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A RESEARCH NOTE ON THE STABILITY OF UNIONS FORMED POST-CONCEPTION

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A Research Note on the Stability of Unions Formed Post-Conception

Abstract

There is a large literature examining the stability of mid-pregnancy unions, and parallel work on unions formed after a nonmarital birth, but research has yet to compare pre- and post-birth unions while explicitly considering whether the union is with the father or a new partner. Using the National Longitudinal Survey of Youth, 1997 Cohort (NLSY97), I compare union stability among three groups of mothers with non-union first conceptions: those with a mid-pregnancy union with the father (N = 203), those with a post-birth union with the father (N = 333), and those with a union with a new partner (N = 342). Compared to mid-pregnancy unions with the father, post-birth unions with the father are 35% more likely to dissolve. New-partner unions are more likely to dissolve than both types of father unions. These associations persist when accounting for union type as well as socioeconomic and demographic factors.

Changes in the response to conceptions occurring outside of cohabitation and marriage are part of broader shifts in the link between marriage and childbearing. Much has been written about coresidential unions formed *after* a conception but *prior* to birth – how frequently these unions occur, what form these unions take, and the stability of these unions. These studies show that even as fewer non-union conceptions are immediately followed by a coresidential union prior to birth (England, Shafer, & Wu, 2013), a growing proportion of women's unions appear to be prompted by such an event (Gibson-Davis & Rackin, 2014; Gibson-Davis, Ananat, & Gassman-Pines, 2016; Hayford, Guzzo, & Smock, 2014; Lichter, Sassler, & Turner, 2014). Further, coresidential unions formed during pregnancy (colloquially known as 'shotgun' unions and referred to as 'mid-pregnancy' unions hereafter) seem to be at an elevated risk of instability (Gibson-Davis, Ananat, & Gassman-Pines, 2016; Lichter, Michelmore, Turner, & Sassler, 2016).

What is generally missing from the literature on the timing and ordering of conception and union formation/stability is recognition that post-conception cohabitation or marriage with a biological parent can occur not just prior to the birth but afterwards. Although demographic analyses often consider a birth as the end-point for 'legitimating' a conception occurring outside of a coresidential union *or* as the starting point for exposure to union formation with a new partner, it is almost certainly the case that individuals view romantic relationships, coresidential unions, conceptions, births, and post-birth behaviors as part of a longer arc in which these events are not discrete or separate. Put differently, not cohabiting or marrying prior to birth does not preclude the possibility of living with their child's other parent in the future (McLanahan & Beck, 2010; Waller, 2001); such a union would fulfill the goals of many marriage promotion programs, but these unions may be less desirable if they have elevated dissolution risks.

Whether there is something unique in terms of union stability about pre- vs. post-birth union formation among those with a conception outside of a coresidential union remains to be

seen. It is quite possible there is a stability gradient due to selection, with the most advantaged individuals in the most committed relationships forming a mid-pregnancy union, followed by those who form a union with the other parent after birth; unions with someone besides the other parent, regardless of timing, are likely be less stable (Gibson-Davis, 2014). In this paper, I analyze mothers' post-conception union stability using several rounds of the National Longitudinal Survey of Youth, 1997 Cohort (NLSY97). The NLSY97 is uniquely suited for such analyses because it has a roster of IDs for the other parent of each of the respondent's children *and* a separate roster with IDs for each cohabiting and marital partner. With these two rosters, one can match parents and partners together using IDs, allowing one to link children to cohabiting and marital partners even if the conception or birth did not occur within the dates of that union. Specifically, I compare the stability of three types of unions: mid-pregnancy unions with the father, post-birth unions with the father, and new-partner unions. Note that the term 'union' here refers to coresidential unions rather than the broad range of romantic relationships.

Post-Conception Union Stability

The weakening link between childbearing and marriage has been widely noted (Cherlin 2004; Nock, 2005; Pagnini & Rindfuss, 1993), and the practice of marrying prior to birth among those with non-union conceptions has declined over time (England, Shafer, & Wu, 2013). However, union formation, especially cohabitation, during pregnancy remains common (Gibson-Davis & Rackin, 2014; Lichter, Sassler, & Turner, 2014; Rackin & Gibson-Davis, 2012). In general, mid-pregnancy unions are assumed to be with the child's other parent (a very reasonable assumption), and mid-pregnancy unions are almost certainly selective of women whose relationship with the biological father is quite strong and who may be relatively advantaged themselves. It is nonetheless possible that a small proportion of women's mid-pregnancy unions are with a different partner, particularly among teens and young adults whose sexual and

romantic relationships are often quite fluid. Mid-pregnancy unions with someone other than the father could occur, for instance, if young women have concurrent or closely spaced relationships (Manning, Giordano, Longmore, & Flanigan, 2012) or on/off relationships (Halpern-Meekin, Manning, Giordano, & Longmore, 2013). To date, research has been unable to distinguish mid-pregnancy unions with the father from those that are with a new partner.

