DISCUSSION PAPERS IN ECONOMICS

Match Quality and Maternal Investments in Children

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Abstract

Divorce and union dissolution as well as investments in children are associated with signi cant e ects on children's outcomes. Here, I examine factors that might lead to union dissolution and their relationship to investments in children's cognitive skills. Using subjective measures of match quality as reported by mothers in relationships with the childs father, I show that women who report less satisfaction in their relationships spend less time reading with their children. I include baseline measures of relationship quality and various socioeconomic characteristics to control for unobserved heterogeneity. I test various theoretical mechanisms by which we would expect women to decrease their investments in a child using additional information about the match including the couples argument frequency and whether the union dissolves in the future. The anticipation of a unions dissolution decreases investments in children while the relationship is intact, but argument frequency and mothers estimation of the fathers character do not have a measurable e ect. The results suggest that subjective measures tell a more complete story about match quality than indicated by future union dissolution, argument frequency or parental quality. Thus the concentration by policymakers on the marginal decision of divorce or dissolution ignores the heterogeneity within relationships and its e ects on children.

Keywords: Match Quality, Cognitive Skills, Paternal Investments in Children

1 Introduction

It is widely believed that parents' early investments in children have a significant effect on their performance in school and on subsequent tests of intelligence. While some of the variation in measures of intelligence like IQ, grades and standardized exams is likely attributable to genetics, parents are encouraged to read to and with their children for the simple reason that such actions are thought to stimulate intellectual curiosity and development.

In turn, parents likely are endowed with a set of characteristics that lead them to invest more or less in their children's cognitive skills. Education, own parents' investments, and cultural background might influence cultural norms and personal preferences that influence time spent with children. Income and work status represent time constraints on such activities as well as differences in willingness to pay for some activities. However, such characteristics do not fully explain variation in parents' time spent with children and there are likely unobservable characteristics that exert an additional influence. In this paper, I examine whether the relationship of a mother's investment in her children is related to the quality of her relationship with her children's father.

This is the first paper, to my knowledge, that empirically links what I term subjective

There is reason to believe that this effect is capturing individual, person-specific characteristics. It may be that bad parents form bad relationships and thus we see that those who rate their relationship lower are the ones who are investing less in their children. I attempt to control for this unobserved heterogeneity by including controls for prenatal investments

ments are linked to adverse social and psychological outcomes (Cicchetti & Toh 2005), as well as increased rate of disease (Corso, et. al. 2008)[2]. Recently, some work has been done to try to identify biochemistry as the missing link between chaotic households and adverse outcomes (Miller & Chen 2010). While I do not directly link investments to outcomes in this paper, I do provide an alternative hypothesis that parents' choices given marital or relationship discord affect investments, which might, in turn, affect outcomes.

Other, more closely related, work examines directly the link between match quality and household behaviors. These include investments in children as well as other factors that dictate investment levels in children. These papers define match quality using marital status, with much of the analysis hinging on marginal marriages and divorces. Theoretical models such as Brown and Flinn (2007) show the interdependency of child quality and match quality—or really match survival—and lay out the implications of divorce on investments in children. Chiappori, Fortin and Lacroix (2002) show how the divorce decision affects women's labor supply. Aizer and McLanahan (2006) link monetary investments in children to child support paid. My analysis unites some of the ideas in these papers and adds to them by including unmarried couples with children and allowing for more nuance within the match quality category by employing questions posed to mothers about the quality of their relationship.

The closest paper to mine, Schmierer (2010), presents a theoretical model showing that anticipation of divorce results in fathers decreasing time spent with children. Schmierer also presents some empirical evidence to support his model using different data. My work differs primarily with the addition of the subjective match quality variable, mother-father pairs that are unwed and additional variation in the outcome variables not captured by the dichotomous variables he employs.

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[2]Several more papers on this topic can be found on the Center for Disease Control's website http://www.cdc.gov/nccdphp/ace/publications.htm

3 Theoretical Mechanism

There are at least three explanations for why we would expect mothers to decrease the time spent with their children given poor match quality. The first and second are guided by the time constraint and the third is informed by literature in economics about children as a public good.

Firstly, due to natural time constraints, it can be said that couples who argue more have less time to spend with their children because they spend more of their time bargaining among themselves. In the data, I show that couples who argue more rate their relationship lower on average. An alternative explanation is that women who are unhappy in their relationships are acting in anticipation of the end the relationship and thus, the steps that follow that end. Perhaps women who see their relationships as eventually ending are more likely to spend time investing in themselves{taking a class, investing in conspicuous consumptive goods or returning to the workforce, for example. When the relationship appears to be ending, the opportunity cost of not investing in one's future match potential becomes higher. Much of the theoretical work on match quality mentioned above hinges on this idea and thus we see women who are unhappy in their relationships investing more in themselves. With a time constraint, this might result in decreased investment in children.

