



The influence of union instability and union quality on children's aggressive behavior [☆]

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ABSTRACT

We investigate whether mother's poor union quality attenuates the association between union instability and young children's behavioral adjustment. Using data from three waves of the Fragile Families and Child Well-being Study to consider children born to married or cohabiting mothers ($N = 1730$), we determine that children who have experienced poor union quality between mothers and their partners have higher predicted aggressive behavior scores at age 3, regardless of whether they have experienced union transitions, compared to children who have experienced high-quality, stable unions. Children who have experienced instability in the context of higher-quality unions and relatively less acrimonious dissolutions are similar to children raised in high-quality stable unions in terms of predicted aggressive behavior scores.

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1. Introduction

A growing body of research has found support for the idea that children's behavioral development and school performance may be influenced as much by multiple changes in family composition during childhood as by the attributes of the families in which children reside at any given point (Cavanagh and Huston, 2006, 2008; Fomby and Cherlin, 2007; Osborne and McLanahan, 2007; Wu and Martinson, 1993). Most research on union instability has focused specifically on the effects for children of experiencing the repeated formation and dissolution of a parent's cohabiting and marital unions. Underlying research on the effects of union instability is the concept that children and their parents or parent-figures form a functioning family system, and repeated disruptions to that system, caused by either the addition or departure of a parent's partner or spouse, may lead to behaviors with potentially deleterious long-term consequences (Fomby and Cherlin, 2007).

An alternative explanation of why union instability negatively affects children's well-being is that children who experience multiple partnership transitions also may be exposed repeatedly to a home environment characterized by poor union quality between parents and their partners prior to union dissolution or as parents and partners negotiate roles in new unions. In the context of a single union, parental conflict and poor union quality have been found to be negatively associated with children's psychological and academic adjustment and the transition to adulthood (Amato and Booth, 1997; Amato et al., 1995; Amato and Sobolewski, 2001; Jekielek, 1998; Morrison and Coiro, 1999; Musick and Bumpass, 1999; Vandewater and Lansford, 1998). We hypothesize that repeated exposure to poor union quality in multiple unions may have a similarly negative effect on young children's socio-emotional development. By poor union quality, we mean a relationship that

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at least one partner characterizes as not supportive and often degrading. With regard to union instability, we are referring to the number of maternal marital or cohabiting partnership transitions a child is exposed to, rather than to how long a child resides in a given union or whether he or she experiences repeated break-ups and reunions in a single partnership.

We test three pathways through which exposure to poor union quality and union instability may contribute to children's behavioral development. Specifically, we consider whether (a) union quality and instability are unrelated processes that have independent effects on children's behavior (the *independent effects* hypothesis); (b) the apparent effect of instability is explained by the effect of poor union quality (the *selection* hypothesis); or (c) poor union quality and multiple union transitions combine to uniquely impact children's behavior (the *interaction* hypothesis).

The focus on poor union quality as a potential explanation contributes to a family process model of why instability matters in children's lives. Prior research has found that the experience of multiple transitions in partnerships, particularly in early childhood (Cavanagh and Huston, 2008), remains a significant predictor of poor outcomes for children even after controlling for a variety of selection factors into union instability (Fomby and Cherlin, 2007), income changes and residential mobility following a partnership transition (Osborne and McLanahan, 2007), and parenting behavior and child attributes measured at interview (Cavanagh and Huston, 2008; Cavanagh et al., 2006). Collectively, these factors measure conditions that are correlated with, but not directly indicative of, family functioning in multiple unions. In this study, we describe mother-partner union quality as a characteristic of family functioning. We use a longitudinal framework to look within unions over time in order to identify to what extent poor mother-partner union quality and union transitions co-occur, and to determine whether and how that co-occurrence explains the effect of instability on young children's behavioral development.

We use three waves of data from the Fragile Families and Child Well-being Study ("Fragile Families Study"), a large birth cohort sample representative of urban births, to investigate the behavioral development of children at age 3 as a function of maternal union stability and mother/partner union quality. Because of the large oversample of unmarried births and the urban nature of the sample, the families in this sample may be at particular risk of union instability (Osborne and McLanahan, 2007), as compared to families in other high-quality nationally-representative studies that include fewer disadvantaged families and thus include less variation in multiple early union transitions. We restrict our analysis to children born to mothers who are married to or cohabiting with the child's biological father at the child's birth ($N = 2971$ at baseline) in order to consider similar trajectories of union transitions. To evaluate the effects of union transitions and poor union quality, we compare children who have experienced either or both of these conditions to children who have remained in high quality, stable cohabiting unions or marriages since birth.

2. Background

2.1. Union quality and divorce

Cause to investigate the effects of children's repeated exposure to poor union quality that are potentially associated with union instability arises from research on divorce, which has investigated the relative effects of pre-disruption parental conflict and eventual union dissolution on children's well-being. Several studies indicate that there is at least a partially *spurious* association between the experience of divorce and child adjustment such that pre-disruption attributes of the parents' union, including parental conflict, influence both the likelihood of divorce and children's behavior (Cherlin et al., 1998, 1991). Other evidence suggests that pre-existing attributes of the union prior to dissolution *moderate* the effect of divorce on children such that children whose parents exhibited high levels of conflict fare better after the parents' divorce compared to children who remain in high-conflict unions (Amato et al., 1995; Booth and Amato, 2001; Hanson, 1999; Jekielek, 1998; but see Morison and Coiro, 1999; Strohschein, 2005; Sun, 2001).

2.2. Union quality and multiple union transitions

The experience of multiple union transitions adds a wrinkle to research on union quality and divorce because it must take account of the potential for multiple sources of union quality. Children who experience the formation and dissolution of a parent's multiple unions may be exposed to poor union quality with each new partner, or to concurrent disputes with a parent's current partner as well as with the child's other biological parent. The repeated exposure to contentious relationships, or the experience of contention from multiple sources, may uniquely impact children's adjustment in the context of family structure change (Dunn et al., 2005; Hanson et al., 1996).

