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SYMPOSIUM TITLE: Sociocultural influences on gender development.

PAPER TITLE: Parents as gender-role socializers during middle childhood and adolescence.

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Despite recent efforts in the United States to increase the participation of women in advanced educational training and professional fields linked to applied mathematics and technology, women are still underrepresented in these fields of study and work. This is even true among women gifted in mathematics. Similarly, although there have been recent increases in the participation of females in organized sport activity, girls and boys still participate in different sports and girls are less involved in sport activity and spend less time on sport activity than boys. (In a recent study, sixth grade boys reported spending significantly more of their free time playing sports than did girls ($F=63.72$, $p<.001$; means=5.75 for boys, 5.24 for girls) (Eccles,1988). Why do these gender differences in activity, educational and occupational choices exist? Today I will present evidence on the role parents play in perpetuating these gender differences. I will focus on the role parents' beliefs and expectations may play in gender-role socialization.

Over the last 15 years, my colleagues and I have been studying the influences of children and adolescents' interests, ability self-concepts, achievement and activity choice. We began this work trying to find out why girls were less likely than boys to enroll in advanced high school math courses. Over the years we have looked at several possible influences. We have been increasingly interested in the role parents play. It is this work that I will summarize today.

We have focused our attention on the role of parents' beliefs and expectations regarding their children's talents and interests across a range of activities. Our work has been guided by the following theoretical model.

(SHOW OVERHEAD 1)

This model is based on the assumption that parents' views of their children's competencies in various activities are influenced by several social factors in addition to the children's actual performance level in each activity domain. Today I will focus on the potential role played by the sex of one's child and by parents' more general gender-role beliefs. For example, we believe that parents' gender role belief systems, in interaction with their child's gender, should affect the inferences parents draw from their children's performance about their children's competence in various gender-role stereotyped activity domains. More specifically, we believe that parents will distort their perception of their children's talents and interests in a direction consistent with

their gender-role stereotype. These inferences, in turn, should affect parents' expectations for their children's future performance in these activities, and should affect the opportunities these parents given their children to develop skills in these various activity domains. Today I will summarize the evidence my colleagues and I have found for these predictions in our longitudinal studies of social development. The work I am reporting has been done collaboratively with the following people: Allan Wigfield, Janis Jacobs, Rena Harold, Amy Arbretton, Carol Freedman-Doan, and Kwang Suk Yoon

Let me begin with a bit of background on our interest in parents' beliefs and expectations. Several researchers (e.g., Eccles, Jacobs, & Harold, 1990; Goodnow & Collins, 1990; Jacobs, 1987; Yee & Eccles, 1988) have suggested that such beliefs are important because of their impact on the expectations and goals parents develop for their children, on parents' perceptions of their children's interests and talents, and on the ways in which parents interact with their children. Previous studies have documented the positive impact of parents' confidence in their children's academic abilities on children's own self-perceptions and actual performance (e.g. Alexander & Entwisle, 1988; Eccles-Parsons, Adler, & Kaczala., 1982). These studies clearly indicate that parents' expectations for their children's performance in math and English have an impact on both children's subsequent performance in these subjects and their view of their own math and language arts abilities. By late elementary school this effect is stronger than the children's own current performance levels in these subject areas.

Our own work has also documented consistent sex of child effects on measures of parents' perceptions of and expectations for their children. For example, we documented the fact that parents' perceptions of their children's math ability has a significant impact on the children's view of their own math ability that is independent of the impact of the child's actual performance on both the parents' and children's perceptions of the children's math ability. Furthermore, we documented that parents' perceptions of their children's math ability varied depending on whether the child was a boy or girl despite the fact that the boys and girls in this study performed equally well in mathematics.

We have now replicated this sex of child effect on parents' perceptions of their children's math ability in two new longitudinal samples. In addition, we have extended the work to three new domains: English, sports and instrumental music. Stereotypic sex of child effects emerge in each of these domains.

(SHOW OVERHEAD ON GENDER DIFFERENCES IN ENGLISH, MATH, INSTRUMENTAL MUSIC, AND SPORTS).

Why do these sex of child effects exist? What factors are shaping parents' expectations for their children's performance potential in various activities? And how exactly are parents' beliefs actually affecting their children's self-perceptions, interests and performance? These are the questions I will focus on today.

Why do parents hold these sex differentiated beliefs?

I am going to focus on the following three possibilities:

1. There are real differences.
2. Parents' gender role stereotypes affect their perceptions of their children's competence.
3. Parents' make different causal attributions for the performances of boys and girls and these differences vary in a systematic way with the sex-typing of the domain being considered.

I'll talk about each of these possibilities and present relevant data from our studies.

1. There is a real sex difference.

For the English and sports domains, there are gender differences on performance indicators during the elementary school years: Boys get lower marks from their teachers in English and we have found that boys perform somewhat better than girls on tests of sport skills in the early elementary school grades. This is not true in the math domain. Thus it is possible that parents' gender differentiated beliefs regarding reading and sports do reflect "real" gender differences in the children's competence. But our results indicated that the relationship of sex of child to parents' perceptions of their children's competence continues to be significant even when indicators of the children's competence are entered into the analysis as controls. So it is unlikely that the sex of child effects are totally veridical and unbiased.

2. It reflects the biasing influence of gender-role stereotypic beliefs regarding sex differences in natural talent in various domains.

Social psychologists make a distinction between category based beliefs and target based beliefs. Category based beliefs are beliefs we hold about groups of people. Gender-role stereotypes are one kind of category based beliefs. Target based beliefs are beliefs we hold about specific individuals or targets. Perceptions of one own's child would be an example of a target based belief. Social psychologists have tried to study how category based beliefs and target based beliefs are related and when specific information leads to changes in both types of beliefs. We have found this a useful distinction to make in thinking about how gender-role beliefs might affect parents' perceptions of, and goals for, their own children and in thinking about how the impact of culturally based gender-role stereotypes on children's own self-perceptions might be mediated by their impact on the children's parents' view of their child's abilities. The model we are working from is illustrated in the next overhead.

(SHOW OVERHEAD ON SEX BY GENDER-ROLE BELIEF MODEL)

We have used path analytic techniques to test this model in a sample of approximately 2000 sixth graders and their parents from 12 school districts in Southeastern Michigan. I will refer to this sample as MSALT (the Michigan Study of Adolescent Life Transition).

(SHOW OVERHEADS ON PATH MODELS TESTING MODEL FOR MOTHERS IN MATH AND ATHLETICS)

For each domain we find evidence that parents' gender-role stereotype affects their perception of their own child's ability in the direction one would expect: namely, if a parent stereotypes an area as male-typed then she/he will overestimate his/her child's ability in that area if the child is a boy and will underestimate the child's ability in that area if the child is a girl. And vice versa if a parent stereotypes an area as female-typed. It is important to note that these differences exist after controlling for the teacher's estimate of the child's competence in each of these two domains.

We have now replicated and extended these findings with a much younger sample of children. These data are from our longitudinal study of development in elementary school. I will be referring to this sample as Study 2. The children were in K, 1, & 3rd grade when their parents gave us this information. We have divided the mothers into three groups based on their response to a question asking whom they thought was better in each of three domains (sports, math, and Reading). They could say boys, girls, or neither. We then ran 2 way ANOVAs with the parents' category-based belief as one independent factor (3 levels) and their child's sex as the other (2 levels), the dependent measure was the parents' (moms and dads separately) rating of how difficult it was for their child to do well in each domain (We also had parents rate their children's' natural ability in each area, but this rating seemed to reflect a larger effect of social desirability. The results showed a similar pattern for both ratings). I have only summarized the mother data due to time limitations. The dad's findings are basically similar.

(SHOW OVERHEADS ON SEX OF CHILD X MOTHER STEREOTYPING CATEGORY INTERACTIONS FOR EACH DOMAIN)

As the graphs show, for all three domains, we obtained the predicted relationships: Mothers' category-based beliefs interact in the expected direction in predicting their ratings of their own child's talent in each area. If they sex stereotype the ability then they distort their ratings of their own child in the stereotypic direction, if they don't sex stereotype the ability or if they cross sex stereotype the ability, then either their child's sex makes no difference or they distort their child's ratings in a cross sex-stereotypic direction.

3. Gender differentiated attribution patterns.

A third plausible explanation for the effect of child's gender on parents' ratings grows out of attribution theory. According to attribution theory (Weiner, 1974),

perceptions of another's competence depends on the causal attributions made for the person's performance. If parents of boys make different attributions for their children's math performance than parents of girls, it would follow that these parents should develop different perceptions of their children's math competence. In a test of this hypothesis, Yee and Eccles (1988) found that parents of boys rated natural talent as a more important reason for their child's math successes than did parents of girls. In contrast, parents of girls rated effort as a more important reason for their child's math successes than did parents of boys. In addition, to the extent that the parents attributed their child's success in mathematics to effort, they also rated their child as less talented in mathematics. Conversely, to the extent that they attributed their child's success in mathematics to talent, they also rated their child as more talented in mathematics. Thus, it appears that the gender-role stereotyped attributions parents make for their children's performance may be important mediators of the parents' gender-role stereotyped perceptions of their children's math competence. The data from our study of sixth graders and their parents provide a direct test of this conclusion.

(SHOW SUCCESS ATTRIBUTION FIGURE)

These mothers were asked to imagine a time when their child did very well in mathematics, reading and sports and then to rate, on a seven point Likert scale, the importance of the following six possible causes in determining this success experience: natural talent, effort, task ease, teacher help, parent help, and current skill level. Significant gender of child effects were obtained on attributions of success to natural talent in each domain and the pattern of these differences reflect the sex -typing of the domains (see attribution figure).

To test the mediation hypothesis we did a series of regression analyses on those mothers' perceptions that yielded a significant gender of child effect in each domain. According to Baron and Kenny (1986), support for a mediational hypothesis consists of demonstrating that the relationship between variables A and C is reduced or eliminated when the hypothesized mediating variable B is entered into the regression equation. We used a path analytic procedure to test this effect. The results for math are illustrated in the next figure. Consistent with the mediational hypothesis, the significant relationship of child's gender to the relevant parent outcome variables (i.e. parents' perceptions of the child's natural math talent, the difficulty of math for their child, and their expectations regarding the child's likely future success in both math courses and a math-related career) disappear once the relationship between the child's gender and the parents' attributions for the child's math success to talent is controlled.

(SHOW PATH ANALYSIS FIGURES)

Comparable results for the talent attribution emerged in both the reading and sport domains. These results are illustrated in the next two figures. As predicted, children's gender influenced their mothers' causal attributions; which, in turn, influenced the mothers' perceptions of, and expectations for, their children. In these

domains, we still find evidence of a direct effect of child's sex on parents' perceptions. The size of this effect, however, is significantly reduced by including the parents' causal attribution in the path analysis.

IMPACT OF PARENTS' GENDER-STEREOTYPIC EXPECTATIONS ON PARENTS' BEHAVIOR

But do these parent perceptions have any impact on the children? and if so how? We have already shown that there is a statistical relationship between parents' perceptions of their children's abilities and the children's perceptions of their own abilities. We also have support for the conclusion that the causal direction of this relationship reflects, at least partially, the impact of the parents' beliefs on their children.

(SHOW OVERHEAD ON CAUSAL DIRECTION OF PARENTS' EXPECTATIONS ON CHILDREN'S SELF-PERCEPTIONS)

Entwisle, Alexander and their colleagues have provided similar evidence for this causal inference. But what accounts for this relationship. How do parents' beliefs affect their children?

(PUT FIRST MODEL BACK UP)

One way is by direct communication. Parents may tell their children what they think or express their causal attribution openly.

Several more indirect modes of influence are also possible. Parents' perceptions of their children's abilities and interest could affect the types of experiences they provide for their children.

We are just beginning to explore this second possibility. In Study 2, we asked the parents to give us detailed reports of the types of activities and experiences they provide for their children in several different activity domains. We have also asked them for their perceptions of their children's abilities and interests in each of these domains. We have been gathering this information from approximately 600 families with children initially in grades k,1, and 3 annually for the last four years.

As a first step in this process we tested whether parents provide different types of experiences for girls and boys. They clearly do in several of the activity domains we are studying. The results are summarized in the next table.

(SHOW OVERHEAD ON GENDER DIFFERENCES IN THE EXPERIENCES PARENTS PROVIDE FOR THEIR CHILDREN.)

For illustrative purposes, I'll focus on the sport domain. Not surprisingly, parents report being more likely to actively encourage boys, compared to girls, to

participate in sports and to watch sports on tv ($r = .1839$). Parents' also rate their boys' ability and interest in sports higher than their girls' ($r = .26$).

Once again we have used path analyses to test whether parents' sex differentiated perceptions of their children's sport ability and interest mediate the relationship between the child sex and the parents' encouragement of their child's participation in sports. The results are illustrated in the next figure. Consistent with the mediational hypothesis, the sex of child effect on parental encouragement of participation becomes non-significant when the sex of child effect on parents' perceptions of their children's sport ability and interest is entered into the path analysis.

(SHOW OVERHEAD ON MEDIATING PATH ANALYSIS)

In conclusion, we have presented evidence for the ways in which parents may be socializing gender differences in the skills and interests of their children. We have focused on why parents' perceptions of their children's abilities in various activity domains are different for sons and daughters. We have also presented evidence linking these sex of child effects in parents' beliefs and perceptions to sex of child effects in the types of experiences parents provide for their children.

