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Childless Expectations and Childlessness Over the Life Course

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Abstract

Using nineteen panels of the 1979 National Longitudinal Survey of Youth (NLSY-79), we construct life-lines characterizing women's childless expectations and fertility behavior. One-quarter of women in the NLSY-79 cohort ever reported an expectation for childlessness but only 14.8 percent of women remain childless. Childless women follow two predominant life course paths: (1) repeated postponement of childbearing and the subsequent adoption of a childless expectation at older ages or (2) indecision about parenthood signaled through vacillating reports of childless expectations across various ages. We also find that more than one in ten women became a mother after considering childlessness: an understudied group in research on childlessness and childbearing preferences. These findings reaffirm that it is problematic to assign expected and unexpected childlessness labels to the reproductive experience of childless women. In addition, despite their variability over time, childless expectations strongly predict permanent childlessness, regardless of the age when respondents offer them. Longitudinal logistic regression analysis of these childless expectations indicates a strong effect of childbearing postponement among the increasingly selective group of childless women. However, net of this postponement, few variables commonly associated with childlessness are associated with reports of a childless expectation. We thus conclude that the effects of socio-demographic and situational factors on childless expectations are channeled predominantly through repeated childbearing postponement.

Introduction

Permanent and temporary childlessness in industrialized countries are on the rise (Dye 2010; Rowland 2007; Sobotka 2017). In the United States, 2014 data show that one in seven women aged 40–44 have not had any children and that almost a half of women aged 18 to 39 were childless (IPUMS CPS, Flood et al. 2017)[1]. These elevated levels of childlessness are part of a broad shift in family formation patterns that have consequences at the individual, family, and societal level.

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[1]While high levels of childlessness are not novel from a historical perspective (Rowland 2007; Morgan 1991), the current context of childlessness, which we subsequently describe, makes recent increases in childlessness unique from a sociological and demographic perspective.

At the individual level, fertility postponement and childlessness expand the proportion of the life course that men and women spend without children. These child-free years create space and opportunity for exploration of non-familial social roles, through e.g. career or leisure activities, which translates into greater individualization of life course biographies (Giddens 1991). In addition, increases in temporary and permanent childlessness fundamentally alter the meaning of parenthood as a life course marker. Once perceived as the final step in the passage to adulthood (Elder 1975), parenting is increasingly an optional part of this transition. At the institutional level, the centrality of parenthood to both the family and to gender identities has been weakened by the growing prevalence and normative acceptance of fertility postponement and childless lifestyles. Combined with smaller family size, childlessness also contributes to a decline of fertility levels in the United States (Martin et al. 2017) and a decrease in birth cohort sizes. These smaller cohorts impact a full set of age-graded institutions such as schools, the labor force, union formation, and social security.

What are the causes of increased childlessness? Are present day levels of, and variation in childlessness a manifestation of individual preferences to avoid childbearing? Or is childlessness more frequently the result of contextual/material factors (potentially anchored in institutional arrangements) that impede fulfillment of motherhood plans, e.g., conflicts between family life, career aspirations, and leisure activities? These questions are fundamentally sociological and we approach them from a duality of structure perspective (see Sewell 1992, 2005) using the theory of conjunctional action (TCA, Johnson-Hanks et al. 2011). This approach stresses the interaction of schemas, material constraints, and individual identity in producing the patterns observed in the data and challenges rational choice approaches to fertility (Bachrach and Morgan 2013; Morgan and Bachrach 2011).

This paper also complements the existing childlessness literature. Specifically, it focuses on three aspects of the process of remaining childless, all three pertaining to the development of childless expectations. First, we study whether women state childless expectations and how these expectations change over women's reproductive careers. At the end of the childbearing years, childlessness is a fixed characteristic. But at younger ages the population of childless women and those that expect to remain childless is dynamic – childless women become mothers and childbearing expectations change. Existing evidence describes this sequential, path-dependent processes leading to eventual childlessness. However, previous studies either take a retrospective approach, that might be subject to rationalization (see Allen and Wiles 2013; Carmichael and Whittaker 2007; Gerson 1985; Veevers 1979), or provide evidence of changes in prospective childlessness expectations over the course of only several years (Berrington 2004, 2017; Bhrolchain, Beaujouan and Berrington 2010; Iacovou and Tavares 2011). We complement this existing work by investigating the changes in prospective childlessness expectations over the full length of women's reproductive lives. While a pattern of childbearing postponement and declining expected family size has been identified in the United States (Hayford 2009), the dynamic changes in childless expectations have not yet been explored.

Second, we ask: do expectations of childlessness predict permanent childlessness? Studies focusing on family size often place substantial emphasis on the predictive validity of fertility expectations (e.g., Miller, Rodgers and Pasta 2010; Morgan and Rackin 2010; Quesnel-

Vallée and Morgan 2003). In contrast, the childlessness literature rarely examines the link between prospective childlessness preferences and subsequent permanent childlessness (for exceptions see: Berrington 2004; Heaton, Jacobson and Holland 1999), especially among young women. An expectation of childlessness, although possibly rare at younger ages, might provide useful information in studying the life long process of remaining childless because individual childbearing preferences might drive specific life course decisions (i.e. forming a romantic union). Our paper bridges predictive validity of fertility intentions literature with studies of permanent childlessness by investigating to what extent expectations of childlessness reported in young and middle adulthood predict permanent childlessness.

Third, we investigate the factors that are associated with an expectation of childlessness at different life stages. Little is known about the correlates of childless expectations. In contrast, there exists a rich literature on the differences between mothers and women who remain childless (Connidis and McMullin 1996; Koropeckyj-Cox and Call 2007; Tanturri and Mencarini 2008). While numerous studies address the reasons behind adjusting fertility intentions upward or downward over the life course (Gray, Evans and Reimondos 2013; Heiland, Prskawetz, and Sanderson 2008; Liefbroer 2009; Iacovou and Tavares 2011; Morgan and Rackin 2010) few studies examine the interdependencies of individual characteristics and expecting no children (e.g. Heaton, Jacobson and Holland 1999). Accordingly, we contribute to understanding the process of remaining childless by looking at correlates of childlessness expectations over the women's reproductive life course.

Substantial proportions of young US women consider a childless life style. Data for 2013–2015 show that 12% of childless women aged 20–24 and 20% of childless women aged 25–29 expected no children (National Survey of Family Growth, 2013–2015). These percentages have increased from 9% and 12% in 1988, respectively (National Survey of Family Growth, 1988). By studying childless expectations and the forces that impact them, this paper provides new information for understanding elevated levels of childlessness in 21st century America. More generally, our work offers a better understanding of how personal preferences, situated within the structure of one's life, change and contribute to divergences in the individual life course.

The Process producing Childlessness

Biologically speaking, a woman could have a child at any time between menarche and menopause – a span of 30 to 35 years. A first order conceptual issue focuses on the time frame individuals use in making childbearing decisions. One extreme is represented by some of the early microeconomic modeling of the childbearing process (e.g., Willis 1973). This approach assumes that men and women make all their fertility decisions early in life, along with decisions about education, labor force participation, consumption and leisure (Turchi 1975). At the opposite extreme is Ryder (1973:503) who argues that "from the standpoint of the actions necessary to fulfill their reproductive expectations, all a couple needs to have in mind is whether to permit the next ovulation to come to fruition". Empirical and theoretical support exists for a middle ground, but one much closer to Ryder's position. Researchers looking at the topic of childlessness (for women that were fecund for much of their

reproductive life) have reached the same conclusion: the typical childless woman repeatedly postpones childbearing and subsequently decides to have no children. This process can be often called “perpetual postponement” (e.g. Berrington 2004).

Why does postponement of childbearing increase the likelihood of childlessness? There are several mechanisms; all are linked to the sequential nature of fertility decisions. The first is exposure to the risk of sub and infecundity with increasing age. Women can wait “too long” given their own “biological clock” or medical history, neither of which can be well predicted at younger ages. This biological mechanism can also be linked with expectations of childlessness. Some women, especially older married women, may have already tried to get pregnant or failed to get pregnant despite irregular contraceptive use. These women may know or suspect that they will have difficulty getting pregnant. Others may have suffered medical conditions related to sub-fecundity and have been told by health professionals that their fecundity might be compromised. Such women may expect childlessness because of the difficulty of getting pregnant or carrying a birth to term.

A second mechanism is linked with social/normative age-schedules for childbearing (Billari et al. 2011). Women and couples can feel they are beyond an optimal or acceptable age for parenthood, possibly because friends and sibling have moved beyond the childbearing stage.

