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**CHALLENGES IN MEASURING AND STUDYING
MULTIPARTNERED FERTILITY IN AMERICAN SURVEY DATA**

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ABSTRACT

Multipartnered fertility (“MPF”) has become a major topic of interest in the United States due to potential negative linkages with parental, child, and family well-being. A first step in studying any newly emerging (or newly identified) social phenomenon is to properly define the issue and identify its prevalence. However, this is problematic in the case of MPF because most existing sources of data were not originally designed to study MPF. We examine the major data sources used to produce estimates of MPF in the United States, discussing the methodological issues that produce conflicting prevalence estimates and providing guidelines for producing comparable estimates. We also discuss important considerations for research seeking to link MPF and outcomes. Our recommendations will help researchers situate their findings in the broader literature and spur future research.

Keywords: Half-siblings, Measurement, Multipartnered Fertility (Multiple-Partner Fertility, MPF), Stepfamilies

Introduction

Multipartnered fertility (also known as multiple-partner fertility or “MPF”) occurs when parents have children with more than one person, and it seems to be rising in the United States (Guzzo & Furstenberg, 2007b; Guzzo, 2014). Rising levels of MPF are concerning because they appear to be negatively linked to family well-being (Bronte-Tinkew, Horowitz, & Scott, 2009; Carlson & Furstenberg, 2006; Guzzo & Furstenberg, 2007a, 2007b; Harknett & Knab, 2007; Logan, Manlove, Ikramullah, & Cottingham, 2006; Manlove, Logan, Ikramullah, & Holcombe, 2008; Turney & Carlson, 2012). Although research on MPF is rapidly growing, its fairly recent recognition means the ability to adequately study the topic has not yet fully developed. In this paper, we focus on the methodological challenges and discuss both practical and substantive issues that arise when studying MPF with survey data.

American families are more complicated than in the past. In 1960, only 5% of children were born to unmarried parents (Martin, Hamilton, Osterman, Curtin, & Mathews, 2013). Today, over 40% of births occur outside of marriage (Martin et al., 2013), with nearly 60% of these births to cohabiting couples and another 30% to couples who are still romantically involved (Kennedy & Bumpass, 2008; Lichter, 2012). Like marriage, these relationships provide children with access to two biological parents, but they are considerably less stable than marriage (Tach & Edin, 2013). Further, although married parents are less likely to experience dissolution than other couples, about half of marriages eventually end in divorce, and of those, slightly more than half include minor children (Amato, 2005). Repartnering after dissolution is common among both never-married and previously-married parents (Arroyo, Payne, Brown, & Manning, 2004; Bramlett & Mosher, 2002; Bzostek, McLanahan, & Carlson, 2012). These new unions expose parents to the possibility of having children with a new partner – that is, having MPF.

MPF is not a not exactly a new phenomenon, but in the past, it largely occurred within the confines of formal stepfamilies, following a pattern of marital childbearing, divorce, remarriage, and additional childbearing. Shifts in union formation and childbearing are changing this pattern, and an interest in understanding childbearing with different partners, as a separate and distinct line of inquiry from stepfamilies, has emerged. A search of the terms “multiple-partner fertility” or “multipartnered fertility,” on Google Scholar, for instance, yields over 650 articles since 2005. The first step to understanding any newly emerging (or newly recognized) social phenomena is to agree on its measurement and meaning and then document its prevalence (Bianchi, 2014). Measuring MPF has proven to be difficult – though it is common for researchers working with different datasets to produce estimates that vary somewhat, estimates of MPF exhibit unusually large variation (Guzzo, 2014). In this paper, we discuss the methodological issues in detail by highlighting the wide range of estimates before more thoroughly addressing the underlying causes of the variation. We also highlight some key issues for studies seeking to examine the linkages between MPF to individual, child, and family outcomes, focusing on issues of selection, counterfactuals, children’s birth order and family structure, gender, and coresidence.

Prevalence estimates of MPF

Table 1 presents estimates of the prevalence of multipartnered fertility from a literature review of articles published or presented between 2005 and 2015. Estimates are presented separately for women, men, and parents; this table is not inclusive of all such articles, as many use the same sources of data and thus produce very similar estimates. Articles were selected first to highlight the potential sources of data and then to demonstrate the different ways researchers operationalize MPF and thus produce widely varied estimates; additionally, we selected articles

drawing from different waves of some datasets to demonstrate changes over time. It is important to point out that for most of these articles the authors did not set out to create national-level estimates of MPF, and we are not suggesting the authors made mistakes or overlooked key issues. Rather, these are primarily substantive articles with descriptive information about their analytical samples, and the foci of the articles vary (adults' experience vs. children's experience, men vs. women, young adults vs. those finished childbearing, etc.).

- Table 1 here -

Although we selected articles to highlight the variation in published estimates of multipartnered fertility, it is nonetheless surprising that prevalence varies so extensively across studies. At one extreme, Evenhouse and Reilly (2011) found in the 2008 Survey of Income and Program Participation (SIPP) data that 7.5% of all mothers who currently have minor children in their household had children by more than one father. At the other extreme, Fomby and Osborne (2013) reported that 48% of all mothers had ever had children with multiple fathers by the nine-year follow-up (2007-2010) of the Fragile Families and Child Wellbeing Study (Fragile Families); this is unweighted and likely to be an overestimate but still implies a high prevalence. Estimates for fathers are disparate as well, ranging from 14% in the National Longitudinal Survey of Youth, 1997 Cohort (NLSY97) among those aged 23-27 (Scott, Peterson, Ikramullah, & Mnalove, 2013) to 33% by the three-year follow-up (2001-04) of Fragile Families (Bronte-Tinkew et al., 2009).

METHOLOGICAL ISSUES

Why do the estimates of MPF vary so widely? There are several potential reasons. One of the most likely explanations is that researchers have a difficult time finding data that either explicitly measures MPF or allows for its creation by providing information about each birth partner.

Other reasons include discrepancies in operationalization of the measure, differences in the units of analysis, and variations that arise from using cross-sectional versus longitudinal data. We consider these issues, along with other limitations inherent in many popular datasets, in more detail below. We then discuss how measurement considerations may impact substantive research questions and findings in the latter half of the paper.

Data requirements for studying MPF

At a practical level, finding a dataset appropriate for studying MPF is a challenge because it requires the researcher to identify the specific partnership in which each child was born. Table 2 lists the most widely used datasets for studying MPF in alphabetical order; we include only datasets that are publically available, though many have requirements or restrictions on access and use. For longitudinal data or repeated cross-sections, we focus on the wave or cycle that is either the most recent or at which point the identification of MPF became possible. The table highlights the main advantages and disadvantages of each source and provides a cursory overview of the information in each dataset that can be used to create an MPF measure. There are generally three types of data used to study MPF, though we only include the first two types in the table due to availability and access: 1) fertility and family surveys; 2) longitudinal cohort surveys with household roster information; and 3) administrative data.