If women and couples do not respond to a non-union conception by forming a mid-pregnancy union, union formation after a birth undoubtedly still occurs. The majority of women with a nonmarital birth eventually cohabit or marry (Gibson-Davis, 2011, 2014), and some – perhaps many – of the initial unions formed after a birth are with the child's father. Certainly, many new parents are romantically involved even if they do not live together (McLanahan & Beck, 2010), with about a third of these couples cohabiting or married one year after birth (Carlson, McLanahan, & England, 2004). However, although single new parents may want to have a stronger relationship with their child's other parent, many face a number of social and economic barriers to moving toward more committed unions or even to maintaining their non-residential romantic relationship (Edin & Reed, 2006; Gibson-Davis, Edin, & McLanahan, 2005). The strongest and most committed likely formed their unions prior to birth, leaving behind a pool of individuals forming either post-birth unions in which the partners have a weaker relationship or one or both partners have characteristics linked to elevated dissolution risks (such as low levels of education or poor employment prospects). What this also means, though, is that some new mothers go on to form an initial post-birth relationship with a new partner, especially over longer post-birth durations as the "magic moment" of birth passes (Gibson-Davis, 2014).

The timing of cohabitation and marriage vis-à-vis conception has been linked to the risk of dissolution. In general, mid-pregnancy unions are less stable relative to unions formed prior to conception (Lichter, et al., 2016), but this seems to be due in large part to differences in the

initial union type formed. In general, cohabiting unions are less stable than marriages, and the majority of post-conception unions are cohabitations, at least initially (Lichter et al., 2016; Rackin & Gibson-Davis, 2012). Rackin and Gibson-Davis (2012), using the same data as the current analysis and focusing only on unions formed prior to birth, found that the risk of dissolution did not vary between pre-conception and mid-pregnancy direct marriages nor were there differences in stability between pre-conception and mid-pregnancy cohabitations. Other work on the linkage between cohabitation, marriage, and union stability (again limited to those in a union at birth) further suggests that cohabiting unions that transition to marriage either before or after having a child are no less stable than marital unions with children that were not preceded by cohabitation (Musick & Michelmore, 2015). What union type (i.e., cohabitation or marriage) seems to be tapping into, then, is some aspect of relationship quality.

Although more careful attention to the nuances of union type, as described above, is a key improvement, a major gap remains in our knowledge about the stability of post-conception unions: how do post-birth unions fare? The studies above only examine timing differences for unions formed *prior to birth*. And while the Fragile Families survey has provided numerous insights into post-birth union formation and stability (see McLanahan and Beck, 2010 for a review of this research), it cannot, by design, incorporate pre-birth union behaviors. Given that many of the first unions formed after birth among single mothers are with the father, it is important to know whether these 'delayed' unions – those formed after a birth but with the father – exhibit different risks of stability relative to those formed more immediately in response to a pregnancy. When faced with a non-union conception, it seems likely that the most committed couples form a union prior to birth, similar to the transition to marriage prior to birth among cohabiting couples with a conception (Lichter et al., 2016). If this is the case, then, one would expect that mid-pregnancy unions with the father would be more stable than those formed post-

birth. It is also possible, though less likely, that post-birth unions formed with the father would be just as stable as those formed during pregnancy, as the former will have survived the challenges of parenting across households and remaining romantically involved (or becoming more seriously involved) and reaching a point at which coresidence seems like a feasible option, rather than perhaps impulsively reacting to the pregnancy. Moreover, regardless of timing, the economic and social costs of dissolution (i.e., changes in contact, coresidence, and involvement) would be similar for all biological parents, and so dissolution risks may not vary by timing.

