Parents' perceptions of their children's competence: The role of parent attributions

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ABSTRACT

The current study examines the contribution of parents' causal attributions in explaining change in parent perceptions of their child's competencies over time, controlling for overt measures of children's performance. The data reported are part of a longitudinal study (The Michigan Study of Adolescent Life Transitions - PI: Jacquelynne Eccles) of students', parents', and teachers' attitudes during the transition to junior high. Mothers' (approximately 800) and fathers' (approximately 600) rated the importance of different attributions for a time their child did very well in sports, math, and English. Their perceptions of their child's competencies in each domain were collected at the same time as the attributions and also at a subsequent time. The child's previous year's grades in English and math, and teachers' ratings of athletic competence were used as objective measures of performance. Path analyses revealed that parents' success attributions explained parents' Time 2 perceptions above and beyond the effect of the Time 1 rating. Gender of child effects were present in sports and English, but not in math.

Introduction

In order to better understand children's educational experiences and aspirations, researchers have examined the role parents play as socializers and as role models (Eccles et al., 1983; Phillips, 1987). In many cases, the messages the children perceive from their parents about their competencies are more powerful than the feedback children get in terms of their report cards (Parsons, Adler & Kaczala, 1982). Parents act as interpreters of their child's competencies in these cases, their influence as socializers playing a more important role than their influence as role models (Eccles et al. 1983). One way that parents potentially communicate messages about their expectations to their child is through the explanations parents make for why their child was successful at a given task, or the causal attributions parents apply to success situations. In fact, parent perceptions of their children's competencies have been found to be linked to the attributions parents make for their children's successes and failures, consistent with Weiner's (1974) attribution theory.

Attribution theorists examine the reasons people give for their successes and failures, and suggest these are cognitive mediators of future expectancies. Attributions have generally been examined as falling into three dimensions: stability (stable or unstable), locus of causality (internal, external), and controllability (uncontrollable or controllable) (Weiner, 1980). Within attribution theory, attributions to a stable cause are proposed to contribute to a continuation of the same expectations for success or failure over time. In contrast, attributions for success to an unstable cause have been found to be less related to expectancies over time (see Weiner, 1985 for a review). For example, attributions of their child's success to working hard, an unstable cause, at one point in time may not be a basis for parents to expect a similar performance from their child at a future point in time. However, an attribution of their child's success to talent or

to skill provides a stable cause and a stable basis for parents to assume that their child's competence will continue. Therefore, attributions to stable, controllable factors, such as talent and skill are expected to influence perceptions of competence over time; whereas attributions to working hard, an unstable, but controllable factor, are expected to relate less well to future perceptions of competence.

Although attribution theory has primarily focused on interrelations of attributions and competence perceptions for individuals about themselves, there has also been some investigation regarding the relations that exist between these constructs when parents are rating their children. Results from previous researchers have shown that parents who rate their child high in competence also tend to attribute their child's successes to talent (Duncan, McDevitt & Hess, 1988, Holloway, 1986). Conversely, those parents who perceive their children as less competent have been found to attribute their children's successes to working hard (Yee & Eccles, 1988). However, in most of the research where the relation between parent perceptions of their children and the attributions they make for their successes and failures has been examined, the relation implied has been that perceptions influence attributions. Further, the ratings have been gathered either at the same point in time or the competence ratings have been collected prior to the attribution rating. Less explored has been the subsequent effect of an attribution made by a parent on their future perceptions of the child. What remains to be examined is how these attributions contribute to change in parent ratings of children's competencies over time.

The differential causal attributions parents make for their children's successes and failures have also been found to account for some of the differences in parents' expectations for their daughters' in comparison to their sons' competence in math, English, and sports (Eccles, Jacobs, & Harold, 1990).

For example, Holloway and Hess (1985) found that parents of boys attributed high performance in math more to ability than to effort; whereas, parents of girls attributed their high performance in math more to effort than to ability. However, the extent to which these attributions act as mediators of gender differences has been inconsistent across different data sets (Parsons, 1983).

