

**In Pursuit of a Tenure-Track Faculty Position:
Career Progression and Satisfaction of Humanities and Social Sciences Doctorates**

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Abstract: Using the life course perspective to examine the longer-term career patterns of more than 5,000 humanities and humanistic social sciences PhDs, this study illustrates the multiple pathways to the professoriate and the importance of academic aspirations and linked lives in career trajectories. Marital status and having young dependents in the household influence the career patterns of men and women differently; however, there is permeability between other employment sectors and tenure-track faculty positions. While the majority of PhDs intended academic careers, PhDs in the non-profit (non-academic) sector report a higher rate of job satisfaction compared to PhDs in tenure-track faculty positions.

Keywords: Doctorates, Tenure-Track Faculty, Family, Career Pathways, Humanities, Social Sciences

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Introduction

While much is known about doctorates' career intentions and early career attainment (i.e., first postdoctoral position), far less is known about their longer-term career trajectories (Council of Graduate Schools [CGS], 2014; Council of Graduate Schools and Educational Testing Service [CGS/ETS], 2012). The current lack of transparency regarding the longer-term career pathways of PhDs has implications for the persistence of doctoral students, as well as the preparation by doctoral students for the range of careers available and the transitions that may occur over a career span (CGS/ETS, 2012; National Institute of Health [NIH], 2012; Woodrow Wilson, 2005; Golde & Dore, 2001). This significant knowledge gap has inspired a number of calls from stakeholders and professional organizations to collect and examine PhD student longitudinal career pathways information (e.g., CGS/ETS, 2012; National Research Council [NRC], 2012; NIH, 2012). The Council of Graduate Schools and Educational Testing Service put forth that “understanding career options and the impact on employability may be an important factor in encouraging students to continue their education” (CGS/ETS, 2012, p. 4). In the context of the humanities and humanistic social sciences, this is especially critical given concerns regarding the relatively high attrition rates and lengthy time to degree (Berman, 2011; Main, 2014; Humanities Indicators, 2011, 2014), as well as the significant financial investments associated with achieving a doctorate (Ehrenberg, Zuckerman, Groen & Brucker, 2010).

We contribute to the growing literature on longer-term career pathways by identifying the career trajectories of humanities and humanistic social science doctorates using data from the Andrew W. Mellon Foundation's Graduate Education Survey (GES). The GES is one of the most comprehensive longitudinal datasets tracing humanities and humanistic social sciences students

from entry into the PhD program through at least 8 years post-graduation, and therefore provides an important opportunity to identify relationships between demographic factors, graduate education experiences, and short-term and longer-term career outcomes among doctorates in the humanities and humanistic social sciences. In particular, we examine the likelihood that humanities and humanistic social sciences doctorates will obtain a tenure-track faculty position at three different post-graduation time points. Since the majority of doctoral students aspire to become tenure-track faculty members, we investigate career pathways to identify whether there is movement (permeability) from different employment sectors/positions (for profit, non-profit, and non-tenure track faculty) into tenure-track faculty positions, as well as whether there are differences in job satisfaction among PhDs working across the sectors.

We apply the life course perspective as our theoretical framework to understand the career pathways of doctorates, and therefore, also consider the influence of gender, marital status, family status, and other demographic factors. The life course perspective considers the pathways through social institutions and organizations, and the interactions between the domains of education, life, and work in the trajectories of individuals (Elder & Giele, 2009; Moen, 2016; Xie & Shauman, 2007). These intersecting domains, such as marriage and family formation, have been shown to influence graduate education experiences and career trajectories in Science, Technology, Engineering, and Mathematics (STEM) fields (Mason, 2009; Ward & Wolf-Wendel, 2012). Therefore, we address the following research questions:

1. Do gender, marital status, and family formation influence the likelihood that humanities and humanistic social sciences PhDs will be in a tenure-track or tenured faculty position 6 months, 3 years, or at least 8 years after completing the PhD?

2. What is the likelihood that PhDs working in other employment sectors are able to obtain a tenure-track faculty position?
3. What are the relative job-related satisfaction levels of PhDs across employment sectors?

Our work further expands previous literature to illuminate how marriage and family formation during graduate school may be associated with longer-term career pathways in the humanities and humanistic social sciences. Our findings not only describe the longer-term career prospects and outcomes for humanities PhDs, but also have important implications for further developing strategies, programs, and practices at the graduate level to improve longer-term career progression among doctorates. Graduate programs and stakeholders can apply the findings to enhance their programs to prepare PhDs for the workforce, and PhD students can gain important insights regarding their longer-term career prospects (CGS/ETS, 2012; NIH, 2012; Woodrow Wilson, 2005; Golde & Dore, 2001). In the sections that follow, we provide a literature review followed by a description of the life course perspective, our data, and our methods. We then present our results and discuss the implications of our work.

Background/Literature Review

In 1991, the Andrew W. Mellon Foundation sought to reduce student attrition rates and shorten time to degree while improving the quality of doctoral education in the humanities through the Graduate Education Initiative (Ehrenberg, *et al.*, 2010). At the time, concerns regarding the high attrition rates and particularly lengthy time to Ph.D. completion among humanities doctoral students were widespread (Bowen & Rudenstine, 1992). The Graduate Education Initiative (GEI) invested nearly \$85 million across 54 humanities departments at 10 major universities

from 1991 through 2000. To help document and examine the impact of the GEI, the Mellon Foundation fielded the Graduate Education Survey (GES) to collect information between November 2002 and October 2003 from students who were enrolled in participating or similar control departments. The survey achieved a 74% response rate, and responses include important information and perspectives from the 13,552 respondents. A comprehensive examination of the effects of GEI can be found in *Educating Scholars: Doctoral Education in the Humanities*. The authors found that although the GEI was associated with improved outcomes—higher completion rates, lower attrition rates, and shorter time to degree—these changes were modest and not necessarily consistent across departments. While increased financial aid “reduced early attrition, [it] did not [substantially] increase rates of completion, nor shorten time to degree” (Ehrenberg, *et al.*, 2010). They also found that students who reported receiving “good” advising and indicated that their faculty advisor showed interest in their work were more likely to graduate.

