-.21	-.12	-.01
Mexplain	.10	.12	-.13	.05	-.03	-.26	-.03
Cexplain	-.20	-.06	.17	.13	-.11	.14	-.02
FMgaze	-.04	.04	-.01	.09	-.10	.02	-.04
MFgaze	-.11	.12	.02	-.16	.14	.03	.03
FCgaze	-.36**	-.14	.17	-.15	-.01	-.15	-.14

Table 4 (continued)

Disagreements

	FMdis	MFdis	FCdis	CFdis	MCdis	CMdis	Tdis
Observ Variables							
CFgaze	-.22	-.17	-.03	-.28*	-.19	-.06	-.22
MCgaze	-.25	-.05	-.04	-.16	.25	.08	-.01
CMgaze	-.30*	-.19	.09	-.21	-.08	.07	-.15

Note. Observ = observational; F = father; M = mother; C = child; dis = "disagreement" (e.g., FMdis = Father disagrees with Mother); Tdis = total disagreements for the family; explain = explanations; affect = positive affect; gaze = head turns; affil = affiliation.

* p < .10   ** p < .05   *** p < .01   (two-tailed).

Table 5   343

<u>Pearson Correlations between Reciprocal Sequences of Interference
Behaviors (Z-Scores; Observational) and the Psychosocial Questionnaire
Variables for the Overlap Sample</u> (N=37)

<u>Reciprocal Sequences of Interference Behaviors</u>

	FIM->MIF	MIF->FIM	FIC->CIF	CIF->FIC	MIC->CIM	CIM->MIC
<u>Quest Variables</u>						
Faccept	-.14	-.14	.09	-.03	-.22	-.19
Maccept	-.27*	-.02	.02	.02	-.21	-.05
Rulstan	-.09	-.30*	.06	-.04	.19	.12
Fparinfl	-.35**	-.06	-.03	.01	-.15	-.02
Mparinfl	-.35**	-.05	.08	.03	-.15	-.04
Fact-chi	.02	-.33**	-.01	.04	-.10	.04
Mact-chi	-.18	.09	.00	-.34**	-.22	-.08
Fact-fam	-.25	-.07	-.07	-.00	.10	.10
Mact-fam	-.22	-.30*	.15	.08	-.08	.26
Oppos (F)	.14	-.02	-.23	.01	.24	.03
Oppos (M)	.06	.22	-.03	-.20	.14	-.04
Fparsat	-.18	-.11	.21	-.08	-.30*	.07
Mparsat	-.18	-.02	.13	.19	-.28	.19
Fdisrule	-.05	.10	-.35**	-.03	.05	-.11
Mdisrule	.26	.17	.01	.18	-.12	.28*

<u>Note.</u> Quest = questionnaire; Interference = interruptions or
disagreements; F = father; M = mother; C = child; I = "interfers with";
"->" = "followed by" (e.g., FIM->MIF = father interfers with mother
followed by mother interfers with father); accept = acceptance (child
report); rulstan = rules and standards (child report); parinfl = parental
influence (child report); act-chi = activities with child (parental
report); act-fam = activities with family (parental report); oppos =
child oppositionalism (parental report); parsat = parental satisfaction
(parental report); disrule = disagreements over rules (parental report).

* $p < .10$ ** $p < .05$ *** $p < .01$ (two-tailed).

Table 6

Reciprocal Sequences of Disagreements

	FdM->MdF	MdF->FdM	FdC->CdF	CdF->FdC	MdC->CdM	CdM->MdC
Observ Variables						
FMaffil	.19	.05	.11	.48***	-.02	.11
MFaffil	.12	-.09	.04	.27*	.12	.11
FCaffil	.02	.30*	-.01	.49***	.01	.11
CFaffil	-.03	.15	.28*	.17	-.08	.04
MCaffil	.04	-.01	.03	.26	.24	.20
CMaffil	-.25	.06	.18	.05	.01	.00
FMcontrol	-.05	.05	.03	.25	.16	.39**
MFcontrol	.01	.18	.18	-.10	.17	.15
FCcontrol	.01	.09	.04	.11	-.02	.40***
CFcontrol	.01	-.01	-.05	.13	.04	.12
MCcontrol	.14	.09	.29*	-.03	.16	.32*
CMcontrol	.01	-.01	-.05	.13	.04	.12
Faffect	.31*	.11	.02	-.11	.06	-.02
Maffect	.15	-.01	.10	-.13	.12	.21
Caffect	.10	-.07	.00	-.23	.34**	.09
Fexplain	.06	.14	-.00	-.02	-.40**	-.17
Mexplain	-.24	-.02	-.12	-.43***	-.46***	-.60***
Cexplain	.16	-.19	-.04	-.25	-.17	.02
FMgaze	-.30*	-.02	.05	-.12	-.23	-.16
MFgaze	-.09	.06	-.12	-.20	-.27*	-.26
FCgaze	-.07	.01	.16	.12	.08	.15

Table 6 continued)

Reciprocal Sequences of Disagreements

	FdM->MdF	MdF->FdM	FdC->CdF	CdF->FdC	MdC->CdM	CdM->MdC
Observ Variables						
CFgaze	.18	-.01	-.12	.14	.04	.12
MCgaze	-.16	-.04	.07	.14	.13	.11
CMgaze	.04	-.12	.04	.12	.08	.18

Note. Observ = observational; F = father; M = mother; C = child; d = "disagrees with"; -> = followed by; explain = explanations; affect = positive affect; gaze = head turns; affil = affiliation.

* p < .10   ** p < .05   *** p < .01 (two-tailed).

Table 7

Pearson Correlations between Reciprocal Sequences of Interference
Behaviors (Z-Scores; Observational) and the Family Process Observational
Variables for the Overlap Sample (N=37)

Reciprocal Sequences of Interference Behaviors

	FIM->MIF	MIF->FIM	FIC->CIF	CIF->FIC	MIC->CIM	CIM->MIC
Observ Variables						
FMaffil	.08	-.10	-.00	.56***	.10	.17
MFaffil	.23	-.27*	.09	.37**	.26	-.21
FCaffil	-.00	.04	-.13	.43***	.08	.14
CFaffil	.02	-.14	.23	.11	.11	-.17
MCaffil	.37**	-.28*	.12	.28*	.32**	-.15
CMaffil	.08	-.35**	.07	-.09	.18	-.12
FMcontrol	.05	-.14	-.04	.02	.08	.05
MFcontrol	.01	.03	.29*	.12	.18	-.26
FCcontrol	.03	-.01	-.22	-.07	-.07	.07
CFcontrol	.10	-.07	-.08	.10	-.01	.14
MCcontrol	.21	-.12	.33**	.16	.19	-.24
CMcontrol	.10	-.07	-.08	.10	-.01	.14
Faffect	.16	.12	.26	.24	.09	.10
Maffect	.11	-.08	.26	.15	.14	.19
Caffect	.15	-.12	.23	.02	.26	.13
Fexplain	-.01	.11	-.11	.01	-.44***	.03
Mexplain	-.17	.10	.18	-.36**	-.36**	-.32*
Cexplain	.17	.04	.12	-.11	-.15	.13
FMgaze	-.02	.11	-.09	-.19	-.18	.08
MFgaze	-.26	.14	-.18	.11	-.27	.03
FCgaze	-.11	.04	.06	.32*	.05	.29*

Table 7 continued)

Reciprocal Sequences of Interference Behaviors

	FIM->MIF	MIF->FIM	FIC->CIF	CIF->FIC	MIC->CIM	CIM->MIC
Observ Variables						
CFgaze	.26	.15	-.00	.30*	-.05	.20
MCgaze	-.18	-.04	-.05	.15	.24	.27
CMgaze	.16	-.02	-.11	.12	.01	.40***

Note. Observ = observational; F = father; M = mother; C = child; I = "interfers with"; "->" = "followed by" (e.g., FIM->MIF = father interfers with mother followed by mother interfers with father); explain = explanations; affect = positive affect; gaze = head turns; affil = affiliation.

$*$ p < .10 $**$ p < .05 $***$ p < .01   (two-tailed).

Table 8   348

Pearson Correlations between Co-Occurrence of Interruptions and Positive Affect (Z-Scores; Observational) and the Psychosocial Questionnaire Variables for the Overlap Sample (N=37)

	Co-Occurrence of Interruptions and Positive Affect (Same Person)					
	FiM->FA	MiF->MA	FiC->FA	CiF->CA	MiC->MA	CiM->CA
Quest Variables						
Faccept	-.06	.26	.02	.25	.10	.04
Maccept	-.00	.26	.19	.38**	.21	.07
Rulstan	.31*	-.32*	-.03	-.42***	-.04	-.26
Fparinfl	-.07	.25	.09	.58***	.22	.19
Mparinfl	.07	.12	.06	.44***	.17	.04
Fact-chi	-.13	-.06	.36**	-.01	-.10	-.19
Mact-chi	.04	.16	.05	-.15	.18	-.01
Fact-fam	-.16	.17	.10	.37**	.02	-.07
Mact-fam	-.17	-.15	.12	.19	.12	-.14
Oppos (F)	-.07	.07	-.24	-.17	-.11	.24
Oppos (M)	.16	-.06	.03	-.27	-.06	-.06
Fparsat	-.02	.04	.08	.28*	.14	-.11
Mparsat	-.07	.01	.02	.26	.34**	.18
Fdisrule	.12	.21	-.08	.14	-.04	.40***
Mdisrule	.12	.08	.29*	.28	-.13	.22

Note. Quest = questionnaire; F = father; M = mother; C = child; i = "interrupts"; "->" = "co-occurring with" (e.g., FiM->FA = father interrupts mother co-occurring with father positive affect); accept = acceptance (child report); rulstan = rules and standards (child report); parinfl = parental influence (child report); act-chi = activities with child (parental report); act-fam = activities with family (parental report); oppos = child oppositionalism (parental report); parsat = parental satisfaction (parental report); disrule = disagreements over rules (parental report).

* p < .10   ** p < .05   *** p < .01   (two-tailed).

Table 9

Pearson Correlations between Co-Occurrence of Interruptions and
Positive Affect (Z-Scores; Observational) and the Family Process
Observational Variables for the Overlap Sample (N=37)

Co-Occurrence of Interruptions and Positive Affect (Same Person)

	FiM->FA	MiF->MA	FiC->FA	CiF->CA	MiC->MA	CiM->CA
Observ Variables						
FMaffil	-.12	-.24	.04	-.01	-.17	.19
MFaffil	-.02	-.15	-.00	-.16	-.19	.11
FCaffil	-.18	-.12	-.03	.02	-.05	.18
CFaffil	-.16	-.09	.03	.13	-.20	-.15
MCaffil	-.16	-.24	-.04	-.15	-.41***	-.08
CMaffil	-.12	-.15	.05	-.05	-.31*	-.30*
FMcontrol	-.08	.16	-.23	.12	-.08	-.13
MFcontrol	-.00	-.20	-.16	-.14	-.07	-.22
FCcontrol	-.18	.05	-.04	.08	-.01	-.07
CFcontrol	-.11	-.19	-.46***	-.31*	-.07	-.17
MCcontrol	-.04	-.16	-.10	-.12	-.11	-.39**
CMcontrol	-.11	-.19	-.46***	-.31*	-.07	-.17
Fexplain	-.12	.02	.14	.07	.07	-.00
Mexplain	.05	-.08	-.03	-.01	.03	-.10
Cexplain	.12	-.03	-.16	-.11	-.09	-.05
FMgaze	-.11	-.11	.32**	.09	-.04	-.05
MFgaze	.18	-.12	-.15	-.11	-.22	-.01
FCgaze	.32*	.01	.22	.09	.01	.06
CFgaze	.24	-.09	-.12	-.35*	-.18	.07
MCgaze	.37**	.31*	-.07	-.02	.06	.15
CMgaze	.19	-.05	-.08	-.25	.13	.23

Table 9 (continued)

Note. Observ = observational; F = father; M = mother; C = child; i = "interrupts"; "->" = "co-occurring with" (e.g., FiM->FA = father interrupts mother co-occurring with father positive affect); explain = explanations; affect = positive affect; gaze = head turns; affil = affiliation.

* p < .10   ** p < .05   *** p < .01   (two-tailed).

Table 10

Group Means and Trends for the Relations Between Daughters' Ratings of
Menarcheal Status and Rates of Interruptions for the Full-Sample of
Seventh-Grade Girls ($\underline{N}$ = 111)

	Daughter Rating of Months Since Menarche				
	$\underline{0}$ (Grp 1)	0-6 (Grp 2)	6-12 (Grp 3)	>12 (Grp 4)	Trends
Total Interruptions (Family)					
Total Interruptions	.0410	.0460	.0429	.0282	-L**,-Q***
Total Interruptions (Dyadic)					
FiM	.0097	.0110	.0126	.0067	-Q***
MiF	.0097	.0106	.0113	.0058	-Q**
FiC	.0099	.0114	.0114	.0071	-Q**
CiF	.0102	.0116	.0097	.0068	------
MiC	.0106	.0117	.0091	.0075	-L**
CiM	.0114	.0150	.0116	.0075	-Q***
Unsuccessful Interruptions					
FuiM	.0008	.0012	.0010	.0007	------
MuiF	.0009	.0004	.0012	.0004	-C***
FuiC	.0006	.0009	.0008	.0005	------
CuiF	.0007	.0011	.0013	.0005	-Q*
MuiC	.0009	.0007	.0007	.0011	------
CuiM	.0011	.0007	.0016	.0004	-C**
"Both Talk" Interruptions					
FboM	.0051	.0050	.0078	.0030	-Q**,-C***
MboF	.0047	.0062	.0065	.0023	-Q***
FboC	.0049	.0058	.0049	.0037	------
CboF	.0057	.0055	.0051	.0039	------

Table 10 (continued)

Daughter Rating of Months Since Menarche

	0 (Grp 1)	0-6 (Grp 2)	6-12 (Grp 3)	>12 (Grp 4)	Trends
MboC	.0055	.0057	.0046	.0033	-L*
CboM	.0061	.0080	.0059	.0034	-L*,-Q**
Successful Interruptions					
FsiM	.0029	.0035	.0027	.0017	------
MsiF	.0032	.0029	.0031	.0022	------
FsiC	.0033	.0040	.0040	.0021	-Q*
CsiF	.0025	.0036	.0023	.0022	------
MsiC	.0030	.0034	.0026	.0023	------
CsiM	.0027	.0038	.0030	.0022	-Q*

Note. F = father; M = mother; C = child; ui = unsuccesful interruptions; bo = interruptions where both individiuals talk; si = successful interruptions; i = total interruptions (ui + bo + si); L = linear trend; Q = quadratic trend (1 bend); C = cubic trend (2 bends). Directions of all trends are noted. Means are based on proportions where frequencies of the variable are divided by the talk time of the individual(s) involved (number of words).

n(0) = 60, n(0-6) = 19, n(6-12) = 17, n(>12) = 15.