As a corollary, we can view children as a public good in which both parents invest and receive utility. Union dissolution, in most cases, diminishes the value of the public good through decreased time spent with the child as a result of custody agreements or perhaps by decreasing future returns such as care in old age. As a result, anticipation of the union's dissolution would cause an anticipatory decrease in investment in the child due to a decreased future benefit stream.

While these mechanisms are not mutually exclusive and there are certainly other possibilities by which we might expect a relationship, I can test directly for the time-constraint argument using the Fragile Families data set and questions posed about argument frequency. I also test the anticipation explanation by controlling for the future relationship status of couples. For the 1-year and 3-year follow-up surveys, I can control for whether the parents

birth in 1998, 1999 or 2000 and a significant oversample of unwed mothers who gave birth in the same time period. The study follows both parents of a focal child over several years. Follow-up surveys were conducted one year, three years and five years after birth of the child with the mother and father, individually. The baseline surveys take place in the hospital right around the time of birth and provide baseline measurements for characteristics such as parent quality and match quality. Subsequent surveys are given over the phone and ask similar questions about parent and match quality as well as how time is spent with the child. In particular, I am interested in investment in children's cognitive skills as measured by how much time is spent reading with a child on a weekly basis.

For this paper, I employ the baseline and follow-up surveys as administered to the mother of the child when she remains the primary caretaker and so long as she reports some sort of intimate relationship with the child's father. Mothers who work or have someone look after the child are included, though I do control for whether a child is in someone else's care besides the mother's. If the mother is doing something besides spending time with her child{such as working or job-searching{we expect her to spend less time reading with her child. Mothers who report that their child is living with someone other than the mother are excluded from the sample.

I work with multiple samples from the data. In particular, I examine the responses of women who are in romantic relationships with the father of their child born in any given wave conditional on being involved in the waves before it. Women who are involved with the father in the first wave, women who are involved in the first two waves, then the first three waves and finally all four waves. Women who are in a relationship with someone other than the reported father of the child are dropped.

The first sample is called the `1-year sample' and consists of all women in relationships with the father of the focal child at the baseline and at the time of the one-year follow-up survey. For this group, characteristics such as whether the child is ever in someone else's care, earnings, and in particular, subjective match quality are measured as they are reported at the one-year follow-up survey. This sample has 1,902 observations at the mother level.

The second sample is termed the `3-year sample' and is made up of respondents from the 1-year sample minus any respondents who report having separated or divorced her spouse or otherwise dissolved the romantic relationship with the child's father. For this group, characteristics such as whether the child is ever in someone else's care, earnings, and in particular, subjective match quality are measured as they are reported at the three-year follow-up survey. There are 1,384 women in this group.

The final sample is of women who are involved with the father of the child in every wave, from baseline to the five-year follow-up survey. This allows for pooling and fixed effects specifications on a sample of 1088 women. I call this group the `5-year sample' and characteristics not marked as \at birth" come from the five-year follow-up survey and consists of 1,088 mothers.

Summary statistics for the 1-year follow-up respondents in relationships and the longitudinal sample are provided in Table 1. Those who remain in a relationship with the focal child's father tend to be slightly more educated and older. They are more likely to be white and to have sought prenatal care earlier in the pregnancy. They are less likely to have collected unemployment or received public assistance at the time of the birth of the focal child and less likely to have used drugs, cigarettes or alcohol during the pregnancy.

[Table 1 about here]

4.1   Measures of Match Quality

The Fragile Families data include a number of unique measures of match quality, of which I use several. The primary variable of interest is mother's estimation of relationship quality, but I also add controls for a baseline measure of quality measured by whether the couple is married and their reported chances of marrying, frequency of arguments and whether the relationship ends in a future wave.

Mothers' report of relationship quality is measured in the three follow-up surveys with the question: How would you rate your relationship with child's father? The options are \Excellent", \Very Good", \Good", \Fair" and \Poor". For each of the responses, I create a dichotomous variable taking a value of one for the answer which the respondent gave and zero for the others. I exclude \Poor" from the regression speci cations as the constant.

The relationship quality question was not asked in the baseline survey, but I do have an alternative measure of baseline match quality. I consider whether a parent is married at the birth of the child and, if unmarried, the mother reports that a marriage to the child's father is \Certain", of \High" probability, \Low" probabiity, or a\50-50" chance. This provides a proxy for match quality before the child is born. For purposes of Table 4, I combine and dichotomize this variable, calling it 0-1 Baseline Match Quality. Respondents who are married at the baseline or report a \Certain" or \High" chance of marriage are given a 1 and others are given a 0.

