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Male Scientists' Competing Devotions to Work and Family: Changing Norms in a Male-Dominated Profession

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Abstract

Using in-depth interviews with 74 men across different ranks in biology and physics at prestigious US universities, we ask to what extent changing norms of fatherhood and a flexible workplace affect men working in a highly male-dominated profession and what variation exists in family forms. We conceptualize four typologies of men: those forgoing children, egalitarian partners, neo-traditional dual-earners, and traditional breadwinners. Findings suggest male scientists hold strong work devotions yet a growing number seek egalitarian relationships, which they frame as reducing their devotion to work. The majority of men find the all-consuming nature of academic science conflicts with changing fatherhood norms.

Keywords

Gender; Science; Family; Work

Despite the growing amount of research devoted to women in science (Ecklund, Lincoln, & Tansey, 2012; Fox, 2010; Mason, Wolfinger, & Goulden, 2013; Whittington 2011; Xie & Shauman, 2003), there has been relatively little research on the work-family lives of men in academic science. The majority of existing research on academic men has focused on differences between men and women (Misra, Lundquist, & Templer, 2012; Winslow, 2010; see Solomon 2010 for a notable exception), leaving us with little information about variation among male scientists. Yet academic science remains dominated by men; men represent over 80 percent of full professors in life sciences, over 90 percent of full professors in mathematics, statistics and physical sciences, and over 95 percent of full professors in engineering (Fox, 2010).

How men working in such a male dominated profession negotiate work-family conflict is a lacuna in the literature. On the one hand, societal institutions, particularly places of work, remain structured around the separate spheres model in which wives care for household activities and husbands act as breadwinners for their families (Cha, 2010; Hochschild, 1989; Moen & Roehling, 2005). Such an arrangement means that workplaces, including academia, assume employees will be “ideal workers” who fully devote themselves to work without the burden of household chores or family obligations (Mason et al., 2013). Academics may be more susceptible to this devotion to work demand than other workers, as they average longer hours than most professionals (Jacobs, 2004; Misra et al., 2012). For example, previous work on academic scientists’ work lives at elite research universities reveal that both men and women work upwards of 55 hours a week (Ecklund & Lincoln, 2011). Long hours are often seen as a badge of courage among academic scientists that signal a primary commitment to the workforce (Keller, 1995; Latour, 1987; Mason et al., 2013; Shapin, 2008). A recent cross-national study found that scientists worked long hours, engaging in work after work hours and working late into the night (Wang et al., 2012).

On the other hand, the sizable research attention on work-family tensions in academia, changing fatherhood norms, and the flexibility of academic scheduling may all limit the amount of devotion academic science can demand of its workers. Despite the continued demands of work, there is also sizable evidence that men are increasing their time at home and anticipating that fatherhood duties involve active time at home, and that academic men are embracing these changes (Coltrane, 2000; Gerson, 2010; Solomon, 2010). Academia is characterized as more flexible than most professional workplaces (Ward & Wolf-Wendel, 2004; Tierney and Bensimon 1996) and a growing body of research suggests that flexible work schedules have a positive impact on workers and their families (Hill et al., 2013; Kelly, Moen, & Tranby, 2011).

Thus, the existing literature suggests two paradoxes may shape male scientists’ work-family lives: first, cultural norms continue to demand a time-intensive devotion to work but are also shifting to expect an increased participation at home for fathers. Second, academia is *both* all-consuming and also a relatively flexible work-place. Thus, we ask: to what extent do changing norms of fatherhood and a flexible workplace have an impact on men working in a male-dominated profession? In particular, what variation exists in family forms among male academic scientists? Through interviews with seventy-four men across different ranks (graduate students, postdoctoral fellows, tenure-track and tenured faculty) we investigate how men who are biologists and physicists at elite research universities navigate the impact of family life on career, and of career on family life.

ACADEMIC SCIENCE AND WORKPLACE DEVOTION?

Researchers find that men, particularly men in professional occupations, have strong devotion to the world of paid work (see Blair-Loy, 2003). Blair-Loy (2003, p. 7) posits that “as an abstract model, the work devotion schema, traditionally masculine, demands that one give an immense time commitment and strong emotional allegiance to one’s firm and career.” Working within this framework, Kelly et al. (2010, p. 289) add, “These expectations reinforce the broader gender order that advantages men (as well as some women with few

family responsibilities) within this workplace.” This devotion affords professionals— such as the academic scientists at research universities that we study here—a type of “macho” masculinity linked with long hours spent at work (Cooper, 2000). Men, therefore, may receive financial rewards, increased social status, and a heightened sense of their own masculinity from their long hours as well as by embracing a cultural schema that demands devotion to work.

At first glance, male scientists appear highly devoted to their profession. On average, male faculty in all academic disciplines work 54.8 hours a week, working over 11 hours more per week than the 43.1 hours averaged by all employed men and over 9 hours more per week than the 46 hours averaged by male professionals or managers (Jacobs, 2004). Academic scientists work even longer hours—averaging over 55 hours a week and often extending their hours late into the night (Ecklund & Lincoln, 2011; Wang et al., 2012). Scientists typically highly identify with their work and occupation; many progressively have pursued this career since adolescence (Faulkner, 2007; Fox, Fonseca, & Bao, 2011; Fox & Stephan, 2001). And scientists are expected to work until they find a significant result without regard to the limitations of time or other life pursuits (Latour, 1987; Shapin, 2008). The shared workplace norms among scientists frame the scientific career as one without boundaries, demanding a huge number of hours worked outside of the standard 40 hours per week, and implicitly demanding mental devotion even outside of this on-the-clock time (Keller, 1995).