* p < .10   ** p < .05   *** p < .01.

Table 11

Group Means and Trends for the Relations Between Daughters' Ratings of
Menarcheal Status and Rates of Diasagreements and Positive Affect
for the Full-Sample of Seventh-Grade Girls (N = 111)

Daughter Rating of Months Since Menarche

	0 (Grp 1)	0-6 (Grp 2)	6-12 (Grp 3)	>12 (Grp 4)	Trends
Disagreements					
Total Disagreements	.0272	.0349	.0268	.0313	+C**
FMdis	.0051	.0074	.0047	.0046	-Q*,+C*
MFdis	.0069	.0072	.0057	.0061	------
FCdis	.0068	.0083	.0081	.0090	------
CFdis	.0071	.0100	.0077	.0110	+L**,+C*
MCdis	.0073	.0092	.0077	.0081	------
CMdis	.0067	.0095	.0068	.0068	+C*
Positive Affect					
Faffect	.0156	.0134	.0143	.0234	------
Maffect	.0354	.0251	.0324	.0400	------
Caffect	.0420	.0348	.0484	.0699	+L**

Note. F = father; M = mother; C = child; dis = disagreements (e.g., FMdis
= father disagreements with mother); L = linear trend; Q = quadratic trend
(1 bend); C = cubic trend (2 bends). Directions of all trends are noted.
Means are based on proportions where frequencies of the variable are
divided by the talk time of the individual(s) involved (number of words).

n(0) = 60, n(0-6) = 19, n(6-12) = 17, n(>12) = 15.

* p < .10   ** p < .05   *** p < .01.

Table 12

Group Means and Trends for the Relations Between Daughters' Ratings of
Menarcheal Status and Talking Time (number of words spoken) and Proportion
of Dyadic Talking for the Full-Sample of Seventh-Grade Girls ($\underline{N}$ = 111)

	Daughter Rating of Months Since Menarche				
	$\underline{0}$ (Grp 1)	$\underline{0-6}$ (Grp 2)	$\underline{6-12}$ (Grp 3)	$\underline{>12}$ (Grp 4)	Trends
Talking Time					
Total Talk Time	802.52	866.89	1042.06	664.07	$-Q**,-C*$
Ftt	260.50	319.89	332.41	233.80	$-Q**$
Mtt	284.52	260.53	389.00	228.60	$-C***$
Ctt	257.50	286.47	321.65	206.40	$-Q**$
Proportion of Dyadic Talking					
F-->M	.1478	.1399	.1703	.1431	$-C*$
M-->F	.1445	.1378	.1673	.1411	$-C*$
F-->C	.1637	.1865	.1520	.1726	$+C*$
C-->F	.1650	.1858	.1533	.1710	$+C*$
M-->C	.1886	.1755	.1777	.1905	------
C-->M	.1904	.1745	.1795	.1905	------

Note. F = father; M = mother; C = child; tt = talking time (number of
words spoken); "-->" = "followed by" (e.g. F-->M = father talks followed
by mother talks); L = linear trend; Q = quadratic trend (1 bend); C =
cubic trend (2 bends). Directions of all trends are noted. Means are based
on proportions where frequencies of the variable are divided by the talk
time of the individual(s) involved (number of words). Proportion of dyadic
talking is computed by dividing the frequency of a specific sequence by
the total number of possible sequences.

$\underline{n}(0)$ = 60, $\underline{n}(0-6)$ = 19, $\underline{n}(6-12)$ = 17, $\underline{n}(>12)$ = 15.

$*$ p < .10 $**$ p < .05 $***$ p < .01.

Table 13

<u>Group Means and Trends for the Relations Between Daughters' Ratings of
Menarcheal Status and Affiliation and Control for the Full-Sample of
Seventh Grade Girls</u> (N = 111)

Daughter Rating of Months Since Menarche

	<u>0</u> (Grp 1)	<u>0-6</u> (Grp 2)	<u>6-12</u> (Grp 3)	<u>>12</u> (Grp 4)	Trends
<u>Rated Dyadic Affiliation</u>					
FMaffil	2.43	2.53	2.70	2.33	------
MFaffil	2.83	2.58	2.88	2.67	-C*
FCaffil	2.60	2.74	2.76	2.33	-Q**
CFaffil	2.93	2.84	2.65	2.47	-L***
MCaffil	2.95	2.74	3.00	2.87	------
CMaffil	2.93	3.16	2.76	2.67	------
<u>Rated Dyadic Control</u>					
FMcontrol	2.77	2.84	3.00	2.33	-Q**
MFcontrol	2.82	2.68	2.70	2.60	------
FCcontrol	2.90	2.95	3.00	2.47	-Q*
CFcontrol	2.62	2.74	2.53	2.27	-L*
MCcontrol	2.85	2.63	2.94	2.80	------
CMcontrol	2.73	2.84	2.76	2.47	------

<u>Note.</u> F = father; M = mother; C = child; L = linear trend; Q = quadratic
trend (1 bend); C = cubic trend (2 bends). Directions of all trends are
noted.

n(0) = 60, n(0-6) = 19, n(6-12) = 17, n(>12) = 15.

* p < .10   ** p < .05   *** p < .01.

Table 14

Group Means and Trends for the Relations Between Daughters' Ratings of
Menarcheal Status and Reciprocal Interruptions, Disagreements, and
Interference Behaviors (Z-Scores) for the Mother-Daughter Dyad (Full
Sample of Seventh-Grade Girls) (N = 111)

Daughter Rating of Months Since Menarche

	0 (Grp 1)	0-6 (Grp 2)	6-12 (Grp 3)	>12 (Grp 4)	Trends
Reciprocity of Interruptions					
MiC-->CiM	.0713	.3204	-.1949	.1434	+C*
CiM-->MiC	.0178	.0905	.0327	-.1102	------
Family Interruption--> Family Interruption	-1.3653	-1.2759	-1.3972	-.2500	+L***,+Q**
Reciprocity of Disagreement					
MdC-->CdM	.8453	1.0317	1.4393	.8312	------
CdM-->MdC	.7091	1.2225	1.5385	.1549	-Q***
Family Disagreement--> Family Disagreement	1.9493	2.5860	2.4671	1.7731	-Q**
Reciprocity of Interference Behaviors					
MIC-->CIM	.3398	.3124	.1963	.6002	------
CIM-->MIC	.8050	.3673	.6910	.0117	-Q*
Family Interference--> Family Interference	.1758	.8093	.1683	1.0493	+L**,+C**

Note. F = father; M = mother; C = child; i = "interrupts" (e.g., MiC-->
CiM = mother interrupts child followed by child interrupts mother); d =
"disagrees with"; I = "interfers with"; L = linear trend; Q = quadratic
trend (1 bend); C = cubic trend (2 bends). Directions of all trends are
noted. Means are group z-score means.

n(0) = 60, n(0-6) = 19, n(6-12) = 17, n(>12) = 15.

* p < .10   ** p < .05   *** p < .01.

Table 15

Group Means and Trends for the Relations Between Daughters' Ratings of
Menarcheal Status and Sequences of Interruptions/Disagreements/
Interference Behaviors AND Positive Affect (Z-Scores) for the Mother-
Daughter Dyad (Full Sample of Seventh-Grade Girls) (N = 111)

Daughter Rating of Months Since Menarche

	0 (Grp 1)	0-6 (Grp 2)	6-12 (Grp 3)	>12 (Grp 4)	Trends
Sequences of Interruptions and Positive Affect					
MiC-->CA	-.3147	-.2089	-.8656	-.2438	+C*
CiM-->MA	-.3248	-.3653	-.9102	-.6638	-L**
Family Interruption--> Family Positive Affect	.4464	.4543	-.2380	.5476	+C*
Sequences of Disagreements and Positive Affect					
MdC-->CA	-.0561	-.2196	-.6651	-.4499	-L*
CdM-->MA	-.2783	-.3619	-.4351	-.2212	------
Family Disagreement--> Family Positive Affect	.2429	-.1209	.3918	-.0407	-C*
Sequences of Interference Behaviors and Positive Affect					
MIC-->CA	-.2770	-.3729	-1.1102	-.5539	------
CIM-->MA	-.4082	-.4977	-.9349	-.7298	-L**
Family Interference--> Family Positive Affect	.5005	.2979	.0815	.0796	-L*

Note. F = father; M = mother; C = child; A = positive affect (e.g., CA =
child positive affect); i = "interrupts" (e.g., MiC-->CA = mother
interrupts child followed by child positive affect); d = "disagrees with";
I = "interfers with"; L = linear trend; Q = quadratic trend (1 bend); C =
cubic trend (2 bends). Directions of all trends are noted. Means are group
z-score means.

n(0) = 60, n(0-6) = 19, n(6-12) = 17, n(>12) = 15.

* p < .10   ** p < .05   *** p < .01.

Table 16

Group Means and Trends for the Relations Between Daughters' Ratings of
Menarcheal Status and Co-Occurrence of Interruptions/Disagreements/
Interference Behaviors AND Positive Affect in the Same Person (Z-Scores)
for the Full Sample of Seventh-Grade Girls ($\underline{N}$ = 111)

Daughter Rating of Months Since Menarche

	$\underline{0}$ (Grp 1)	$\underline{0-6}$ (Grp 2)	$\underline{6-12}$ (Grp 3)	$\underline{>12}$ (Grp 4)	Trends
Co-Occurrence of Interruptions and Positive Affect (same person)					
FiM-->FA	-.0035	.1339	.3408	.0803	------
MiF-->MA	-.1167	-.3577	-.5013	-.4371	------
FiC-->FA	-.1778	-.1756	-.2603	.0235	------
CiF-->CA	-.3890	-.0226	-.6921	-.3125	+C**
MiC-->MA	-.1374	.3323	-.7315	.0719	+C***
CiM-->CA	-.1227	-.4136	-.4512	-.3395	------
Co-Occurrence of Disagreements and Positive Affect (same person)					
FdM-->FA	.3162	.5826	.0268	-.0069	------
MdF-->MA	.3677	.0200	-.4071	.3021	+Q**
FdC-->FA	.0772	-.2083	.1628	-.0547	------
CdF-->CA	.0676	.4437	.1210	-.9024	-L*,-Q**
MdC-->MA	.0453	-.5128	.1274	-.3733	-C**
CdM-->CA	-.0303	-.1068	-.1243	-.1594	------
Co-Occurrence of Interference Behaviors and Positive Affect (same person)					
FIM-->FA	.1809	.4859	.3236	.0178	------
MIF-->MA	.1290	-.2500	-.7167	-.1139	-L*
FIC-->FA	-.0990	-.2565	-.0784	-.0188	------
CIF-->CA	-.2682	.2985	-.4465	-1.0269	-Q*
MIC-->MA	-.0990	-.0832	-.4382	-.2623	------
CIM-->CA	-.1166	-.3544	-.4113	-.3744	------

Table 16 (continued)

<u>Note.</u> F = father; M = mother; C = child; A = positive affect (e.g., CA = child positive affect); i = "interrupts" (e.g., MiC-->MA = the co-occurrence of mother interrupts child and mother positive affect); d = "disagrees with"; I = "interfers with"; L = linear trend; Q = quadratic trend (1 bend); C = cubic trend (2 bends). Directions of all trends are noted. Means are group z-score means.

<u>n</u>(0) = 60, <u>n</u>(0-6) = 19, <u>n</u>(6-12) = 17, <u>n</u>(>12) = 15.

* p < .10   ** p < .05   *** p < .01.

Appendix L

Article Length Version of Dissertation

The Role of Familial Conflict in Adaptation to Menarche:

Sequential Analysis of Family Interaction

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Running Head: FAMILIAL CONFLICT AND ADAPTATION TO MENARCHE

Abstract

Given that past research has suggested that temporary perturbations and conflict characterize parent-adolescent relations after the onset of pubertal development, the purpose of this study was to further delineate the characteristics of these disruptions in families with seventh-grade girls. More specifically, I sought to determine: (a) whether the observed disruptions in response to menarche are indicative of conflict (i.e., sequential reciprocity of interruptions and disagreements) and, (b) the affective nature of the disruptions. The study was conducted on a sample of 111 intact families with first-born seventh-graders who participated in the Structured Family Interaction Task. Analyses based on sequential analysis of family interaction revealed that familial adaptation to menarche involves a temporary period of conflict shortly after menarche, and especially in the mother-daughter dyad. Withdrawl of positive affect also seems to characterize adaptation to pubertal change. Families with early-maturers tend to be less engaged as well. In order to explain the role conflict plays in the process, a two-factor theory is suggested which involves both extrapsychic and intrapsychic processes. Limitations of the study and directions for future research are discussed.