Of course, this assumes that post-birth unions are with the father rather than a new partner, and being able to distinguish between those two types is of paramount importance. There is a large literature documenting the high levels of instability among the unions formed by unmarried mothers (Bramlett & Mosher, 2002; Gibson-Davis, 2014; Teachman, 2008), along with work showing that union formation does not confer the same benefits among single mothers as it does other women, especially when the union dissolves (Lichter, Graefe, & Brown, 2003; Williams, Sassler, & Nicholson, 2008). Evidence shows the least advantaged women are selected into forming unions with new partners (Cancian & Meyer, 2014), perhaps out of financial need rather than solely on the basis of positive relationship factors, which would likely increase the risk of dissolution. Marriage market opportunities for single mothers are also fairly restricted, a situation that is exacerbated to the extent that disadvantaged women have characteristics that make them less attractive to higher-quality partners (Manning, Trella, Lyons, & Du Toit, 2010). It is also worth stating the obvious – women whose first post-conception union is with a new partner have either experienced the dissolution of a non-residential romantic relationship with the biological father or conceived their child in a casual sexual encounter, both of which suggest an underlying predisposition to partner instability. Finally, given the difficulties that stepfamilies face (such as conflict, role ambiguity, and jealousy) relative to

biological parent families (Cherlin, 1978; Stewart, 2007; Sweeney, 2010), unions formed with new partners – regardless of timing – are likely to be highly unstable.

In sum, this research brief addresses the following question: Among those forming unions after a conception, how is the timing of union formation relative to conception *and* birth associated with stability, and does this vary by whether the union is with the father or a new partner? I address this question using data uniquely suited for such an analysis and control for two key sets of factors linked to stability: socioeconomic status and union type (i.e., cohabitation vs. marriage). There is likely to be a strong socioeconomic gradient across union timing and partnership type (biological father vs. new partner), with the most advantaged forming unions with the father prior to conception. Socioeconomic advantage, in turn, is linked to stability, as are certain demographic characteristics such as age, race, child gender, and additional births (Carlson, McLanahan, & England, 2004; Gibson-Davis, 2011, 2014; Lillard & Waite, 1993; Lundberg & Rose, 2003; Musick & Michelmore, 2015; Rackin & Gibson-Davis, 2012; Schwartz, 2013). Moreover, I isolate the role of union timing and partnership type from union type/transitions (direct marriage, cohabitation-to-marriage, and continuous cohabitation) by using two distinct sets of measures whereas prior work combined this information into a single measure (e.g., Rackin & Gibson-Davis, 2012; Lichter et al., 2016).

A comparison of stability across unions formed after conception by timing and partnership seems to beg the question of how various types of post-conception unions fare relative to pre-conception unions. However, there is an important caveat to consider: when does exposure to dissolution begin for unions formed prior to conception? For couples living together prior to conception, the 'clock' measuring dissolution risk begins at the start of coresidence, *prior* to conception; the least stable unions may be those that dissolve prior to conceiving any children (Lillard & Waite, 1993). For the unions studied in the current analysis, the 'clock'

begins, by definition, at the start of the coresidential union and *after* conception – and sometimes after birth as well. Thus, the risk of dissolution begins at variable points across different types of unions, and so comparisons are not easily made. Following prior work (e.g., Lichter et al., 2016; Rackin & Gibson-Davis, 2012), which has only compared pre-conception unions with mid-pregnancy unions, I briefly discuss – but do not show – the results of a basic validity check in which I model the risk of dissolution beginning with the birth month among those in unions prior to birth (i.e., excluding post-birth unions).

Data

The analysis uses the National Longitudinal Survey of Youth, 1997 Cohort (NLSY97), a representative study of individuals born between 1980-84 first interviewed in 1997, with yearly interviews thereafter. The original sample included 8,984 young men and women, with oversamples of black and Hispanic youth, and contains detailed fertility and union information. Due to concerns about the validity of male fertility data, particularly for conceptions and births occurring outside of marriage (Joyner et al., 2012), this analysis focuses on women. I use data from rounds 1 through 15 (2011, when respondents were aged 26-32) to identify a sample of mothers with a valid date of first birth (N = 2,549), for whom conception occurred after age 12 (excluding 4 cases), and who were not missing start and end dates for all unions (excluding 4 cases). As in other work (Raley, 2001; Rackin & Gibson-Davis, 2012), I analyze only conceptions ending in a live birth and define conception as 7 months prior to birth. Using the date of conception combined with union start and end dates, I categorized each first conception as marital (N = 625), cohabiting (N = 605), or non-union (N = 1,311).