The pressures of academia appear to influence academic men's family lives. Male faculty often delay childbearing until after tenure (Drago et al., 2006), only experiencing a slight decline in work hours in the first two years after achieving tenure (Jacobs, 2004). Academic men also have fewer children, on average, than other professionals, such as physicians and attorneys (Wolfinger, Goulden, & Mason, 2010). Once they have children, fathers may be less likely than mothers to take advantage of work-family policies because of cultural expectations that such policies are meant for mothers rather than fathers (Lundquist, Misra, & O'Meara, 2012; Raabe, 1997). Some studies report that academic fathers face fewer work penalties for having children than do mothers, but other research suggests that this bias may be because, unlike mothers, academic fathers are expected not to take advantage of universities' work-family policies (Drago et al., 2006; Sallee, 2012). Having a child under the age of six significantly increases reported experiences of work-family conflict for scientist fathers (Fox et al., 2011). Irrespective of gender faculty working in the STEM fields take paternity and maternity leave at much lower rates than other academics (Lundquist et al., 2012). Such research indicates that men in academic science face significant work to family conflict.

OR CHANGING FATHERHOOD NORMS AT FLEXIBLE INSTITUTIONS?

While much research suggests that academic science remains stubbornly entrenched in the Victorian notion of separate spheres (Coltrane, 2004; Mason et al., 2013), changing social norms may be slowly bringing change to academic science. Recent research suggests that faculty men not only increasingly experience pressure to contribute more at home yet also desire to do so (Marotte, Reynolds, & Savarese, 2011). Moreover, a qualitative study

focused on academic men found that the majority prioritized their family commitments over their workforce obligations (Solomon, 2010).

Over half of male faculty members have a spouse who works full-time (Jacobs, 2004). Those who are married to a fellow academic may experience reduced work-family conflict as a result (Creamer, 2001; Fox, 2005). Additionally, while studies continue to find a considerable gender gap in faculty members' time spent on household chores and childcare, faculty men report spending an average of 25 hours a week on childrearing and domestic chores, a substantial amount of time (Sutor, Mecom, & Feld, 2001). Finally, faculty responsibilities at home are changing; as the path to a tenure-track position and then to tenure has lengthened, many assistant professors have found themselves unable to wait until after tenure to have children (Jacobs & Winslow, 2004). Faculty men, then, increasingly appear to have and welcome responsibilities outside the home.

The flexibility available in academia may allow male scientists to accommodate these changing norms. Research on academia has found that faculty work lives are characterized by a high degree of flexibility that allows them to balance work and family responsibilities (Bronstein & Farnsworth, 1998; Tierney & Bensimon, 1995; Ward & Wolf-Wendel, 2004). This flexibility allows academics to choose (to varying degrees) how to schedule their own days and to set schedules that allow additional time with children (Solomon, 2010; Ward & Wolf-Wendel, 2004). Moreover, academia also provides for a great deal of autonomy, allowing academics to pursue research topics of interest and, generally, not to report their work schedules to a supervisor or boss (Ward & Wolf-Wendel, 2004). The ability to set one's schedule appears to reduce overall levels of work-family conflict for white-collar workers (Kelly et al., 2011). Moreover, one study of a workplace flexibility program reveals that access to schedule control and workplace flexibility increases the likelihood that fathers will work off-site and that mothers will perceive a greater sense of control over their schedules (Hill, Tranby, Kelly, & Moen, 2013).

Scientists may have less access to flexibility in the *location* of their work than other academics, as their work often must be done on-site and is tied to the work of others in the lab (Fox & Mohapatra, 2007; Ward & Wolf-Wendel, 2012). But there are flexibility benefits specific to a lab, such that a highly trained team can continue work and publish when faculty members are out of the office, or, even on leave, and, as a professor in charge of the lab, faculty members do retain a relatively high level of control over their schedule (Ward & Wolf-Wendel, 2012). In many ways, faculty members appear to have access to the "work-redesign model": the type of flexibility purposefully developed by work organizations in response to the work-family challenges of employees, in which employees need not ask for "accommodations" for their work-family needs, but, instead, are afforded increased general autonomy and schedule control (see Perlow & Kelly, 2014). How, then, do the changes in fatherhood norms and the apparently high levels of flexibility in academia stack up against the highly demanding nature of academic science?

THEORETICAL EXPECTATIONS AND MODELS

The existing research leads to several theoretical expectations. First, we anticipate male scientists will hold a strong devotion to work regardless of their family experience (see Faulkner, 2007; Fox & Stephan, 2001). Second, we expect that men whose wives work full-time will be more egalitarian in work at home than other men (Astone et al., 2010; Fox, 2005; Lundquist et al., 2012). Third, we anticipate that the all-consuming nature of academic science will clash with changing norms about fatherhood (Coltrane, 2000; Shapin, 2008), leading the majority of scientists to be unsatisfied with their work-family balance and to report high levels of work-family conflict. We anticipate that this will be greatest for men in dual-earner relationships, but anticipate that work-family conflict will be found among the majority of respondents with children. Fourth, we anticipate that the ability to control one's schedule and set hours will allow scientists to spend time with family.

In order to investigate the above expectations and disentangle differences in men's experiences, we identify the most prevalent typologies of work-family life among the scientists studied. The existing literature describes two predominant models of men's experiences of balancing family and paid work (Shows & Gerstel, 2009). On the one hand, the "neo-traditional model of masculinity" is one in which men continue to act as the primary breadwinner for the family and anticipate that their spouses will be the primary caregivers regardless of their wives' employment status (Gerson, 2010). While these men may be more involved with parenting than were their fathers, they still remain committed to a traditional division of labor in which women provide most of the caregiving work. On the other hand, the "Superdad" model of masculinity is one in which men attempt to "meet all work and family obligations without sacrificing anything in either sphere" (Cooper, 2000). These men want to be egalitarian and profess to be "modern" on gender issues (Cooper, 2000; Gerson, 2010). They appear to sacrifice sleep and personal time in order to contribute both at work and at home (Cooper, 2000; Gerson, 1993). While men employed in professional positions, such as academic scientists, may be more likely to profess egalitarian ideals, they may, in practice, retain neo-traditional models of masculinity (Cooper, 2000; Shows & Gerstel, 2009; Usdansky, 2011). Since male scientists are most often defined by comparisons with women, it is unclear how their experiences would fit into these prior typologies.

