



ASA RESEARCH BRIEF

Figure 1: Top Five Benefits and Costs of Using Adjunct Faculty, April 2004.

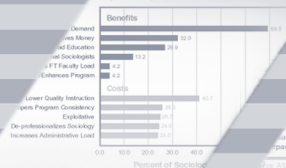


Figure 2: Percent Use of Supplementary Faculty in Percent.

Category	Not Using Any Supplementary Faculty	Using Only Non-Graduate Students	Using Only Graduate Students	Using Both Non-Graduate and Graduate Students
Adjuncts	15.7%	31.4%	1.4%	51.4%
Faculty I	9.7	35.5	9.7	44.9
Faculty II	20.0	20.7	6.7	42.6
Faculty III	24.4	53.7	0.0	21.9
Faculty IV	19.2	69.7	2.8	9.1
Faculty V	23.5	72.5	0.0	3.0
Faculty VI	41.7	45.6	6.8	4.9
Faculty VII	32.4	55.7	4.0	7.9
Faculty VIII	25.3	56.4	3.6	14.7

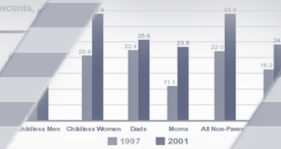


Figure 1: Percentage of PhD Cohort with Tenure at Research or Doctoral Universities Who Were Non-Parents During Graduate School.

**American Sociological Association
DEPARTMENT OF RESEARCH AND DEVELOPMENT**

ASA RESEARCH BRIEF - JULY 2004

THE BEST TIME TO HAVE A BABY: *Institutional Resources and Family Strategies Among Early Career Sociologists*

OVERVIEW

The slow response of the academy to accommodate the increasing share of PhDs who are women and who do not wish to remain childless has resulted in the loss of skills and scholarship to the scientific enterprise. A current front-page article in *The Chronicle of Higher Education*, "How Babies Alter Academic Careers," cites a nationally representative study by Mary Ann Mason and Marc Goulden that finds raising children, especially early in academic careers of PhD recipients between 1973 and 1999, had a negative effect on women's but not men's careers (Wilson 2003). Recently, women graduate students and early career faculty members who participated in an online discussion with Mason frequently asked, "When is the best time to have a child?"

The American Association of University Professors (AAUP) recently issued a *Statement of Principles on Family Responsibilities and Academic Work* (2001) calling for colleges and universities to enact policies

designed to allow faculty members to combine family and academic career responsibilities more successfully, and to help alleviate the conflicts junior faculty face as they try to get tenure and begin families (AAUP 2001). The policies AAUP recommends include family leave, stopping the tenure clock, and modified or part-time teaching and service loads. These "work/family" policies tend to be under-used in academia, however, because parents are afraid that they will not be considered serious scholars if they use them (Drago and Colebeck 2003). If academic parents are afraid to use these work/family policies, are there other sorts of institutional resources, ostensibly distributed on the basis of merit and not specifically directed to parents, they can use to achieve career success? In addition to resources, what strategies increase the chances of early career success, especially for academic mothers?

This research brief investigates the availability and use of resources and strategies during graduate school and their impact on the early career success

of a cohort of PhD sociologists. It asks whether these resources and strategies increase the chances of obtaining a tenure-track position at a research or doctoral university. Unlike the other physical, life, and social sciences, the majority of early career sociologists with PhDs are women. Except for psychology, sociology is the most "feminized" of the science and engineering disciplines, with 60 percent of new PhDs in 2002 awarded to women. These early career sociologists may face parenting/productivity dilemmas, given the age at which they finish their degrees and begin their academic careers. Sociology is, therefore, an interesting case for research about family responsibilities and professional demands and can provide a model for other disciplines, as they gradually feminize (Spalter-Roth and Lee 2000).

We find that institutional resources, resource-based strategies and family-based strategies are significant factors in early career success. Institutional resources distributed in graduate school, especially departmental prestige, and publishing help from faculty members, resource-based strategies including presenting papers and publishing articles while in graduate school, have a positive and significant effect on early career success. We also find that resources are not equally distributed during graduate school, with mothers generally having less access to them than other groups, especially childless men.

Child-spacing strategies are also significant. Women who delay childbirth until tenure do better at obtaining success early in their careers, and more of them delay childbirth than do their male colleagues. Women who have children during graduate school have lower odds of obtaining tenure-track jobs at research and doctoral universities, although access to resources and the ability to use these resources helps significantly. Delaying childbirth also has problems, and many women do not wish to do so. Women who have children directly after obtaining their PhDs are marginally less likely to obtain these desired positions on a later job search, while those who had children during graduate school appear to have an

equal chance at tenure-track jobs at research universities several years out. So "When is the best time to have a baby?" for women: There is no best time or a worst time. All times involve some trade-offs, but access to resources help.

THE STUDY

In 1998, ASA began a longitudinal study of a cohort of sociologists who received their PhD degrees in the United States between July 1996 and September 1997. From the beginning, we were interested in the potentially contradictory efforts to develop successful careers and to form families. Brief follow-up surveys with cohort members were conducted in 1999 and 2001 to ascertain if they had changed jobs, had married, or had children.¹

During 2003, we conducted a series of panels and discussion groups at regional and annual sociology meetings with additional groups of academic mothers and fathers including non-tenured faculty, tenured faculty, and graduate students. We sought to identify what institutional resources had been important to participants, how they used these resources, and what additional strategies and policies they found important. Although we attempted to focus primarily on resources, the discussions usually turned quickly to the strategies participants use to combine parenting and scholarly work. We incorporated comments from members of these groups into the findings presented here.

