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thesis entitled

Gender Differences In The Perceived Thinking Styles Of College Students And Their Parents

presented by

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has been accepted towards fulfillment
of the requirements for

M.A. degree in Clinical Psychology

Major professor

Date 4/2/91

GENDER DIFFERENCES IN THE PERCEIVED THINKING STYLES OF COLLEGE STUDENTS AND THEIR PARENTS

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A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

MASTER OF ARTS

Department of Psychology

1991

ABSTRACT

GENDER DIFFERENCES IN THE PERCEIVED THINKING STYLES OF COLLEGE STUDENTS AND THEIR PARENTS

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Hypothesized gender differences in cognitive style were explored using Epstein and Meier's (1989) Constructive Thinking Inventory (CTI). Adressing both constructive and nonconstructive cognitive forms and reported to correlate with successes in love, physical health, and work, the CTI was administered to 118 undergraduates and to their mothers and fathers by mail. In simulations of their parents' CTI performance, students depicted each parent as thinking more constructively than themselves but less constructively than parental self-reports. Males' higher Emotional Coping scores was the salient gender difference. Daughters' simulated parental CTI responses were generally more favorable than sons. On CTI scales of both Naive Optimism and Categorical Thinking, however, parents own response were significantly more favorable than sons' and daughters' simulations. Noteworthy differences also held among the various family dyads (mother-daughter, mother-son, father-daughter, father-son). These findings were discussed in the context of myths about gender-linked differences in thinking.

TO DAVE

ACKNOWLEDGMENTS

I would like to thank Dr. John Hurley, who enthusiastically shared his ideas and his time. I am grateful to him for the his encouragement and direction throughout the development of this work. I would also like to express my appreciation to Dr. Norman Abeles and Dr. Bertram Karon for their guidance in the completion of this thesis.

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INTRODUCTION

This paper addresses young adults' perceptions of parental thinking style and the influences of parent and child gender on these perceptions. The effects of gender on various aspects of family interaction have been frequently reported. Childrens' adjustment seems importantly influenced by their perceptions of parents. (Whitbeck, 1987). There is, however, a dearth of research in the area of childrens' perceptions of parents cognitive style and it is precisely on this that the present paper will focus. In addition, the concept of constructive thinking will be both reviewed and investigated.

Constructive Thinking

Constructive thinking is a relatively new construct that can be described as "life smarts" - a thinking style that enables one to function effectively at life tasks. Epstein and Meier (1989) used the phrase "practical intelligence" to describe this construct. This name underscores their finding that constructive thinking is conceptually distinct from intelligence as

we usually define it.

Intelligence has traditionally been defined by school-related skills and is generally thought to include such skills as vocabulary, arithmetic, and spatial ability. At present, rather than measuring specific skills, there is a new emphasis on the processes that are necessary to acquire such skills. A person high in intelligence would process information in a way that facilitates intellectual learning (Kaufman, 1979). Thompson and Melancon (1987), in their investigation of critical thinking skills, measure such skills as hypothesis testing and deduction.

Constructive thinking, unlike intelligence, does not refer to intellectual functioning. Constructive thinking is a broad concept that encompasses diverse areas of functioning and adjustment. High constructive thinkers should be relatively successful in life--career, love, friendships, etc. However, high constructive thinkers would not necessarily have high I.Q.'s or do well in school. In fact, constructive thinking, as measured by the Constructive Thinking Inventory (CTI), was found uncorrelated with academic achievement or with I.Q. (Epstein & Meier, 1989).

How might one come to think constructively as opposed to nonconstructively? Several cognitive theorists have linked destructive or negative thinking to various forms of psychopathology. For example, Beck

(1976) implicates illogical thinking as a causal agent in depression. According to Beck, people who view themselves, the world, and the future in an unrealistically negative fashion would be more likely to become depressed and remain depressed. Several studies have provided empirical support for this theory of depression (e.g. Burns, Shaw, & Crooker, 1987; Rizley, 1978).

Ellis (1987) points to "irrational beliefs" as the cause for emotional disturbance. According to Ellis, humans often think in terms of "musts", "shoulds", and other unrealistic beliefs; and it is this type of thinking that leads to neuroticism (Ellis, 1985; Ellis, 1987). In accordance with Ellis' theory, Thyer, Papsdorf, and Kilgore (1983) found a correlation between irrational thinking and psychological disturbance. In fact, irrational thinking styles have been associated with various psychological problems ranging from eating disorders (Mizes, 1988) to wife abuse (Edleson, 1984).

Cognitive-experiential Self-theory

Epstein and Meier's (1989) CTI was developed to assess constructive versus nonconstructive thinking styles. The CTI scales were designed with adherence to cognitive-experiential self-theory (CEST). This theory defines three separate "conceptual systems": the rational, the experiential, and the associationistic

(Epstein, in press). The rational system operates consciously and is guided by reason and logic. The experiential system operates at the preconscious level and is strongly influenced by feelings (both conscious and unconscious). The associationistic system "corresponds to a state of altered consciousness and is viewed as similar to Freud's unconscious system..." (Epstein, in press, p. 6).

The experiential system provides the passion that the rational system lacks. Conflicts "between the heart and the mind" are examples of interaction between the experiential and rational systems. Irrational fears provide another example of interaction between the systems (Epstein, in press). For example, we may know in our minds, while watching a horror movie, that we are safe, yet we may feel frightened and scream. According to Epstein, it is the experiential system that responds rapidly while the rational system experiences a delay. Therefore, it is the experiential system that guides much of our behavior. If we are to understand human motivation and behavior, we must tap into the experiential conceptual system. And it is with this purpose that the CTI was devised (Epstein & Meier, 1989). It is a 64-item measure that is designed to assess constructive thinking as defined above.

The Constructive Thinking Inventory

The CTI's prospective item pool was gathered from three sources: books and articles on cognitive theory; reports from acquaintances of the author on various constructive and destructive thoughts they experienced; and daily logs of students enrolled in a class on "emotions and self-concept". From these items Epstein constructed statements which could be responded to on a five point scale--the extreme anchors for which are "definitely false" and "definitely true". Epstein then sorted the items were sorted into 18 categories based on face validity. A confirmatory factor analysis identified six "interpretable factors". The six scales of the CTI were formed from these factors after slight modifications. Twelve was the maximum number of items in any scale. Each scale included only those items which correlated most highly with each other.

These six basic scales are: Emotional Coping, Behavioral Coping, Superstitious Thinking, Categorical Thinking, Negative Thinking, and Naive Optimism. Added was a composite set of 28 items drawn from the six basic scales and labelled the global index of Constructive Thinking. Brief descriptions of each scale will further elucidate these constructs.

Emotional Coping taps such areas as not taking things too personally or not being overly sensitive, not being afraid of failure, and not being needlessly

worried. Behavioral Coping, on the other hand, deals with the ability to act efficiently. People who are effective behavioral copers are optimistic and focus on future action rather than past disappointments or injustices. Emotional Coping is tied to the absence of negative thinking while Behavioral Coping involves the presence of positive thinking (Epstein & Meier, 1989).

Superstitious Thinking includes items on personal superstitions (e.g., I must eat a candy bar before each exam or I will fail) as well as items on institutional superstitions (e.g., it is bad luck to walk under a ladder). Categorical thinking includes items that refer to rigid thinking patterns. A person who thinks categorically would tend to see people as good or bad, for them or against them (usually against), and see things as right or wrong. Naive Optimism includes items that refer to "seeing the world through rose colored glasses" and is not viewed as a constructive thinking style. It is characterized by overgeneralizing after positive events occur. For example, "I passed this exam therefore I will be successful on every exam I ever take no matter what it entails."