I also measure argument frequency.. In the follow-up surveys, mothers are asked how often they argue with the focal child's father "about things that are important". Answers are coded \Always", \Often", \Sometimes", \Rarely" and \Never". The questions on argument frequency were also di erent in the baseline survey. I employ principal components analysis

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4.2 Measures of Investments in Cognitive Skills

In this paper, I focus here on investments in cognitive skills as measured by reading days per week. Mothers are asked both how many days each week they read to the focal child and how many days per week the father reads to the focal child. Other measures of time investments are asked in a similar manner about activities such as time spent playing inside and watching television. The outcome variable, thus, is measured discretely and takes values between zero and seven. Though one third to one half of the sample reports reading to their child every day of the week (y=7), there is significant variation in the responses and they do vary over time. Table 3 shows the distribution of reading days per week as reported by the mother by wave.

[Table 3 about here]

a higher average number of reading days than those who rate their their relationship as good or fair.

[Figure 1 about here]

4.3 Data and Conceptual Issues

The lack of precision in the measured variables introduces a wide margin for error in this test. Time reading with a child is measured in days per week, for example, and frequency of arguments is coded as often, sometimes or never. Though I do account for the ordered nature of these categorical variables by creating dichotomous variable for each answer, it makes the magnitudes slightly di cult to interpret. In addition, mothers are asked, in hindsight and on average, how many days per week they read with the child as opposed to having some check-o process or time-use survey where we could see actual days or actual hours spent reading. This combined with the discrete nature of the outcome variable indicate some sort of underlying process by which mothers arrive at the number of days they read with their child. Thus, when we do see a signi cant e ect of argument frequency on days spent reading, the magnitudes of the coe cients are somewhat murky, but can at least be interpreted for their sign and signi cance. These issues make the use of an ordered probit speci cation more useful. This is discussed at the end of the empirical section and preliminary results are given at the end of the results section.

5   Empirical Strategy

5.1   Baseline Speci cation

The baseline speci cation is:

$$y_i = \ + \ \sum_{j=1}^{4} \ _j \ MatchQuality_{j;i} + \ X_i \ + \ _i \tag{5.1}$$

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where y indicates the number of days per week that a mother reads with her child, MatchQuality is a vector of dichotomous variables for match quality where one of the ve entries takes a value of one and the others zero. X is a vector of socio-economic and individual characteristics including race, education, mother's age and immigrant status and child's gender as well as the baseline socio-economic characteristics described above.

This model is estimated separately on each of the three regression samples: the 1-Year Sample, the 3-Year Sample and the 5-Year Sample.

5.2   Prenatal Investments

As the lack of variation over time in the match quality variable does not allow for a traditional xed e ect strategy, I attempt to control for unobserved heterogeneity and mediate omitted variable bias by controlling for the mother's baseline match quality and investment in the children. Baseline match quality as measured by a combination of marital status and unmarried mothers' report of the chances of an eventual marriage is added to control for e ects that child quality might have on match quality. Measures of prenatal investment include whether prenatal care was sought, the month in which the rst doctor's visit occurred, whether the mother used drugs and alcohol or cigarettes during pregnancy.[3] Additionally, I control for whether the child was ever breastfed.

At baseline, participants are asked whether they are married, and if they are not married, they are asked what the chances of marrying the child's father is. I use these two measures to control for baseline match quality under the assumption that if a couple married, at some point they would have considered their match high enough to take that step. And similarly, if they intend to marry, there must be some perception of a high quality match. Unfortunately,

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[3]I also added a control for whether the child was of low birthweight, but the variable is sparsely populated for the relevant sample. This, combined with lack of signi cance on the coe cient, led me to exclude it.

the baseline survey does not include the subjective match quality questions asked in future waves.

As the baseline survey takes place at the hospital around the time of birth, there is no measure of reading days. For this, I use measures of prenatal behaviors to control for mothers' initial level of investment in the child.

The measures of mother's prenatal investments in the child including whether prenatal care was received, at what point in the pregnancy prenatal care was sought and behaviors such as alcohol, drug and cigarette use during pregnancy, indicated by the vector Z. I control for baseline match quality as measured by marital status and respondents' report of the chances of imminent marriage. Respondents report a chance of marriage as \Certain", \Good", \50-50", \A Little", or \No Chance".

$$ y_i = \; + \; \sum_{j=1}^{4} \; _j \; MatchQuality_{i;j} + \; \sum_{k=5}^{9} \; _k \; BaselineMatchQuality_{i;k} + X_i \; + Z_i \; + \; _i \quad (5.2) $$

where y_i is reading days again. Here we add Z_i, which is a vector of controls for prenatal investments and $BaselineMatchQuality_i$ which is a vector of dichotomous variables on marital status and chances of marriage reported at the baseline.

5.3   Argument Frequency

Next, I employ a similar strategy controlling for argument to frequency in order to test whether increased argument frequency leads to decreased time spent reading. The Fragile

In addition to the baseline controls, I control for argument frequency as asked in the wave and baseline argument frequency. As the argument frequency questions are asked di erently in the baseline survey, I use principal components analysis to account for the variation in the questions posed on argument frequency at the baseline. The baseline survey asks ve separate questions about argument frequency while subsequent surveys ask how often

I see are more attributable to anticipation of union dissolution for mothers who remain in relationships for all four waves due to the limited time horizon.