Similarly, using the GES data, Main (2014) identified that the advisor’s attitude toward dissertation completion and how often the advisor communicates with his or her advisee during the dissertation process are important factors in the advisee’s program duration. In regard to post-graduation employment, Ehrenberg, *et al.* (2010) found evidence of fewer PhDs obtaining tenure-track faculty positions due to the changing job market; and that among those who began in non-tenure track faculty positions, many transitioned into tenure-track positions within 3 years of graduation. Although the GES provided a rich examination of the intersection between graduate school experiences and early career outcomes, questions remained regarding the doctorates’ longer-term career outcomes, as well as how family formation and respondents’

characteristics influence employment pathways. To learn more about the employment pathways of humanities doctorates, a follow-up survey was conducted in 2011-2012, generating longitudinal data that connects how graduate education experiences and other factors relate to employment outcomes at 3 different time points: 6 months after PhD completion, 3 years after PhD completion, and 2011.

Employment Outcomes and Job Satisfaction among HHSS PhDs

Although student career interests and early career outcomes have been thoroughly examined, previous studies have largely focused on Science, Technology, Engineering, and Mathematics (STEM) fields rather than the humanities and social sciences fields. Additionally, research on postdoctoral employment outcomes tends to focus on the positions that PhDs acquire immediately after graduation, rather than longer-term career trajectories. In general, researchers have found that there is a mismatch between doctoral student career goals, professional development programs, and actual postdoctoral employment outcomes (e.g., Golde & Dore, 2001; Goldman & Massy, 2001; Austin, 2002; Austin & Wulff, 2004; Cyranoski, *et al.*, 2011; Gibbs, McGready, Bennett & Griffin, 2014; Muindi & Keller, 2015). The discrepancies between “student goals, training, and actual careers” have notably been documented by Golde & Dore (2001). They found that the number of graduate students aspiring to academic positions far exceeds the number of available positions; yet, graduate programs are more focused on preparing students for academic careers than positions in industry or government. Similarly, Cyranoski, *et al.* (2011) and Goldman and Massy (2001) demonstrated the declining prospects for obtaining faculty positions in relation to the continued increase in the production of PhDs worldwide. Rather, the number of postdoctoral research positions in STEM fields has steadily increased

since the 1980s (Einaudi, Heuer, & Green, 2013). Postdoctoral research positions, which provide PhDs with advanced professional training and research independence, have become a step toward obtaining tenure-track faculty positions in many STEM fields. While not as prevalent as in STEM fields, postdoctoral positions have also expanded in the humanities and social sciences fields since 2000. However, the role of postdoctoral positions in the longer-term career trajectories of humanities and social sciences PhDs is less clear than in STEM fields. Given the contextual differences across disciplines, it is critical to examine the humanities and humanistic social science specifically (Horta, 2009).

There have been several efforts to collect data on graduate student experiences and employment outcomes. The American Association of Universities Data Exchange encourages the use of a common set of questions that institutions collect from doctorates, and the National Science Foundation has launched the Early Career Doctorates Survey and a longitudinal component to the Survey of Doctorate Recipients. The few studies examining the career pathways of humanities and social sciences doctorates come from the Center for Innovation and Research in Graduate Education (CIRGE), which examined students' career paths, job satisfaction, and graduate experiences for a select number of disciplines 5 years and 10 years after the Ph.D. (e.g., Nerad & Cerny, 1999; Nerad et al., 2003; Nerad, Rudd, Morrison, and Picciano, 2007). While Nerad and her colleagues examined English to represent the humanities and political science to represent the social sciences, they also collected data from other fields of study, including biochemistry, computer science, electrical engineering, and mathematics. The resulting sample includes 61 institutions and represents 57% of the PhDs awarded in the aforementioned fields between 1982 and 1985. The respondents completed the survey between 1996 and 1997.

Among the 525 political science PhDs who responded to the survey in 1982, 72% indicated having aspired to become a professor, and approximately 61% of the respondents indicated that their faculty advisors encouraged them to pursue academic jobs (Nerad et al., 2003). By 1995, approximately ten years after PhD completion, 70% of the political science PhDs worked in the academic sector, whereas the remaining 30% worked in non-profit, government, and business sectors. A higher percentage of those working in business, government, or nonprofit sectors reported being satisfied with their jobs overall (91%) compared to those working in tenure-track faculty positions (81%). Fifty-five percent of the political science PhDs were tenured and 4% in non-tenure track faculty positions. Women were more likely to be represented in non-PhD granting institutions (38%) compared to men (28%), and women were less likely to be represented in Research I institutions (20%) compared to men (28%; Nerad et al., 2003). Compared to political science PhDs, a greater proportion of English PhDs (81%) aspired to become professors and 73% of the respondents reported that their faculty advisors encouraged this career trajectory (Nerad & Cerny, 1999). By 1995, 73% worked in the academic sector and 53% of the English PhDs were tenured. However, nearly half of English PhDs worked in non-tenure track academic positions (for an average of 2.8 years) before starting a tenure-track position. A relatively small percentage (8%) assumed postdoctoral positions as a step toward later obtaining a tenure-track faculty position. Although the majority of English PhDs aspired for and obtained faculty positions, a higher proportion of those working in business, government, and non-profit sectors report satisfaction with their jobs compared to those in the academic sector (Nerad & Cerny, 1999).

There are a number of studies examining job satisfaction among tenure-track faculty by gender and discipline. For example, Bilimoria, et al. (2006) showed that male faculty reported higher levels of job satisfaction than female faculty, although they noted a difference in faculty rank among their sample. While leadership and mentorship both played a role in faculty members' level of job satisfaction, internal relational supports appear to be more important for women. Likewise, Bozeman and Gaughan (2011) found that male faculty are more satisfied than female faculty within STEM fields. Consistent with previous literature, they also found that faculty members are more satisfied when their level of compensation more accurately reflects their market value. Using data from the National Science Foundation Survey of Doctorate Recipients, Sabharwal and Corley (2009) found that female faculty members reported lower levels of job satisfaction compared to male faculty members, but that the effect largely disappears when additional factors, such as institutional and career-related factors, are considered. Within the social sciences, they did not find a difference in job satisfaction between male and female faculty.

Gender and Family Formation in the Academy

In the humanities and social sciences fields, women comprise a little more than half of the doctorates. In 2013, 52% of the doctorates in the humanities and 60% of the doctorates in behavioral and social sciences were women (Humanities Indicators, 2017). A large proportion of doctorates tend to work in academia—for example, over 80% of humanities doctorates (Humanities Indicators, 2014). A 2012-2013 survey of humanities departments found that women comprise 50% of the humanities faculty (White, Chu & Czujko, 2014), which is relatively commensurate to the gender composition of doctorates. The relative numbers between

men and women are particularly important in the study of academic career progression, as it relates to the culture of the working environment (Kanter, 1977). Further, many academic institutions developed workplace norms at a time when men were traditionally viewed as breadwinners and women as caregivers; subsequently, both male and female faculty face challenges when trying to forge different work-life patterns (Ely, 2000; Mason, 2002; Ward & Wolf-Wendel, 2012).