Although there are many ways to define early career success, this brief focuses on the attainment of a tenure-track position at a research or doctoral granting university. Access to jobs at these institutions is important because they come with the resources, the publishing requirements, and the graduate students to influence the growth and development of sociology as a scholarly discipline. The majority of both men and women pursuing sociology PhDs are trained for and regard a tenure-track job at a research university as the most desirable early career outcome (Golde and Dorr 2000). Women, especially those who wish to

¹The ASA survey was part of a 14-discipline study that was coordinated by the Commission for Professionals in Science and Technology and funded by the National Science Foundation and the Alfred P. Sloan Foundation. The PhD survey in sociology included those sociologists who received the degrees between July 1, 1996, and August 31, 1997. The survey went into the field in February 1988 and obtained a 72 percent response rate (for a total of 435 respondents). Women were more likely to respond to this survey than men, U.S. citizens were more likely to respond than non-citizens, and whites were more likely to respond than minorities. There was an 80 percent response rate for each of the two follow-up surveys. ASA was the only disciplinary organization to conduct follow-up surveys.

parent, may be discouraged from pursuing careers at these institutions (Ward and Wolf-Wendel 2003), or may opt out because of the structural incompatibility of tenure demands with family life. As one member of one of our recent discussion groups remarked,

I think that you need to look at whether mothers or fathers try to get into research universities and were not accepted, which is very different from they didn't try. I turned down positions at top-notch research universities to be at [a teaching college]. Why? I would guess 90 percent because I have kids.

THE CONCEPTUAL FRAMEWORK

Those with greater access to institutional resources (including mentoring and networks) generally have more successful individual careers (Allison, Long, and Krauze 1982; Coleman 1988). In spite of the tendency to view the academy as a meritocracy, with the best ideas and the best scholars rising to the top, researchers cited below suggest that resources are not evenly distributed by merit alone. Those groups with lower social positions based on their gender, race, ethnicity, and age have less access to resources and, as a result, may be less likely to achieve (Orr 2003). We investigate how academics' social positions, as determined by their gender, race, and age, affect their early career success when these other factors are taken into account.

Unequal access to resources is not the whole story, however. Also important is the ability of individuals and groups to use strategies to change conditions in their favor (sometimes referred to as "agency"). Some of these efforts require the use of institutional resources (efforts that we refer to as "resource-based strategies"), while others require some "give" in structures outside of academia, including families (efforts that we refer to as "family-based strategies"). Some of these strategies may change patterns of inequality and others may reinforce them. Even those strategies that maintain or reinforce inequalities can still shift the balance in an individual's favor, at least temporarily (Giddens 1984).

Institutional resources in graduate school, as defined here, come from within and outside academic departments. These include departmental prestige, funded opportunities to present papers outside the department, faculty help in publishing, effective

teacher training, research assistantships, fellowships, and other competitive awards. Resource-based strategies, as defined here, include publishing in peer-reviewed journals, presenting papers at professional meetings, organizing sessions or roundtables at professional meetings, joining professional societies, using faculty advisors for help in job search, and changing jobs early in one's career. The second type of strategy is related to choices individuals make about their family situations and include the spacing of children and the use of resources from spouses or family members. Both resource-based and family-based strategies can reflect efforts on the part of individuals to try to change the structure in their favor, and in this case, to obtain a desirable career position.

LITERATURE

The research question of whether access to institutional resources, use of resource-based strategies and/or family-based strategies, increase the chances of early career success for early career academics, and especially mothers, grows out of two bodies of literature. The first focuses on institutional resources that affect career trajectories, and the second concerns mothers' roles and obligations and their lack of fit with academic life.

Institutional Resources

One institution-related factor explaining career success is differential structural location and access to institutional resources (Allen 1998; Allison and Long 1990; Bentley and Blackburn 1992; Fox 1991; Grant, Ward, and Forshner, 1992, 1993; Long 1990; Reskin 1978a, 1978b; Xie and Shaumann 1998). Institutional location is important for productivity, because different locations provide varying levels of research support including funding, facilities, and collegial networks. For graduate students, prestigious departments may offer better training, greater opportunities to work and collaborate with eminent professors, and better chances for post-PhD placement in departments with resources and reputations (Keith and Moore 1995). From graduate school onward, scholarly productivity is necessary for climbing this ladder, and publications do not occur in a vacuum. From the first step, publications, and perceptions of promise in publication, are related to the distribution of prestigious appointments, resources, collegial relations, and