Negative thinking is characterized by excessive pessimism. A high scorer on negative thinking would tend to see the worst aspects of any situation. Finally, the global CTI scale is a selected composite of all the other scales except Naive Optimism. Its items

were excluded from the global index because Epstein and Meier (1989) found that all basic CTI scales except Naive Optimism intercorrelated significantly. More recently however, Hurley's (1990) study found that the Naive Optimism scale was significantly associated positively with Superstitious and Negative Thinking but negatively with coping both Behaviorally and Emotionally, as well as with the global index. Since the CTI instrument is so new (1989), there is little other published research about it. Preliminary findings (Epstein & Meier, 1989) reported correlations of the global Constructive Thinking scale with such variables as job success, success in love, mental well being, and physical well being.

Other research (Epstein, in press) reported relationships between CTI scores and scores on the Primary Emotions and Trait Scales (PETS). Global Constructive Thinking also correlated positively with ego-strength and self-esteem, but negatively with anger, depression, and neuroticism. In addition, the various CTI subscales correlated with the PETS variables divergently, providing evidence that they do address different aspects of thinking. For example, anxiety correlated highest with Emotional Coping, whereas anger correlated most highly with Categorical Thinking.

Hurley (1990) investigated the relationship between CTI scores and one's ratings of self and others within

small interpersonal groups. All members rated themselves and all other same-group members for self-acceptance and other-acceptance. CTI scores were found to correlate with the discrepancy between self ratings and ratings one gave to others for self-acceptance. Those higher on the subscales of constructive thinking were significantly more likely to rate self higher than they rated their group peers, while those higher in nonconstructive forms of thinking were significantly less likely to overrate themselves.

For acceptance of others, smaller discrepancies between ratings of self and ratings given to others was found to be associated with Categorical Thinking, Superstitious Thinking, and Negative Thinking. In summary, a high degree of self-acceptance was associated with constructive thinking, as would be expected. In addition, as was suggested by the research of Taylor and Brown (1988), a self-serving bias appears to be predictive of constructive thought.

Family Relationship Factors and Thinking Style

Constructive Thinking is also believed to be influenced by parental behavior. Epstein (1987) investigated the effects of parental independence-encouragement and parental acceptance-rejection on the development of constructive thinking in children. Independence-encouragement was found to be significantly

correlated with constructive thinking, however, the relationship between constructive thinking and parental acceptance-rejection was not found significant. According to these findings, encouraging children to be independent appears to be more important in development of their thinking style than is providing warmth and acceptance. Later, Epstein (in press) reported that the situation most conducive to constructive thinking in children is a father who encourages independence and a mother who is accepting. What is most apparent is that parent-child interaction some impact on the development of constructive thinking in children.

Another early CTI study by Epstein and Lee (cited in Epstein, in press) yielded some expected and some puzzling findings. In a study of 79 college students and their parents, it was found that these parents scored more favorably on a revised version of the CTI than did their children. This was expected because constructive thinking should, unlike intelligence, increase with experience. There were no sex differences.

Some unexpected correlations were found between the CTI scores of these parents and their children. The global Constructive Thinking scores of both sons and daughters were found to correlate significantly with those of their fathers, yet not with their mothers. Daugters' CTI responses, however, did have significant

positive correlations with those of their mothers on two scales--Categorical Thinking and Esoteric Thinking. Esoteric thinking, a scale which measured a belief in superstitions and supernatural phenomena, was later incorporated into the Superstitious Thinking scale. Thus, it appears that daughters acquired some negative aspects of their mother's thinking style and some positive aspects of their father's. In contrast, these sons' thinking style modelled only that of their fathers. What might account for this unexpected finding?

These college-student children had been asked to simulate CTI responses separately for each parent. Daughters consistently depicted their mothers as below their fathers for global Constructive Thinking than fathers despite the fact that these fathers did not score higher than mothers on the CTI. Sons, on the other hand, described their mothers and fathers as equal for Constructive Thinking. The authors offered no explanation for these findings, but acknowledged the need for replication. Thus, Epstein's findings appear to conflict with the work of O'Neil and Reiss (1984) who found no sex differences in the way sons and daughters (aged 20-64) perceived their mothers' competence. O'Neil and Reiss examined adult childrens' perceptions of their mothers across the life-span using a new measure called the Parent Perception Inventory and

concluded that "by age twenty men and women perceive their mothers in basically similar ways on a number of important dimensions" (p. 341).

The present study seeks both to replicate Epstein's puzzling findings and to uncover some possible explanations. Several questions remain unanswered. Why do sons and daughters have different perceptions of their mothers? An extension of this question is: If sons and daughters do have different perceptions of their mothers, then why are there not parallel differences in the way that they viewed their fathers? Why do daughters see their mothers' Constructive Thinking as inferior to their fathers' despite the absence of differences between the parents? Why do sons fail to use their mothers as models of constructive thinking even though they rate them as highly as their fathers?

The way children view their parents is an important factor in children's development. Whitbeck (1987) found that a child's self-adjustment is better predicted by the child's perception of parental efficacy than actual parental self efficacy as recorded by self-report. Therefore, the way in which children perceive their parents' cognitive style seems an important area of research which merits further attention.

There also seem to be gender differences in the salience of parental efficacy to sons and to daughters.

Girls appear more affected by parental behaviors and parental interaction, while boys appear more affected by the perceived efficacy of their parents (Whitbeck, 1987). Thus, it seems that having parents believed to be inefficacious would be more detrimental to boys than to girls. Girls could view their mother as less efficacious but still have high efficacy themselves. This is precisely what was reported by Epstein and Lee (cited in Epstein, in press). Although daughters rated their mothers below fathers for Constructive Thinking, they rated their own Constructive Thinking as equivalent to the male peer group.

When discussing parent-child relationships an important fact to consider is that, in our society, the mother is the primary caretaker. As Chodorow (1987) describes,

> "fathers are from the outset separate people and special...As a result, representations of the father relationship do not become so internalized and subject to ambivalence, repression, and splitting of good and bad aspects..." (p.97).

Thus, both son and daughter are more likely to have closer and more emotionally intense relationships with mother than with father. Fathers and sons are believed to have a stronger bond than exists between fathers and daughters (Radin, 1986), although the mother is still in the position to be closest with children of both sexes. The majority of children, whether male or female, tend to see fathers as "separate people and special".

Perhaps, this provides partial explanation for the absence of differences between sons and daughters in the way they view father's Constructive Thinking. Because neither child has the opportunity to be extremely close with father, there may be less room for variance in their impressions.

The remainder of this paper will focus on the mother-child relationship for two reasons. First, it is this relationship that takes up most of the child's time. Second, the inconsistent prior findings concerrned only mothers only and it is these findings that the present study addresses.

Time spent with mother can often be less enjoyable than time spent with father. Chores and care-giving type activities occur more often with the mother, while proportionally, play time more often occurs with father (Montemayor & Brownice, 1987). Hazzard, Christensen, and Margolin (1983) found that both sons and daughters perceived their mothers as performing more negative behaviors than father. In a study by Smith and Forehand (1986), daughters reported significantly more conflict with mothers than with fathers. And Montemaynor (1982) reported that girls have more conflict with their mothers than do boys. Thus, mother's increased involvement with children may bring with it increased opportunity for conflict and "ambivalence" (Hazzard et al., 1983; Smith & Forehand, 1986); and this difference

may be greater for girls than for boys (Montemaynor, 1982).

