Riding the "Union-Go-Round": The Intergenerational Transmission of Repartnering Across Generations

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Abstract

Stable, committed relationships are linked to positive adult and child outcomes, but many adults, and parents, frequently transition into and out of marriage and cohabitation. This study investigated the intergenerational transmission of repartnering using women from the National Longitudinal Survey of Youth 1979 and their offspring in the Children and Young Adults sample. Negative binomial regression and sibling fixed-effects results established that maternal and offspring repartnering are associated and that neither economic hardship nor inherited maternal characteristics accounted for this significant association. Further, both maternal repartnering prior to offspring age 18, and post 18, were associated with offspring repartnering. Results supported social learning theory, which posits that offspring learn relational skills and commitment by observing their parents' relationships and imitating them in their own relationships. These findings suggest that repartnering spans generations and that researchers should investigate potential positive, and negative implications of parental repartnering on adult outcomes.

Key words: Remarriage, Cohabitation, Intergenerational Transmission, Within-family Design

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Stable, committed romantic unions are linked to positive mental health and better physical health for both adults and children (Amato, 2010; Ryan, Claessens, & Markowitz, 2015; Wilson & Oswald, 2005). However, maintaining unions is difficult; almost half of cohabiting unions will dissolve within the first five years and nearly 50% of ever-married persons have divorced by age 50 (Kennedy & Bumpass, 2008; Kennedy & Ruggles, 2014). After a union dissolves, most individuals hope to repartner. Repartnering is defined as remarriage or cohabitation after a union dissolution (Lampard & Peggs, 1999). The study of repartnering, particularly after cohabitation dissolution, is still an emerging area of scholarship (Anderson & Greene, 2013) despite the fact that 30% of adults have dissolved a cohabiting union (Kennedy & Bumpass, 2008) and four in 10 marriages involves a remarriage (Livingston, 2014). Cherlin's (2010b) American "marriage-go-round" could be extended to a "union-go-round."

Although repartnering is more common today, most of the literature on the intergenerational transmission of family instability has been limited to divorce. Individuals whose parents divorce are more likely to divorce (Amato & DeBoer, 2001; Wolfinger, 2000), and individuals who experience a greater number of parental divorces also have more divorces themselves (Wolfinger, 2000). This literature is hampered by its focus on marriage and divorce because many children will experience cohabitation and its dissolution. The nonmarital fertility rate has hovered around 40% for the past several years (Martin, Hamilton, Ventura, Osterman, & Mathews, 2013) with most of these children born in cohabiting unions (Lichter, Sassler, & Turner, 2014), and cohabitation rates have continued to rise among the never and ever married (Kennedy & Bumpass, 2008). Indeed, 20% of children will live with their mother and her

cohabiting partner at some point in their childhood (Kennedy & Bumpass, 2008), and Raley and Wildsmith (2004) found that by neglecting transitions into and out of cohabitation, family instability was underestimated by 30% for White children and over 100% for Black children.

Using the National Longitudinal Survey of Youth 1979 Child and Young Adults (NLSY79 CYA) and their mothers in the National Longitudinal Survey of Youth 1979 (NLSY79), we examine the intergenerational transmission of repartnering, including both married and cohabiting partners. Very little work has examined parental repartnering specifically, but family instability, measured as the number of parental union transitions a child experiences, is associated with poor child socioemotional development, elevated behavior problems, risky behaviors in adolescence, and poor academic achievement (Amato, 2010). Surprisingly, there is very little research on the association between family instability and offspring outcomes beyond adolescence.

One difficulty in identifying a causal association between maternal and offspring repartnering is that maternal repartnering is not randomly distributed across the population. Race, employment status, education, and poverty, which are associated across generations (Carvalho, 2012; Holmlund, Lindahl, & Plug, 2011), are also associated with higher rates of divorce (Amato, 2010), lower rates of marriage, and, importantly, higher rates of cohabiting unions, which tend to be less stable (Cherlin, 2010a), leading to increased repartnering. Further, the negative economic consequences of divorce and cohabitation dissolution are well established (Tach & Eads, 2015) and could be partially driving any association between maternal and offspring repartnering (Carvalho, 2012). Previous research has relied on retrospective reports of maternal repartnering (Ryan et al., 2015; Teachman, 2003) that have been unable to account for the confounding role of economic instability. By using the NLSY79 and the NLSY79 CYA, we

are able to use prospective data on maternal education, employment, and poverty status as time-varying covariates to better account for concurrent changes in socioeconomic circumstances.

An additional advantage of the NLSY79 and NLSY79 CYA data is that it includes siblings. Unmeasured maternal characteristics, such as her personality, may also be associated with her transitions into and out of unions. We capitalize on the sibling data by examining sibling fixed-effects models that allow us to control for unmeasured maternal characteristics that do not vary between siblings, as well as time-varying maternal and household characteristics. Siblings may have different family structure experiences; for example, a mother may have a child with her first husband and a second child with a cohabiting partner. In this example, assuming that the second cohabiting union does not dissolve, her first child will experience two partners, and her second child will experience only one. By comparing these siblings, we are able to more carefully isolate the association between maternal and offspring repartnering.