The Role of Familial Conflict in Adaptation to Menarche:

Sequential Analysis of Family Interaction

Recent work on associations between adolescent pubertal maturation and familial relationships suggest that there is a period of temporary perturbations or agitation in parent-adolescent relations shortly after the onset of pubertal development (e.g., Anderson, Hetherington, & Clingempeel, 1986; Cantara, 1983; Diamond, 1983; Hill, Holmbeck, & Cantara, 1988; Hill, Holmbeck, Marlow, Lynch, & Green, 1985a, 1985b; Papini & Datan, 1982, 1983; Papini & Sebby, 1985, 1987; Steinberg, 1977, 1981, 1987a, in press; Steinberg & Hill, 1978). These effects occur for pubertal status (i.e., the adolescent's placement in the sequence of secondary sex characteristics; Tanner, 1962) independently of chronological age and pubertal timing and appear to be most pronounced in adolescent-mother dyads (Steinberg, 1987a). Findings for pubertal status have been replicated by several investigators with a variety of methodologies and measures of pubertal change. Finally, there is some evidence that pubertal timing has an impact on family relations. For example, Hill et al. (1985a) found that early-maturing girls may be at risk for chronic (rather than temporary) familial disruption.

Although investigators in this area have generated a wealth of data in a relatively short period of time, this line of research has raised more questions about the process than it has answered. Foremost among these questions concerns the nature of the "perturbations." Although the changes that occur in families as a

function of pubertal development appear to be "perturbations", can we assume that these changes are indicative of increased "conflict" (Hill & Holmbeck, 1987) or "distance" (Steinberg, 1987a)? Moreover, if the perturbations are conflictual, we would want to know if they are adaptive in the sense of promoting a healthy transformation in familial attachments. If it is not conflict, then what is it and what is its purpose? It may be that the family is less positive rather than more conflictual as others have suggested (Montemayor, 1985, 1986; Papini & Sebby, 1985, 1987). Given the lack of data that address the specific nature of the effects of pubertal maturation on familial relations, the purpose of this observational study was to further delineate the characteristics of these perturbations in families with seventh-grade girls. More specifically, I sought to determine: (a) whether the observed disruptions are indicative of conflict and, (b) the affective nature of the disruptions.

Conflict and Definitional Issues

As has been noted elsewhere (Hill & Holmbeck, 1987), the question of how to define conflict in the observational context (as opposed to approaches involving questionnaires; see Foster, Prinz, & O'Leary, 1983; Prinz, Foster, Kent, & O'Leary, 1979; Robin, 1981, for examples of self-report approaches to parent-adolescent conflict) has been addressed but is far from resolved. This problem is particularly relevant to the study of "normal" families where contentious interchanges in the form of intense arguments, threatening, name calling, and yelling rarely occur in laboratory settings or in nature (e.g., Douvan & Adelson, 1966; Montemayor, 1983; Montemayor & Hanson,

1985; Prinz et al., 1979). Thus, it appears that to adequately examine conflict in normal families, more subtle indices are needed. In fact, subtle measures may be preferred because the behavioral changes that occur as a function of pubertal change are probably not dramatic (Steinberg, 1981, in press).

Riskin and Faunce (1972) noted that conflict has been defined in a number of ways ranging from the highly abstract (e.g., power struggles) to the more concrete (e.g., interruptions, disagreements, etc.). Although "interruptions", for example, are behaviors that require minimal inference, they have frequently been employed as measures of the following more abstract concepts: "conflict," "power," "dominance," and "control." O'Connor and Stachowiak (1971) employed the number of times one member interrupted another or was interrupted by another during a discussion as an operational definition of conflict. Leighton, Stollack, and Ferguson (1971) employed interruptions as a measure of dominance hierarchies. Others have used successful interruptions as an index of power (e.g., Hetherington, Stowie, Ridberg, 1971; Zuckerman & Jacob, 1979). Mishler and Waxler (1968) maintained that one can exercise power in two ways: attention-control and person-control. According to their coding scheme, attempted and successful interruptions fall in the latter category. It could also be argued that some interruptions do not relate to conflict or control. As Marlow (1985) has pointed out, "interruptions may appear at times of high excitement and creativity, and may indicate a high level of flexibility in the family's interactions" (p. 27). Interruptions may also occur between two individuals who know each other well simply because these individuals

are able to anticipate what the other is going to say before each individual has completed his/her utterance (Holmbeck, 1987).

It is clear that there is a lack of agreement as to how to operationally define key constructs such as "conflict" or what concrete behaviors such as "interruptions" measure. As a result, it is worthwhile to consider several theoretical definitions of conflict that may be suggestive of more useful operational definitions. Interestingly enough, conflict or conflict-like notions exist in nearly every area of psychology and in most related fields. Definitions may focus on intrapsychic conflict, cognitive conflict, social conflict, role conflict, conflict between organizations, competitive conflict, interpersonal conflict, etc. (see Coombs, 1987; and Peterson, 1983, for reviews). Some definitions worth noting come from sociologists. Hunt (1965/1976), for example, states that "conflict refers to a condition where an individual experiences the simultaneous (emphasis added) arousal of two or more incompatible behavioral tendencies" (p. 286). He takes the definition into the interpersonsal realm when he implies that similar processes can occur between individuals. As Shantz (1987) has argued, "conflict is not defined as an individual's behavior...rather, it takes two (or more) individuals to be in social conflict, one opposing the other" (p. 285). Shantz (Shantz & Shantz, 1985) has also described interpersonal conflict as the state of "mutual resistance."

The important point here is that interpersonal conflict involves opposing forces that occur or interact simultaneously. In the case of Steinberg's (1981) findings, we know that mothers' interruptions of sons and sons' interrutpions of mothers both increase shortly after

puberty. We do not know whether these higher rates of interruptions occurred in the same families or, more importantly, whether the interruptions on the part of mothers and sons occurred contiguously or with reciprocity (Hill & Holmbeck, 1985, 1987). In research on marital conflict, Gottman (1979) has found that distressed couples were more likely than nondistressed couples to reciprocate each other's behaviors. For example, negative affect chains were more likely in distressed couples--an example of the simultaneous (or contiguous) occurrence of opposing forces. In a similar fashion, Shantz and Shantz (1985) defined conflict between children as "occasions when Child A attempts to influence Child B, Child B resists, and Child A persists" (p. 4). Could it be that similar reciprocity is occurring in families shortly after the onset of pubertal change in their maturing adolescents? If so, we would then be safer in talking about conflict--at least insofar as it occurs in the laboratory setting. Testing such hypotheses would necessitate the use of sequential analyses so as to determine the degree to which certain types of families (e.g., premenarcheal versus menarcheal) demonstrate reciprocity of interruptions and disagreements.

Also absent in most studies and theoretical discussions of familial conflict is a serious examination of the types of affect that occur in conjunction with the micro-analytic behaviors under investigation. Peterson (1983), for example, deals only indirectly with the issue of affect as it occurs in the context of a conflictual interaction. It seems clear that interruptions that elicit positive affect in the person being interrupted have been received differently than those that elicit negative affect. In a similar fashion, an

interruption that has been delivered with positive affect will probably be perceived differently than one that is delivered with negative affect. An examination of the affective "valence" of commonly used conflict indices (e.g., disagreements, interruptions) would not only provide a methodological advance, but it would also allow us to examine the validity of the notion that parent-adolescent relations not only endure a temporary period of perturbations but a withdrawl of positive affect as well (Montemayor, 1985, 1986; Papini & Sebby, 1987).

This particular effort is the third in a series of observational studies of a sample of intact families with first-born seventh-graders designed to provide information relevant to the issues discussed above. The first study (Hill, Holmbeck, & Cantara, 1988) focused on the frequencies of a variety of micro-analytic and summary variables and the changes in each as a function of menarcheal status. The findings of that study indicated that: (a) family members in the immediately postmenarcheal group (onset of menarche within the past 6 months) interrupted each other more than did the pre-menarcheal families, (b) fathers and daughters both talked more and talked more to each other in the immediately postmenarcheal group, whereas mothers in this group talked less, (c) fathers showed more affiliation toward daughters, but mothers and daughters showed less affiliation toward fathers in the immediately postmenarcheal group versus the premenarcheal group, and (d) fathers exhibited more control toward mothers and daughters in the immediately postmenarcheal group whereas daughters evidenced less control toward fathers with increasing maturity.

These and other findings suggest that there are temporary perturbations in families with seventh-grade girls shortly after menarche, thus supporting earlier findings with other samples. We have also begun to gain new insights into the interactions between fathers and daughters. The frequency results suggest that daughters exhibit a pattern of passive-assertive behavior toward fathers and fathers appear to be invested in maintaining a gender-stereotyped role for daughters (i.e., deferential and expressive) and there appears to be a seductive quality to his interactional style (Hill, in press; Hill, Holmbeck, & Cantara, 1988). Finally, it appeared that a subsample of families who had early-maturing duaghters were not only more conflictual but were also less "engaged" than were families where the daughters matured relatively on time. We sought to extend these findings by examining the role of conflict (as defined above) and affect in these dyadic processes.

The second study (Holmbeck, 1987) was a validation effort involving a sample of 17 families with daughters and 20 families with sons from the same sample who were the most intensively studied of our families (participating in both questionnaire and observational sessions). In that study, the psychosocial correlates of the frequency and sequential observational variables were examined. The purpose of the effort was to provide support for some of the arguments advanced thus far, namely, that reciprocity of interruptions and disagreements would be more valid measures of familial conflict than frequencies of these variables. The results of the study suggested that: (a) interruptions and disagreements were not highly correlated with each other, (b) frequencies of

interruptions index power within the family rather than overt conflict, (c) the co-occurrence of interruptions and positive affect (within the same person) tends to be associated with less conflict in the family, and (d) frequencies and sequences of disagreements appear to be indicative of increased conflict. Although complex, the findings indicated that disagreements (regardless of affective valence) and interruptions with no accompanying positive affect tended to be associated with familial conflict.

The present study extends the findings of previous efforts by: providing a validated operational definition of conflict in an observational context, employing sequential analytic variables in the study of relations between menarche and family relations, and examining the pubertal correlates of conflict variables wherein their affective valence is taken into account. Throughout, we were attentive to dyadic differences in the results. It was hypothesized that: (a) there would be greater reciprocity of interruptions and disagreements in families with an immediately postmenarcheal girl (as compared with those families with daughters more or less mature), and especially for disagreements and for the mother-daughter dyad, (b) positive affect would occur in conjunction with interruptions (both within the same person and dyadicly) less frequently in the immediately postmenarcheal group, and (c) families with early-maturing daughters would evidence conflict (similar to that experienced in the immediately postmenarcheal group) thus suggesting that these families endure persistent perturbations. Findings for the frequency variables were also reported (with the exception of interruptions, the results for which were reported in a previous

study; Hill, Holmbeck, & Cantara, 1988) and were expected to be in line with the above predictions although less dramatic. Sequential analyses (Bakeman, 1978; Bakeman & Gottman, 1986; Sackett, 1978, 1979, 1980) were employed to assess the sequential relationship among and reciprocity of interruptions, disagreements, and positive affect.

Method

Subjects

Subjects for this study were 111 families with seventh-grade girls who were recruited from eight school districts in a large midwestern city. Families who participated had to meet the following criteria: the family had to be intact such that the child who was involved in the study was living with his or her natural parents, the child had to be a seventh-grader, and he or she had to be a first-born. Principals of the schools were asked to provide lists of students who fit the inclusion criteria. Letters were then sent out, with the principal's signature, to eligible families. Of the school districts that participated, 95-100% of the principals were cooperative. The letters to the families were followed up with phone calls requesting their participation. The staff members who made these calls provided the families with a brief description of the required tasks. Approximately 40% of the families agreed to participate. The most common reason for refusal was that the family did not have enough time. No differences in socioeconomic status were noted between those who agreed to participate and those who declined. On a 1 to 100 scale of socioeconomic status (Duncan, 1977) families who agreed to participate ranged from 8 to 96 (mean = 59.62). Thus,

the full range of socioeconomic status was represented. Approximately
31% of the sample was Catholic.

<u>Procedure</u>

All families filled out a brief set of questionnaires and
participated in the interaction sessions. A supervisor, an
administrator, and an equipment operator were all present during the
interaction sessions for each family. All families signed consent
forms for video and audiotaping. Six tasks were employed during the
video-taped interaction session, but the only laboratory stream data
of interest in this study was that obtained during the Structured
Family Interaction Task (SFIT; Ferreira, 1963).

Prior to the SFIT, each family member was given a list of five
multiple choice questions and they were asked to indicate
independently their first and second choices to these questions. Such
questions typically inquire as to the family members' preferences
regarding where they would like to go on vacation etc. Three
different versions of the form were employed to minimize the effects
of families discussing the interaction session with families who had
not yet participated. Following independent completion of the
preferences questions, family members were brought together and were
asked to decide on a joint response. The family discussion that
followed constituted the SFIT. The "unrevealed differences" procedure
(Ferreira, 1963) was employed in that family members were not told
prior to their joint discussion what each member's choices were.