In addition, it seems apparent that the more intimate we are with people, the more likely we are to perceive their less logical and less rational sides. Mothers, therefore, might well be regarded by their children as less constructive thinkers. Epstein and Lee reported that only daughters have this misperception of their mothers' constructive thinking. This gender difference may be partly attributed to conflict in the mother-daughter relationship. Are there other reasons why only daughters would see their mothers' as less constructive in their thinking? As was mentioned above, girls appear more affected than boys by the qualitative aspects of interaction with their parents. Perceived parental competence may be more salient to boys. Hetherington and Frankie (1967) use the terms "warmth" and "dominance" to refer (respectively) to the characteristics most salient to girls and to boys. The adjustment and competence of boys, therefore, would be expected to be more highly influenced by, and more similar to, their perceptions of parental efficacy than would the adjustment and/or competence of girls.

Quality of interaction would seem more likely to fluctuate than would perception of parental efficacy or dominance. Thus, the "mother" that daughters see may appear less stable and secure than the "mother" that

sons see. Following from this, it appears that daughters would be more likely to see the less logical and less rational side of their mothers than would boys. This is because daughters are more likely than sons to attend to the fluctuating qualitative aspects of parental interaction. Thus, one may predict that daughters would be more likely to underrate their mother's constructive thinking to a greater extent than would sons.

Why do sons and daughters have different perceptions of their mothers? Chodorow (1987) describes an intensity in the mother-daughter relationship that is not present in the mother-son relationship. Since mother and daughter are of the same gender, they tend to share a more instense bond than is usually developed between mothers and sons. There is also a diminished sense of boundaries between mothers and daughters--a fuller sense of oneness. In addition, boys are socialized to be independent, while girls are socialized to be nurturant and caring of others (Block, 1983; Gilligan, 1980). This would further promote attachment to mother on the part of the daughter and separation on the part of the son.

Into adulthood, daughters struggle with the conflict between maintaining and diminishing the close ties to mothers. Sons likely experience less of this ambivalence as their movement toward manhood includes

greater separation from mothers (Gilligan, 1980). College students are in the process of achieving independence from family and emerging into adulthood. Thus, unlike in the adult sample of O'Neil and Reiss (1984), the time is ripe for increased ambivalence on the part of the daughter toward her mother. This may partially explain the discrepancies between the CTI responses which daughters attributed to their mothers and fathers in the study by Epstein and Lee. Conversely, sons are achieving the expected separation from mother that is a necessary part of manhood. Mother and father now have more comparable roles in their son's life. Therefore, one would expect lesser discrepancies between the CTI scores that sons give to their mothers and fathers. The late adolescent period, marked by ambivalence, may be unique in its capacity to foster in daughters a distorted view of mother. Recall that O'Neil and Reiss (1984) found no differences in the maternal perceptions of adult daughters and sons.

In summary, it appears that there are several family system factors that may account for the discrepancies between the ways in which daughters and sons view their mothers. However, the first task here is to replicate the findings of Epstein and Lee, either empirically supporting or disconfirming these discrepancies.

Similarities and differences between parents and

their children in Constructive Thinking will be examined. All configurations of the parent-child dyad will be compared, e.g., mother-daughter, mother-son, father-daughter, father-son. Parent-child conflict is hypothesized to play a role in the relationship between gender and perception of parents and in the degree of parent-child similarity in constructive thinking.

Hypotheses

The following hypotheses will be tested:

Hypothesis 1. With reference to parents' actual CTI responses, students will underrate their mothers more than their fathers for all modes of constructive thinking addressed by the Constructive Thinking Inventory.

Hypothesis 2. Daughters will underrate their mothers' global Constructive Thinking scale performance more than will sons.

Hypothesis 3. Daughters will report significantly more conflict with their mothers than will sons as measured by the Conflict Behavior Questionnaire.

Hypothesis 4. Student-reported parent-child conflict will correlate positively with the amount of discrepancy between the simulated and

actual performance of parents on the CTI's global Constructive Thinking scale.

Hypothesis 5. Global scale scores of both sons and daughters will correlate significantly more highly with the parallel scores of their fathers than with those of their mothers.

Hypothesis 6. Both daughters and sons will perceive their mothers as performing more negative behaviors than fathers as measured by the Conflict Behavior Questionnaire.

Hypothesis 7. Sons' CTI global Constructive Thinking will correlate significantly more highly with their parent-simulated scores than will daughters' parallel scores.

Hypothesis 8. There will be no gender differences in CTI scores.

Hypothesis 9. Students of both sexes will report spending more time with their mothers than with their fathers.

Method

Participants

Participants were 147 college students (ages 18-20) and 118 of the 147 sets of parents. These students (95 female, 52 male) were enrolled in an introductory psychology course at a large university and chose to participate in the study in exchange for class credit. Both parents of 76 female and 42 male students also contributed their CTI responses. According to student-report, 76% of mothers and 95% of fathers were employed outside of the home.

Measures

The CTI was administered to all participants. For 124 University of Massachusetts undergraduates, Epstein (1989) reported a range in reliability for the scales of the CTI from a high internal consistency (coefficient alpha) of .87 for the global scale to .67 for Naive Optimism, with a mean alpha of .77 for the basic set of seven scales.

To demonstrate these measures' construct validity, Epstein and Meier (1989) calculated correlations between three CTI scales (Global, Emotional Coping, and Behavioral Coping) with several criterion variables. Each of these three scales correlated positively and significantly with success in work, love, and social

relationships. Information on these criteria was gathered using The General Information Form, a four-item questionnaire on work success, a four-item scale on success in love, and an eight-item scale on success in social relationships. The same three CTI scales were also found to be negatively and significantly correlated with physical and psychological symptoms as well as with the abuse of alcohol and drugs as measured by the Medical Checklist. Independent findings using Michigan State University students (Hurley, 1990) indicated that Constructive Thinking correlated positively, and nonconstructive modes of thinking negatively, with self-acceptance.

The present study assessed "Time Spent" with each parent using the following eight questions, "On the average, how many hours did you spend with your (mother/father) per week when you lived at home during high school?" "Currently, how many times do you speak to your (mother/father) on the phone each month?" "Currently, how often do you see your (mother/father) each month?" "Approximately how many letters per month do you write to your (mother/father)?"

The variables of "parent-child conflict" and "perceptions of parents" were assessed with the 44-item version of the Conflict Behavior Questionnaire (CBQ; Prinz, Foster, Kent, & O'Leary, 1979) which uses a true-false format. This instrument yields scores for two

content areas: "Appraisal of the Dyad" and "Appraisal of the Other". These two scores serve, respectively, as measures of "parent-child conflict" and "perceptions of parents".

Foster and Robin (1988) reported a correlation of .98 between the 44-item CBQ and the original 73-item measure. The CBQ (long version) was also shown to distinguish troubled from untroubled families (Robin & Weiss, 1980). Foster and Robin (1988) reported a correlation of .55 between the 44-item CBQ and a subtest of Snyder's Marital Satisfaction Inventory measuring dissatisfaction with child rearing practices; and a correlation of -.52 between the CBQ and a problem solving ability score on Nayar's (cited in Foster & Robin, 1988) Parent-Adolescent Interaction Coding System--an observational rating of conflict. Test-retest stability was reported at .37 - .85 over six to eight weeks (Robin & Foster, 1988). Alpha coefficients of .94 and .95 were reported for adolescent's report on dyad ("Appraisal of the Dyad") and adolescent's report on mother ("Appraisal of the Other") respectively.