In addition to multiple sources of union quality, research on multiple union transitions and union quality must take account of the fact that children may be more likely to experience parents' poor union quality in higher-order unions compared to the union into which they were born. Higher-order marriages are more likely to end in divorce compared to first marriages (Goldstein, 1999), and higher-order cohabiting unions are at least as likely to dissolve compared to earlier marriages or cohabiting unions (Poortman and Lyngstad, 2007), suggesting that the prevalence of poor union quality in higher-order unions may be greater compared to union quality in first unions. Higher-order unions may be more likely to engender discontent because of selection into multiple unions: some partners in higher-order unions may possess personality traits that both provoke conflict and contribute to a higher risk of union dissolution (Furstenberg and Spanier, 1984). Higher-order unions that include children also may encounter more occasions for contested territory as blended families negotiate relationships

between biological parents, stepparents, and stepsiblings (Cherlin, 1978). Finally, higher-order unions are also more likely to begin as cohabiting unions, rather than as marriages (Poortman and Lyngstad, 2007; Wu and Schimmele, 2005). To the extent that cohabiting unions are more likely to dissolve compared to marriages (Osborne et al., 2007), poor union quality may be more frequent among cohabitators in higher-order unions.

2.3. Effects of union quality and union instability

The joint experience of union instability and poor union quality may affect children in one of three ways: through independent effects, through selection, or through an interaction effect. Under the *independent effects hypothesis*, multiple union transitions and poor union quality would each have an independent, significant association with children's development. This hypothesis is supported indirectly by the finding from longitudinal data that children were affected by their mother's union instability after taking into account factors that potentially were associated with a history of poor union quality, including a woman's self-reported delinquent behavior, the number of unions she experienced prior to her child's birth (Fomby and Cherlin, 2007), and whether she has had children with prior partners (Osborne and McLanahan, 2007).

Additional indirect evidence comes from literature on divorce and remarriage. Children who experienced the separation or divorce of their parents during early or middle childhood had increased behavior problems after the union dissolution, regardless of their parents' level of prior conflict, but children who remained in high-conflict unions also had elevated levels of behavior problems (Morrison and Coiro, 1999). In a study following children into adulthood, children whose parents eventually divorced had elevated emotional problems prior to union dissolution compared to children whose parents remained together, but the magnitude of the difference in behavior problems continued to increase following divorce, suggesting that the divorce had an independent effect on the trajectory of children's emotional development (Cherlin et al., 1998). In a nationally representative sample of families, adolescents residing in stepfather families experienced higher levels of parental conflict compared to children residing with both biological parents because of relatively high ongoing conflict with the biological father in addition to conflict with the stepfather. But while high levels of conflict independently predicted adolescents' externalizing and internalizing behavior problems in stepfamilies, that exposure to conflict *did not* explain the significantly poorer adjustment of adolescents in stepfather families compared to families with two biological parents (Hanson et al., 1996). These studies together support the argument that family structure and the exposure to conflict or other measures of poor union quality affect children's behavior and emotional development through independent processes.

Under the *selection hypothesis*, children who experience multiple union transitions also may be more likely than other children to experience poor union quality, and poor union quality may explain the apparent effect of union instability. Support for this hypothesis comes from nationally-representative, longitudinal samples of children from the United States and Great Britain, for whom the negative effect of divorce on children was largely explained by factors that were present in a child's family prior to divorce, especially for boys (Cherlin et al., 1991). Using data from the National Survey of Families and Households (NSFH), Vandewater and Lansford (1998) found that youth in middle childhood or adolescence reported significantly higher internalizing and externalizing behavior problems and trouble with peers when their biological parents exhibited high levels of conflict, regardless of whether the parents were married or divorced. Similarly, adolescents in the NSFH living with biological parents in high-conflict unions were statistically equivalent to adolescents residing with a stepfather on several outcomes related to schooling, substance use, and early family formation (Musick and Meier, forthcoming). Support for both the independent effects and selection hypotheses would be evident if the magnitude of the independent effect of multiple union transitions on children's adjustment were attenuated by accounting for selection factors but remained statistically significant (Cherlin et al., 1998).

Under the *interaction hypothesis*, children would be uniquely impacted by the combined effects of union instability and exposure to poor union quality. In support of this hypothesis, prior research shows that children who experienced their parents' divorce following a highly-conflicted union reported *better* psychological adjustment compared to children who experienced divorce following a marriage characterized by low conflict or compared to children who remained in high-conflict unions (Amato et al., 1995; Hanson, 1999; Jekielek, 1998; Strohschein, 2005). However, the relationship between union instability and poor union quality may go in the opposite direction, such that repeated exposure to union formation and union dissolution in the context of poor union quality may not give children the "stress relief" that is hypothesized to explain why children from high-conflict unions fare relatively well following a single divorce event compared to children who remain in high-conflict unions. Furthermore, children who experience repeated changes in union status over a short time horizon may differ from those who experience only a single change if they lack the time required to return to a point of emotional equilibrium after the crisis of exiting a particular union status (Amato, 2005; Amato and Keith, 1991; Hetherington and Kelly, 2002).

2.4. Union quality and union instability among young children

Most research has focused on the consequences of transitions that have accumulated by middle childhood or adolescence (Cavanagh, 2008; Cavanagh et al., 2006, 2008; Cavanagh and Huston, 2006, 2008; Fomby and Cherlin, 2007; Heard, 2007a,b). Transitions in family structure begin much earlier, however, and have significant consequences for later development. Using data from the Fragile Families Study, Osborne and McLanahan (2007) found that over one-quarter of children born to cohabiting mothers and nearly half of children born to single mothers in urban areas experience at least two family structure transitions by age 3. Nationally, by age 2, 30% of children born to cohabiting parents have experienced the dissolution of their

parents' union, compared to 2% of children born to married parents (Susan L. Brown, 2008, unpublished conference paper). And in a sample skewed toward relatively economically-advantaged families, 15% of children had experienced at least two family structure transitions by the end of kindergarten (Cavanagh and Huston, 2008). Research in developmental psychology indicates that children are highly reactive to change in their immediate environments in the period from infancy to preschool (Duncan et al., 1994), and children who are exposed to frequent instability and environmental stress in their early years may continue to accumulate destabilizing events throughout childhood. Furthermore, the effects of early family structure instability may be more salient than later instability in predicting children's behavior, as evidenced by research on social adjustment with peers in middle childhood (Cavanagh and Huston, 2008) and school adjustment in adolescence (Heard, 2007b). The current study follows children from birth to age 3 and tracks up to four union transitions and the experience of mother/partner union quality with up to three partners (including the biological father) to assess response to poor union quality and instability in the early life course.