The goals of the paper are twofold. First, we seek to contribute to research on gender and the academic sciences by identifying the prevalence of work-family conflict among male scientists, by investigating whether men in dual-earner families face increased work-family conflict, and by examining whether the scientists feel bound by a devotion to work schema. Second, we seek to expand current research on academic male scientists (who are most often characterized by how they differ from women), by identifying the most prevalent typologies of the work-family experiences of the academic scientists studied. To do this we examine the lives of 74 men in top 20 departments in academic physics, astronomy and biology at research institutions in the United States.

Methods

Data for this study come from the Perceptions of Women in Academic Science (PWAS) study, which consists of a survey as well as in-depth interviews with a proportion of survey respondents. As part of the Perceptions of Women in Academic Scientist (PWAS) study, we selected a random sample of 3,455 scientists from the more than 14,000 graduate students, postdoctoral fellows, and tenure-track/tenured faculty members in the top 20 Ph.D. programs in all subfields of astronomy, physics and biology in the United States. Programs were ranked by the National Research Council (1995) and correlated with the rankings of U.S. News & World Report (2008). The PWAS survey ran from November 2008 through February 2009, using Web and phone modes of completion. The sample was stratified by rank in the career track and, where possible, we selected a disproportionately high sample of women within each rank. Overall, this combination of methods resulted in a high response of 72% or 2,503 respondents, a very high rate for a survey of academics.

Once the survey was completed, 216 survey respondents were selected to participate in in-depth interviews from a disproportionate stratified random sample that oversampled women. For the interviews, a contact letter containing a cash pre-incentive was mailed to each of the potential respondents. Overall, a total of 150 interviews (a 69% response) were completed with 84 biologists and 66 physicists, 76 women and 74 men (therefore, N=74 for this paper). The interviews were conducted between June 2009 and April 2011, and took between twenty minutes and two hours. Each respondent was interviewed once, either face-to-face or by phone. Interviews were primarily completed by the study PI with some completed by a graduate student or postdoctoral fellow. The average age of men in our sample is 41 with a median age of 39.

The interviews were independently transcribed, edited and systematically coded by a team of researchers, including three of the authors and trained students, for themes related to the central research questions. Semi-structured interviews capture the narrative aspect of the research. For this paper the following interview questions were primarily analyzed: Do you have children? [If respondent has children] Could you tell me a little about what it has been like to raise children while maintaining your career as a scientist? Have there been any particular challenges in your career? [If respondent does not have children] How do you think a career in science might have an impact on your family choices? Do you think that you have fewer children than you might have had if you had not been a scientist? [Note: If yes, ask respondent to extrapolate on this answer]. [If has children] Could you tell me about your next career step and how having children might factor into your next career move, if you think it does at all? [if have children] How do you think it is different being an academic parent or a parent who is a scientist when compared to a parent with a different kind of job? [Asked of all respondents with children] Do you think that having children is difficult to manage with being a scientist? Why or why not? We maintain that the narratives scientists use are important because narratives are discursive practices individuals use to actively produce social and psychological realities in conversation with the interviewer (Davies & Harre, 1990) and both memory and perception, whether accurate or not, strongly influence current belief and action (Thomas & Thomas, 1928). Personal identities are constructed through language (Bourdieu, 1991); if men in science use a particular kind of language to

describe the relationship between their career as an academic scientist and their role as a parent, it suggests they view their scientific identities in different ways. The semi-structured interview format allowed respondents to elaborate on how men in science see the connection between their academic science careers and family life, revealing the nuances of how scientists think about these issues.

Findings

Our data reveals that many men have notable commitments outside of work, and accordingly, men appear to balance work and family in one of four ways, which we name according to four categories: *forgoing childrearing*, egalitarian partners, neo-traditional dual earners, and *traditional breadwinners*.ⁱ In naming the categories, we adapt and revise typologies of work and family devised by Gerson (1993) and Hochschild (1989), while also contrasting the typologies we identify with more recently developed ones (e.g. Cooper, 2000). We borrow from and expand on both to identify and name conceptual categories that best fit the work-family devotions of the male scientists we studied.ⁱⁱ

Least common, compromising only 15% of respondents, male scientists may *forgo childrearing*, either by marrying and making a commitment not to have children or by remaining single with no intention of having children (see Table 1). The men who are forgoing children avoid much work-family conflict by placing work above all other commitments and avoiding what may be the most time-demanding of family commitments. This category deviates from Gerson's "pursuing autonomy" category, as the men here did not necessarily forgo all relationships—specifically, many married or intend to marry—but they do intend to avoid childrearing, which they see as having a high career cost. In contrast, the majority of male scientists have a family or immediate aspirations to have children. Among these, most representative of an emergent new work-home life balance paradigm, are those men who are *egalitarian partners* (28% of respondents). This category differs from Cooper's "Superdads" in that the men appear devoted to their wives' careers (rather than simply talking about egalitarianism) and they actively reduce their work activities to accommodate the dual careers. Men who see themselves as egalitarian partners seek to split childcare and household tasks evenly with their partner while also pursuing an elite career in academic science. This differs from those men who are *neo-traditional dual earners* (22% of respondents) who are in relationships where both partners work, but the husband is less responsible for the work being done in the home. The final group is comprised of men who devote themselves to work and have a wife who acts as the primary caregiver at home and does not work outside the home. These men report spending the most time at work (and having the lowest workload at home) and constitute the fourth category: *traditional breadwinners* (30% of respondents).ⁱⁱⁱ Unlike prior studies (Cooper, 2000; Gerson, 2010), in households that hold traditional gender ideologies, we differentiate between those in which the mother works from those in which she stays at home. The men in neo-traditional

ⁱWe are concerned here with men's stated family intentions or how men talk about their aspirations for family life, not just their current condition.

ⁱⁱIt is important to note that these categories are ideal types and that the men may share similarities with men in other categories. They were placed into categories for which there was a best fit.

ⁱⁱⁱThe other men were not able to be coded into these categories.

households do benefit from their spouse's primary responsibility for household labor, but they still differ significantly from men in traditional households with a stay-at-home spouse, who rarely perform any household labor.