Procedures

Participants were recruited via a standard Departmental sign-up sheet requesting male and female participants between the ages of 18 and 20 whose biological parents are currently married. Participants

could sign up for one of four scheduled research sessions. The study was entitled "Thinking Styles of Parents and their Children". Students were given three credits for their participation and six credits (total) if both of their parents also participated. These credits can be used to fulfil requirements in the introductory psychology classes in which these students were enrolled.

Students were given a research packet consisting of all previously mentioned scales in the following order: the Constructive Thinking Inventory, the Conflict Behavior Questionnaire, demographic questions, and the "Time Spent" scale. They completed all instruments during a two hour session in a classroom setting with other participants and an experimenter present. All students finished within the two hours allotted with many students finishing in approximately one and a half hours.

Participation for students also included writing a standardized letter to their parents and requesting that they each fill out the Constructive Thinking Inventory (CTI) separately and mail it back (see Appendix A). These handwritten letters were collected and mailed by the experimenter with two informed consent forms in envelopes addressed by the students. Students were given a "debriefing" form, which provided general information about the study, after they returned all

materials to the experimenter.

Parents were contacted only by this written communication. They received the following materials: their student-child's letter, two informed consent forms, two copies of the Constructive Thinking Inventory, and a pre-stamped addressed envelope in which to return the completed CTI's. Approximately half of the students elected to hand-deliver the forms; thus no stamp was included. All instructions were included in the letter written by their child.

Data Analyses

Correlations were computed to assess the relationship between gender (of both parent and adolescent child) and CTI scores. Tests of mean differences (*t*-tests) were calculated to investigate the differences between mothers and fathers for hypotheses 1, 5, 6, and 9; also for the differences between daughters and sons for hypotheses 2, 3, and 5. The discrepancy between the scores simulated for parents and actual performance of parents on the CTI were correlated with the variable of parent-child conflict to test hypothesis 4. Students' scores were correlated with both the simulated and actual CTI scores of parents to test hypotheses 5 and 7.

Results

Precautions were taken to limit errors in this data set. All response forms which omitted the last item were excluded out of concern that other responses might be flawed due to the participant having lost track of the questions. In total, materials from eight participants (sets of student-child and parents) were excluded. In addition, postal returns were analyzed separately from those which students returned by hand because students motivated to receive credit might simply complete each parent questionnaire and return them without involvement of either parent. To help ensure that the data which students hand-delivered were, in fact, completed by parents, a comparison of parents' mean scores on all scales was performed. There were no significant differences between mean CTI scores of parents' postal returns versus those which students hand-delivered. Therefore, both data sets were pooled and all subsequent analyses were performed on this pool.

Table 1 provides an overview of student responses to the several measures as well as their parents' data. The conservative two-tailed test of statistical significance was used to assess all differences among these means and also among the pertinent correlations. The subsequent paragraphs deal sequentially with this study's hypotheses.

Table 1. Means of Self-reported and Parent-simulated Responses to CTI and Relationship Indicators

MEASURE	SELF-REPORTS		DAUGHTER'S		DAUGHTER-SIMULATED		SON'S		SON-SIMULATED	
	Daughters (n = 76)	Sons (n = 42)	Moms (n = 76)	Dads	Moms	Dads	Moms (n = 42)	Dads	Moms	Dads
Constructive	84.1	87.4	88.6	94.3	88.4	93.8	90.6	92.7	85.4	90.8
Behavioral	44.8	45.6	47.6	49.3	48.3	49.7	47.7	47.9	46.2	47.9
Emotional	25.1	27.8	27.3	31.7	28.7	33.1	29.1	32.8	27.0	31.7
Validity	21.6	21.7	23.6	23.6	21.9	22.0	22.9	23.2	23.1	22.7
Naive Optimism	27.5	26.7	26.0	25.7	28.7	27.8	24.2	25.2	28.8	27.8
Superstitious Thkg.	26.8	25.9	25.6	24.7	25.9	24.8	25.3	25.2	26.3	25.3
Categorical Thkg.	26.4	26.4	23.7	24.9	24.9	26.1	23.9	24.9	26.6	27.7
Negative Thinking	31.1	30.4	28.3	27.6	28.3	27.8	28.4	27.3	29.5	28.9
Time with Mom	8.0	6.5								
Time with Dad	7.2	6.2								
Conflict with Mom	2.8	3.5								
Conflict with Dad	4.0	3.4								
Appraisal of Mom	5.9	6.6								
Appraisal of Dad	8.5	8.5								

Mildly supporting the initial hypothesis that mothers would be viewed less favorably than fathers, this sample of 118 students with cooperating parents viewed mothers as differing significantly from fathers, relative to each parent's actual performance, only on Naive Optimism. Contrary to expectations, however, Naive Optimism was the sole CTI scale on which these students rated their fathers significantly more favorably than mothers (see Table 2). In total, mothers were rated less favorably on five of the eight CTI scales and more favorably than fathers on three. A comparison of daughters' and sons' direct ratings of parents, independent of parents' performance, will be reviewed later.

Table 2. Means and *t*-tests of Differences Between CTI Discrepancy Scores (parent's actual score minus student's simulation) for Mothers and Fathers.

CTI Scales	Mothers Discrepancy n = 118	Fathers Discrepancy n = 118	*t*-value
Constructive	2.01	.99	.68
Behavioral	-.04	-.20	.17
Emotional	-.10	-.51	.40
Validity	.98	1.18	-.81
Naive Optim	-3.37	-2.32	-2.05*
Superstitious	-.54	-.11	-1.00
Categorical	-1.73	-1.81	.13
Negative	-.39	-.67	.48

* $p \leq .05$, two tailed test

Clearly refuting the second hypothesis, the present findings directly conflict with Epstein and Lee's report (Epstein, in press) that college daughters, but not sons, described their fathers as significantly above their mothers for global Constructive Thinking. As is shown in Table 3, here it was sons, not daughters, who depicted their mothers as significantly below their mothers' actual performance on Constructive Thinking.

Table 3. Correlated *t*-tests of Differences Between the Means of Parents' Self-reports and Their Responses as Projected by their Children on the CTI.

CTI Scales	Father vs. Dau-Projec	Father vs. Son-Projec	Mother vs. Dau-Projec	Mother vs. Son-Projec
Construct	.43	1.19	.15	2.61*
Behavior	-.42	.00	-.87	1.21
Emotional	-1.59	1.05	-1.37	1.61
Validity	6.14***	1.24	6.09***	-.56
Naive Op	-3.66***	-3.60***	-5.34***	-5.77***
Supersti	-.21	-.30	-.57	-1.81
Categoric	-2.02*	-3.98***	-1.87	-3.16**
Negative	-.30	-2.33*	.02	-1.60

*** $p \leq .001$

** $p \leq .01$

* $p \leq .05$

Tables 4 and 5 compare daughters' and sons' CTI parent simulations for their mothers and fathers with reference to each parents' self-reports. Further conflicting with Epstein and Lee, these discrepancy scores revealed that the present sons depicted their mothers less favorably than did daughters on Emotional Coping (t = -2.11, $p \leq .05$) and Naive Optimism (t = 2.02, $p \leq .05$) and as almost significantly lower on total Constructive Thinking (t = -1.93, $p \leq .06$). Only on the brief Validity scale were the sons' discrepancy scores (mothers t = 4.04, $p \leq .01$; fathers t = 2.44, $p \leq .05$) more favorable than daughters'.