3. Data and methods

The Fragile Families Study is a longitudinal birth cohort study including nearly 5000 children born between 1998 and 2000 in hospitals in 20 US cities with populations of 200,000 or more. Mothers of the children were interviewed in person within 48 h of the child's birth and again when the children were 1 and 3 years old. The response rate at baseline is 82% for unmarried mothers and 87% for married mothers. The response rate is calculated as the percentage of all eligible mothers who provided complete interviews. Eighty-two percent of all mothers participated at all three waves (Bendheim-Thoman Center for Research on Child Wellbeing, 2005). The Fragile Families Study is especially well-suited to our research question because it includes contemporaneous reports on union quality for unions that have ended and for unions that are ongoing, so that we can account for changes in quality within a union over time and for multiple sources of poor union quality, issues that may be significant for children who have experienced multiple transitions in family structure. Additionally, because of the relatively disadvantaged status of the urban sample, the study includes a large sample of cohabiting and marital unions that are likely to experience multiple union transitions (Osborne and McLanahan, 2007). The data we use come from the mother core study interview at each wave and the 36-month in-home parent interview.

3.1. Analytic sample

The baseline sample includes 2971 focal children whose mothers were cohabiting with or married to the child's biological father at birth, representing 61% of all families in the Fragile Families Study. We identify mother's union status at each wave through measures constructed by Fragile Families staff and made available on the public release version of the data. Definitions of cohabitation vary slightly across waves: at baseline, women who are romantically involved or in an on again, off again relationship with the child's biological father are asked if they are living together, without further elaboration of how "living together" might be defined. In subsequent waves, mothers are asked whether they are living together *most* of the time with a romantic partner. As a result of question wording changes or an exaggerated assessment of relationship status at a child's birth, it is possible that the constructed measures overestimate transitions out of cohabiting relationships after the baseline interview (see Teitler et al., 2006).

We select women in unions at birth so that the transitions we study are in the same direction (i.e., toward exits from unions followed by entries to new unions); that is, we do not observe entrances into unions among women who were single at their children's birth. One strength of the Fragile Families data is that they include substantial information on dating relationships (i.e., non-coresidential unions) that mothers are in, but because data on union quality with new dating partners are not available at wave 2, we do not include children whose mothers are in dating relationships at birth, nor do we count transitions to dating relationships with new partners in subsequent waves. Our final analytic sample includes 1730 focal children, or 58% of the eligible baseline sample. This reduction is due to sample attrition and to item non-response. Of the baseline sample of children with married and cohabiting mothers, approximately 80% of mothers participated in both subsequent interview waves; and of that subset, 80% participated in the in-home study in wave 3, where information on children's behavior was reported (i.e., 64% of eligible parents participated in all of the study components). An additional 6% of the sample was lost to item non-response on either the independent or dependent variables.

Our attrition analysis indicates that study participants in the analytic sample are similar to excluded participants in terms of marital status, mother's age, and parity at the child's birth, mother's family structure at age 15, child's sex, and the prevalence of multiple births. The analytic sample is distinct in that participants are more often college-educated and non-Hispanic white and less often used Medicaid at the child's birth compared to excluded study participants ($p < .05$). In sum, the analytic sample is relatively less disadvantaged than the baseline sample overall, but importantly, it is similar to the baseline sample in terms of the distribution of married and cohabiting unions at birth.

3.2. Dependent variable

The Fragile Families Study administers items from the Child Behavior Checklist (Achenbach, 1992) to mothers when children are 36 months old in order to develop age-appropriate indicators of externalizing and internalizing behaviors. Research

has consistently found that union instability is associated with externalizing behavior problems (Capaldi and Patterson, 1991; Fomby and Cherlin, 2007; Osborne and McLanahan, 2007), but that it has only minimal effects on internalizing behavior (e.g., withdrawn or anxious/depressive behaviors) (Cooper et al., 2008). Our purpose is to investigate one pathway that would explain the established association between instability and externalizing behavior. We use the *aggressive behavior* subscale from the externalizing behaviors composite because the Fragile Families Study does not include all information on items in the complete externalizing behavior scale for the full 36-month sample. Aggressive behavior includes destructive behavior, strong emotional outbursts, physical aggression toward people and animals, implacability, and a lack of response to discipline or punishment. Examples of question wording include “He/she destroys things belonging to his/her family or other children,” “He/she doesn’t get along with other children,” and “Punishment does not change his/her behavior.” Parents are asked whether this is never true (0), sometimes/somewhat true (1), or often/very true (2). Our summed score includes 15 items and has an alpha reliability score of .86. The variable is approximately normally distributed with a skewness statistic of .54.

3.3. Key independent variables

The Fragile Families Study includes information on mother’s union status at each wave, and we compute measures of the number of union transitions the child has experienced (into or out of marriage or cohabitation) at each wave. By age 3 (the third wave of the study), it is possible that a child who resided with both biological parents at birth has experienced up to 4 recorded union transitions. The data do not include information on unions that formed and dissolved between waves, so we potentially underestimate the total number of transitions a child has experienced. In addition, consistent with prior research using these data (Osborne and McLanahan, 2007), we do not count a transition from cohabitation to marriage as a transition in this analysis because we are interested in the number of partnerships the mother forms or dissolves over this period.