Finally, in general, attribution research conducted to inform about children in schools has focused on the domain of math (Dunton, McDevitt & Hess; Holloway & Hess, 1985; Yee & Eccles, 1988) or to academics as a general domain (Bar Tal & Guttman, 1981; Holloway, 1986). When researchers have examined other domains, differences have been found. For example, Riemer (1975) found no relation between stable attributions and expectancy of success on a piano playing task. Frieze and Snyder (1980) found that when children were shown other children succeeding in different tasks, that first, third and fifth graders had wide agreement on causal ascriptions for a testing situation (attributing success to effort and ability), but that they were less in agreement about the causes of success in sport. In the current study, we examine parent perceptions of their children's competencies in relation to the attributions for success across three domains: math, English and sports.

By examining the relations between expectancies and attributions within domains separately, we also expect to be more likely to uncover any gender differences that may otherwise be masked. Deaux and Emswiller (1974) found some evidence to suggest that others' ratings of male and female performance is linked to sex-consistent tasks. They found that undergraduate students in a lab situation were more likely to attribute success at a mechanical object identification task to internal factors when the person being rated was male. No gender differences emerged when the task involved identifying household

objects. In the current study, math and sports have typically been identified as male domains, and English has been identified as a female domain.

In sum, in the current study we are concerned with two major objectives: 1) we extend earlier work by addressing the relation between parents' causal attributions at Time 1 and their contribution in explaining changes in parent perceptions of their children's competencies from Time 1 to Time 2, controlling for overt measures of children's performance, and 2) we examine the relation between child gender and the change over time in parents' ratings of their child's ability, and effort, and of parents' current expectations for their child, controlling for objective indicators of child's performance.

Method

Participants

Data for the current study are part of a longitudinal investigation (The Michigan Study of Adolescent Life Transitions-- MSALT; PI Jacquelynne Eccles) of students', parents', and teachers' attitudes during the transitions from elementary to high school. Data were collected from 12 school districts in southeastern Michigan. The data reported here were collected in the fall (1983) and spring (1984) of the students' sixth grade year, and in the fall (1984) of the students' seventh grade year. We examined data from parents (approximately 800 mothers and 600 fathers) who had completed surveys at each time point. Participants were from primarily white, working class and middle class backgrounds.

Measures

Parent Questionnaire. Parents were asked to rate their child's ability and their child's required effort in math, English, and sports. One item assessing the parents' perception of their child's ability asked the parent to rate how good their child is in general, on a scale from 1 (not at all good) to 7 (very good). The

required effort construct consisted of 2 items: parents' ratings of how hard their child finds the domain, from 1 (very easy) to 7 (very hard) and parents' ratings of how much the child has to try to do well in the domain, from 1 (a little) to 7 (a lot). Additionally, for math and English, parents' current expectations for how well their child would do in math and English were assessed with 2 items: Parents rated how well their child is doing in each domain this year from 1 (not at all well) to 7 (very well), and parents' indicated what grade they expected their child to get in each domain this term. The grade the parent noted was coded on a scale from 1 (F) to 14 (A+), and then the scale was reversed when combined with the other item. All these constructs were measured at two different time points. Although the constructs were intercorrelated, they are conceptually distinct and therefore were kept separate for the analyses. Cronbach alphas computed for required effort and current expectations ranged between .73 and .89 for each domain and for both mothers and fathers (see Appendix A for specific items and alphas).

At the first time point, along with their perceptions of their child's competencies (ability, required effort and parent current expectancy), parents were asked to think about a time their child did well in a domain activity and to rate the importance of five different attributions for explaining their child's success in each domain (math, English and sports). The attributions included talent, working very hard (practicing a lot for sport), task ease, parent help and learned skills (doing sport a long time). Parents rated each of the academic attributions on a scale from 1 (not at all important) to 7 (very important). Parents rated each of the sports attributions on a scale from 1 (not at all true) to 4 (very true). The following algorithm was used to convert parents' ratings of each of the sports attributions from a 4-point to a 7-point metric:

6 * ([old rating-1]/3) + 1 = new rating

Although five attributions were given to parents to rate, only three were used for subsequent analyses: ability, working very hard, and skills. Weiner (1985) reports that within the achievement domain, ability and effort attributions tend to be the most salient; we were interested in looking at these as well as at the other stable attribution we had identified, skill.