Table 4. Means, Standard Deviations, and t-tests of CTI Differences Between Daughters' and Sons' Discrepancy Scores (mother's actual score minus student's simulation) for Mothers.

CTI Scales	Daughters n = 78	Sons n = 42	t-value
Constructive	.24(13.66)	5.21(12.96)	-1.93
Behavioral	-.83 (8.31)	1.38 (7.42)	-1.44
Emotional	-1.32 (8.40)	2.10 (8.44)	-2.11*
Validity	1.64 (2.35)	-.21 (2.47)	4.04**
Naive Optim	-2.72 (4.45)	-4.55 (5.11)	2.02*
Superstitious	-.28 (4.26)	-1.02 (3.67)	.98
Categorical	-1.18 (5.53)	-2.71 (5.56)	1.44
Negative	.01 (5.38)	-1.12 (4.53)	1.16

** $p \leq .01$, two-tailed test

** $p \leq .05$, two-tailed test

+ Standard deviations in parentheses.

Table 5. Means, Standard Deviations, and *t*-tests of CTI Differences Between Daughters' and Sons' Discrepancy Scores (parent's actual score minus student's simulation) for Fathers.

CTI Scales	Daughters n = 76	Sons n = 42	*t*-value
Constructive	.50(10.11)	1.88(10.27)	-.71
Behavioral	-.32 (6.63)	.00 (6.18)	-.25
Emotional	-1.40 (7.64)	1.10 (6.74)	-1.77
Validity	1.57 (2.22)	.47 (2.49)	2.44*
Naive Optim	-2.18 (5.20)	-2.57 (4.63)	.40
Superstitious	-.09 (3.90)	-1.43 (3.13)	.07
Categorical	-1.26 (5.45)	-2.79 (4.54)	1.54
Negative	-.16 (4.53)	-1.60 (4.44)	1.66

** $p \leq .01$, two-tailed test

* $p \leq .05$, two-tailed test

+ Standard deviations in parentheses.

Tables 6 and 7 show comparisons of daughters' and sons' simulations of their mothers and fathers, independent of parent scores, a comparison that is similar to Epstein and Lee's (Epstein, in press). As can be seen, the apparent differences listed above between sons and daughters dissipated. The only significant difference that remained between sons' and daughters' ratings was the sons' higher Validity ratings of their mothers.

Table 6. Means, Standard Deviations, and *t*-tests of Differences Between Sons' and Daughters' Mother-Simulated CTI Scores.

CTI Scales	Daughters n = 76	Sons n = 42	t-value
Constructive	88.38(12.22)	85.43(10.72)	1.31
Behavioral	48.38 (6.97)	46.29 (5.82)	1.66
Emotional	28.66 (8.74)	26.95 (6.83)	1.09
Validity	21.90 (2.20)	23.12 (2.04)	-2.94**
Naive Optim	28.71 (3.16)	28.76 (2.80)	-.09
Superstitious	25.92 (3.16)	26.29 (3.52)	-.58
Categorical	24.88 (4.89)	26.62 (4.32)	-1.83
Negative	28.26 (4.45)	29.48 (3.40)	-1.54

** $p \leq .01$

\+ Standard deviations in parentheses.

Table 7. Means, Standard Deviations, and *t*-tests of Differences Between Sons' and Daughters' Father-Simulated CTI Scores.

CTI Scales	Daughters n = 76	Sons n = 42	t-value
Constructive	93.83 (8.98)	90.79(10.66)	1.65
Behavioral	48.71 (5.83)	47.90 (7.29)	1.45
Emotional	33.11 (6.70)	31.67 (5.53)	1.19
Validity	22.03 (1.94)	22.74 (2.03)	-1.88
Naive Optim	27.84 (3.37)	27.81 (2.53)	.05
Superstitious	24.77 (2.53)	24.31 (2.82)	-1.05
Categorical	26.13 (5.61)	27.69 (4.50)	-1.55
Negative	27.80 (3.31)	28.90 (3.56)	-1.69

\+ Standard deviations in parentheses.

Overall, the present student sample, and especially the sons, tended to underestimate their parents' Constructive Thinking capabilities according to the data of Table 1. Among 16 comparisons of son-simulated parental CTI mean scores with parents' own responses, only sons' mean mother-simulated Validity scores favorably exceeded the parents' self-descriptions, and then nonsignificantly. In contrast, daughters' parent-simulated responses were more favorable (ns) than parents' own responses in 7 of 16 comparisons.

As shown earlier in Table 3, daughter-simulated responses were significantly less favorable than each parent's actual responses for Naive Optimism, Validity and, for fathers only, on Categorical Thinking. Son-simulated responses were significantly less favorable than the parents' actual score in the following six cases: Naive Optimism, Categorical Thinking, mothers' global Constructive Thinking, and fathers' Negative Thinking.

The pertinent Table 1 means indicate that sons reported more conflict with mothers than did daughters ($t = -2.18$, $p \leq .05$), contrary to hypothesis 3. Sons and daughters reported about equal amounts of conflict with father and their evaluative perceptions of each parent on the "Appraisal of the Other" scale did not differ significantly. Daughters reported significantly less conflict ($t = 2.64$, $p \leq .01$) with mothers than

fathers, consistent with their report of a more negative view of fathers than mothers (t = -2.02, $p \leq .05$). In contrast, son's reported no interparent distinction on either "Appraisal of the Dyad" or "Appraisal of the Other". For sons, there were no significant differences in the amount of conflict with each parent, or in their related evaluative perceptions of each parent.

The correlations between student-reported conflict with parents and discrepancies between student-simulated and parents' actual CTI scores are shown in Table 8. Largely supporting hypothesis four, these findings show that mother-student conflict correlated positively and significantly (r = .38, $p \leq .01$) with the direction and amount of discrepancy between mothers' actual and student-simulated CTI responses for daughters, while sons' parallel correlation also approached significance (r = .30). Similar discrepancies also correlated positively but somewhat less firmly with father-student conflict (daughters' r = .21, ns; sons' r = .25, ns). Daughter-reported conflict with their mothers and fathers also correlated positively (r = .23, $p \leq .05$), similar to sons' parallel correlation (r = .28).

Separately for sons and daughters, all correlations between students' scores, parents' scores, and parent-simulated scores on the Constructive Thinking scale are shown in Table 9. Sons' global Constructive Thinking correlated positively with the parallel scores of both

their fathers (r = .40, $p \leq .01$) and mothers (r = .24, $p \leq .07$), partially supporting the fifth hypothesis. Surprisingly, however, daughters' global Constructive Thinking responses failed to associate with either parent's parallel scores (fathers' r = -.02; mothers' r = .03)

. Table 8. Correlations Among CTI Discrepancy Scores (between student-simulations and parents' actual scores) and Parent-conflict.

	Discrepancy with mothers	Discrepancy with fathers	FATHER Confl.	MOTHER Confl.
DISCREP MOTHER		.05	.02	.36**
DISCREP FATHER	.11		.21	.17
FATHER CONFL.	.11	.25		.23*
MOTHER CONFL.	.30	.05	.29	

** $p \leq .01$, two-tailed test

* $p \leq .05$, two-tailed test

Note: Correlations for 78 daughters above the diagonal; correlations for 42 sons below it.