At each wave, the mother interview component of the Fragile Families Study also gathers data on union quality between a child’s mother and the biological father if she still resides with him or ended her union with him since the last wave, and between a child’s mother and her new married or cohabiting partner, if relevant. These items capture a variety of areas where negative mother/partner interactions may affect a child’s well-being, either through the child’s direct observation of poor union quality or through the influence of union quality on parenting style and parenting stress. We use four of five items included in the union quality index administered at baseline. One item addresses the biological father’s negative behavior, including insults and criticism, and three items address positive behavior, including perceived willingness to compromise, expressions of affection, and encouragement. At waves 2 and 3, we use 10 of 12 items that were included in the union quality scale from the mother interview. In addition to the items addressed at baseline, the expanded scale addresses the biological father and/or current partner’s controlling behaviors (controlling money or access to family, friends, and work) and expressions of emotional support. For each item, the respondent indicates whether her partner exhibited the behavior often (re-scaled to be coded as 0), sometimes (1), or never (2). Positively-worded items are reverse-coded so that a higher score indicates that the behavior was exhibited more frequently. The alpha reliability for the 4-item baseline scale is .57; alpha scores for the 10-items scales range from .67 to .86. Our scales exclude items pertaining to partner’s violent behavior to be consistent with prior work that has used these data to assess union quality (Carlson, 2007) and because factor analysis on other scales has demonstrated that violence is a construct separate from general union quality (Funk and Rogge, 2007). The full battery of items included in our analysis is in Appendix A.

We sum the individual union quality items to develop a scale score for each relationship reported in a given wave. For each wave, we then sum the individual scales from the three possible sources of union quality that children have experienced: mother’s union quality with biological father in ongoing relationship, mother’s union quality with separated biological father before union ended, and mother’s union quality with new partner. At each wave, no child will experience more than two sources of union quality, i.e., union quality between the mother and separated biological father and the mother and current partner. We adjust the scores for individuals reporting on both former and current partners in a given wave so that the sum of those union quality scales is re-scaled by a factor of .5 (i.e., take the average of the two scores) in order to avoid the mathematical problem of necessarily having a higher score when reporting on union quality in two relationships. Because the number of items in the union quality scale is different at wave 1 compared to waves 2 and 3, we standardize the summed scale scores from each wave and take the average of those standardized scores over three waves. This value represents the average level of union quality a child has experienced between birth and age 3. We compute this measure for all children whose mothers participated in all three survey waves. We recognize that this measure masks variation over time in levels and sources of union quality; as we describe below, we also tested a variety of other specifications of union quality.

From these data, we create a 6-category classification that combines children’s family structure history and exposure to mother–partner union quality. Children’s family structure history may fall into one of three mutually-exclusive categories: stable, where a child has resided with his/her biological parents (married or cohabiting) from birth to age 3; separated, where a child continues to reside with his/her biological mother, but the child’s father is no longer in the household by year 3; or multiple transitions, where the child’s biological mother has re-partnered at least once by year 3. Fifty-nine children whose mothers are separated from the biological father at wave 2 and re-partnered with him at wave 3 are treated as separated (that is, having experienced one separation), rather than as in multiple unions or in a stable union. Children’s experience of mother–partner union quality may fall into one of two categories: low union quality, meaning that the average amount of union quality the child has experienced is below the 25th percentile for the distribution of union quality

experience in the sample; or high quality, meaning that the average amount of union quality experienced is at or above the 25th percentile for the sample. Relationships above the 25th percentile are not of equal quality, and may not all be “high quality.” Based on several robustness checks, described below, we chose to use the 25/75 cut-off for this measure to get a more accurate portrayal of low-quality unions, and we limit the number of comparison groups to avoid very low cell sizes. When combined, our 6 classifications of family structure history and exposure to conflict are stable, low-quality; separated, low-quality; multiple transitions, low-quality; stable, high-quality; separated, high-quality; and multiple transitions, high-quality. Results presented here were similar using a definition of exposure to low union quality with a cut-off at the median, rather than at the 25th percentile. Results were also similar using a continuous measure of union quality interacted with the categorical measures of union history.

As we suggested above, a measure of average union quality exposure over a child’s lifetime potentially masks variation in a child’s experience. If a child experiences the end of an especially poor-quality union and subsequently resides in a high-quality union, the average of the two experiences will reflect moderate union quality overall, which may not adequately capture the experience of a qualitative change over time. To address this concern, we tested other specifications of union quality trajectories including a count of the number of waves during which a child resided in a high-quality union (0–3) and a set of categorical indicators representing whether a child experienced only low union quality, mostly low union quality, mostly high union quality, or only high union quality. The latter specification took into account that children whose mothers were separated and not re-partnered at wave 2 and/or wave 3 did not have valid current union quality data for those periods. Results using those specifications were consistent with results presented here, but cell sizes for some groups were quite small. The selected specification is the most parsimonious method we have identified that permits us to use data from each wave and to include all types of union trajectories. Our descriptive analysis provides a nuanced picture of the variability in children’s experience of union quality over time.

3.4. Control variables

We control for parents’ marital status at the child’s birth (cohabiting vs. married) because marital unions are subject to less instability compared to cohabiting unions (Manning et al., 2004; Osborne et al., 2007). A mother’s family transitions prior to her child’s birth are represented by three attributes: whether she resided with both parents at age 15; whether she had prior births with another man; and the number of prior partners she reports (regardless of whether she cohabited with or was married to any of those partners). Because mother’s mental health is associated with children’s behavioral development through genetic and environmental mechanisms, and because mother’s mental health is known to bias reports of children’s behavior, we control for mother’s experience of depression in the last year reported when her child was 1 year old. Mother’s low-income status at the time of the child’s birth is assessed based on whether the hospitalization and delivery were covered by Medicaid or other public assistance. Additional sociodemographic controls include mother’s race/ethnicity, educational attainment, and age at child’s birth, child’s birth order and sex, and whether the child was a singleton or twin birth.

3.5. Analytic strategy

We use ordinary least-squares regression to estimate a child’s aggressive behavior score as a function of maternal union instability, mother–partner union quality, and the other characteristics described above. Specifically, we develop an analytic model that assesses the effects of family structure change and exposure to poor union quality on externalizing behavior problems at age 3, given that the child resided with the biological mother and father at birth. We make our assessment by comparing children who have experienced poor union quality and/or family structure change to children who have remained with their biological parents in stable, high-quality unions since birth.