- Table 2 here -

The first type of data are primarily fertility and family surveys. Typically, fertility surveys collect childbearing information from a woman's birth history as well as coresidential union histories with start and end dates, and then assign paternity by combining these two histories and matching dates of births within union start and end dates. Imagine a woman with two or more births, two cohabiting relationships, and one marriage, where the months of births

and the months of union formations and dissolutions (or time of interview, if the relationship is still intact) are available. If the date of a birth occurs between the start date and the end date of the cohabitation, we assume the father is the cohabiting partner, and if it occurs within the start and end dates of the marriage, the husband is assumed to be the father. If one of the cohabiting relationships “ends” the same month a marriage begins, the data are often reorganized to ensure that these relationships are considered as a single relationship (the transition from cohabitation to marriage with the same partner) rather than two separate relationships. When all births occur within the start and end dates of a union, it is usually assumed that the residential partner is the father of the children. However, if one or more of the births occurred outside of the start and end dates of any of the coresidential unions—as is often the case with MPF—it is unclear whether the partners are the same or different across births, and thus MPF cannot be reliably assessed. A more direct, but less common approach is to embed fertility information within the context of coresidential unions, as is done with the male sample of the cross-sectional National Survey of Family Growth (NSFG). In these cases, respondents report on each union, and then specifically report on births within that cohabitation or marriage; male respondents are also asked about all births occurring outside of a coresidential union and whether they are all with the same person.

A similar complication arises when couples dissolve and re-form – surveys collecting dates of union formation and dissolution usually do not inquire if each union was with a new or previous partner. Researchers generally assume that each spell of coresidence is with a new partner, and thus births across unions with different start and end dates would be characterized as MPF. This assumption is probably true in most, but certainly not all cases, as relationship churning and repartnering does occur, and is more common when partners share a biological child (Nepomnyaschy & Teitler, 2013; Hernandez, Pressler & Dorius, forthcoming). Assigning

births based on union information, of course, assumes that full and accurate histories are reported, yet there is evidence that less formal unions (i.e., cohabitations) are under-reported depending on how long ago the union occurred (Hayford & Morgan, 2008) or how questions are phrased (Kennedy & Fitch, 2008). Some individuals may estimate their start or end dates if they do not remember the exact date, while others may not provide those dates; in the latter instance, researchers likely drop cases when they cannot decisively link births to unions, but there is no way of knowing how often the former scenario arises. In any case, inaccurate union data may bias estimates if we drop respondents with missing union data or misattribute a birth to a union (or fail to attribute a birth union).

The easiest to use, and arguably most reliable data for assessing MPF comes from family surveys that ask respondents directly if they have had children with more than one person. This is the strategy employed by the Fragile Families study, perhaps the most widely used dataset for studying multipartnered fertility. Fragile Families follows a birth cohort of approximately 5,000 births in 1998-2000 in 20 major cities in the United States; about three-fourths of these births are nonmarital. Researchers were first able to identify MPF among the parents of the focal child in the one-year follow-up when mothers were asked directly if they had children by other partners and whether their child's father had children by other partners. Data on additional births with new partners were gathered in subsequent follow-ups, with a complete fertility history collected in the nine-year follow-up. The Fragile Families dataset is the only publicly available data that enables researchers to identify parental MPF – either mother's, father's (to a lesser extent), or both – from a focal child's perspective and to track how MPF affects parental relationships and child well-being at multiple points in time. Unfortunately, child-centered studies such as Fragile Families face a major limitation: the responding parent is usually a residential mother. Mothers

can report on fathers' childbearing histories and behaviors, but the accuracy of such data when parental relationships are not intact are questionable (Carlson & Furstenberg, 2006). Thus, the accuracy and completeness of paternal MPF (and the extent to which a child experiences MPF through both parents) in Fragile Families is unclear. Further, attrition across waves, along with the original focus on urban areas, limits the generalizability of Fragile Families research.

The second type of data used to study MPF are longitudinal cohort studies not necessarily designed for family research but which contain household rosters. Here, MPF may be identified by examining the relationships between mothers and fathers listed on the household roster (sometimes across multiple waves and in both marital and cohabiting unions) and matching these partnerships to children's birth dates. This is the case for the National Longitudinal Survey of Youth, 1979 cohort (NLSY79) data and the earlier waves of Survey of Income and Program Participation (SIPP). Identifying MPF through household rosters is more accurate for mothers than fathers; given that fathers are less likely to live with their children (Grall, 2013), household roster estimates undercount both men's own MPF and children's experience of parental MPF. Even for women, not all children live in the household; for instance, some have aged out of parental coresidence or may live with fathers, other relatives, or in non-family care. Longitudinal cohort data do not always include full fertility histories either, so the extent of underreporting of MPF is unclear. Another limitation of the household roster approach is that it is highly dependent on the accuracy of the reporter, and it is possible that the primary reporter may not know how all family members are related to each other, especially in more complicated or intergenerational households. In partial recognition of MPF and family complexity, the original household rosters of the NLSY79 study were recoded to provide identifiers for each unique coresidential partner from 1979-2012, and newer rounds of data collection for both the

NLSY97 (round 6) and the SIPP (beginning in 2014), have been “reengineered” to include explicit measures identifying birth partners.

We acknowledge that some datasets do not neatly fit into our categorization of fertility surveys and cohort surveys, such as the National Longitudinal Survey of Adolescent to Adult Health (Add Health). Add Health is a longitudinal cohort study, beginning with adolescents in grades 7-12 in 1995 who were later reinterviewed three more times (with a fifth interview in the field now). Add Health can also be considered a fertility study, as it collected detailed fertility histories embedded within relationships at the later waves of data collection, when respondents were in early adulthood (Wave III, 2001-2002, ages 18-24) and early-mid adulthood (Wave IV, 2007-08, ages 24-32).

The third type of data used to study MPF are administrative files, usually taken from welfare records or child support data. We do not include these datasets in Table 2 since they are rarely publicly available. The unique advantage of such data are that they often allow linkages between parents whose relationship is no longer intact as well as the ability to fully identify children’s experience of their parents’ MPF, as non-response/participation is not a problem (i.e., nonresidential father information is still available). Administrative data from Wisconsin, for instance, reveal that nearly 60% of children born outside of marriage in 1997 and who had some involvement in either the welfare or child support system had at least one half-sibling by their 10th birthday through either their mother or father (Cancian, Meyer, & Cook, 2011). Monte, using data for a sample of mothers on welfare in 1998 and followed through 2002, found that 39% of recipients had children with more than one partner (Monte, 2011). The downside of using administrative data are the limited availability, concerns over generalizability to other

geographic areas (as data tend to be at the state level) and other populations (as the population tends to be highly disadvantaged).