Indeed, pressures associated with the “ideal worker” norm place a relatively heavier burden on women compared to men because they are less likely to have spouses who will assume all of the childcare and other family needs (Acker, 1990; Hochschild, 1995; Williams, 2000; Sallee, 2014). Mason (2009) and Ehrenberg, *et al.* (2010), for example, suggest that this is the reason that women with children are less likely than men with children to obtain tenure-track positions. Instead, women are more likely to obtain part-time academic or non-tenure track positions. Among tenure-track faculty with children, women are less likely than men to earn tenure (Mason, 2009). Tenure-track women are also less likely to be married or partnered than their male peers, and more likely to have delayed childbirth or not have the desired number of children (Nerad, et al, 2007). Female faculty are also more likely than male faculty to say they delayed or did not have children for professional reasons, that they timed childbirth to coincide with the summer months, and/or that they chose not to take parental leave to minimize disrupting their career progression (Armenti, 2004; Ward & Wolf-Wendel, 2012). Xie & Shauman (2013) have shown that women who take a larger share of childcare responsibilities face additional challenges in the workforce and in their career progression. And while women have had greater access to the academic workplace, women lag men in terms of career progression to leadership

positions (Ceci, Ginther, Kahn & Williams, 2014; Mason et al, 2013; Ward & Wolf-Wendel, 2016). According to Ward and Wolf-Wendel (2016), this pattern may partially be due to women's reluctance to pursue promotion or leadership positions due to having already contributed substantial time and effort to service, to avoid engaging in "unpleasant leadership cultures" (p. 15), and/or as a strategy to meet the demands of their work and family lives. Evidence nonetheless suggest that men are increasingly taking a greater share of childcare responsibilities in the rise of the "new dads" as social norms and economic realities move away from the more traditional "male breadwinner" and "female caretaker" dichotomy (Lotkeff, et al., 2012; Milkie, Kendig, Nomaguchi, & Denny, 2010; Sallee, 2014). This change in the outlook of some men is particularly salient in humanities and social science fields—Sallee (2014) indicates that men in the humanities and social sciences were more likely to report involvement with their children and ability to carve time for family compared to men in science and engineering. Whereas the structure of work may be more flexible in humanities and social sciences fields and the culture more open to the presence of children in the department, role strain is particularly acute in science and engineering fields due to the heavy reliance on external funding and lab-based activities (Sallee, 2014). Thus, disciplinary differences are particularly important in determining the structure of individual faculty work and the extent of "role strain" or challenges associated with career-life integration.

Indeed, women have outpaced men in the number of doctoral degrees earned and have reached parity in regard to the proportion of faculty positions in the humanities and humanistic social sciences. Because social context is critical to understanding the pathways of PhDs, the faculty sex ratio in humanities and humanities social sciences fields and the outlook of the faculty

regarding work life integration has important implications for the pathways available to graduate students in these fields. As Elder (1998) indicated, “all life choices are contingent on the opportunities and constraints of social structure and culture,” and thus this raises the question of what types of career progression patterns can be generated in this environment. Therefore, it is critical to understand how gender, marital status, and family formation influence the career trajectories of both men and women with doctorates in the humanities and humanistic social sciences.

Theoretical Framework: Life Course Perspective

Since individual-level decisions, institutional-level factors, and environmental context shape the career trajectories of individuals, we adopt a life course perspective to inform our analyses of how these different factors converge to influence career patterns (Shanahan, Mortimer, & Johnson, 2016). The life course perspective emphasizes human agency (choices and actions taken by individuals) in the context of historical and social circumstances, as well as the connections between individuals and the network of shared lives and relationships (Elder & Giele, 2009; Elder, 1994, 1998). It recognizes the “multiple trajectories in the domains of education, family, and work,” “the intersection of individual and institutional actions,” and the possibility of alternative career pathways (Xie & Shauman, 2003). Importantly, this perspective facilitates the understanding of how factors related to individual backgrounds, institutional academic programs, and the career environment interact and intersect in important ways to generate the existing career trends. Therefore, the life course perspective provides a formal mechanism to help interpret linear and non-linear career trajectories, and potential differences across relevant demographic characteristics, such as gender, race/ethnicity, discipline, and

citizenship.

We compare the career trajectories of men and women in the humanities and humanistic social sciences across the life course with a focus on the following factors: (1) gender, (2) race/ethnicity, (3) student expectations to become a faculty member, (4) marital status, (5) dependents under 6 years old, (6) post-PhD job position, (7) field of study, (8) PhD institution, (9) graduation year, and (10) student academic variables, including Graduate Record Examination (GRE) scores, undergraduate grade point average (GPA), number of publications, and time to degree. Nearly all of the humanities and humanistic social sciences PhDs in the sample reported choosing to pursue academic faculty careers, and we analyze how a context of factors influence the likelihood of the attainment of this goal. We examine men and women's likelihoods of obtaining tenure-track faculty positions 6 months, 3 years, and at least 8 years after receiving the PhD with a focus on how marital status and family formation influence career trajectories. Based on the life course perspective, we estimate how life events in one time period, such as marriage and caring for young dependents, influence the career outcomes of PhDs in a subsequent time period. Consistent with the life course perspective, we also take into account other relevant contextual factors, such as individual demographic characteristics, previous achievement, and job expectations, as well as departmental and institutional factors. Further, we examine whether there are non-linear trajectories by estimating the likelihood that PhDs are able to obtain tenure-track faculty positions after initial employment in other job sectors.