In order to evaluate our hypotheses pertaining to independent effects, selection, or interaction effects, we present our analysis in four steps. In the first step, models show the bivariate association between union quality and children’s aggressive behavior and union stability and behavior. In the second step, we include union stability and union quality in the same model to determine whether the association of union stability with aggressive behavior is driven by differential selection on union quality. In the third step, we use the 6-category classification of union quality and union stability to consider whether children who have experienced union instability are uniquely affected by poor union quality compared to children in stable, poor-quality unions. We use the 6-category classification for ease of presentation and discussion; it is mathematically equivalent to a model with full interaction terms between the categorical union quality measure (low vs. high) and the categorical union stability measures. In the fourth step, we introduce our full list of control variables to the 6-category classification of union stability and union quality.

4. Results

Weighted means and frequencies that describe sample attributes by family form and union quality exposure are summarized in Table 1. The table shows that children who are exposed to poor union quality have higher externalizing behavior problems scores compared to children in comparable family structures who have experienced better union quality. Children

Table 1

Weighted descriptive statistics (proportions or means with standard errors), children residing with both biological parents at birth.

	Overall		Stable, high-quality		Stable, low-quality		Separated, high-quality		Separated, low-quality		Multiple transitions, high-quality		Multiple transitions, low-quality	
	Mean/prop.	SE	Mean/prop.	SE	Mean/prop.	SE	Mean/prop.	SE	Mean/prop.	SE	Mean/prop.	SE	Mean/prop.	SE
<i>Dependent variable</i>														
Aggressive behavior problems score (0–30)	8.58	0.33	8.15	0.43	8.75	1.01	9.31	0.49	10.82	0.99*	8.71	1.12	9.66	1.14
<i>Independent variables</i>														
Married (vs. cohabiting) at birth	0.68	0.02	0.79	0.02	0.76	0.06	0.10	0.03*	0.34	0.07*	0.16	0.08*	0.63	0.16
Mother's educational attainment														
Less than high school	0.24	0.03	0.20	0.03	0.32	0.10	0.33	0.06	0.35	0.07*	0.24	0.08	0.60	0.18
High school graduate/GED	0.31	0.03	0.27	0.04	0.36	0.11	0.43	0.07	0.36	0.07	0.65	0.12	0.28	0.14
Some college	0.19	0.02	0.20	0.03	0.15	0.05	0.22	0.05	0.21	0.07	0.12	0.06	0.12	0.06
College graduate or more	0.26	0.03	0.34	0.04	0.16	0.06*	0.03	0.01*	0.07	0.04*	0.00	0.00*	<0.01	0.01
Mother's race/ethnicity														
Hispanic, any race	0.31	0.03	0.33	0.04	0.33	0.10	0.22	0.05	0.33	0.08	0.10	0.05*	0.07	0.05
Non-Hispanic white	0.35	0.03	0.41	0.04	0.27	0.07	0.11	0.03*	0.28	0.06	0.12	0.05	0.27	0.14
Non-Hispanic black	0.25	0.02	0.14	0.02	0.36	0.11	0.65	0.06*	0.35	0.07*	0.77	0.09*	0.62	0.17
Non-Hispanic other race	0.09	0.02	0.12	0.03	0.04	0.02*	0.01	0.01*	0.03	0.02*	0.01	0.01*	0.04	0.04
Depressed in last year	0.18	0.02	0.12	0.02	0.39	0.10*	0.17	0.04	0.26	0.06*	0.35	0.19	0.30	0.15
Mother's family/partner history														
Has children with another father	0.22	0.02	0.18	0.03	0.18	0.07	0.42	0.06*	0.32	0.06*	0.51	0.16*	0.69	0.15
No. of other romantic partners ever	2.61	0.17	2.77	0.25	2.82	0.24	1.78	0.21*	2.27	0.29	1.35	0.42*	2.37	1.24
Family of origin intact at 15	0.54	0.03	0.58	0.04	0.59	0.10	0.28	0.05*	0.45	0.08	0.17	0.07*	0.75	0.12
Attributes of birth														
Mother's age at child's birth	28.20	0.35	28.84	0.41	30.31	1.16	24.84	0.43*	25.82	0.74*	21.79	1.00*	23.68	0.52
Child's birth order	2.10	0.06	1.96	0.06	2.58	0.19*	2.33	0.18	2.28	0.17	2.36	0.62	2.33	0.31
Child is male	0.55	0.03	0.62	0.04	0.38	0.09*	0.55	0.06	0.41	0.07*	0.34	0.12	0.23	0.11
Mother had twins	0.02	0.00	0.01	0.00	0.03	0.02	0.01	0.01	0.04	0.03	0.02	0.01	0.00	0.00
Hospitalization/delivery covered by Medicaid	0.46	0.03	0.38	0.04	0.58	0.09	0.74	0.05*	0.53	0.08	0.86	0.06*	0.68	0.15
N	1730		972		183		256		205		76		38	

Source: Fragile Families and Child Well-being Study, Baseline to Year 3.

* Different from stable, high-quality unions at $p < .05$.

whose mothers are separated or who have re-partnered were born less often to married parents compared to children whose parents remain together. Mothers who have separated or re-partnered less often have a college education, more often are non-Hispanic black, more often have had children with another father, and more often used Medicaid at the child's delivery compared to mothers remaining in stable unions. Mothers who report low levels of union quality less often have a college education and *more* often come from families that were intact at age 15 compared to mothers who report higher union quality. Among stable unions, mothers who report low union quality more often used Medicaid at the child's birth compared to those who report high union quality. In contrast, separated or multi-partnered mothers with high levels of union quality more often used Medicaid at their child's birth compared to separated or multi-partnered mothers with low levels of union quality.

Table 2 presents average relationship quality for each type of union at each wave by type of union history. (We report average quality rather than the summed score from the union quality scale because the number of items included in the summed score changes across waves, which could confuse interpretation.) The average relationship quality score ranges from 0 to 2, and a higher score indicates better union quality. Children who reside with both biological parents in a stable family structure experience the highest union quality at birth (mean = 1.75), and union quality remains consistent across waves. Children whose parents' unions eventually dissolve experience lower union quality between mother and biological father at birth and in subsequent waves, although union quality deteriorates more slowly in couples that do not dissolve their union until wave 3. Children whose mothers eventually repartner report union quality with their new partner that is as high or higher than union quality among stable couples. Data are not available to assess whether new partnerships that eventually dissolve experience a decline in union quality prior to dissolution.