Variation in operational definitions and the unit of analysis

In sum, these variations in data sources often mean the analytical samples themselves – and the measures drawn from them – are very different, as shown in the columns labeled “population” and “measures” in Table 1. Going down the population column, it is apparent that estimates are drawn from quite varied groups – all people versus all parents versus only parents with two or more children; men and women; narrow age ranges; and specific groups of parents (i.e., those with a birth in 1998-2000, those with a nonmarital birth, those on welfare or in the child support system, or those with resident children). Essentially, these proportions often use different numerators and denominators. Sometimes limitations inherent in the data sources necessitate the construction of certain types of estimates, though in other instances, the population is defined based on the research question or by other decisions made by the researcher(s). These different populations, in turn, produce different measures, ranging from population-wide prevalence estimates of MPF to measures among those with two or more children to measures of family complexity from the child’s perspective (i.e., having half-siblings from one or both parents).

To be sure, there is no single way to operationalize MPF that would be appropriate for all types of analyses, yet more attention to conceptualization is warranted. That is, how should we define MPF, how do we account for “eligibility” for MPF, and for what purpose are we constructing measures? What we mean by these questions is that although the definition of MPF is actually quite clear in some ways – having children with two or more partners – the implications of MPF differ quite dramatically depending on the phenomena of interest, and this has important implications for how scholars should measure MPF. For example, if we are

interested in simply documenting the prevalence of MPF in the general population, then we should produce population-wide estimates for all adults. Conversely, scholars could be interested in the risk of MPF, in which case they may want to focus on those with at least one child and perhaps further focus on those whose coparental romantic relationship is no longer intact; here, researchers would need data with fertility histories that identify partnerships. Yet another research interest may be in understanding children's experience of their parents' MPF, identifying whether parents have children with other partners; from the children's perspective, this presents itself as having half-siblings. Each of these different issues (and there are, of course, others) would suggest an entirely different unit of analysis and often requires different types of data. The challenge for researchers, then, is to both make their own operational definition of MPF explicit *and* to figure out how to situate their definition and findings with other research which may define MPF differently.

To this end, we suggest that it would be helpful for future studies focusing on adults' experience of MPF to present three sets of estimates whenever possible, even if the estimates are presented only briefly when describing the data: (a) MPF among all adults (i.e., the whole sample), (b) MPF among all parents, and (c) MPF among parents with at least two children. The latter estimate is restricted to the only group technically "eligible" to have children with more than one partner because they have at least two children; one cannot have children by more than one partner if he or she does not have two children. None of these prevalence estimates is inherently better than another, and of course, there may be restrictions by gender or age groups. The NSFG, NLSY79 and 97, SIPP, Fragile Families, and Add Health have, and can be, used for studying adults (Dorius, 2012; Evenhouse & Reilly, 2011; Guzzo, 2014; Guzzo & Furstenberg, 2007b). The recommended estimates produce a set of increasing proportions; for instance, 13%

of all men 40-44 have MPF, rising to 17% of all fathers aged 40-44, and 23% of fathers with two or more children (Guzzo, 2014), and we discuss the reasons this occurs below.

Similarly, for analyses focused on children, we recommend producing at least two estimates of children's experience of parental MPF (i.e., the prevalence of children with half-siblings): (a) the proportion of all children who have at least one half-sibling, and (b) the proportion of children with any siblings who have at least one half-sibling. The former estimates the overall prevalence of children's experience of parental MPF in the population, while the latter captures the prevalence among the group who are technically eligible to experience parental MPF (one cannot have a half-sibling if one has no siblings at all). If possible, it would be useful to further differentiate between those who have half-siblings in the household vs. those that have half-siblings elsewhere and/or to identify whether half-siblings are through the mother, the father, or both. Data most often used for studying children's experience of MPF include Fragile Families and SIPP (Carlson & Furstenberg, 2006), along with some administrative data sources (i.e., the Wisconsin welfare and child support data; see Cancian and Meyer (2011) and Cancian, Meyer, and Cook (2011)). Even for projects with a substantive rather than descriptive focus, producing estimates using different operational definitions enables researchers to maximize their ability to situate their findings within those from other data sources and projects.

Cross-sectional and longitudinal issues

Of course, MPF is not a fixed state but a process that unfolds over the fertility careers and relationships of men and women, and this presents another measurement challenge. We can see this from the estimates produced from various waves of Fragile Families – looking just at the mothers who were unmarried at birth, 23% of mothers had MPF at the one-year follow-up (Carlson & Furstenberg, 2006), and this percentage more than doubled to 57% (unweighted but

no doubt still higher) by the nine-year follow-up (Fomby & Osborne, 2013). Exposure to MPF increases with age, both as individuals experience more years of potential childbearing and as they experience more years of potential relationship instability. At the same time, multipartnered fertility is sensitive to the timing and circumstances of the entrance into parenthood. Generally speaking, in more recent cohorts, the younger a woman is at first birth, the more quickly she transitions to a subsequent birth (Gold, Connell, Heagerty, Cummings, Bezruchka, Davis, & Cawthon, 2005). Further, the more children one has at early ages, the more likely they are to be with multiple partners. Selection into early and high fertility (Guzzo & Furstenberg, 2007a; Guzzo, 2014), combined with the instability of young relationships, particularly those involving children (Edin & Tach, 2012), produces a long period of exposure to potential subsequent fertility with a new partner. Those who delay childbearing, conversely, are much more likely to have their children within more stable relationships and with the same partner (Dorius, 2010).

More relationship instability among early parents, compared to those who delay childbearing, may explain an interesting phenomenon observed across various estimates. The overall population prevalence of MPF – the first estimate we recommend scholars present for adults – is higher at older ages, with 13% of men aged 40-44 exhibiting MPF compared to 7% of men aged 25-32 (Guzzo, 2014). This is as we would expect, given that more people are exposed to both childbearing and relationship instability over time; that is, more people enter the risk set indicated by the numerator. Conversely, among those with at least two children – the third estimate we suggest for adults – prevalence is higher at *younger* ages among those who have already had two or more children, with 28% of fathers aged 40-44 with two or more children exhibiting MPF compared to 32% of fathers aged 25-32 with two or more children (Guzzo, 2014); here, age differences contribute primarily to who is in the denominator. This issue

highlights the importance of careful attention to the numerator and the denominator in producing and interpreting prevalence. The movement from childless to parity one to higher parities is both a selective process (not everyone has a child, or goes on to have another child) and one that occurs over time. Childbearing and rearing in stable unions is also a selective process and is more likely to occur among those who have their children at older ages. Thus, as more adults transition to higher parities with age, the more likely it is that those with two or more children will have them within one partnership, “diluting” the higher prevalence of MPF seen at younger ages by adding those whose childbearing occurs in more stable unions to the denominator. To capture full exposure to MPF, one could produce estimates for those who are near or have finished their childbearing years, given future childbearing (with a same or different partner) is unlikely to occur (Dorius, 2010). This can be done with women in the recent rounds of the NLSY79, for instance, or by restricting the analytical sample of the NSFG or the SIPP to age groups above the prime childbearing ages, such as 40 or 45 and older. This, of course, has drawbacks for examining cohort differences and predicting future trends, but such limitations are inherent in all fertility research.