School Record Data and Teacher Data. As an objective indicator of the child's performance in math and English, child's cumulative grade point in English and math the year prior to parent Time 1 ratings were used. Teacher rating of the child's sport competence was also obtained, as an objective sport performance measure.

Results

Path analytic techniques using a series of multiple regression analyses were utilized. Time 1 parent ratings were regressed on child's gender and objective performance indicator. Next, parents' attributions were regressed on the first three variables. Finally each dependent measure (parent Time 2 rating) was regressed on all preceding variables. Examination of preliminary path analyses conducted for boys and girls separately revealed only one significant difference; therefore, male and female data are combined in the present analyses.

In order to test for attributions as mediators, we examined to what extent the relation between the time 1 and time 2 parent rating was reduced when attributions were entered into the equation, according to the steps suggested by Baron and Kenny (1986). Mediation occurs when the independent variable is correlated significantly with the dependent variable, but the relation between these two variables is diminished when the mediator variable is included. The other conditions which must be met in order to show mediation are that the

independent variable be significantly related to the mediator and that the mediator be significantly related to the dependent variable.

We did not expect the relation between time 1 and time 2 ratings to diminish completely when the attributions were entered; in other words, we did not expect perfect mediation. Therefore, in order to examine whether the relation between time 1 and time 2 diminished significantly, we used the following method: first, we regressed time 2 ratings on time 1 ratings, with child gender and the objective performance indicator already in the equation, and we examined the confidence interval around the unstandardized regression coefficient for the time 1 rating. Next, we entered the attribution ratings into the equation, and we noted those cases where the unstandardized regression equation for the time 1 rating in this augmented equation fell outside of the range of the original confidence interval. When the coefficient fell outside of the confidence interval with the attributions in the regression equation, we had evidence of partial mediation. We also conducted t-tests for the significance of the indirect effect of time 1 rating on time 2 rating via the attribution. To do this, we multiplied the standardized betas together to get the beta for the indirect effect, and divided the beta by the standard error for the indirect effect, calculated using a formula suggested by Sobel (1982, cited in Baron & Kenny, 1986).

We also tested for mediation between child gender and time 2 rating via parent time 1 rating using the same technique as above. We examined whether the unstandardized regression coefficient from gender to time 2 rating was significantly reduced when time 1 parent ratings were entered into the equation (controlling for objective measures of child performance). Although we had hypothesized that gender effects on time 2 rating would be mediated by

attribution ratings, there was no path between gender and attribution, except in one case, and therefore we found no evidence for this relation.

Table 1 shows the zero-order correlations for each item as well as the means and standard deviations. Tests of mediation were not conducted for current expectancies, because there were no relations between attributions and time 2 ratings of this variable. Similarly, the test of mediation of gender on time 2 rating via time 1 rating was not conducted in math, where gender had no zero-order correlation to parents' ratings on any of the outcome variables. Figure 1 displays our results for the tests of mediators of parents' ratings of their child's ability within each of the domains, and Figure 2 displays the results for mediators of parents' ratings of their child's effort.

Step 1a: Time 1 ratings on Time 1 attribution ratings

Ability. A positive association of time 1 ratings of child's ability both to attributions of success to talent as well as to attributions of success to skill was revealed across all the domains. Additionally, in the sport domain, there was a positive association between time 1 rating of sport ability and attribution of success to hard work.

Effort. A negative association between time 1 ratings of child's effort attributions of success to talent as well as to skill was revealed across all the domains. Additionally, in the sport domain, there was a negative association between time 1 rating of sport effort and attribution of success to hard work; whereas in math and in reading the relation between these two variables was positive.

Current expectancy. In math and reading, there was positive association of time 1 ratings of parents' current expectancy both to attributions of success to talent as well as to attributions of success to skill.

Step 1b: Attributions as mediators Time 1 (T1) to Time 2 (T2), controlling for objective indicators of child's performance

Ability. An attribution of child's success to talent partially mediated the relation between T1 and T2 ability ratings across Math, English and Sports for moms, and in sports for dads. Controlling for how important parents thought skill and hard work for their child's success was, when parents placed more importance on an attribution of their child's success to talent, they were also likely to rate their perceptions of their child's ability as greater over time. Path coefficients are presented in Figure 1.