Overall, this descriptive picture suggests that children who have experienced multiple union transitions have the greatest exposure to poor union quality in the union into which they are born. Parents in those unions have a more negative interaction style initially, and relationship quality declines over time. Subsequent unions are on a par with stable unions in terms of quality while those unions are in progress, but the lack of information on relationship quality at the end of those subsequent unions may lead to overestimates of overall quality.

Table 3 presents column percentages for each of our three categories of children's family structure experience by level of union quality. The table indicates that about 15% of children born to married or cohabiting mothers who remain with both parents to age 3 have experienced poor union quality (using the 25th percentile of the standardized union quality

Table 2

Mean union quality (range = 0–2, with a higher score indicating better quality) at each wave and overall, by mother’s union history to age 3.

	Union quality at birth	Union quality w/father, w2	Union quality w/new partner, w2 ^c	Union quality w/father, w3	Union quality w/new partner, w3	Union quality 3 wave average
Married or cohabiting at birth (N = 1730)						
Stable (N = 1155)	1.75 (.29)	1.76 (.25)	na	1.75 (.26)	na	1.76 (.22)
Separated at w2 and w3 (N = 263)	1.62 (.34) [†]	1.24 (.49) [*]	na	1.68 (.30) [†]	na	1.49 (.32) [†]
In union at wave 2, separated at w3 (N = 198)	1.69 (.33)	1.67 (.31) [*]	na	1.29 (.49) [†]	na	1.55 (.27) [*]
Re-partnered at w2, then stable (N = 15)	1.40 (.61) [*]	.96 (.58) [*]	1.83 (.39)	na	1.81 (.36)	1.54 (.23) [*]
Re-partnered at w2, broken up at w3 (N = 10)	1.48 (.34)	1.45 (.45) [*]	1.81 (.25)	na	na	1.59 (.24)
Re-partnered at w3 (N = 77)	1.64 (.34)	1.37 (.52) [*]	na	1.02 (.46) [†]	1.86 (.23)	1.57 (.25) [*]
New partners at w2 and at w3 (N = 12)	1.65 (.41)	1.13 (.53) [*]	1.85 (.22)	na	1.86 (.16)	1.63 (.21)
Visiting at wave 1 (N = 1274 at wave 1) ^b	1.58 (.39)	1.61 (.38)	1.88 (.15)	1.47 (.43)	1.87 (.20)	1.56 (.35)

na, not applicable.

^a 59 cases who were separated at wave 2 and reunited with father at wave 3.

^b Category not compared to stable unions in analysis of variance.

^c Group differences in union quality with new partners were not statistically significant.

^{*} Group mean differs from group mean for stable unions at $p < .05$.

Table 3

Column percentages, 6-category classification of family structure history and exposure to mother–partner union quality among children living with both parents at birth.

Mother–partner union quality	Family structure history			
	Stable	Stable Separated	Multiple transitions	Row total
Low quality (<25th percentile)	15.84%	44.47%	33.33%	25.00%
High quality (≥25th percentile)	84.16%	55.53%	66.67%	75.00%
N	1155	461	114	1730

distribution as a cut-point). Children whose mothers have separated or re-partnered are more likely to have been exposed to poor union quality: 44% of children whose mothers have separated have experienced poor union quality, and 33% of children whose mothers have made multiple transitions have experienced poor union quality overall. These data suggest that union instability and poor mother/partner union quality are likely to co-occur, although stable unions are not immune from poor union quality.

Table 4 presents results from ordinary least-squares regressions predicting children’s aggressive behavior problems scores. The bivariate models include indicators of whether a child has experienced a parental separation or multiple transitions relative to remaining in a stable relationship (Model 1A) and whether a child has experienced poor union quality relative to high union quality (Model 1B). Model 1A shows that both types of union instability are positively associated with children’s predicted aggressive behavior scores, as is the experience of poor union quality, and the effects are statistically significant at least at the .01 level. Children who have experienced their parents’ separation have predicted aggressive behavior scores that are 1.03 points higher (about one-fifth of a standard deviation) and children who have experienced multiple transitions have predicted scores about 1.7 points higher compared to children who are in stable unions. The difference in the magnitude of the coefficients for union instability type is not statistically significant. Model 1B shows that children who have experienced poor union quality have predicted behavior scores that are 1.41 points higher compared to children who have experienced high union quality.

Model 2 includes union instability and union quality in order to determine if poor union quality attenuates the effect of union instability on young children’s aggressive behavior. The association between residing with a separated mother and children’s aggressive behavior is reduced to non-significance when poor union quality is included in the model, and the magnitude of the coefficient is reduced by over 60%. The association between multi-partner union history and child behavior is reduced by 30% but remains significant at the $p < .05$ level. Poor union quality retains statistical significance at the $p < .001$ level. These results are generally consistent with the selection hypothesis, indicating that the apparent association of union instability with elevated aggressive behavior problems is largely attributable to the overrepresentation of the experience of poor union quality among children whose parents’ unions have ended.

Model 3 uses the 6-category classification of union stability and union quality to assess the interaction effects hypothesis. The excluded category is children who remained in stable, high-quality unions to age 3. The model indicates that predicted aggressive behavior problem scores are significantly higher for children who have been exposed to poor union quality, regardless of family transition history: the coefficients associated with residing in a stable, separated, or multiple transition family structure with exposure to poor union quality range in value from 1.55 (about one-quarter of standard deviation) for children in poor-quality stable unions to 4.24 (about three-quarters of a standard deviation) for children who have experienced multiple transitions and poor union quality. Each coefficient is statistically significant at the .001 level.

Model 4 adds control variables to the 6-category classification in Model 3. The magnitude of the coefficients associated with exposure to poor union quality are attenuated for all union stability types, but the associations remain statistically

Table 4

Coefficients and standard errors from OLS regression estimates of child's aggressive behavior score at age 3, Fragile Families Study (children born to cohabiting or married parents only) (Standard errors are presented beneath unstandardized regression coefficients).