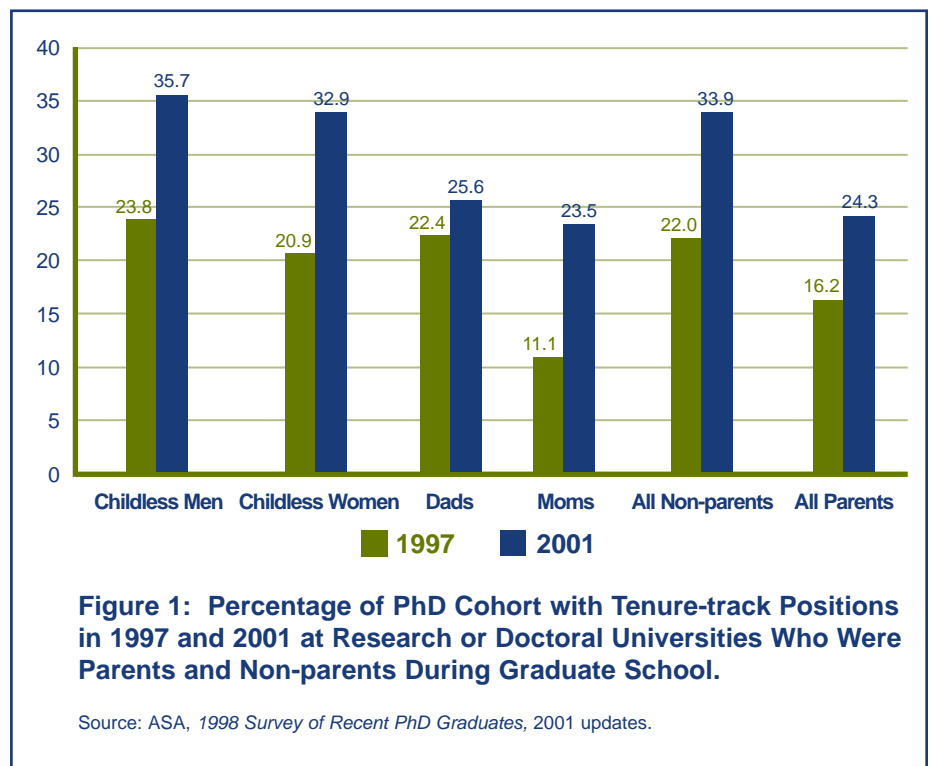
teaching loads, other factors being equal (Allison et al. 1982; Calhoun 1999; Chamberlain 1988; Fox 1991; Fox and Faver 1985; Graham and Diamond 1997; Long, Allison and McGinnis 1993; Long and Fox 1995; Slaughter and Leslie 1997). Many studies have found that women have less access to the resources that result in scholarly productivity than their male peers (Fox 1996; Grant et al. 1992; Grant and Ward 1996; Kulis 1988; Romero and Storrs 1992; Spalter-Roth and Lee 2000; Zuckerman 1991). Few have concentrated on mothers.

Greedy Institutions

The lack of fit between mothers' responsibilities and successful academic careers is based on the conflicting rhythms and requirements of each. Academic careers require long hours, without interruptions throughout the life course (Williams 2000; Jacobs and Winslow 2003). Mothers often bear the primary family obligations that conflict with the demands and rhythms of academic life (Bellas 1997; Cole and Zuckerman 1991; Fox and Faver 1985; Hargens, McCann and Reskin 1978; Long 1990; Long et al. 1993; Sonnert and Holton 1995; Williams 2000). The result is a "care giving bias" (Drago, Larson, and Selfe 2001) because the academy, described as a "greedy institution," is organized to meet the rhythm of "male clocks" (Hochschild 1975; Grant, Kennelly and Ward 2000).

Previous studies suggest that the scientific enterprise is permeated with gendered assumptions that are incompatible with family obligations and the patterns of women's lives (Drago et al. 2001; Grant et al. 2000; Reskin 1978b 1992; Zuckerman 1991). Many women fail to thrive in environments that reward youthful PhDs, quick publication, and six- to seven-year tenure clocks (Ward and Grant 1995). A recent report from the Committee on Women in Science and Engineering of the National Academies of Science suggests that marriage and family was the single most important factor differentiating the shape of the scientific careers of men and women (Long 2001).

Some recent research suggests that individual women try to shift the balance in their favor by trying to manage the conflict between productive academic careers and motherhood. They do this by limiting and spacing childbirth, along with other "discrimination avoidance strategies" (Drago et al. 2001; Sonnert and Holton 1995; Grant et al. 2000). There is also some evidence that the current generation of academic fathers, as well as mothers, face care-giver bias, and that both are afraid to take advantage of policies (such as family leave) that would increase their parenting time (Drago and Colbeck 2003).



THE FINDINGS

What follows is a brief summary of the results from the on-going survey of the 1996-97 cohort, focusing on their access to resources and their use of resource- and family-based strategies as they move along the career pipeline or fail to do so. The metrics used to measure early career success, institutional resources, resource-based strategies, and family-based strategies are described in Appendix I. The descriptive findings are first followed by the results of two multivariate models.

Prior research on this 1996-97 cohort shows early career differences among women with children, men with children, childless men, and childless women (Spalter-Roth, Thomas and Levine 2001; Spalter-Roth and Merola 2001a, 2001b). The greatest differences are usually between men who were childless and women with children at each career stage.

Mothers and Others

Figure 1 shows that a minority of the cohort obtained tenure-track positions at research universities, although the percent with jobs at these institutions increased between 1997 and 2001. Childless men were the group most likely to hold tenure-track positions at research and doctoral universities, and women who had children (referred to as moms in the figure) were the least likely to hold these positions. By 2001, 36 percent of childless men held these positions compared to 33 percent of childless women, 26 percent of men with children, and 24 percent of women with children.

Differences Between Parents and Childless Men and Women.

One reason for the difference between parents and childless men may be differential access to resources that promote scholarly careers. Table 1 shows which differences are significant. Those cohort members who were childless in graduate school (non-parents) obtained their degrees from sociology departments with significantly higher prestige rankings (the ranks go from 1 to 100, with the lower numbers meaning higher prestige). Similarly, a significantly higher percentage of non-parents have opportunities to present papers outside their departments and universities. Most non-parents were likely to have such opportunities, about 9 out of 10 did, compared to slightly more than 8 out of 10 women who were mothers during graduate school.

Non-parents were also more likely than parents to have had research assistantships, a resource that can result in training and mentoring. Fewer than 6 out of 10 mothers—compared to more than 7 out of 10 childless men—received this resource.