The key advantage of the NLSY97 is that it contains a roster of ID variables for the other parent of nearly all the respondent's biological or adopted children. Among mothers with a non-union first conception, only 1 mother was missing a parent ID, reducing the analytical sample to

1,310. Additionally, it contains an ID roster for most coresidential partners; for instance, 13.7% of first cohabitations and 3.5% of first marriages among women are missing partner IDs. With these two rosters, it is possible to compare parent IDs with cohabiting and marital partner IDs to determine whether partners are the parent of the respondents' children in most cases.

I then used this information to link post-conception unions to birth. I created variables indicating the date of the first union formed between the month of the conception and the date of the last interview, the date any such unions ended, and the partner ID for this union. Among the 1,310 mothers whose first birth occurred outside a union, IDs for the first union after conception were missing for 92 cases, reducing the sample to 1,218 mothers. Of these mothers, 317 did not form any coresidential union by their last interview and thus were excluded from the analysis because they were not at risk of union instability. An additional 23 cases had valid union start dates but no end dates. Thus, the final analytical sample used to examine stability included 878 mothers who were not in a union at conception but formed at least one union post-conception and who had valid start and end dates and partner IDs for their first post-conception union.

Initially, the key independent variable combined information on union timing and parent-partner type (father vs. new partner): mid-pregnancy union, new partner; mid-pregnancy union, father; post-birth union, new partner; post-birth, father. Unions formed the same month as a birth (N = 37) were categorized as post-birth unions because exploratory sensitivity tests showed that unions formed during the birth month were significantly different than mid-pregnancy unions but not post-birth unions. As might be anticipated, forming a mid-pregnancy union with a new partner was fairly rare, occurring for only 31 mothers, and preliminary analysis (not shown) suggested that these mothers' unions were highly unstable, with considerably higher odds of dissolution than all other types of post-conception unions. However, because of the small number of cases, I combined these mothers with those who formed a union after birth with a new

partner into a single category: new-partner union (regardless of timing). Results were substantively the same when excluding mid-pregnancy unions with a new partner, and I retain these cases to maximize sample size. The final key independent variable thus has three categories: mid-pregnancy union, father; post-birth union, father; new-partner union.

Analytical strategy

I begin by presenting descriptive statistics for the analytical sample of mothers with post-conception unions by timing and parent-partner type. I then predict dissolution using event history logistic models in which mothers enter the analysis the month they begin living with a partner and exit when the union dissolves or are censored at the last interview. For the validity check comparing stability among mothers with pre-conception unions (N = 1,230) to those who formed mid-pregnancy unions with the father (N = 203), both sets of mothers enter the analysis the month of birth and exit at union dissolution or the date of the last interview.

The event history models control for a number of relevant covariates. These include the respondent's own socioeconomic and demographic characteristics: age at conception, race-ethnicity, household family structure at baseline, time-varying education (less than high school, high school/GED, some college/AA degree, and college or higher), and time-varying employment status (a categorical variable based on the category applicable to most weeks during the month: not working, working <35 hours/week, working ≥35 hours/week). For both education and employment, I also ran models with time-invariant measures indicating these statuses at the month of conception to account for the fact that many women do not work or participate in schooling around the time of birth. The results were substantively similar but including time-varying measures better accounts for women's own socioeconomic resources as the union progresses. There are also two indicators of the partner's socioeconomic resources, as reported by the respondent – partner employment (don't know, not working, and working) and

partner's highest level of education (don't know, less than high school, high school/GED, some college/AA degree, and college or higher). These measures are time-invariant since the NLSY does not collect monthly data for partners, and they are indexed to either the start of the union (for unions that ended between survey rounds) or the survey nearest the start of the union (for unions intact at the time of the survey). Child-related characteristics include gender of the first child as well as a time-varying indicator of whether the respondent had an additional child during the union. As discussed above, a key covariate is union type – cohabitation vs. marriage. To account not just for initial union type but transitions from cohabitation to marriage, I created a time-varying three-category measure indicating both union status during the month and initial union type: continuous cohabitation; cohabitation-to-marriage; and direct marriage. However, following other work examining post-conception union stability across union types (Lichter et al., 2016), I do not explicitly model the transition from cohabitation to marriage, as this is beyond the scope of this research brief. Finally, union duration (indexed from the start of coresidence, regardless of conception or birth timing) is a time-varying nonlinear spline (0-6 months, 7-12 months, 13-24 months, 25-36 months, 37-48 months, and 49 or more months) because preliminary analyses indicated the odds of union dissolution were nonlinear.

