

How Much Do You Have to Publish to Get a Job in a Top Sociology Department? Or to Get Tenure? Trends over a Generation

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Abstract: Many sociologists suspect that publication expectations have risen over time—that how much graduate students have published to get assistant professor jobs and how much assistant professors have published to be promoted have gone up. Using information about faculty in 21 top sociology departments from the American Sociological Association's Guide to Graduate Departments of Sociology, online curricula vitae, and other public records, I provide empirical evidence to support this suspicion. On the day they start their first jobs, new assistant professors in recent years have already published roughly twice as much as their counterparts did in the early 1990s. Trends for promotion to associate professor are not as dramatic but are still remarkable. I evaluate several potential explanations for these trends and conclude that they are driven mainly by changes over time in the fiscal and organizational realities of universities and departments.

Keywords: publications; higher education; professions; journals

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
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SOCIOLOGISTS can be sharply divided along methodological and theoretical lines. Indeed, they sometimes seem to be engaged in entirely different lines of work. However, there is one thing that most established sociologists seem to agree on regardless of theoretical orientation, area of expertise, or methodological approach: "Today, you have to publish much more than you did 'back in my day' to get a faculty job and to get tenure."

Although sociologists usually require their undergraduate students to support strong claims with citations in their course papers, those same sociologists do not cite much beyond anecdotes when they make the assertion that publishing expectations have gone up. My first goal is to provide clear empirical evidence about trends over time in how much sociologists must publish to get faculty positions and to get tenure. My second goal is to explore the veracity of several potential explanations for those trends.¹

What I find, basically, is that the collective wisdom is correct: Graduate students entering faculty positions today *do* publish much more than they did a generation ago, at least in top-ranked sociology departments. Likewise, in top sociology departments, successful candidates for promotion to associate professor publish more than they used to. As I show, this trend is driven by a variety of institutional and professional forces that all shift publishing expectations in the same direction.

Why Study Trends in Publication Expectations among Sociologists?

There are a variety of reasons for documenting and understanding trends in publishing expectations in sociology. First, on a basic human level, there is a perception that aspiring sociologists must work harder, more quickly, and under greater pressure than ever before to achieve the same rewards—all with few additional resources. Many people fear that this leads to greater anxiety and unhappiness, especially for junior scholars. Second, and related to this, talented scholars may consequently be driven from the profession as they find success costlier and less easily attainable. This may be especially true for women as they face growing challenges balancing traditional family responsibilities with heightened professional demands (Wilton and Ross 2017).

Third, rising publication expectations may aggravate inequalities within and between sociology departments. Well-resourced departments (e.g., those in private universities) and those closely affiliated with well-funded research centers (e.g., in demography) are often better equipped to give their graduate students and junior faculty the time and other resources they need to meet heightened expectations to publish. This may produce a feedback loop in which students and faculty in the “have” departments are more successful than those in “have-not” departments, bringing ever more resources to the “haves.” At the same time, within departments, growing publishing expectations may exacerbate inequalities between (1) scholars who work in article-oriented subfields and who typically perform quantitative analyses of existing secondary data and (2) scholars who work in book-oriented subfields and/or who typically collect and perform qualitative analyses of original primary data. The former group may be better able to publish more and more quickly. This may lead to disparities in rewards (i.e., salary, promotion) across subfields and across groups defined by methodological approach and/or theoretical orientation.

Fourth, rising publication expectations may incentivize junior scholars to work in subfields, to design projects, and/or to utilize methodologies that put them in a better position to meet higher expectations for publishing. Although a graduate student, for example, may be intellectually driven to a subfield or a topic or a methodology that makes quick and frequent publication less feasible, he or she may strategically enter a different subfield, study a different topic, and/or use different methodologies to publish more often and more quickly. In the bigger picture, rising publication expectations may thus affect the shape and direction of the discipline.

Finally, many people worry that the quality of scholarship declines as expectations for productivity and speed increase. Ideas and projects often take time to develop and mature, and the need to publish more and more quickly may erode the quality of the work. In my experience, for example, an article is not really “ready” for submission to a journal until I have had opportunities to present the underlying research to different audiences, to get feedback on the article from busy colleagues, and to spend extended time simply thinking about the research. Rising publication expectations mean that sociologists have less time to do these and other things that promote quality scholarship.

What Do We Already Know?