	Model 1A	Model 1B	Model 2	Model 3	Model 4
<i>Child's union history (vs. stable)</i>					
Parents separated	1.03***		0.39		
	0.31		0.31		
Parents separated, mother had another union	1.7**		1.17*		
	0.55		0.54		
Child exposed to low (vs. high) union quality		1.41***	1.33***		
		0.17	0.18		
<i>Stability/union quality (vs. stable, high-quality)</i>					
Stable, low union quality				1.55***	1.18**
				0.45	0.45
Separated, low union quality				2.06***	1.00*
				0.42	0.44
Separated, high union quality				0.64	-0.32
				0.39	0.42
Multiple transitions, low union quality				4.24***	2.92**
				0.91	0.92
Multiple transitions, high union quality				0.79	-0.50
				0.66	0.68
Married at birth (vs. cohabiting)					-0.98**
					0.34
<i>Educational attainment (vs. high school grad/GED)</i>					
Less than high school					0.34
					0.36
Some college					-0.49
					0.37
College or more					-0.51
					0.50
<i>Ethnicity (vs. non-Hispanic white)</i>					
Hispanic, any race					-0.11
					0.39
Non-Hispanic black					-0.16
					0.37
Non-Hispanic other					0.11
					0.68
Mother depressed in year after birth					1.35***
					0.34
<i>Prior family transitions</i>					
R had any child with another man					0.57
					0.34
No. of partners R had prior to child's birth					0.12*
					0.05
R's family intact at 15					-0.07
					0.29
<i>Attributes of birth</i>					
Mother's age at child's birth					-0.04
					0.03
Child's birth order					-0.01
					0.14
Child is male					0.41
					0.26
R had twins					-0.26
					0.93
R used Medicaid/other public aid at delivery					0.51
					0.33
_cons	8.85***	3.4***	3.59***	8.6***	9.59***
	0.16	0.72	0.73	0.18	0.82
N	1730	1730	1730	1730	1730
R ²	0.01	0.04	0.04	0.03	0.07

* $p < .05$.** $p < .01$.*** $p < .001$.

significant at the .01 level for children in stable, poor-quality unions ($\beta = 1.26$) and for children who have experienced multiple union transitions ($\beta = 2.92$ and at the .05 level for children who have experienced separation ($\beta = 1.00$). Stepwise regressions (not shown here) indicate that attenuating effects of low union quality for all groups result primarily from controlling for marital status at birth, depression history, multi-partner fertility, and Medicaid status at birth. The size of the coefficients represent increases of roughly one-sixth to one-half of a standard deviation in a child's predicted aggressive behavior problems score at age 3 when she or he has experienced low union quality. While relatively small effects at the individual level, collective increases in the likelihood of children's aggressive behavior have important consequences in families and classrooms (Belsky et al., 2007).

Post-hoc tests comparing the coefficients associated with stable, low-quality unions and multi-partnered, low-quality unions in Model 4 are not significantly different from one another at the .05 level, indicating the absence of an interaction effect. However, tests comparing the coefficients for separated, low-quality unions to multi-partnered low-quality unions reach statistical significance at the $p < .05$ level ($p = .048$). In other words, the association of poor union quality with children's aggressive behavior is nearly constant (in statistical terms) across union stability types after controlling for mothers' demographic and socioeconomic attributes, although there is some evidence that children who have experienced the dissolution of one union followed by entry into another union may be more affected by poor union quality than are children who have experienced a single separation. Children who have experienced higher-quality unions in the context of union instability have predicted behavior scores that are statistically equivalent to children who have remained in stable, high-quality unions.

4.1. Robustness checks

We evaluated additional specifications of the relationship between union quality and union instability. Building on prior work on union quality (Vandewater and Lansford, 1998), we used the median, rather than the 25th percentile, as a cut-point to define low union quality in an analytical model otherwise identical to Model 4. The results were very similar, but the magnitude of the coefficient for the low union quality/multiple transitions category, was about 17% smaller in the alternative specification (although still significant at $p < .001$). Post-hoc tests of equality between coefficients indicated no significant differences among low-quality union types, providing support for the selection hypothesis.

We also tested the continuous form of the standardized union quality measure interacted with categorical measures of union history. The coefficient for the main effect of union quality was *negative* and statistically significant at $p < .001$, indicating that an increase in mother's average union quality was associated with a lower predicted aggressive behavior score. The coefficients associated with direct measures of union history and the interaction terms were statistically insignificant. These results also support the selection hypothesis.

Other specifications of the union quality measure included a scale that retained items pertaining to violence, and separate scales for positive and negative behaviors. Results where the relationship violence items were included were similar to the full model presented here, except that again the magnitude of the coefficient associated with the low union quality/multiple transitions category was about 15% smaller in magnitude. Where positive and negative behaviors were regarded separately, the magnitude of the coefficient associated with negative union quality was larger than that associated with positive behavior, but both were statistically significant and in their expected directions, with negative indicators predicting more aggressive behavior and positive indicators predicting fewer behavior problems.

Finally, we tested an alternative specification of our indicator of maternal depression. Information on maternal depression was collected when the focal child was 1 year old, resulting in a temporal ordering problem: poor union quality might have led to maternal depression, rather than the other way around. Therefore, we tested the mother's report of her own parents' depression when she was an adolescent, reported at year 3. The magnitude and statistical significance of the association of the family history variable were nearly identical to those shown in Model 4.

5. Discussion

Our analysis indicates that exposure to poor union quality has a deleterious effect on young children's behavioral development, regardless of children's family structure instability. Specifically, children who have been exposed to a low level of cumulative union quality by age 3 have higher predicted aggressive behavior problem scores compared to children in high-quality stable unions, regardless of whether they remain with both parents, have experienced a separation, or have experienced at least one additional union. Children in separated or multiple-transition families who have been exposed to high union quality, in contrast, do not have significantly different predicted aggressive behavior problem scores compared to children in high-quality, stable unions.