Analyses were conducted in Stata 14.1. Descriptive statistics and multivariate models were weighted to account for survey design and attrition. Missing data, occurring primarily among the respondent's education and employment measures (2-3%), was imputed using Stata's multiple-imputation commands. Partner's characteristics were not imputed because there was little other information to use to inform imputation equations, but it is also likely that individuals who know very little information about their partners may be in especially unstable relationships.

Results

Descriptive Results

Table 1 shows the weighted descriptives for the analytical sample of mothers with a first non-union conception, with the top row showing the overall distribution. For descriptive purposes only, time-varying measures are indexed to the last month of observation, as indicated in the table. For the first union formed after a non-union conception, about one fourth of mothers formed a union with the father prior to birth, with the majority of unions formed during the birth month or after. Slightly more than one third of the first unions formed were post-birth unions with the father, but the most common type of first union formed was a post-birth union with a new partner. Still, about 60% formed a union with their child's father at some point, and 60% of these unions – which are biological-parent unions – formed after birth.

– Table 1 here –

Not surprisingly, the mothers in the sample were fairly disadvantaged. On average, they conceived their first child prior to age 20, only a third grew up with both biological parents, and 15% did not have a high school degree or equivalent when they started living with their partner. Consistent with other work, very few – only 1 out of 6 – of these unions began as marriages, and more than half had another child prior to the last month of observation. However, there were differences across union timing and parent-partner type in socioeconomic and demographic factors as well as union type. Mothers who formed mid-pregnancy unions with their child's father were about two years older than their counterparts who formed unions after birth or with a new partner, and a greater proportion were living with both biological parents during adolescence. This group had the highest percentage of direct marriages (23%), the longest average union durations (nearly six years), and a greater proportion of their partners had at least a high school degree. These mothers also had the highest proportion transitioning to marriage,

so they overall had the highest proportion married (59%) by the last month of observation. Mothers who formed post-birth unions with their child's father were more often race-ethnic minorities, had lower proportions with any college, and had the lowest proportion working full-time at the last month of observation; this group had the highest percentage reporting they either did not know their partner's education or that their partner had less than a high school degree. Only 16% of these mothers' first post-conception unions were marriages, but about a third transitioned from cohabitation to marriage during the period of observation (similar to the proportion transitioning to marriage among those with mid-pregnancy unions). Continuous cohabitation was most common among those with new-partner unions; these unions were fairly short in observed duration (about three years), and mothers with new-partner unions were least likely to have lived in a biological family during adolescence. Otherwise, those in new-partner unions generally fell between those in mid-pregnancy unions and those in post-birth unions with the father in terms of socioeconomic characteristics.

Multivariate Results

I now turn to event history models using logistic regression to predict dissolution (Table 2). Model 1 shows the odds ratio for dissolution for a model with only the union timing and partnership categories, along with duration. Model 2 adds the respondent's and partner's socioeconomic and demographic variables to Model 1, and Model 3 adds the time-varying union type variable (continuous cohabitation, cohabitation-to-marriage, and direct marriage). In Model 1, we see that relative to mid-pregnancy unions with the father, post-birth unions with the father were significantly more likely to dissolve (OR = 1.38). Mothers with new-partner unions had even higher risks of dissolution (OR = 2.52); new-partner unions were also about 80% more likely to dissolve than post-birth unions with the father (not shown).

– Table 2 here –

The link between dissolution and partner type/timing became even stronger when controlling for socioeconomic and demographic characteristics, with both post-birth unions and new-partner unions significantly more likely to dissolve than those formed mid-pregnancy with the father (OR = 1.55 and OR = 2.94, respectively). Several socioeconomic and demographic factors were independently associated with dissolution among post-conception unions. Relative to non-Hispanic white/other mothers, black mothers were about 22% more likely to experience dissolution. Age at conception was positively associated with the odds of dissolution, and relative to mothers who lived with two biological parents during adolescence, mothers in all other family types were more likely to experience union dissolution. Women's own socioeconomic characteristics were unrelated to dissolution risk, but those who did not know their partner's education had an elevated risk of dissolution relative to those partnered with a man who had a high school degree (OR = 1.75), and mothers whose partner was unemployed had a higher risk of dissolution than those whose partner was working (OR = 1.58). Mothers who had an additional child were about a quarter less likely to break up than those with no more children, and finally, as would be expected, the odds of dissolution tended to be higher at longer durations relative to the first six months of coresidence, though this was not always significant.