Data limitations

A related issue that arises when measuring MPF is the need to pay careful attention to whether the information in the data actually reflect if the respondent or focal individual has ever had children with more than one partner. Due to data limitations, MPF is sometimes based on relationships within a single household or from administrative records that capture only a short period of time. Such estimates provide *current MPF status* (i.e., an individual has two or more minor children, or children in the household, or children that are eligible for a program, and so on that can be identified as having different parents at a specific point in time) but may fail to

capture *lifetime MPF status* (i.e., an individual has ever had two or more children by different partners) if some children are excluded or missed from the time-limited focus (by not being minors, by no longer living in the household, by being ineligible for programs, etc.). The key issue, then, is that current status can underestimate whether a person has ever had children with multiple partners, and so lifetime measures are as high (and usually higher) than current status (Dorius, 2012; Guzzo & Furstenberg, 2007b). Current household composition, for instance, partially explains the much lower prevalence seen in the SIPP data (Evenhouse & Reilly 2011) – all children must live in the household at the time of the survey, whereas estimates from other surveys have no such restriction. Current MPF status, or a partial estimate of lifetime MPF status, is often the estimate produced for samples that have not yet completed childbearing (i.e., are right-censored), such as the NLSY97 and Add Health (Guzzo & Furstenberg, 2007a; Scott et al., 2013), and this needs to be explicitly acknowledged. Using life tables to measure exposure and transitions to births with new partners may aid in situating MPF within the life course and comparing MPF in younger samples with older samples who have completed their childbearing years.

There are certainly valid and interesting questions that can be addressed using current MPF despite its limitations. For instance, researchers might be interested in how MPF within the household is associated with parental time or resource allocation. Another potential benefit of current MPF status may be the ability to capture the respondent's partner's past fertility behavior; high rates of relationship instability mean that a respondent's partner's MPF status is almost certainly a moving target. Many surveys do not include detailed information on partner's past union and fertility history, particularly when the partner's children do not live in the household. However, it is possible with some data, such as the male sample of the NSFG, to not

only produce estimates of an individual's MPF status but whether they currently are partnered with someone who has children from a past relationships (and often whether that child or children live in the household).

A more important issue for studying MPF is the availability and quality of data on men's MPF, due in part to a basic problem in family demography: the accuracy of male fertility data. Joyner and colleagues (2012) found incomplete reporting of births by American men to be common, with early and nonmarital births particularly underreported. Missing male fertility is exacerbated by issues of survey and sampling design; disadvantaged men (who are most likely to experience early, nonmarital, and multipartnered fertility) are underrepresented in national surveys of households (Hernandez & Brandon, 2002). Thus, direct estimates of men's MPF from fertility histories in nationally representative fertility surveys, such as the NSFG, are almost certainly underestimates. Population-based surveys (for example, the NLSY and the SIPP, especially the older data collection efforts) which produce estimates based on household rosters will also undercount men's MPF because many men do not live with some or all of their children. Approaches drawing from child-centered datasets are also problematic. For instance, estimates from Fragile Families rely upon mother's reports of their partner's MPF, leading to underestimates when mothers are unaware if their child's father has children with other partners. Obtaining information directly from fathers is difficult in child-centered datasets as well; response rates for nonresidential fathers are quite low and decline over time (Knab, 2008), and non-participation by fathers is not random but instead concentrated among the most disadvantaged fathers (Garfinkel, McLanahan, Meyer, & Seltzer, 1998; Hernandez & Brandon, 2002). Finally, there are two unique attributes of male fertility that differ from female fertility – it is possible for men to not know about children, and men can father children into much later

ages compared to women, though the latter point is unlikely to have a big effect given that overall birth rates over age 45 among men are very low (Martin et al., 2013).

As this preceding section has shown, there are many legitimate reasons why estimates drawn from different datasets and focused on different aspects of MPF vary. Our point here is not to criticize past research but rather to provide clarity as the field moves forward. When operational definitions are clear, with explicit attention to whether definitions are similar to what has been used in prior research, it will be easier for readers to situate any given study in the broader literature. And although this review pointed out differences rather than similarities, there is evidence to suggest that when similar datasets are used, with similar operationalizations, estimates might be quite close. For instance, among fathers aged 25-32 in Wave IV of Add Health, 16.6% had MPF (Guzzo, 2014), and among a slightly younger group of fathers aged 23-27 in the NLSY97, 13.7% had MPF (Scott et al, 2013). The similarity of these estimates, despite very different samples and only partial overlap in the ages, is quite heartening.

LINKING MPF TO OUTCOMES

Of course, family scholars want to not only measure multipartnered fertility but to understand its implications for family well-being, and this is perhaps even more of a challenge, both methodologically and theoretically. MPF is the end result of a series of behaviors – forming a relationship, having a child, experiencing the demise of the parental romantic relationship, forming a new relationship, and having another child. None of these behaviors occurs at random, and to date, research linking MPF to various outcomes has documented primarily statistical associations rather than causal relationships. We briefly discuss key issues researchers should consider when studying the linkages between MPF and outcomes.

Selection issues

A primary concern for understanding how MPF is related to well-being is that researchers must isolate which factors are specifically linked to MPF from those associated with other family processes. Consider that multipartnered fertility is more common among those with a nonmarital first birth, for instance. Studies show that having a nonmarital birth, or being born to an unmarried mother, is negatively linked to well-being for women and children (Shah, Zao, & Ali, 2011; Williams, Sassler, Frech, Addo, & Cooksey, 2011), yet we also know there is considerable socioeconomic selection into having a nonmarital first birth (McLanahan, 2009). If women with MPF or children with half-siblings have poorer outcomes, and one of those children was born outside of marriage, how we can determine whether this is a consequence of MPF, a consequence of nonmarital childbearing, the result of selection into nonmarital childbearing and MPF, or some combination thereof?