Of the three hypotheses we considered, our analysis best supports the selection hypothesis, which posits that the apparent effects of union instability on children's behavioral adjustment are largely explained by residing in unions characterized by a lack of support and ineffective communication. While the experience of poor union quality is most common among those children who have experienced family instability, the effect of union quality is not unique for that group. Our results highlight the importance of measuring family process as a precursor to union dissolution and as a by-product of adjustment to union formation in order to explain why family structure instability is associated with negative child outcomes.

Our results suggest that the mechanisms that spur union transitions, and especially union dissolution, vary depending on mother/partner union quality, and those mechanisms may have different consequences for children. Our descriptive results

offer a hint of an explanation: women who report higher union quality and who are no longer with their child's biological father more often were low-income at the child's birth, and among multi-partnered mothers, those with higher union quality have lower educational attainment. One direction for future research is to consider whether parents whose multiple unions dissolve as a result of economic stress are distinctive in their consequences for children compared to those that end primarily because of interpersonal conflict.

Our findings pertain to very young children, who may be more vulnerable to exposure to poor union quality than to family structure transitions. Mother/partner disputes may provoke immediate stress responses that manifest as behavior problems, whereas union transitions may have less immediate impact, especially if extended kin are available to support parents with young children. Therefore, the effect of poor union quality relative to union transitions may be greater for young children compared to older children.

Among our limitations, data on union quality are available at all waves only for women in married or cohabiting relationships. As a result, our estimate of family structure change excludes transitions into or out of dating or visiting relationships and other union types, and may underestimate the total number of partner transitions to which children are exposed. This is particularly true for African-American mothers, who are less likely to cohabit or marry compared to Hispanic and non-Hispanic white mothers (Osborne and McLanahan, 2007). Therefore, we recommend caution in interpreting our results as they pertain to African-American mothers and children, as those in married or cohabiting unions are not generally representative.

In addition, unions that occurred between waves are not captured, so that the total number of union transitions a child has experienced may be underestimated and short-term unions also may be systematically underrepresented. Furthermore, the sample design is not nationally representative. The effects of parental conflict and union dissolution may be distinctive for non-urban children, who are more often white and have higher family income and who may have less exposure to union instability compared to children in the Fragile Families Study. However, the moderating effect of pre-disruption parental conflict on the association between the experience of divorce and children's adjustment has been established in nationally-representative studies, lending support to the notion that the patterns we observe for multiple union transitions also may be broadly relevant. Finally, sample sizes for children who have experienced multiple union transitions are relatively small. We recommend caution in interpreting the null association between the experience of multiple transitions in the context of high union quality and children's aggressive behavior.

We propose three extensions to the current research. First, the effect of exposure to high conflict between mothers and partners may be lessened for children who have positive relationships with their parents. In other words, parents who engage in poor union quality may have generally poor communication skills that contribute jointly to family structure instability and to children's externalizing behavior problems. Accounting for parenting style and other indicators of parent-child relationship quality would isolate the effect of mother/partner union quality on children's development.

Second, we anticipate that our measure of average union quality exposure may be insufficient to capture how children respond to poor union quality. Rather, the duration, timing, intensity, and source of union quality (whether with the biological father or another partner) may characterize the exposure to conflict in ways that explain variation in how children respond. We have investigated whether there is variation in children's aggressive behavior depending on the source of poor union quality among children whose mothers have re-partnered at least once. In a model containing all of our control variables, we did not find a statistically significant difference in the magnitude of the effect of low union quality with a child's biological father compared to the effect of low union quality with a new partner; both were positively associated with children's predicted externalizing behavior scores, although neither effect was statistically significant at the .05 level. Given the small sample size ($N = 114$), those results should be interpreted with caution.

The effect of union quality on children also may vary depending on whether a parent is in a cohabiting union or a marriage. Cohabiting couples are more likely to engage in conflict and to demonstrate less commitment to one another compared to married parents (Brown, 2003; Stanley et al., 2004), have lower income and educational attainment on average (Manning and Lamb, 2003; Manning and Lichter, 1996), and have a higher probability of union dissolution (Graefe and Lichter, 1999; Manning et al., 2004; Osborne et al., 2007). These attributes may be associated with lower union quality overall in cohabiting unions, so that children born into cohabiting unions may be particularly at risk both for low union quality and instability in family structure. Alternatively, conflict may be less associated with union dissolution and have less of an effect on children born to cohabiting parents than married parents. The legal and social commitment of marriage is higher than that of cohabitation, and thus the level of conflict necessary to prompt union dissolution may be lower among cohabitators than married parents. Despite these plausible expectations, supplementary analyses did not show a significant difference in the effect of low union quality on children born into cohabiting unions compared to marriages.

This research has significant implications for policies aimed at increasing the stability of families through relationship skills training. Improving couples' communication patterns to avoid overt conflict is an important first step, but the programs should also emphasize respect, support, and mutual well-being between partners both in stable unions and in unions that are ending. Our findings suggest that in the limited cases where separation occurs in a more positive environment, children's well-being is not damaged in the short-term. However, most relationships that end in separation are characterized by poor union quality, at least in the waning days of the relationship. Forming new relationships does not necessarily negate the effect of exposure to poor union quality in prior unions, and often brings about stressors that put new union quality at risk. The potential impact of union instability on children may be minimized if parents and their partners employ strategies to reduce the acrimony associated with union dissolution and to thoughtfully integrate blended families in the course of new union formation.

Appendix A. Questions about mother/partner conflict, Fragile Families Study, waves 1–3

Thinking about your relationship with (baby's father/current partner), how often would you say that: (0 = often, 1 = sometimes, 2 = never).

	Wave 1	Wave 2	Wave 3
He is fair and willing to compromise when you have a disagreement, would you say often (0), sometimes (1), or never (2)?	X	X	X
He expresses affection or love for you?	X	X	X
He insults or criticizes you or your ideas?*	X	X	X
He encourages or helps you to do things that are important to you?	X	X	X
He tries to keep you from seeing or talking with your friends or family*		X	X
He tries to prevent you from going to work or school*		X	X
He withholds money, makes you ask for money, or takes your money*		X	X
He tries to make you have sex or do sexual things you don't want to do*		X	X
He listens to you when you need someone to talk to		X	X
He really understands your hurts and joys		X	X

*Reverse-coded for analysis.

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