Model 3 adds union type (continuous cohabitation, cohabitation-to-marriage, and direct marriage) to Model 2. This reduced the magnitude of the link between partner timing and type, but these remained strong and significant, indicating a unique and independent association distinct from union type. Relative to mothers forming a mid-pregnancy union with the father, mothers forming a post-birth union with the father were 1.3 times as likely to experience dissolution, and mothers forming a union with a new partner were 2.3 times as likely to break up. Mothers forming a union with a new partner were also about 74% more likely to experience dissolution than those forming a post-birth union with the father (not shown). Not surprisingly,

union type was important as well – the odds of dissolution were more than tripled among continuously cohabiting unions than direct marriages, but cohabiting unions that transitioned to marriage did not exhibit higher dissolution risks, consistent with prior work (Lichter et al., 2016). In the presence of controls for union type/transitions, there were few changes in the other covariates, although race differences were no longer significant nor was having an additional child, and longer durations were more consistently and significantly linked to dissolution.

As a brief validity check (available upon request), I compared the stability of women's mid-pregnancy unions with those of pre-conception unions, with dissolution modeled beginning at the month of the first birth. These results closely corresponded with those of Rackin and Gibson-Davis (2012) – among those in unions at birth, the timing of union formation (pre-conception vs. post-conception) mattered less than union type (cohabitation vs. marriage).

Discussion

The decline in mid-pregnancy marriages has been well-documented (England, Shafer, & Wu, 2013), though mid-pregnancy unions still occur often (Gibson-Davis, Ananat, & Gassman-Pines, 2016; Lichter, Sassler, & Turner, 2014). The evidence is mixed regarding the stability of pre-conception and mid-pregnancy unions (Lichter et al., 2016; Rackin & Gibson-Davis, 2012), but it seems that the most committed and stable couples are selected into coresidence prior to birth, begging the question of how post-birth unions fare in comparison. This is an important question, as many single mothers report at birth that they hope to move into a more committed union with their child's father– and many of them actually do (McLanahan & Beck, 2010). Taking advantage of a unique aspect of the NLSY97 – the ability to identify the other parent for each of a respondent's children, each of a respondent's coresidential union partners, and link them together – I consider the stability of women's post-conception unions in terms of the timing of both conception and birth and incorporate partner-parent type.

When considering both timing and partner type of new unions, the most common was a new-partner union, but if we look at this differently – by focusing on partner type specifically – it is important to note that the majority of all initial unions were with the biological parent. However, a majority of these biological-parent unions were formed either during the birth month or afterwards, suggesting that even if couples do not respond to a non-union conception by immediately forming a union, future union formation remains a possibility. Timing and partner type, in turn, were clearly associated with union stability. Unions with the father were, not surprisingly, more stable than new-partner unions, but with an important caveat –unions with the father formed at birth or later were also less stable than those formed between conception and birth. The question remains, though, as to why. The most likely explanation is that mid-pregnancy cohabitations and marriages are indeed selective of the most committed and stable couples. Given that young adults profess a preference for nuclear families (Wang & Taylor, 2011), couples facing a non-union conception have a choice to make – do they try and form a two-parent family in one household? Those who are the most optimistic about their relationship and who feel most prepared to make a commitment respond by moving in together, perhaps even directly marrying. Those who are still committed but fail to meet economic and social prerequisites for union formation (for instance, facing constraints such as being able to afford an independent residence) will stay together as a romantic couple and try to coparent across households, no doubt a difficult task. Still others may be less sure of their relationship's future but are willing to remain linked together in some way for the sake of their child. Some of these latter groups – those committed but with obstacles to mid-pregnancy union formation and those who are less sure but willing to try – may see changes (such as finishing school and getting a job or seeing their relationship become stronger and more committed) that make coresidence a possibility after the birth. Nonetheless, it appears that the challenges that precluded mid-

pregnancy union formation may continue to present challenges to ongoing stability even for unions formed later between biological parents.

Consistent with the literature on stepfamilies as well as work on single mothers' union experiences, unions with a new partner were highly unstable, especially for mid-pregnancy unions. These families may face boundary ambiguity, jealousy, and competing obligations across families and households (Sweeney, 2010). Additionally, the least advantaged women are more likely to form new-partner unions (Cancian & Meyer, 2014), perhaps indicating that single mothers form unions at least in part due to need rather than relationship-specific positive qualities. Further, mothers themselves may have qualities that predispose them to both attract low-quality partners and have unstable unions (Manning et al., 2010). If this is true, then the elevated risk of dissolution is even less surprising.