Theoretical Perspectives on the Intergenerational Transmission of Repartnering

Economic Hardship Perspective. This perspective assumes that the economic hardship experienced by many children living in alternative family forms, including single-parent families and cohabiting families, is primarily responsible for the negative outcomes that the children in these alternative family forms experience. Both divorce and cohabitation dissolution have negative financial consequences (Tach & Eads, 2015). Indeed, poverty rates for economically disadvantaged unwed mothers who marry then divorce exceed those of never-married mothers (Lichter, Graefe, & Brown, 2003). Once a mother repartners, economic resources may increase (Lichter et al., 2003). Remarried families, and low-income mothers who repartner into cohabitation (Bzostek, McLanahan, & Carlson, 2012), have more economic resources than single-parent families (Morrison & Ritualo, 2000). In this case, repartnering may be positive; the

negative economic consequences of the first partnership dissolution may be abated with the second partnership (Bzostek et al., 2012).

Overall, the economic consequences of partnership dissolution have serious implications for child development. Children raised in families with fewer economic resources have more negative cognitive and social outcomes (Gershoff, Aber, Raver, & Lennon, 2007), which could render them less attractive partners as adults (Manning, Trella, Lyons, & Du Toit, 2010). Further, socio-economic status is transmitted across generations (Behrman & Taubman, 1990), and because economic stress is associated with decreased odds of marriage (Rose-Greenland & Smock, 2013) and increased odds of union dissolution (Amato, 2010), offspring who have lived in economic hardship may find their own unions less stable as well. Controlling for income reduces the association between family structure and various outcomes in childhood (Manning & Lamb, 2003) and is expected to do the same in the intergenerational transmission of repartnering.

Intergenerational Transmission of Marriageable Characteristics. A second causal mechanism is the intergenerational transmission of marriageable characteristics. Manning et al. (2010) have argued that both men and women may not be "marriageable", that is, may have characteristics that make them undesirable partners, including depression, substance use, and poor economic prospects. Many of these characteristics can be passed from mother to child. For example, mothers who are depressed are more likely to have children with elevated internalized problems (Hammen, Brennan, & Le Brocque, 2011). Maternal personality traits such as willingness to take risks or trust others are also evident in their offspring (Dohmen, Falk, Huffman, & Sunde, 2012). Mothers who use substances in adolescence and early adulthood are more likely to have children who do so (Patrick, Maggs, Greene, Morgan, & Schulenberg, 2014). Thus, according to the marriageable characteristics perspective, mothers pass their marriageable

characteristics on to their offspring, and these characteristics, not the maternal repartnering, drive the intergenerational transmission of repartnering. By comparing siblings who inherit similar characteristics from their mother, but may differentially experience repartnering, we are able to account for time-invariant, and some time-variant, maternal characteristics.

Social Learning Theory. This theory posits that children learn interpersonal behaviors and attitudes from observing their parents' relationships (Bandura, 1977). This observation is problematic when poor skills and attitudes are modeled. Couples who later divorce communicate less clearly, listen to their spouses less attentively, and express less positive and more negative emotion (Gottman & Gottman, 1995). The transmission of relationship skills and interpersonal behavior perspective (Amato & DeBoer, 2001) posits that children of these couples observe and learn these skills and behaviors, hence making their own relationships less stable. The same processes are likely happening in families in which cohabiting unions dissolve. Indeed, children in cohabiting families may be more likely than children in married families to witness negative relationship behaviors that, if learned, could make their own relationships less stable (Carlson & VanOrman, 2013).

Offspring also form their attitudes toward interpersonal relationships from the observation of their parents. Specifically, in the event of a parental divorce or cohabitation dissolution, offspring learn that a marital or cohabiting commitment can be broken (Amato & DeBoer, 2001). Indeed, offspring whose parents divorce are more likely to question the stability and permanence of their own relationships (Amato & DeBoer, 2001; Sassler, Cunningham, & Lichter, 2009). Thus when children observe their parents dissolve multiple unions, the transmission of repartnering could be exacerbated.

The Role of Age at Transitions. The key tenet of the economic hardship perspective is

that economic hardship experienced in childhood will be associated with poor outcomes that may make it difficult for the child to maintain intimate relationships as an adult. Furthermore, social learning theory suggests that offspring who, before they live independently, directly observe their mothers' poor relationship skills and behaviors, will be more likely to mimic these behaviors and have more unions themselves. Yet offspring do not stop learning from their parents after they leave the home. First, remarriage may provide a contemporaneous model for offspring to imitate in their own relationships (Yu & Adler-Baeder, 2007). In addition, maternal repartnering is associated with weaker parent-offspring relationships and decreased parental financial assistance (Aquilino, 1994). This lack of parental support may translate into more unstable partnerships for the offspring. Finally, the observation of the dissolution of a committed maternal union may be more salient for offspring in intimate relationships themselves as compared to younger offspring. These older offspring may be more likely to dissolve their own unions because they observe in real time, from their mothers, that commitments can be broken.

Previous Research on the Intergenerational Transmission of Repartnering. Overall, there has been very little research on the association between parental repartnering, or even family instability, and offspring repartnering. The children of divorce are more likely to divorce (Amato & DeBoer, 2001; Teachman, 2002; Wolfinger, 2000). They are also more likely to cohabit as their first union (Teachman, 2003), particularly if their mother repartners into a cohabiting union (Sassler et al., 2009). Because cohabiting unions are less stable than marital unions (Cherlin, 2010a), the children of divorce may be at an elevated risk of more unions. In a series of two papers, Teachman (2002, 2003) examined the association between childhood family instability and first union formation and the risk of divorce. He used data from women in the 1995 National Survey of Family Growth, which collected a retrospective parental union

history. In the first paper, he found that childhood maternal marital transitions were positively associated with an increased risk of divorce for women (Teachman, 2002). In the subsequent paper, he found that childhood living arrangement transitions, including transitions to alternative living arrangements (e.g. with a grandparent), was associated with more quickly moving into a first cohabiting union (Teachman, 2003). Because cohabiting unions are less stable and most individuals repartner (Anderson & Greene, 2013), these studies suggest that offspring who experience more maternal repartnerships will have more repartnerships themselves.