Work plays a critical role in shaping individual and family life in terms of social status, resource availability, social relations, and time allocation (Moen, 2016). In the household production

model, members of the household choose how to allocate time between work at home and work in the market. However, the interaction of the life cycle and the normative pathways of academic careers complicates decisions regarding time allocation. For example, the household production model would predict that individuals, in the course of the life cycle, will work more when their earning capacity is highest, during middle age. However, the critical years for success in a normative tenure-track academic career pathway often coincide with the normative timing for family formation (Moen, 2016; Mason, et al., 2009; Ward & Wolf-Wendel, 2012). Due to norms regarding care-taking and household responsibilities, women's participation in the normative academic pathway is often constrained by institutional policies and practices and "ideal worker norms," as well as historical norms that have viewed the male experience as the template for faculty careers. The life course perspective allows us to understand the participation of women in academia in a broader and more flexible way, by considering faculty careers in terms of years and life spans, rather than first position after the PhD. We are therefore able to investigate how life events, such as employment status, marriage, and family formation, in one time period influences PhDs' subsequent career trajectories.

Data

We analyze restricted access data from the two waves of the GES linked to associated administrative data. As noted above, the Andrew W. Mellon Foundation developed and launched the GES to help evaluate the GEI program, collecting data on the respondents' graduate education experiences related to advising, publications, satisfaction, and so on. The original GES was conducted between November 2002 and October 2003, and a follow-up survey was conducted in 2011. The 2011 follow-up includes questions related to the original participants'

employment outcomes, job market satisfaction, marital status, dependent care, and other relevant variables. The original survey was merged with the follow-up survey to generate a longitudinal dataset that provides information regarding graduate education experiences and eventual employment outcomes. The combined surveys were merged with administrative records from the respective departments and institutions, which include student demographic information, program duration, and funding information. While the original survey achieved a response rate of 74%, there is not sufficient data on non-respondents to identify whether there are significant differences between respondents and non-respondents (Ehrenberg, *et al.*, 2010)¹. In the follow-up survey, 8,052 individuals from the original sample were invited to participate, and 5,052 completed the survey yielding a 57% response rate.

The sample is comprised of doctoral students enrolled between 1982 and 1996 in the following departments: anthropology, art history, classics, comparative literature, East Asian studies, English, ethics, history, medieval studies, music, philosophy, politics/government, religion, and Romance languages. All of the departments are in selective research institutions: University of California, Berkeley; University of Chicago; Columbia University; Cornell University; Harvard University; University of Michigan, Ann Arbor; University of Pennsylvania; Princeton University; Stanford University; Yale University; University of California, Los Angeles; University of California, San Diego; and University of North Carolina, Chapel Hill.

¹ For a more detailed discussion regarding the original GES and the sample, please see Ehrenberg, *et al.*, 2010.

The sample for analysis consists of 5,052 individuals who completed their PhDs between 1985 and 2003. Because the sample includes students who completed their PhDs across different time points, at the time of the 2011 survey between 8 and 26 years had elapsed since PhD completion. Table 1 summarizes demographic information for the sample. Women comprise 48% of the sample of PhDs, and approximately 12% of the PhDs are Asian, Black, or Hispanic. The average time to degree is 7.3 years. This is lower than the national average, likely due to factors such as relatively more funding for research assistantships and higher-ranked programs that attract top students. The doctorates generated an average of 1.5 publications (articles, books, etc.) while they were still in the doctoral programs. Six months after their PhD completion, 64% of the respondents were married and 25% had at least one child under 6 years old. The doctorates reported whether they were employed and, if so, the employment sector in which they worked (non-academic non-profit, for profit, non tenure-track academic, tenure-track faculty) at three points in time—6 months after the PhD, 3 years after the PhD, and in 2011. The proportion of PhDs in tenure-track/tenured faculty positions were 41%, 64%, and 68%, respectively.

Figure 1 illustrates the proportion of PhDs in tenure-track or tenured faculty positions at three time points: 6 months after the PhD, 3 years after the PhD, and in 2011. Figure 1A shows that the proportion of men and women who obtain tenure-track faculty positions 6 months and 3 years after the PhD are similar; however, by 2011, there is a slight difference between the proportion of men and women who are in tenure-track faculty positions. When disaggregated by gender and marital status, Figure 1B demonstrates that doctorates who were married at the time of graduation have slightly different trends than doctorates who were single at the time of graduation. Compared to their counterparts, a relatively lower proportion of women who were

married at the time of PhD graduation hold faculty positions in 2011. Finally, when disaggregated by gender and family status, Figure 1C indicates that having young dependents in the household (children < 6 years of age) at the time of graduation appears to influence men and women differently. A relatively larger proportion of men with young children at the time of PhD graduation hold tenure-track faculty positions compared to women with young dependents.

Methods

We documented patterns in career progression over time using probit regressions. For example, our first analysis considered factors that predict whether an individual holds a tenured or tenure-track position six months after completing his or her PhD. In this case, we regressed an indicator for holding such a position ($TenureTrack6mo_i$) on the following factors—whether the person was married or partnered at 6 months ($Married6mo_i$) and whether the person had at least one child under age 6 at 6 months ($Kids6mo_i$), as well as an interaction with being a woman on both factors ($Married6mo * Woman_i$ and $Kids6mo * Woman_i$). Our models also included a wide range of controls (X_i), such as race/ethnicity, gender, characteristics as of graduate school (Verbal and Math GRE scores, undergraduate grade point average, field, institution, time to degree, publications as a student, academic expectations, and academic expectations interacted with gender), and graduation year groups (1985-1992, 1993-1997, 1998-2001, 2002-2003). When we consider outcomes reported on the 2011 survey the indicators for graduation year groups control not only for changes in the academic and social landscape over time, but also for the amount of time elapsed since PhD completion. Academic expectation is a dummy variable that describes whether the PhD aspired to pursue a tenure-track faculty career. The demographic information (gender, race/ethnicity, GRE scores, undergraduate GPA, publications, graduation

year, time to degree, field, and institution) was derived from the participants' graduate school records. Note that data regarding marital status and presence of dependents below 6 years old reflect the time point of 6 months after PhD completion for all analyses, including those examining outcomes that occur later.

$$(1) P(TenureTrack6mo_i) = \beta_1 Married6mo_i + \beta_2 Kids6mo_i + \beta_3 Married6mo * Woman_i + \beta_4 Kids6mo * Woman_i + \beta_5 X_i + \varepsilon_i$$

When investigating factors that predict holding a tenured or tenure-track position 3 years after PhD completion or in 2011, we also included indicator variables describing the position the individual held at the previous time point (i.e., 6 months when investigating 3-year outcomes and 3 years when investigating 2011 outcomes). Positions are categorized as being for profit (non-academic), non-profit (non-academic), non-tenure-track academic, unemployed, tenure-track/tenured academic, or missing.