Table 9. Correlations Among Students' Scores, Parent Scores, and Student-Simulated Scores for Parents on the CTI's Constructive Thinking Scale.

	Sons	Simulat. Fathers	Simulat. Mothers	Fathers Actual	Mothers Actual
Daus		.39**	.40**	-.02	.03
Simulat. Fathers	.33*		.30**	.25*	.17
Simulat. Mothers	.25	.22		.22	.32**
Fathers Actual	.40**	.47**	.05		.12
Mothers Actual	.24	.00	.21	-.07	

** $p \leq .01$, two-tailed test

* $p \leq .05$, two-tailed test

Note: Correlations for 76 daughters given above the diagonal; correlations for 42 sons given below it.

Daughters' global Constructive Thinking scores did correlate positively and significantly with their simulated responses for each parent (fathers r = .39, $p \leq .01$; mothers r = .40, $p \leq .01$); the parallel correlations for sons' (fathers r = .33; mothers r = .25, ns) were somewhat lower. Daughter-simulated mother and father responses also correlated positively and significantly with parents' actual scores (fathers r = .25, $p \leq .05$; mothers r = .32, $p \leq .01$), much like son-simulated mother and father responses (fathers r = .47, $p \leq .01$; mothers r = .21, ns). The .30 correlation between daughters simulated responses for each parent was significant ($p \leq .01$), but the sons' parallel value was not (r = .22). Overall, the CTI responses of these daughters were significantly more similar (according to r to z transformation) to their parent-simulations (mothers r = .39, fathers r = .40) than to each parent's actual responses (mothers r = .03, fathers r = -.02). This pattern did not occur among sons, however, as only small differences were found between the correlations of sons' scores with their parents' actual scores (fathers r = .40; mothers r = .24) and the parallel correlation with son-simulated parent scores (fathers r = .33; mothers r = .25).

When parent-student correlations were examined across the set of eight scales, students' own responses were closer to those of the same-sex than the opposite-

sex parent. Thus, daughters' responses correlated positively and significantly with their mothers' responses on four CTI scales (Emotional Coping, r = .22, $p \leq .05$); Superstitious Thinking, r = .25, $p \leq .05$; Validity, r = .27, $p \leq .01$; and Categorical Thinking, r = .36, $p \leq .01$). However, merely one parallel mother/son correlation was significant (Behavioral Coping r = .28, $p \leq .05$). On the other hand, sons' CTI responses resembled their fathers' more than did daughters'. Sons' scores correlated positively and significantly with fathers' scores on five scales: Constructive Thinking (r = .40, $p \leq .01$), Behavioral Coping (r = .55, $p \leq .01$), Emotional Coping (r = .31, $p \leq .05$), Negative Thinking (r = .30, $p \leq .05$), and Validity (r = .34, $p \leq .05$). Across sexes, merely one parallel father/daughter correlation was significant (Validity r = .34, $p \leq .01$).

On the Conflict Behavior Questionnaire, daughters depicted their fathers as behaving more negatively than their mothers (t = 2.02, $p \leq .05$). Sons made no parallel interparent distinction, although they tended to view each parent more negatively than did daughters. However, this difference between sons' and daughters' perceptions of parents did not attain statistical significance, requiring rejection of hypothesis 8.

Both sons' and daughters' global Constructive Thinking scores correlated significantly with their

father-simulations. For mothers, the correlation between daughters' scores and daughter-simulated performance was statistically significant ($p \leq .05$) and sons' parallel correlation approached significance. Daughters' responses tended to correlate more highly with those which they simulated for parents (mean r = .40) than did sons' (mean r = .29), although the difference between these correlations was not significant. Thus, hypothesis #7 was rejected.

The following significant sex differences partially supported hypothesis #8:

a. Fathers scored significantly more favorably than mothers for global Constructive Thinking (t = 3.83, $p \leq .05$) and Emotional Coping (t = 5.14, $p \leq .01$).

b. Mothers scored significantly less favorably than fathers on Categorical Thinking (t = 2.15, $p \leq .05$).

c. Male students scored significantly more favorably than female students on Emotional Coping (t = 2.83, $p \leq .01$).

Daughters, but not sons, reported spending significantly more time with their mothers than their fathers (t = 6.31, $p \leq .01$). In a comparison of sons and daughters, daughters reported spending significantly ($p < .01$) more time with each parent than did sons. These findings supported hypothesis 9.

Discussion

Sample Considerations

Often there are problems in generalizing to the broader population from research featuring college students. The present study is relatively broad in including both college students and parents. However, this sample is also quite distinct. All families had a child in college and were apparently intact at the time of this study. In addition, the students were asked to enlist their parent's participation. Thus, this sample likely represents a relatively cooperative, less conflictual, and economically advantaged set of American families. Mean scores for the present sample on the Conflict Behavior Questionnaire (CBQ) and Constructive Thinking Inventory (CTI) were compared with previously published means. On all scales the mean scores of both sons and daughters, as well as those of their mothers and fathers, were within one standard deviation of the parallel means for Epstein's (1987) sample of 124 Massachusetts undergraduate volunteers. Additionally, the present students' mean CTI scores were also within one standard deviation (in 15 of 18 comparisons) of Hurley's (1990) sample of 103 Michigan State University undergraduates enrolled in a psychology course featuring small group experience. The lone exception was that all present participant groups other than fathers scored

more than one standard deviation above Hurley's (1990) sample for Superstitious Thinking. In summary, the present data are consistent with those reported in earlier research and, therefore, appear reasonably representative of contemporary college samples.

Ratings of Parents

Somewhat unexpected was the finding that these college-student children had relatively unfavorable views of the thinking of both their fathers and mothers, in the sense that these parents were underrated on several constructive modes of thinking yet were never significantly overrated. Students did, however, rate parents more favorably than students' own self-reports on all scales. Fathers were underrated (depicted less favorably than their actual performance) by both children on Naive Optimism and Categorical Thinking, by daughters only for Validity, and by sons only for Negative Thinking. Mothers were rated below their actual performance by both daughters and sons for Naive Optimism and Categorical Thinking, by daughters only for Validity, and by sons only for global Constructive Thinking. Thus, both sons and daughters underestimated their mothers and fathers about equally.

It had been hypothesized that, as in Epstein's report (in press), mothers' cognitive responses would be depicted less favorably depicted than fathers'

(hypothesis 1) and, because daughters are closer than sons to mothers, that this negative bias would be more pronounced among daughters than among sons (hypothesis 2). It was further thought that the recent separation of these college-age daughters from their families would heighten mother-daughter conflict. This transition period was considered likely to involve a higher degree of conflict in the close and more intense mother-daughter dyad than in the other parent-child dyads because the mother-daughter unit requires the most change as daughters exit from home. The present daughters, however, did not show this negative bias toward their mothers.

Methodology differences between the present study and that of Epstein and Lee (Epstein, in press) merit attention. Epstein and Lee examined the CTI scores which students simulated for their parents and found that students' father-simulated responses were significantly more favorable than their mother-simulations. The present sample of daughters and sons also rated their fathers more favorably than their mothers on virtually all scales. However, when the scores of the parents are considered by comparing simulations with the parents actual performance, the consistent underrating of mothers tend to dissipate. As stated earlier, only for Naive Optimism were mothers rated significantly less favorably than fathers,

relative to each parents actual performance.