Selection. Selection may play a significant role in the intergenerational transmission of repartnering. African-American and Hispanic women are more likely to have births outside of marriage, most in cohabiting unions (Kennedy & Bumpass, 2008), increasing the likelihood that their union will dissolve (Kamp Dush, 2011). African-American and Hispanic women are also less likely to repartner than Whites (McNamee & Raley, 2011). We control for race, and maternal race is most rigorously accounted for in the sibling fixed-effects models. Further, socioeconomic status is associated with a lower likelihood of marriage, a greater likelihood of cohabitation, more nonmarital births, and a higher rate of union dissolution (Cherlin, 2010a; Kamp Dush, 2011). Thus, we include time-varying indicators of maternal employment, education, and poverty as controls. Maternal age and relationship status at childbirth are also associated with a variety of offspring outcomes (Manning & Lamb, 2003; Teachman, 2002) and were also included as controls in all models. Finally, male and female offspring may respond differently to maternal repartnering (Aquilino, 1994) and older offspring will have more opportunity to enter and exit successive unions. Therefore, the sex of offspring and the age of offspring at the last recorded interview were also included as a control in each model.

Hypotheses. Based on the potential causal mechanisms we identified, we test five

competing hypotheses. First, we hypothesize that maternal repartnering will significantly predict offspring repartnering, even after controlling for maternal demographic characteristics and offspring age and sex. Second, based on the economic hardship perspective, we hypothesize that the association between maternal and offspring repartnering will become nonsignificant after including time-varying indicators of maternal employment, education, and poverty. Third, based on the intergenerational transmission of marriageable characteristics perspective, we hypothesize that the association between maternal and offspring repartnering will become nonsignificant when comparing offspring who share a mother but may have experienced a different number of maternal partnerships. Fourth, based on social learning theory, we hypothesize that even after we carefully account for economic hardship and maternal characteristics, maternal repartnering will significantly predict offspring repartnering. Finally, we expect that maternal repartnerships that occur before and after offspring are 18 will both significantly predict offspring repartnering.

Note about Sibling Fixed Effects Models. Sibling fixed effects analyses represent a rigorous statistical tool whereby differences are compared between siblings (i.e. Colen & Ramey, 2014). By comparing siblings, maternal characteristics that siblings share (e.g. maternal race, maternal personality, maternal family background, etc.) are accounted for in the model. To illustrate how sibling fixed effects models are conceptualized in the context of this study, consider a family of three siblings. Jack, Sally, and Bill all share the same birth mother. Jack was born while his mother was with Partner 1. Jack's mother then dissolved her union with Partner 1 and repartnered with Partner 2. After a subsequent dissolution with Partner 2, Jack's mother repartnered with Partner 3 and they together had Sally. Jack and Sally's mother then dissolved her union with Partner 3 and repartnered with partner 4 and they together had Bill. In this example, Jack experienced four maternal partnerships, Sally experienced two, and Bill

experienced only one. The sibling fixed effects model capitalizes on siblings like Jack, Sally, and Bill's who experience a different number of maternal partnerships by comparing their own repartnering behaviors to one another.

Method

We use the National Longitudinal Survey of Youth 1979 (NLSY79) and the National Longitudinal Survey of Youth 1979 Child and Young Adult (NLSY79 CYA) datasets. The NLSY79 is a nationally representative longitudinal sample consisting of 12,686 young men and women ages 14 – 22 when first interviewed in 1979. Data were collected annually until 1994 and biennially thereafter. The most current available data are from 2012. We use data from women whose offspring were recorded in the NLSY79 CYA (n = 3515).

The NLSY79 CYA data was collected biennially beginning in 1994 on all offspring, age 15 and older, of the female participants in the NLSY79. Offspring were added in subsequent waves as they aged into the sample. These adolescents and young adults completed a lengthy interview similar to the NLSY79 interview. The most current data available are from the 2012 interview (N = 7999). Only siblings in the NLSY79 CYA were included in the sibling fixed effects model; offspring with no siblings (singletons) were omitted (n = 7142).

Variables

Descriptive statistics for the full sample and sibling subsample are reported in Table 1.

Maternal Total Partners. The NLSY79 tracks respondent cohabiting partners and spouses across time. Every time a respondent has a new partner at the time of their interview, maternal total partners incremented by one. However, this variable misses marriages and cohabiting unions that occur between waves. At every wave, exact dates of up to three marital transitions were also collected; these data were used to supplement the maternal total partner

variable with missed marital partners. Further, in 2002 and thereafter, retrospective data on transitions into and out of cohabiting unions between waves were also collected. These data were also used to supplement maternal total number of partners. Maternal total partners ranged from 0 – 9 (M = 1.52, SD = 97).

Offspring Total Partners. Offspring total partners was assessed in the NLSY79 CYA for years 1994 to 2012 using several variables as items changed between waves and no one variable tracked the number of partners. For years 1994 through 1998 the highest reported value for the item asking, "How many marriage or partner relationships have you been involved in?" was used. Two cases were omitted, as their reported number of partners was so high as to likely represent a mischievous response. After 1998 this item was dropped from the survey, so for years 2000 through 2012 a combination of items was used to determine the number of partners. First, all participants who consistently indicated "Never Married" as their marital status and never reported cohabiting between waves were included as having no partners. Second, all participants who ever marked married, separated, cohabiting, divorced, or widowed were counted as having a partner. Third, for each wave those who reported cohabiting or married in their marital status and further indicated that they were no longer with their spouse or partner from a previous wave were counted as having another partner. Fourth, those who reported that they had cohabited with someone (other than current or previous partner) between waves were counted as having had an additional partner. Finally, the number of partners was totaled across all of the previously stated items to arrive at the total number of partners from 1994 through 2012. Offspring total partners ranged from 0 – 17 (M = 1.05, SD = 1.32).