We also examined whether spouse occupation is predictive of career outcomes, restricting the sample to those who were married or partnered 6 months after graduation and estimating a similar equation to (1), with the addition of indicator variables for spouse occupation (student, working, not working, missing) and spouse occupation interacted with gender.

$$(2) P(TenureTrack6mo_i) = \gamma_1 Kids6mo_i + \gamma_2 Kids6mo * Woman_i + \sum \gamma_o SpouseOcc_o_i + \sum \gamma_{ow} SpouseOcc_o * Woman_i + \varepsilon_i$$

We analyzed the PhD survey participants' level of satisfaction in different aspects of their current job: administration, appreciation of work by colleagues and supervisors, remuneration,

service opportunities, and overall satisfaction. The respondents ranked their level of satisfaction as Very Satisfied, Somewhat Satisfied, Somewhat Dissatisfied, Very Dissatisfied, or Not Relevant. For our analyses of career satisfaction, we used t-tests to compare the percentage of respondents who answered Satisfied or “Very Satisfied to the questions listed above. We compared the percentage of those who indicated Very Satisfied or Somewhat Satisfied across the four employment sectors: tenure-track/tenured faculty, non-tenure track academic, not for profit (non-academic), and for profit. The comparison group was tenure-track/tenured faculty.

Results

Likelihood of tenure-track or tenured faculty position

We estimated the likelihood of being a tenured or tenure-track faculty member at 6 months after the PhD, 3 years after the PhD, and in 2011. Since survey participants graduated between 1982 and 2003, the year 2011 represents data collected at least 8 years after graduation. For those who began tenure-track positions immediately after degree completion, this should generally cover the time period for the tenure process, which tends to range from 5 to 7 years, although it can be shorter or longer for a number of reasons. The results presented in Tables 2 and 3 are marginal effects holding all other factors constant. The difference in the likelihood of holding a tenure-track position 6 months after graduation for those with young children is 9 percentage points more negative for female PhDs (Table 2). This difference between outcomes for men and women with young children, however, appears to diminish over time. While having young dependents appears to play a role in women’s employment outcomes more immediately, both men and women who report having young dependents near the time of graduation are less likely to be tenured in 2011 compared to their counterparts. Male PhDs who indicated having young

dependents 6 months after graduation are 6 percentage points less likely to be tenured in 2011 compared to male PhDs without young dependents at the same time point; the influence of young children is not significantly different for female PhDs. Marriage is also associated with a lower likelihood of becoming tenured among women. The difference in 2011 tenure rates for those who were married 6 months after graduation is 7.2 percentage points more negative for women than it is for men. Marital status and dependents under 6 years old appear to influence women's early career outcomes.

In addition to marital status and young dependents, other characteristics were also strong predictors of holding a tenured or tenure-track job (Table 2). Compared to their counterparts, underrepresented minority PhDs (African American, Native American, Hispanic/Latino, and Pacific Islander) are 20 percentage points more likely to hold a tenure-track/tenured faculty position 6 months after PhD, and 9 percentage points more likely to do so 3 years after the PhD. This positive relationship, however, diminishes by 2011. PhDs who reported that while in graduate school they had intentions to pursue academic careers were more likely to be in a tenure-track or tenured position across all time points, and there is no significant difference between men and women in the importance of this factor. The variable denoting PhDs' academic expectations, however, was collected retrospectively, so it is possible that individuals who have already obtained tenure-track or tenured positions may be more likely to recall intending to pursue academic careers while they were in graduate school.

There is evidence that there is some permeability from all of the other employment sectors to academic careers, but the likelihood of obtaining tenure-track positions appears to be higher for

those who begin in non-tenure track or non-profit (non-academic) positions rather than for-profit/business (non-academic) positions. PhDs who held non-tenure track positions 6 months after the PhD were 30 percentage points more likely to enter a tenure-track or tenured position within 3 years of their PhD completion compared to PhDs who held positions in the for-profit sector. This general finding is true for both full-time non-tenure track and part-time adjunct faculty. (The results including part-time adjunct faculty are available upon request.) Those who were initially employed in the non-profit (non-academic) sector are 10 percentage points more likely than PhDs working in the for-profit sector to have obtained a tenure-track faculty position 3 years after earning the doctorate.

Table 3 reports analyses on the 2,624 PhDs who reported being married or partnered at or just after PhD completion, which is approximately 53% of the study participants. We found that among doctorates who were married/partnered, having young children present at 6 months after the PhD is associated with a lower likelihood of being in tenure-track positions for women than for men 6 months and 3 years after the PhD. However, this trend appears to reverse by 2011 (Table 3). For married men, the presence of children under 6 years old in the household is associated with a 6 percentage-point higher likelihood of a tenure-track job at 6 months, but an 8 percentage-point lower likelihood of having tenure in 2011. Differences between those with and without kids are significantly different for women. The influence of children on having a tenure-track job at 6 months is 13 percentage points more negative, but that on having tenure is 8 percentage points more positive for women. We also estimated whether spouse/partner activity (student, not working, and omitted category of working) at the start of the PhD's dissertation process influenced the career outcomes of PhD students. PhDs were more likely to obtain tenure-

track or tenured positions at any of the three time points if their spouse was also a student versus working (Table 3). This finding may be consistent with other research, which has found that female academics tend to be married to other academics (Mason, 2009; Ehrenberg, *et al.*, 2010).

Satisfaction with Employment Outcomes

We used t-tests to identify whether a greater proportion of those employed in tenure-track/tenured faculty positions report being satisfied with their jobs than those employed in other areas: non-tenure track academic, not for profit, and for profit (Table 4). Overall, a greater proportion of PhDs employed in the non-profit sector reported being satisfied than those in tenure-track positions. Approximately 93% of PhDs working in non-profit employment indicated being Very Satisfied or Somewhat Satisfied with their overall current position compared to 88% of PhDs in tenure-track/tenured faculty positions ($p < 0.05$). A relatively larger proportion of those in non-profit employment (80%) indicated satisfaction with remuneration compared to 61% of those in tenure-track/tenured positions. The trends are similar when comparing PhDs working in the for-profit sector with PhDs in tenure-track/tenured positions. A greater proportion of PhDs in the for-profit employment sector reported satisfaction with remuneration (87%), appreciation of their work from colleagues (95%), and administration (83%). Differences in satisfaction with service opportunities and overall were not significant. Although a greater proportion of non-tenure track faculty (70%) indicated satisfaction with the administration compared to tenure-track/tenured faculty (60%), a relatively smaller proportion of non-tenure track faculty reported overall satisfaction with their current position (80%). We conducted similar comparisons on several subgroups of our sample—those with and without children, those married and unmarried in 2011, and men and women—and found similar trends across all groups

(results available from authors upon request). Although these demographic factors appear to affect career patterns, they do not appear to affect the relative satisfaction of individuals within different types of employment.