But third and most importantly, postponement allows for experiences that can change a person’s identity and preferences (see Gerson 1985 and more generally Johnson-Hanks et al. 2011). Mason’s “role hiatus hypothesis” (see Spitze 1978) captures this mechanism – time spent in non-familial roles during adolescence and early adulthood can alter gender role attitudes and tastes for employment and leisure. Or as Cutright and Polonko (1977:60) suggest “given opportunities to engage in alternate roles, some women will find other activities more rewarding than childbearing, and successive postponements will eventually result in …childlessness.”

The postponement of childbearing clearly increases childless expectations. However these facts leave many unanswered empirical questions. For instance, at what ages do women transition from postponing childbearing to expecting no children? If they make this transition, then are these new expectations stable? And, do these stated childless expectations demonstrate predictive validity? Further, does the predictive validity of stated expectations vary by the age at which expectations are reported, e.g., at age 24 versus 40? And finally, what factors are associated with childless expectations over the life course and are they different from those associated with remaining childless? We provide answers to these questions for a cohort of American women that have recently finished their reproductive careers (the 1979 National Longitudinal Survey of Youth cohort).

Structure and Heterogeneity in the Processes Producing Childlessness

Following Johnson-Hanks et al. (2011), we identify the sources of variation and change in the timing of childbirth or childbearing expectations in the different frames or schemas (hereafter schemas) that exist in individual’s brains and “in the world”. These schemas enable information to be processed and interpreted, thereby allowing action. A second

source of behavioral structure and variation is the different conjunctures (or concrete situations where action occurs) that people experience. These conjunctures provide material culture that facilitates action using a particular schema or may "prime" an individual to construe a conjuncture in a particular way. Members of different social groups may know or be more likely to use particular schemas and/or they may experience different conjunctures as their lives unfold. Importantly, variation in either or both can produce behavioral variation (See for instance, Johnson-Hanks et al. 2011: 82–83).

The cohort we study entered adulthood when women's educational attainment was increasing rapidly, and employment opportunities were expanding. Also, gender roles were becoming more malleable. These changes, no doubt, increased the likelihood that many potential childbearing conjunctures were resolved in favor of postponement (see Johnson-Hanks et al. 2011). This postponement often led to new conjunctures that also favored additional postponements. These repeated postponements allowed for changes in identity, including ones that attenuate the centrality of parenthood. In this way, predictable trajectories (social structure) emerge from available/chosen schemas and from the situations (conjunctures) that individuals face (Johnson-Hanks et al. 2011; Sewell 1992, 2005).

Race and ethnicity are a source of variation in schemas and conjunctures. A history of racial separation and exclusion has reinforced schemas rationalizing earlier childbearing among Blacks (see Johnson-Hanks et al. 2011: 80–82). Studies provide evidence of lower levels of expected childlessness among Black women (Heaton, Jacobson and Holland 1999; Mosher and Bachrach 1982). While levels of fertility and childlessness between Blacks and Whites have narrowed in recent decades (Lundquist, Budig and Curtis 2009), note that the women in this study were born in late 50s and early 60s. Thus, we expect the incidence of childlessness and childless expectations to be lower among Black women.

Similarly, strong family-oriented cultural roots inculcate pronatalist schemas and social adaptation in the United States and may encourage earlier parenthood as well as discourage childlessness among Hispanics (for broader discussion see e.g. Landale, Oropesa and Bratadan 2006). Evidence of earlier childbearing patterns and lower levels of childlessness for Hispanics as compared to Whites has been observed (Sweeney and Raley 2014). However these trends are predominantly driven by the divergent childbearing patterns of migrant populations rather than the difference between US-born Hispanics and Whites (Parrado and Morgan 2008; Parrado 2011). Considering previous findings on divergent fertility patterns of Hispanic women in the United States, we anticipate Hispanic women in our sample will have lower levels of childlessness and will less frequently state a childless expectation.

Schemas supportive of family formation and early childbearing may become dominant during adolescence as a result of immersion in a religious community (as measured by religious participation). Regardless of denomination, more religious individuals tend to have higher fertility and fertility preferences (Adsera 2006; Hayford and Morgan 2008) and childless women tend to be less religious (Abma and Martinez 2006).

Aspects of family background also alter the schemas most accessible to individuals and the conjunctures they are most likely to experience. Children, adolescents and young adults learn schemas relevant to family and parenting by observing and interacting with their parents, siblings and relatives. Further differential family background, provides differential life course opportunities (via different sets of conjunctures). As a result, children are likely to adopt family formation patterns like those that their parents have experienced (Liefbroer and Elzinga 2012). In this study, we focus on several aspects of family background: the size of the family of origin, mother's education, and mother's labor force participation. Children growing up with numerous siblings may prefer larger families (and as a result, a lower preference for childlessness) and prefer earlier family formation (for evidence see e.g. Barber 2000). Thus, we expect that women who grew up in larger families will be less likely to expect childlessness and less likely to remain childless.

Higher educated and working mothers may encourage their daughters to follow a similar path of schooling and career (Berrington and Pattaro 2014). The schemas supporting such life course are likely to include postponed motherhood. Highly educated, working mothers could also provide examples of successfully combining college, career and motherhood. Thus, we expect that the women whose mothers finished higher education and were employed will be more likely to postpone childbearing but less likely to report childless expectations.

There is a strong association between women's own advanced education and childbearing patterns (Kravdal and Rindfuss 2008; Rindfuss, Bumpass and St. John 1980; Sobotka 2004). Both education and childbearing are time and energy consuming. For this reason, women who pursue higher education often postpone motherhood to complete schooling (Blossfeld and Huinink 1991; Hoem 1986; Kohler, Billari and Ortega 2002). Pursuing tertiary education, especially graduate degrees, might extend the postponement to ages at which female biological fecundity is reduced (te Velde and Pearson 2002), hence increasing the risk of sub-fecundity and childlessness. In addition, further education may alter the subsequent life course and, as a result, the conjunctures one experiences. Longer periods of education and training allow women to realize interests or lifestyles that compete with parenthood and lead to developing a childless expectation. One's involvement in education might also signal less traditional attitudes and possibly weaker interest in forming a family. Empirically, women with higher levels of education have a greater probability of remaining childless (Bloom and Trussell 1984; Heaton, Jacobson and Holland 1999; Keizer, Dykstra and Jansen 2008; Koropeckyj-Cox and Call 2007) and are more likely to expect childlessness (Kenkel 1985; Lee and Gramotnev 2006).

We expect that two aspects of individuals' current situation, employment and union status, will powerfully influence the likelihood of childlessness. These current situations provide the context, the conjunctures, within which individuals act. Labor force participation can encourage childbearing postponement as women pursuing professional careers might postpone childbearing in hopes of accumulating more human capital during their twenties and thirties. Employment can also be linked with remaining childless and childless expectations through multiple mechanisms such as increasing opportunity costs of parenthood, providing alternatives to motherhood that are valued in one's environment,

providing financial resources to explore alternative life styles. Possibly, an increased labor market involvement could be an indicator of personal preferences that prioritize professional career and other life choices over family formation. Empirical studies indicate that women strategically postpone motherhood to increase their chances of career advancement (for review see Gustafsson 2001), employed women are more likely to remain childless and women with occupational ambitions are more likely to express a desire to have no children (Kenkel 1985; Lee and Gramotnev 2006).

Being married (or having a stable partnership) alters the context for childbearing. Being single is the most frequently cited reason for having no children (Connidis and McMullin 1996), and having never been married is one of the strongest predictors of childlessness (Heaton, Jacobson and Holland 1999; Keizer, Dykstra and Jensen 2008; Koropeckyj-Cox and Call 2007). Remaining single might also be yet another indicator of non-traditional life style preferences that are linked with preferences for no children. Partnered women are also less likely to adjust their fertility intentions downward over the life course (Hayford 2009; Liefbroer 2009; Iacovou and Tavares 2011; Morgan and Rackin 2010). We thus expect that married women will be less likely to report intentions for childlessness.

In sum, the factors above are likely associated with differences in the likelihood of fertility postponement, childlessness, and expected childlessness. But are these associations stronger at younger or older ages? Our approach to this question is exploratory since we do not have strong theory or prior empirical findings suggesting that effects change with age. However, our general expectation is that family background factors will have strong effects at younger ages and that at older ages the experiences and trajectory of the individual life course (more proximate factors) will dominate.