Sociologists who have been in the profession for a while appear to rely on personal experience for their claim that publishing expectations have risen over time. They seem to suspect that recent graduate students are publishing more than previous graduate students, and they seem to suspect that there are now more publications than there used to be on the curricula vitae (CVs) of applicants for assistant professor jobs and of candidates for promotion to associate professor. At the same time, sociologists know better than most that personal perceptions are a fallible method for assessing broader patterns and trends. Unfortunately, to my knowledge, there are no published or otherwise available empirical studies describing trends in how much sociologists need to publish to get a faculty position or to get tenure.

There is considerable evidence that the rate of growth of *all* scientific output—as indexed by the total number of publications—has grown markedly over time (Larsen and von Ins 2010; Price 1961; Van Noorden 2014; White et al. 2017), albeit unevenly across countries and disciplines (White et al., 2017). Of course, this has a great deal to do with the growing number of *scientists* over time both in the United States and elsewhere. A larger number of scientists means more articles and other publications, even if each individual scientist's rate of publication is constant over time. What we should care about, instead, is the rate of publication *per scientist*.

On a per-scientist basis, Fanelli and Larivière (2016:5) document that “[t]he average number of papers published by early-career researchers has been stable or increasing for all disciplines during [sic] 20th century and has increased for most disciplines after the year 1980.” They document that both parts of that statement hold for the social sciences, too. However, Fanelli and Larivière do not describe trends for sociology in particular. And, their results pertain only to publications catalogued in the Web of Science database—which only includes journal articles—authored by people whose names have three initials (e.g., “S.G.E. Thomas”). In any case, theirs is the only empirical basis for the claim that publication expectations have risen for sociologists (presuming that the broader trend in social science holds in sociology). Interestingly, as I explain below, Fanelli and Larivière's (2016) explanation for the rise of publication expectations is quite different than what most sociologists would likely guess.

Why Might Publication Expectations Be Increasing over Time?

From a theoretical point of view, there have been a variety of institutional and professional changes to the way that sociologists work and manage their careers—all of which may have increased publishing expectations over time. Below I review several such changes and explain their implications for publishing expectations.

First, sociologists may simply be more productive than they used to be. Improvements in computer and communications technology mean that sociologists can do things more quickly and efficiently than a generation ago. Quantitative sociologists who used to spend days running analyses on mainframe computers can now do

those same analyses in seconds on laptops computers (or maybe smartphones). Qualitative researchers can interview people by Skype and use NVivo and other technology to speed transcription and data analysis. Interuniversity collaborations are cheaper and easier in the era of Dropbox folders and Google Hangouts. The time and energy required to complete a given research project may simply have declined over time, freeing sociologists to take on more projects and produce more publications.

Second, it may be that sociology departments can be more selective in hiring and promoting than they were a generation ago. If the number of doctoral degree (PhD) recipients has gone up over time while growth in the number of faculty positions has not kept pace, then departments can be choosier in who they hire and can hold out for more productive faculty. The result may be that, over time, departments can expect more publications of job applicants and tenure candidates. A department that may have hired or tenured someone with a certain number of publications a generation ago may now be able—simply for reasons of supply and demand—to only hire or tenure people with a higher number of publications today.

Third, the structure of sociological careers has changed over time in at least one way that may be consequential for publication expectations: A generation ago, sociologists rarely took postdoctoral positions (unlike, say, biologists) before starting tenure-track faculty positions. Today, postdoctoral positions are much more common across the social sciences (Arbeit and Kang 2017; Powell 2015). This means that the applicant pool for assistant professor positions has changed in an important way: More and more applicants have had one or more years in postdoctoral positions in which to publish. This may have led to growing expectations for publication quantity among successful applicants for assistant professor positions. Down the road, this may also raise expectations for candidates for promotion to associate professor with tenure.

Fourth, the structure of sociological publishing has also changed over time in at least one way that may be consequential for publishing expectations: Today, there are simply more journals in which to publish than there were a generation ago. In 1986, the Social Sciences Citation Index's *Journal Citation Reports (JCR)* listed 64 journals in the category "Sociology." In 2016, that figure was 143. Articles that went unpublished before thus may have more opportunities to appear in print today; the result may be a rising number of journal article publications on the average CV.