Discussion

We applied a life course perspective to examine how individual choice, demographic and institutional factors, and environmental context influence the career outcomes and patterns of PhDs in the humanities and humanistic social sciences. Consistent with the life course perspective, whereby human agency is an active force in the construction of an individual's career and life path, we found that having aspirations to become a tenure-track faculty member is a strong predictor for attainment of this position. This finding is consistent across the time periods we analyzed—6 months after the PhD, 3 years after the PhD, and in 2011. A potential limitation to this finding is that the survey question was retrospective, such that it may be that those who attained tenure-track faculty positions were more likely to indicate that this was their intention during graduate school. However, there were a number of PhDs who held positions in non-tenure track academic and non-profit, non-academic sectors at 6 months after the PhD who eventually obtained tenure-track faculty positions by the year 2011, suggesting that there were a number of PhDs who took specific actions and made choices that helped them obtain their intended career goal.

Consistent with the life course perspective that social contexts matter and that lives are interdependent (linked lives), we found that marital and family status influences PhDs' employment patterns. Among married PhDs, spouse activity plays a role in the PhD's

employment outcomes. Married PhDs whose spouses/partners were students at the same time were more likely to obtain tenure-track faculty positions compared to married PhDs whose spouses were unemployed or employed. This may be due to shared values and understanding of the academic path, and perhaps related to academic institutions' increasing attention toward supporting dual careers. Previous research shows that female academics tend to be married to other academics (Mason, 2009; Ehrenberg, *et al.*, 2010). However, marriage and having a young dependent (< 6 years old) appear to affect men and women differently. Women are less likely to hold faculty positions if they indicate being married or having young dependents in the household 6 months after receipt of their degrees. As with previous studies, it is difficult to ascertain whether these patterns are due to individual choices, structural factors across institutions and hiring practices that constrain women's choices, or a combination of individual and institutional factors. Our study extends this finding by examining the longer-term outcomes of female PhDs and demonstrating that this effect diminishes over time. In particular, by 2011, women with dependents are just as likely as women without dependents (6 months after PhD) to hold a tenured position in 2011. Among women who were married (6 months after PhD), having young dependents in the household has a negative effect on the likelihood of holding a tenure-track job 6 months after the PhD, but this effect reverses direction over time. While our data do not provide additional insights to explain these trends, the higher level of gender equity of the humanities and humanistic social sciences compared to STEM fields (e.g., Wolfinger, Mason, & Goulden., 2009) may facilitate transition into faculty roles through a non-linear, non-traditional path. Potential differences in the academic cultural environments between fields, as well as changes in individual time allocation, household routines, and children's needs as they grow older, may play a role in women's changing career paths. Importantly, these findings suggest that

examining longer-term career outcomes and the life course, rather than just the first position after the PhD, provides a different perspective on women's work lives.

While the majority of doctoral students in the humanities and humanistic social sciences indicated that their goal is to pursue academic careers, our findings indicate that obtaining a faculty position is not always associated with higher career satisfaction. In our sample, a greater proportion of PhDs working in the non-profit, non-academic sector reported being satisfied overall compared to PhDs in faculty positions. A higher proportion of PhDs working in the non-profit, non-academic sector reported high levels of satisfaction with their remuneration, appreciation from colleagues and supervisors, administration, and service opportunities. However, only 5% of the sample is comprised of non-profit, non-academic sector professionals compared to more than 70% tenure-track faculty members. Note that the proportion of tenure-track faculty members in our sample is relatively high compared to the national average, perhaps because the doctorates have graduated from top-ranked departments and institutions and therefore may represent some of the top candidates in their respective fields. Important to note is that differences in levels of job satisfaction by employment sector were similar for demographic subgroups and the overall sample.

We also found that PhDs working in non-profit, non-academic sectors are more likely than those working in for-profit sectors to move into tenure-track faculty positions. Not surprisingly, PhDs who are in non-tenure track faculty positions are the most likely to move into tenure-track faculty positions. While it may be that PhDs who take on non-tenure track and non-profit, non-academic positions are those who are aiming to pursue tenure-track positions, it may also be that

these positions provide them with opportunities to engage in activities (teaching, publishing, etc.) and to develop CVs that would be more appealing to tenure-track faculty search committees.

Conclusion and Implications

Using the life course perspective as our framework, we demonstrate that human agency— aspiration to obtain a tenure-track faculty position—plays an important role in goal attainment and that the path to tenure-track faculty positions is not necessarily linear. Not surprisingly, PhDs who indicated that they intended to pursue academic careers while in graduate school are more likely to hold tenure-track faculty positions compared to those who did not. By examining the longer-term career paths of PhDs, we demonstrate that the likelihood of holding a tenure-track faculty position can increase over time, and that the path to tenure-track faculty positions does not always conform to traditional notions of a direct line between PhD completion and a tenure-track faculty position. Although the majority of doctoral students in the humanities and humanistic social sciences aspire to become tenure-track faculty members, many begin their post-PhD careers in non-tenure-track or non-academic jobs. Contrary to commonly held perceptions among some PhDs that stepping out of the academic pathway may preclude entry into tenure-track faculty positions, we found evidence that there is permeability between other employment sectors and academia. While holding postdoctoral positions is becoming increasingly common, many of these positions are in non-academic sectors. Social context is important, as PhDs initially employed in non-profit (non-academic) and non-tenure track faculty positions are more likely than those initially employed in for-profit sectors to obtain a tenure-track faculty position.