Controls. *Maternal race* was coded into three races: Hispanic (22.05%), Black (33.28%), and Non-Black, Non-Hispanic (44.67%). *Maternal education* was measured on a scale from zero

to 20 (0 = No education, 20 = Eighth year of college or more; *M* = 12.94, *SD* = 2.53). *Maternal employment* was measured by dividing the number of weeks employed since the last interview by the total number of weeks since the last interview producing a continuous variable ranging from zero to one with zero indicating unemployed and one indicating full employment (*M* = 0.63, *SD* = 0.30). *Maternal relationship status at childbirth* was coded as Single (30.98%), Married (62.73%), and Cohabiting (6.29%) and measured by examining the maternal union status at the time of the interview the year of the offspring's birth. For offspring born prior to 1979, the mothers' union status in 1979 was used (*n* = 823). *Maternal age at childbirth* was measured by subtracting maternal birth year from the offspring's birth year (*M* = 24.49, *SD* = 5.31). *Offspring sex* was measured using a dichotomous variable with 1 = Male (51.27%). The *offspring age at last interview* was measured by subtracting their birth year from the year of their last recorded interview (*M* = 25.32, *SD* = 5.31). *Maternal poverty status* was a dichotomous variable whereby 1 = household income at or below the federal poverty line that year (26.46%).

Missing Data. The poverty status variable accounted for the majority of the missing data (20%), but maternal employment status and education also accounted for a portion of missing data (roughly 6% each). We used the multiple imputation multivariate normal model to impute the missing data for these three variables with 50 iterations using all dependent, independent, and control variables following Johnson and Young (2011).

Plan of Analysis. Our dependent variable, offspring total partners, is a count variable and is skewed towards zero with overdispersion (the variance is greater than its mean), thus we used negative binomial regression which is designed for count variables and corrects for overdispersion (Long & Freese, 2006). We first examined the association between offspring total partners and maternal total partners controlling for maternal race, age at childbirth, and union

status at childbirth, as well as offspring sex and age at the last interview. To test the economic hardship perspective, we then added time-varying socioeconomic controls, including maternal education, employment, and poverty status, to the model. We also examine the number of maternal partners the child experienced prior to age 18, and the number post age 18 as predictors.

To test the intergenerational transmission of marriageable characteristics perspective, we exploited our multigenerational and sibling data and conducted between-within, also known as hybrid, sibling fixed effects models (Allison, 2009). Between-within sibling fixed effects models are able to more carefully account for selection into repartnerships due to offspring-invariant maternal characteristics. A between-within sibling-fixed effects model is similar to the fixed effects model which uses each participant as their own control over time thereby controlling for all time-invariant measured and unmeasured characteristics, and time-variant measured characteristics, of a participant. The key difference is that rather than using each participant as their own control, each offspring is compared to their sibling, and thereby any maternal characteristics that do no vary by time or by sibling are accounted for in the model. Separate models predicting each sibling's number of partners from sibling-specific maternal number of partners can be written as follows:

$$Offspring\ Partners_{i1j} = \alpha_1 + \beta_1 X_{i1jt} + \beta_2 U_{i1j} + \beta_3 V_j + \beta_4 W_j + \beta_5 O_{i1t} + \beta_6 L_{i1} + \theta_1 X^M_{i1j} + \theta_2 O^M_{i1} + \varepsilon_{i1jt}$$

$$Offspring\ Partners_{i2j} = \alpha_2 + \beta_1 X_{i2jt} + \beta_2 U_{i2j} + \beta_3 V_j + \beta_4 W_j + \beta_5 O_{i2t} + \beta_6 L_{i2} + \theta_1 X^M_{i2j} + \theta_2 O^M_{i2} + \varepsilon_{i2jt}$$

where *i* represents the offspring, *j* represents the mother, *t* represents time, α is the constant, βs are regression parameters, θs are mean-variable coefficients, and ε is the error term. *X* represents maternal time- and offspring-variant characteristics (e.g. maternal education, maternal employment, and maternal annual poverty status), *O* represents offspring time-varying

characteristics and *M* indicates the mean of each maternal and offspring time-varying variable. *U* represents maternal time-invariant but offspring-variant characteristics (e.g. total maternal partners, maternal age at childbirth, maternal union status at childbirth), *V* represents maternal time- and offspring-invariant characteristics (e.g. maternal race), *W* represents unmeasured time- and offspring-invariant maternal characteristics (e.g. maternal personality), and *L* represents offspring time-invariant characteristics (e.g. offspring sex). To derive the difference model, the sibling 1 equation is subtracted from the sibling 2 equation:

$$\begin{aligned}&\left(Offspring\ Partners_{i2j} - Offspring\ Partners_{i1j}\right)\\&= (\alpha_2 - \alpha_1) + \left(\beta_1 X_{i2jt} - \beta_1 X_{i1jt}\right) + \left(\beta_2 U_{i2j} - \beta_1 U_{i1j}\right) + \left(\beta_3 V_j - \beta_3 V_j\right) + \left(\beta_4 W_j - \beta_4 W_j\right)\\&+ (\beta_5 O_{i2t} - \beta_5 O_{i1t}) + (\beta_6 L_{i2} - \beta_6 L_{i1}) + \left(\theta_1 X^M_{i2j} - \theta_1 X^M_{i1j}\right) + (\theta_2 O^M_{i2} - \theta_2 O^M_{i1}) + \left(\varepsilon_{i2jt} - \varepsilon_{i1jt}\right)\end{aligned}$$