Similarly, we know that family structure and family instability are significantly associated with child well-being. Children and adolescents who spend time living outside married two-parent biological families tend to fare worse than their peers across a number of domains (Amato, 2005). And certainly MPF resulting from a pattern of marital childbearing – divorce – remarriage – remarital childbearing is going to be very different than MPF occurring entirely outside of marriage, where the legal ties and obligations between parents and children are less likely to be formally established. But it is not just structure that matters; the number and timing of changes in structure are relevant. Children born to cohabiting couples or to parents who do not live together are both highly likely to experience instability in their family structure and living arrangements and to experience them earlier and more frequently (Osborne & McLanahan, 2007). Children who experience multiple family transitions exhibit higher levels of

externalizing and aggressive behaviors and delinquency across childhood and adolescence, particularly when transitions occur at younger ages (Cavanagh, 2008; Cavanagh & Huston, 2006, 2008; Fomby, 2011; Fomby & Cherlin, 2007; Fomby & Osborne, 2010; Ryan & Claessens, 2012). As such, MPF is closely intertwined with family structure and instability, and analyses of MPF and child outcomes must account for such factors, lest they risk misattributing outcomes to MPF that are more accurately the product of structure and instability.

Counterfactuals

Researchers must also consider what the appropriate counterfactual should be when studying MPF. For example, consider parental mental health – women with multipartnered fertility report lower levels of social support (Harknett & Knab, 2007) and have poorer mental health than those with single-partner fertility (Dorius, 2010). Parents with MPF report higher rates of depression than their peers with children by only one partner, and fathers with MPF are less satisfied with their parenting than their counterparts (Guzzo, 2014). The mechanisms linking MPF to psychological health are unknown, however. Untangling selection and causality might necessitate comparing parents who remain stably partnered to parents who experience dissolution to account for the linkages between mental health and union dissolution, then comparing (among those who experience dissolution) those who repartner to those who do not, and comparing (among those who repartner) those who have additional children to those who do not. Clearly, this is a very complicated process, and scholars need to carefully choose the most appropriate comparison group to answer their research question and will often have to draw not only from theories specific to their outcomes of interest but also theories about union formation and stability, theories about childbearing, and theories about parent and child well-being.

Child well-being: Birth order and family structure

Other challenges exist when considering how parental MPF is linked to child well-being. Foremost among these is the need to carefully account for birth order and timing. The burgeoning research on MPF, parenting behaviors, and child outcomes has largely overlooked the possibility that parental MPF is not a state experienced equally and uniformly across children. Consider a mother who has two children with two fathers. Both of these children would be considered as experiencing maternal MPF, but the experiences of the first child and the second child are almost certainly quite vastly different. Unless the first child was born to the small proportion of women who were not at all romantically involved with their child's father (McLanahan & Beck, 2010), they experienced the dissolution of their parents' relationship, spent some time in a single-parent family, and experienced maternal repartnering (perhaps a series of new maternal partnerships) before experiencing the birth of a half-sibling; they also potentially experienced paternal repartnering and childbearing. This new-partner birth may be several years after the first child was born, as women with MPF tend to have more widely spaced birth intervals than their peers (Dorius, 2010). By default, a first child whose mother has two children by two partners has some involvement in a stepfamily situation (broadly defined to include interaction with their mother's new partner but not necessarily a resident social father) because the mother's new partner is not their biological father. The second child, however, is usually born into a situation in which their parents are at least romantically involved, if not cohabiting or married. In fact, over 70% of MPF women eventually marry, suggesting that later-born children are more likely to experience a more traditional family and are less likely experience the dissolution of their parents' relationship (Dorius, 2010). Thus, in this scenario, the first child

experiences family instability and is exposed to a social or stepfather, but the second child does not necessarily experience these things.

As such, children within a family with maternal MPF are often experiencing different levels of paternal involvement (Meyer & Cancian, 2012), as older children have nonresidential biological fathers *and* perhaps resident social father(s) whereas younger children are more often have a resident biological father. Even when all fathers are nonresidential, children with different fathers will experience varying levels of father involvement (Meyer & Cancian, 2012). Another complication is that mothers' and fathers' behaviors are often associated with each other, even when the relationship is no longer intact. For instance, we know that paternal visitation with nonresidential children declines when the mother forms a new relationship (Guzzo, 2009), yet it is possible that mothers form new relationships precisely because they anticipate their child's biological father will not be involved (Kotila & Kamp Dush, 2012).

Gender and coresidence

Readers will have likely noticed that the discussion above has often focused on maternal multipartnered fertility. Any discussion of the consequences of MPF must pay attention to issues of gender and coresidence because *multipartnered fertility is a gendered phenomenon*. Maternal and paternal MPF, though defined in the same way, have very different implications for involvement and parenting among mothers and fathers. When mothers in their late twenties and early thirties have MPF, the vast majority of them (87%) live with all of their children, but when fathers have MPF, the vast majority of them (87%) do not live with all of their children (Guzzo, 2014). For fathers, MPF often means they live with their children from a current partnership and have children living elsewhere with a past partner. To the extent that parenting behaviors and resources within a household may be fairly similarly regardless of whether the children are all

with the same person (beyond differences attributable to the number, spacing, and age of children and personality differences among children), maternal parenting in MPF families may not be very different than maternal parenting in families without MPF. Similarly, children whose mother has MPF likely experience comparable living situations on a day-to-day basis; as noted above, though, only some of the children would have a resident biological father.

For fathers with MPF, though, their interactions with their children by different partners almost certainly vary in ways that mothers' interactions with children by different partners do not. We know that men's interactions with nonresidential children decline when they have children in new relationships (Manning & Smock, 1999, 2000). The youngest child of a father with MPF will often have a different relationship with his or her father than the oldest child of a father with MPF because the younger child is far more likely to be living with his or her father. Birth order, then, may matter more for predicting parenting and involvement among men with MPF than it does for women with MPF. Because men are less likely to retain full physical custody of their children than women (Grall, 2013), involvement with their children usually entails coordination and negotiation across partners and households to gain access to their children (Edin, Tach, & Mincy, 2009). Conversely, because women generally retain physical custody of children regardless of birth order, they do not have the same obstacles to interaction with older children from past relationships. Instability in family structure and living arrangements among fathers, however, may impact children less than instability among mothers, given the gendered pattern of child coresidence and children's likely exposure to mother's romantic and coresident partners. Studies thus need to consider gendered patterns of child coresidence.

Discussion

In this paper, we sought to highlight some key methodological and substantive issues for researchers working on multipartnered fertility. Specifically, we laid out some potential explanations for the large discrepancies of the prevalence of MPF and provided some simple ways researchers can try to increase comparability across projects. Moreover, we pointed out some methodological issues that substantive projects need to consider to help move the field forward. Although we focused on a few key examples, we suggest that these issues are pertinent to all work studying the consequences of MPF – selection, counterfactuals (i.e., MPF compared to whom?), child birth order and timing, and parental gender and coresidence.