I perform the first analysis adding measures of the couple's relationship status in the future for the 1-year and 3-year follow-up surveys[5]. In addition, I test whether the dissolution of marriages affects child investments more or less than the dissolution of relationships of unwed couples. I do this by interacting marital status in that wave with future relationship status for each of the waves available. Thus, for the specification on reading days in the one-

5.5 Fixed Effects and Ordered Probit

The panel nature of the data naturally leads to a fixed effects specification. I measure the change in reading days over the change in relationship status over time for each individual.

$$y_i = \alpha + \sum_{j=1}^{4} \beta_j \; MatchQuality_{j;i;t} + X_{i;t}\gamma + \alpha_i + \epsilon_{i;t} \qquad (5.4)$$

Due to the nature of the left-hand side variable, a discrete variable that takes on values zero to seven, I also use an ordered probit model to estimate the model. While the measure of days per week surely indicates the need for estimation with a count or probit model, the best model is not immediately apparent. Count models, such as the Poisson or Negative binomial, are likely more appropriate in situations where the count is very clearly taken for each observation. If mothers were asked to keep track of the days of the week that they read to their children each week, a count model might be appropriate. However, the survey design, which asks respondents to estimate the number of the days per week they read with

describe it as \Poor". E ects for smaller jumps, from Poor to Fair, say, are not generally distinguishable from zero. Table 5 shows results for each sample. The relevant sample in

mother's report of subjective match quality. In fact, virtually all variables of interest lose their significance, with much of the results being driven by differences in race and education. As relationships end and the pool of women in relationships with the father dwindles, we may see a convergence on similar investment behaviors and similar subjective match quality. Because in earlier waves we see that conflict drives investment, it follows that relationships that persist match better on investment behavior as well as other characteristics.

6.1   Results on Argument Frequency

In this section, I directly test one of the possible theoretical mechanisms for how perception of match quality relates to investments in children's cognitive abilities. In particular, I test whether there is a trade-off between arguing or bargaining and time spent with children. In the baseline survey, a series of questions are posed about how often the mother argues with the child's father about a number of different subjects including drugs, money and the pregnancy. In the two subsequent waves, respondents are only asked about general argument frequency. The question does not appear in the 5-year follow-up survey, so only two surveys are examined here.

In order to have a baseline measure that reflects overall argument frequency, I calculate and retain two principle components from the various measures of argument frequency and supplant the many measures in the regressions. In general, this measure does not predict argument frequencies reported in subsequent follow-up surveys, but is included as a control of prenatal or baseline argument frequency.

In accordance with a theory of time constraints and opportunity costs, I would expect that mothers who report arguing about things that are important with their spouse "Often" or "Sometimes" would spend less time reading with their children than mothers who report arguing "Never" ("Always" is the excluded category). The results, however, are inconclu-

sive, varying greatly in magnitude when included in these speci cations. The signs are as

for di erences in investments in children The match quality coe cient, in this case, could be proxying for couples who divorce even later than observed in the data set, allowing for the all coe cients to be signi cant. This result is extremely important as it shows that we can account for much of the di erence in investments in children by posing questions about subjective match quality.

There may be some confounding e ects here because the sample consists of both couples that are married and unmarried. It is likely that the costs of ending a marriage are di erent than the costs of ending a relationship that may or may not have legal ties, which may, in turn, a ect investments. Thus, I also allow for marital status to be interacted with the future relationship status. This coe cient is small in magnitude and not statistically signi cant for married couples that divorce before the 3-year follow-up survey. There is a di erential e ect, however, for married respondents whose relationships end by the 5-year follow-up survey. These results, when combined, show a positive overall e ect on reading days for married parents whose relationship ends. This suggests there may be something di erent about married respondents who eventually divorce and speaks to the e ect in the opposite direction I predicted for high-quality parents. Though I cannot attribute it to only high-quality parents, there is some evidence of an e ect in the other direction.

6.3   Pooling and Fixed E ects Results

Despite the emphasis that the survey puts on unmarried mothers, it is interesting to nd that there is a large sample, of about 1100 women, that reports some sort of intimate relationship with the father of the focal child for all four surveys. This sample allows for pooling and xed e ects speci cations; the xed e ects speci cations are reported in Table 8. In the pooled speci cations, the coe cient estimates, are, as expected, similar to the cross-sectional estimates and highly signi cant.

When individual fixed effects are added, the coefficient estimates are still within the range of estimates from cross-sectional results, but lose significance. Though most of the women do vary their report of relationship quality and the number of days spent reading with their child, the variation is not enough to allow for a traditional fixed effects strategy. The strong association of the baseline match quality variable and subsequent match quality variables reflects the lack of variation over time in the measure.