Effort. An attribution of child's success to talent partially mediated the relation between T1 and T2 ratings of effort in sports for moms, but not for dads. In English and math, attributions both to working hard and to talent partially mediated T1 to T2 ratings of effort. An attribution to talent corresponded to lower ratings of required effort ratings T2, whereas an attribution to hard work corresponded to higher ratings of required effort over time. Path coefficients are presented in Figure 2.

Current Expectancy. Parent attributions did not mediate the relation of T1 and T2 expectancies.

Step 2a: Gender on Time 1 ratings

Ability. The relation between gender and parent ratings of child's math ability T1 was not significant for moms. For dads, the relation was negative: Dads of girls gave higher ratings for their child's math ability than did dads of boys. There was a negative association between parent ratings of child's English ability and child's gender, indicating that parents of girls gave higher ratings to their children on their English ability than did parents of boys. In contrast, a positive association between sport ability ratings T1 and child gender indicated

that parents of boys rated their child's sports ability higher than did parents of girls.

Effort. In contrast to what was found for ratings of ability, the relation between gender and parent ratings of child's math effort T1 was not significant for dads, and was for moms. For moms, the relation was negative: Moms of girls gave higher ratings for their child's effort in math than did moms of boys. Additionally, the sport and English ratings of child's effort were in the opposite direction of what was found for ability ratings. There was a positive association between parent ratings of child's English ability and child's gender, indicating that parents of boys gave higher ratings to their children on their English effort than did parents of girls. In contrast, a negative association (for fathers only) between sport effort ratings T1 and child gender indicated that fathers of girls rated their child's sports effort higher than did parents of boys. The relation for moms was not significant.

Current expectancy. The relation between gender and current expectancy in math T1 was not significant either for moms or for dads. In English, there was a negative association, indicating that parents of girls had higher current expectancies than did parents of boys.

Step 2b: Time 1 ratings as mediators of Gender effects on Time 2 (T2), controlling for objective indicators of child's performance

Ability . There was no relation between gender and math ability ratings T2. In English parents of girls rated their child's ability higher than did parents of boys at T1 and T2. In contrast, parents of boys rated their boys' sports ability higher than did parents of girls at each time. After controlling for objective performance, T1 ratings did not mediate the relation of T1 and T2 ratings in any domain.

Effort. There were no gender effects in math. In English, boys were rated as having to exert more effort to do well in comparison to girls. In sports, girls were rated as requiring more effort to do well than boys. However, T1 ratings did not mediate T2 ratings, once other measures were controlled.

Current Expectancy. In math, gender was not related to expectancy T2. In English, parents expected their girls to do better in English at T1 and T2; however, there was no mediation after controlling for objective performance.

Summary of Results

The results were consistent with previous research linking parent perceptions of child's past performance to parent attributions (Duncan, McDevitt & Hess, 1988, Holloway, 1986). Additionally, we found that attributions parents gave for their child's success were related to change in parent perceptions of their child's competencies, even after controlling for objective indicators of child's performance. In particular, parent attribution of their child's success to talent was associated with positive change in parent ratings of how good their child is in a domain and with negative change in how hard the domain is for their child. However, parent attributions were not related to change in parent specific expectancies for how well their child would do in a particular year.

Parent ratings of their child's competencies were consistent with past research finding parents perceptions to fall along stereotypic lines. Parents of girls rated their child's competencies higher than parents of boys, beyond the actual difference that would be congruent with girls' better grades in English. The opposite pattern was true in sports, with parents of boys perceiving their child's competencies higher than parents of boys, even after accounting for boys' better performance as rated by their teachers. Interestingly, there were no gender effects in math, even though girls were outperforming boys in terms of their grades. Although we found some zero-order correlations between child gender

and parent attributions in line with previous research, there was little evidence to suggest that parent attributions mediated the effect of gender on parent perceptions, once we had accounted for other measures.