Forgoing childrearing

Although a minority in our sample, 15% of respondents chose to forgo many family responsibilities either by remaining single or marrying but making a commitment not to have children. In our interviews these men emphasized the totalizing nature of scientific work and felt they cannot be successful in science if they have childcare responsibilities. Significantly, family responsibilities seem to mean “childrearing” responsibilities, as these men did not (and do not expect to) necessarily avoid all relationship entanglement. Instead, men in this category clearly indicate that “babies matter” in the path to pursue an intensive science career (e.g. Mason et al., 2013). On average, men who are *forgoing childrearing* are slightly younger than the majority of our sample with a mean age of 37 years compared to 41 years for the sample at large and a median age of 33 compared to 39 for the interview sample at large (see Table 2). Twenty-seven percent of these men are graduate students, identical to the 27% of the sample as a whole that are in graduate school. So, while, some of these men's perceptions of science as an extremely demanding field may result from their relatively limited career socialization, they are, on average, past the age when most of their peers have married or had children and, mostly, past the initial training period of graduate school. Moreover, the senior faculty (the remaining 34% are all tenured) in this category share similar views with their junior colleagues about the all-consuming nature of science and its incompatibility with childrearing.

Crucially, these men consciously recognize that they are choosing to not have children for work reasons. For example, when asked, “Has your career as a scientist had an impact on your family choices in any way you can see?” a 64 year old professor of physics,^{iv} who is married but does not have children, responds “Well I would think that if we had more hours in the day that weren't taken up, we might have had kids.” In other words, he directly attributes his lack of children to the time constraints resulting from his work.

Some older male scientists persisted through the early stages of their career and subsequently decided to forgo childbearing because their spouses refused to be the primary caregiver in the family and the male faculty member did not want to share such responsibilities. An associate professor of physics in his mid-forties^v explained, “My wife definitely felt very strongly that if we were going to have children... I would have to be, you know certainly equal amount of caregiver [as her]. . . And to be a successful scientist, it just takes so much of my time. I wouldn't be able to have children also and do that.” For this physicist, responsibility for children and success in science are mutually exclusive, or perhaps more accurately, success in science is so demanding that it leaves little room for other responsibilities.

^{iv}Phys21M, conducted 2/11/10

^vPhys56M, conducted 11/08/10

Other men who are forgoing childrearing communicate that children are a factor that unduly distracts or detracts from their work and do not reveal any plans to have children in the foreseeable future. A 24-year-old biology graduate student^{vi} explains:

sometimes I have family or friend obligations that kind of tear me away from the lab bench. Like- if my brother [who lives near me] ... needs help with something, I might help him do something on the weekend and that might influence whether or not I hang out with friends during the week or what.

His perception that he is “torn” from work by family “obligations” intimates his generally negative attitude toward non-work obligations. Indeed, it is clear that he only allows a specific amount of personal time per week, explaining that if his personal time is “maxed out” by one obligation (in this example, his brother), then it cannot be extended to include additional time with his friends. Essentially, he reveals a utilitarian framework in which he processes his available hours and feels that his time commitments must be very calculated in order to make everything fit.

Since slightly less than one-third of the participants are still in graduate school, it is necessary to ask if their commitment to forgoing children may change as their careers progress. While 2 of the 3 graduate students expressed a strong commitment to forgoing children, a third foretold a possible alternate path. A graduate student in biology^{vii} discusses his unwillingness to become like his advisor, explaining that, “the toll it takes on my professor, my advisor... I see the hours he has to put in for this, and I see the dedication...I do not want that to be my entire life, you know, I don't want science to be everything I do.” In other words, although this student is *forgoing childrearing* now, there seems to be some apprehension of the sustainability of such a lifestyle. Not satisfied with the demanding nature of the discipline, this graduate student considers leaving the discipline entirely; a concern echoed by several respondents (not categorized) who plan to leave academic science rather than accept this lifestyle. Regardless of whether he may change to another path, the view that academic science is incompatible with childrearing is a shared concern among the men in this category.

Egalitarian Dual-Earners

According to our data, almost one third of respondents, a significant portion of men, are taking an active role in childcare or seek to share household responsibilities equally with their partners. We conceptualize *egalitarian-dual earners* as those who seek to share home responsibilities with their partner in an equal manner—or as an associate professor of physics^{viii} in his early 40s states, these men try to “be as much an equal participant in the whole thing as possible.” Egalitarian dual-earners have a mean age of 42 and a median age of 40 and comprise 45% of all tenured faculty in our sample but only 15% of all graduate students and postdoctoral fellows in our sample.

^{vi}Bio46M, conducted 04/23/10

^{vii}Bio22M, conducted 07/31/09

^{viii}Phys38M, conducted 05/13/10

Central to the egalitarian dual earner experience is the reality that both partners are dedicated to an academic career. Three-fourths (76%) of the men in our sample who are egalitarian are married to women who are also in academia, and 88% of these women are also in academic science. Consequently, the wives of these men also face high demands at work. A biology professor in his mid-forties^{ix} said of himself and his wife, “we’re both trying to accomplish the same thing. We both have the same constraints. We both have to travel a lot to meetings and to seminar visits and to study sections.” When both partners are working as academics in a university, neither possesses the ability to spend significantly less energy at work in order to fulfill household duties. Unsurprisingly then, these relationships are often based on compromises meant to facilitate two demanding academic careers. For example, one man, an assistant professor of biology,^x is married to a scientist who has a high-level administrative position at the same university where he works. Here he describes their system to share childcare responsibilities:

You know we take turns, pretty much like sometimes if she has a grant due then I will do more, otherwise then she will. It can be tough at times. [When] both of us are...she has a talk to give in two days to top scientists in her field [and] I have a grant due and it can depend- and sometimes we do sort of less.

As he reveals, concessions are common in these relationships; this strategy of “scaling back” both non-work and work related tasks is one that Moen et al. found to be common in a study of professionals (2013). He concludes that in the end he and his wife “do less.” Often neither partner is able to devote complete attention to work or to home for any extended period of time, but is instead prioritizing both career and family.

A professor in his late forties,^{xi} who is married to another professor in the same discipline, describes his view of this process:

Her career is equal to my career. And so what that means is that we have to really equally share responsibilities at home and such. So ... it basically means [we have to] make decisions, in terms of what our presence would look like at home and how much time we have to attend functions outside of work.