[Table8 about here]

6.4   Ordered Probit Results

7   Robustness Checks and Extensions

7.1   Investments in Cognitive Skills versus Time Spent with Children

Despite the strong results on days spent reading with a child, it is still unclear whether there is something particular about investments in cognitive skills that makes them especially affected by match quality or if parents who are happier with their partners are more likely to report higher averages of any time activity their child does.

In order to test this, I run similar regressions to those on reading days per week, but using alternate variables of interest of days per week that a child watches television and days per week that mothers play inside with their children. While these activities are time investments, they are not necessarily investments in children's cognitive abilities, as reading is. In this case, the specifications are identical to Equations 6.1 and 6.2, except that the left-hand side variable measured is days per week that the child watches television or days per week that the child spends playing inside. Television days are only available for the five-year follow-up survey and days playing inside is available for each of the samples.

Television viewing time is an area where we might expect to see the opposite effect, that couples unhappier in their relationships are more likely to set their child in front of the TV while they attend to other matters. Television viewing is limited to the final wave of the analysis and thus I only have results for the 5-year Sample, but match quality is insignificant in all specifications. It seems that better or worse match quality does not induce or relate to increased or decreased average TV watching. There is no statistically significant coefficient on the individual dummy variables for match quality.

In the case of days spent playing, there is some statistical significance in the most parsimonious of regressions. When we add controls for baseline maternal investments and socio-

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economic status, the results become insigni cant for measures of subjective match quality. These results on time spent playing inside and television viewing indicate that subjective match quality is associated with changes in investment-heavy activities, but not necessarily all time spent with children. In addition, there does not appear to be an `opposite' to investments in cognitive skills, at least as measured by television viewing time.

7.2   Direction of causation between parenting and relationship

Finally, I add various measures of estimation of the parents' personalities by the mother. Though these are not necessarily indicative of parenting quality, I control for whether a mother sees her child's father as a good or bad person. This is an attempt to control for omitted variable bias arising from the possibility that bad people or bad parents get into bad relationships.

While the results on match quality are signi cant and strongly correlated with the baseline match quality, I still have not e ectively ruled out the possibility that people who are inherently bad parents are necessarily those who get into bad relationships. Interestingly, the addition of controls for mother's estimation of the father's character does not necessarily have an e ect on the number of reading days in the same way that estimation of the relationship quality does. Mothers who report that their partner is \often" or \sometimes" \fair and willing to compromise" do not report signi cantly di erent reading frequencies than those who report that their partner is \never" \fair and willing to compromise".

This could be interpreted as the inability to reject the hypothesis that bad parents are necessarily those who get into bad relationships. Mothers seem to invest less in their children if they see the relationship as ending or if they are unhappy in the relationship, but not necessarily if they see their partner as a bad person.

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8 Conclusions

In this paper, I show that mother's subjective assessment of the quality of her relationship with a child's father is an important predictor of how much time she will invest in her children's cognitive abilities. These results are robust to the addition of control for a bevy of individual characteristics that account for parental quality, cultural norms and socio-economic status. Mothers who report an excellent relationship with the father of their child spend up to 1.2 days more per week reading with the child than a mother who reports a poor relationship with the father. Importantly, these results show that relationship discord can have an indirect impact on children through how it affects their parents' investment decisions.

In addition, I test some of the theoretical mechanisms by which we hypothesize that match quality could affect parental investment decisions. In particular, I find that argument frequency does not have a significant direct impact. Though we might expect relationship discord to have a directly measurable opportunity cost, we cannot measure it with reported argument frequency. The correlation of argument frequency and subjective match quality likely affects these specifications.

The inclusion of future relationship status in part of the analysis shows that while an upcoming divorce does significantly affect time spent reading with children, it is over and above the effect of a mother's estimation of the match quality. This result is important as researchers can use subjective match quality as a proxy for future relationship status in assessing investments in children, but should not necessarily use it to predict future relationships status. The union dissolution decision, while important, does not fully encompass the range of satisfaction or happiness in an intimate relationship and those gradations can exert an important effect on parents' behaviors, investments in children and otherwise, within the

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relationship. Likely, this relationship could be explored more to examine the link between match quality and other behaviors such as health or education monetary outlays as related to children or investments in oneself.