Data and methods

Our analyses use the 1979 National Longitudinal Survey of Youth (NLSY-79, Zagorsky and White 1999) that contains 19 reports of childbearing expectations collected between 1979 (respondent's age 14–22) and 2012 (respondent's age 47–56). These reports are free from post-rationalization as the question always referred to future childbearing. The NLSY-79 also contains a full birth history that can be compared with these reported expectations. Using these data we study annual or biannual changes in the process of childbearing postponement and remaining childless.

The NLSY-79 provides a representative sample (N=6, 283) of women born between 1957 and 1965. We defined childlessness at time *t* as having never had a biological child (versus women who had at least one biological child). As described subsequently, we identify women who reside (vs. do not reside) with non-biological children because this familial context may impact their expectations and childbearing[2]. The NLSY-79 defined non-biological children as any adopted, fostered, or step children. We excluded deceased respondents (N=266), the two discontinued supplemental samples of: 1) military (N=441)

[2]As a robustness check, all the analyses in this paper were conducted excluding all women who ever had any non-biological children. The results are comparable to those presented in the paper. Details are available from the Authors upon request.

and 2) economically disadvantaged, non-Black/non-Hispanic females' sample (N=890). We additionally excluded a small group of women for whom we could not determine their childlessness status (N=214). The final sample consists of 4,473 women and 611 of these remained childless at the age of 50 (or at the last survey wave for women, who did not reach the age of 50 by the last wave in 2012). We use the NLSY-79 custom weights program to ensure our analyses are representative of this cohort of American women.

Measures

This paper focuses on childbearing expectations as measured by the question "How many (more) children do you expect to have" asked 19 times between 1979 and 2012. Conceptually, childbearing expectations are different from childbearing desires and childbearing intentions. To explain, childbearing desires can be described as one's wishes or aspirations to have children and childbearing intentions can be viewed as purposeful plans to have children in the future. Expectations, on the other hand, are people's best predictions of future outcomes. Thus, expectations might include one's preferences but could also reflect one's knowledge about her reproductive health or her ability to effectively use birth control. Childbearing expectations and intentions are strongly associated and evidence suggests that respondent's do not distinguish between them (Morgan 2001:154; Ryder and Westoff 1971). Thus, we treat childbearing expectations as an indicator of respondent's future childbearing plans and predictions.

Unfortunately, many respondents were not interviewed in all survey waves and some respondents did not answer the specific question about childbearing expectations. Overall, 12.4% of respondents have at least one non-interview or an invalid record of childbearing expectation. Due to the fact that excluding women for whom we do not have a complete history of childbearing expectations would markedly limit the sample, we imputed missing childbearing expectations[3] Results presented here were replicated using the complete case sample analysis. Missing data for covariates were also imputed using ten cycles of ten iterations each.

We utilize two groupings of independent predictors: family background and life course experiences. Family background measures include race/ethnicity, number of siblings, mother's education, mother's labor force participation when respondent was 14 (all asked retrospectively during the first wave of the survey) as well as church attendance reported during the first interview in 1979. We do not have information about church attendance at older ages. Selected life course experiences (i.e., the highest level of education completed, marital status[4] labor force status) are measured at ages 24, 30, 34 and 40. Labor force status was constructed using reports on the number of weeks that the respondent was employed, unemployed, out of labor force and in the military, i.e., a respondent was classified as employed if she spent over 26 weeks in the previous year employed, etc. Table 1 shows the variables defined above and their distributions in the NLSY-79 data.

3. To fill in the missing records - following Van Buuren, Boshuizen and Knook (1999) - we used a conditional chained multiple imputation procedure. This method computes, for each missing value, its posterior distribution conditional on other variables in the imputation model. This solution assumes that data are missing at random (MAR). Ten imputation cycles were conducted.

4. Separated, divorced and widowed women were all classified into one category.

Analytic approach

As a first step, we construct a sequence of childbearing expectations for each respondent. At each wave between 1979 and 2012, a woman could already have children, be childless and report an expectation to have children in the future (any number of children) or be childless and report an expectation of having no children. The sequences were constructed using the SQ-Ado module in Stata (Brzinsky-Fay, Kohler and Luniak 2006). Next, we estimate the predictive validity of childless expectations by constructing bivariate odds ratios of remaining childless given stating a childless expectation at four points in women's lives – ages 24, 30, 34 and 40.

The next part of the analysis consists of a multinomial regression (Hosmer, Lemeshow and Sturdivant 2013) of the selected variables (See Table 1) on the likelihood of being in one of the previously described states; 1 – being a mother, 2 – being childless and expecting to have children, 3 – being childless and expecting no children. We analyzed the associations between childlessness, childbearing expectations and selected variables at four different points in women's lives: early adulthood (age 24), throughout their thirties (age 30 and 34) and, at the age of 40 when most women are approaching menopause. Lastly, we also pool the data across the four ages of 24, 30, 34, and 40 to fit a logistics regression with individual level random effects to study the reports of expectation of childlessness over time and the potential change in the effect sizes over time.

Findings

Fertility "Life-Lines"

Figure 1 shows hypothetical lifelines of childbearing expectations and childbearing history. These patterns only demonstrate potential life lines and do not strictly represent the timing of specific transitions – we use them to demonstrate the order rather than timing of events. Person A has no children and repeatedly reports that she expects to have no children. Such a person is clearly committed to expected childlessness. This pathway was also described by Houseknetch as "early articulators" (1987). In contrast Person B postpones childbearing until age 50 and at each wave reports an expectation of parenthood. Assuming the likely status of permanent childlessness, the woman representing lifeline B would be unexpectedly childless. Table 2 shows how many women in the sample follow paths outlined in Figure 1. As shown in Table 2 both scenarios of committed childlessness and unexpected childlessness are extremely rare among the NLSY-79 respondents; we categorize 0.3% (N=11) and 0.1% (N=3) respondents as fitting lifelines A and B, respectively.

Person C (in Figure 1) expects to have children until her early 20s and then in several waves reports a childless expectation. She then switches back to expecting children around the age of 30. At age 45 and subsequently, she again reports a childless expectation. This lifeline reflects indecision about having any children (sometimes reporting an expectation for children, at other times not) but a lifeline culminating in childlessness. About 7.6 percent of all women, 28.6 percent of those ever-reporting a childless expectation and 51.4 percent of permanently childless women are of this type. These are precisely the categories of women that seem impossible to place in a static division of expecting/not expecting children.

Person D expects to have children (she has none but expects to have some) until – for instance - age 30 (the age of this transition might vary). Subsequently, she remains childless, repeatedly reporting (from age 30 to 50) that she expects no children. This person is childless because of repeated postponement and then a decision to forego childbearing. The first part of their lifeline thus suggests childbearing postponement; but the latter part is consistent with expected childlessness. Based on the existing literature this is the scenario assumed to be the most common path to childlessness, described as "perpetual postponement" (Berrington 2004). Table 2 shows that 6.8% of all women, 25.7% of those ever-reporting a childless expectation and 46.1% of women permanently childless follow this lifeline pattern.

Person E expresses some ambivalence about childbearing through at least once stated expectation of childlessness, but (unlike person C) has a child. Women with these lifelines represent 11.8% of the full sample and 44.6% of those that ever-reported a childless expectation. This is a very interesting category, one of substantial size and one that has received little research attention.

Person F postpones childbearing until age 30 and then becomes a parent (the age of transition might vary). This lifeline pattern should be the dominant path leading to parenthood. Indeed, nearly 60% of all women follow this lifeline pattern. Many do not delay until age 30, but all show at least some delay prior to becoming a parent - delay in this context means they first expect having children in the future, but they have not yet become parents. Finally, person G has an early first birth; one prior to the first interview. Teenage and early childbearing was common for this cohort; 13.4% had an early birth (with no observed period of postponement).

The richness of the NLSY-79 data on fertility expectations and behavior is shown in Figure 2. The x-axis shows the modal respondent age at successive survey waves. The y-axis is a count of respondents. The figure includes 4,473 "life lines", each representing a respondent's parenthood/expectation state at successive survey waves. The first 1,150 lines represent women that have ever reported that they expect no children, ordered from the top of the figure by the age of the first report (of expecting "no children"). The duration of maintaining a childless expectation is represented by the red portion of the life line. The remaining lines show women who have never expected childlessness (no segment of the line is red) with those having children at younger ages at the bottom of the figure. Thus, reporting no children and an expectation of no children at wave 1, places the respondent as one of the top lines. Expecting no children and having none does not persist across age for the clear majority of women. In fact as noted above, only 11 women state a childless expectation at wave 1 and maintain it throughout their reproductive life – a sliver of experience (lifelines A in Figure 1) so narrow in Figure 2 as to be nearly invisible.