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Appendix A

Ability

In general, I believe that my child is (1)Not at all good to (7)Very good in *math/English/sports*

Effort

	Math	English	Sport
Time 1	a=.73 (.72)	.75(.61)	.79(.72)
Time 2	a=.80 (.72)	.80(.76)	.80(.80)

My child finds *domain* (1)very easy to (7)very hard

To do well in *domain*, my child has to try (1)a little to (7)a lot.

Current Expectancies

	Math	English
Time 1	a=.86 (.87)	.87(.87)
Time 2	a=.87 (.85)	.89(.87)

How well is your child doing in *domain* this year? (1)Not at all well to (7) very well.

What grade in *domain* do you expect your child to get this term? coded from 1(A+) to 13 (Fail), and reversed.

Table 1. Summary Statistics and Zero-order Correlations for child gender, child competence, parent success attributions and parent ratings of their child atTime 1 (T1) and Time 2 (T2) in English, Math, and Sport

Math Variables	1	2	3	4	5	6	7	8	9	10	11
1. Child Gender[a]	___	-.12**	-.02	-.04	-.08†	.02	-.01	.06	-.00	-.02	-.08†
2. Gradepoint	-.11**	___	.59**	-.35**	.63**	.31**	-.00	.15**	.46**	-.31**	.52**
3. Ability T1	-.01	.52**	___	-.57**	.91**	.48**	.04	.35**	.54**	-.38**	.50**
4. Effort T1	-.09*	-.42**	-.66**	___	-.50**	-.38**	.19**	-.23**	-.42**	.54**	-.37**
5. Expectancy T1	-.08*	.63*	.76**	-.56**	___	.41**	.03	.26**	.48**	-.34**	.49
6. Talent	.08*	.29**	.52**	-.46**	.40**	___	.02	.36**	.35**	-.35**	.30**
7. Work hard	-.05	-.06†	-.09*	.22**	-.05	-.03	___	.26**	-.04	.14	-.03
8. Skills	-.01	.15*	.29**	-.23**	.23**	.28**	.29**	___	.26**	-.19**	.25**
9. Ability T2	.01	.52**	.67**	-.56**	.59**	.44**	-.12**	.25**	___	-.57**	.90**
10. Effort T2	-.03	-.39**	-.53**	.62**	-.43**	-.37**	.23**	-.15**	-.66**	___	-.53**
11. Expectancy T2	-.09*	.53**	.47**	-.38**	.52**	.30**	-.09*	.17**	.73**	-.59**	___
Mothers:											
M	NA	11.84	5.41	3.85	0	4.49	5.52	5.69	5.42	3.90	0
SD		2.32	1.16	1.42	1.00	1.53	1.33	1.30	1.22	1.49	1.00
Fathers:											
M	NA	12.07	5.49	4.08	0	4.63	5.37	5.35	5.46	4.05	0
SD		2.25	.99	1.20	1.00	1.37	1.17	1.27	1.10	1.24	1.00

Note. Mothers *N*=798, Fathers *N*=543 Due to listwise deletion of data. Correlations for mothers are reported below the diagonal, for fathers, above the diagonal.

†p≤.05, *p≤.01, **p≤.001

[a](1=female,2=male)