The videotaped SFIT sessions were transcribed by trained coders. These coders were blind to the physical maturity level of the child and other information about the family. All statements by family members were coded in the form of "utterances", which were defined as complete thought units that were usually equivalent to a sentence. Interruptions were also preserved by placing an asterisk (*) at the point in an utterance where the interruption occurred.

Observational Variables

Interruptions. This variable was coded by the SFIT coders during the transcription process (Hill, Sawin, Shelton, Shiflet, 1978). Four types of interruptions were coded: successful interruptions, unsuccessful interruptions, interruptions where both individuals continued talking, and questionable interruptions. In the analyses below, all interruptions were combined into a variable termed "total interruptions" because of the low frequencies of these behaviors. Both the person being interrupted and the interruptor were noted.

Disagreements. The manual that was employed here (Hill, Holmbeck, Marlow, & Putterman, 1986) was based, in part, on Gottman's (1979) coding approach. Although most of his categories have been included, more have been selected for this study because Gottman's definition of disagreements did not seem to include all possible forms of this variable. A disagreement was defined as "any statement that directly or indirectly contradicts the assertion made by the previous speaker or...a statement that conveys disapproval, dissatisfaction, or negative evaluation of a previous assertion."

Two coders were employed for disagreements. When a satisfactory
reliability level (see reliability data below) was reached on a
sample of families not used in the present study, one coder then
coded all of the useable families. The second coder randomly selected
12 families from the total and did reliability checks.

Positive affect. The coding manual (Hill, Holmbeck, & Valentine,
1986) for this variable was again based, in part, on Gottman's (1979)
coding scheme. Unfortunately, facial cues and many nonverbal displays
of positive affect could not be used by the raters because of the
quality of the videotapes. As a result, an abbreviated version of
Gottman's approach was used. Attempts were also made to code negative
affect but the low frequency of their occurrence precluded their
inclusion in the study.

For purposes of this study, affect was defined as "a feeling or
emotion as distinguished from cognition, thought, or action. A strong
feeling having active consequences" (American Heritage Dictionary,
1969). It was coded when there were laughs or rises in the voice.
This included rises in the voice that were associated with surprises
but did not include rises normally associated with asking a question.
If an affective burst continued across a number of utterances, this
continuation was noted with arrows.

Two trained coders (with adequate pre-coding reliability rates
based on at least 10 hours of training and reliability checks) rated
all of the tapes. For all families where a kappa of .60 or greater
was obtained, a third rater (who was trained with the other two)
resolved all disagreements between the two coders. The two original
coders re-rated all tapes where .60 was not obtained. (This only

occurred for two families.) One of the three coders then re-examined all occurrences of affect that occurred on lines where an interruption also occurred. This coder made note of whether these affect bursts occurred prior to or after the interruption. This procedure was necessary for sequential analyses because affect that begins before an interruption, for example, can not be linked causally to the previous occurrence of the interruption.

Menarcheal status. Seventh-grade girls and their parents were asked to indicate whether menstruation had not yet begun (Group 1) or had begun within the past six (Group 2), within the past 12 (Group 3), or longer than 12 months ago (Group 4). In a previous study (Hill et al., 1985a), around 80% agreement in placing the time of menarche was characteristic of each pair of respondents: mother-father; mother-daughter; and father-daughter. Correlations between pairs ranged from .87 to .91. In this study, correlations ranged from .81 to .90 with an overall alpha coefficient of .94. Approximately 60% of the seventh-grade girls were placed in the premenarcheal group with the remainder being distributed evenly in the other groups. Because of the high reliability coefficients for this variable, menarcheal status was based on the child's report so as to avoid the confusion that would occur if different reports were used for different dependent variables.

Plan of Analysis

To assess the sequential relationships among the variables (interruptions, disagreements, and positive affect), a sequential analytic approach was employed. Such a strategy is based on the

notion that "a behavior of one organism has communication value in a social sense if it reduces the uncertainty in the behavior of another organism" (Gottman, 1979, p. 31). For example, if knowledge that organism A exhibits behavior X allows us to then be more certain that organism B will exhibit behavior Y, then knowledge of A's behavior (X) reduces the uncertainty regarding B's subsequent behavior (Y). Whether the uncertainty of B's behavior is reduced can be assessed empirically by comparing the difference between the base rate of B's behavior (Y) with the conditional probability that B will exhibit behavior Y given that A exhibits behavior X. The statistic for this comparison, initially devised by Sackett (1979), was a z-statistic where the difference between the observed and expected probabilities is divided by the standard error of the difference. The equation used in the current study was Sackett's z-statistic after applying corrections by Allison and Liker (1982) and Gottman (1980; see also Bakeman & Gottman, 1986).

If z is equal to or greater than ± 1.96, it has reached the .05 level of significance and if it is equal to or greater than ± 2.58, it has reached the .01 level of significance (Sackett, 1979). (It should be noted that, in the present study, mean z-scores were computed for the menarcheal groups and, as a result, I was more concerned with differences between them rather than their significance or nonsignificance.) If a z is positive and significant, then the matching behavior (i.e., the consequent variable) followed the criterion behavior (i.e., the antecedent behavior) more often than would have been predicted by the base rate of the matching behavior (i.e., a positive dependency). If z is negative and significant, then

the matching behavior followed the criterion behavior less often than would be expected given the base rate of the matching behavior.

Sequences were assessed by counting all lag-1 occurrences (see Gottman, 1979) of criterion behavior-matching behavior variable pairs. For example, if mother interrupts son and then son interrupts mother, this would count as one occurrence of this sequence. A decision was made with regard to the "window of observation." A window of observation is the amount of time (or number of observations) that will comprise a single lag. Because there were three people involved rather than two and because utterances rather than complete speeches were employed as the unit of analysis, it appeared that the window of observation should be longer than a single utterance since a family member may, for example, disagree with another family member but may take several utterances to do so (given input by other members). It was felt that a better window was 5 utterances because this would give the person emitting the criterion behavior enough time to finish his or her speech and enough time for the person emitting the matching behavior (taking into account input by the third speaker) to respond if he/she decided to do so. For the co-occurrence variables, the window of observation was still 5 utterances, but simultaneous occurrence (i.e., on the same utterance) of criterion and matching behaviors was also counted. Adjustments in the z-statistic equation were made to take this extended window into account (e.g., the total number of events in the record was now 1/5 of the actual total and the probabilities had to be adjusted as well).

A number of other issues were also considered, namely, autocorrelation (i.e., the tendency for a behavior to be more likely if that behavior was exhibited previously), stationarity, and mutual exclusiveness. Given that many have argued that one should have a sound reason for assessing the effects of autocorrelation (e.g., Cousins & Power, 1986) and because there is no theoretical basis to assume autocorrelation for any of the variables examined here (i.e., in the present case, cross-dependency has logical precedence over autocorrelation), such tests were not conducted. The assumption of stationarity (i.e., the assumption that conditional and unconditional probabilities will remain constant throughout a given family's session) was also not tested because of the rather low frequency of occurrence of the variables under consideration. Finally, these data were not mutually exclusive (insofar as behaviors could be coded simultaneously). As Sackett (1978, 1979) has argued, probabilities for nonmutually exclusive data will not sum to 1.00 and will therefore be misleading. On the other hand, this concern is especially problematic when there are a large number of behaviors being coded and when the occurrence of the behaviors and simultaneous codes is frequent. Given that we are examining only three behaviors that are fairly infrequent, the lack of mutual exclusiveness was not judged to be problematic.

Although aggregated z-scores could have been computed on entire subsamples (menarcheal groups) as has been done by Gottman (1979), Margolin and Wampold (1981) have argued correctly that inferential statistics can only be used when z's are computed on a subject-by-subject basis. This strategy was employed here.

Multiple regression analyses were performed to assess the relations between menarcheal status and the observational data. Menarcheal status was treated as a continuous variable and was entered into a multiple regression equation as a set of power polynomial terms. Such a procedure, when applied to a single variable, can be used to test the linearity and nonlinearity of the relation of this independent variable with a dependent variable. The terms are entered in a hierarchical fashion beginning with the linear term ($\underline{v}$) and continuing with the terms that test for a quadratic trend ($\underline{v}^2$) and a cubic trend ($\underline{v}^3$). For additional information regarding this analytic approach, see Hill et al. (1985a, 1985b) and Cohen and Cohen (1983). Given the exploratory nature of the study, marginally significant findings ($\underline{p} < .10$) were reported.

Thus, the independent variable was menarcheal status (along with the quadratic and cubic terms for this variable) and the following were the dependent variables: (a) reciprocal sequences (between two family members) of attempted interruptions, (b) reciprocal sequences (between two family members) of disagreements, (c) co-occurrence of attempted interruptions and positive affect in the same person (d) co-occurrence of disagreements and positive affect in the same person, (e) sequences of interruptions and positive affect (dyadic and in that order; e.g., mother interruption of child followed by child positive affect), (f) sequences of disagreements and positive affect, (g) frequencies of disagreements, and (h) frequencies of positive affect.

Results

Reliability

Reliability was examined by employing the kappa coefficient
(Cohen, 1960, 1968, 1972; Hartmann, 1977; Hollenbeck, 1978; Landis &
Koch, 1977). This coefficient appears to be the most widely accepted
index when coding involves the presence or absence of infrequent
codes. Landis and Koch (1977) provide the following strength-of-
association benchmarks for various ranges of kappa values: <0.00 =
Poor, 0.00-0.20 = Slight, 0.21-0.40 = Fair, 0.41-0.60 = Moderate,
0.61-0.80 = Substantial, and 0.81-1.00 = Almost Perfect. The mean
kappa for disagreements (based on 12 families) was .71. Kappa's for
positive affect were computed in two ways. The first approach
involved an assessment of agreement based on occurrence/
nonoccurrence. The second approach involved an assessment of
agreement based on utterance-by-utterance agreement (a more
conservative approach). The Kappas for these two approaches were .80
and .64, respectively. Reliability for interruptions was assessed
with percent agreement and was always above 80% for all coder pairs.

Descriptive Statistics and Adequecy of Data for Sequential Analysis

The mean number of occurrences for all variables were computed
dyadically (except in the case of positive affect). Means for
positive affect ranged from 4.17 (father positive affect) to 10.24
(child positive affect). Frequencies of disagreements ranged from
3.17 (father disagrees with mother) to 4.65 (child disagrees with
father). Finally, means for interruptions (all forms of interruptions

combined) ranged from 5.68 (father interrupts child) to 6.56 (child
interrupts mother).

Given the rather low frequencies, some variables were combined
for some of the analyses (a common practice in the sequential
analysis literature; Sackett, 1978, 1979). In addition to running the
regression analyses as planned, interruptions and disagreements were
collapsed into a single set of variables termed "interference
variables" (Peterson, 1983). Thus, reciprocity for "interference"
variables could consist of sequences such as: mother interrupts
father followed by father disagrees with mother. Although
interruptions and disagreements have been found to be uncorrelated
(Holmbeck, 1987), they both meet Peterson's (1983) definition of
interference and their reciprocity constitutes "conflict" as it was
defined above. For these "interference" analyses, the "window of
observation" was one utterance. Analyses were also run on a "family"
level whereby a sequence such as the following would constitute a
conflictual sequence: father disagrees with mother followed by child
disagrees with father. As with the "interference" analyses, the
"window of observation" was reduced to one utterance. (The "co-
occurrence" analyses could not be run on a "family" level because
affect and interruptions/disagreements had to be emitted by the same
person.)

The assumptions underlying the z-scores are violated when the
base rates of criterion behaviors are close to .01 or .99 (Patterson
& Forgatch, 1985). Overall, the data do not violate this assumption.
For interruptions, base rates falling below .01 occurred for 2.7 to
9.0% of the sample depending on the dyad under consideration.

(Patterson and Forgatch, 1985, found that 18% of their behaviors had
base rates below .01.) For disagreements, base rates fell below .01
for 7.2 to 16.2% of the sample. Finally, for positive affect, base
rates fell below .01 for 3.6 to 27% (father positive affect) of the
sample. The high percentage of low base rates for father positive
affect is not of concern, however, because positive affect was never
employed as a criterion variable in the analyses. The data met
Bakeman and Gottman's (1986) "NPQ > 9" criterion only when the
variables were collapsed into general categories (e.g.,
"interference"). (It should be noted, however, that this latter
criterion will not always be useful. If one is attempting to
demonstrate that a particular sequence never occurs, then the NPQ
coefficient will equal zero regardless of how many utterances are
sampled.) In sum, it appears that these data meet the "base rate"
criterion and the "NPQ" criterion, but particularly when the
variables are combined in the manner described above.

A Test of "Initial Agreement"

     Given the nature of the SFIT, it is possible that the degree
that families agreed with each other prior to beginning the task
could affect subsequent frequencies of the variables being considered
here. In order to determine whether "initial agreement" affected the
results of the regression analyses involving menarcheal status, the
analyses were first run by controlling for initial agreement. Out of
170 analyses, five of the significant menarcheal effects did not
emerge after controlling for initial agreement and only six new
effects emerged. In sum, the findings for initial agreement suggested

that (although important in its own right) this variable had a minimal effect on the findings. Therefore, it was not partialled out in the analyses and all analyses were run as planned.

Regression Findings for Frequency Variables

It was predicted that frequencies of disagreements would be at their peak in menarcheal groups 2 (the immediately postmeanrcheal group) and 4 (the early maturing group) and that the frequencies of positive affect would be at their peak in groups 1 (premenarcheal group) and 3. In statistical terminology, it was predicted that cubic trends would be found for the relations between these frequency variables and menarcheal status such that disruptions in family function would be at their peak in groups 2 and 4.