References

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- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. Journal of Personality and Social Psychology, 51, 1173-1182.
- Parsons, J. E., Adler, T. F., & Kaczala, C. M. (1982). Socialization of achievement attitudes and beliefs: Parental influences. Child Development, 53, 310-321.
- Weiner, B. (1974). Achievement motivation and attribution theory. Morristown, NJ: General Learning Press.
- Yee, D., & Eccles, J. S. (1988). Parent perceptions and attributions for children's math achievement. Sex Roles, 19, 317-333.

PARENT & FAMILY CHARACTERISTICS
Education
Family Income
Occupation
Marital Status
Number of Children
Employment Status
Ethnicity
Cultural Traditions

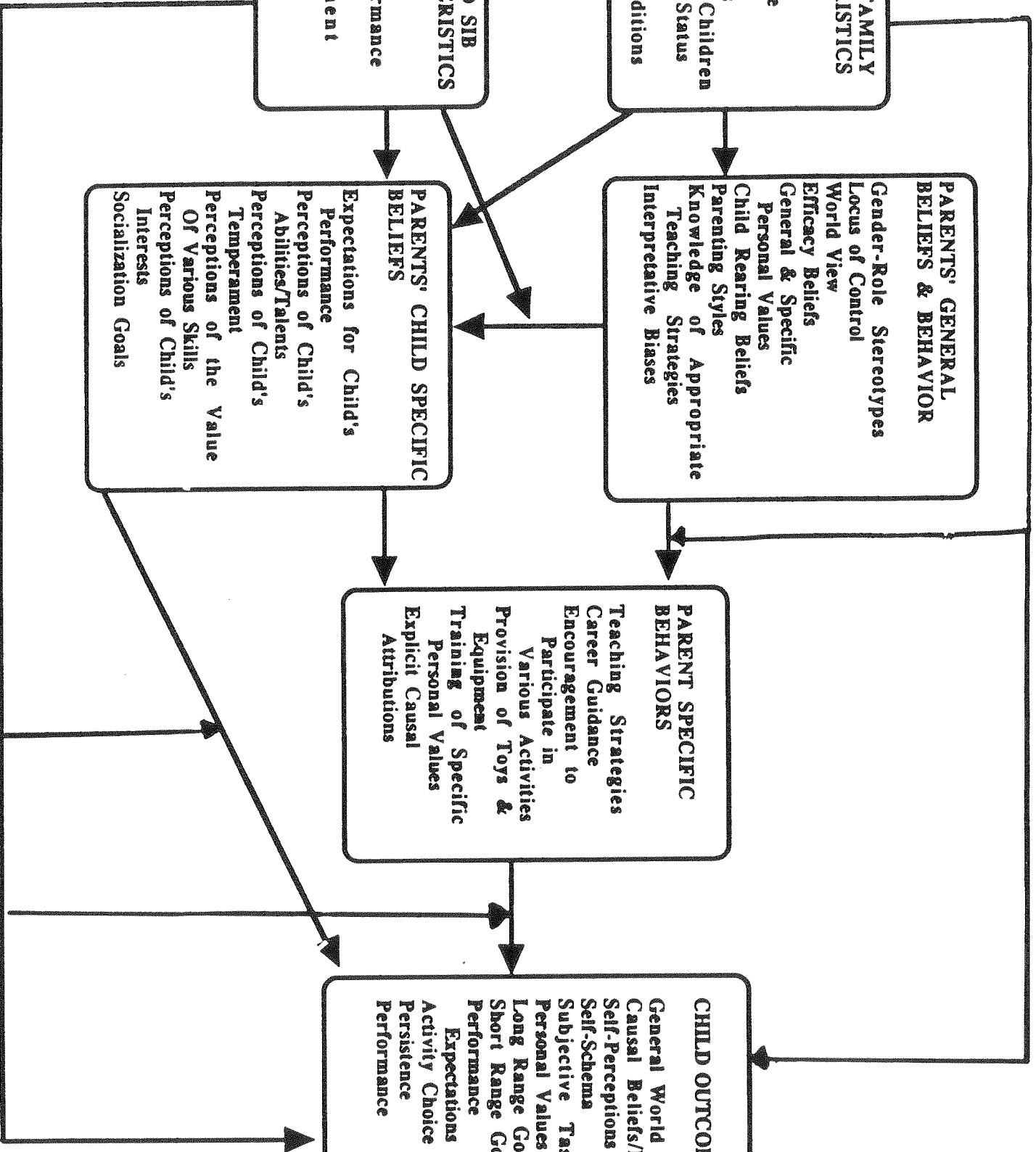
CHILD AND SIB CHARACTERISTICS
Sex
Past Performance
Aptitudes
Temperament
Attitudes
Birth Order

PARENTS' GENERAL BELIEFS & BEHAVIOR
Gender-Role Stereotypes
Locus of Control
World View
Efficacy Beliefs
General & Specific Personal Values
Child Rearing Beliefs
Parenting Styles
Knowledge of Appropriate Teaching Strategies
Interpretative Biases

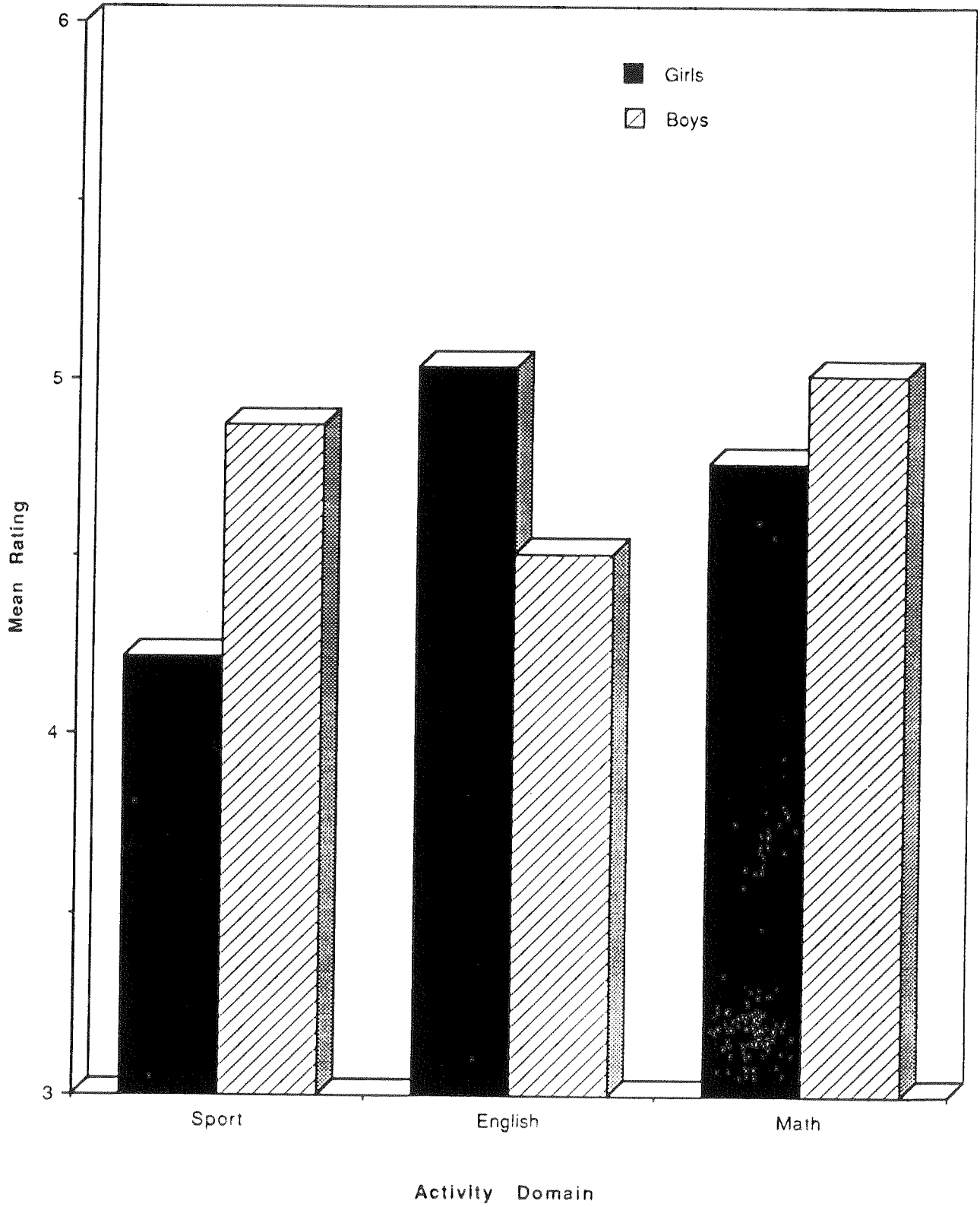
PARENTS' CHILD SPECIFIC BELIEFS
Expectations for Child's Performance
Perceptions of Child's Abilities/Talents
Perceptions of Child's Temperament
Perceptions of the Value Of Various Skills
Interests
Socialization Goals

PARENT SPECIFIC BEHAVIORS
Teaching Strategies
Career Guidance
Encouragement to Participate in Various Activities
Provision of Toys & Equipment
Training of Specific Personal Values
Explicit Causal Attributions

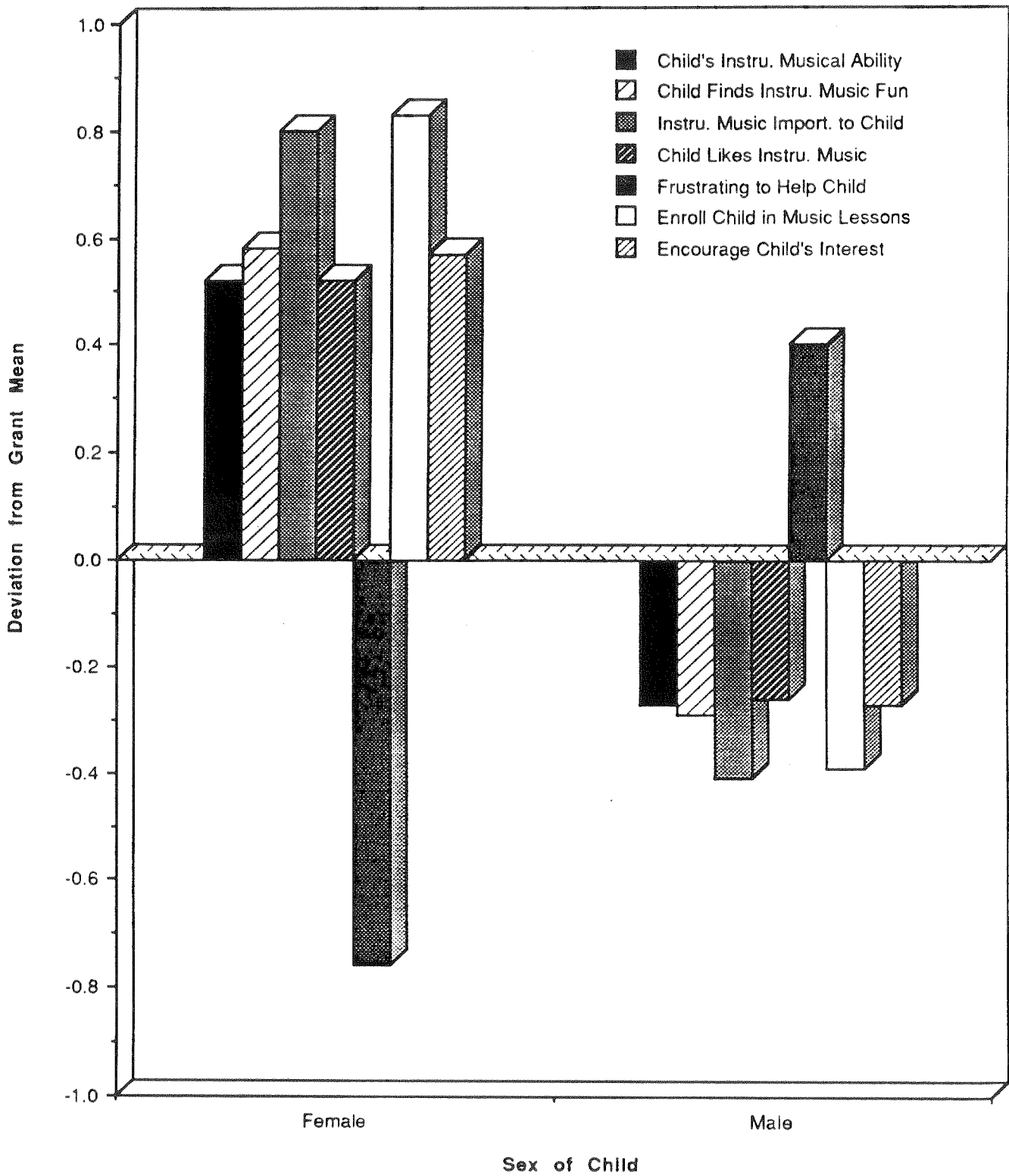
CHILD OUTCOMES
General World View
Causal Beliefs/Biases
Self-Perceptions
Self-Schema
Subjective Task Values
Personal Values
Long Range Goals
Short Range Goals
Performance
Expectations
Activity Choice
Persistence
Performance