English Variables	1	2	3	4	5	6	7	8	9	10	11
1. Child Gender[a]	----	-.22**	-.24**	.18**	-.26**	-.17**	-.02	-.08†	-.21**	.08†	-.21**
2. Gradepoint	-.20**	----	.58**	-.27**	.63**	.38**	.09	.22**	.52**	-.29**	.57**
3. Ability T1	-.18**	.49**	----	-.52**	.90**	.54**	.08†	.40**	.92**	-.46**	.60**
4. Effort T1	.13	-.34**	-.65**	----	-.45**	-.33**	.14**	-.15**	-.42**	.49**	-.34**
5. Expectancy T1	-.22**	.64**	.76**	-.57**	----	.47**	.07	.34**	.63**	-.41**	.62**
6. Talent	-.12**	.31**	.47**	-.41**	.40**	----	.14**	.41**	.41**	-.31**	.37**
7. Work hard	-.04	-.02	-.04	.17**	.00	.08*	----	.35**	.06	.12*	.11*
8. Skills	-.09*	.13**	.29**	-.21**	.24**	.30**	.34**	----	.33**	-.20**	.32**
9. Ability T2	-.21**	.50**	.69**	-.54**	.61**	.43**	-.04	.22**	----	-.57**	.92**
10. Effort T2	.15*	-.36**	-.55**	.62**	-.46**	-.35**	.16**	-.17**	-.70**	----	-.49**
11. Expectancy T2	-.21**	.59**	.55**	-.41**	.62**	.30**	-.04	.16**	.75**	-.60**	----
Mothers:											
M	NA	12.23	5.29	4.04	0	4.47	5.48	5.23	5.15	4.10	0
SD		1.97	1.23	1.40	1.00	1.53	1.32	1.37	1.32	1.50	1.00
Fathers:											
M	NA	12.41	5.30	4.26	0	4.53	5.28	5.21	5.16	4.16	0
SD		1.92	1.09	1.15	1.00	1.42	1.23	1.28	1.21	1.24	1.00

Note. Mothers N=810, Fathers N=543 Due to listwise deletion of data. Correlations for mothers are reported below the diagonal, for fathers, above the diagonal.

†p≤.05, *p≤.01, **p≤.001

[a](1=female,2=male)

Sport Variables	1	2	3	4	5	6	7	8	9	10	11
1. Child Gender[a]	----	.16**	.15**	-.14**	--	.11**	.12**	.13**	.17**	-.11**	--
2. Competence	.16**	----	.27**	-.20**	--	.16**	.19**	.14**	.26**	-.16**	--
3. Ability T1	.13**	.32**	----	-.73**	--	.58**	.38**	.28**	.76**	-.63**	--
4. Effort T1	-.09†	-.22**	-.71**	----	--	-.46**	-.23**	-.13**	-.65**	.72**	--
5. Expectancy T1	--	--	--	--	----	--	--	--	--	--	--
6. Talent	.07*	.22***	.53**	-.46**	--	----	.36**	.32**	.51**	-.43**	--
7. Work hard	.03	.18**	.32**	-.20**	--	.35**	----	.39**	.33**	-.17**	--
8. Skills	.14**	.16**	.27**	-.15**	--	.32**	.41**	----	.24**	-.12*	--
9. Ability T2	.15**	.31**	.77**	-.63**	--	.51**	.33**	.27**	----	-.71**	--
10. Effort T2	-.14**	-.24**	-.65**	.71**	--	-.47**	-.22**	-.18**	-.72**	----	--
11. Expectancy T2	--	--	--	--	--	--	--	--	--	--	----
Mothers:											
M	NA	4.70	4.99	3.61	NA	4.70	5.14	4.00	4.89	3.82	NA
SD		1.42	1.48	1.56		1.73	1.77	1.92	1.39	1.48	
Fathers:											
M	NA	4.69	4.95	3.95	NA	4.65	5.13	3.93	4.86	4.07	NA
SD		1.41	1.42	1.45		1.64	1.71	1.84	1.36	1.43	

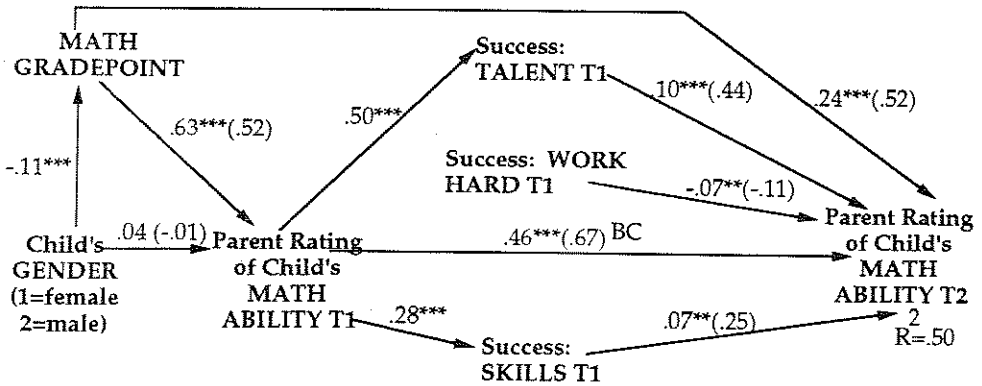
Note. Mothers N=882, Fathers N=543 Due to listwise deletion of data. Correlations for mothers are reported below the diagonal, for fathers, above the diagonal.