Linked lives (marriage and young dependents) also play a role in the career pathways of PhDs. Consistent with previous literature, marital status and the presence of young dependents in the household affects the career trajectories of men and women differently. Research on women's careers have tended to find that women have more varied work roles, moving in and out of the workforce, perhaps through part-time and full-time positions (e.g., Malenfant, LaRue, & Vézina, 2007; Moen, 2016). Previous studies have also found that women with young dependents are more likely to obtain part-time academic or non-tenure track faculty positions (Mason, 2009; Ehrenberg, *et al.*, 2010). Consequently, perhaps another common perception among some PhD students is that having young dependents in the household may deter their academic aspirations. Our findings, however, show that there are multiple pathways to the professoriate, especially when viewed across the work life span. We find that by our final time point, at least 8 years after PhD, the likelihood of holding a tenured position is no different between women who indicated having young dependents in the household 6 months after PhD completion and those who did not. The importance of linked lives in the career trajectories of PhDs is further demonstrated by the significance of spouse activity in the PhD's attainment of a tenure-track faculty position. Among PhDs who were married during graduate school, those with spouses who were students at the same time are more likely to hold a tenure-track faculty position than those with spouses who were employed or not working across all time points observed.

We also examined the levels of career satisfaction among PhDs in the humanities and humanistic social sciences. A higher proportion of those who work in the non-profit sector report high levels of satisfaction with their positions compared to PhDs who have tenure-track/tenured faculty positions. While many of the PhDs aspired to and obtained tenure-track faculty positions, this

finding suggests that those who pursue non-academic jobs may find greater satisfaction for a number of reasons related to remuneration, service opportunities, and/or level of appreciation from colleagues and supervisors. Importantly, the relative levels of satisfaction reported by PhDs across employment sectors/positions are consistent across the subgroups (gender, race/ethnicity, etc.) that we investigate.

Our findings highlight the importance of examining the longer-term career outcomes of PhDs in the humanities and humanistic social sciences. Using the life course perspective to investigate the career paths of men and women (with and without young dependents 6 months after the PhD), we illustrate that there are multiple and non-linear pathways to the professoriate and thus provide insights into the longer-term career prospects of PhDs. These findings have the potential to help doctoral students envision and prepare for their careers, as well as to counteract perceptions held by some students that taking a non-tenure-track job or having young dependents in the household early in the career may preclude academic careers. Rather, our findings suggest that doctoral students, administrators, faculty, and other stakeholders employ more flexibility in imagining the work lives of PhDs and the many ways and roles in which PhDs can use their training. We provide insights that could potentially be applied in enhancing the design of PhD programs and structures toward greater alignment between “student goals, training, and actual careers.”

Tables and Figures

Table 1
Descriptive statistics

	Mean	SD	N
Demographic			
Female	0.477	0.500	5,052
Asian	0.042	0.120	3,587
Black	0.038	0.191	3,587
Hispanic	0.042	0.201	3,587
White	0.874	0.332	3,587
At 6 months after PhD			
Married	0.637	0.481	4,237
Has dependent under 6 yrs. old	0.247	0.548	4,739
Academic			
Year graduated			
1985-1992	0.205	0.404	5,052
1993-1997	0.374	0.484	5,052
1998-2001	0.310	0.463	5,052
2002-2003	0.111	0.314	5,052
GRE verbal (8-point scale)	6.808	0.763	4,504
GRE math (8-point scale)	6.415	0.904	4,504
Undergraduate GPA	3.646	0.296	1,992
Expected academic career	0.962	0.191	4,699
Publications as student	1.542	2.481	2,445
Time to degree (years)	7.273	2.018	5,052
Employment outcomes at 6 mos.			
Non-profit	0.039	0.193	4,812
Non-tenure track academic	0.438	0.496	4,812
Unemployed	0.069	0.253	4,812
Tenured or tenure-track	0.411	0.492	4,812
For-profit	0.043	0.203	4,812
Employment outcomes at 3 years			
Non-profit	0.041	0.198	4,809
Non-tenure track academic	0.251	0.434	4,809
Unemployed	0.023	0.151	4,809
Tenured or tenure-track	0.638	0.481	4,809
For-profit	0.047	0.211	4,809
Employment outcomes in 2011			
Non-profit	0.050	0.218	4,644
Non-tenure track academic	0.176	0.381	4,644
Unemployed	0.026	0.159	4,644
Tenured or tenure-track	0.675	0.468	4,644
For-profit	0.073	0.261	4,644

Table 2
Likelihood of being in a tenured or tenure-track faculty position 6 months after PhD, 3 years after PhD, in 2011, and of being in a tenured position in 2011

	Tenured/Tenure Track at 6 months	Tenured/Tenure Track at 3 years	Tenured/Tenure Track in 2011	Tenured in 2011
Female	0.000 (0.048)	-0.047 (0.039)	0.047 (0.038)	0.094 (0.050)
URM	0.199* (0.030)	0.093* (0.028)	0.015 (0.027)	-0.018 (0.029)
Academic expectations	0.297* (0.052)	0.186* (0.039)	0.145* (0.036)	0.182* (0.051)
Academic expectations*female	0.059 (0.050)	0.060 (0.040)	-0.057 (0.039)	-0.082 (0.051)
Married at 6 months	0.019 (0.020)	-0.015 (0.017)	-0.012 (0.017)	0.018 (0.018)
Married at 6 months*female	-0.028 (0.029)	-0.009 (0.024)	-0.045 (0.024)	-0.072* (0.027)
Kids < 6 at 6 months	0.044 (0.037)	-0.002 (0.021)	-0.007 (0.022)	-0.062* (0.023)
Kids < 6 at 6 months*female	-0.086+ (0.037)	-0.052 (0.032)	-0.002 (0.031)	0.047 (0.036)
Post-PhD position at previous survey				
Non-profit, non-academic sector		0.099+ (0.045)	0.063 (0.040)	0.005 (0.061)
Non-tenure track academic		0.295* (0.033)	0.253* (0.030)	0.203* (0.044)
Unemployed		0.280* (0.038)	0.135* (0.045)	0.094 (0.065)
Tenure-track academic		0.686* (0.031)	0.549* (0.027)	0.324* (0.042)
Missing position		0.220* (0.041)	0.176* (0.038)	0.173* (0.053)
Number of observations	4,914	4,939	4,644	4,644

Note. Values reflect marginal effects from a probit model predicting outcomes in columns. Standard errors appear in parentheses. In addition to variables listed models include graduation year groups (1985-1992, 1993-1997, 1998-2001, 2002-2003), field of study, institution attended, GRE scores, undergraduate GPA, publications as a student, time to degree, and indicators for missing values. Post-PhD position at 6 months/3 years reflects position held at previous time point—position at 6 months for outcome at 3 years and position at 3 years for outcomes in 2011. Significance at the 0.05 level is denoted with +, that at the 0.01 level with *.