which can be reduced to:

$$\begin{aligned}&\left(Offspring\ Partners_{i2j} - Offspring\ Partners_{i1j}\right)\\&= (\alpha_2 - \alpha_1) + \left(\beta_1 X_{i2jt} - \beta_1 X_{i1jt}\right) + \left(\beta_2 U_{i2j} - \beta_2 U_{i1j}\right) + (\beta_5 O_{i2t} - \beta_5 O_{i1t}) + (\beta_6 L_{i2} - \beta_6 L_{i1})\\&+ \left(\theta_1 X^M_{i2j} - \theta_1 X^M_{i1j}\right) + (\theta_2 O^M_{i2} - \theta_2 O^M_{i1}) + \left(\varepsilon_{i2jt} - \varepsilon_{i1jt}\right)\end{aligned}$$

In this final equation, *V* and *W* are differenced from the equation because these do not vary over time or between offspring. Thus, this model is a good test of the intergenerational transmission of marriageable characteristics perspective because all measured and unmeasured characteristics of the mother that do not vary over time or between offspring such as maternal race, family background, or personality are accounted for in the model. By including the variable mean for all time- and sibling-variant maternal variables and time- and sibling-variant offspring variables, the between-within model (Allison, 2009) effectively positions the sibling fixed-effects model to exploit the variance to provide a fixed-effect for measured time- and sibling-variant variables.

Results

To test our first hypothesis that maternal repartnering will significantly predict offspring repartnering, even after controlling for maternal demographic characteristics and offspring age and gender, we used negative binomial regression to predict offspring total partners. The results are displayed in Table 2. Overall, mothers who had more partners had children with significantly more partners. Negative binomial regression results can be interpreted with a risk ratio. Overall, each additional maternal partner was associated with a 13% greater risk of having an additional partner for offspring. Both maternal partners when the offspring was less than 18, and when the offspring was over 18, significantly predicted offspring total partners. Specifically, each additional maternal partner before an offspring was 18, and after an offspring was 18, was associated with 12% and an 8% greater risk of offspring having an additional partner, respectively. Posthoc analyses indicated that there was no significant difference in the magnitude of the association between maternal total partners pre18 and post18 and offspring total partners (F = 1.42; p = .23).

Compared to offspring with Hispanic mothers, offspring with Black mothers had significantly fewer partners and offspring of nonHispanic, nonBlack mothers had significantly more partners. Mothers who were younger at their child's birth had offspring with significantly more partners. Compared to mothers who were single at childbirth, mothers who were married at childbirth had offspring with significantly fewer partners but only in the model with maternal total partners. In all models, those who were cohabiting at childbirth had offspring with significantly more partners compared to mothers who were single at childbirth. Female offspring and offspring that were older at their last interview were significantly more likely to have more partners as well.

Test of the Economic Hardship Perspective. To test Hypothesis 2, that the association

between maternal and offspring repartnering will become nonsignificant after accounting for socioeconomic status, we added time-varying indicators of maternal education, employment, and poverty status to the negative binomial regression models (see Table 2 for results). Overall, the results for maternal total partners were nearly identical to the previous models and therefore results did not support Hypothesis 2. Offspring had significantly more partners when their mothers had more partners, regardless of whether the maternal partners were before, or after, the offspring was 18. The coefficients barely changed in magnitude, thus the results were robust to the inclusion of the socioeconomic variables. Posthoc analyses again indicated that there was no significant difference in the magnitude of the association between maternal total partners pre18 and post18 and offspring total partners even after the inclusion of the socioeconomic indicators ($F = 1.97$; $p = .16$). Overall, lower maternal education and employment, and more time in poverty were significantly associated with more offspring partners.

Test of the Intergenerational Transmission of Marriageable Characteristics Perspective.

To test our third hypothesis that the association between maternal and offspring repartnering will become nonsignificant when comparing offspring who share a mother but may have experienced different maternal partnerships, we conducted sibling fixed effects models. The results are displayed in Table 3. Overall, results did not support Hypothesis 3. Siblings who experienced more maternal repartnering reported significantly more partners than their siblings who experienced less maternal repartnering, even after accounting for time- and sibling-varying indicators of maternal education, employment, and poverty status, and sibling-varying indicators of maternal age and relationship status at childbirth, sibling sex, and sibling age at last interview. Further, sibling fixed-effects results also indicated that siblings who experienced more maternal partners both before and after the age of 18 had significantly more total partners compared to

their siblings who experienced fewer maternal partners both before and after age 18. Posthoc analyses indicated that there was a significant difference in the magnitude of the association between maternal total partners pre18 and post18 and offspring total partners (F= 69.27; p < .001). When comparing siblings, maternal total partners post18 as a more salient predictor than maternal total partners pre18.

Time- and sibling-varying socioeconomic indicators, including maternal education, employment, and poverty status, were not significant in the sibling fixed-effects models. Sibling-varying indicators of maternal age and relationship status at childbirth were significant; siblings who had a mother who was older at childbirth had significantly more partners compared to their older sibling, but this association was only significant in the model examining maternal total partners. Siblings whose mothers were single at childbirth had significantly more total partners compared to their siblings who were born when their mothers were married or cohabiting. The significant difference between maternal cohabiting and single at birth and offspring total partners was no longer significant in the model examining maternal partners pre and post18. Sibling-varying indicators of sex and age at last interview were also significant. Female siblings and siblings who were older at their last interview had significantly more partners than their siblings who were male or were younger at their last interview.