Further research is needed to examine a link, if any exists, between match quality and

References

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9 Figures

9.1 Figures 1a,b,c

[8] The above boxplots represent the distribution of days per week spent reading with the focal child, delineated by the mother's report of relationship quality in that wave. The ends of the plot (or the `whiskers')

9.2 Figure 2

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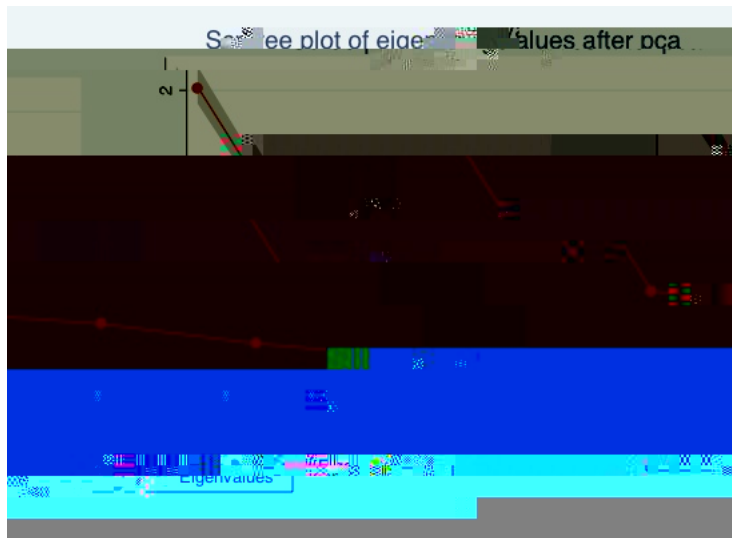
represent the maximum and minimum responses. The top and bottom of the box represent the rst and third quartile and the line in the middle of the box represents the median.

[9]The scree plot of the eigenvalues for the principle components analysis is intended to visually assist in selecting how many components to retain for the analysis. I retained the rst two components as the marginal value of additional components drops signi cantly after the second component as seen in the leveling of the screeplot after the second point.

Table 2
Mother's Relationship Rating by Wave

	1-yr Follow-Up		3-yr Follow-Up		5-yr Follow-Up	
	Number	%	Number	%	Number	%
1 Excellent	906	26.77	715	23.15	595	22.09
2 Very Good	1,033	30.52	870	28.17	733	27.21
3 Good	664	19.62	598	19.37	513	19.04
4 Fair	413	12.2	421	13.63	418	15.52
5 Poor	369	10.9	484	15.67	435	16.15
Total	3,385	100	3,088	100	2,694	100

Table 3
Mother's Reading Days per Week by Wave

	1-yr Follow-Up		3-yr Follow-Up		5-yr Follow-Up	
	Number	%	Number	%	Number	%
0 None |	223	6.62	73	2.38	63	2.37
.5 d/wk |	25	0.74	{	{	{	{
1 d/wk |	189	5.61	81	2.64	112	4.21

Table 4

Baseline Characteristics on Good-Bad Relationship Indicator by Wave

0-1 Indicator of Quality	Baseline	1-yr	3-yr	5-yr
Living in Public Housing	0.00586	0.0540	0.00878	0.0307
	(0.0248)	(0.0347)	(0.0373)	(0.0431)
Any prenatal care?	-0.0680	-0.0660	-0.0932	-0.0394
	(0.0588)	(0.0884)	(0.0916)	(0.105)
First prenatal visit month	-0.0113**	-0.00962	-0.00963	-0.00453
	(0.00511)	(0.00715)	(0.00764)	(0.00865)
Parents Married at Birth?		0.0911***	0.0913***	0.0782***
		(0.0244)	(0.0247)	(0.0274)
Mother drank alcohol during pregnancy	0.0351	-0.0103	0.0517	0.0342
	(0.0501)	(0.0722)	(0.0765)	(0.0819)
Mother used drugs during pregnancy	-0.0932***	-0.124**	-0.100*	-0.177**
	(0.0361)	(0.0563)	(0.0577)	(0.0687)
Mother smoked cigarettes during pregnancy	-0.0965***	-0.00686	-0.0624**	-0.0390
	(0.0201)	(0.0267)	(0.0292)	(0.0330)
Constant	-0.257**	0.676***	0.644***	0.563***
	(0.120)	(0.168)	(0.176)	(0.201)
Observations	4,174	2,304	2,114	1,731
R-squared	0.162	0.073	0.060	0.062

Standard errors in parentheses
*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 5 { Reading Days on Subjective Match Quality

Days per Week that Mother reads with Child

	(1) 1-Year	(2) 1-Year	(3) 3-Year	(4) 3-Year	(5) 5-Year	(6) 5-Year
Subjective Match Quality						
Excellent	0.711*	0.568	1.174**	1.153**	0.532	0.544
	(0.430)	(0.436)	(0.531)	(0.531)	(0.595)	(0.598)
Very Good	0.340	0.200	0.850	0.830	-0.00900	0.000561
	(0.428)	(0.434)	(0.530)	(0.529)	(0.594)	(0.597)
Good	-0.0834	-0.231	0.627	0.636	-0.564	-0.530
	(0.434)	(0.438)	(0.536)	(0.535)	(0.602)	(0.605)
Fair	-0.243	-0.365	0.627	0.636	-0.228	-0.180
	(0.458)	(0.458)	(0.559)	(0.559)	(0.637)	(0.642)
Married or Chances of Marriage at Birth						
Married at Birth		0.703		1.072**		0.321
		(0.727)		(0.460)		(0.455)
Certain Chance		0.924**		1.034**		0.512
		(0.369)		(0.427)		(0.435)
Good Chance		1.011***		0.689		0.282
		(0.375)		(0.436)		(0.447)
Fifty Fifty Chance		0.786**		0.662		0.335
		(0.372)		(0.441)		(0.456)
A Little Chance		1.717***		0.928*		0.0265
		(0.452)		(0.562)		(0.641)
Male Child	-0.163	-0.160	-0.0321	-0.0217	-0.297**	-0.300**
	(0.0998)	(0.0997)	(0.101)	(0.101)	(0.118)	(0.119)
Married (in wave)	0.0737	0.287	-0.0768	-0.259	0.211	0.197
	(0.134)	(0.659)	(0.127)	(0.196)	(0.142)	(0.189)