Table 1 also shows that childless men are significantly more likely than the other groups to receive help in publishing from faculty members while in graduate school. More than 6 out of 10 of these men receive this kind of mentoring compared to slightly more than 4 out of 10 of mothers and

Table 1. Significant Differences in Institutional Resources Awarded During Graduate School by Parental Status, 1997.

Institutional Resources	Childless During Graduate School		Children in Graduate School		All Parents	All Non-parents
	Men	Women	Dad	Mom		
Departmental Reputational Prestige (Mean)	36.8	37.1	42.3	47.0	44.9	37.0**
Presentation Opportunities Outside University (%)	88.6	91.4	86.6	81.0	83.6	90.4 ^a
Received Faculty Help in Publishing (%)	60.2	44.0*	55.2	44.9*	49.7	50.0
Awarded Research Assistantship (%)	71.4	68.4	64.2	55.6	59.5	69.5 ^b
Awarded a Fellowship (%)	54.3	57.6	64.2	51.9	57.4	56.4
Awarded a Dissertation Fellowship (%)	32.4	31.1	29.9	24.7	27.0	31.6
Received Effective Teacher Training (%)	55.2	46.0	56.7	45.6	50.7	49.5
Received Other Awards (%)	17.1	16.4	10.4	19.8	15.5	16.7

Source: ASA, 1998 Survey of Recent PhD Graduates in Sociology, 1998, 2001.

Note: Other awards include any awards received from an external source as a graduate student during PhD training. Other awards do not include teaching assistantships, research assistantships, fellowships, or dissertation fellowships.

* p < .05. ** p < .01.

^a $\chi^2=4.20$, df=1, p=.04.

^b $\chi^2=4.37$, df=1, p=.037.

childless women. Previous research on this cohort suggests that women (both mothers and childless women) are less likely than men to receive this kind of mentoring, regardless of their area of specialty or the gender of their advisor (Spalter-Roth et al. 2001; Spalter-Roth and Lee 2000). Participants in discussion groups note that the most helpful mentors were themselves responsible for their children's primary care.

The amount and flexibility of time constrain the ability to take advantage of institutional resources. Time to travel to professional meetings and provide research assistance can be severely limited for parents who have primary care-taking responsibilities. Parents talked of being offered research assistantships in graduate school but having to turn them down or defer them to a later semester. Some also talked about how fortunate they felt to have had professors who created unique arrangements for them to be able to participate in research presentations and assistantships. One, for example, says she was granted a research assistantship for the spring semester when her child was due, and was very pleased that her professors allowed her to receive her stipend that semester but work on the project in the preceding fall semester. The gratitude participants expressed suggests that most professors are not able or willing to bend their projects and needs to create the flexible timetables student parents may need.

Strategies That Help Careers. The descriptive findings show few significant differences between parents and non-parents, mothers and others in terms of their participation in resource-based strategies such as presenting papers at annual or regional meetings or publishing in peer reviewed journal as a graduate student. The trend is for childless men to use these strategies the most and mothers to use them the least.

In contrast to resource-based strategies, those that we call "family-based" are enacted in a sphere outside of the academic context (Acker 1990). First, the strategy of obtaining family funding (resources from spouses and other family members) is significantly less likely to be used by non-parents, perhaps because they obtain the most institutional resources or had less need of money. This use of family-based resources was a focal topic of discussion in our discussion groups. Many participants, especially parents, have borrowed or been given money from their families for a number of support-related reasons including paying bills, hiring help or allowing partners to cut down on work hours. Participants feel this money makes their scholarship possible, although it does not show up on their curriculum vita as do competitive awards, and, as we will see, family resources appear to be negatively related to obtaining a tenure-track position at a research or doctoral university.

A second family-based strategy that may help individual women's careers but is unlikely to change the structure or culture of academic life is spacing the birth of children. Other researchers have suggested that academic women have fewer children than they wish to have (Drago et al. 2001). By 2001, approximately four years after obtaining their PhDs, fully 71.6 percent of women remained childless in contrast to 61.6 percent of men (Table 2). Even though sociology has a greater share of women than do other disciplines, women PhDs are still significantly more likely than men to postpone having children, probably because they are afraid that they cannot manage the two greedy institutions of academic and family.

Discussion group participants indicated that the timing of children is one of the most pressing issues on their minds. As in the general population, the births of many participants' first children were not planned, so participants had to make adjustments if they had intended to have children later or not at all. For some, this meant taking more time to finish their degrees, since, as one participant put it, "I feel that my time is much more my own now as a graduate student and [part-time] teacher." Indeed, some participants' mentors counseled them to adopt this strategy of staying in graduate school longer if they had children. For others, their work went on at the same pace. In a story that is relatively common, one participant describes:

Table 2. Parental Timing by Gender Four Years After PhD.

Parental Timing	Men	Women
No Children	61.6%	71.6%
Had Children While in Graduate School, but None Afterwards	29.1	13.7
Had Children After Graduate School	7.9	12.3
Had Children During and After Graduate School	1.3	2.4
Total (N)	100.0 (151)	100.0 (211)

Source: ASA, 1998 Survey of Recent PhD Graduates in Sociology, 1998, 2001.

$\chi^2=13.74$, $df=3$, $p=.003$.

In the course of maybe 6 months I entered the job market, interviewed for jobs, had a baby, finished my dissertation, moved and started a tenure-track job...

Other participants very carefully planned the days and months of conception to allow births to coincide with either non-teaching summer months or less hectic career stages. One participant, now a full professor, said he and his partner decided to have their first child after he passed comprehensives but before he finished his dissertation. Another, a graduate student, planned and had her child between semesters and carefully kept her pregnancy a secret from her department. Others talked about having to wait until after tenure to adopt or conceive.