The large green wedge at the left side of the figure represents the portion of the cohort's life experience without children but expecting them. The size of this group declines with age as many of these women have children (and their life-line becomes blue). But a secondary reason is that at each wave some women state, for the first time, an expectation of no children. Especially at younger ages, these periods of "expected childlessness" usually revert

to either expecting parenthood or to becoming a parent. The sliver of experience (lifeline B in Figure 1) of always expecting children but never having them is also very rare (N=3), reflecting the very small chance that women at age 50 can reasonably expect to have children.

As three fourths of this cohort have never reported a childless expectation, the general picture obscures the experiences of those women who did report expectation of having no children. Figure 3 reproduces the top portion of Figure 2 allowing us to focus on the 1,150 women who ever report a childless expectation. As noted above, earlier reports of childless expectations are frequently reversed and ended by parenthood (44.6% of all those ever-reporting childless expectations). Figure 4 shows only lifelines for women who never had children (N=611). This figure shows that much of the experience of these women was spent expecting children.

A key feature of this cohort's experience is the small share of the experience that is in the "childless, expects childlessness" category (i.e., the area of Figure 2 that is red is quite small, 8.0%). In contrast, postponement is a common and normative behavior; 71.7% of women had children after some delay (postponing via lifelines E and F).

As a first test of the predictive validity of childless expectations, we estimate the association between expecting "no children" at various ages and completed childlessness (having no children at age 49). Table 3 shows bivariate odds ratios that measure this association, i.e., at age 24 those expecting no children are 4.5 times more likely to remain permanently childless. The strong predictive validity of these reports at the younger ages is consistent with our characterization of childless expectation as being non-normative. These childless expectations signal recognition of the competition between having children and other goals. As women age, the predictive power of expectations of childlessness increases: women who are childless at age 34 and expect having no children in the future are 7 times more likely to remain childless than women who are childless at age 34 but still expect having children later in their lives. Greater life experience leads to more accurate predictions of childlessness.

Childlessness and Childbearing Expectations by Age

Table 4 shows the percentage of respondents childless and expecting no children, by age. We ask for instance: what percent of the sample is still childless at age 24? What percent of the sample expects childlessness at age 24? Clearly the sample of childless women is increasingly selective across ages. About 50.9 percent of all women in the sample are childless at the age of 24 but only 14.8 percent are still childless at age 46. The percent of the childless that are expecting childlessness is modest at age 24 (9.8 percent) but increases rapidly with age. By age 34, 43.1 percent of the childless report a childless expectation; at age 46 nearly all do (92.3 percent). Note that the shift to childless expectations occurs across all ages shown and is not concentrated at ages 35 and 40.

We have already shown that fertility expectations are strong predictors of subsequent behavior (Table 3) and that childless expectations increase markedly with age (Table 4). Thus, we turn to a third descriptive question focusing on the correlates of childlessness and

childless expectations. In this step we compare mothers, childless women expecting children, and childless women not expecting children at four different stages of their lives (i.e., ages 24, 30, 34 and 40) and study factors linked with remaining childless over the life course. In addition, to better understand the development of expectations for childlessness over time, we next estimate a longitudinal logistic regression model of the odds of reporting an expectation for childlessness over the life course with individual level random effects.

Table 5 shows relative risk ratios from four multinomial multivariate regressions (parallel bivariate associations are included in Appendix 1). The group of women with children serves as a reference category to which we compare women who are childless but expect having children in the future (we call them “postponers”) and women who are childless and expect childlessness.

Results from panel 1 of the Table 5 show a clear, consistent and expected association of socio-demographic and situational factors with fertility postponement. For instance, the risk of childbearing postponement at the age of 24 for Black and Hispanic women (compared to White women) is lower by factors of 0.2 and 0.6, respectively. At all ages, the risk of childbearing postponement is dramatically lower for married/separated[5] women and women out of labor force. The strong effect of educational attainment is also visible – the risk of postponement is higher for women with college education by factors between 2.9 and 8.3 across the four age points.

Similar associations are observed when comparing mothers versus childless women expecting childlessness (Table 5, panel 2). The risk of expecting childlessness (compared to being a mother) is lower for Black and Hispanic women, married/separated women and women out of labor force. The risk of expecting childlessness is higher for women who finished college. At older ages, women who have non-biological children have a higher risk of expecting childlessness compared to being a mother, a result that might signal declining fecundity. Both panels of the Table 5 provide evidence that factors included in the analysis have strong associations with remaining childless at all four points in time.

We include the regression in Table 5 as our reference point because it portrays previously documented correlates of the process of remaining childless versus becoming a mother. Socio-demographic and situational factors of women’s lives bear strong correlation with motherhood postponement and remaining childless. Is this true also for the process of developing an expectation for childlessness among the subpopulation of childless women?

This question can be answered using coefficients from Table 5. The comparison between childless women expecting children (“postponers”) and childless women expecting childlessness is embedded in the coefficients from the multinomial regression presented in Table 5. We present these coefficients in Table 2.1 in Appendix 2[6]. Women who did not finish high school are more likely to expect childlessness at age 24. Hispanic women, women who finished college and married women are less likely to expect childlessness at age 30. Women who finished college are also less likely to expect childlessness at age 34

5. Separated here means all women who were in a union but no longer are: legally separated, divorced, and widowed.
6. This table is a repetition of Table 5 included in the paper, with an alternative reference category.

while Black women (compared to White women) are less likely to expect childlessness at age 40.

The juxtaposition of mothers and childless women expecting/not expecting children obtained from Table 5 is a cross-sectional analysis of this phenomenon. To better understand the role of the identified socio-demographic and situational factors on the process of developing an expectation for childlessness, we also fit a model which accounts for the change of expectations for childlessness over time. Table 6 shows results from a longitudinal logistic regression model estimating the process of developing a childless expectation for an increasingly selective sample of childless women. As in Table 5, we investigate the reports of an expectation for childlessness across four points in women's lives (age 24, 30, 34 and 40) but this time we do this only for a subpopulation of women childless at age 24.

The results in Table 6 showcase the strong, dominate effect of childbearing postponement. Childless women have 3.3 times higher odds of reporting an expectation for childlessness at the age of 30 than at the age of 24. A childless woman is almost 50 times more likely to report a childless expectation at the age of 40 than at the age of 24. This coefficient translates to a 77% probability of expecting childlessness at age 40. This is an intuitive result which corroborates the results shown in Table 4: at age 24, few childless women expect childlessness but at age 40 most of them do. Nonetheless, the results from Table 6 show just how much the effect of postponement dominates over other measures of socio-demographic and situational factors.

In addition to the strong effect of postponement, Table 6 shows very few statistically significant associations. Women who obtain college education and women who are married are less likely to expect childlessness, across all stages of their lives. Women who had non-biological children have 1.9 times higher odds of expecting having no biological children in the future. We also tested if these relationships change over time by including interactions of the covariates over time (see Appendix 3). Except for a positive interaction between time and college education, no effects change over time. The effects of age are weaker for women who finished college compared to women who finished high school, which highlights the acceptance and even anticipation of childbearing postponement among higher educated women in the United States. But we stress the scarcity of strong effects compared to Table 5. Small sample sizes might explain the lack of statistical significance of some of these associations given that childless women expecting childlessness comprise a small proportion of the female population, especially at older ages. However, bivariate associations show a similar pattern (see Appendix 1). We discuss the significance of the contrasting results in Table 5 and 6 in the discussion below.

Noteworthy, both of the analytic approaches employed to investigate the difference between childless women expecting and not expecting children are imperfect. The multinomial regression allows us to compare "postponers" and childless women expecting childlessness while still keeping the sub-population of mothers in the sample. This approach provides only a cross-sectional perspective[7] and offers no information about associations between

[7]·We wanted to use longitudinal multinomial logistic models. Such models fail to converge using standard statistical software.

identified covariates and the change of expectations over time. On the contrary, the longitudinal logistic regression model which uses the sample of only childless women provides an examination of the dynamic change of the expectations. This model might suffer from selection bias as only women childless at age 24 were included in the sample (49% of women had children by the age of 24)[8]. In summary, neither of these approaches (cross-sectional or longitudinal analyses) is perfect, but combined they provide useful insights into the correlates of expectations of childlessness and their dynamic nature.