He and his wife make work decisions based on home concerns. Consequently, they must selectively decide which work responsibilities to adopt and which to pass by. Nevertheless he goes on to explain that:

I think we’re pretty happy with the balance that we have. And we definitely have enough time to interact with the kids, so I think – I think it’s struck a good balance.

He is satisfied with his “balance,” even when it means turning down opportunities at work.

One biologist^{xii} recalls his and his wife’s job search process during which they both altered their career desires and decisions in order to accommodate the other:

^{ix}Bio37M, conducted 03/11/10

^xBio20M, conducted 07/30/09

^{xi}Bio77M, conducted 09/02/10

^{xii}Bio37M, conducted 03/11/10

And sort of the deal that we struck there was that when she was ready to look for a job that we would look together and try to make a two career thing work. And so she finished her postdoc and right after I got tenure she went on the job market and *she* [respondent emphasis] was a hot commodity, way hotter than I was.

We see some of the reasoning behind this scientist choosing to follow his wife's career and commit to an egalitarian dual-earning partnership. Willing to recognize his wife's superior credentials and demand in the job market, and subsequently, her breadwinning abilities, this man engages his egalitarian framework as a rhetorical justification for her taking the lead in their job-negotiations. Simultaneously, he reveals that *both* have compromised during their marriage, and that both have allowed their career paths to change direction in light of the other's career.

Few of the egalitarian men spoke explicitly about why they did not avoid caregiving duties as the autonomous, traditional, and neo-traditional men did. Instead they discussed their commitment to childcare and home responsibilities in terms of a commitment to support a spouse's career. An associate professor of physics,^{xiii} whose wife is also an academic physicist explained, "I'm trying to be a sensitive new age guy, I said... 'We'll share as much of this as is possible.' ...So we have this mutual fear where we try not to take advantage of the other person even though there are concessions you can make along the way." That he calls himself a "sensitive new age guy," i.e. someone who doesn't take advantage of his wife and makes concessions along the way, reveals that he perceives such choices as a somewhat new phenomenon; he qualifies these choices as unusual and, in fact, his specific language—"sensitive new age"—is not traditionally associated with masculinity. Significantly, this differs from the sensitivity of the "new masculinity" found in Marianne Cooper's work on men in Silicon Valley (2000). While the men in her study identified as "sensitive," this meant reluctant to ogle women or supportive of women's rights, but did not lead to them participating more at home or step back from their careers. In contrast, the egalitarian men in our study consistently note the concessions or sacrifices they made to their careers to have this egalitarian relationship.

In contrast to research that finds that having a spouse in a similar occupation can reduce work-family conflict (Creamer, 2001; Fox, 2005), we see that those who did pursue a more egalitarian relationship were burdened by family responsibilities and felt strained by the competing demands of work and family. Although committed to his egalitarian partnership, the above associate professor of physics further explained that having kids has made his life "incredibly busy" and that children have been a "strain" but also a "joy, of course":

The biggest challenge I have right now is having the energy at my age to do all of this...I have this family obligation and I want to do it. And so it just doesn't seem like there's enough time in the day, frankly to get it all done.

Unlike Cooper's "Superdads," many of our respondents report that they compromise work demands in order to make time for domestic responsibilities. An associate professor of physics in his mid-40s^{xiv} describes this lifestyle as "a challenge." He declares, "Nothing can

^{xiii}Phys13M, conducted 02/04/10

happen after four thirty because I have to pick [my daughter] up.... I can't be in a seminar; I can't be in a meeting that starts at four because that's already too late for me." His family priorities take precedence over his work responsibilities; he explains he cannot meet at certain times of day due to a prior obligation for childcare. This responsibility for childcare extends to taking entire days off in certain situations. He recalls, "There are many days where you have to go to the doctor... And [a] day with the doctor means a day that I don't come to work." In sum, he recognizes that his family responsibilities mean "your days are short, there's no weekends; there's no work on the evenings, so you're very restricted." This choice isolates him from his co-workers because, "if you don't have kids, you don't understand that."

Many egalitarian men share stories about extreme hours and intricate schedules. An assistant professor of biology^{xv} in his late thirties who is married to another biologist recalls a typical day:

I drop off my kids, get to lab around 9, stay until about 6, go have dinner with my family, do some stories, some bath and then back at the lab until at least midnight every night, often 1 or 2....[And my wife] will go in at 5 in the morning and I'll take the kids just to the daycare type of thing. [...] we are both home for dinner.

For him, and others like him, creating an egalitarian relationship requires extreme commitment and willingness to construct an atypical schedule, often sacrificing sleep and relaxation. He modifies both his home and work schedules. It is important to note that the schedules that these men describe are *not* examples of "role blurring," in which home and work are combined (see Glavin and Schieman 2012)—instead, these men suggest that they bound off specific times for family and specific time for work, even though sometimes work is done in the home.

An associate professor of biology^{xvi} with two children speaks more negatively about the effects of balancing work and family on his career: "It's a disaster." He goes on to explain:

I am not nearly as productive as I used to be....And it's hard because I used to work here till whenever I wanted to and then I'd go home and I could work at night, now I kind of get home, put the kids to bed....No academic institution is particularly—that I know of—is particularly great for family....the people that do best in academia, sadly, often are those who don't have [the responsibility of] child care.

Although this biologist explains that he is determined to foster an egalitarian household, he also appears keenly aware that this commitment puts him at a disadvantage relative to male peers who are childless or who have more traditional relationships. This suggests that the problems facing female scientists cannot be solved *only* with men's greater involvement at home. Men who were more involved at home report greater levels of stress and decreased productivity at work, mirroring the very problems reported by women who face similar demands from both work and family. Yet they also, as a whole, report being satisfied with

^{xiv}Phys39M, conducted 05/18/10

^{xv}Bio27M, conducted 08/11/09

^{xvi}Bio10M, conducted 07/15/09

their home lives and committed to the egalitarian relationships they formed and to their increased time with their children. As a result, men's greater involvement at home may be a necessary but not sufficient condition in addressing the challenges faced by women balancing work and home.