In sum, mid-pregnancy unions – regardless of union type and transitions – were more stable than either post-birth unions with the father or new-partner unions. Mid-pregnancy unions, when controlling for union type, had the same risk of dissolution as pre-conception unions, as shown in supplementary analysis and other work (Rackin & Gibson-Davis, 2012). Thus, while post-birth unions with the father and new-partner unions had an elevated risk of dissolution, as long as unions with the biological father occurred prior to birth, there were no differences in stability based on timing relative to conception. Unions formed prior to birth appear to be selective, likely on both relationship factors and individual-level characteristics. As such, efforts targeting single parents to encourage them to form a family unit within a single household – by cohabiting or marrying – are not likely to produce a stable family unit.

Limitations

Although this study makes a valuable contribution to the literature, there are nonetheless several limitations. Key among these is the inability to include indicators of relationship quality and

commitment to account for selection. Although the NLSY does contain some measures of relationship quality, these were not uniformly included across rounds, and the measures were collected differently for unions that were intact at the time of survey versus those that started and ended between rounds. I was also unable to include individual attitudinal measures that may have captured women's own predisposition to forming and maintaining unions. Because the NLSY97 did not collect information on birth intendedness, which is linked to both union formation and dissolution (Guzzo & Hayford, 2012; Lichter et al., 2016), I was also unable to account for this factor. There are some limitations in terms of generalizability – these were only first births with a non-union conception that occurred by the 2011 survey, when respondents were at most in their very early 30s. The fairly young age of the mothers in the analytical sample may explain why both the current research and Rackin and Gibson-Davis (2012) did not find significant differences in the risk of dissolution between pre-conception unions and mid-pregnancy unions when controlling for union type whereas Lichter and colleagues (2016) found that mid-pregnancy marriages had higher odds of dissolution than pre-conception marriages, using a sample of women aged 15-44. Finally, the analyses did not explicitly consider selection into cohabitation versus marriage nor explicitly model transitions from cohabitation to marriage and how those processes relate to timing or partner type.

Conclusion

This study underscores the complexity of union formation after a non-union conception and builds upon prior work that examined differences in stability across pre-conception and mid-pregnancy unions. Although most single parents form a union at some point, some unions are biological-parent families and some are with new partners (i.e., stepfamilies). Some occur prior to birth but not all of these are biological-parent families, and some occur well after a birth yet may still be biological-parent families. Though the results here cannot speak to causal

mechanisms, clearly timing and partnership type are linked to the stability of unions in which children are present. Planned childbearing after the formation of a stable union may be preferable, but fewer individuals are following this path, particularly among young adults and the disadvantaged (McLanahan, 2004). As a first step, this work highlights the complexity and instability of post-conception union behaviors but does little to delve more deeply into the underlying processes at play. If unions formed after a birth with a biological parent have an elevated risk of dissolution relative to those formed just a few months earlier, understanding the extent to which selection processes – is it commitment to each other? differences in value orientation? more or less complex lives and competing obligations? – play a role may help inform public policies designed to promote family stability. Other work finds that single mothers "trade up" when they form new-partner unions, as their new partners are more socioeconomically advantaged than the biological father of their child (Bzostek, McLanahan, & Carlson, 2012). If that is the case, the present work suggests that their new partner's more favorable economic characteristics do not seem to translate into factors that improve the stability of their new union. Perhaps new partners do not take on active social father roles or do not make financial contributions to the household in the same matter as biological parents, and the more general issues that stepfamilies face no doubt come into play as well. In sum, more work is also needed to identify the mechanisms that contribute to instability among post-birth unions and new-partner unions.