Mothers' Perception of Child's Natural Talent
by Sex of Child and Activity Domain
(N = 900, Children in Grade 6)

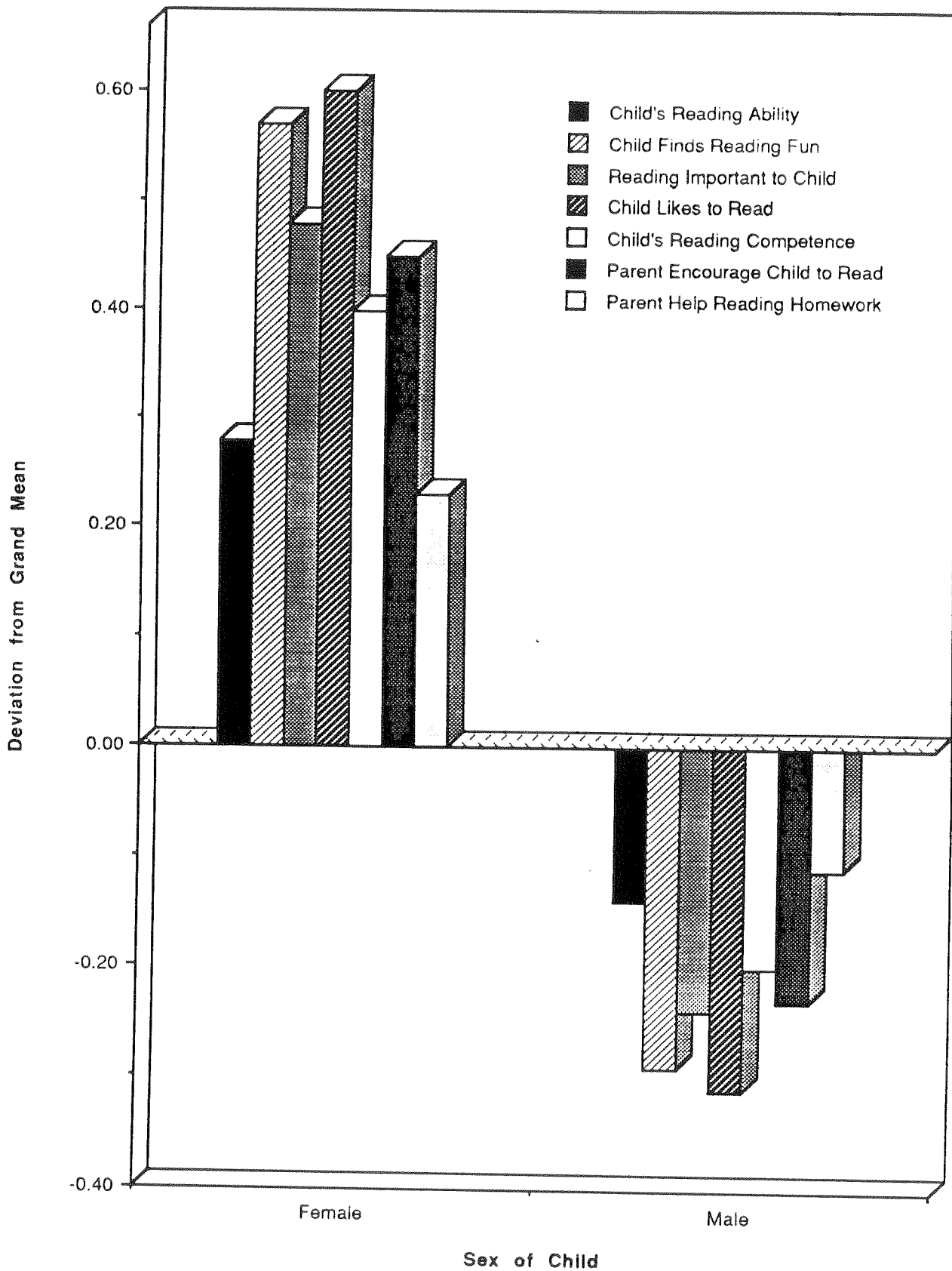


Parents' Perception of Child's Ability and Interest in Playing Instrumental Music; and Parents' Involvement in Child's Music



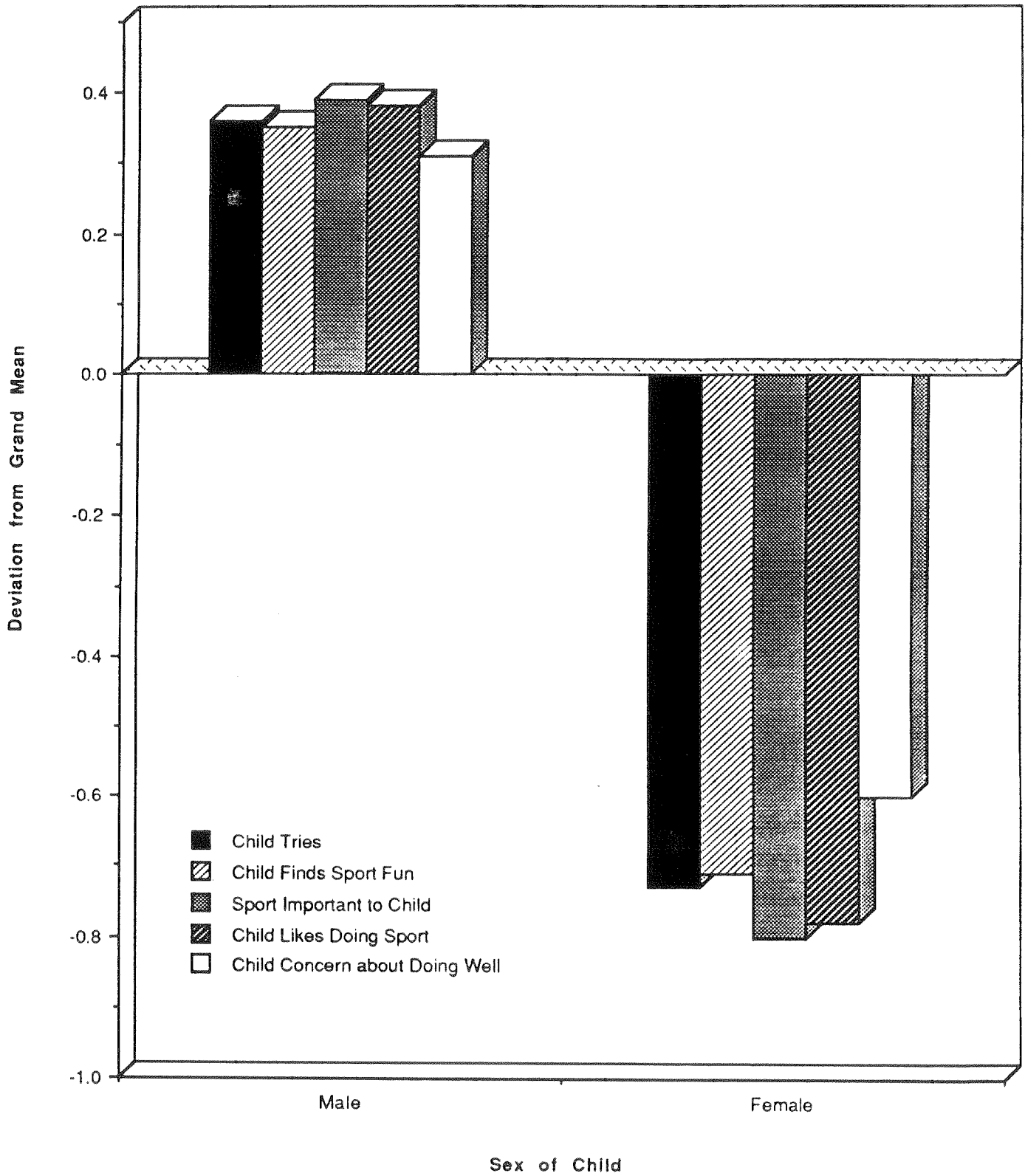
N = 70;
 Children in Grades 2, 3, and 5 - Gifted Program

Parents' Perception of Child in Reading and Parents' Involvement in Child's Reading