Disagreements. The results for disagreements are given in Table 1 where it can be seen that significant effects were found for four of the seven variables. For father disagreements of mothers, there was a negative quadratic trend, B = -.937, $t(2,108)$ = -1.635, p = .10, and a positive cubic trend, B = 6.826, $t(3,107)$ = 1.850, p = .07. For child disagreements of fathers, a positive linear trend, B = .190, $t(1,109)$ = 2.022, p < .05, and a positive cubic trend, B = 6.478, $t(3,107)$ = 1.763, p = .08, were found. For child disagreements of mother, there was a marginally significant positive cubic trend, B = 6.409, $t(3,107)$ = 1.731, p = .09. Finally, for total disagreements, there was a significant positive cubic trend, B = 8.359, $t(3,107)$ = 2.273, p < .05. In general, the results for disagreements were as predicted; several positive cubic trends were found. As predicted, and for most of the variables where there were significant effects,

the highest rate of disagreements was found in group 2. In some cases, the rate for group 4 was also high as indicated by the positive cubic effects. The results for total disagreements were precisely as predicted whereby the highest rates were found in groups 2 and 4 and the lowest rates were found in groups 1 and 3.

Insert Table 1 about here

Positive affect. As can be seen in Table 1, only one effect was found for positive affect; a significant positive linear effect, $\underline{B}$ = .185, $\underline{t}(1,109)$ = 1.968, $\underline{p}$ < .05, emerged for child positive affect. This finding runs contrary to the predictions, and indicates that the highest rate of child positive affect occurred in group 4.

Regression Findings for Reciprocity of Interruptions and Disagreements

It was predicted that reciprocal sequences of interruptions and disagreements would be more common in groups 2 and 4. More specifically, it was predicted that the z-scores that represent such sequences (and assess the contingent nature of these behaviors) should be highest in groups 2 and 4. Analyses were run for interruptions, disagreements, and interference behaviors (i.e., interference refers to either an interruption or a disagreement).

Because there were two possible "directions" (e.g., MiF-->FiM and FiM-->MiF) for each dyad, there were six z-score variables for interruptions, six for disagreements, and six for interference

behaviors. In addition, analyses were run for "family" interruptions, disagreements, and interference. These "overall" z-scores were computed by determining the reciprocity of, for example, interruptions emitted by any family member.

It should be noted at the outset that only one effect emerged in all of the analyses (interruptions, disagreements, and interference behaviors) for the father dyads (father-mother and father-child). As a result, only the results for the mother-daughter dyad and the results for the overall familial analyses will be presented in this section.

Interruptions. The regression results for the z-scores that represent reciprocity of interruptions in the mother-daughter dyad and for the overall familial analysis are given in Table 2. As predicted, a positive cubic trend was found for the z-scores that represent MiC-->CiM (mother interrupts child followed by child interrupts mother), $\underline{B}$ = 6.777, $\underline{t}(3,107)$ = 1.812, $\underline{p}$ = .07, which indicates that the highest z's were found in groups 2 and 4. For the "total familial interruptions" variable, positive linear and quadratic effects were found, $\underline{B}$ = .282, $\underline{t}(1,109)$ = 3.067, $\underline{p}$ < .01; and $\underline{B}$ = 1.250, $\underline{t}(2,108)$ = 2.297, $\underline{p}$ < .05, respectively. Upon inspection of the group means, these findings suggest that the z's were higher in group 4 than in any of the other groups.

Insert Table 2 about here

Disagreements. As can be seen in Table 2, a negative quadratic effect was found for CdM-->MdC, $\underline{B}$ = -3.172, $\underline{t}(2,108)$ = -3.172, $\underline{p}$ <

.01. Inspection of the group means reveals that the highest z's were found for groups 2 and 3 and the lowest mean emerged for group 4. Similarly, there was a negative quadratic effect for "total familial disagreements", $\underline{B}$ = -1.155, $\underline{t}$(2,108) = -2.027, $\underline{p}$ < .05, indicating that the z-scores were again highest in groups 2 and 3.

Interference behaviors. As can be seen in Table 2, a negative quadratic trend was found for CIM-->MIC, $\underline{B}$ = -1.056, $\underline{t}$(2,108) = -1.851, $\underline{p}$ = .07, where the group means were at their peak in groups 2 and 3 and at their lowest level in group 4. For the "total familial interference behaviors" variable, there were positive linear and cubic trends, $\underline{B}$ = .192, $\underline{t}$(1,109) = 2.045, $\underline{p}$ < .05; and $\underline{B}$ = 8.128, $\underline{t}$(3,107) = 2.231, $\underline{p}$ < .05, respectively. As predicted, group means were highest in groups 2 and 4 and lowest in groups 1 and 3.

Regression Findings for Sequences of Interruptions/Disagreements and Positive Affect

It was predicted that sequential pairs of interruptions/ disagreements and positive affect would yield higher z-scores in groups 1 and 3 and would yield lower z-scores in groups 2 and 4. In other words, it was expected, for example, that mothers' disagreements of daughters would be less likely to be followed by positive affect in the daughters in groups 2 and 4. Once again, few results were found for the father dyads and, as a result, they will not be reported. (In fact, no results emerged for these dyads.) As was done in the last section, overall family effects will be reported. All findings for this section are given in Table 3.

Insert Table 3 about here

Sequences of interruptions and positive affect. As can be seen
in Table 3, there were two effects for the mother-daughter dyad.
Contrary to predictions, a positive cubic trend was found for
MiC-->CA (mother interruption of daughter followed by daughter
positive affect), $\underline{B}$ = 7.158, $\underline{t}$(3,107) = 1.927, $\underline{p}$ = .06, indicating
that the highest z-scores were found for groups 2 and 4. A negative
linear trend was found for CiM-->MA, $\underline{B}$ = -.224, $\underline{t}$(1,109) = -2.404, $\underline{p}$
< .05, suggesting that the z-scores decrease with increasing
maturity. In the latter instance, it appears that with increasing
maturity, interruptions and positive affect are less frequently
associated sequentially. For the overall family analysis
(interruption--> positive affect), there was a significant positive
cubic trend, $\underline{B}$ = 6.946, $\underline{t}$(3,107) = 1.878, $\underline{p}$ = .06, which appears to
be due almost entirely to the low z-score mean in group 3.

Sequences of disagreements and positive affect. For MdC-->CA, a
negative linear effect was found (see Table 3), $\underline{B}$ = -.178, $\underline{t}$(1,109) =
-1.889, $\underline{p}$ = .06, suggesting that the z-scores decrease with
increasing maturity. As predicted, a negative cubic trend was found,
$\underline{B}$ = -6.598, $\underline{t}$(3,107) = -1.765, $\underline{p}$ = .08, for the overall family
analysis (disagreement--> positive affect) suggesting that the z-
scores for these variables were lowest in groups 2 and 4.

Sequences of interference behaviors and positive affect. As can
be seen in Table 3, a negative linear effect was found for CIM-->MA,
$\underline{B}$ = -.188, $\underline{t}$(1,109) = -2.002, $\underline{p}$ < .05, again suggesting that the z-

scores that represent this sequence decrease with increasing maturity. Similarly, there was a negative linear effect for the overall family analysis (interference-->positive affect), $\underline{B}$ = -.173, $\underline{t}(1,109)$ = -1.837, $\underline{p}$ = .07, again suggesting that the z-scores decrease with increasing maturity.

Regression Findings for the Co-Occurrence of Sequences of Interruptions/Disagreements and Positive Affect (In the Same Person)

The predictions for this section were the same as those for the last section except that these predictions involve the co-occurrence of interference behaviors and positive affect in the same person. That is, it was predicted that the z-scores representing these co-occurrences would be most frequent in groups 1 and 3 and less frequent in groups 2 and 4. Unlike the results for the previous sections, there were significant findings for all dyads and, thus, all will be reported in Table 4.

Insert Table 4 about here

Co-occurrence of interruptions and positive affect in the same person. As can be seen in Table 4, two significant positive cubic effects were found for the co-occurrence of interruptions and positive affect in the same person and both were contrary to predictions. That is, there was a positive cubic effect for CiF-->CA (child interrupts father co-occurring with child positive affect), $\underline{B}$ = 8.065, $\underline{t}(3,107)$ = 2.171, $\underline{p}$ < .05, and a positive cubic trend for

MiC-->MA, $\underline{B}$ = 11.624, $\underline{t}$(3,107) = 3.207, $\underline{p}$ < .01. These findings suggest that these co-occurrences are more likely in groups 2 and 4 and less likely in groups 1 and 3.

Co-occurrence of disagreements and positive affect in the same person. Significant effects were found for three of the dyads and they were as follows (see Table 4): (1) a positive quadratic trend for MdF-->MA (mother disagreement with father co-occurring with mother positive affect), $\underline{B}$ = 1.174, $\underline{t}$(2,108) = 2.080, $\underline{p}$ < .05, (2) negative linear and quadratic trends for CdF-->CA, $\underline{B}$ = -.158, $\underline{t}$(1,109) = -1.671, $\underline{p}$ = .10; and $\underline{B}$ = -1.229, $\underline{t}$(2,108) = -2.191, $\underline{p}$ <.05, respectively, and (3) a negative cubic trend for MdC-->MA, $\underline{B}$ = -8.797, $\underline{t}$(3,107) = -2.395, $\underline{p}$ < .05. The only finding that supports the predictions was the negative cubic finding for MdC-->MA in that the co-occurrence of these behaviors appears to be less likely shortly after menarche (group 2) and in the early maturing group (group 4). On the other hand, the findings for the other two dyads were at variance with the predictions. Although the z-scores representing MdF-->MA were at relatively low levels in group 2, they were at higher levels in group 4. Also, the z-scores representing CdF- ->CA were at their lowest levels in group 4 but at their highest levels in group 2.

Co-occurrence of interference behaviors and positive affect within the same person. As can be seen in Table 4, two significant effects were found for these co-occurrence variables: a negative linear effect for MIF-->MA (mother interfers with father co-occurring with mother positive affect), $\underline{B}$ = -.156, $\underline{t}$(1,109) = -1.645, $\underline{p}$ = .10, and a negative quadratic effect for CIF-->CA, $\underline{B}$ = -1.095, $\underline{t}$(2,108) =

-1.938, $\underline{p}$ = .06. These findings only support the predictions in part. That is, the z-scores for MIF-->MA were at relatively low levels in group 2 (as predicted) but at a higher level in group 4 (contrary to predictions). The opposite was true of CIF-->CA; the z-score means were at their lowest level in group 4 (as predicted) and at their highest level in group 2 (contrary to predictions).

Discussion

In discussing the findings of this study, I will first focus on the results for the immediately postmenarcheal group (group 2) and then I will turn my attention to the results for the early maturing group (group 4). A fairly consistent pattern of results were found for the immediately post-menarcheal group. That is, when there were significant effects, the following results characterized group 2 as compared to the premenarcheal group (or group 1): (a) family members in group 2 disagreed with each other more (and interrupted each other more; Hill, Holmbeck, & Cantara, 1988), (b) for mothers and daughters in group 2, z-scores representing reciprocal sequences of interruptions tended to be greater, (c) for mothers and daughters in group 2 and for the family-level analysis, z-scores representing reciprocal sequences of disagreements tended to be greater, (d) for the family-level analysis, z-scores representing reciprocal sequences of interference behaviors tended to be greater, and (e) for many of the analyses involving sequences of interruptions/disagreements and

positive affect, z-scores tended to decrease with increasing maturity (negative linear trends).

These findings tended to hold up when comparing group 2 with group 3 as well. That is, group 2 tended (with some exceptions) to differ from group 3 (the 6-12 months-ago group) in the same manner in which it differed from group 1. The only set of findings that deviated remarkably from this three group pattern were the findings for co-occurrence of interference behaviors and positive affect in the same person. This latter finding was somewhat surprising given that the co-occurrence of interruptions and positive affect in the same person was highly related to the observational and questionnaire validation measures in Holmbeck's (1987) validation effort. If we ignore the findings for the "co-occurrence" variables for a moment, inspection of the effects in Tables 1, 2, and 3 reveals that for the 28 variables examined, significant (or marginally significant) effects emerged for 18 of these variables. For 14 of the 18 effects, the level of the group 2 means were as predicted relative to the group 1 means (and often the group 3 means).

Given these findings for group 2, it appears that a coherent set of results based upon observational data (i.e., frequency and sequential data) was found. These results support the notion that familial adaptation to menarche involves a temporary period of perturbations in family relationships shortly after menarche. Moreover, they are consistent with findings of earlier studies from the same project but with different families. In the earlier Hill et al. (1985a) study, for example, we found that children in the immediately post-menarcheal group (group 2) reported less maternal

acceptance, less paternal acceptance, more rules and standards, less maternal influence, and less paternal influence than was the case for the girls in groups 1 or 3. Mothers in this group reported fewer activities with the family and more disagreements over rules than did mothers in groups 1 or 3. In fact, the results for girls are similar to those that have emerged for boys (Hill et al. 1985b; Steinberg, 1981, 1987a) in that the levels of the means for the first three groups tend to have the characterisic quadratic pattern (the U-shaped curve).

Given the similarity of findings across laboratories, what does the current study add to our knowledge? First, this is the first study of the relations between puberty and family relations where a sequential analytic definition of conflict was employed. The fact that reciprocal sequences of interference behaviors were more likely in families with immediately post-mencheal daughters suggests that conflict (in the sense of there being more "engagement" and reciprocity) is more common in these families, and particularly in the mother-daughter dyad.