Sensitivity Analyses

Number of transitions. Some of the family instability literature has examined the number of maternal union transitions (measured by counting maternal transitions into and out of cohabiting and married unions) as a measure of family instability. We created a measure of maternal union transitions that was a count of each maternal union entrance and exit, including reunifications and dissolutions with a previous partner, between 1979 and the date of last

maternal interview. Transitions from cohabitation into marriage with the same partner were not counted as a union transition. We also created indicators of maternal union transitions that occurred before the offspring was 18 and after. We did not include both total maternal union transitions and maternal total partners simultaneously in any model because of multicollinearity (r = .79). We reran all analyses substituting maternal union transitions for maternal total partners (results not shown). The pattern of results was the same for maternal union transitions as maternal total partners in every model.

Age. Another potential bias could be the age of the offspring in our sample. Though offspring as young as 13 reported living with a partner, younger offspring overall reported fewer partners. To test the sensitivity of our analyses to offspring age, we reran all models restricting the sample to only those offspring who were at least 18 years old at their last interview (N = 7313; result not shown). The pattern, and significance, of results did not change.

Any partner. A counterhypothesis may be that offspring who experience more maternal repartnering may either 1) become discouraged with romantic relationships in general and avoid partnering, or 2) may not have the skills necessary to partner at all. We created a dichotomous indicator of whether an offspring had ever partnered. Logistic regression models were run including all covariates in the negative binomial regression models outlined above (results not shown). The counterhypothesis was not supported; higher maternal total partners significantly predicted offspring having partnered.

Poverty status versus household income. Another potential weakness of our models is the use of annual poverty status instead of a continuous variable of the reported annual household income as an indicator of socioeconomic status. The poverty line changes annually depending on the economic climate and there is substantial variability both above and below the

poverty line that could potentially alter our results. All models were rerun with annual household income instead of annual poverty status. The results were essentially identical.

Multiple imputation. Finally, there has been some recent debate as to the appropriate use of multiple imputation for longitudinal data. Specifically, Young and Johnson (2015) suggest that longitudinal data should be imputed in wide form, whereby each individual has a single line of data, rather than in long form in which each individual has a line of data for each year. After the imputation in wide form, Young and Johnson (2015) suggest reshaping the data back into long form for analyses. However, their simulation of a fixed effects model only used 10 variables with 4 waves of data. Our model includes 11 variables and 25 waves of data, or 216,380 person years, and the multiple imputation did not converge in wide form, thus we conducted our analyses with the imputed long form data. To test the sensitivity of our results to the long form multiple imputation, we conducted all analyses using list-wise deletion (results not shown). The pattern of results was unchanged in the list-wise deletion dataset.

Discussion

The divorce rate has remained high (Kennedy & Ruggles, 2014), families continue to form outside of marriage with high dissolution rates (Cherlin, 2010a; Kennedy & Bumpass, 2008), and the majority of these individuals who experience union dissolution will repartner (Anderson & Greene, 2013). In light of the second demographic transition (Lesthaeghe, 2014), Cherlin's "marriage-go-round" (2010b) is probably better conceptualized as a "union-go-round." Overall, our results suggest that offspring whose mothers were on the "union-go-round" are likely riding it themselves. Mothers who had more partners had offspring who reported significantly more partners. Scholars had previously established the intergenerational transmission of divorce (Amato & DeBoer, 2001), but our efforts have established that there is

an intergenerational transmission of repartnering that cannot be explained by selection based on maternal characteristics or the socioeconomic consequences of union instability.

We outlined three potential causal mechanisms that could be driving the intergenerational transmission of repartnering. The economic hardship perspective suggests that the economic stress that often accompanies union instability (Tach & Eads, 2015) is the main culprit for the negative child outcomes associated with family instability. Indeed, there is ample evidence to suggest that children growing in impoverished homes fare worse than children who grow up in more advantaged circumstances (Gershoff et al., 2007). Our results provide only moderate support for the economic hardship perspective. Although offspring with mothers who had low education and employment and more time in poverty reported significantly more partners, maternal repartnering remained a strong predictor of offspring repartnering even when these variables were added to the model.

Another potential explanation for the intergenerational transmission of repartnering is the intergenerational transmission of marriageable characteristics. This perspective suggests that mothers have certain characteristics (e.g. personality, family background) that make them more or less desirable on the marriage market and better or worse at relationships. Mothers may pass these characteristics on to their offspring, suggesting that the intergenerational transmission of repartnering is explained by the intergenerational transmission of marriageability. To test this perspective, we first controlled for observed maternal characteristics including maternal race, age and relationship status at childbirth in the negative binomial regression models, and maternal total partners continued to significantly predict offspring total partners. Next we conducted a more rigorous test using between-within sibling fixed effects models that controlled for all measured and unmeasured time- and sibling-invariant maternal characteristics, measured time-

and sibling-variant maternal characteristics, and measured sibling-variant maternal and sibling characteristics. Maternal repartnering remained a significant predictor of offspring repartnering such that a sibling who experienced more of their mother's partners reported more partners him or herself than did a sibling who experienced fewer of their mother's partners. These results did not support the intergenerational transmission of marriageable characteristics perspective.