The good news is that as more researchers study MPF, new and existing surveys are incorporating the kind of information needed to assess this form of family complexity. Fragile Families, for instance, collected full fertility histories in its nine-year follow-up to include additional information about the context in which other births (outside of the focal birth) occurred. This allows researchers to incorporate more background factors related to selection processes and study how MPF varies by birth order, among other possibilities. The NLSY97 now explicitly identifies the parent for each of the respondent's children, and SIPP includes, beginning with the 2014 round tentatively scheduled for released in the fall of 2016, complete fertility histories and a direct question measuring MPF for both men and women as well as relationship and household matrices.

As shown in Table 2, existing and soon-to-be available data provides a wealth of opportunities to study the processes leading to MPF and to then link these processes and MPF to a broad range of indicators of individual, couple, family, and child well-being. Our recommendation to the data community at large is not that we need completely new national

datasets to study MPF in the United States; in fact, we would argue that a data collection effort specifically aimed at those with children across partnerships would actually miss out on some of the most important underlying processes. For the study of MPF (and most relationship and childbearing behaviors), we ideally need to study men and women before they embark upon the path to family formation, making existing longitudinal studies of teenagers and young adults ideally suited to studying MPF. As such, we applaud efforts by some of the ongoing data collection programs, such as the Fragile Families, NLSY97, and SIPP, to adapt their survey instruments to better collect the type of information needed to identify MPF and encourage other data programs, such as the NSFG, to incorporate such measures to provide an invaluable tool in tracking trends in MPF over time. At the same time, while there are a few excellent pieces of qualitative work that directly address multipartnered fertility (e.g., Burton, 2014; Burton & Hardaway, 2012; Monte, 2007) as well as work that covers family complexity more broadly (e.g., Edin & Kefalas, 2005; Edin & Nelson, 2013), still more is needed. Qualitative work is uniquely equipped to elucidate the complexities of MPF families from the perspective of different actors within the same larger family system (residential and nonresidential parents, children with different linkages to each other and to parents in and outside the household, and so on). The complicated and dynamic nature of MPF is difficult to capture in surveys, particularly cross-sectional ones, and qualitative research would provide important glimpses into the nuanced processes occurring in MPF families.

Finally, it is worth noting there is no singular theory best suited for studying MPF. At the broadest levels, we should consider theories about fertility; theories about union formation, stability, and repartnering; and theories about family functioning. Research to date has thus used wide range of guiding frameworks, from identity theory among fathers (Scott et al., 2013) to the

value of children perspective (Vikat, Thomson, & Hoem, 1999) to theories of child development (Bronte-Tinkew, Horowitz, & Scott, 2009), depending on the outcome of interest. Within the family systems framework more generally, family scholars have drawn heavily from stepfamily research (Dorius, 2012), focusing on the complexity in reconstituted families (see Inger-Tallman & Pasley, 1987) to examine how MPF affects well-being. Role confusion and boundary ambiguity in complex families (Brown & Manning, 2009; Carroll, Olsen, & Buckmiller, 2007), in which children and adults must make sense of the shifting and varied definitions of who is – and is not – considered part of the family, has implications for interactions, involvement, and the strength and quality of ties within and across families and households. The lack of clear societal norms for more complex families (Cherlin, 1978) often means individuals and families struggle to define their obligations to each other, especially when each member may define his or her own family differently. In an MPF situation, for instance, two children within the same household will have different biological parents (and potentially different stepparents and half-, full-, and step-siblings) and different ties to individuals outside the household. These different ties, in turn, affect not just interpersonal relationships but more concrete responsibilities as well, with lower levels of financial support and less formal legal obligations between stepparents and children (McLanahan & Beck, 2010).

In consideration of the direct and reciprocal relationship of family stressors to family well-being in complex families, a number of authors have also utilized family stress theories (Fomby & Osborne, 2013) or other variations of the family stress process model (adapted from Pearlin and Johnson, 1977) including distinctions between role, chronic, and event stressors (Dorius, 2012; McLanahan, 1983). The entrance (and exits) of family members is a stress to the overall function of the family, and each individual member must draw upon personal and

familial resources to adapt and develop new ways of functioning. Further, these changes to family structure and membership are differentially experienced by various members of the family and often across households. For instance, from a child's perspective, having a nonresidential parent who has another child with a new partner will likely be a stressor in a very different way than having a residential parent and a new partner have another child together; both scenarios produce a half-sibling but the former scenario may impact visitation and financial support whereas the latter scenario will have a bigger impact on day-to-day life. From the parents' perspective, the new partner (the stepparent) will have to adapt to having both a biological child – for whom the obligations are fairly clear – while also having a stepchild. Yet another issue to cope with on an ongoing basis may be rotating household membership – parents with biological children across households have to figure out how to incorporate their nonresident child(ren) into their household when they visit while children have to form sibling ties based on perhaps sporadic contact with some siblings.

These are just a few examples of the types of issues MPF families face and the types of theories and approaches for studying such families, though such theories are not specific to MPF. Rather, they are a mechanism linking complexity and fertility to a specific set of outcomes (like father involvement, maternal depression, or externalizing behaviors among children). Good research is informed by the theory – or theories, as will often be the case for MPF research – most appropriate for the research question and, we hope, analyzed with careful attention to the data and analytical choices.

Conclusion

American families are not now, nor have they ever been, a static concept. Instead, families are adaptive to the historical times and social location of their members. In the first half of the

twenty-first century this includes a growing number of single mothers, nonmarital births, and a proliferation of new family forms and patterns, including an increase in multipartnered fertility. As family scholars have adapted their research agendas to keep up with these changes, hundreds of articles have been published on multipartnered fertility, often with the goal of linking MPF to individual, child, and family level outcomes. As we have demonstrated, the ability to compare results across these studies is often difficult due to variations in analytic samples and measurement as well as distinctions in the use of counterfactuals. To synthesize prior findings and move the literature forward, we have suggested a number of critical issues to be considered by those who study MPF, including the role of selection into this family form (both in terms of individual characteristics and the relationship instability antecedent to MPF), the influence of children's birth order, and the importance of the gender and coresidence of the parent and child. As family researchers from a variety of disciplines weigh in on the importance (or not) of MPF on family processes and well-being, it is important to clarify what we do know, including the basic prevalence and scope of this emerging family form in American society. By articulating the similarities and significant variations in the prior body of work, we hope to encourage new insights and approaches to studying this complex, but fairly common, family pattern.