Conclusion

This study bridges two research areas – the life course analysis of the process producing childlessness and the analysis of childless expectations. We use a rich longitudinal survey that includes frequent reports of childbearing expectations over the cohort's complete reproductive history. The richness of these data is unparalleled, both in the U.S. and globally. This source allows for an analysis of the process of remaining childless in the United States for a female cohort that only recently finished its reproduction. Specifically, we focused on the longitudinal change of childless expectations, predictive validity of these reports, and the correlates of expected childlessness.

For our first contribution, we constructed life-lines characterizing the fertility expectations and behavior of the female respondents in the NLSY-79. One in four women in this cohort ever considered childlessness at any point in their lives. This finding illuminates the indecision about motherhood expressed by a large share of this cohort. Further, it demonstrates why it is problematic to assign expected and unexpected childlessness labels to the reproductive experience of childless women.

Of those that did state a childless expectation, especially those stating such an expectation at a young age, most subsequently became parents. These mothers comprise a substantial part of the full cohort (12%). A question arises: what differentiates this group from the group of women that experience indecision but eventually remain childless (a group discussed below)? Did the women who remained childless encounter unanticipated constrains that led them to expect childlessness? Were such constraints linked to structural aspects of their lives (e.g. availability of combining motherhood and professional career) or more distal in nature (e.g. partners' opposing desires)? Answering such questions will help us understand how institutional arrangements shape family change and birth declines in the US. Also importantly, women in this group could have experienced an unwanted pregnancy and subsequently, an unwanted birth. It is crucial to understand what role effective contraception plays in this process.

Fewer than 15% of this cohort never had children. Among women who never had children, roughly 46% of permanently childless women repeatedly postponed childbearing and then adopted a childless expectation (Table 2: Row D). This path of developing a childless

8.We conducted a robustness check using a sub-sample of women childless at age 20. Due to the NLSY-79 study design, only 80% of women were interviewed at age 20. However, because of high levels of teenage childbearing among the NLSY-79 cohort, we still lose 28% of the respondents who already had children by age 20. The results of the robustness check for women childless at age 20 are comparable to those presented in the paper. Details available from the Authors upon request.

expectation through repeated or “perpetual” postponement is well documented (see e.g., Berrington 2004).

However, a slightly larger percentage of childless women (51%) followed a path suggesting indecisiveness about childbearing – a path we labelled ‘undecided to expected childlessness’ (Table 2: Row C). These women reported inconsistent expectations in their twenties and thirties, switching back and forth from expecting childlessness to childbearing at different points in their life. The process of childbearing postponement which includes vacillating reports of expectations of children and childlessness has not been well studied in family sociology. How can one explain the instability of expectations of some women and the one-time change of reports of others? As Mynarska and colleagues (2015) show, lives of childless women are heterogeneous and a share of them follow a path of instability in employment and union histories. Is this instability in other life spheres intertwined with the instability of childbearing expectations?

Providing an additional contribution, we show that the predictive power of childless expectations is strong as early as age 24 – women who are childless and expect childlessness at age 24 were 4.5 times more likely to be childless at age 50 (compared to childless women expecting children). This strong effect increases as women age. We seek to understand this relationship within the framework of Theory of Conjunctural Action, TCA (Johnson-Hanks et al., 2011). Individuals have multiple goals and expectations entrenched in schemas that relate to different life domains. These expectations (and the broader schemas within which they are embedded) are not highly integrated, especially at young ages. When asked about plans for parenting, individuals might revert to answering a survey question with a socially desirable answer – i.e., having two children. This is one reason why studies on the association between childbearing expectations in young adulthood and final family size find that many respondents miss their initial “target” (Morgan 2001; Morgan and Rackin 2010; Quesnel-Vallée and Morgan 2003). The expectations become more salient when one is in a context that facilitates these expectations or when one finds oneself in conjunctures that pit goals in two life domains directly against one another (see Johnson-Hanks et al. 2011, especially Chapter 3). A report of “no children expected” might be interpreted as a signal that the respondent already realizes the competition between life goals that can lead to postponed and forgone childbearing. At later ages, as more women experience conjunctures which require them to consider childbearing vis-à-vis other life decisions, the proportion of childless women facing this realization grows and the consequence of this realization strengthens.

TCA captures well many key features of the childlessness literature. Applying a framework of sequential decision-making within conjunctures - that are structured by time and place - highlights the life course character of childlessness: a process of multiple re-evaluations of one’s situation and one’s goals, considering the costs and benefits of motherhood against other lifestyle options. In addition, the dynamic nature of expectations can be interpreted within TCA through the connection of expectations with the broader context (or structure) of one’s life and one’s identity. Finally, idiosyncratic conjunctures (i.e., good or bad luck) can alter the broad structure of one’s life and one’s identity. Thus TCA offers a perspective that can incorporate the “random” but impactful conjunctures often described by childless

women during in-depth interviews. These conjunctures can lead to a pronounced change in the sequence of events one faces or in one's outlook on life (Edin and Kefalas 2005) and childlessness (Gerson 1985; Cannold 2005).

We also identified factors that could impact the contrasts of childlessness (versus mothers) and expected childlessness (versus mothers), i.e., factors pertaining to family background, experiences in adolescence and early adulthood as well as current experiences. This analysis identified multiple characteristics that were strongly linked with these contrasts at all or just some ages. In general, these factors (examined in Table 5) have strong associations with remaining childless (whether future births are expected or not). As reported in previous research, racial differences, education and marital status are the strongest predictors of childlessness (see e.g. findings from Bloom and Trussell 1984; Heaton, Jacobson and Holland 1999; Keizer, Dykstra and Jansen 2008; Koropeckyj-Cox and Call 2007; Sweeney and Raley 2014) in our analyses. Specifically, Black and Hispanic women, married women and women without a high school degree are less likely to remain childless (either postponing childbearing or expecting childlessness) as compared to mothers at all ages examined. We also show a strong effect of tertiary education on remaining childless.

In comparison, the examination of expectations for childlessness among a sub-sample of childless women is more complex. We do this in two ways: first by estimating the cross-sectional comparison between childless women expecting children and not expecting children using the multinomial regression presented in Table 5 (provided in Appendix 2, Table 2.1). Second, we estimate a longitudinal logistic model with individual random effects, Table 6, to analyze the change of the expectations for childlessness over time. The cross-sectional analysis indicates that marriage and college education are strongly associated with lower odds of reporting a childless expectation; however these associations are not present in all four models, only at the age of 30 and 34. The longitudinal analysis presented in Table 6 supports these findings. Married childless women and childless women with higher levels of education are less likely to expect childlessness, across all four ages. Importantly, the age effect, absent from the cross-sectional models, dominates the results: as women age and remain childless they are markedly more likely to report an expectation for childlessness.

To summarize the multivariate regression analysis, we conclude with a couple of key observations. First, these results confirm our expectations about the role of marriage: married women are both less likely to remain childless and less likely to expect childlessness even if they remain childless over the life course. Previous studies indicate that married and partnered women are less likely to adjust their childbearing intentions and expectations downward (e.g. Iacovou and Tavares 2011; Morgan and Rackin 2010), but we show that they are also less likely to ever develop an expectation for childlessness, despite remaining childless for most of their 20s and 30s. Marriage is thus correlated with an expectation of childbearing, even at later ages. This highlights an interesting interaction between the social acceptance of having children within marriage and social boundaries of life periods appropriate for childbearing.

Second, women with higher educational attainment are more likely to postpone childbearing but contrary to our expectations, are also less likely to expect childlessness. Previous

findings about educational attainment include negative or no effects of educational attainment on intended family size over the life course (Iacovou and Tavares 2011; Liefbroer 2009). This finding suggests several scenarios. Higher educated women might be likely to decrease their intended family size (intend to have fewer children) but might be less likely to expect childlessness. Women with higher levels of education are indeed at the forefront of postponing motherhood, in some cases to very late ages (e.g., past the age of 35 or 40). Effects of educational attainment might also operate differently for women in different institutional contexts (previous evidence comes from studies using British and Dutch data).

Third, the covariates commonly associated with remaining childless hold weak associations with reporting an expectation for childlessness but longitudinal models picture a strong effect of ageing and childbearing postponement. Such results suggest that the socio-demographic factors impact expected childlessness primarily through postponement that may lead to declines in childbearing preferences and/or in fecundity. It is important to uncover which process ensues first – do women anticipate declines in fecundity and thus change their expectations or do they first alter their expectations and are less concerned about the biological clock? Unfortunately, the NLSY-79 and other social surveys offer limited opportunities to study fecundity. In addition, many covariates, for instance those related to marital satisfaction or care for elderly parents or siblings, were not examined here. Future work should not only investigate the change in childbearing expectations in tandem with one's perception about fertility, but this work should also develop and then test a more detailed conceptual model of situational factors that might lead to childless expectations.