Second, and because sequential analyses were employed, we have some evidence that disagreements and interruptions are less likely to be followed by positive affect (in the person being disagreed with, for example) as the daughter matures physically. That is, we now have information concerning the effect of pubertal change on the affective nature of family interaction. Not only is there an increase in conflict but there also appears to be a withdrawl of positive affect as well (Montemayor, 1985; Papini and Sebby, 1987). This finding is also in line with Steinberg's (1987a) "distancing" hypothesis in that

"pubertal maturation increases emotional distance between youngsters and their parents" (p. 457; also see Steinberg, in press). In the present case, decreases in positive behavior per se were not found, but interference behaviors do appear to be delivered with less positive affect in physically mature girls. It is worth noting that a careful inspection of the means in Table 3 reveals that the lowest means for the these sequences tended to be found for group 3 rather than group 2. This was also the case for many of the significant effects given in Table 4 for the "co-occurrence" variables. It may be that parent-adolescent conflict precedes the withdrawl of positive affect and that the latter is an outcome of chronic conflict. Of course, longitudinal data would be required to test this hypothesis.

What of group 4? The findings for this group are more difficult to interpret and must be viewed in the context of other findings for this group (see Hill, Holmbeck, & Cantara, 1988). On the one hand, we have lower levels of the following in group 4: interruptions, affiliation, control, father-to-mother and mother-to-father talking, reciprocity of disagreements, dyadic sequences of disagreements and affect, and dyadic sequences of interference behaviors and positive affect. On the other hand, I found higher levels of: disagreements, child positive affect, reciprocity of interruptions, reciprocity of interference behaviors, and father-to-daughter and daughter-to-father talking. In general, most of these findings are consistent with the hypotheses; group 4 families (families with early maturing daughters) appear to be in more conflict than were the pre-menarcheal families or group 3 families. Not only do we find less affiliation, and lower z-scores for sequences of interference behaviors and positive affect

but we also find higher frequencies of disagreements and reciprocity of interruptions and interference behaviors--all of which support a "conflict" interpretation.

Despite this general trend, exceptions did emerge; there were lower frequencies of interruptions and lower z-scores for reciprocity of disagreements in group 4. In addition to finding fewer interruptions, we have less talking and less control in families from this group. Mixed findings, such as these, are actually typical of studies where pubertal timing (early vs. late maturers) is the principal focus. As Steinberg (1987a) has argued in a recent review, "studies of pubertal timing and family relationships are more equivocal than studies of pubertal status" (Steinberg, 1987a, p. 451). In the Steinberg (1987a) study, there were few effects of pubertal timing in girls (i.e., late versus early maturation) after controlling for the effects of pubertal status (also see Aro & Taipale, 1987). On the other hand, Magnusson, Stattin, and Allen (1985) found that early maturing girls were clearly at risk for a number of personal and social difficulties.

Although the findings that emerged in the current study are also somewhat mixed, the bulk of the findings cohere rather well if interpreted from a perspective other than the "conflict" perspective. In group 4, there was less talking, affiliation, control, and interruptions. My argument, and the argument that I prefer, is that rather than being characterized exclusively by more conflict, per se, it appears that there may be a lack of "engagement" or "cohesiveness" in families with early maturing daughters as well. This "pulling away" could occur for at least two reasons. First, it may be that the

lack of engagement is a consequence of considerable conflict lasting for some time because of the added stress resulting from early maturity. In short, these families may have found the chronic conflict to be highly aversive and therefore preferred to pull away to avoid such confrontations. Whether or not this is true of all families that have girls who began menstruating more than 12 months ago (rather than just those with early maturers) we do not know, owing to the cross-sectional nature of the study.

A second possibility is that these families have lacked cohesiveness for some time and that this type of interaction is typical for families with early-maturing daughters. Regardless of the explanation, a number of other data issues may also have played a role in the mixed nature of the findings. Because talking time levels were low for this group, rather unstable frequencies and z-scores may have emerged. Moreover, pubertal status and pubertal timing are confounded in group 4 (Steinberg, 1987a). That is, we do not know if the observed effects are due to the fact that this group is early maturing or if they emerged because these girls are more mature (biologically) than the girls in the other groups. Finally, it is our experience that parents and children exhibit nearly 100% agreement concerning whether or not their daughter has experienced menarche. On the other hand, they are somewhat less reliable at placing the timing of the event, thus making placement in group 3 versus group 4 less reliable as well.

Returning now to the issue of conflict, the most important question that remains unanswered is: Why are there perturbations and increased conflict in family functioning shortly after the onset of

certain pubertal changes? Thus far, I have documented that there is an increase in conflict, particularly in the mother-daughter dyad, shortly after menarche. Given this finding and similar findings of other investigators, it appears that we have begun to demonstrate that conflict plays a role in the adaptation to pubertal change but we have not specified what role it plays. I believe that conflict plays an adaptive role in healthy families in the sense that it promotes adjustment to developmental change, and that there are two processes--one intrapsychic and the other extrapsychic--that allow conflict to play this role and make moderate levels of conflict inevitable in healthy families. With regard to the extrapsychic process, the conflict seems to play an information-providing role in that it informs the individuals involved that a more mature person is now living in the home. In the case of the intrapsychic process, the conflict appears to play a role in facilitating the individuation process that is triggered by reactions of the child and parents to pubertal change. As with any two-factor theory (e.g., the two-factor theory of avoidance conditioning), it is believed that the two processes that serve to promote the conflict are distinct but interrelated. (Both of these processes will be discussed in more detail below.)

Earlier, I posed the question: Are the perturbations adaptive in the sense of promoting healthy and needed transformations in familial relations? Before one can answer the question of whether conflict is "adaptive", one must first ask the question "Why does the conflict occur?" Conflict may be the result of a number of underlying factors in the individuals involved. If the "goal" of these underlying

processes is adaptation and they occur in healthy families and these underlying processes also promote a form of conflict that makes the "goal" possible, then one is more safe in assuming that the conflict is adaptive. Certainly this is the case with many cognitive-developmental theories (Kohlberg, 1969; Piaget, 1970; see Shantz, 1987, for a review) whereby conflict is "an essential impetus to change, adaptation, and development" (Shantz, 1987, p. 284). In the present case, it appears that conflict is the adaptive manifestation of the underlying processes that are responses to pubertal change. If the underlying processes and subsequent conflict actually made the parent-adolescent relationship more dysfunctional than it would have been without the conflict, then these processes that promote the conflict and the conflict itself would be maladaptive.

Perhaps an example will make these points clear. Most individuals in this culture leave home at some time in their life and, for many, this home-leaving occurs toward the end of their teens or in their early twenties. We might ask if home-leaving is adaptive and why it occurs. One can speculate that the underlying process that leads to the home-leaving involves autonomy needs. The available research suggests that home-leaving is adaptive. Sullivan and Sullivan (1980) found that boys who left home to go away to college reported an increase in their affection for their parents and their parents' affection for them as compared to boys who did not leave home to attend college. In addition, their affection was greater than it was prior to the home-leaving. Thus, it appears that the underlying process, autonomy-seeking, is adaptive and that the behavioral manifestation of this process, home-leaving, is also

adaptive. Both appear to enhance the relationship between the parents and adolescents and it appears that the relationship would have worsened had the home-leaving not occurred.

With this theory, I assume that: (a) some form of conflict occurs in families shortly after the onset of pubertal change, at the peak of pubertal change, or after some main event such as menarche, (b) the effects of pubertal change on behavior are not direct but are mediated and moderated by social-situational and individual factors (Peterson & Taylor, 1980; Richards & Peterson, 1987), (c) there are various forms of conflict, some of which are adaptive and some of which are not (Montemayor, 1983), and (d) the processes that I will discuss probably apply to this culture only and to intact families.

Extrapsychic processes. Returning now to the issue of conflict, it appears that there is an underlying process at work here that is not intrapsychic. The notion here is simply that the adolescent wishes his/her parents to recognize the changes that he/she is intimately aware of. Because of the rigidity of the roles other family members presumably adopt, change in response to change is not automatic. When a child's pubertal changes do not lead to behavioral changes in others and are therefore not assimilated into their existing modes of behavior, then pressure is placed on these behaviors to change. Given a lack of change, the pressure increases, conflict ensues, and finally, others modify their behaviors to reduce the conflict. This process is not unlike the cognitive processes of assimilation and accomodation as spelled out by Piaget (1970; Ginsberg & Opper, 1969).

Thus, conflict appears to play a role in the process of adaptation to pubertal change. It provides information to all those involved that some form of behavioral change is needed so as to return the system to a resting state. Without conflict, no one would know when, if, or how to change their behaviors in response to change in others. If certain behavioral changes do not reduce the level of conflict, then this "conflict feedback system" will provide feedback that further behavioral modifications are needed.

These notions are supported by existing empirical data. Most relevant here are Smetana's data concerning parent-adolescent conflict as studied within a social-cognitive framework (Smetana, 1987, in press; Turiel, 1983; also see Vuchinich, 1984). Smetana maintains that "conflicts between parents and children are seen to emerge...[when]...the boundaries of legitimate authority are renegotiated during adolescence" (p. 2). The theorizing up to this point is also in line with Steinberg's (1987a) data reviewed earlier and his "distancing hypothesis." Although this "distancing" may occur for a number of reasons, one major contributor may be the lack of recognition on the parents' part of biological change in their adolescent. Thus, the increases in conflict and autonomy and the decreases in closeness observed by Steinberg may be the result, in part, of the conflict that emerges whereby the children inform their parents that they are changing. (Steinberg [in press] takes a more sociobiological stance when he argues that such distance serves the purpose of removing. the child from the family so that he/she can procreate.)

A final point regards mediating processes. Given that "change" is common to all humans, it is fair to assume that there will be interindividual differences in terms of how each individual adjusts to their own change and to change in others. Thus, it follows that there exists a personality variable, that I will refer to as "adaptability to change," for which there are (potentially) measurable individual differences. In a healthy system, individuals experiencing change within themselves or within other members of their family will change in response to the conflict that results and they do so in a manner that enhances or protects the relationship. They see that their old.roles are no longer appropriate and that conflict is resulting from their maintenance of these old roles--so they change. These individuals probably have a high level of "adaptability to change." In short, if the individual is quite rigid, he/she is low in adaptability to change and if the individual is more flexible (or elastic, Lewin, 1951; or resilient, Block & Block, 1980) then he/she is high in adaptability to change. This construct is central to the study of change and could be measured in its own right. It can also be distinguished from other related constructs such as "ego-resiliency" (Block & Block, 1980) and "adaptability" (Olson, McCubbin, Barnes, Larsen, Muxen, & Wilson, 1983; Olson, Sprenkle, & Russell, 1979; see Holmbeck, 1987, for a review). I now summarize the companion intrapsychic process that promotes conflict within the family as an adaptive response to biological change.

Intrapsychic processes. Two implicit assumptions of the
extrapsychic process just described are that adaptive conflict arises
in families with pubertal early adolescents because of the
information-providing role that this conflict plays and that the
responses to it are determined by the personality traits of the
individuals involved. Thus, this process is extrapsychic insofar as
intrapsychic mechanisms are not implicated in the process. It is my
belief that adaptive conflict also arises, in part, because of
intrapsychic changes that occur within the adolescent (although there
are also changes within the parents that coincide with the changes
within the adolescent; Greene & Boxer, in press; Stierlin, 1981).
Since Anna Freud's classic paper on adolescence (A. Freud, 1958), a
number of psychoanalytic theoriests have written extensively on the
topic (e.g., Blos, 1962, 1979; Chodorow, 1978; Kaplan, 1984; Klein,
1984; also see Mahler, 1971; Mahler, Pine, & Bergman, 1975, for a
related discussion). According to these writers, the genders differ
with regard to how they manage the classic intrapsychic tasks of
adolescence (e.g., regression, individuation; see H. Lerner, 1987,
for a review). The task for males is to relinquish infantile ties to
mother and to identify with father and the findings by Steinberg
(1981, 1987a) and Hill et al. (1985b) support this notion--especially
insofar as most of the conflict appears to be with mothers. Although
psychoanalytic theory tends to be male-dominated (Adelson & Doehrman,
1980), a number of thinkers have recently begun writing on the topic
of girls (e.g., Blos, 1979; Chodorow, 1978; Hammer, 1975, 1982;
Kaplan, 1984). For daughters, and according to Blos (1979), "the
mother remains the central identificatory object" (H. Lerner, 1987,

p. 66). Although this identification seems more intense for females, females (like males) desire autonomy from the mother. In fact, most who write about mothers and daughters, actually argue that considerable conflict can occur in this dyad (and this is, in fact, what was found in the present study). The female integrates her relationship with her father with the existing relationship with her mother. Although S. Freud (1925, 1905/1957; Chodorow, 1978) asserted that the daughter comes to totally reject her mother, Chodorow prefers to argue that separation issues are particularly salient for the mother-daughter dyad because both mothers and daughters each tend to view the other as extensions of oneself and that the daughter never really detaches from her mother (Chodorow, 1978; Deutsch, 1944; Hammer, 1975).

But what of girls' conflict with their parents? Because daughters must finally abandon the safety of the maternal attachment (at least to some degree) in order to procreate outside of the family, some transformations must occur (Steinberg, in press). The girl must, at some point, "confront her entanglement in familial relationships" (Chodorow, 1978, p. 135). As a result of pubertal change and the changing perceptions of her peers, it may be that daughters begin to experience themselves as overattached and unindividuated. In order to individuate, daughters engage in conflicts with their mothers. Clearly, more extreme reactions will occur in overly attached daughters. This conflict can be adaptive insofar as the resulting transformation of the attachment is necessary for the relationship to continue and for the daughter to develop extrafamilial relationships.