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Table 1. Existing Estimates of Women’s, Men’s, and Parent’s Experience of Multipartnered Fertility, by Author(s) and Source (weighted estimates unless otherwise noted)^a

Measure	Estimate	Population	Data source; estimate year	Authors
<i>Women’s MPF</i>				
Ever female MPF	12.1% of women	Women aged 25-32	National Longitudinal Study of Adolescent to Adult Health, Wave IV; 2008	Guzzo (2014)
Ever maternal MPF	22.1% of mothers			
Ever maternal MPF: ≥2 children	37.9% of mothers with ≥2 children			
Ever maternal MPF	47.9% of mothers (unweighted)	Mothers with a birth in 1998-2000	Fragile Families and Child Wellbeing Study; 9-yr follow-up (2007-10)	Fomby & Osborne (2013)
Ever maternal MPF: unmarried at focal birth	57.3% of unmarried mothers (unweighted)			
Ever maternal MPF: married at focal birth	18.6% of married mothers (unweighted)			
Ever female MPF	18.7% of women	Women aged 43-51 in 2010	National Longitudinal Survey of Youth 1979- 2010	Dorius (2012)
Ever maternal MPF	22.4% of mothers			
Ever maternal MPF: ≥2 children	27.7% of mothers with ≥2 children			
Current maternal MPF	7.5% of mothers	Mothers 15 and older with all biological children residing in household	Survey of Income and Program Participation; 2008	Evenhouse & Reilly (2011)
Current maternal MPF: 2 children	8.6% of mothers with 2 children			
Current maternal MPF: 3 children	15.2% of mothers with 3 children			
Current maternal MPF: 4 children	18.3% of mothers with 4 children			
Current maternal MPF: 5 children	21.6% of mothers with 5 children			
Ever maternal MPF: unmarried at focal birth	20.8% of unmarried mothers	Mothers with a birth in 1998-2000	Fragile Families and Child Wellbeing Study; 5-yr follow-up (2004-07)	McLanahan & Beck (2010)
Ever maternal MPF: cohabiting at focal birth	14.9% of cohabiting mothers			
Ever maternal MPF: visiting at focal birth	23.0% of visiting mothers			
Ever maternal MPF: single at focal birth	32.6% of single mothers			
Current maternal MPF	39% of mothers	Subsample of Illinois mothers on welfare in 1998	Illinois Families Study (2002)	Monte (2011)
Ever female MPF	3.2% of women	Women aged 19-25, those with a nonmarital 1 st birth	National Longitudinal Study of Adolescent to Adult Health, Wave III; 2001-02	Guzzo & Furstenberg (2007b)
Ever maternal MPF: unmarried at 1 st birth	13.5% of unmarried mothers			
Ever maternal MPF: unmarried at 1 st birth, ≥2 children	41.0% of unmarried mothers with ≥2 children			
Ever maternal MPF	22.7% of mothers	Mothers with a birth in 1998-2000	Fragile Families and Child Wellbeing Study; 1-yr follow-up (1999-2001)	Carlson & Furstenberg (2006)
Ever maternal MPF: unmarried at focal birth	36.9% of unmarried mothers			
Ever maternal MPF: married at focal birth	13.3% of married mothers			

Measure	Estimate	Population	Data source; estimate year	Authors
<i>Women's MPF, continued</i>				
Current maternal MPF	At least 30% of mothers	Mothers entering TANF in Wisconsin in 1997-1998	Wisconsin welfare recipient data; 1999	Meyer, Cancian, & Cook (2005)
<i>Men's MPF</i>				
Ever male MPF	13.1% of men	Men aged 40-44	National Survey of Family Growth; 2006-10	Guzzo (2014)
Ever paternal MPF	17.1% of fathers			
Ever paternal MPF: ≥ 2 children	22.5% of fathers with ≥ 2 children			
Ever male MPF	6.9% of men	Men aged 25-32	National Longitudinal Study of Adolescent to Adult Health, Wave IV; 2008	Guzzo (2014)
Ever paternal MPF	16.6% of fathers			
Ever paternal MPF: ≥ 2 children	32.4% of fathers with ≥ 2 children			
Ever paternal MPF	13.7% of fathers	Fathers aged 23-27	National Longitudinal Survey of Youth 1997; 2008	Scott, Peterson, Ikramullah, & Manlove (2013)
Ever paternal MPF: unmarried & nonresident at 1 st birth	47.6% of unmarried, nonresident fathers			
Ever paternal MPF	33.2% of fathers	Fathers who were resident at birth occurring 1998-2000 (as reported by mothers)	Fragile Families and Child Wellbeing Study; 1-yr & 3-yr follow-ups (1999-2001 & 2001-04)	Bronte-Tinkew, Horowitz, & Scott (2009)
Ever male MPF	7.9% of men	Men aged 15-44	National Survey of Family Growth Cycle 6; 2002	Guzzo & Furstenberg (2007a)
Ever paternal MPF	17.0% of fathers			
Ever paternal MPF: ≥ 2 children	26.6% of fathers with ≥ 2 children			
Ever paternal MPF	24.7% of fathers	Fathers with a birth in 1998-2000 (as reported by mothers)	Fragile Families and Child Wellbeing Study; 1-yr follow-up (1999-2001)	Carlson & Furstenberg (2006)
Ever paternal MPF: unmarried at focal birth	42.2% of unmarried fathers			
Ever paternal MPF: married at focal birth	13.3% of married fathers			

Measure	Estimate	Population	Data source; estimate year	Authors
<i>Parental MPF</i>				
Current maternal and biological father's MPF	30.7% of mothers and/or identified fathers	Mothers with resident child(ren) under 18, corresponding fathers identified by mothers	Wisconsin child support enforcement data system; 2005	Cancian & Meyer (2011)
Current paternal and biological mother's MPF	31.4% of fathers and/or identified mothers			
Current child MPF experience of parental MPF	58.2% of firstborn children of unmarried mothers through mothers and/or fathers	1 st births to unmarried mothers in 1997	Wisconsin child support enforcement data system; 2008	Cancian, Meyer, & Cook (2011)
Ever both parents MPF	11.1% of both parents	Mothers and fathers with a birth in 1998-2000 (as reported by mothers)	Fragile Families and Child Wellbeing Study; 1-yr follow-up (1999-2001)	Carlson & Furstenberg (2006)
Ever both parents MPF: unmarried at focal birth	20.1% of both unmarried parents			
Ever both parents MPF: married at focal birth	5.2% of both married parents			
Current maternal and biological father's MPF	At least 50% of mothers have MPF and/or the identified fathers of their children have MPF	Mothers entering TANF 1997-1998, corresponding fathers	Wisconsin welfare recipient data; 1999	Meyer, Cancian, & Cook (2005)
Current paternal and biological mother's MPF	At least 72% of identified fathers have MPF and/or the mothers of their children have MPF			

^a This table replicates some information appearing in Guzzo (2014).