For the research niche on fertility intentions and childlessness, our study is agenda setting. Across the population of American women, we showcase the prevalence of expectations of childlessness, their dynamic nature and the importance of direct and indirect effects of life factors on these expectations. We also show the strong impact of childless expectation on subsequent permanent childlessness. If future work includes more distal causes of the development of expectations for childlessness – such as employment or marital instability or the potential onset of health deterioration (Berrington 2017) – then we might better understand why women report this expectation, even at young ages. However, even the richest longitudinal data set cannot capture the idiosyncrasies of lived lives. This gap must be filled by focused, qualitative studies such as Gerson's (1985) "Hard Choices" and Cannold's (2005) "What, No Baby?". Such work, along with quantitative analyses like ours, can provide a more complete understanding of the process producing 21st Century childlessness.

At a higher level of abstraction, our study highlights the value of duality of structure approaches, those that acknowledge the interacting effects of new schemas and the changed material conditions that constrain/enable thought and action. At this conceptual level, studies of childlessness fit the same template as other important social changes. Specifically, new material conditions (such as women's greater access to education and the labor force, or an economic crisis) cause a behavioral change (in our work, a postponement of childbearing). Actors rationalize this behavior using schemas that stress its appropriateness. The new behaviors are reified because they are both "in the mind and in the world" (Geertz, 1973). Consequently, these new behaviors impact subsequent experiences as well as create space

for reconsideration of goals and preferences and for strengthening one's identification with already occupied social roles. New social structures are thus produced and recreated through sequences of conjunctures that are regulated by material conditions, schemas, and individual identity. By emphasizing the role of context, interaction, and time, this integrative approach enriches our thinking about social change and variation across a range of substantive domains.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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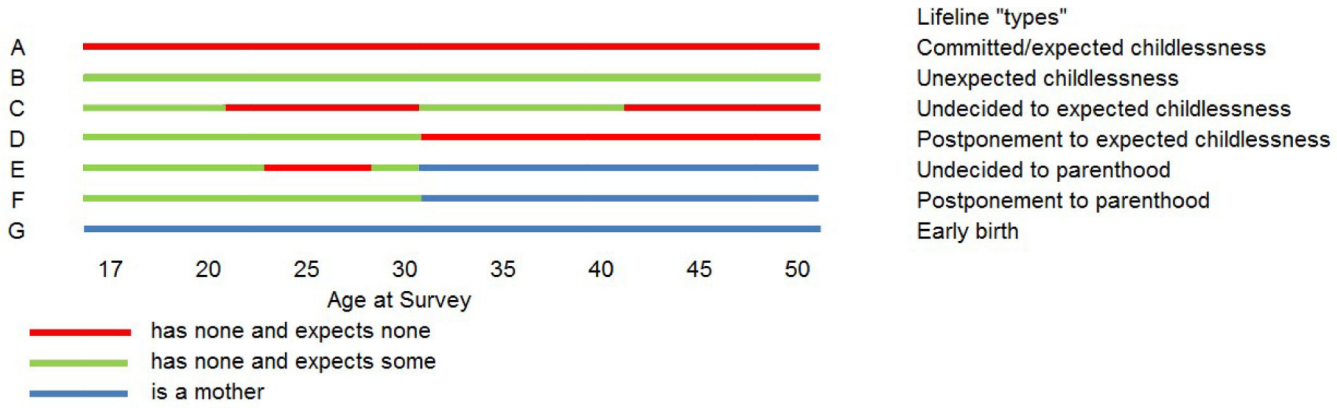

Figure 1.
Hypothetical Lifelines Showing Time Spent in Three States: Childless/Expects No Children, Childless/Expects Children, and Mother.

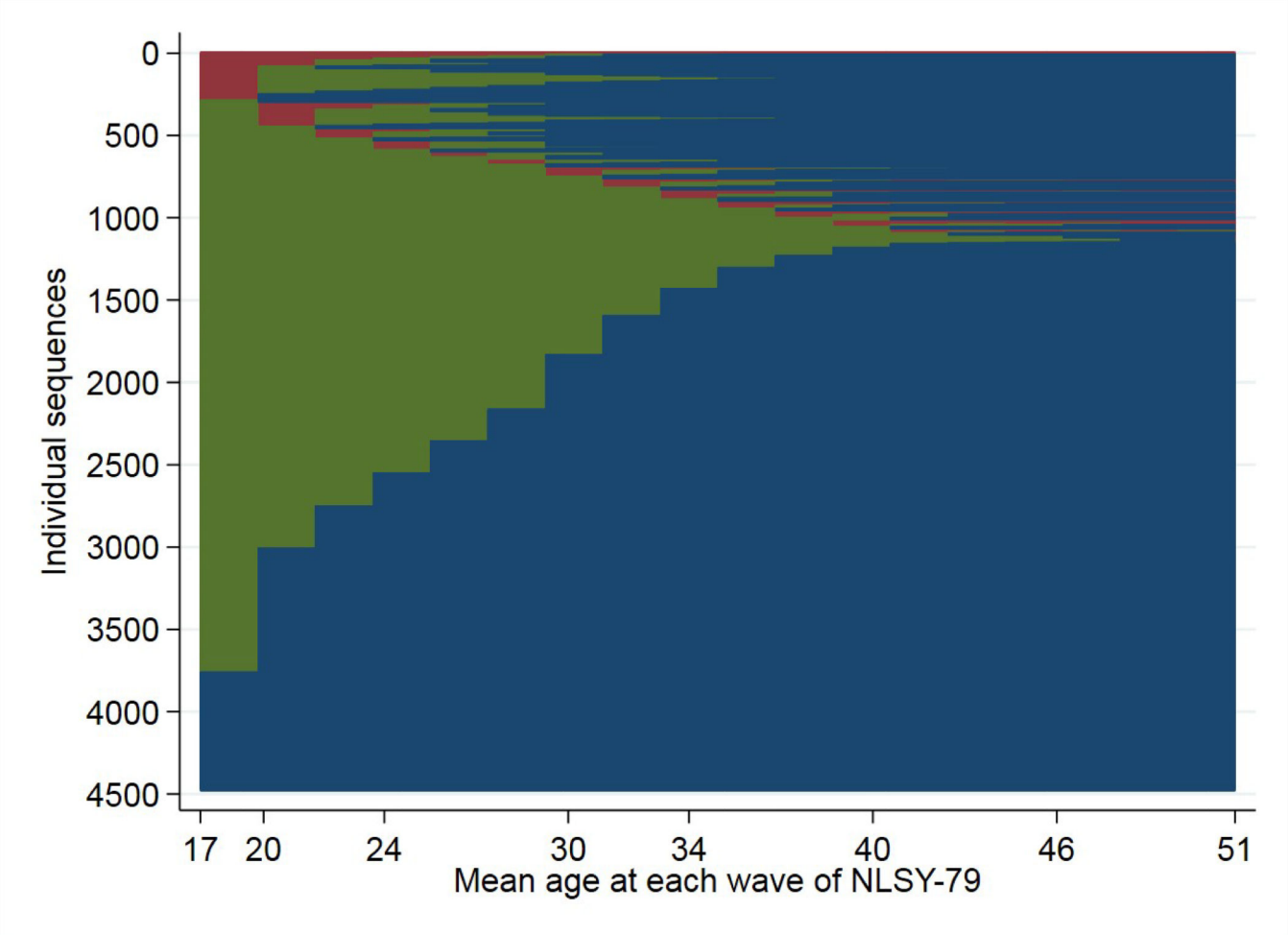

Figure 2.

Sequences of Childbearing Expectations For Women of NLSY-79 Cohort. Red: Childless/Expects No Children, Green: Childless/Expects Children, and Blue: Mother.

Note under figure: Sequence index plot. Each horizontal line represents one individual sequence.