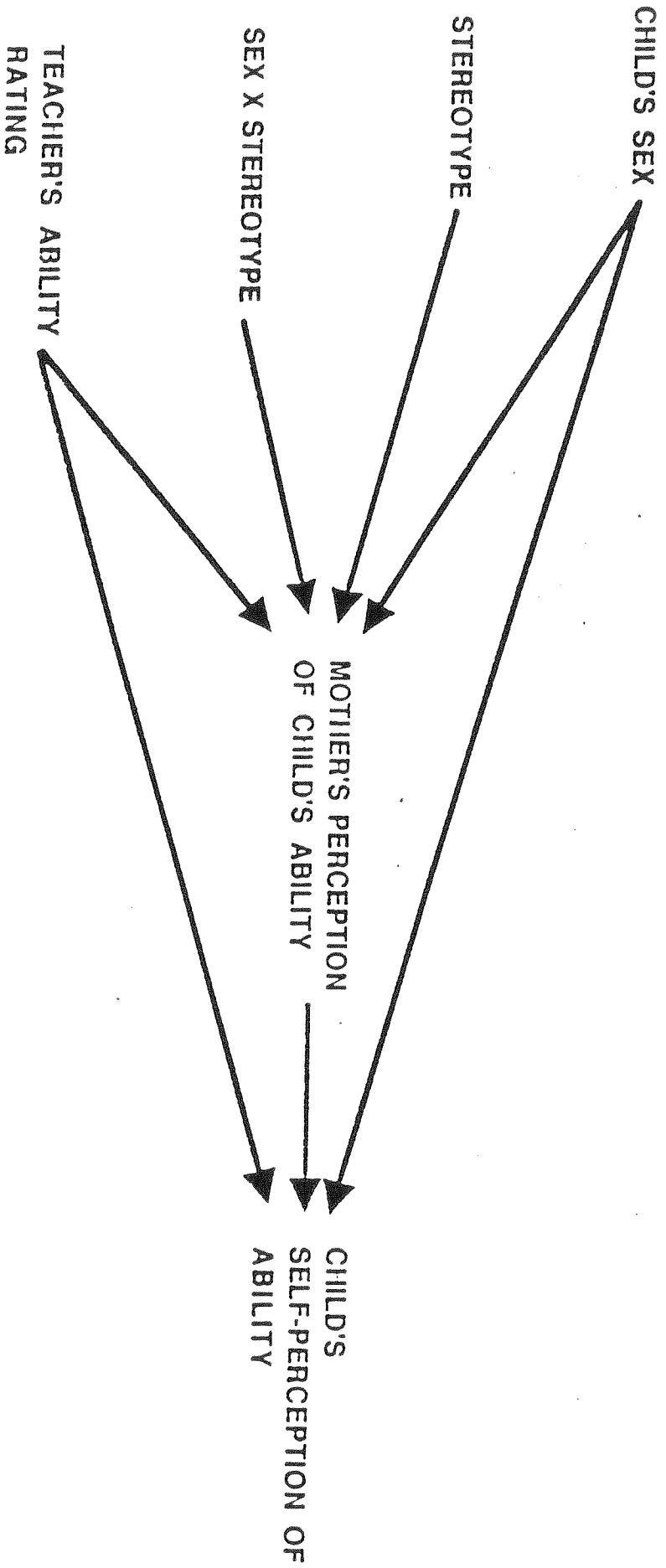


N = 74;
 Children in Grades 2, 3, and 5 - Gifted Program

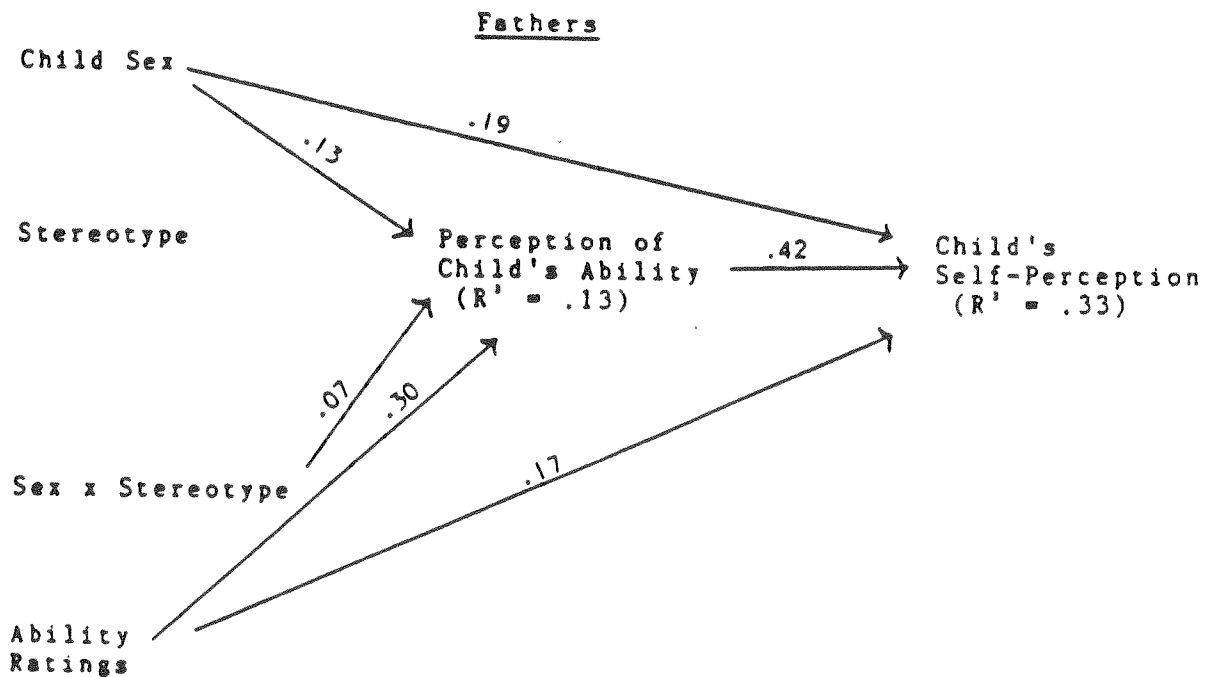
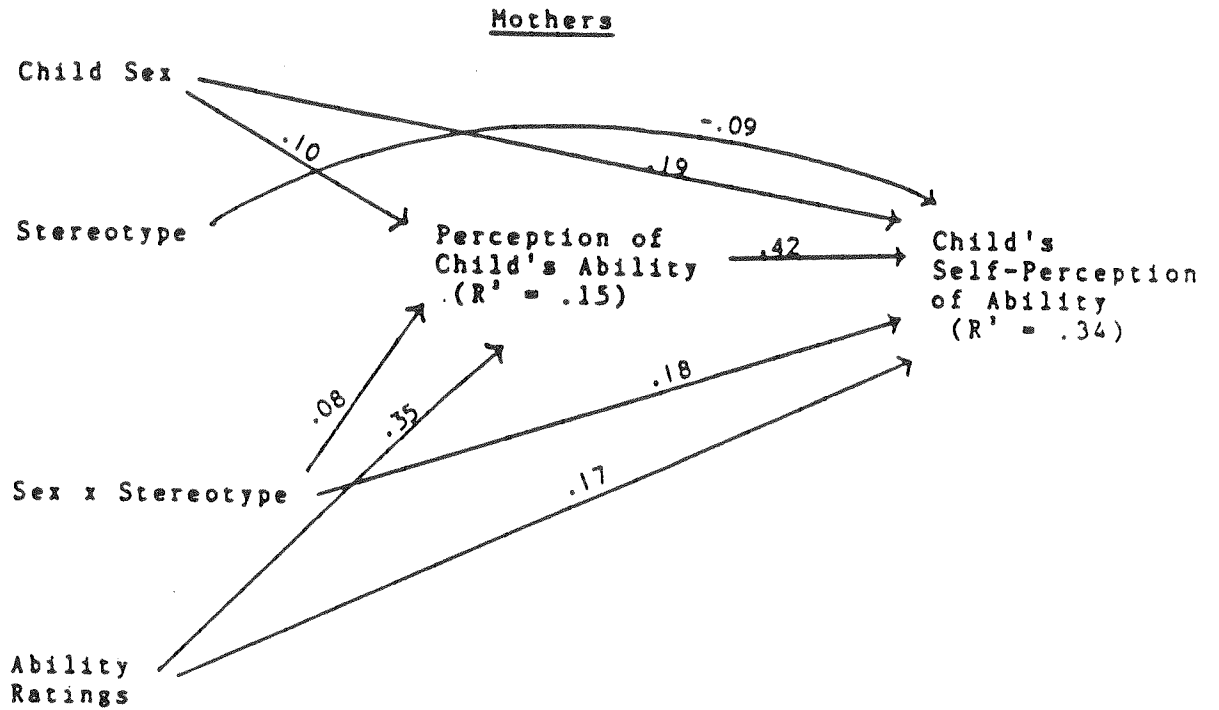
Parents' Perception of Child's Interest in Sport