Perhaps these daughters were not actually separating from their mothers in ways that heightened mother-daughter conflict. The average amount of time that daughters reported spending with mothers each month (via phone calls and visits) was quite high--three to five contacts in addition to one letter. Upon examination of the relationship between age of the student and degree to which that student underrated parents, it was found that the older the student, the more likely the father was to be underrated. This relationship did not, however, hold true for mothers. The correlation between age and rating of father was significant for both daughters (r = .22, $p \leq .05$) and sons (r = .44, $p \leq .01$). In addition, as the reported "Time Spent" with father increased, the student-simulated parental Constructive Thinking responses tended to become more favorable (son's r = .35, daughter's r = .11).

Perhaps separation of the mother and daughter becomes more pronounced at ages later than the present sample's mean of 18 years, with the subsequent change in the daughter's perception of mother occurring concurrently. This sample did not include a sufficient number of participants of different ages to permit a meaningful comparison of groups by age and sex.

Another possible explanation for the absence of low

mother-simulated CTI scores by daughters is that the mother-daughter bond explicated in the introduction serves to hinder, rather than to facilitate, a negative view of mother on the part of daughter. Daughters, through their stronger identification with mother, may come to perceive mother as very similar to themselves. It is likely beneficial, therefore, that they perceive this parent in a favorable light since self-serving biases have been linked with both constructive thinking (Hurley, 1990) and mental health (Taylor & Brown, 1988).

The present sons underrated their mothers for Constructive Thinking as much as daughters did. Stereotypes regarding women may partially explain these generally lowered simulated scores for mothers. Perhaps these students developed a negatively-biased attitude toward women with regard to rationality and constructive thinking. Women have traditionally been viewed as less rational and more emotional than men (Broverman, 1972; James, 1973).

Sons underrated mothers on Emotional Coping and Naive Optimism more than did daughters as shown in Table 2. These scales may tap areas in which women have been perceived to be less efficient. Perhaps the male students were more prone to perceive their mothers in a stereotyped manner. Only on the Validity scale did daughters underrate parents more than did sons. The Validity scale items seem clearly associated with

attention and comprehension as illustrated by the following items: "I have never seen anyone with blue eyes." and "I feel that people who wear glasses usually can see better without their glasses." Daughters seemed to believe, more than did sons, that their parents would respond less carefully.

Sons', but not daughters' global Constructive Thinking scores correlated significantly with fathers' **actual** performance (sons' r = .40; daughters' r = -.02) Table 8). A similar pattern held for mothers' (sons' r = .24; daughters' r = .03). These are consistent with Whitbeck's (1987) finding that parental efficacy was more salient to sons than to daughters. These sons had apparently acquired the thinking style of their parents more fully than did daughters. Daughters, however, may be modelling their parents' behavior by emulating the thinking style which they perceive their parents to hold, as daughters' own repsonses consistently correlated higher with their parent-simulated responses than with their parents' actual responses.

Also notable was the finding that the global Constructive Thinking responses which both daughters and sons simulated for their parents correlated with the students' own global responses (daughter-mother r = .40, daughter-father r = .39; son-mother r = .25, son-father r = .33) as highly as with the parents' actual scores. Thus, these students may be attributing to their parents

a style that is closer to their self-image than to an independent and objective view of their parents' behavior.

Sex Differences on the CTI

It was unexpected to find that the present sample of fathers scored higher than mothers for Constructive Thinking and Emotional Coping because gender differences on the CTI had received little prior attention (Epstein & Meier, 1989). As shown by their parent-simulated responses, this difference was also perceived by students. Both daughters and sons generally rated their mothers less favorably than fathers on these scales.

Unexpected also were the findings that sons scored significantly higher on Emotional Coping than daughters and that mothers scored significantly higher than fathers on Categorical Thinking. No sex differences were reported in Epstein and Lee's similar study of 79 college students and their parents. Epstein and Meier's (1989) study of 122 college students reported only one sex difference, that men were significantly higher than women for Categorical Thinking. In the present study the opposite was found; women scored significantly higher than men for Categorical Thinking. These sex differences defy a satisfying explanation and may be due to sampling issues.

It might be assumed that these gender differences

are unique to this sample. However, the consistency with which both fathers and sons scored higher than the participating mothers and daughters for Emotional Coping suggests that more than chance was involved.

Parent-Child Conflict

Wholly unexpected was the significantly higher amount of mother-child conflict reported by sons than daughters. These college-age sons and daughters reported about equal amounts of father-child conflict and their overall evaluative perceptions (positive-negative) of each parent were also comparable. Why would sons, rather than daughters, report a higher amount of conflict with mother? Since daughters spend more time with mothers and are generally believed to have a more intense bond with mothers, it is puzzling that daughters did not report more maternal conflict during this age in which separation from parents is a notable issue. These daughters did report spending significantly more time with their mothers than did the sons. Perhaps, as suggested earlier, daughters spent sufficient time with mother to allay uncertainties arising during this transition period. Sons, on the other hand, reported spending significantly less time with mother than did daughters. Perhaps the high degree of conflict between sons and mothers reflects this lowered degree of contact. Perhaps sons separate from the family at an earlier age than daughters, with

increased conflict ensuing.

In addition to reporting less conflict with mothers than did sons, the present daughters reported less conflict with their mothers than with their fathers. Again, perhaps the closeness with mother precludes the display of overt conflict during this transition period. The father-daughter relationship, conversely, has been reported to be particularly bland and distant (Steinberg, 1987). Perhaps this less intense relationship is less able to withstand the inevitable changes in the parent-child relationship than the more intense mother-daughter relationship.

The present daughters appeared to hold more distinct views of mothers and fathers and also of their parent-child relationships than did sons. Sons depicted the thinking of their father and mother as more similar. The differences between daughters' simulations of the thinking of their fathers and mothers surpassed sons' parallel differences. This seems as expected, since relationship variables have been found more salient to daughters than to sons (Whitbeck, 1987). Hazzard, Christian, and Margolin (1983) theorized that perceived similarity among family members would be most beneficial because it signifies parental harmony. They found that children from distressed families perceived their parents as more dissimilar than did children from nondistressed families.

The Relationship Between Conflict and Ratings of Parents

Discrepancy scores were calculated by subtracting the students' parent-simulated scores from the parents' actual scores. Such discrepancies could be either positive or negative, the meaning of the sign depended on whether the pertinent scale addressed a thinking modality which was constructive or nonconstructive. For example, a positive discrepancy score resulted if the student had depicted a parent less favorably than that parents' actual performance on any of the four scales featuring constructive modes of thinking (global Constructive Thinking, Emotional Coping, Behavioral Coping, and Validity) or more favorably than the parents' actual performance on a scale from the nonconstructive quartet (Categorical Thinking, Superstitious Thinking, Naive Optimism, and Negative Thinking).

Only mother-student conflict was found significantly associated with discrepancies between student-simulated and parents' actual CTI scores. The more conflict that students reported experiencing with their mothers, the more likely they were to underrate her for global Constructive Thinking (sons $r = .30$, $p \leq .06$; daughters $r = .36$, $p \leq .01$). Father-child conflict, in contrast, appeared less related to such discrepancies (sons $r = .25$, ns; daughters $r = .21$, ns). Although the differences between these correlations for

mothers and fathers were not significant, one might ask, what is it about mother-child conflict that selectively influences the child's perception of mother's thinking style? Why were father-perceptions not similarly affected?