A final strategy is to change jobs. More than 7 out of 10 women who had children during graduate school changed jobs between 1998 and 2001. They are the group who are the most frequent job changers; they are also less likely than other groups to find tenure-track jobs right after receiving the PhD degree and are more likely to obtain temporary positions and jobs outside the academy for their first job. Childless men in the survey are the least likely to change jobs between 1998 and 2001—only 40 percent do so—and are also the most likely to find tenure-track jobs upon receiving their PhD degree.

Chances for Tenure-track Jobs

Two sets of multivariate analyses determined whether, and if so, by how much, each factor increased the odds of obtaining a tenure-track position at a research or doctoral university. The first analysis included all members of the cohort and examines the factors, relative to one another, that led to employment in tenure-track positions at research or doctoral universities by October 1997, shortly after they completed graduate school. The second analysis was limited to those cohort members who used the strategy of changing jobs between 1997 and 2001 and examines the factors that lead to tenure-track positions at research or doctoral universities by 2001 (Tables 3 and 4). In both cases, we examined whether the availability of institutional resources alone significantly increased the odds of obtaining a tenure-track position at a research or doctoral

university. We then examined whether a model that also includes resource-based strategies, family-based strategies, and demographic indicators of social position, such as gender, race, age, and citizenship, as well as institutional resources increased the odds of obtaining a tenure-track position at a research or doctoral university.

The full models (Table 3A and Table 4A), as discussed below, produce the highest pseudo-R²s and the highest percentage of correct predictions for those who obtained tenure-track positions at research universities by 1997 and by 2001. We also include an interaction term between child spacing (whether cohort members had children before they went to

Table 3: Institutional Resources Predicting the Odds of Obtaining a Tenure-track Job at a Research or Doctoral University in 1997.

	Coefficient	S.E.	OddsRatio	Sig.
Departmental Reputational Prestige (log)	-0.38***	0.11	0.69	0.001
Awarded Research Assistantship	0.31	0.33	1.37	0.347
Received Other Awards	0.74**	0.33	2.11	0.022
Awarded a Fellowship	0.05	0.30	1.05	0.863
Awarded a Dissertation Fellowship	0.30	0.30	1.35	0.316
Faculty Publishing Help	0.57*	0.28	1.77	0.040
Presentation Opportunities Outside University	-0.42	0.45	0.66	0.352
Received Effective Teacher Training	0.46†	0.27	1.58	0.091
Intercept	-0.78	0.58	0.46	0.181
-2 Log Likelihood		354.8		
Cox/Snell Pseudo R²		0.086		
Nagelkerke Pseudo R²		0.131		
χ^2		32.6		
df		8		
Sig.		0.001		
N		362		
Correctly Predicted Research/Doctoral Jobs (%)		15.9		

Source: ASA, 1998 Survey of Recent PhD Graduates in Sociology, 1998, 2001.

† p < .10 * p < .05 ** p < .01 *** p < .001.

graduate school, while in graduate school, or neither) and gender (being a woman). Most of the research literature, as well as our discussion groups, show that women, even professional women, bear more responsibility for children than do men.

Early Career Success: Post PhD

Table 3 shows the results of the institutional model for predicting the odds of obtaining a tenure-track position at a research or doctoral university right after the receipt of the PhD. Departmental prestige, receiving "other" awards, and faculty help in publishing articles

positively, and significantly, increased the odds of obtaining early career success for the cohort. The institutional resource model, however, is relatively weak, with a small share of correctly predicted outcomes (15.9 percent). When we add the other factors to the model (Table 3A), the share of predicted outcomes increases to more than 50 percent. Among institutional resources, departmental prestige alone remains significant. All resource-based strategies are

Institutional Resources. Table 3 shows that the prestige of the graduate school a new PhD attended has a positive and significant effect on the likelihood of obtaining a tenure-track position at a research or doctoral university within a year or two of earning a PhD, even after other strategies and statuses are taken into account. Exponent β , the predicted change in odds for a unit increase in the predictor, is less than one, which means that for every point increase in the

prestige score (recall that higher scores mean lower prestige), there is a .485 percent decrease in the odds of obtaining a tenure-track position at a research university. This suggests that even when cohort members do not engage in resource-based strategies, the prestige of their department affects their career trajectory. Since mothers are less likely to attend the higher prestige schools, they would be less likely to obtain such positions even when they engage in scholarly activities such as publishing papers in peer reviewed journals or presenting at professional meetings.

Research assistantships and faculty help in publishing are institutional resources that can result in skill development and publication. These institutional resources are not significant when resource-based strategies are included in the model, possibly because institutional resources are incorporated in the resource-based strategies (Table 3A). For example, being awarded a research assistantship (an institutional resource) can result in papers and publications (a resource-based strategy).

Receiving "other" awards also declined in significance although it remained marginally significant. As one of the participants in our current research stated of her fellowship at the National Institute of Aging, "I had mentoring from some top folks in the field, it was a prestigious school, and I had networks."

Table 3A. Final Logistic Regression Model Predicting the Odds of Obtaining a Tenure-track Job at a Research or Doctoral University in 1997.