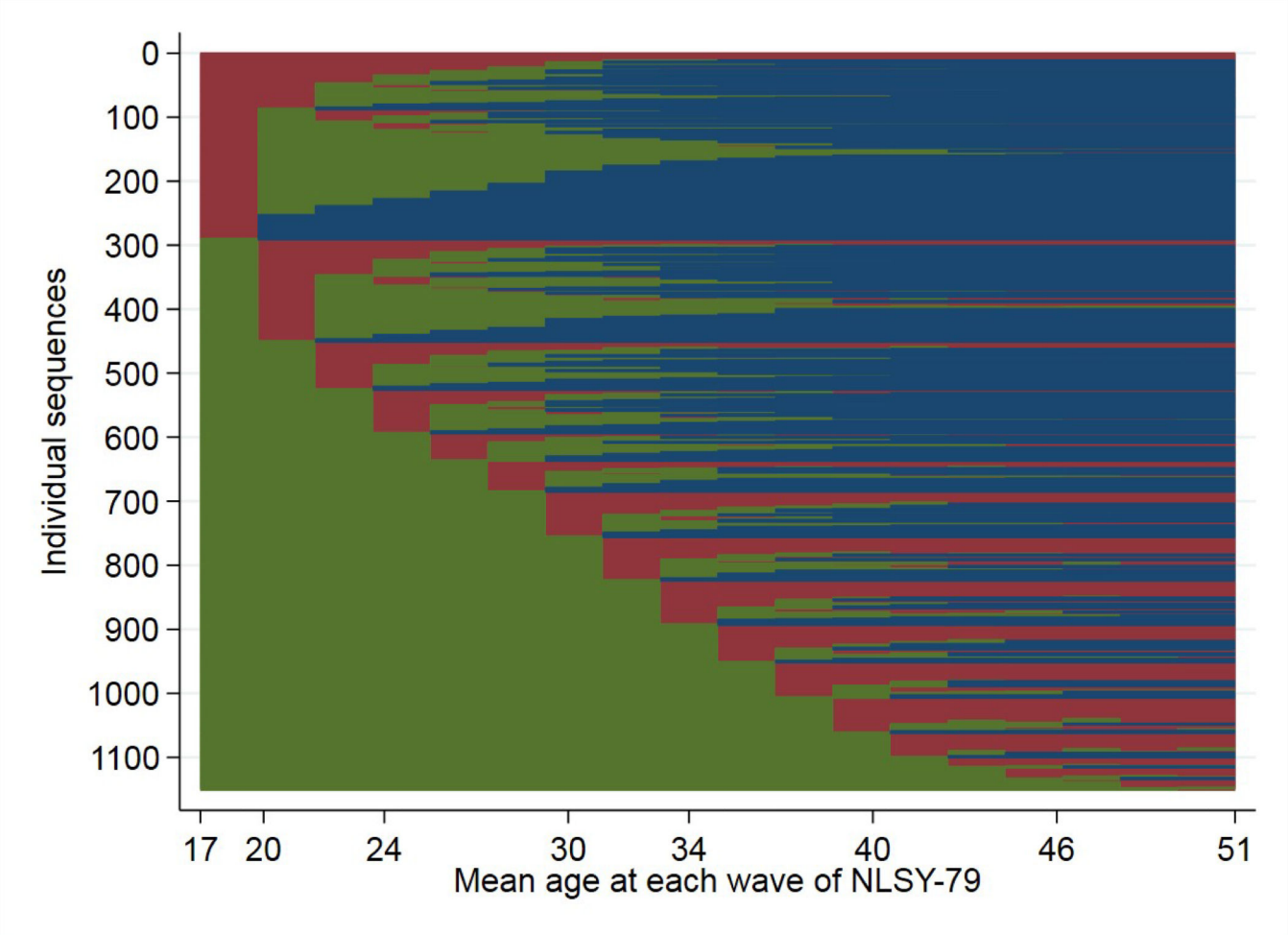

Figure 3.

Sequences of Childbearing Expectations For Women of NLSY-79 Cohort – Only Women Who Express Childless Expectations. Red: Childless/Expects No Children, Green: Childless/Expects Children, and Blue: Mother.

Note under figure: Sequence index plot. Each horizontal line represents one individual sequence.

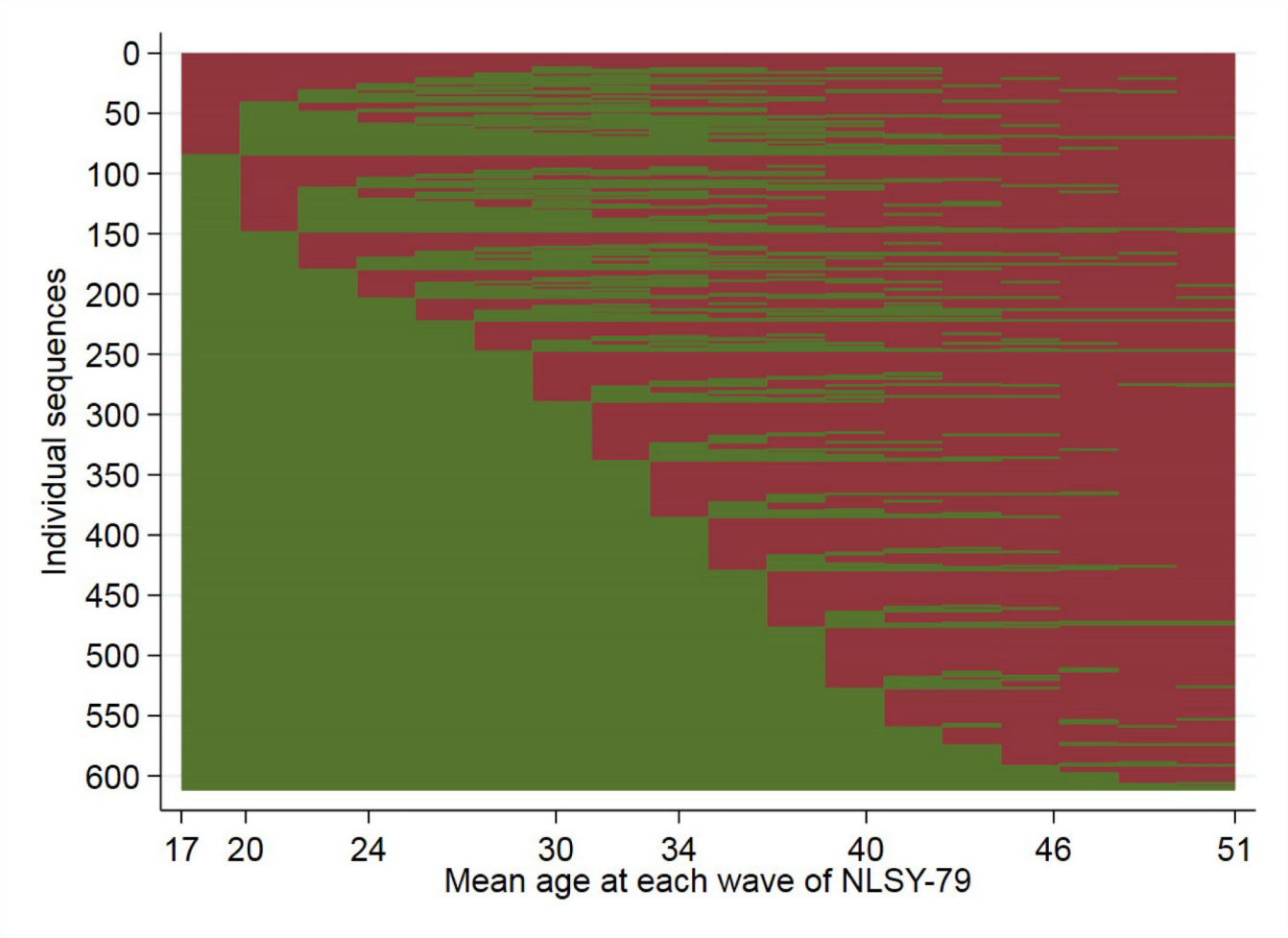

Figure 4.

Sequences of Childbearing Expectations for Women of NLSY-79 Cohort – Only Women Who Remained Childless by Age 50. Red: Childless/Expects No Children, Green: Childless/Expects Children.

Note under figure: Sequence index plot. Each horizontal line represents one individual sequence.

Table 1.

Descriptive statistics on covariates for multinomial logistic models.