NEO-TRADITIONAL DUAL-EARNERS

In contrast to men in egalitarian partnerships, *neo-traditional dual earners* take on the primary breadwinner role and do not equally share home responsibilities, even though their spouse does work outside the home. In order to accommodate the husband's science career, these relationships often involve a more traditional gender divide of household responsibilities. While these men composed 22% of our respondents, just over 50% of neo-traditional dual earners in our sample were graduate students, a time when male scientists overwhelmingly report concerns regarding the extreme demands of science, lack of control over their career and uncertainty about future job prospects. A 30-year-old graduate student in biology^{xvii} explains that his wife quit her job as an engineer to be closer to him. Now she volunteers in his lab because she did not get funding, but remains interested in pursuing a science career. As graduate students and young professionals, this couple and many like them, do not have the clout to negotiate two jobs, and, among neo-trationals, the male scientist's job comes first. As Gerson (2010) notes, many men espouse egalitarian ideals, but plan to live “neo-traditional” lives, in which their careers are prioritized, if institutional demands push egalitarian ideals out of reach.

Among the neo-traditional dual-earner men, many characterized their continued work devotion and their partners' role as the primary caregiver as a “choice” on the part of the female partner.^{xviii} But it appears that men overemphasize their wives' decision as a “choice.” For example, a physics graduate student^{xix} argues that even though the trajectory of both his and his fiancée's careers have changed for family considerations, his wife chose to allow her trajectory to change even more than his. He indicates that his fiancé, who is currently in graduate school in a humanities' discipline, would want to stay at home to raise their children when they are young:

I think that my timeline for taking and not taking jobs is not going to be as dependent on when I have kids. I think that's going to be more dependent on my future wife because she hopes to not be working when the children are very, very young. That means that she wants to- there's certain times in the career track when it's better or worse to take time off . . . So that's her issue.

His description of the situation as “her issue” simultaneously disassociates him from his wife's career decisions and the responsibility to care give, as well as the implications for his future family that his own career decisions might have.

^{xvii}Bio19M, conducted 07/29/09

^{xviii}: See Stone 2007 for discussion of opting out of work as a woman's “choice”.

^{xix}Phys47M, conducted 07/08/10

Another graduate student^{xx} was even more explicit, telling us that having kids was more a problem for women than for men because “there's more expected of the women in terms of family life, time commitments.” His thoughts reveal that his academic career trajectory actively benefits from the societal expectation that caring for children largely falls to women. In effect, both of these young scientists employ traditional ideas about the role of women as primary caregivers despite being married to women who do not stay home full-time.

One neo-traditional faculty member^{xxi} was married to a woman who worked full-time as a physician, but made many sacrifices to her career to benefit his. He explicitly discussed the benefits of traditional gender divides to his own career, “I think that one major difference is that women are burdened with childrearing. So, that really sets your career path.” As in the above example, this scientist clearly acknowledges a privilege that stems from being male and not having the burden of being the primary caregiver. Additionally, his response suggests that motherhood is incompatible with science in a way that fatherhood is not—the burden of childrearing “sets your career path” if you are a woman. Unlike his egalitarian peers, as a neo-traditional man, he avoided much of this burden, by delaying parenthood, hiring childcare, and relying on his wife to be the primary caregiver.

That these graduate students and faculty members distance themselves from childcare and homecare is illustrative of a general trend among men in the transitional dual-earner model. These men portray decisions about child rearing as made entirely by their wives, rather than joint decisions, removing them from the responsibility of care-work. Many of the women who are in relationships with neo-traditional men generally work part-time in a professional setting as well as full-time at home, and while the neo-traditional academic scientists describe themselves as more “egalitarian” than their traditional peers, they also report that they do a disproportionately low share of household work compared to their partners. This provides some support for research that suggests that espousing egalitarian values is very different than acting upon them (see Damaske, 2011; Usdansky, 2011). While these men may frame their work at home in what they see as a “new” way, they are much closer to their traditional peers than to those who identify as egalitarian.

Despite this dissociation from home responsibilities, these men may often still perceive that their devotion to work is affected by family responsibilities. A physics graduate student in his late 20s^{xxii} contrasts his desired future family/work life balance with that of his advisor who “works a lot.” Describing his advisor who “has two young kids and...gets in at 8 o'clock in the morning and leaves at 7 o'clock at night,” this graduate student claims “if I had small kids like that I would definitely not want to work that hard.” In sum, even though he seems to see childcare as a phenomenon that necessarily burdens women (he earlier explained that “if you're a woman and you have children... you have got to dedicate such a large part of your life...”), he anticipates that he would *desire* some involvement with his children that would require he would “not work as hard” as his current advisor.

^{xx}Bio2M, conducted 06/09/09

^{xxi}Bio 75M, conducted 08/20/10

^{xxii}Phys11M, conducted 2/2/10

Even the neo-traditionalist quoted earlier describing childcare as “his wife's issue” still feels that his commitment to family and desire to be respectful of his wife's academic career, will affect his work. When asked how he thinks a career in science might impact his family choices in the future, he corrects the question explaining, “the way I think about that question is the opposite way, which is how are my family choices going to affect my science career?” [Emphasis added]. In other words, contrary to the dominant model of understanding male devotion to work as modifying family commitments, he sees his commitment to family modifying devotion to work. As a concrete example of this relationship he explains,

I'm sure it's [my family life] going to be detrimental because... I decided that I will definitely move to the same city as my fiancée wants to move to when she graduates. It's going to be a joint decision, but it means that I'm going to rule out from the get go, you know, the vast majority of possible positions and colleges and research universities around the- country and world. I think that I'll do the best I can within that constraint.

Even though this man is neo-traditional in outlook, he still anticipates that his work devotions will be modified by family constraints. Overall, the neo-traditional men report some expectations that work devotions will be modified by family constraints, but they do not report as high a level of constraint as the egalitarian men.