	Coefficient	S.E.	Odds Ratio	Sig.
Institutional Resources				
Departmental Reputational Prestige (log)	-0.72***	0.14	0.49	0.001
Received Research Assistantship	-0.28	0.37	0.76	0.448
Other Awards (from external sources)	0.68†	0.38	1.98	0.076
Resource-based Strategies				
Member of One or More Professional Society	0.25*	0.12	1.29	0.028
Faculty Help with Job Search	0.72*	0.32	2.05	0.022
Published One or More Papers in Peer Reviewed Journal	0.21*	0.08	1.23	0.014
Learned to Make Effective Presentations	1.23**	0.48	3.43	0.011
Presented at Regional Sociology Meeting	1.29***	0.34	3.63	0.001
Family/Individual Strategies				
Individual, Spousal, or Family Financial Support	-0.59*	0.29	0.56	0.044
Women Having Children During Graduate Training	-2.19*	1.09	0.11	0.045
Women Having Children Before Graduate Training	0.16	0.55	1.17	0.779
Social Position				
Women	-0.24	0.34	0.79	0.473
Non-citizen	-2.41***	0.64	0.09	0.001
Black	1.28**	0.50	3.60	0.010
Age (log)	-0.67	0.93	0.51	0.472
Intercept				
	1.31	3.39	0.22	0.700
-2 Log Likelihood		274.3		
Cox/Snell Pseudo R²		0.274		
Nagelkerke Pseudo R²		0.417		
χ^2		117.1		
df		15		
sig.		0.001		
N		368		
Correctly Predicted Research/Doctoral Jobs (%)		51.8%		

Source: ASA, 1998 Survey of Recent PhD Graduates in Sociology, 1998, 2001.

† p < .10 * p < .05 ** p < .01 *** p < .001.

significant, and some family strategies and demographic indicators of social position increase the odds of employment in a tenure-track position at a research or doctoral university shortly after completing graduate school.

Resource-based Strategies. All of the resource-based strategies are positively and significantly related to attaining tenure-track positions at a research or doctoral university right after graduate school. Publishing in peer reviewed journals, joining professional societies, presenting papers at regional sociology meetings, calling upon faculty for help in the job search, or learning to make effective presentations increases the odds of early career success by as much as three times. These are activities that can lead to contacts, networks, and positive appraisal of scholarly productivity, which, in turn, can result in early career success.

Family-based Strategies. Obtaining financial support for graduate education from family members is negatively (and significantly) related to obtaining a tenure-track position at a research university, when other factors are taken into account. This finding suggests that those who can rely on institutional resources in graduate school do better in terms of early career success than those who need to rely on financial resources from spouses and other family members.

Child spacing appears to have some importance as a strategy for career success. The descriptive findings suggest that women with children are significantly less likely to obtain tenure-track jobs at research universities right out of graduate school than are childless men. The multivariate analysis shows that the odds of cohort members who are mothers during graduate school cut the odds in half of gaining this kind of position, compared to non-mothers, even when mothers have access to institutional resources and engage in resource-based strategies. This finding does not tell us whether women with small children fail to apply for tenure-track positions at research universities, even though they receive awards and engage in professional activities, or if hiring committees find them less attractive than childless men and women. In contrast, women who have children before graduate school do not face negative odds for early career success when other factors are present.

Social Position. Demographic indicators of social position are significantly related to obtaining a desirable position right after graduate school, despite resources and strategies. Being a woman is negatively, but not significantly, related to obtaining a tenure-track job at a research or doctoral university, probably because childless women are more likely to obtain tenure-track jobs at research universities than are mothers. Being a black scholar is positively related to obtaining this type of position, other factors being present, suggesting that members of this status group are extremely marketable as new PhDs. Citizens are more than twice as likely as non-citizens to obtain

Table 4: Institutional Resources Predicting the Odds of Obtaining a Tenure-track Job at a Research or Doctoral University in 1997 among Job Changers in 2001.

	Coefficient	S.E.	Odds Ratio	Sig.
Departmental Reputational Prestige (log)	-0.24*	0.12	0.79	0.052
Received Other Awards	1.23***	0.36	3.41	0.001
Awarded Research Assistantship	0.86**	0.34	2.36	0.013
Awarded a Fellowship	-0.05	0.30	0.95	0.856
Awarded a Dissertation Fellowship	0.16	0.31	1.17	0.613
Faculty Encouragement to Publish Own Work	-0.73†	0.41	0.48	0.079
Faculty Publishing Help	1.29***	0.35	3.64	0.001
Received Effective Teacher Training	0.24	0.27	1.28	0.371
Intercept	-0.80	0.59	0.45	0.176
-2 Log Likelihood		326.1		
Cox/Snell Pseudo R²		0.152		
Nagelkerke Pseudo R²		0.204		
χ²		44.9		
df		8		
sig.		0.001		
N		273		
Correctly Predicted Research/Doctoral Jobs (%)		46.5%		

Source: ASA, 1998 Survey of Recent PhD Graduates in Sociology, 1998, 2001.

† p < .10 * p < .05 ** p < .01 *** p < .001.

tenure-track positions at research universities, regardless of resources or strategies, and older sociologists are less likely to obtain these jobs, although the difference is not significant.

In contrast to the institutional resources-only model, the ability of the full model to predict the odds of obtaining this form of early career success increases by more than three times.

Career Success: Results for Job Changers

As noted, the majority of this cohort did not obtain tenure-track jobs at research or doctoral universities right after graduate school. Tables 4 and 4A present the factors, relative to one another, that are related to whether or not those who changed jobs between 1997 and 2001 obtained this kind of position by 2001.

Table 4A. Final Logistic Regression Model Predicting the Odds of Obtaining a Tenure-track Job at a Research or Doctoral University Among Job Changers in 2001.