Perhaps mothers show more emotion during conflicts with their children. Displays of emotion are generally more socially acceptable for women. Taking this one step further, emotionality may be seen as the opposite of rationality. Thus, in conflicts with children, mothers may come to be viewed as less rational. Fathers, on the other hand, may show less emotion in such conflicts. Thus, increasing conflict might be less likely to interfere with father's appearance as the more rational parent.

Future Research

The family is an evolving and dynamic system. Thus, the age at which one taps into this ever-changing system would likely affect the findings. That the work of O'Neil and Reiss (1980) on attitudes toward mothers found no differences in adult childrens' perceptions of mother, while the present study found numerous differences in such perceptions, suggests the need to study these differences with varied age groups. For example, the present students underrated their parents in a majority of cases; would this be found in a sample

of adult children; of young children? There is, in fact a children's version of the CTI that could be used in investigation of such questions.

Gender differences on the Emotional Coping scale appeared with some consistency in the present study. Item analysis of the CTI comparing responses of males and females seems necessary to ascertain if certain items on the scale are gender-dependent.

Consistent with Epstein and Lee's research (Epstein, in press), the present daughters resembled their mothers on Superstitious and Categorical Thinking. The absence of similar correlations on four of the CTI's eight scales suggests that this replicated finding may be reflective of an interactive style unique to the mother-daughter dyad. Further research comparing parents and children on the scales of the CTI will help to elucidate whether this pattern of performance was simply a chance occurrence, or whether mothers and daughters do in fact differ from the father-son dyad in transmission of these aspects of thought.

Finally, the differences between sons' and daughters' perceptions of each parent were numerous. Do gender stereotypes play a role in these perceptions? Research using the CTI and measures of attitudes on masculinity/femininity and gender roles would provide further information on this important issue.

APPENDIX A

APPENDIX A

Standard deviations of self-reported and parent-simulated responses to CTI and Relationship indicators.

MEA-SURE	Self-reports DAU	SON	DAUGHTER'S MOMS	DADS	DAU-SIMULAT MOMS	DADS	SON'S MOMS	DADS	SON-SIM MOMS	DADS
Cons	10.57	8.23	11.21	7.37	12.22	8.98	9.90	9.03	10.72	10.66
Beha	6.31	5.58	6.34	4.88	6.97	5.83	6.01	6.21	5.82	7.29
Emo	7.15	6.30	7.85	5.31	8.74	6.70	6.77	5.55	6.83	5.53
Val	1.88	2.96	1.68	1.70	2.20	1.94	1.96	2.20	2.04	2.03
Nai	3.52	3.21	3.80	3.80	3.16	3.37	4.39	4.08	2.80	2.53
Sup	3.41	3.73	3.37	3.27	3.16	2.53	3.11	3.33	3.52	2.82
Cat	3.77	4.88	5.07	4.30	4.89	5.61	3.85	4.56	4.32	4.50
Neg	4.14	3.60	4.39	3.34	4.45	3.31	3.64	3.44	3.40	3.56
Mcfl	3.47	2.63								
Fcfl	3.75	2.02								
Mper	8.74	7.15								
Fper	9.28	7.09								

APPENDIX B

APPENDIX B

Letter to Parents

Dear Mom and Dad,

I am participating in a research study as one way to gain additional credit toward the grade in a psychology course. I chose this option rather than the other alternatives available to me. This study compares the way parents and children repond to questions about ways of thinking. I have filled out this questionnaire and the study will compare my responses with yours on it. Please complete the brief 64-item questionnaire separately and return the answer sheets to the researcher in the enclosed envelope (Please don't mail back the actual questionnaire, just the answer sheet). My participation and yours is voluntary. You may choose not to participate. We have been requested to not discuss our responses to these questions until after everyone has completed it, although some of the answers may seem humorous. Also, each of you need to read the "informed consent" sheet attached to the questionnaire.

Thanks for your help with this.

APPENDIX C

APPENDIX C

Demographic Items

1 Your year in school
- A = Freshman
- B = Sophomore
- C = Junior
- D = Senior

2 Your age
- A = 18
- B = 19
- C = 20

3 Sex
- A = female
- B = male

4 Your mother's educational attainment
- A = grammar school
- B = junior high school
- C = high school
- D = college
- E = graduate school

5 Your father's educational attainment
- A = grammar school
- B = junior high school
- C = high school
- D = college
- E = graduate school

6 Number of siblings
- A = 0
- B = 1
- C = 2
- D = 3
- E = 4 or more

7 Birth order
- A = you are an only child
- B = you are the first born child
- C = you are the second born child
- D = you are the third born child
- E = you are the fourth (or later born) child

8 Does your mother work outside the home?
- A = yes
- B = no

9 Does your father work outside the home?
A = yes
B = no

10 On the average, how many hours did you spend with your mother per week when you lived at home during high school?
A = 0
B = 1-2 hours
C = 3-4 hours
D = 5-7 hours
E = 8 or more hours

11 On the average, how many hours did you spend with your father per week when you lived at home during high school?
A = 0
B = 1-2 hours
C = 3-4 hours
D = 5-7 hours
E = 8 or more hours

12 Currently, how many times do you speak to your mother on the phone each month?
A = 0
B = 1-2
C = 3-5
D = 6-8
E = 9 or more

13 Currently, how many times do you speak to your father on the phone each month?
A = 0
B = 1-2
C = 3-5
D = 6-8
E = 9 or more

14 Currently, how often do you see your mother each month?
A = 0
B = 1 to 2 times
C = 3 to 5 times
D = 6 to 8 times
E = 9 or more times

15 Currently, how often do you see your father each month?
A = 0
B = 1 to 2 times
C = 3 to 5 times
D = 6 to 8 times
E = 9 or more times

16 Approximately how many letters per month do you write to your mother?

A = 0
B = 1
C = 2
D = 3-5
E = 6 or more

17 Approximately how many letters per month do you write to your father?

A = 0
B = 1
C = 2
D = 3-5
E = 6 or more

APPENDIX D

APPENDIX D

Student's Informed Consent Form

The purpose and procedures involved in this study on "Thinking Styles of Parents and Their Children" have been verbally explained to me. I agree to participate in this study and to write a letter to my parents requesting their participation. I understand that no identifying information will be attached to the answers I provide on any questionnaires. I realize that my participation is voluntary and that I may refuse to answer certain questions and/or withdraw from the study at any time without penalty.

APPENDIX E

APPENDIX E

Debriefing Sheet

As you are aware, although your participation is now complete, this study is not yet concluded. After responses from parents are collected we will compare your responses on the Constructive Thinking Inventory (CTI) with those of your parents. We are interested in investigating the similarities and differences between the CTI performance of parents and their children. This study is also designed to assess the perceptions that late adolescents have of their parents, and it is for this reason that you were asked to simulate your parent's responses on the measure. Constructive thinking is a relatively new construct that is sometimes referred to as "practical intelligence". If interested, you may find information on this topic in:

Epstein, S. & Meier, P. (1989). Constructive thinking: A broad coping variable with specific components. Journal of Personality and Social Psychology, 57(2), 332-350.

Principal investigator: Helene Lensky
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APPENDIX F

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Parent's Informed Consent Form

The purpose and procedures involved in this study on thinking styles have been explained to me by my child. I agree to participate in this study. I understand that no identifying information will be attached to the answers I provide on any questionnaires. I realize that my participation is voluntary and that I may refuse to answer certain questions and/or withdraw from the study at any time without penalty to myself or my child.

I indicate my voluntary agreement to participate by completing and returning this questionnaire. (This form is for you to keep.)

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