Table 5{ Continued

	(1) 1-Year	(2) 1-Year	(3) 3-Year	(4) 3-Year	(5) 5-Year	(6) 5-Year
Any Prenatal Care?	-0.978**	-1.004**	-0.713	-0.790	-0.457	-0.542
	(0.481)	(0.481)	(0.543)	(0.545)	(0.163)	(0.164)
Month of First Prenatal Visit	-0.118***	-0.124***	-0.0988**	-0.106**	-0.116**	-0.123**
	(0.0401)	(0.0401)	(0.0422)	(0.0424)	(0.0529)	(0.0532)
Child Ever in Other Care	-0.328***	-0.340***	-0.226**	-0.151	-0.203	-0.186
	(0.104)	(0.104)	(0.101)	(0.107)	(0.153)	(0.164)
Public Asst Receipts at birth	-0.00650	-0.00236	-0.0558	-0.0567	-0.0176	-0.0168
	(0.0405)	(0.0405)	(0.0412)	(0.0411)	(0.0552)	(0.0557)
Unemployment at birth	-0.0299	-0.0287	-0.00723	-0.0110	-0.0284	-0.0275
	(0.0396)	(0.0395)	(0.0421)	(0.0421)	(0.0471)	(0.0472)
In Public Housing at birth	-0.280	-0.300	-0.615***	-0.618***	-0.364	-0.348
	(0.190)	(0.189)	(0.199)	(0.200)	(0.236)	(0.238)
Mother US-born?	0.489***	0.507***	0.131	0.145	0.201	0.197
	(0.173)	(0.173)	(0.173)	(0.173)	(0.198)	(0.199)
Child disabled	-0.157	-0.162	0.461	0.509	0.351	0.369
	(0.371)	(0.370)	(0.426)	(0.426)	(0.589)	(0.590)
Ever Breastfed	0.0323	0.0175	0.0120	-0.00132	0.116	0.115
	(0.111)	(0.111)	(0.116)	(0.116)	(0.137)	(0.138)
Alcohol Use during Preg.	0.00868	0.00851	-0.168	-0.210	0.548	0.517
	(0.387)	(0.387)	(0.405)	(0.405)	(0.449)	(0.450)
Drug Use during Preg.	-0.599*	-0.645**	-0.654**	-0.627*	0.417	0.417
	(0.310)	(0.309)	(0.331)	(0.331)	(0.389)	(0.391)
Cigarette Use during Preg.	0.0639	0.0734	0.272*	0.288*	-0.342*	-0.348*
	(0.147)	(0.147)	(0.158)	(0.158)	(0.188)	(0.190)
Constant	5.168***	4.475***	5.889***	5.334***	6.335***	5.966*

	Days per Week that Mother reads with Child					
	(a)	(1)	(2)	(b)	(3)	(4)
	1-Year	1-Year	1-Year	3-Year	3-Year	3-Year
Argument Frequency						
Argue Never	0.584	0.124	0.178			
	(0.408)	(0.421)	(0.421)			
Argue Rarely	0.236	-0.173	-0.132	(0.292)	(0.310)	(0.310)
	(0.307)	(0.323)	(0.324)	0.569*	0.267	0.271