	Coefficient	S.E.	Odds Ratio	Sig.
Institutional Resources				
Departmental Reputational Prestige (log)	-0.33*	0.13	0.72	0.012
Received Research Assistantship	0.50	0.37	1.64	0.186
Other Awards (from external sources)	1.24**	0.40	3.45	0.002
Faculty Publishing Help	0.75*	0.34	2.12	0.029
Resource-based Strategies				
Member of One or More Professional Society	0.10	0.11	1.11	0.378
Faculty Help with Job Search	0.60†	0.32	1.82	0.062
Published One or More Papers in Peer-reviewed Journal	0.11	0.08	1.12	0.168
Presented at a Non-regional Professional Meeting	0.82**	0.31	2.26	0.008
Family/Individual Strategies				
Individual, Spousal, or Family Financial Support	-0.89**	0.30	0.41	0.003
Women Having Children During Graduate Training	0.01	0.01	1.01	0.486
Women Having Children After Graduate Training	-0.03†	0.02	0.97	0.067
Social Position				
Women	0.46	0.32	1.59	0.150
Non-citizen	-1.13**	0.43	0.32	0.009
Black	0.69	0.57	1.99	0.228
Age (log)	-1.38	0.84	0.25	0.102
Intercept	3.94	3.07	51.23	0.200
-2 Log Likelihood		285.1		
Cox/Snell Pseudo R²		0.278		
Nagelkerke Pseudo R²		0.374		
χ²		89.8		
df		15		
sig.		0.001		
N		276		
Correctly Predicted Research/Doctoral Jobs by Job Changers (%)		63.5%		

Source: ASA, 1998 Survey of Recent PhD Graduates in Sociology, 1998, 2001.

† p < .10 * p < .05 ** p < .01 *** p < .001.

Those who switched jobs included former postdoctoral fellows, those at temporary (usually one-year) positions, those who moved from one tenure-track job to another, and those who moved from non-academic jobs. For the job changers, many of the same factors remain significant as for those who obtained tenure-track jobs directly after

graduate school. For example, institutional resources available in graduate school still increase the likelihood of obtaining a tenure-track position in the second round of job search several years after obtaining a PhD.

Institutional Resources. For this cohort, institutional resources available in graduate school are a relatively strong predictor of early career

success (43 percent of outcomes were correctly predicted). The prestige of the graduate department job changers attended still significantly increases the odds of successful job search. Some of the measures of institutional resources in graduate school that were not significant earlier on become so. Faculty publishing help in graduate school more than doubled the odds of obtaining a tenure-track job at a research or doctoral university by 2001. It may be that faculty members who had provided that help now provide a support network in job search and attainment. Likewise, receipt of "other" awards became significant and more than tripled the likelihood of obtaining a tenure-track job at a research university. Some of these "other" awards are postdoctoral fellowships that aid new PhDs to obtain tenure-track jobs at research universities.

When resource-based strategies and family-based strategies are added to the model, more than 63 percent of the outcomes are correctly predicted.

Resource-based Strategies.

Some of the resource-based strategies used during graduate school faded in significance by 2001, although one new one (i.e., presented at another professional society meeting) became significant. Unfortunately, because of the limited number of questions asked on the follow-up questionnaires, we do not know, for example, whether those who had published continued to

publish, or whether those who received help from faculty in obtaining jobs in 1997 still could rely on this help several years later or if those who presented at professional meetings continued to present. The next wave of the survey (2004) will ask these kinds of questions.

Family-based Strategies. Obtaining financial support from family members during graduate school and continues to significantly decrease the odds of obtaining a tenure-track job in 2001. This confirms our view that individual resources do not replace institutional resources in career success. Child spacing still appears to be at least a marginally successful career strategy after changing jobs. Those women who became mothers in graduate school no longer experienced negative odds in obtaining tenure-track positions at research or doctoral universities, if they were graduates of prestigious sociology departments, have had awards and mentoring, and have engaged in professional activities. Those women who became mothers after graduate school marginally decreased their odds of obtaining a tenure-track job at a research university this time around, suggesting that childbirth during graduate school is a more successful strategy than waiting until after graduate school, but before the tenure decision.

Social Position. By 2001, being a woman is not a significant disadvantage, when other factors such as institutional resources are equally distributed. Although small in number, black scholars are still significantly more likely than their white peers to obtain a tenure-track job at a research university after they changed jobs, although the odds are not as strong as when they were right out of graduate school. Age is negatively related to employment in a tenure-track position at a research university after job change (though not significant), and citizens are still more than twice as likely to be hired in these desirable positions than are non-citizens.

SUMMARY AND DISCUSSION

The findings suggest that institutional resources and the ability to use these resources in professional activities increase the odds of obtaining a tenure-track position at a research or doctoral university, thus far, in the careers of the 1996-97 cohort. Obtaining a PhD degree in a prestigious sociology department remains positive and significant over the

course of the study and increases in predictive power for those who changed jobs between 1997 and 2001. Engaging in professional activities while in graduate school significantly increases the odds of early career success but does not overcome the prestige factor for those who change jobs. Child spacing does appear to be a strategy with consequences for women who want research and teaching careers in sociology. Those women who give birth or adopt during graduate school have significantly lower odds of obtaining what we have defined as early career success right out of graduate school, even if they obtain institutional resources and use them in career strategies. Their chances improve several years later if they change jobs, when other positive factors are present. Those women who have children after graduate school decrease their odds of obtaining a tenure-track position at a research or doctoral university if they did not obtain this kind of position right after the PhD. Women who continue to delay childbirth do better at obtaining success early in their careers, and, as we have seen, significantly more of them delay childbirth than do their male colleagues.