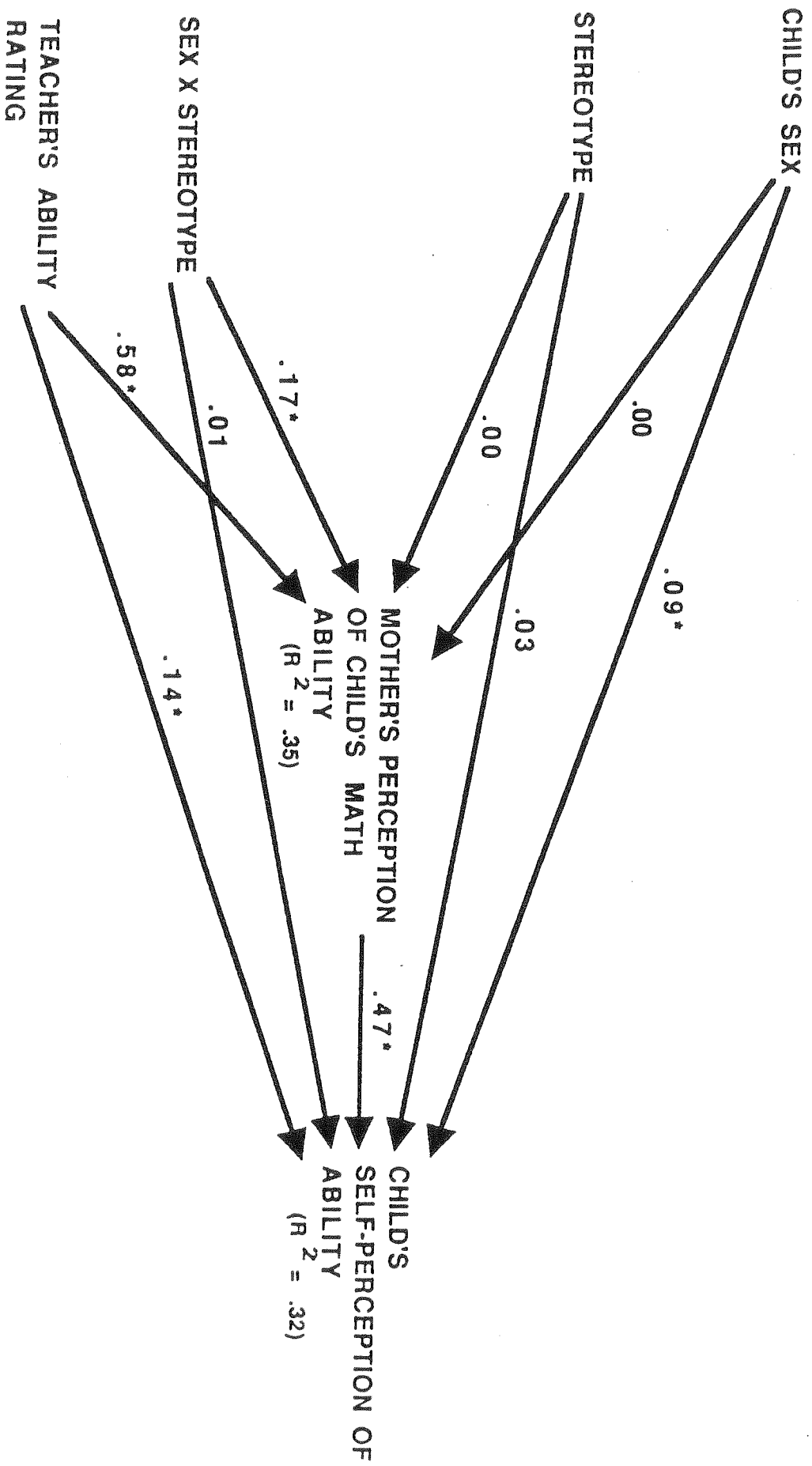


N = 68;
Children In Grades 2, 3, and 5



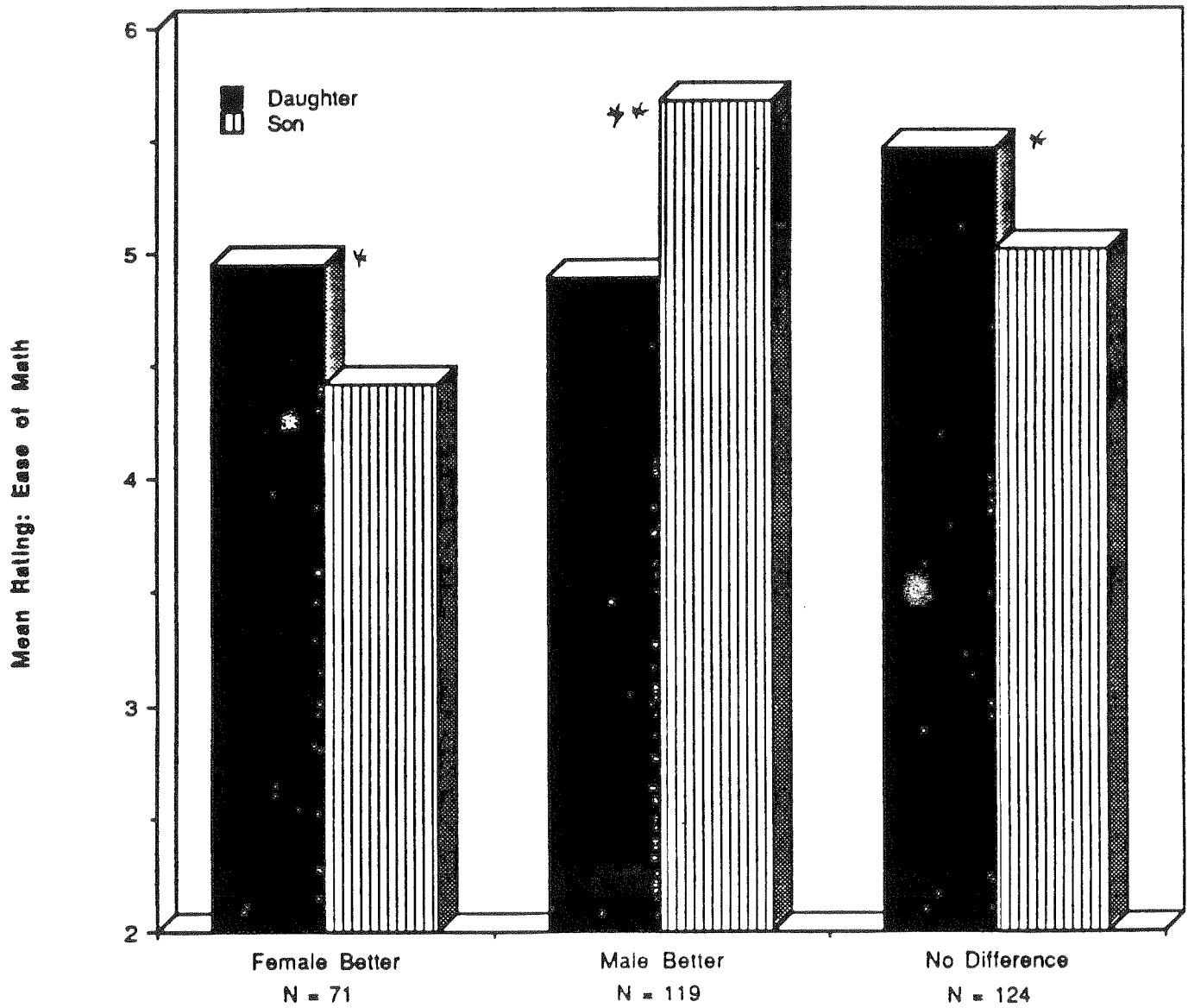
SPORTS





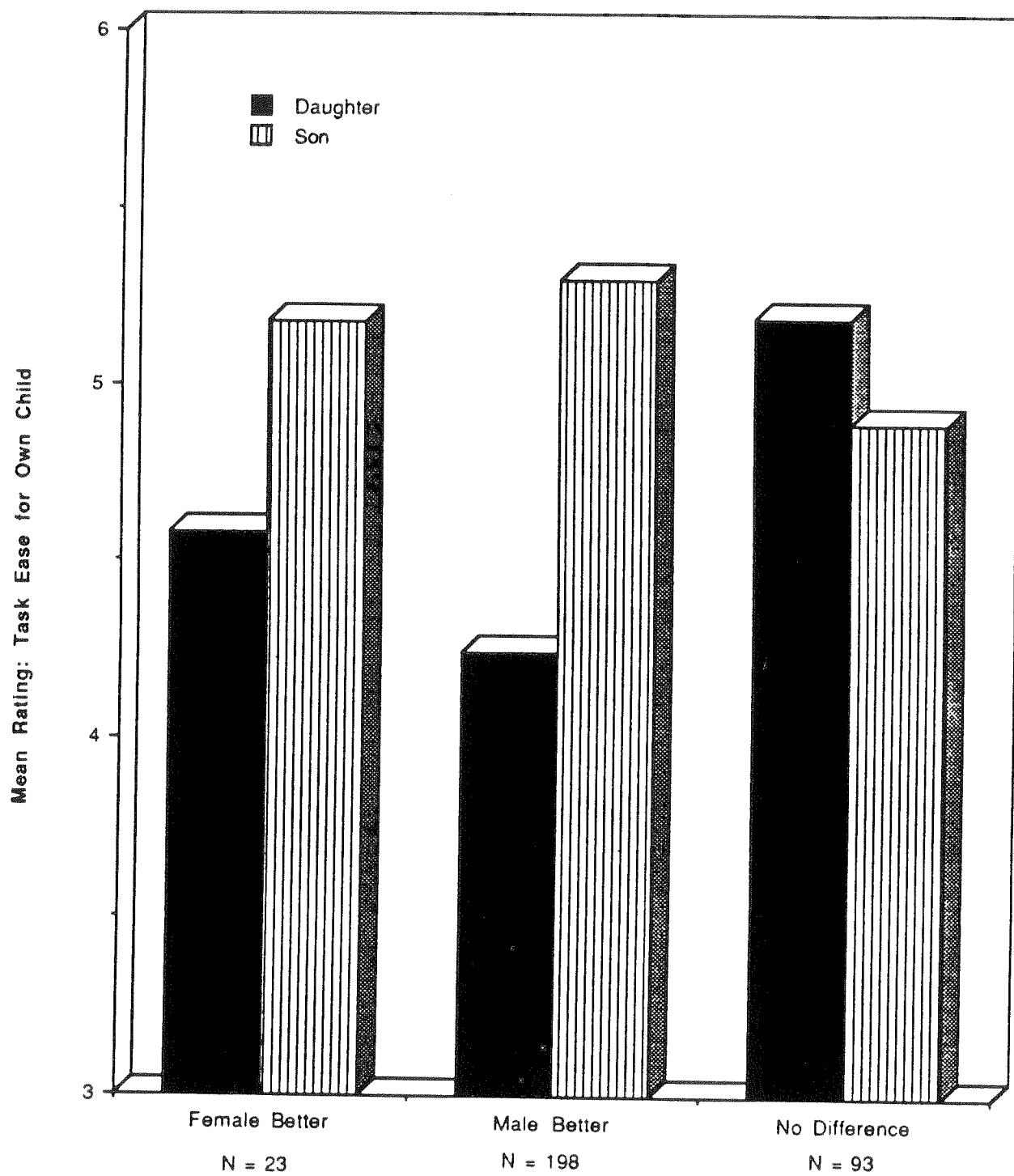
* $p < .05$

Mothers' Rating of the Ease of Math for Own Child



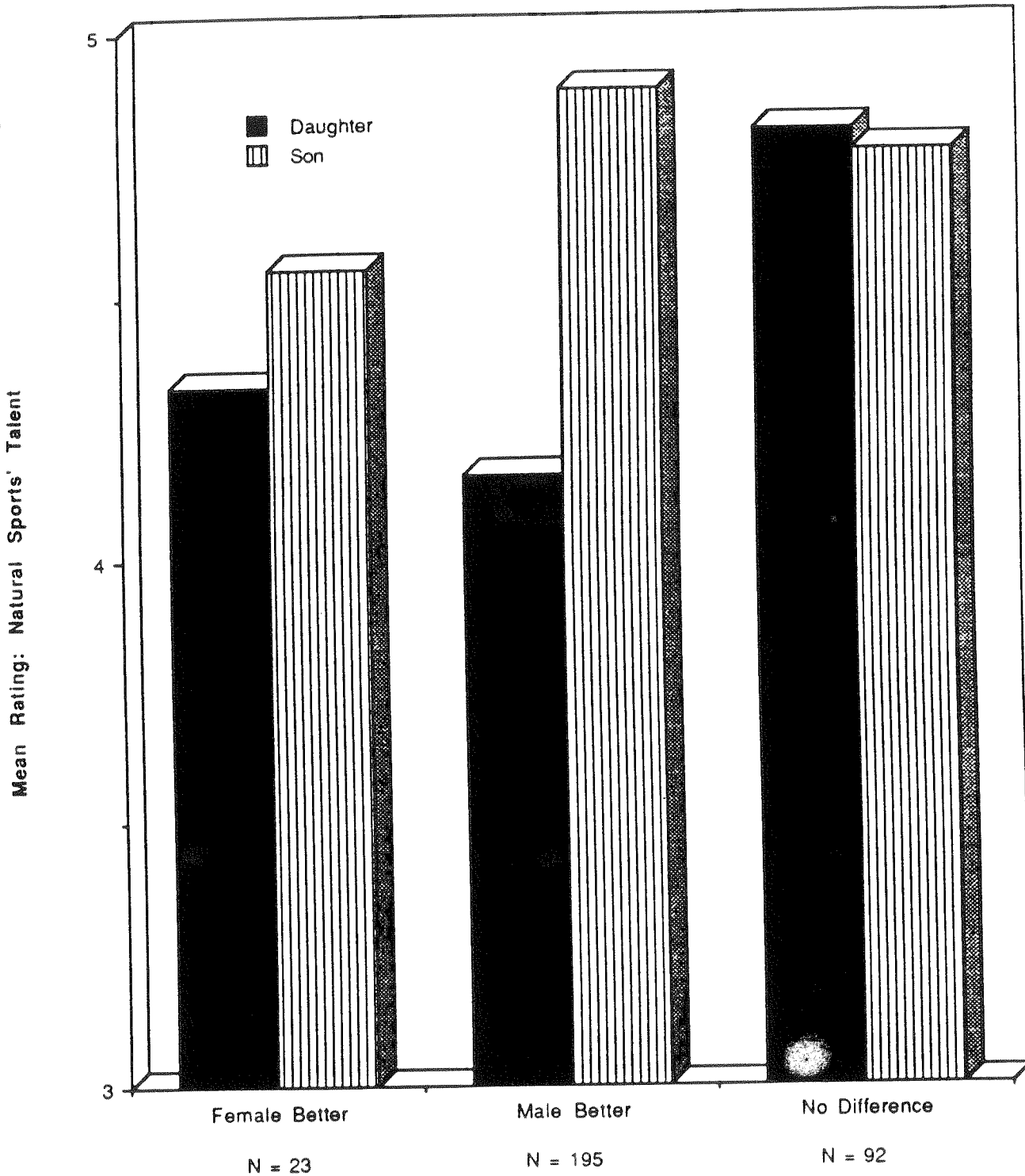
Mothers' Stereotypic Category-Based Belief about Math Ability

Mothers' Ratings of Sports' Ease for Own Child



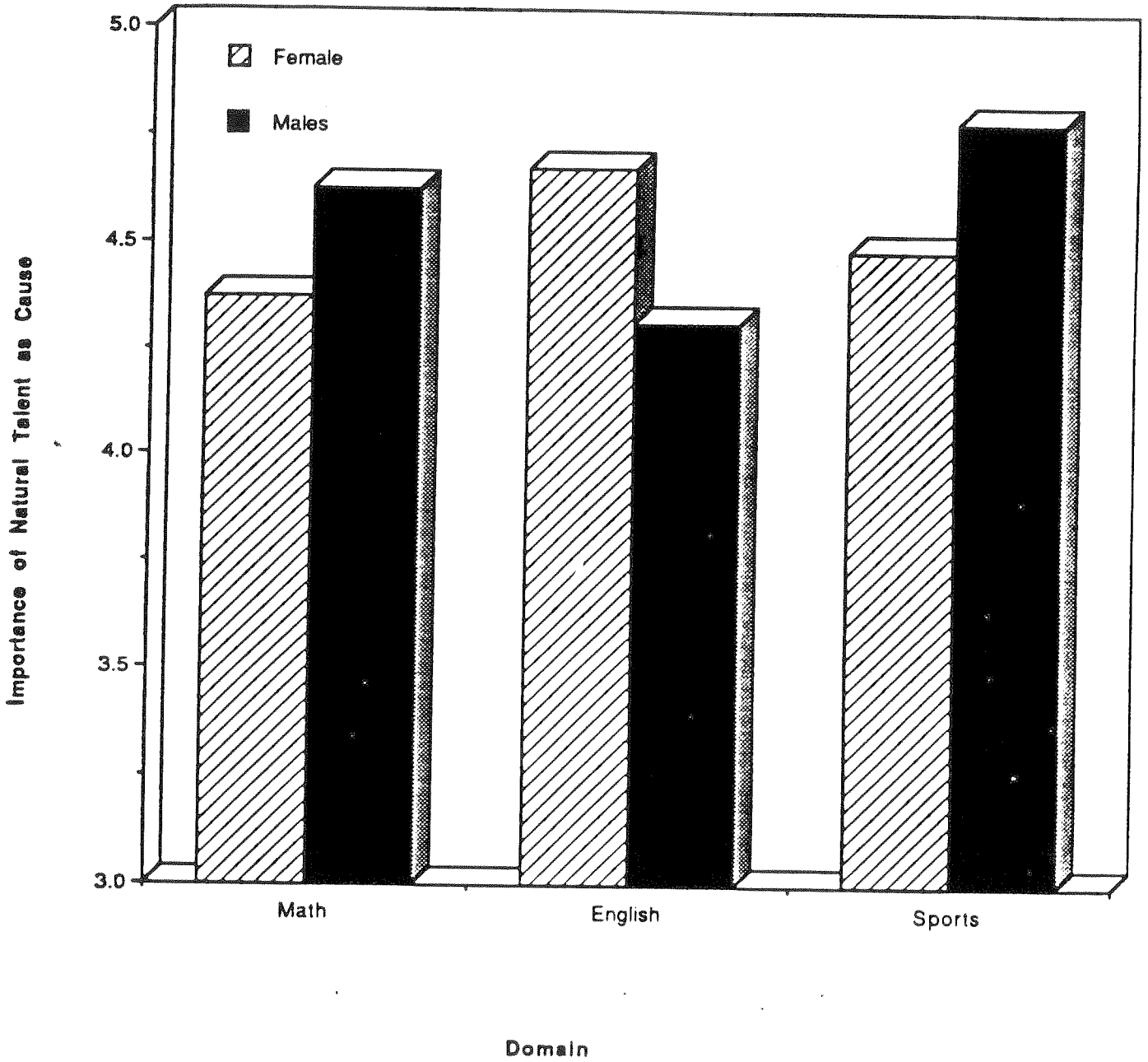
Mothers' Stereotypic Category-Based Belief about Sports' Ability