Table 6{Reading Days on Argument Frequency

	(a)	(1)	(2)	(b)	(3)	(4)
Table 7 { Reading Days on Future Relationship Status						
Days per Week that Mother reads with Child						
	1-Year	1-Year	1-Year	3-Year	3-Year	3-Year
Relationship End 3-yr	-0.0800	0.0312	0.0196			
	(0.134)	(0.145)	(0.145)			
Relationship End 5-yr	-0.204	-1.144**	-1.166**	-0.934***	-0.901*	-0.932*
	(0.331)	(0.460)	(0.460)	(0.307)	(0.502)	(0.501)
Married x Rel Ends at 3-yr		-0.0202	-0.0259			
		(0.355)	(0.357)			
Married x Rel Ends at 5-yr		2.217***	2.233***		0.280	0.277
		(0.651)	(0.650)		(0.627)	(0.626)
Subjective Match Quality						
Excellent		0.942***	0.915***		0.714***	0.692***
		(0.209)	(0.223)		(0.226)	(0.225)
Very Good		0.565***	0.543**		0.399*	0.377*
		(0.203)	(0.216)		(0.226)	(0.225)
Good		0.124	0.0951		0.187	0.197
		(0.214)	(0.220)		-0.324	-0.323
Poor		0.184	0.311		-0.324	-0.323
		(0.461)	(0.461)		(0.561)	(0.560)
Married or Chances of Marriage at Birth						
Married at Birth			0.798			1.110**
			(0.727)			(0.459)
Certain Chance			0.945**			1.069**
			(0.369)			(0.427)
Good Chance			1.034***			0.712
			(0.375)			(0.435)
Fifty Fifty Chance			0.810**			0.700
			(0.372)			(0.441)
A Little Chance			1.730***			0.934*
			(0.452)			(0.561)
Constant	5.687***	4.870***	4.047***	6.913***	6.413***	5.844***
	(0.775)	(0.789)	(0.833)	(0.843)	(0.870)	(0.925)
Observations	1,902	1,902	1,902	1,384	1,384	1,384
R-squared	0.083	0.107	0.115	0.088	0.102	0.109

Standard errors in parentheses

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

Table 8 { Fixed E ects

	(1)	(2)	(3)	(4)	(5)	(6)
	Days per Week that Mother reads with Child					
	1-Year	1-Year	3-Year	3-Year	5-Year	5-Year
Subjective Match Quality						
Excellent	0.364*	0.299	0.645**	0.638**	0.327	0.331
	(0.211)	(0.214)	(0.300)	(0.301)	(0.323)	(0.324)
Very Good	0.167	0.104	0.449	0.442	-0.00206	4.38e-05
	(0.210)	(0.213)	(0.299)	(0.300)	(0.322)	(0.323)
Good	0.167	0.104	0.291	0.298	-0.306	-0.292
	(0.213)	(0.215)	(0.302)	(0.303)	(0.326)	(0.328)
Fair	-0.128	-0.186	0.183	0.185	-0.132	-0.114
	(0.224)	(0.225)	(0.316)	(0.317)	(0.345)	(0.348)
Baseline Married or Chances of Marriage						
Married at Birth		0.340		0.602**		0.150
		(0.354)		(0.264)		(0.250)
Certain Chance		0.464**		0.561**		0.242
		(0.181)		(0.244)		(0.239)
Good Chance		0.506***		0.367		0.143
		(0.185)		(0.248)		(0.245)
50/50 Chance		0.402**		0.348		0.152
		(0.183)		(0.251)		(0.250)
A Little Chance		0.856***		0.462		0.00668
		(0.223)		(0.325)		(0.350)
Observations	1,902	1,902	1,382	1,382	1,087	1,087

Table 9- Ordered Probit Reading Days on Match Quality

Standard errors in parentheses

*** $p<0.01$, ** $p<0.05$, * $p<0.1$

All include controls for race, education, baseline socio-economics and investments

Table 10{E ect on S_i and y_i of Varying Subjective Match Quality

	Days per Week that Mother reads with Child			
	Married	Unmarried	Married	Unmarried
	1 yr Sample		3 yr Sample	
	(2)		(4)	
	Excellent			
predicted S	0.18	0.11	0.15	-0.38
predicted y	5 days	5 days	7 days	5 days
	Very Good			
predicted S	-0.017	-0.09	-0.04	-0.57
predicted y	5 Days	5 days	7 Days	5 days
	Good			
predicted S	-0.23	-0.30	-0.19	-0.72
predicted y	4 days	3 days	6 days	4 days
	Fair			
predicted S	-0.31	-0.38	-0.30	-0.83
predicted y	3 days	3 days	5 days	4 days
	Poor			
predicted S	-0.12	-0.19	-0.49	-1.01
predicted y	4 days	4 days	5 days	3 days

11 Appendix I

Table I1- Marginal Effects for Ordered Probit Estimation using 'meoprobit'

	c1	c2	c3	c4	c5	c6	c7	c8
Sample Freq	0.064	0.545	0.102	0.176	0.106	0.133	0.0266	0.338
Prob at mean	s .054	0.052	0.10	0.18	0.11	0.14	0.028	0.33
	Average Marginal Effects at the mean for each cuto point							
Excellent	-0.051	-0.036	-0.053	-0.056	-0.012	0.007	0.005	0.196
	(0.016)	(0.0121)	(0.018)	(0.021)	(0.006)	(0.002)	(0.001)	(0.071)
Very Good	-0.040	-0.028	-0.040	-0.03995838	-0.00775309	0.00754201	0.00387032	0.14401513
	(0.018)	(0.013)	(0.019)	(0.020)	(0.005)	(0.003)	(0.002)	(0.070)
Good	-0.017	-0.012	-0.017	-0.017	-0.003	0.003	0.002	0.062