Having children and managing academic careers are both very time- and energy-intensive activities, because both occur in "greedy institutions" (Hochschild 1975). This research brief examines whether either institutional or family resources and strategies can increase career success for those who tap both. The answer is "not entirely." Even if women who are mothers during graduate school have equal access to resources, the cohort study suggests that they have lower odds of obtaining tenure-track jobs at research and doctoral universities, although access to resources and the ability to use these resources helps significantly. Women who have children directly after obtaining the PhD degrees are marginally less likely to obtain these kinds of positions on a later job search, but those who had children during graduate school appear to have an equal chance at tenure-track jobs at research universities several years out. They will, however, be competing against new PhDs. So the answer to the oft asked question, "When is the best time to have a baby?" is, for women: "There is no best time nor any worst time; all times involve trade-offs. But resources help."

Currently (in 2004), the 1996-97 results from an additional wave of the cohort study, titled PhD +6,

will be presented. The major purpose of the PhD +6 wave is to determine whether institutional resources in post-PhD positions, and the use of resources and family-based strategies aid in obtaining tenure. We will investigate work-family policies and some additional strategies that members of the cohort think can change the structure of the academy so that it is more receptive to a variety of scholarly careers and to parenting. These include changes in tenure clocks, childcare, and paid family leave.

The participants in our study agreed with these structure-changing ideas about how academia could accommodate its faculty's actual diversity. During the discussion groups, we heard mothers and fathers say that they want the tenure process to stretch longer, for example, so that women's biological clocks and tenure clocks do not have to tick away simultaneously. We also heard them say that they want more flexible schedules, and universally available on-campus day-care. In addition to adopting family policies, however, departments and

universities must consider how to make it normatively and actually "cost-free" to use them.

Based on the findings presented in this brief, we also suggest wider access to resources (e.g., more equal distribution of faculty help in publishing and research assistantships), encouragement to use these for professional and scholarly activities, and restructuring and rescheduling when some of these activities need to be undertaken. We think that these resources may be especially beneficial to those who are afraid that taking advantage of "family friendly" policies will peg them as not being committed to their profession. The need for institutional resources, and the use of resource-based, and family-based strategies are important for early career academic success in sociology, especially for women who do not wish to remain childless. As noted, sociology has the second to highest percentage of women who obtain their doctorates. We suggest that these resources and strategies are even more important for women who obtain their doctoral degrees in male-dominated disciplines.

This brief is prepared by Roberta Spalter-Roth, Department of Research and Development, Research Program on the Discipline and the Profession and Ivy Kennelly, Department of Sociology, the George Washington University with the assistance of William Erskine, Department of Research and Development, Research Program on the Discipline and the Profession.

Appendix 1: Description of Variables in Regression Models.

Variable Name	Variable Description
Demographic Status	
Age (Log)	Age reported at time of survey (May-September 1998)
Woman	Respondent's reported gender at the time of the survey (0=men; 1=woman).
Race/Ethnicity	Respondent's choice of the following alternatives: Hispanic/Latino; White/Caucasian; African American/Black; Asian or Pacific Islander; American Indian or Alaska Native; or Other. Originally based on two questions, this single variable was created by excluding Hispanic/Latino Whites from the White Category and Hispanic/Latino Blacks from the Black category in order to avoid duplicate counts.
Non-citizen	Citizen status at time of survey (0=U.S. citizen; 1=non-citizen).
Institutional Resources	
Research Assistantship	Respondent reported whether or not they received a research assistantship from their university, department, or an external source at any point during graduate school.
Other Awards Received	Other awards are a variety of awards and funding from external sources such as NSF, NIA, ASA sections, and other sociological organizations such as the Society for Women in Sociology. Other awards do not include teaching assistantships, research assistantships, fellowships, or dissertation fellowships.

(continued)

Appendix 1: Description of Variables in Regression Models (continued).

Variable Name	Variable Description
Department Prestige (Reputational score)	A reputational prestige score for the respondents PhD department based on the 1993 National Research Council's survey that ranked graduate departments on the basis of agreement that the department was strong or distinguished. The lower the ranking the higher the prestige.
Faculty Publishing Help	Respondent received help from faculty in publishing journal articles (0=no; 1=yes).
Presentation Opportunities Outside University	Respondent had opportunities to present their research outside the university (0=no; 1=yes).
Resource-based Strategies	
Member of One or More Professional Society	The number of national and international professional societies to which the respondent belonged in 1997.
Faculty Advisor on Job Search	Respondent used faculty advisor during their 1996-97 job search (0=no; 1=yes).
Publications	Number of publications in peer-reviewed journals during graduate training.
Learned to Make Effective Presentations	Respondent learned how to make effective presentations in 1997 (0=no; 1=yes).
Presented at Regional Sociology Meeting	Respondent presented at least one paper at a regional sociological meeting (0=no; 1=yes).
Family/Individual Strategies	
Individual, Spousal, or Family Financial Support	Level of financial support from family or individual sources used by respondent during PhD training (0=not used; 2=maximum).
Had Children During Graduate Training	Respondent reports having at least one child during PhD training prior to 1996-97 academic year (0=no children during training; 1=had kids).
Had Children After Graduate Training	Respondent reports having at least one child after their PhD training ended during 1996-97 academic year (0=no children after training; 1=had kids).
Had Children Before Graduate Training	Respondent reports having at least one child before their PhD training (0=no children before training; 1=had kids).
Job Characteristics (Dependent Variables)	
Tenure-track Job Research or Doctoral University	Respondent had a job in a department at Research I or Doctoral Institution (according to Carnegie Classification) in 1997.
Tenure-track Job Research or Doctoral University for Job Changers	Same as above, except includes those who landed a job at research or doctoral schools in 2001 who previously held non-academic jobs or changed from another academic post (0=changers not at research or doctoral universities; 1=job changers with jobs at research/doctoral institutions).

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