Table 2. Main Datasets Used to Study Multipartnered Fertility (MPF)

Dataset	Advantages	Disadvantages	Where to find MPF information	Variables indicate	Steps to create MPF measure
Fragile Families and Child Wellbeing Study, 9-yr follow-up (2007-10) (Fragile Families): birth cohort of 5,000 births (mostly nonmarital) in 20 major cities, with follow-ups at 1, 3, 5, 9, and 15 years	<ul style="list-style-type: none"> - Can create MPF at focal child’s birth as well as subsequent MPF - Can combine mother and father reports to create measure of MPF through either parent - Allows identification of MPF through either parent, even if father is not interviewed - Can link to range of parent and child outcomes 	<ul style="list-style-type: none"> - Much more complete data for mother’s MPF than father’s MPF - Can only link MPF to focal child outcomes, not all children - Mother may not know father’s fertility information - Must combine information from other waves - Cannot measure prevalence in population overall - Cannot produce lifetime measure, as respondents may not have completed childbearing years - Data are not nationally representative of all births - Cannot account for selectivity of entrance into parenthood or MPF 	Section A	Unique identifier for biological parent for each child (asked of both mothers and fathers)	Sum number of different identified partners across births
			Section B, mother interview	Mother report of whether focal child bio father had children w/ another woman since last interview	Combine with data from earlier waves on MPF prior to last interview, then combine with maternal MPF
National Longitudinal Study of Adolescent Health, Wave IV (Add Health): school-based sample of adolescents in grades 7-12 in 1995, with follow-ups in 1996, 2001-2002, and 2008	<ul style="list-style-type: none"> - Can model selection into parenthood and MPF due to availability of earlier waves of data and rich set of measures - Can measure prevalence among population overall and among parents - Can measure MPF among both men and women 	<ul style="list-style-type: none"> - Fertility is likely under-reported for men - Cannot produce lifetime measure, as respondents have not completed childbearing years - Cannot measure couple-level MPF - Cannot link to child outcomes - Data are not entirely nationally representative due to school-based sampling frame and attrition across waves 	Section 16a	Creates record for each coresidential union and each relationship or encounter resulting in a pregnancy	Exclude pregnancies not ending in a live birth, then reorganize birth file from multiple records to create one birth history for each respondent, retaining partnership information for each birth. Create measure indicating whether there is more than one birth partner for all births
			Section 16b	Collects information on number of times cohabited or married each partner	
			Section 16c	Collects start and end dates of cohabitation and marriage	

Section 18

Creates separate record for all pregnancies, identifies relationship in which pregnancy occurs, and identifies pregnancies ending in a live birth

<p>National Longitudinal Survey of Youth 1979 & National Longitudinal Survey of Youth 1979 - Young Adult, beginning in 2006 (NLSY79): youths aged 14-21 in 1979, interviewed yearly until 1994 and biennially thereafter; children of the NLSY79 cohort were interviewed annually beginning in 1986 until 1994 and biennially thereafter</p>	<ul style="list-style-type: none"> - Nationally representative - Can produce lifetime measure - Can model selection into parenthood and MPF due to availability of earlier waves of data and rich set of measures - Can measure prevalence among population overall and among parents - Can link to children's data (NLSY79 Child and Adult Samples) to study outcomes 	<ul style="list-style-type: none"> - Cannot measure male MPF because MPF indicators are derived in part from child and YA survey, which is only asked of women's biological children - Patterns may not apply to younger cohorts 	<p>Household roster</p> <p>Fertility and Relationship History file</p> <p>NLSY79-Young Adult Family Background</p>	<p>Unique identifier for each different coresidential partner of female respondent</p> <p>Dates of birth and start and end dates for coresidential relationships</p> <p>Biological relatedness of siblings in the household</p>	<p>Combine data from household roster and fertility or relationship history to match dates of birth to relationship dates to create father identifier for each birth in a residential union. For nonresidential births, use data from half and full sibling reports from young adult file. Combine to create overall measure for mothers</p>
<p>National Longitudinal Survey of Youth 1997, round 6 and later (NLSY97): youths 12-16 in 1997, interviewed yearly</p>	<ul style="list-style-type: none"> - Nationally representative - Can model selection into parenthood and MPF due to availability of earlier waves of data and rich set of measures - Can measure prevalence among population overall and among parents - Can potentially compare estimates across cohorts among women by using NLSY79 - Can measure MPF among both men and women 	<ul style="list-style-type: none"> - Fertility is likely under-reported for men - Cannot produce lifetime measure, as respondents have not completed childbearing years 	<p>"OTHERPARENTS" roster</p>	<p>Lists all people with whom respondents had children</p>	<p>Sum number of parents listed</p>

<p>National Survey of Family Growth, 2002 and later (NSFG): cross-sectional household-based survey of men and women aged 15-44</p>	<ul style="list-style-type: none"> - Nationally representative - Can measure prevalence among male population overall and among fathers - Can stratify by age to compare across age groups and to obtain estimates for those at end of childbearing years 	<ul style="list-style-type: none"> - Not possible to construct measures for women due to differences in survey instruments - Fertility is likely under-reported for men - Retrospective reports and cross-sectional data precludes disentangling selective and causal mechanisms 	<p>Male respondent file: relationship histories in Sections C-D</p> <p>Section F</p>	<p>For each cohabiting and marital union, respondents are asked if they had any children with that partner</p> <p>Respondents are asked about any children born outside coresidential union and whether they all have same mother</p>	<p>Sum number of relationships in which respondent had child, combine with number of additional mothers listed for nonmarital children</p>
<p>Survey of Income and Program Participation, through 2008 (SIPP): household-based survey of all adults 15 and over interviewed three times a year for up to four years, with periodic panel replacement (i.e., new samples drawn)</p>	<ul style="list-style-type: none"> - Nationally representative - Multiple panels allow estimation of trends over time - Can measure prevalence among female population overall and among mothers 	<ul style="list-style-type: none"> - Cannot measure male MPF because MPF indicators are derived from household rosters - Underestimation of female MPF due to restriction to women with minor children and due to exclusion of nonresidential children - Cannot identify number of fathers - Limited ability to examine selection into MPF due to short panel length 	<p>Household roster</p>	<p>Identifies relationships between all those living in a household</p>	<p>Identify for every woman each household member listed as her biological child, then count the number of occurrences of full and half siblings between members</p>
<p>“Reengineered” Survey of Income and Program Participation, 2014 and beyond (SIPP): household-based survey of all adults 15 and over interviewed annually for four years</p>	<ul style="list-style-type: none"> - Nationally representative - Multiple panels allow estimation of trends over time - Can measure prevalence among population overall and among parents - Can measure MPF among both men and women 	<ul style="list-style-type: none"> - Shift in data collection methodology and questionnaire design may inhibit comparisons with earlier rounds of SIPP data - Limited ability to examine selection into MPF due to short panel length 	<p>Direct question for all respondents 15 and older</p>	<p>Direct question if all children have same biological parent; children are put into “shared parent” clusters</p>	<p>Identify number of partners from number of shared parent clusters</p>