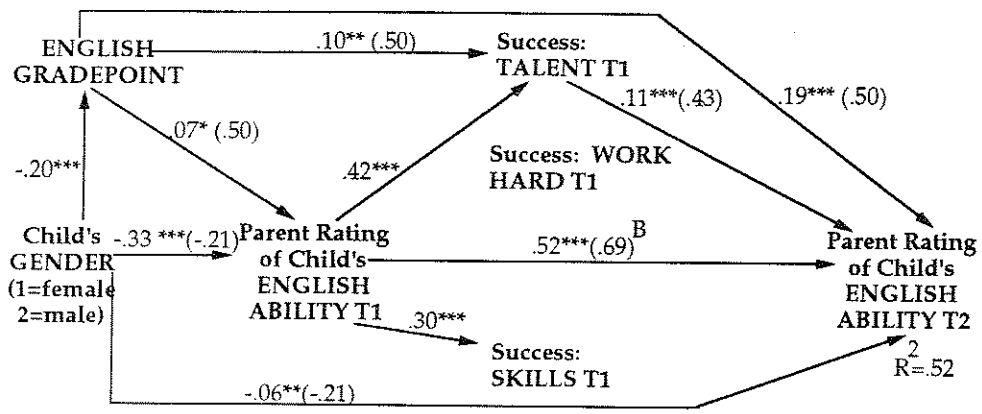
†p≤.05, *p≤.01, **p≤.001

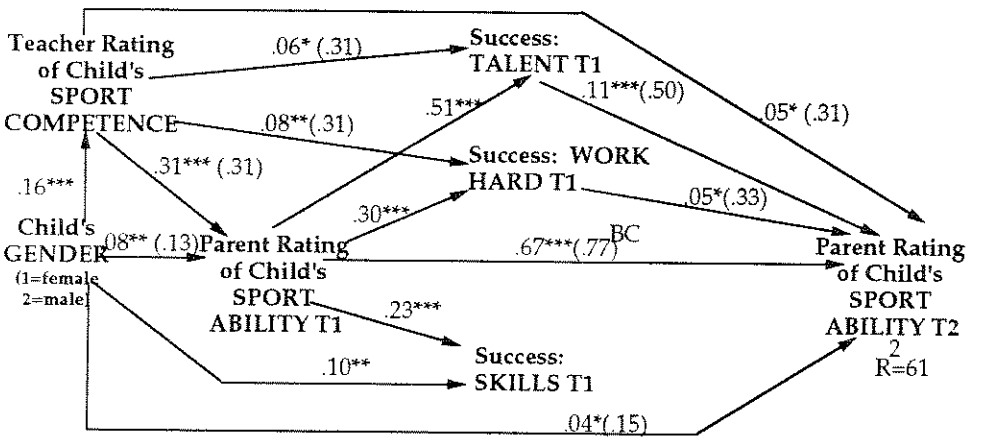
[a](1=female,2=male)

Figure 1,

Mothers' Attributions for their Child's Success as Mediators of Parent Ratings of their Child's Ability from Time 1 to Time 2[A]







Note. Standardized path coefficients are reported. Only those paths significanct at p<.05 are drawn in for clarity. Zero-order correlations of the variable with the T2 ratings are in parenthesis.

Fathers' path models are very similar to mothers, with a few exceptions that are noted in the text.