Social learning theory (Bandura, 1977) and the transmission of relationship skills and interpersonal behavior (Amato & DeBoer, 2001) suggests that children learn interpersonal skills from their own social interactions with their parents as well as through the observation of their parents' interactions with each other. These perspectives suggest that repartnering can be differentially transmitted within families (i.e. between siblings) because one sibling might observe their mother in a poor functioning partnership that dissolves, but their younger, unborn sibling is protected from the negative effects of the initial poorly functioning union.

Yet repartnering may not be negative for the older sibling. Remarriage, and subsequent cohabitations, are associated with positive mental health outcomes for the adults in them (Author citation; & Strohschein, McDonough, Monette, & Shao, 2005). To successfully form a new relationship, one needs the skills to both find and court new potential partners. Older siblings who experience their mothers' union dissolution may learn these skills in observing their mother in the process of repartnering and use them after a union dissolution to successfully repartner themselves. Younger siblings who do not experience their mothers' union dissolution may be less equipped when attempting to form new relationships after their own union dissolution.

The transmission of commitment perspective (Amato & DeBoer, 2001) suggests that offspring observe their parents exiting unions and learn that a committed union can be dissolved. This perspective suggests that an older sibling who observes their mother breaking her

commitment to her partner learns that commitments can be broken, and will be less apprehensive in breaking their own commitment when they are unhappy with their union, hence increasing the likelihood of repartnering. Their younger sibling may not observe first-hand that a committed union can be dissolved, and may stick with their union even if it is not ideal. Alternatively, offspring may learn that breaking commitments can have positive outcomes. For example, the older sibling may observe their mother happier in their second union, and may attribute their mothers' increased wellbeing to the dissolution of the poor first union and the successful repartnering into the second union. In this case, the older sibling, when finding him or herself unhappy in their union, may feel more comfortable dissolving an unfulfilling union expecting to find greater happiness in a subsequent union. The younger sibling, who did not observe firsthand the potential benefits of dissolving a committed union, may stay in a poorly functioning union rather than breaking a commitment and have little hope of finding a better subsequent union.

The number of maternal partners both before and after an offspring was age 18 was associated with total offspring partners. These associations were likely driven by a similar mechanism; offspring can learn relational skills through observation both before and after age 18 (Amato & DeBoer, 2001; Bandura, 1977; Yu & Adler-Baeder, 2007). However, the contexts of these observations likely differ pre18 and post18. Offspring likely directly observe maternal relational skills pre18 while living with their mothers. After the offspring is beyond age 18, they may transition to a more supportive role as their mothers form and dissolve partnerships (Perrin, Ehrenberg, & Hunter, 2013). In that supportive role, mothers may more readily share relational information with these older offspring that the offspring then use to inform their own relationship behaviors and decisions. Thus relational behaviors in maternal repartnerships may be more directly modeled to older offspring as compared to their younger siblings. Further research is

needed to determine the age specific contexts that best explain the association between maternal repartnering and offspring repartnering.

Limitations

Although the NLSY79 and NLSY79 CYA datasets contain a wealth of uniquely available information, these data are limited on several accounts. First, although the sample of mothers in the NLSY79 was nationally representative in 1979 when data collection began, the demographics of the United States have changed dramatically over the past 36 years and these data no longer mirror the demographics of the nation today. Second, the NLSY79 undercounts maternal partnerships. Participants were not specifically asked about cohabitation in early waves of data collection and no data were collected about cohabiting partnerships occurring between waves of data collection until 2002. Third, these data lack consistent measurement of mechanistic variables such as relationship quality, stress, and mental health, which would have allowed us to explore further the transmission of marriageable traits and the potential role of stress associated with repartnering. Fourth, no paternal data were collected regarding paternal transitions or transitions the offspring might experience outside of their maternal home. Limiting data to maternal households fails to fully capture the complexity that many American children experience as they mature (Guzzo & Furstenberg, 2007), and thereby may bias our results.

Right-censoring is problematic in the NLSY79 CYA; the offspring in the NLSY79 CYA are fairly young and have not completed their repartnering. Future research should replicate these results as the NLSY79 CYA sample ages and forms successive unions. Another limitation of the NLSY79 CYA is the lack of data on the offspring's partners. Very little is asked about partners' personality or relationship background except if they have ever divorced, and no data is collected on couple relationship functioning. Partner characteristics and couple relationship functioning

could more fully explain repartnering patterns.

A critique of sibling fixed-effects models has been that parents may deliberately attempt to either make siblings similar to one another (compensation) or make siblings differ from one another (selective investment) (Almond & Mazumder, 2013). If either compensation or selective investment are occurring among the mothers in our sample, the results of the sibling fixed-effects model are likely unreliable because siblings are either artificially homogeneous or heterogeneous. Although it is unlikely that these efforts are being made in regards to offspring repartnering or by a large number of the mothers in our sample, these data do not provide measures to assess compensation or selective investment efforts and thereby present a potential limitation of our findings.

Another critique of sibling fixed-effects models is that these models do not account for any influence that siblings may have on each other. Any influence between siblings would likely lead siblings to be more homogeneous than they would be without this influence. To consider that one sibling's repartnering would have no influence on another sibling's repartnering is illogical unless no contact existed between these two siblings. Data on sibling relationships, including contact, closeness, and even data on how siblings talk about relationships (Killoren, Wheeler, Updegraff, Rodríguez de Jésus, & McHale, 2015) could unearth an additional mechanism underlying the intergenerational transmission of repartnering. Albeit these critiques present potential limitations to our results from the sibling fixed-effects model, if the estimates in the sibling fixed-effects models are biased, they more likely underrepresent the true association between maternal total partners and offspring total partners. This means that the differences present in the data are likely smaller than the true differences that should exist between siblings and that the association between maternal repartnering and offspring repartnering is actually

stronger than we find in our analyses.