Table 3

Likelihood of being in a tenured or tenure-track faculty position 6 months after PhD, 3 years after PhD, in 2011, and of being in a tenured position in 2011, respondents married or partnered 6 months after PhD completion

	Tenured/Tenure			
	Track at 6 months	Tenured/Tenure Track at 3 years	Tenured/Tenure Track in 2011	Tenured in 2011
Female	0.003 (0.119)	-0.217+ (0.107)	0.071 (0.081)	-0.058 (0.141)
Kids < 6 at 6 months	0.057+ (0.027)	0.019 (0.022)	-0.003 (0.024)	-0.081* (0.025)
Kids < 6 at 6 months*female	-0.131* (0.040)	-0.082+ (0.034)	0.010 (0.034)	0.081+ (0.038)
Spouse activity when started dissertation				
Student	0.042+ (0.020)	0.048* (0.017)	0.039+ (0.017)	0.052* (0.018)
Not working	-0.002 (0.045)	-0.011 (0.037)	0.021 (0.039)	0.017 (0.043)
Missing	-0.002 (0.033)	-0.016 (0.027)	0.056+ (0.028)	0.035 (0.030)
Number of observations	2,624	2,632	2,491	2,491

Note. Values reflect marginal effects from a probit model predicting outcomes in columns. Standard errors appear in parentheses. In addition to variables listed models include graduation year groups (1985-1992, 1993-1997, 1998-2001, 2002-2003), field of study, institution attended, race, academic expectations, academic expectations * female, GRE scores, undergraduate GPA, publications as a student, time to degree, position at previous survey, and indicators for missing values. Significance at the 0.05 level is denoted with +, that at the 0.01 level with *.

Table 4

Satisfaction with current job by position held in 2011

	Percentage of respondents responding Very Satisfied or Somewhat Satisfied			
	Tenure-Track	Non-Profit	Non-Tenure Track Acad	For Profit
Overall satisfaction	0.878	0.93+	0.796*	0.899
Administration	0.602	0.806*	0.701*	0.832*
Appreciation of work from colleagues	0.824	0.946*	0.837	0.949*
Appreciation of work from supervisors	0.788	0.911*	0.761	0.865+
Remuneration	0.608	0.799*	0.591	0.867*
Service opportunities	0.866	0.95*	0.831+	0.795
N	3,135	223	816	131

Note. Reported N is the total number of respondents to this section of the survey in each employment category. Number of actual respondents to individual questions is always smaller. Significant differences at the 0.05 level from the tenure-track group are marked with +, those at the 0.01 level are marked with *.

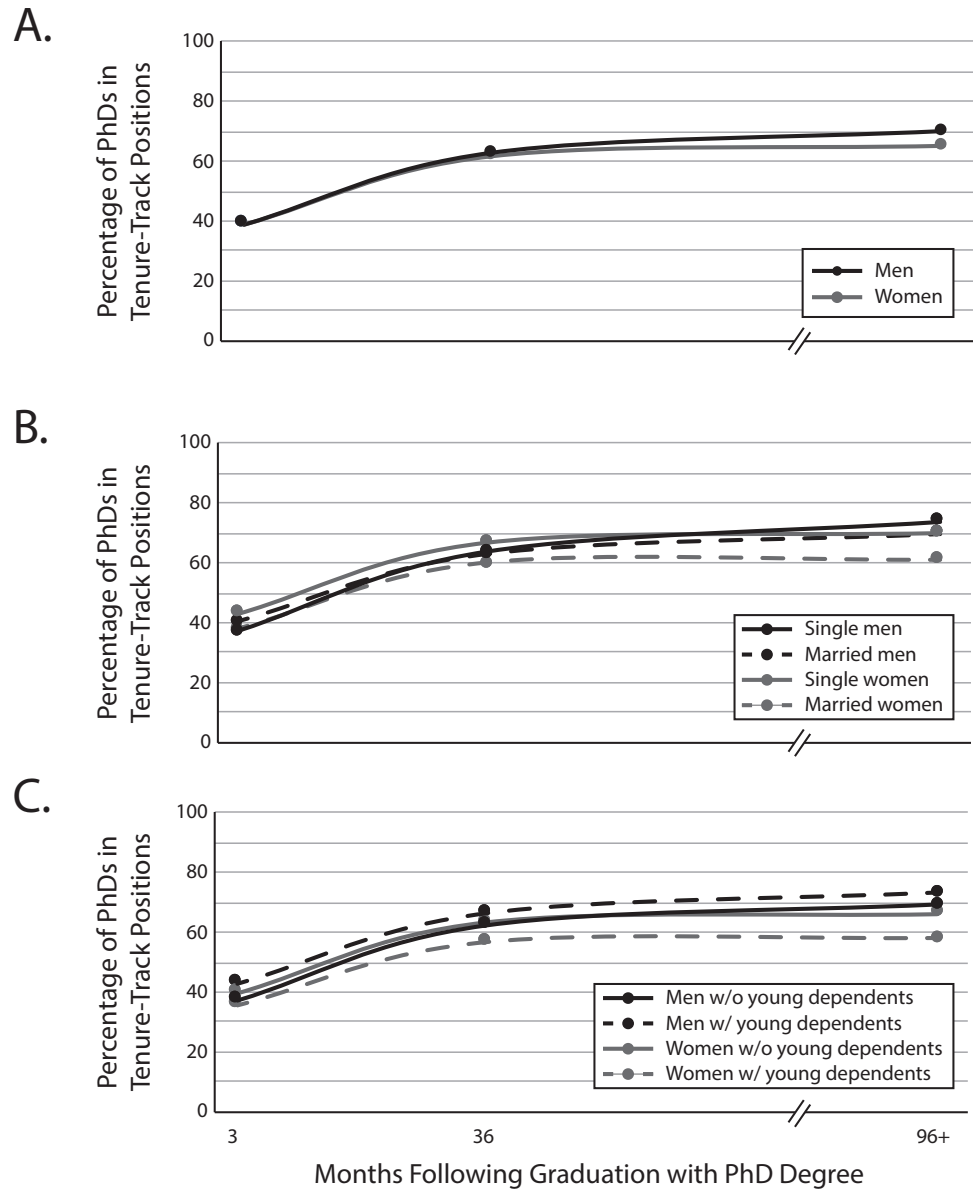


Figure 1. Percentage of PhDs in Tenure-Track Faculty Positions across time: 6 months, 36 months, and at least 96 months after completing the PhD.

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