Although fathers may not be involved in extreme conflict with their daughters, they do play an important role (Appleton, 1981; Chodorow, 1978; Deutsch, 1944; Hammer, 1982; Tessman, 1982). Fathers appear to be responsible for shaping their daughter's sexuality. In fact, Deutsch goes so far as to claim that the love and tenderness that the father gives to the daughter is provided, in part, because it is a bribe to motivate the daughter to renounce her masculine qualities such as instrumentality, aggressiveness, and the like. These notions are similar to those presented by Hill and Lynch (1983) in their discussion of the Gender Intensification Hypothesis. In sum, I have argued that there are underlying intrapsychic and extrapsychic processes that promote adaptive conflict that insures that the "goal" (e.g, individuation, being treated as an adult) of these underlying processes is manifested.

Finally, I discuss the linmitations of this study and directions for future research. A major limitation of this study is that it is cross-sectional. Longitudinal research is needed to document the direction of effects and to determine the sequence of the transformations in familial relationships (see Steinberg, 1987b, 1988, in press). Although we do have sequential data, we can not make causal statements without longitudinal data. Data should also be gathered on non-intact families in settings other than the laboratory. Tasks that elicit more "conflict" sequences should be employed in future research so as to avoid the frequency problems like those encountered here. Little attention has been paid to intrapsychic processes and transformations of internalized working models of attachment or the mediating effects (e.g., peer factors;

Boxer & Petersen, 1986; Hill & Holmbeck, 1987) of puberty on family

relations. Finally, it will be important for us to determine what

forms of parent-adolescent conflict are adaptive and what forms are

maladaptive (and therefore require professional intervention).

REFERENCES

Adelson, J., & Doehrman, M. J. (1980). The psychodynamic approach to adolescence. In J. Adelson (ed.), Handbook of Adolescent Psychology. New York: Wiley.

Allison, P. D., & Liker, J. K. (1982). Analyzing sequential categorical data on dyadic interaction: A comment on Gottman. Psychological Bulletin, 91, 393-403.

American Heritage Dictionary. (1969). New York: Houghton Mifflin.

Anderson, E. R., Heterington, E. M., & Clingempeel, W. G. (1986, March). Pubertal status and its influence on the adaptation to remarriage. Paper presented at the First Biennial Meetings of the Society for Research on Adolescence, Madison, WI.

Appleton, W. S. (1981). Fathers and Daughters. New York: Berkley Books.

Aro, H., & Taipale, V. (1987). The impact of timing of puberty on psychosomatic symptoms among fourteen- to sixteen-year-old Finnish girls. Child Development, 58, 261-268.

Bakeman, R. (1978). Untangling streams of behavior: Sequential analyses of observation data. In G. P. Sackett (Ed.), Observing behavior: Vol II. Data collection and analysis methods. Baltimore: University Park Press.

Bakeman, R., & Gottman, J. M. (1986). Observing interaction: An introduction to sequential analysis. New York: Cambridge University Press.

Block, J. H., & Block, J. (1980). The role of ego-control and ego-resiliency in the organization of behavior. In A. Pick (Ed.), Fourteenth annual Minnesota symposium on child psychology. Minneapolis: University of Minnesota Press.

Blos, P. (1962). On adolescence. New York: Free Press.

Blos, P. (1979). The adolescent passage. New York: International Universities Press.

Boxer, A. M. & Petersen, A. C. (1986). Pubertal change in a family context. In G. K. Leigh & G. W. Peterson (Eds.), Adolescents in families. Cincinnati, OH: South-Western Publishing.

Cantara, A. R. (1983). Pubertal status and assertiveness in family interaction in early adolescent girls. Unpublished master's thesis, Virginia Commonwealth University, Richmond.

Chodorow, N. (1978). The reproduction of mothering: Psychoanalysis and the sociology of gender. Berkeley, CA: University of California

Press.

Cohen, J. (1960). A coefficient of agreement for nominal scales. Education and Psychological Measurement, 20, 37-46.

Cohen, J. (1968). Weighted kappa: Nominal scale agreement with provision for scaled disagreement or partial credit. Psychological Bulletin, 70, 213-220.

Cohen, J. (1972). Weighted chi-square: An extension of the kappa method. Education and Psychological Measurement, 32, 61-74.

Cohen, J., & Cohen, P. (1983). Applied multiple regression/correlation analysis for the behavioral sciences. Hillsdale, NJ: Erlbaum.

Coombs, C. H. (1987). The structure of conflict. American Psychologist, 42, 355-363.

Cousins, P. C., & Power, T. G. (1986). Quantifying family process: Issues in the analysis of interaction sequences. Family Process, 25, 89-105.

Deutsch, H. (1944). The psychology of women. New York: Grune & Stratton.

Diamond, M. (1983). The transition to adolescence in girls: Conscious and unconscious experiences of puberty. Unpublished doctoral dissertation, University of Michigan.

Douvan, E., & Adelson, J. (1966). The adolescent experience. New York: Wiley.

Duncan, O. D. (1977). A socioeconomic index for all occupations. In A. J. Reiss, Jr. (Ed.), Occupations and social status. (pp. 109-138). New York: Arno Press.

Ferreira, A. J. (1963). Decision making in normal and pathological families. Archives of General Psychiatry, 8, 68-73.

Foster, S. L., Prinz, R. J., & O'Leary, K. D. (1983). Impact of problem-solving communication training and generalization procedures on family conflict. Child and Family Behavior Therapy, 5, 1-23.

Freud, A. (1958). Adolescence. Psychoanalytic Study of the Child, 13, 231-258.

Freud, S. (1925). Some psychical consequences of the anatomical distinction between the sexes. Standard edition of the complete psychological works of Sigmund Freud (Vol. 19; pp. 243-258). London: Hogarth Press and Institute of Psycho-Analysis.

Freud, S. (1957). Three essays on the theory of sexuality. In J. Strachey (Ed. and Trans.), The standard edition of the complete

psychological works of Sigmund Freud. London: Hogarth Press and
Institute of Psycho-Analysis. (original work published 1905).

Ginsburg, H., & Opper, S. (1969). Piaget's theory of intellectual
development: An introduction. Englewood Cliffs, NJ: Prentice-Hall.

Gottman, J. M. (1979). Marital interaction: Experimental
investigations. New York: Academic Press.

Gottman, J. M. (1980). Analyzing for sequential connection and
assessing interobserver reliability for the sequential analysis of
observational data. Behavioral Assessment, 2, 361-368.

Greene, A. L., & Boxer, A. M. (in press). Daughters and sons as young
adults: Restructuring the ties that bind. In N. Datan, A. L.
Greene, & H. W. Reese (Eds.), Life-span developmental psychology:
Intergenerational networks. Hillsdale, NJ: L. Erlbaum.

Hammer, S. (1975). Daughters and mothers: Mothers and daughters. New
York: Quadrangle, New York Times Book Co.

Hammer, S. (1982). Passionate attachments: Fathers and daughters in
America today. New York: Rawson Associates.

Hartmann, D. P. (1977). Consideration in the choice of interobserver
reliability estimates. Journal of Applied Behavior Analysis, 10,
103-116.

Hetherington, E. M., Stouwie, R., & Ridberg, E. H. (1971). Patterns of
family interaction and child-rearing attitudes related to three
dimensions of juvenile delinquency. Journal of Abnormal Psychology,
77, 160-176.

Hill, J. P. (in press). Adapting to menarche: Familial control and
conflict. In M. R. Gunnar (Ed.), 21st Minnesota Symposium on Child
Psychology. Hillsdale, NJ: Lawrence Erlbaum.

Hill, J. P., & Holmbeck, G. N. (1985, April). Familial adaptation to
pubertal change: The role of conflict. In W. A. Collins (Chair),
Parent-child relations in the transition to adolescence: Family
adaptations to pubertal change. Symposium conducted at the meeting
of the Society for Research in Child Development, Toronto.

Hill, J. P., & Holmbeck, G. N. (1987). Familial adaptation to
biological change during adolescence. In R. M. Lerner & T. T. Foch
(Eds.), Biological-psychosocial interactions in early adolescence:
A life-span perspective. Hillsdale, NJ: Erlbaum.

Hill, J. P., Holmbeck, G. N., & Cantara, A. R. (1988). Menarcheal
status and family interaction. Unpublished manuscript, Virginia
Commonwealth University, Richmond.

Hill, J. P., Holmbeck, G. N., Marlow, L., Green, T. M., & Lynch, M. E. (1985). Menarcheal status and parent-child relations in families of seventh-grade girls. _Journal of Youth and Adolescence, 14_, 314-330. (a)

Hill, J. P., Holmbeck, G. N., Marlow, L., Green, T. M., & Lynch, M. E. (1985). Pubertal status and parent-child relations in families of seventh-grade boys. _Journal of Early Adolescence, 5_, 31-44. (b)

Hill, J. P., Holmbeck, G. N., Marlow, L., & Putterman, J. (1986). _Coding manual for disagreements_. Technical Report #2, Virginia Commonwealth University, Richmond.

Hill, J. P., Holmbeck, G. N., & Valentine, M. (1986). _Coding manual for affect_. Technical Report #3, Virginia Commonwealth University, Richmond.

Hill, J. P., & Lynch, M. E. (1983). The intensification of gender-related role expectations during early adolescence. In J. Brooks-Gunn & A. C. Petersen (Eds.), _Girls at puberty_ (p. 201-228). New York: Plenum.

Hill, J. P., Sawin, D. B., Shelton, K., Shiflet, D. (1978). _A manual for the coding of achievement-related instruction_. Unpublished manuscript. Center for the Study of Youth Development, Boys Town, NB.

Hollenbeck, A. R. (1978). Problems of reliability in observational research. In G. P. Sackett (Ed.), _Observing behavior: Vol. II. Data collection and analysis methods._ Baltimore: University Park Press.

Holmbeck, G. N. (1987). _The role of familial conflict in adaptation to menarche: Sequential analysis of family interaction._ Unpublished doctoral dissertation, Virginia Commonwealth University, Richmond.

Hunt, R. G. (1976). Role and role conflict. In E. P. Hollander & R. G. Hunt (Eds.), _Current perspectives in social psychology_ (4th ed.). New York: Oxford University Press. (Reprinted from _Focus on change and the school administrator,_ 1965, In H. J. Harley, & G. E. Holloway (Eds.), Buffalo, NY: University of New York, School of Education.)

Kaplan, L. (1984). _Adolescence: The farewell to childhood._ New York: Simon and Schuster.

Klein, C. (1984). _Mothers and sons._ Boston: Houghton Mifflin.

Kohlberg, L. (1969). Stage and sequence: The cognitive-developmental approach to socialization. In D. A. Goslin (Ed.), _Handbook of socialization theory and research_ (pp. 347-480). Chicago: Rand-McNally.

Landis, J. R., & Koch, G. C. (1977). The measurement of observer agreement for categorical data. _Biometrics, 33,_ 159-174.

Leighton, L., Stollak, G., & Fergusson, L. (1971). Patterns of communication in normal and clinic families. Journal of Clinical and Consulting Psychology, 36, 252-256.

Lerner, H. (1987). Psychodynamic models. In V. B. Hasselt, & M. Hersen (Eds.), Handbook of adolescent psychology. New York: Pergamon.

Lewin, K. (1951). Field theory in social science. New York: Harper.

Magnusson, D., Stattin, H., & Allen, V. L. (1985). Biological maturation and social development: A longitudinal study of some adjustment processes from mid-adolescence to adulthood. Journal of Youth and Adolescence, 14, 267-283.

Mahler, M. (1971). A study of the separation-individuation process and its possible application to borderline phenomena in the psychoanalytic situation. The Psychoanalytic Study of the Child, 26, 403-424.

Mahler, M., Pine, F., & Bergman, A. (1975). The psychological birth of the human infant. New York: Basic Books.

Margolin, G., & Wampold, B. E. (1981). Sequential analysis of conflict and accord in distressed and nondistressed marital partners. Journal of Consulting and Clinical Psychology, 49, 554-567.

Marlow, E. L. (1985). The effect of perceived family harmony and pubertal development on compliance-gaining in families of adolescents. Unpublished doctoral dissertation, Virginia Commonwealth University, Richmond.

Mishler, E., & Waxler, N. (1968). Interaction in families: An experimental study of family process and schizophrenia. New York: Wiley.

Montemayor, R. (1983). Parents and adolescents in conflict: All families some of the time and some families most of the time. Journal of Early Adolescence, 3, 83-103.

Montemayor, R. (1985). Some thoughts about conflict and power in the parent-adolescent relationship. Paper presented at the Third Biennial Conference on Adolescent Research, Tuscon, AZ.

Montemayor, R. (1986). Family variation in parent-adolescent storm and stress. Journal of Adolescent Research, 1, 15-31.

Montemayor, R., & Hanson, E. (1985). A naturalistic view of conflict between adolescents and their parents and siblings. Journal of Early Adolescence, 5, 23-30.

O'Connor, W., & Stachowiak, J. (1971). Patterns of interaction in families with high adjusted, low adjusted, and mentally retarded members. Family Process, 10, 229-241.

Olson, D. H., McCubbin, H. I., Barnes, H. L., Larsen, A. S., Muxen, M. J., & Wilson, M. A. (1983). Families: What makes them work. Beverly Hills, CA: Sage.

Olson, D. H., Sprenkle, D., & Russell, C. (1979). Circumplex model of marital and family systems I: Cohesion and adaptability dimensions, family types and clinical applications. Family Process, 18, 3-28.