Mothers' Ratings of Own Child's Natural Talent in Sports

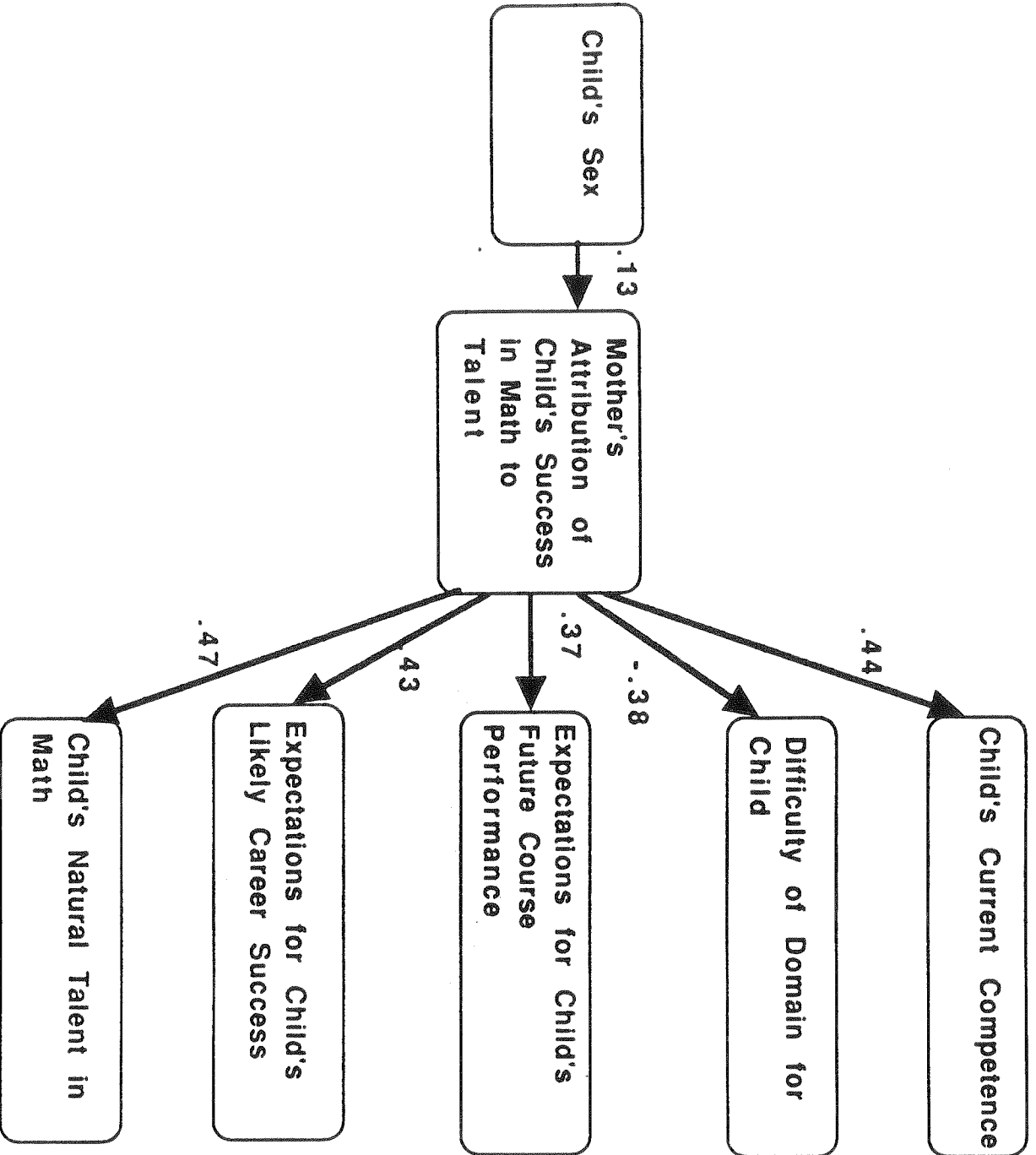


Mothers' Stereotypic Category-Based Belief about Sports' Ability

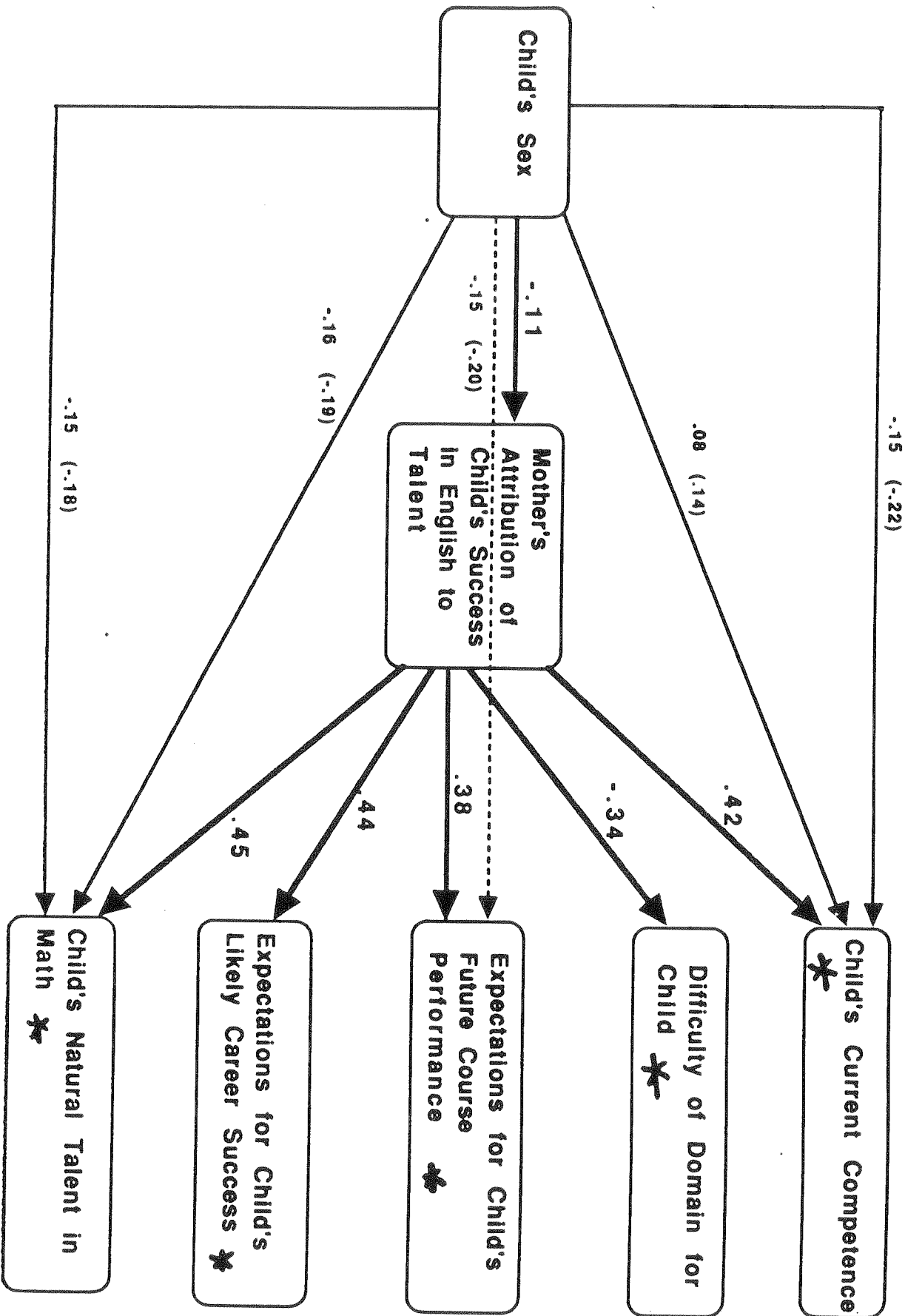
Parents' Causal Attributions for Child's Success



Mother's Perceptions of:

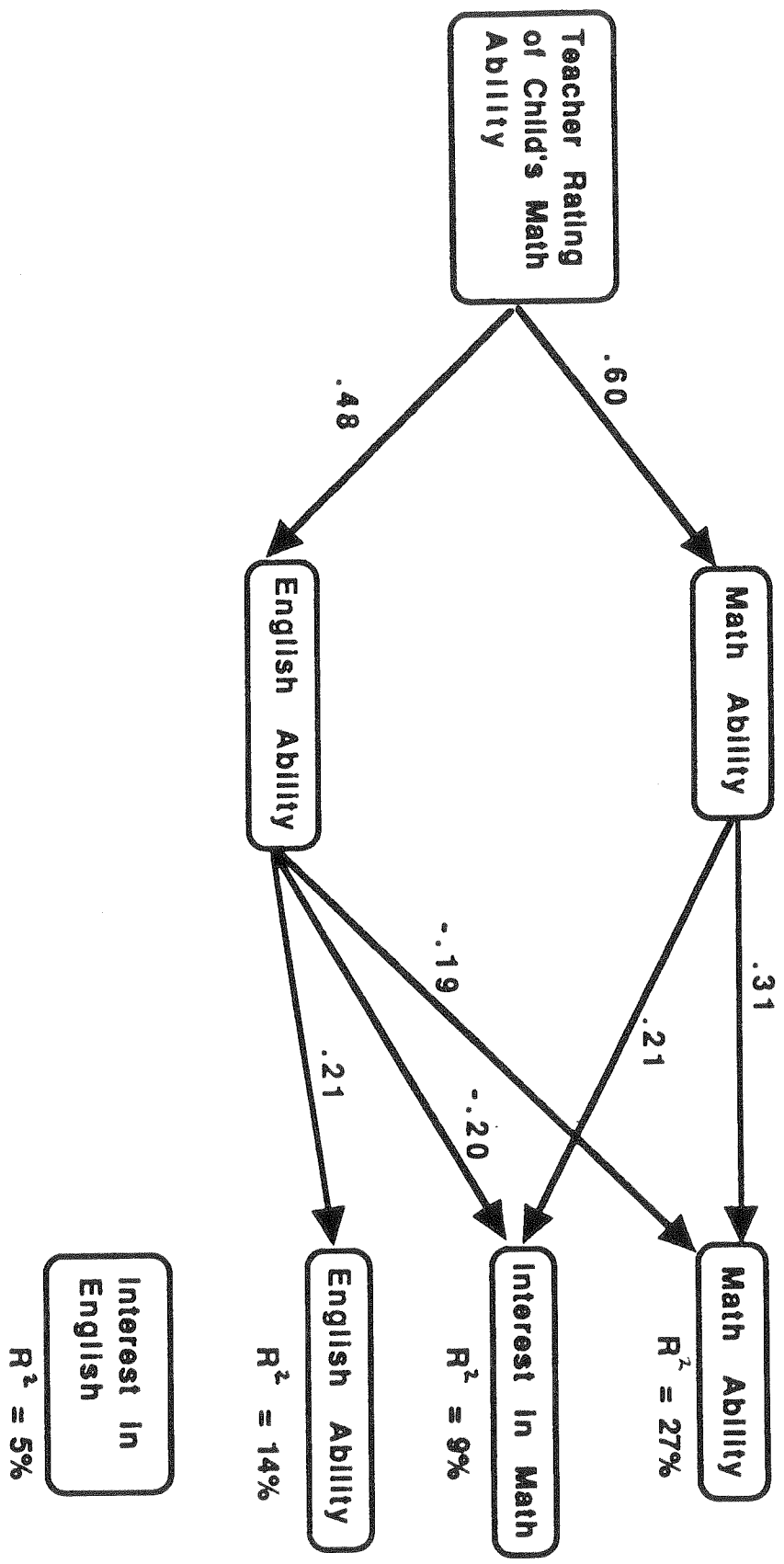


Mother's Perceptions of:

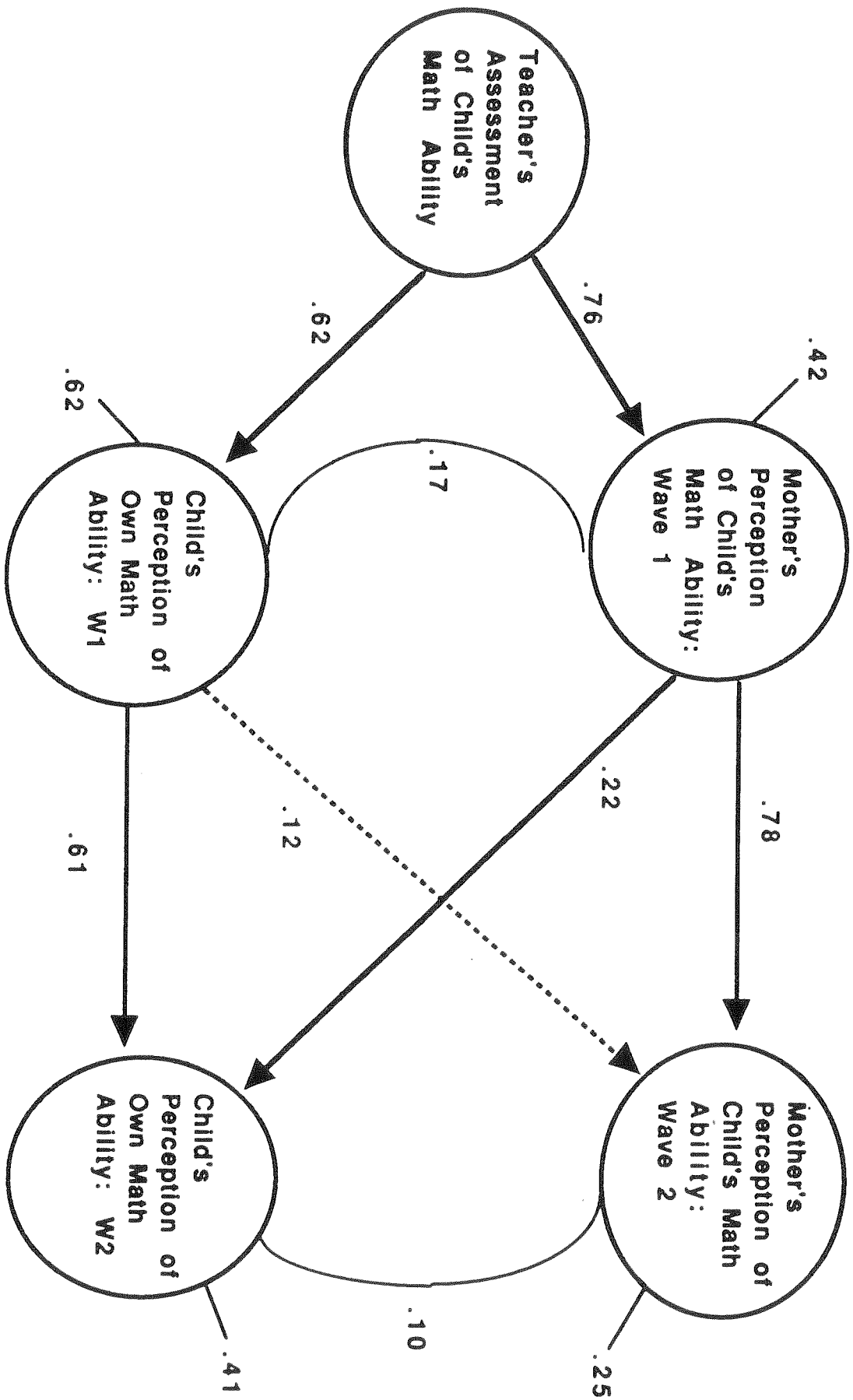


Mother's Influence on Daughter's Self-Perceptions

Mother's Rating of Daughter's: Daughter's Self Rating of:



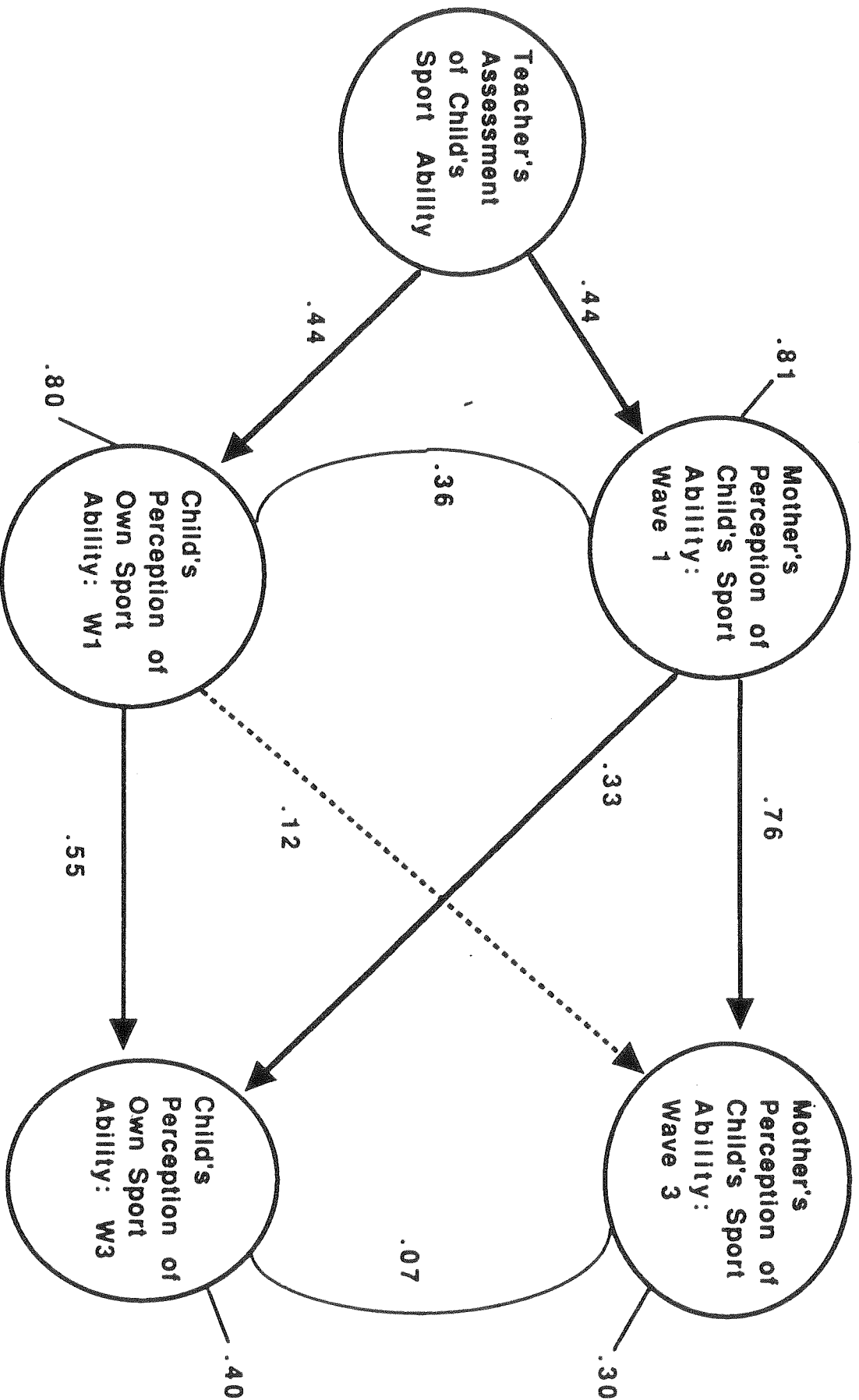
**Cross Lagged Structural Equation Modelling of Causal Directions And Mediating Influence of
Mother's Perceptions: Data for Sons**



Note: Measurement Model Statistics Omitted

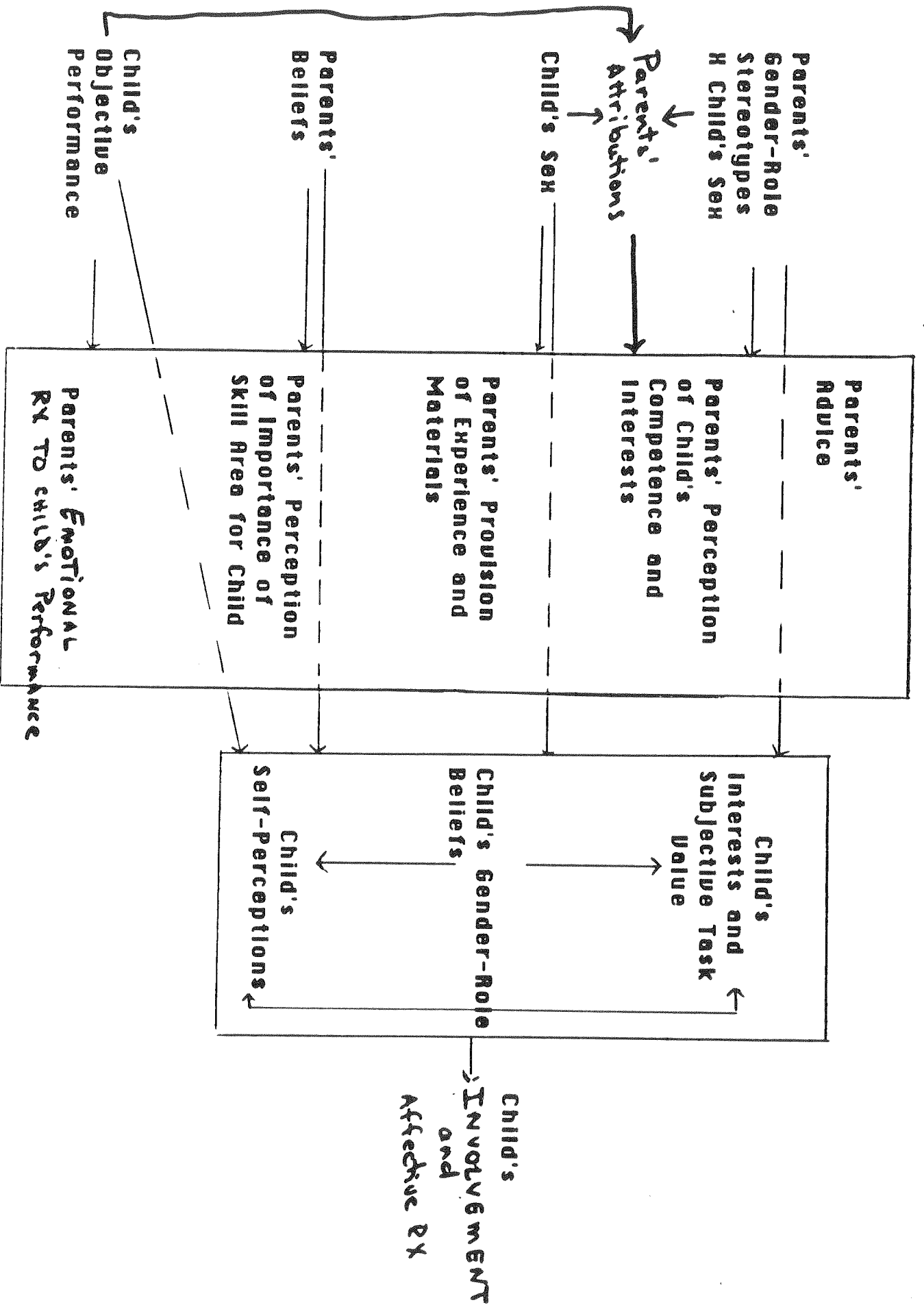
X (df=82) = 150.19
Goodness of Fit = .98

Cross Lagged Structural Equation Modelling of Causal Directions And Mediating Influence of
 Mother's Perceptions: Data for Sons



Note: Measurement Model Statistics Omitted

χ^2 (df=32) = 51.61
 Goodness of Fit = .984



Parents' Gender-Role Stereotypes & Child's Sex

Parents' Attributions

Child's Sex

Parents' Beliefs

Child's Objective Performance

Parents' Advice

Parents' Perception of Child's Competence and Interests

Parents' Provision of Experience and Materials

Parents' Perception of Importance of Skill Area for Child

Parents' Emotional Rx TO child's Performance

Child's Interests and Subjective Task Value

Child's Gender-Role Beliefs

Child's Self-Perceptions

Child's Involvement and Affective Rx

**PARENTAL BELIEFS ABOUT UTILITY OF COURSES
AND FUTURE ASPIRATIONS FOR THEIR CHILDREN**

VARIABLES	MORE IMPORTANT FOR...
Future utility of English	Girls
Future utility of math	Boys
Future utility of computer science classes	Boys
Future utility of mechanics / shop	Boys
Future utility of biological science	Girls
Importance of child's future self-sufficiency	Boys
Future job stability	Boys*

* All items were significant for both fathers and mothers with the exception of job stability which showed a significant difference for fathers only.