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Table 1. Weighted Descriptive Characteristics of Women Forming Post-Conception Unions, by Union Timing and Parent/Partner Type

			Union Timing and Parent/Partner Type		
	Full analytical sample	N	Mid-pregnancy union with father	Post-birth union with father	New-partner union
Overall distribution			24.1%	35.5%	40.4%
Mean age at conception (std dev)	19.1 yrs (3.08 yrs)		20.5 yrs (3.18 yrs)	18.8 yrs (2.83 yrs)	18.6 yrs (2.96 yrs)
Race-ethnicity					
Non-Hispanic White/Other	55.5%	297	63.2%	49.1%	56.6%
Non-Hispanic Black	25.8%	337	11.6%	31.0%	29.7%
Hispanic	18.7%	244	25.2%	19.9%	13.8%
Family background					
Two biological parent family	33.0%	269	45.8%	31.5%	26.8%
Stepfamily	6.5%	57	7.2%	4.7%	7.6%
Single parent family	52.2%	477	41.3%	56.0%	55.2%
Other	8.4%	75	5.7%	7.7%	10.5%
Education at last month of observation					
Less than high school	15.4%	135	15.1%	17.3%	14.0%
High school/GED	69.0%	611	64.8%	69.7%	70.9%
Some college/AA degree	6.9%	59	7.9%	5.4%	7.7%
College or more	8.7%	73	12.3%	7.6%	7.5%
Employment at last month of observation					
Not working	41.9%	375	38.4%	48.2%	38.4%
Working part-time	16.1%	142	16.7%	16.8%	15.1%
Working full-time	42.1%	361	44.9%	35.1%	46.6%
Partner's education					
Don't know	5.8%	51	2.6%	7.4%	6.4%
Less than high school	26.3%	236	25.1%	30.5%	23.3%
High school/GED	44.0%	382	49.1%	40.3%	40.7%
Some college/AA degree	17.9%	159	16.8%	16.5%	17.9%
College or more	5.9%	50	6.4%	5.3%	6.1%
Partner's employment					
Don't know	4.2%	38	2.1%	4.8%	4.8%
Not working	15.5%	139	14.7%	17.1%	14.7%
Working	80.3%	701	83.2%	78.1%	80.5%
Female 1st child	50.5%	4543	47.8%	49.9%	52.8%
Had another child by last observation	60.2%	551	57.4%	69.3%	53.9%
Initial union type and at last month of observation					
Continuous cohabitation	53.6%	497	40.7%	51.6%	63.1%
Cohabitation-to-marriage	30.0%	240	36.6%	32.6%	23.7%
Direct marriage	16.4%	141	22.7%	15.8%	13.3%
Mean duration at last month of observation (std dev)	53.3 mos (40.7 mos)		69.6 mos (43.2 mos)	62.0 mos (43.7 mos)	36.0 mos (28.7 mos)
N	878		203	333	342

Table 2. Odds Ratios of Dissolution among Mothers' First Unions Following a Non-Union Conception (N = 878)

	Model 1		Model 2		Model 3	
Union timing and parent/partner type						
Mid-pregnancy union with father	--		--		--	
Post-birth union with father	1.38	*	1.55	***	1.35	*
New-partner union	2.52	***	2.94	***	2.34	***
Age at conception			1.08	***	1.05	*
Race-ethnicity						
Non-Hispanic White/Other			--		--	
Non-Hispanic Black			1.22	*	1.02	
Hispanic			1.02		0.89	
Family background						
Two biological parent family			--		--	
Stepfamily			1.72	**	1.53	
Single parent family			1.30	*	1.27	*
Other			1.52	*	1.68	**
Education (time-varying)						
Less than high school			1.15		1.05	
High school/GED			--		--	
Some college/AA degree			1.29		1.40	
College or more			0.80		0.95	
Employment (time-varying)						
Not working			0.89		1.01	
Working part-time			0.82		0.84	
Working full-time			--		--	
Partner's education						
Don't know			1.75	*	1.63	*
Less than HS			1.18		1.07	
High school/GED			--		--	
Some college/AA degree			1.02		1.11	
College or more			0.65		0.69	
Partner's employment						
Don't know			0.93		0.97	
Not working			1.58	***	1.33	*
Working			--		--	
Female 1st child			0.86		0.86	
Had an additional child (time-varying)			0.75	*	0.95	
Union type (time-varying)						
Continuous cohabitation					3.44	***
Cohabitation-to-marriage					0.84	
Direct marriage					--	
Union duration						
Less than 6 months	--		--		--	
6-12 months	1.36		1.41		1.48	*
13-24 months	1.24		1.36		1.53	*
25-36 months	1.28		1.52	*	1.87	**
37-48 months	1.11		1.41		1.86	**
49 or more months	1.06		1.55	*	2.40	***
Constant	0.01	***	0.00	***	0.00	***

*p≤0.05 **p≤.01 ***p≤.001