Papini, D., & Datan, N. (1982, October). Mutual regulation in family relations: Parental imperatives and adolescents in transition. Paper presented at the Fifth Annual Communication, Language, and Gender Conference, Ohio University, Athens, OH.

Papini, D. R., & Datan, N. (1983, April). The transition into adolescence: An interactional perspective. Paper presented at the Biennial Meetings of the Society for Research in Child Development, Detroit, MI.

Papini, D. R., & Sebby, R. A. (1985, April). Multivariate assessment of adolescent physical maturation as a source of change in family relations. Paper presented at the Biennial Meeting of the Society for Research in Child Development, Toronto.

Papini, D. R., & Sebby, R. A. (1987). Adolescent pubertal status and affective family relationships: A multivariate assessment. Journal of Youth and Adolescence, 16, 1-15.

Patterson, G. R., & Forgatch, M. S. (1985). Therapist behavior as a determinant for client noncompliance: A paradox for the behavior modifier. Journal of Consulting and Clinical Psychology, 53, 846-851.

Petersen, A. C., & Taylor, B. (1980). The biological approach to adolescence: Biological change and psychological adaptation. In J. Adelson (Ed.), Handbook of adolescent psychology. New York: Wiley.

Peterson, D. R. (1983). Conflict. In H. H. Kelley, E. Berscheid, A. Christensen, J. H. Harvey, T. L. Huston, G. Levinger, E. McClintock, L. A. Peplau, & D. R. Peterson (Eds.), Close relationships (pp.360-396). New York: W. H. Freeman.

Piaget, J. (1970). Piaget's theory. In P. H. Mussen (Ed.), Carmichael's manual of child psychology (2nd ed.). New York: Wiley.

Prinz, R. J., Foster, S., Kent, R. N., & O'Leary, K. D. (1979). Multivariate assessment of conflict in distressed and nondistressed mother-adolescent dyads. Journal of Applied Behavioral Analysis, 12, 691-700.

Richards, M., & Petersen, A. C. (1987). Biological theoretical models of adolescent development. In V. B. Van Hasselt, & M. Hersen (Eds.), Handbook of Adolescent Psychology. New York: Pergamon.

Riskin, J. & Faunce, E. (1972). An evaluative review of family interaction research. Family Process, 11, 365-456.

Robin, A. L. (1981). A controlled evaluation of problem-solving communication training with parent-adolescent conflict. Behavior Therapy, 12, 593-609.

Sackett, G. P. (1978). Measurement in observational research. In G. P. Sackett (Ed.), Observing behavior: Vol. II. Data collection and analysis methods. Baltimore: University Park Press.

Sackett, G. P. (1979). The lag sequential analyses of contingency and cyclicity in behavioral interaction research. In L. J. Osofsky (Ed.), Handbook of infant development (pp. 623-649). New York: Wiley.

Sackett, G. P. (1980). Lag sequential analysis of a data reduction technique in social interaction research. In D. Sawin, R. Hawkins, L. Walker, & J. Penticuff (Eds.), Exceptional infant (Vol. 4). New York: Brunner/Mazel.

Shantz, C. U. (1987). Conflicts between children. Child Development, 58, 283-305.

Shantz, C. U., & Shantz, D. W. (1985). Conflict between children: Social cognitive and sociometric correlates. In M. W. Berkowitz (Ed.), Peer conflict and psychological growth: New directions for child development (pp. 3-21). San Francisco, CA: Jossey-Bass.

Smetana, J. G. (1987). Parent factors in family relations in adolescence. Paper presented at the biennial meetings of the Society for Research on Child Development, Baltimore, MD.

Smetana, J. G. (in press). Concepts of self and social convention: Adolescents' and parents' reasoning about hypothetical and actual family conflicts. In M. R. Gunnar (Ed.), 21st Minnesota Symposium on Child Psychology. Hillsdale, NJ: Erlbaum.

Steinberg, L. (1977). A longitudinal study of physical growth, intellectual growth, and family interaction in early adolescence. Unpublished doctoral dissertation, Cornell University, Ithaca, NY.

Steinberg, L. (1981). Transformations in family relations at puberty. Developmental Psychology, 17, 833-840.

Steinberg, L. (1987). Impact of puberty on family relations: Effects of pubertal status and pubertal timing. Developmental Psychology, 23, 451-460. (a)

Steinberg L. (1987, April). Pubertal status, hormone levels, and family relations: The distancing hypothesis. Paper presented at Biennial meetings of the Society for Research in Child Development, Baltimore, Maryland. (b)

Steinberg, L. (1988). Reciprocal relation between parent-child distance and pubertal maturation. Developmental Psychology.

Steinberg, L. (in press). Pubertal maturation and family relations: Evidence for the distancing hypothesis. In G. Adams, R. Montemayor, & T. Gullotta (Eds.), Advances in adolescent development (Vol. 1). Beverly Hills, CA: Sage.

Steinberg, L., & Hill, J. P. (1978). Patterns of family interaction as a function of age, the onset of puberty, and formal thinking. Developmental Psychology, 14, 683-684.

Stierlin, H. (1981). Separating parents and adolescents. New York: Aronson.

Sullivan, K., & Sullivan, A. (1980). Adolescent-parent separation. Developmental Psychology, 16, 93-99

Tanner, J. (1962). Growth at adolescence (2nd ed.). Springfield, IL: Charles C. Thomas.

Tessman, L. H. (1982). A note on the father's contribution to the daughter's ways of loving and working. In S. H. Cath, A. R. Gurwitt, & J. M. Ross (Eds.), Father and child: Developmental and clinical perspectives. Boston: Little, Brown.

Turiel, E. (1983). The development of social knowledge: Morality and convention. Cambridge: Cambridge University Press.

Vuchinich, S. (1984). Sequencing and social structure in family conflict. Social Psychology Quarterly, 47, 217-234.

Zuckerman, E., & Jacob, T. (1979). Task effects in family interaction. Family Process, 18, 47-53.

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Table 1

Group Means and Trends for the Relations Between Daughters' Ratings of
Menarcheal Status and Rates of Diasagreements and Positive Affect
for the Full-Sample of Seventh-Grade Girls ($\underline{N}$ = 111)

	Daughter Rating of Months Since Menarche				
	$\underline{0}$ (Grp 1)	0-6 (Grp 2)	6-12 (Grp 3)	>12 (Grp 4)	Trends
Disagreements					
Total Disagreements	.0272	.0349	.0268	.0313	+C**
FMdis	.0051	.0074	.0047	.0046	-Q*,+C*
MFdis	.0069	.0072	.0057	.0061	------
FCdis	.0068	.0083	.0081	.0090	------
CFdis	.0071	.0100	.0077	.0110	+L**,+C*
MCdis	.0073	.0092	.0077	.0081	------
CMdis	.0067	.0095	.0068	.0068	+C*
Positive Affect					
Faffect	.0156	.0134	.0143	.0234	------
Maffect	.0354	.0251	.0324	.0400	------
Caffect	.0420	.0348	.0484	.0699	+L**

Note. F = father; M = mother; C = child; dis = disagreements (e.g., FMdis
= father disagreements with mother); L = linear trend; Q = quadratic trend
(1 bend); C = cubic trend (2 bends). Directions of all trends are noted.
Means are based on proportions where frequencies of the variable are
divided by the talk time of the individual(s) involved (number of words).

$\underline{n}$(0) = 60, $\underline{n}$(0-6) = 19, $\underline{n}$(6-12) = 17, $\underline{n}$(>12) = 15.

* p < .10   ** p < .05   *** p < .01.

Table 2

Group Means and Trends for the Relations Between Daughters' Ratings of
Menarcheal Status and Reciprocal Interruptions, Disagreements, and
Interference Behaviors (Z-Scores) for the Full Sample of Seventh-
Grade Girls (N - 111)

	Daughter Rating of Months Since Menarche				
	0 (Grp 1)	0-6 (Grp 2)	6-12 (Grp 3)	>12 (Grp 4)	Trends
Reciprocity of Interruptions					
MiC-->CiM	.0713	.3204	-.1949	.1434	+C*
CiM-->MiC	.0178	.0905	.0327	-.1102	------
Family Interruption--> Family Interruption	-1.3653	-1.2759	-1.3972	-.2500	+L***,+Q**
Reciprocity of Disagreement					
MdC-->CdM	.8453	1.0317	1.4393	.8312	------
CdM-->MdC	.7091	1.2225	1.5385	.1549	-Q***
Family Disagreement--> Family Disagreement	1.9493	2.5860	2.4671	1.7731	-Q**
Reciprocity of Interference Behaviors					
MIC-->CIM	.3398	.3124	.1963	.6002	------
CIM-->MIC	.8050	.3673	.6910	.0117	-Q*
Family Interference--> Family Interference	.1758	.8093	.1683	1.0493	+L**,+C**

Note. F = father; M = mother; C = child; i = "interrupts" (e.g., MiC-->
CiM = mother interrupts child followed by child interrupts mother); d =
"disagrees with"; I = "interfers with"; L = linear trend; Q = quadratic
trend (1 bend); C = cubic trend (2 bends). Directions of all trends are
noted. Means are group z-score means.

n(0) = 60, n(0-6) = 19, n(6-12) = 17, n(>12) = 15.

* p < .10   ** p < .05   *** p < .01.

Table 3

Group Means and Trends for the Relations Between Daughters' Ratings of
Menarcheal Status and Sequences of Interruptions/Disagreements/
Interference Behaviors AND Positive Affect (Z-Scores) for the Full Sample
of Seventh-Grade Girls (N = 111)

Daughter Rating of Months Since Menarche

	0 (Grp 1)	0-6 (Grp 2)	6-12 (Grp 3)	>12 (Grp 4)	Trends
Sequences of Interruptions and Positive Affect					
MiC-->CA	-.3147	-.2089	-.8656	-.2438	+C*
CiM-->MA	-.3248	-.3653	-.9102	-.6638	-L**
Family Interruption--> Family Positive Affect	.4464	.4543	-.2380	.5476	+C*
Sequences of Disagreements and Positive Affect					
MdC-->CA	-.0561	-.2196	-.6651	-.4499	-L*
CdM-->MA	-.2783	-.3619	-.4351	-.2212	------
Family Disagreement--> Family Positive Affect	.2429	-.1209	.3918	-.0407	-C*
Sequences of Interference Behaviors and Positive Affect					
MIC-->CA	-.2770	-.3729	-1.1102	-.5539	------
CIM-->MA	-.4082	-.4977	-.9349	-.7298	-L**
Family Interference--> Family Positive Affect	.5005	.2979	.0815	.0796	-L*

Note. F = father; M = mother; C = child; A = positive affect (e.g., CA =
child positive affect); i = "interrupts" (e.g., MiC-->CA = mother
interrupts child followed by child positive affect); d = "disagrees with";
I = "interfers with"; L = linear trend; Q = quadratic trend (1 bend); C =
cubic trend (2 bends). Directions of all trends are noted. Means are group
z-score means.

n(0) = 60, n(0-6) = 19, n(6-12) = 17, n(>12) = 15.

* p < .10   ** p < .05   *** p < .01.

Table 4

Group Means and Trends for the Relations Between Daughters' Ratings of
Menarcheal Status and Co-Occurrence of Interruptions/Disagreements/
Interference Behaviors AND Positive Affect in the Same Person (Z-Scores)
for the Full Sample of Seventh-Grade Girls ($\underline{N}$ = 111)

Daughter Rating of Months Since Menarche

	0 (Grp 1)	0-6 (Grp 2)	6-12 (Grp 3)	>12 (Grp 4)	Trends
Co-Occurrence of Interruptions and Positive Affect (same person)					
FiM-->FA	-.0035	.1339	.3408	.0803	------
MiF-->MA	-.1167	-.3577	-.5013	-.4371	------
FiC-->FA	-.1778	-.1756	-.2603	.0235	------
CiF-->CA	-.3890	-.0226	-.6921	-.3125	+C**
MiC-->MA	-.1374	.3323	-.7315	.0719	+C***
CiM-->CA	-.1227	-.4136	-.4512	-.3395	------
Co-Occurrence of Disagreements and Positive Affect (same person)					
FdM-->FA	.3162	.5826	.0268	-.0069	------
MdF-->MA	.3677	.0200	-.4071	.3021	+Q**
FdC-->FA	.0772	-.2083	.1628	-.0547	------
CdF-->CA	.0676	.4437	.1210	-.9024	-L*,-Q**
MdC-->MA	.0453	-.5128	.1274	-.3733	-C**
CdM-->CA	-.0303	-.1068	-.1243	-.1594	------
Co-Occurrence of Interference Behaviors and Positive Affect (same person)					
FIM-->FA	.1809	.4859	.3236	.0178	------
MIF-->MA	.1290	-.2500	-.7167	-.1139	-L*
FIC-->FA	-.0990	-.2565	-.0784	-.0188	------
CIF-->CA	-.2682	.2985	-.4465	-1.0269	-Q*
MIC-->MA	-.0990	-.0832	-.4382	-.2623	------
CIM-->CA	-.1166	-.3544	-.4113	-.3744	------

Table 4 (continued)

Note. F = father; M = mother; C = child; A = positive affect (e.g., CA = child positive affect); i = "interrupts" (e.g., MiC-->MA = the co-occurrence of mother interrupts child and mother positive affect); d = "disagrees with"; I = "interfers with"; L = linear trend; Q = quadratic trend (1 bend); C = cubic trend (2 bends). Directions of all trends are noted. Means are group z-score means.

n(0) = 60, n(0-6) = 19, n(6-12) = 17, n(>12) = 15.

* p < .10   ** p < .05 *** p < .01.

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