Parents' Rating of Importance of Subject Area for Their Child

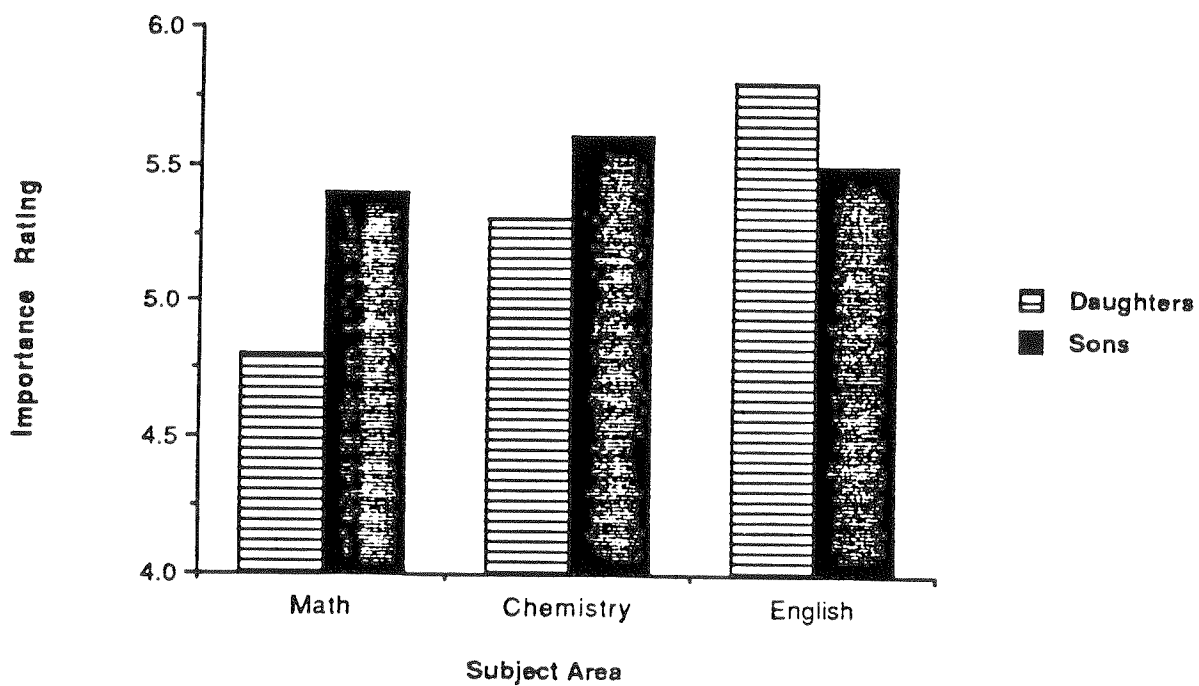
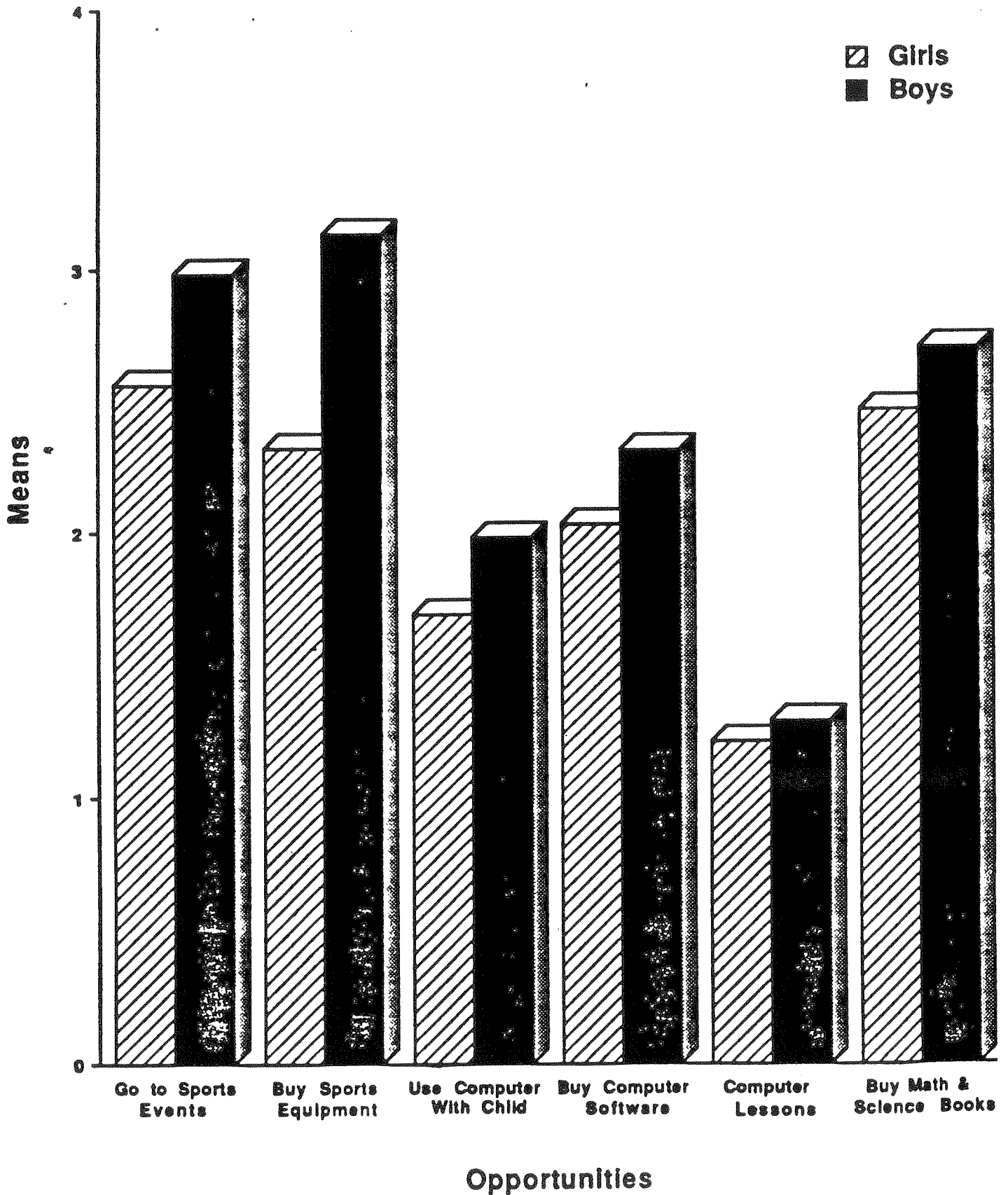
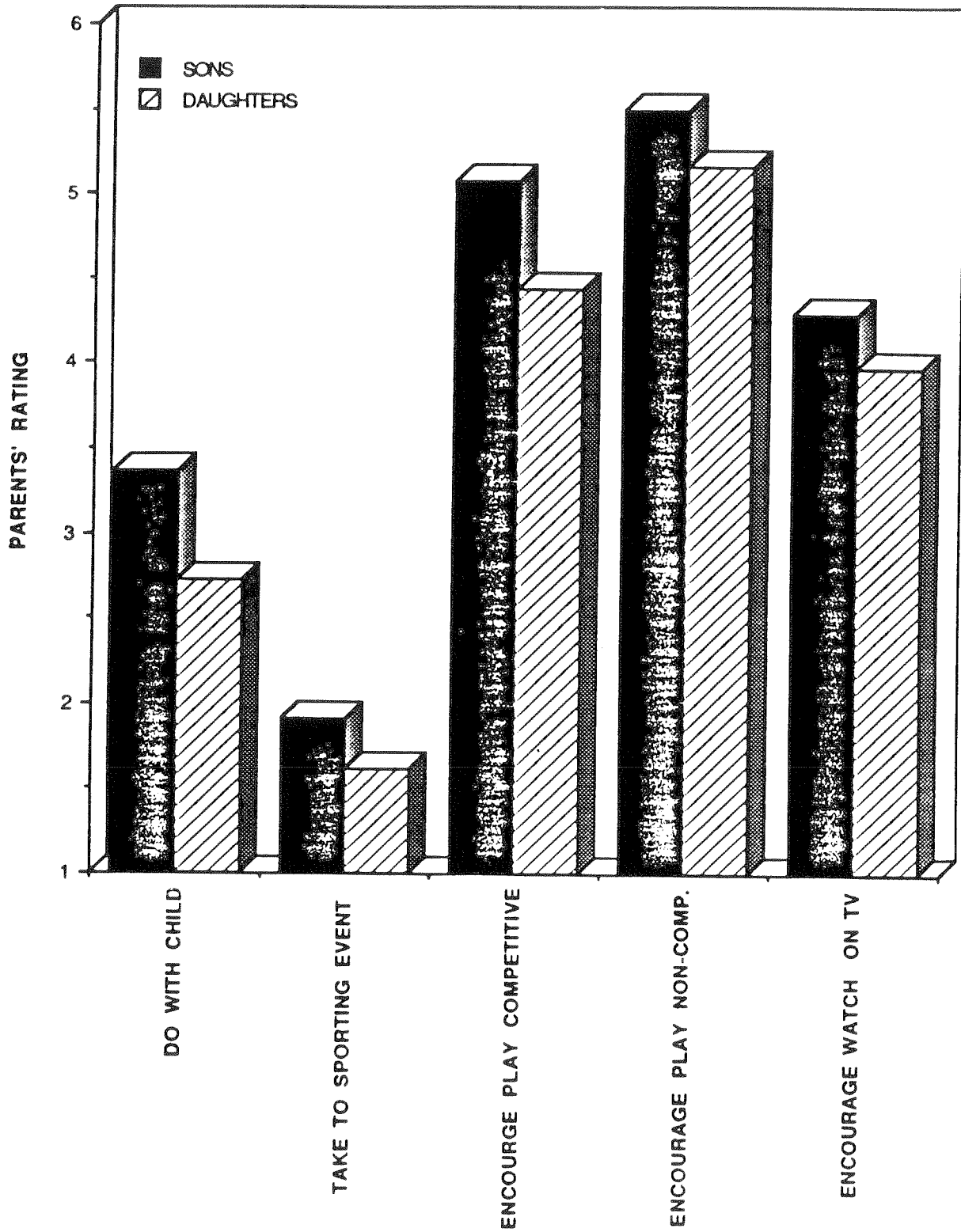


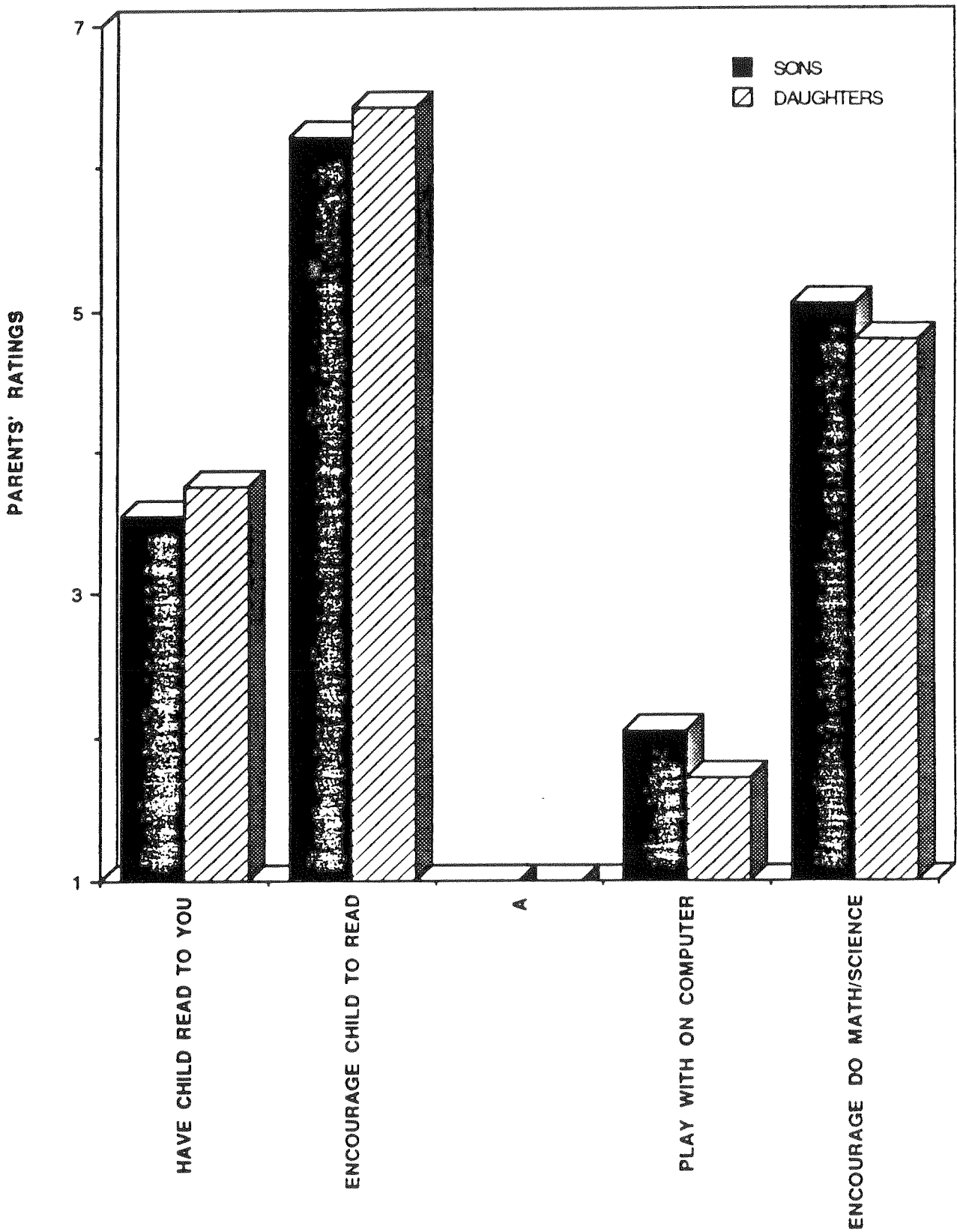
Figure 3. Mothers' Provision of Opportunities by Sex of Child



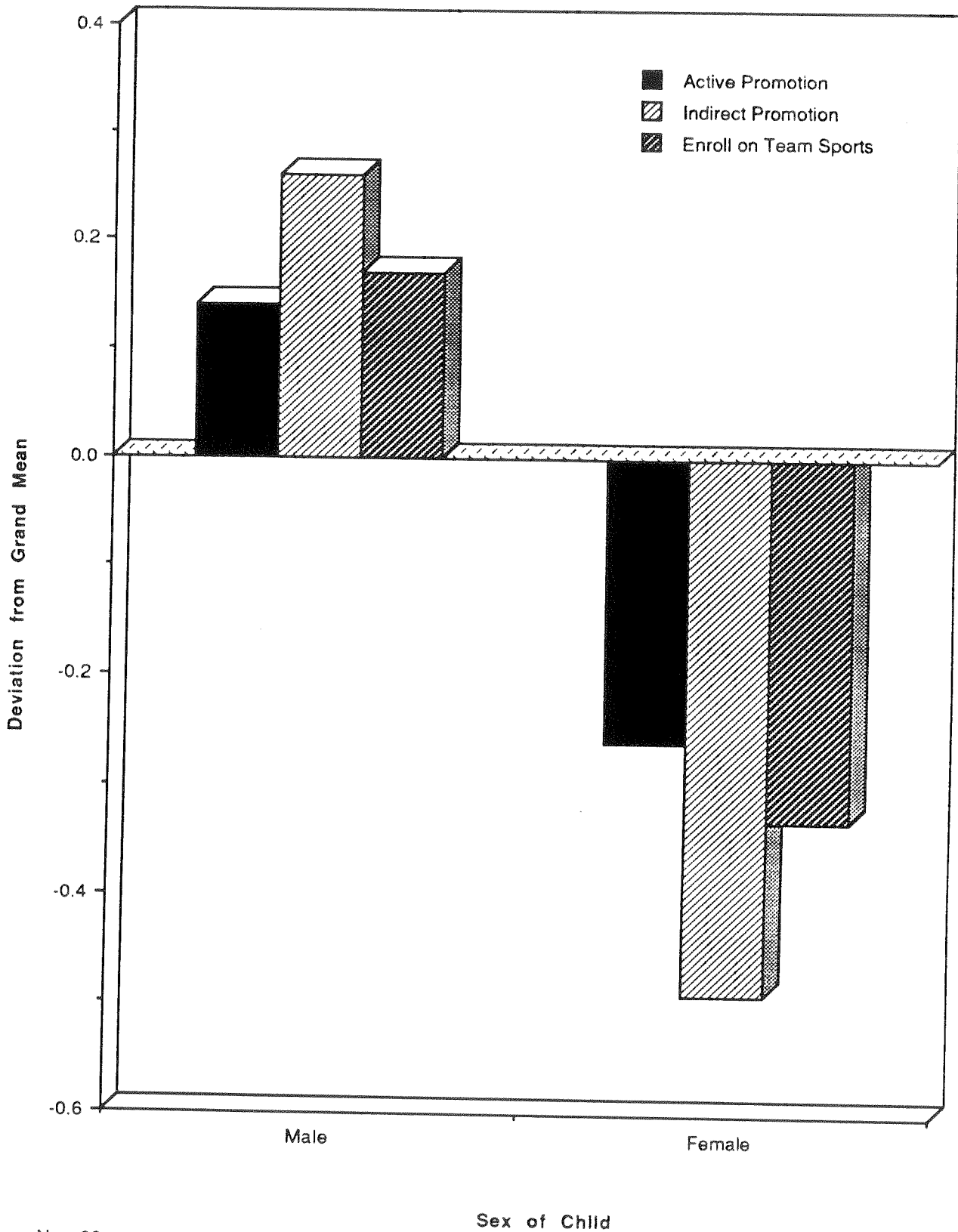
PARENTS' RATING OF EXTENT TO WHICH THEY DO EACH TYPE OF SPORT ACTIVITY WITH CHILD



PARENTS' RATING OF EXTENT TO WHICH THEY DO EACH ACTIVITY WITH CHILD



Parent Promotion of Child's Sport Participation



N = 66;
Children in grades 2, 3, and 5

Path Analysis on the Mediating Role of Parents' Perceptions of Their Child's Ability and Interest In Sports