TRADITIONAL MEN

Accounting for 30% of respondents, traditional men are the sole breadwinners for their families; they frame their career as taking precedence over the rest of their life, and have few caregiving responsibilities. Traditional men are the oldest group in our sample with a mean age of 47 years and a median age of 41 years and more of them are full professors (37%) than among the other three groups. This is especially striking given that for each of the other three family structure types, full professors only comprise between 18% and 25% of the sample. In short, traditional men have achieved the most career prestige out of any family structure category in our sample, although this may be attributed both to the benefits of having a stay-at-home spouse and to the small cohort difference between traditional men and the rest of the sample. Since traditional men were from a slightly older cohort than the other scientists, they may have been less likely to have been influenced by the gender revolution of the last forty years. But they are not so much older than the other groups, suggesting that something other than a cohort effect is influencing these men's rise. In fact, they specifically report benefitting from having a stay-at-home wife that allowed them to achieve tenure relatively quickly.

Each traditional man in our sample has a wife who cares full-time for the home and children. One 67-year-old physics professor^{xxiii} embodies perhaps the most extreme example of this family approach type. He describes that “[his] wife did everything” and that they maintained “a very strict separation of responsibilities.” In his words, “I did physics and she did the rest.” Moreover, he describes her as “a CEO, a secretary” who “ran the company [so that]

xxiii: Phys64M, conducted 03/29/11

[he], the boss, only signed.” Here, he admits that because of her work in the home, “I never in my life made a tax return. I never in my life washed a pair of socks or cleaned a pair of shoes.” And when asked, “Do you think that having children then is difficult to manage with being a scientist?” He concisely responds, “No, absolutely not. That’s why you have a wife.” Through this discussion, he clearly conjures images of a stereotypical 1950s “Leave It to Beaver” household, where the husband is completely isolated from the daily workings of the home and only present to eat dinner. Moreover, his explanation that “that’s why you have a wife,” suggests a solution to work-family balance that is predicated on a full-time caregiver at home. This enables a model whereby the home is a distinct sphere and the workplace another. This is available to him as a male scientist, but presumably less available to female scientists, and also to the egalitarian men in our sample. This scientist’s offhand comment reinforces the notion that science is a masculine devotion, while not acknowledging the privilege of the respondent to be removed from work-family conflict.

Male scientists in traditional families often explicitly acknowledge the career benefits of having a stay-at-home spouse. One associate professor of biology in his early fifties^{xxiv} describes that, in fact, his wife’s role as a homemaker enables him to pursue a demanding career in science:

For me it’s a little easier because I have a wife that has stayed home and taken care of them [the children]. I imagine it would be much much more challenging if I didn’t have a spouse that was planning on staying home.

Crucial to the breadwinner model, he indicated that although he appreciates what his wife does, he does not, in a tangible form, have any responsibility to help his wife with her “sphere”—the home. Moreover, like the neo-traditional men, this associate professor explains that “staying home” was what his wife planned; he does not consider how his plans to pursue a demanding occupation may have had an impact on her goals.

Traditional men, however, are not completely immune from changing fatherhood norms. Whether this means sneaking in work on the weekends or bringing laptops to baseball games, some traditional breadwinners report that the all-consuming nature of science makes it difficult to find time to spend at home. In fact, despite feeling that they must find ways to provide financially for their families (perhaps in ways that the others do not) many report that they also would like to be more present at home. In contrast to their egalitarian and neo-traditional peers, however, the majority of traditional men report that they have not altered their work schedules to accommodate their family responsibilities. Moreover, this is not the juggling act to do the work of both science and home as described by their egalitarian peers, but instead is a desire to have more time to be present at home with their families.

A 40-year-old assistant professor of biology^{xxv} describes his strategy to balance work and spending time with his homemaker wife and his six-year-old son:

I leave every day at 5:30 because I want to be home with my son and my wife, but mostly my son is growing up and I don’t want to miss that, [...] Of course I get here

^{xxiv}Bio18M, conducted 07/29/09

^{xxv}Bio4M, conducted 06/10/09

at seven, but I would probably stay later if it wasn't for that. And I don't regret it, but it does slow down progress and what you can get done when you've sort of made that commitment to be at home.

While his story is reminiscent of those shared by egalitarian earners, an important distinction remains. He has the privilege of having someone at home to care for the children, so, he does not face the same demands of the egalitarian men who cannot always rely on someone to pick up the difference should they need to work late or travel. And further, as a traditional breadwinner, he is quite rare in his willingness to change his schedule at all. Out of the 22 traditional respondents in our sample, only 3 (14%) reported modifying their work schedules to make more time for family. And he indicates that this “commitment to [being] at home” “slow[s] down progress” at work, intimating a primary devotion to work.

In the lives of the traditional men, we see both the benefits these men receive from this separate spheres structure—the ability to work with little restriction and achieve high goals at work—as well as some costs—unmet desires to spend more time at home or feelings of angst regarding not fully living up to their full demands at work. The fact that even some men in this category feel that they cannot completely meet the ideal worker norm suggests that these ideals, perhaps, cannot be met at all. Finally, although the traditional model of home and work life balance for men may be becoming increasingly uncommon (see Coltrane 2000) it appears to provide significant career benefit to those men who follow it.

Discussion

Our results reveal that one-third of men in academic science largely expect to be involved equally at home and are willing to reduce their work devotion in order to do so. And a small minority (15%) believes that academic science is completely incompatible with having children. Yet, the majority of men in our sample (in the traditional and neo-traditional groups) continue to place work devotions ahead of family commitments, although they do so to varying degrees. In sum, our preliminary expectations were largely met; we find evidence of a strong devotion to work that is altered, in the egalitarian cases, by commitments to wives and children. We find evidence in all four typologies that the all-consuming nature of academic science does conflict with changing fatherhood norms, but men have varied reactions to this conflict with slightly over half reporting soldiering on at work while others reduce work hours or forgo (or anticipate forgoing) child-rearing as a result. Finally, we see that men in all groups report having some ability to control their hours with the egalitarian men being most likely to reduce hours or limit time spent at work during hours children are awake. The egalitarian men's experience provides support for speculation that academia may provide valuable flexibility. The vast majority (across all four groups) also report working outside of the standard forty hour work week, which seems to provide some evidence to support claims that flexibility at work may also be tied to longer work hours (Schieman, Glavin, & Milkie, 2009).