Characteristics	Proportion	Standard Error
Race		
White	0.46	0.008
Black	0.29	0.007
Other	0.08	0.004
Hispanic	0.17	0.006
Number of siblings		
0	0.03	0.003
1	0.13	0.005
2	0.19	0.006
3+	0.66	0.007
Mother's education		
Did not finish high school	0.45	0.008
High school	0.48	0.008
College	0.07	0.004
Did mother work?		
Yes	0.54	0.008
No	0.46	0.008
Church attendance 1979		
Less than once a week	0.52	0.007
At least once a week	0.48	0.007
Ever had non-biological children		
By age 24	0.02	0.002
By age 30	0.04	0.004
By age 34	0.06	0.004
By age 40	0.07	0.005
Highest degree completed at age 24		
Did not finish high school	0.16	0.006
Finished high school	0.69	0.007
Finished college	0.15	0.005
Marital status at age 24		
Never married	0.45	0.008
Married	0.45	0.008
Divorced/Widowed/Separated	0.10	0.005
Labor force status at age 24		
Employed	0.66	0.007
Unemployed	0.04	0.003
Out of labor force	0.29	0.007
Highest degree completed at age 30		
Did not finish high school	0.13	0.005

Characteristics	Proportion	Standard Error
Finished high school	0.68	0.007
Finished college	0.19	0.006
Marital status at age 30		
Never married	0.25	0.007
Married	0.57	0.008
Divorced/Widowed/Separated	0.19	0.006
Labor force status at age 30		
Employed	0.71	0.007
Unemployed	0.03	0.002
Out of labor force	0.26	0.007
Highest degree completed at age 34		
Did not finish high school	0.12	0.005
Finished high school	0.68	0.007
Finished college	0.20	0.006
Marital status at age 34		
Never married	0.20	0.006
Married	0.59	0.008
Divorced/Widowed/Separated	0.22	0.006
Labor force status at age 34		
Employed	0.73	0.007
Unemployed	0.03	0.003
Out of labor force	0.25	0.007
Highest degree completed at age 40		
Did not finish high school	0.10	0.005
Finished high school	0.68	0.008
Finished college	0.22	0.007
Marital status at age 40		
Never married	0.16	0.006
Married	0.59	0.008
Divorced/Widowed/Separated	0.25	0.007
Labor force status at age 40		
Employed	0.78	0.007
Unemployed	0.03	0.003
Out of labor force	0.19	0.007
Childlessness status at age 24		
Mother	0.56	0.008
Childless, expects children	0.40	0.008
Childless, does not expect children	0.04	0.003
Childlessness status at age 30		
Mother	0.76	0.007
Childless, expects children	0.18	0.006
Childless, does not expect children	0.06	0.004

Characteristics	Proportion	Standard Error
Childlessness status at age 34		
Mother	0.82	0.006
Childless, expects children	0.10	0.005
Childless, does not expect children	0.07	0.004
Childlessness status at age 40		
Mother	0.86	0.005
Childless, expects children	0.04	0.003
Childless, does not expect children	0.10	0.004

Table 2.

Distribution of lifelines from Figure 1 in the data set.

Lifeline "types"	All women (frequency)	All women (%)	Women who ever reported a childless expectation (%)	Women permanently childless (%)
A. Committed/expected childlessness	11	0.3	1.1	2.0
B. Unexpected childlessness	3	0.1		0.5
C. Undecided to expected childlessness	336	7.6	28.6	51.4
D. Postponement to expected childlessness	261	6.8	25.7	46.1
E. Undecided to parenthood	542	11.8	44.6	
F. Postponement to parenthood	2,612	59.9		
G. Early birth	708	13.4		
Total N	4,473	4,473	1,150	611

Table 3.

Predictive validity of childbearing expectations by age.

Age	24	30	34	40
Odds ratio measuring association of expecting “no children” and childlessness at age 49	4.5	5.1	7.0	7.7

Note: Bivariate odds ratios calculated from separate cross-tabulations of expectations at ages 24, 30, 34 and 40 by childlessness at age 49. Significance levels are determined by the chi-square statistic associated with tabulation with 1 dF.

Table 4.

Descriptive tabulations of life lines shown in Figure 2.

	Age 24	Age 30	Age 34	Age 40	Age 46
% of the total sample that is still childless	50.9	26.3	18.9	15.2	14.8
% of the childless who expect no children	9.8	23.7	43.1	77.9	92.3

Table 5.

Multinomial regression models: Relative risk ratios of postponing motherhood and expecting childlessness at ages 24,30,34 and 40.

Variables	Category 1: Mothers				Category 2: Postponers[1]				Category 3: Expecting childlessness[2]			
	Age 24	Age 30	Age 34	Age 40	Age 24	Age 30	Age 34	Age 40	Age 24	Age 30	Age 24	Age 40
Race/Ethnicity (Ref: White)												
Black					0.2***	0.4***	0.4***	0.8	0.2***	0.2***	0.3***	0.4***
Hispanic					0.6***	0.7	0.8	1.1	0.4**	0.4**	0.5*	0.5**
Other					0.8	1.0	0.9	1.4	1.0	1.0	1.2	1.0
# of siblings (Ref: 1 sibling)												
0					1.6	1.9*	1.4	1.0	2.4	2.0	3.2**	2.1*
2					1.1	1.4	0.9	0.8	1.5	1.1	1.5	1.0
3+					0.8	1.1	0.9	0.6	0.9	0.8	1.0	0.8
Mother worked when R was 14 (Ref: No)												
Yes					0.8*	0.9	1.2	1.0	0.7	1.0	0.9	0.9
Mother's education (Ref: High school)												
Did not finish high school					0.7***	0.7**	0.8	1.0	0.7	0.9	0.6*	0.7*
Finished college					1.3	1.8***	1.3	1.9	1.3	1.6	1.2	1.3
Church attendance 1979 (Ref: Less than once a week)	Reference category											
At least once a week					1.1	1.1	0.9	1.1	0.9	1.0	1.0	0.8
Highest degree completed (Ref: Finished high school)												
Did not finish high school					0.3***	0.4**	0.6	0.5	0.6	0.8	0.8	0.6
Finished college					8.3***	2.9***	4.0***	3.2***	5.5***	1.6*	1.8**	2.1***
Marital status (Ref: Never married)												
Married					0.1***	0.1***	0.1***	0.1***	0.1***	0.1***	0.1***	0.1***
Separated/divorced/widowed					0.1***	0.1***	0.1***	0.1***	0.2***	0.1***	0.1***	0.1***
Employment (Ref: Employed)												
Unemployed					0.6*	0.5	1.1	0.4	0.5	0.7	0.7	0.4
Out of labor force					0.2***	0.2***	0.2***	0.2**	0.2***	0.2***	0.3***	0.4***

Variables	Category 1: Mothers				Category 2: Postponers[1]				Category 3: Expecting childlessness[2]			
	Age 24	Age 30	Age 34	Age 40	Age 24	Age 30	Age 34	Age 40	Age 24	Age 30	Age 24	Age 40
Ever had non-biological children by age X					0.6	1.5	1.2	1.9	1.0	1.8	2.2**	2.7***
Constant					8.8	2.0	1.0	0.3	0.9	1.1	0.9	1.4
F-statistic	21.8	16.2	12.8	9.1								
p-value	0.00	0.00	0.00	0.00								
Observations	2,192	3,027	3,590	3,816	2,058	948	470	144	178	253	368	468

[1] Relative risk ratios for the comparison of women, who are childless but expect having children in the future (postponers) with women, who already have children.

[2] Relative risk ratios for the comparison of women, who are childless and expect having no children in the future (expecting childlessness) with women, who already have children.

Models control for region (South/Non-South) and type (rural/urban) of residence. Models estimated using 4,428 observations. 45 women in the military excluded due to small cell size.

*** p-value <0.001

** p-value <0.01

* p-value <0.05.

Table 6.

Logistic regression for expecting childlessness.

Variables	Model 1 OR
Age (ref: Age 24)	
30	3.3***
34	9.9***
40	47.1***
Race/Ethnicity (Ref: White)	
Black	0.9
Hispanic	0.8
Other	1.3
# of siblings (Ref: 1 sibling)	
0	1.2
2	1.1
3+	1.1
Mother worked when R was 14 (Ref: No)	
Yes	0.9
Mother's education (Ref: High school)	
Did not finish high school	0.9
Finished college	0.8
Church attendance 1979 (Ref: Less than once a week)	
At least once a week	1.0
Highest degree completed (Ref: Finished high school)	
Did not finish high school	1.4
Finished college	0.5***
Marital status (Ref: Never married)	
Married	0.7*
Separated/divorced/widowed	1.2
Employment (Ref: Employed)	
Unemployed	1.0
Out of labor force	0.9
Ever had non-biological children	1.9*
Constant	0.05
Sigma	1.75
Rho	0.48
F-statistic	20.78
p-value	0.0
Observations	1,969

Models control for region (South/Non-South) and type (rural/urban) of residence.

Women in the military excluded due to small cell size.

*** p-value <0.001

** p-value <0.01

* p-value <0.05