Conclusion

Overall, this study makes a significant contribution to the literature by establishing the intergenerational transmission of repartnering. Future research should examine potential reverse causal mechanisms that could also explain the association between maternal and offspring repartnering. For example, offspring may not want their parents repartnering because of worries about their inheritance or that a new partner will suggest that their mother give them less financial or emotional support. Mothers may also be more likely to repartner after supporting their offspring through repartnerships or learning skills from their offspring on how to successful repartner in a digital age. Although repartnering represents a degree of family instability, it is important to keep in mind that repartnering is not inherently negative. Future research should explore in what contexts repartnering is associated with positive or negative outcomes, particularly for adults, where there is very little research on this topic. If the child development literature on family instability, which has consistently found detrimental associations between family instability and child outcomes (Amato, 2010), is correct, our results suggest that the grandchildren of the mothers in this sample will not only be at risk in childhood, but will have more partners themselves as adults.

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Table 1
Means, Standard Deviations, Minimums, Maximums, and Percentages for Variables

	Full Sample			**Sibling Fixed Effects Sample**		
Dependent Variable	*M*	%	*SD*	*M*	%	*SD*
Offspring Total Partners	1.05		1.32	1.07		1.34
Independent Variables						
Maternal Total Partners	1.52		0.97	1.53		0.96
Maternal Total Partners Pre-18	1.41		0.79	1.42		0.78
Maternal Total Partners Post-18	1.16		0.55	1.17		0.55
Maternal Total Transitions	1.68		1.90	1.68		1.91
Maternal Employment	0.63		0.30	0.62		0.30
Maternal Age at Childbirth	24.49		5.31	24.42		5.27
Maternal Marital Status at Childbirth						
Single		30.98			30.37	
Married		62.73			63.50	
Cohabiting		6.29			6.13	
Maternal Education	12.94		2.53	13.13		2.50
Maternal Race/Ethnicity						
Hispanic		22.05			22.72	
Black		33.28			33.59	
Non-Hispanic/Non-Black		44.67			43.69	
Maternal Poverty Status		26.46			27.52	
Child Variables						
Age at Last Interview	25.32		5.31	28.47		5.27
Sex (Male)		51.27			51.27	
N		7999			7142[a]	

a: Singletons omitted

Table 2
Negative Binomial Regression Predicting Offspring Total Partners

	Model 1			Model 2			Model 3			Model 4		
Variables	*B*	*SE*	e^b	*B*	*SE*	e^b	*B*	*SE*	e^b	*B*	*SE*	e^b
Maternal Total Partners	.12	.01	1.13***				.12	.01	1.13***			
Maternal Total Partners Child Pre-18				.11	.01	1.12***				.11	.01	1.12***
Maternal Total Partners Child Post-18				.08	.02	1.08***				.07	.02	1.07***
Maternal Race[1]												
Black	-.09	.03	.91**	-.10	.03	.91**	-.07	.03	.93*	-.07	.03	.93*
Non-Hispanic, Non-Black	.07	.03	1.07*	.07	.03	1.07*	.11	.03	1.12***	.11	.03	1.12***
Maternal Age at Childbirth	-.03	.005	.97***	-.03	.05	.97***	-.03	.005	.97***	-.03	.005	.97***
Maternal Relationship Status at Childbirth[2]												
Married	-.07	.03	.93*	-.05	.03	.95	-.05	.03	.95	-.03	.03	.97
Cohabiting	.14	.05	1.15**	.18	.05	1.19***	.13	.05	1.14**	.17	.05	1.18**
Maternal Education							-.02	.005	.98***	-.02	.005	.98***
Maternal Employment							-.04	.02	.96*	-.04	.02	.96*
Maternal Poverty Status							.08	.01	1.08***	.09	.01	1.09***
Offspring Sex (Male)	-.19	.02	.83***	-.19	.02	.83***	-.19	.02	.83***	-.19	.02	.83***
Offspring Age at Last Interview	.11	.004	1.11***	.10	.005	1.11***	.11	.004	1.11***	.10	.004	1.11***
N	7999			7202			7999			7202		

1: Hispanic as Reference Category; 2: Single Mother as Reference Category
*: p < .05; **: p < .01; ***: p < .001

Table 3
Sibling Fixed Effects Regression Model Predicting Offspring Total Partners

	Model 1		Model 2	
Variables	*B*	*SE*	*B*	*SE*
Maternal Total Partners	.15***	.01		
Maternal Total Partners Child Pre-18			.10***	.006
Maternal Total Partners Child Post-18			.19***	.01
Maternal Age at Childbirth	.003*	.001	.0005	.001
Maternal Relationship Status at Childbirth[1]				
Married	-.10***	.01	-.04***	.01
Cohabiting	-.06***	.01	-.002	.01
Maternal Education	-.0001	.002	-.0006	.002
Maternal Employment	.002	.006	.002	.007
Annual Poverty Status	.005	.006	.003	.006
Offspring Sex (Male)	-.21***	.005	-.22***	.005
Offspring Age at Last Interview	.12***	.001	.12***	.001
Mean Centered Controls				
Mean Maternal Employment	-.17*	.08	-.14	.09
Mean Maternal Education	-.03	.02	-.02	.02
Mean Poverty Status	.15*	.07	.23**	.08
n (Offspring)[a]	7142		6499	
n (Mothers)	2658		2593	

1: Single Mother as Reference Category
a: Singletons omitted
*: p < .05; **: p < .01; ***: p < .001