We corroborate prior findings that men whose wives work full-time will be more egalitarian in work at home than other men (see Astone et al., 2010; Lundberg & Rose, 2000; Lundquist et al., 2012). Again, three-fourths (76%) of the men in our interview sample who are egalitarian are married to women who are also in academia and 88% of these women are

also in academic science. This may suggest that the egalitarian set-up may be predicated on a certain level of equity between the two partners' career statuses. In contrast to prior research on scientists married to other scientists (Creamer, 2001; Fox, 2005), we find increased work-family conflict among this group, although they also report enjoying being more involved at home and being pleased with their relationships and time with children.

Men—across all four categories— are feeling the pull of changing fatherhood norms. The majority of men in our interview sample (63%) spoke of their desire to be more involved at home and indicated that they make efforts to spend increased time at home (although their definition of this increased time varied widely by typology). This supports our second expectation that the system of academic science misaligns with changing fatherhood norms. This desire is strong enough that 1/3 of the men in our sample (those in the egalitarian group) were willing to make changes at work. In contrast to the neotraditional and “Superdad” models, the egalitarian men in our sample altered their work devotions in order to accommodate family. This suggests, contrary to the implications of the extant literature – at least in academic science and professional occupations— men's identities may not be as totalized by work as previously conceptualized (see Coleman, 2005; Cooper, 2000; Faulkner 2007). On the other hand, a small percentage of men felt that the changing fatherhood norms made fatherhood incompatible with childrearing and forgo having children as a result. Both those in the egalitarian category and those in the forgoing childrearing category signal that the academy does not merely have a gender problem, but also a child-rearing problem, suggesting that it is not only women who are at-risk of structural discrimination within academic science but men who want to have and spend time with their children as well.

A flexible workplace may explain the ability of egalitarian men to increase their devotion to home. Our egalitarian model is unique in that in previous work (see Coltrane, 2004; Cooper, 2000), most models assume that men's work commitments do not alter in response to family life, yet our work suggests that egalitarian men do just that. The autonomy achieved in academic science allows these male scientists to control their schedules (recall the professor who doesn't work after 4:30) and to make decisions about what activities to be involved in. Supporting our expectation that academia may bring greater flexibility and ease work-family conflict (Hill et al., 2013; Kelly et al., 2011; Ward & Wolf-Wendel, 2012); this flexibility allows egalitarian men to alter their work commitments in ways that make it possible to be more present at home.

There are some limitations to this study. Notably, it is not our purpose to compare men and women's experiences in this article but to investigate variations among men in science, so we do not comment on how the work-family typologies of these men may differ from women's nor on how women scientists may be further marginalized from the academic community by their family responsibilities. A significant body of research shows that there are important variations at work by gender and that women pay a higher penalty for parenthood than do men—both in terms of wages and, in the case of professors, in the case of promotion and tenure (see Mason et al. 2013). Thus, how women negotiate work and family responsibilities in the sciences is likely much more constrained than is the experience of the men in our study. It seems likely that few women have access to a stay-at-home spouse who could provide the support that the traditional and neo-traditional men in our

study receive. Moreover, the egalitarian men likely remain privileged in their relationships in ways that we do not capture with this data, suggesting that they likely retain some benefits from the gender division of separate spheres. Additionally, we cannot account for selection out of the academic pipeline by virtue of the sample selection process. While this process allowed for the collection of a large, national random sample of scientists working at elite research universities from which the qualitative study was drawn, we do not have data on those who left academia to pursue other opportunities—either in for-profit scientific endeavors or beyond. Further, we are unable to identify whether those who left academia did so because the for-profit sector offered a brighter future or because they found themselves unable to attain either a permanent faculty position or tenure.

CONCLUSION

If men feel an increased sense of devotion to family as part of their identity and anticipate that academic science conflicts with such devotion, but the structure of academic science demands men's full identity-based devotion, then work-family conflict is likely to remain a concern for academic scientists and be, perhaps, a growing concern as more men now come to share this responsibility. Yet, the predominance of traditional men among the full professors in our study suggests that the ideal worker norm may continue to have lasting power and to provide extensive benefit to those who follow it. The traditional men at the top continue to have significant power in the university system and their expectations about the division of labor at the home is likely a detriment to both female scientists and egalitarian minded male scientists. This may mean that younger traditional male scientists may be more likely to advance their careers within the current structure, suggesting that change may be slow in coming.

Our data illustrate that having a family while also having a career in academic science requires some sort of change to at least one of these aspects of life. Men temper devotions to family life, work life, or both. Increasingly, home life is not solely the concern of women, but is becoming a shared concern between women and men, and universities are often not structured to support men in this role (Lundquist et al., 2012). These results have very practical implications for the social reproduction of masculinity within academic science. The full professors who are more likely to be traditional men are also the ones who are the mentors and advisors to a younger cohort of neo-traditional and egalitarian men. They also play important, often key, roles in hiring, retention, and promotion decisions. If science does not change to accommodate family life for *both* men and women, and if advisers do not adapt to accommodate changing notions of masculinity among young men in science, then the academic science pipeline may begin to leak young men as well as young women, increasing the overall loss of talent in academic science.

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Table 1

Family Model Type Classification by Academic Rank (N= 74)

Rank	Graduate Student (N)	Post-Doctoral Fellow (N)	Assistant Professor (N)	Associate Professor (N)	Professor (N)	Other (N)	Total
Forgoing Childrearing	3	4	0	2	2	0	9
Egalitarian Partners	2	2	6	7	4	0	21
Neo-Traditional Earners	8	1	1	2	4	0	16
Traditional Breadwinners	4	3	3	2	7	3	22
Not Categorized	3	1	0	0	0	0	4
Total	20	11	10	13	17	3	74

Table 2

Family Model Type Classification by Age (N= 74)

	Mean Age (years)	Median Age (years)	Age Range (years)
Forgoing Childrearing	37	33	24-64
Egalitarian Partners	42	40	27-74
Neo-Traditional Earners	40	38	24-63
Traditional Breadwinners	47	41	26-73
Not Categorized	31	31	26-35
Total	41	39	24-74