A. Controlling for previous year's cumulative gradepoint for math and English, and Teacher rating of Ability in Sport.

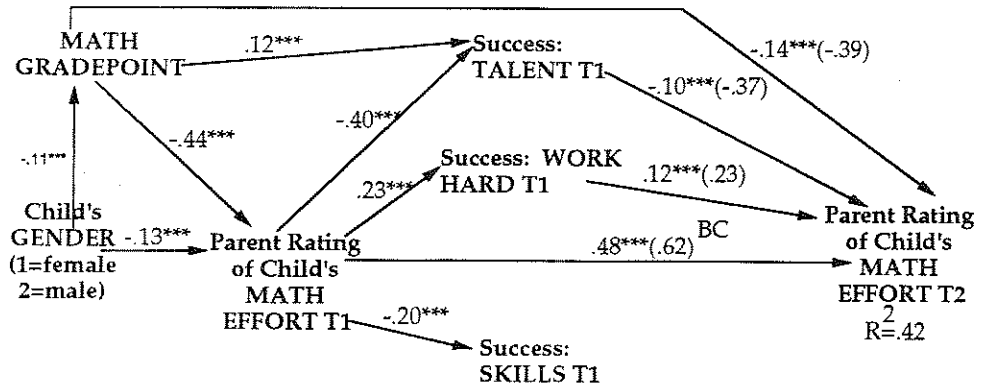
B. Parent T1 rating has a significant indirect effect on parent T2 rating via the mediator, parent attributions

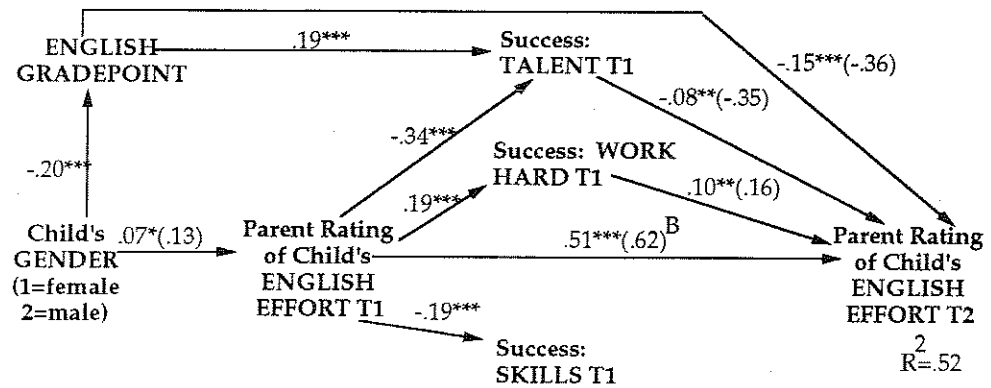
C. The unstandardized regression coefficient of T2 rating regressed on T1 rating is significantly reduced (falls outside the confidence interval) when attributions are entered into the regression equation (after controlling for child's objective performance and gender.)

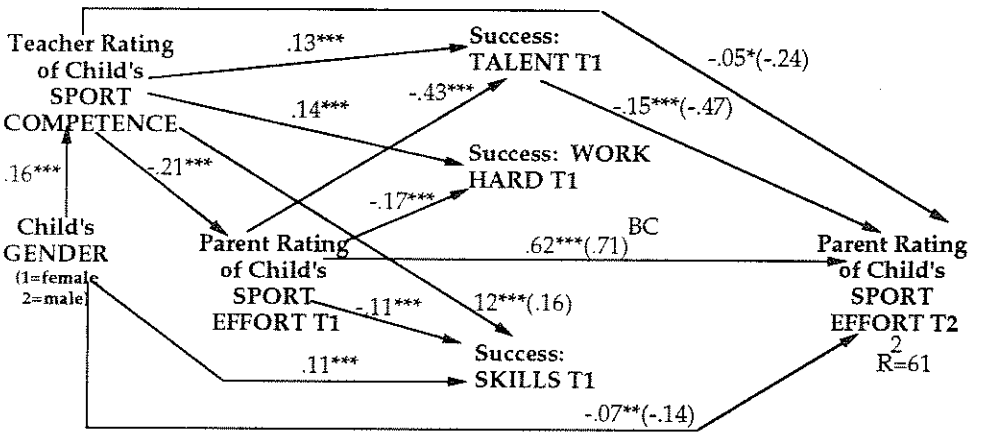
*p<.05, **p<.01, ***p<.001

Figure 2.

Mothers' Attributions for their Child's Success as Mediators of Parent Ratings of their Child's Effort from Time 1 to Time 2[A]







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