Fifth, like scientists in many other disciplines, sociologists have become more collaborative over time. A key indicator of this is the number of coauthors appearing on sociology publications. If sociology books and articles have more authors today than they did a generation ago, then the average CV will have more publications listed on it—even if the total number of distinct publications produced has remained constant. I noted above that Fanelli and Larivière (2016) provide the only known empirical evidence about trends over time in the average number of publications per scientist in the social sciences. They argue that almost *all* the increase over time in publications per scientist is driven by rising numbers of coauthors per publication.

Sixth, there are well-documented differences in publication rates by gender in sociology. Although women publish less than men on average (for reasons having

to do with personal, professional, and institutional factors [Grant and Ward 1991; Leahey 2006]), there is evidence that women may nonetheless need to publish more than men to achieve similar academic rewards (e.g., Correll, Benard, and Paik 2007). As women have become a larger share of the sociology faculty workforce (Dellinger et al. 2011), the result may be rising overall expectations for publications. Women may have to publish more than men to be successful, and there are more and more women on sociology faculties².

Note that none of these broader professional and institutional changes necessarily imply that sociologists are *working* any longer or harder than they used to work. Changes in computing and communications technology may have increased sociologists' efficiency—how much they produce and publish for exerting the same effort. Changes in the supply and demand of PhDs; in the availability of postdoctoral positions; in the number of sociology journals; in the number of coauthors per sociology article; and in the representation of women in faculty positions are all professional and institutional changes that are exogenous to individuals and that may have had no impact on how much the average sociologist actually produces. Instead, these factors theoretically “move the bar”—that is, increase how many publications departments can expect on the average CV of applicants for assistant professor positions and of candidates for promotion to tenure.

Note also that several of these explanations for increases in publishing expectations are related to changes in the way higher education is organized and financed. In an era of declining state support for higher education and increased pressure on sociologists and other faculty to be fiscally entrepreneurial, departments' faculty sizes have remained stable despite graduating more PhDs. This basic demographic pressure, along with the Great Recession, increased sociologists' use of postdoctoral and other short-term positions between graduate school and faculty jobs. Fiscal pressures may also have led departments to hire in subfields with more external grant-funding possibilities (e.g., demography, medical sociology); these areas tend to have larger, more collaborative research teams—and thus more coauthors on publications. Although the professional and institutional changes outlined above in some ways represent distinct and independent upward pressures on publishing expectations, the modern organizational and fiscal realities of higher education are fundamentally responsible for several of them.

My first objective is to provide empirical evidence about trends in how much sociologists need³ to publish to get faculty positions and to get tenure. My second is to investigate the degree to which the professional and institutional changes described above account for those empirical trends. Have publishing expectations risen in sociology as most people perceive, and if so, what accounts for those rising expectations?

Specifically, I study trends between 1991 and 2017 in how much sociology faculty had published (1) when they started their first assistant professor positions and (2) when they were first promoted from assistant to associate professors. I narrow my focus to 21 of the top sociology PhD-granting departments in the United States. This limitation of scope makes my research more feasible, but it certainly detracts from its generalizability. I would note, however, that the top departments are particularly influential in setting broader norms and expectations in the wider discipline. They

produce a disproportionate share of all new PhDs, and (for better or worse) their faculties dominate journal editorships, editorial boards, grant-proposal review panels, and leadership positions in professional associations.

Research Design

Below I describe my procedures for identifying 21 of the top sociology departments, for identifying new assistant and newly promoted associate professors in each of those departments in each year between 1991 and 2017, and for quantifying how much each of those people had published as of their hire (for new assistant professors) or as of their promotion (for newly promoted associate professors).

Top Departments

Any effort to rank the quality and prestige of academic departments is inevitably subjective and arbitrary. However, those efforts happen at least annually and generally yield consistent results. I began with the 1992 and 2013 *U.S. News & World Report* rankings of the “Best Sociology Graduate Programs” and with the National Research Council’s rankings of sociology doctoral programs in the early 1990s and the mid-2000s (Goldberger, Maher, and Flattau 1995; Ostriker, Kuh, and Voytuk 2011). Only 14 sociology departments are ranked among the top 25 departments in all four assessments. In the end, I chose a somewhat more liberal definition: To be included in my analyses, departments had to be in the top 25 in both the 1992 and 2013 *U.S. News* rankings and in at least one of the National Research Council rankings. This procedure yielded 22 (not 21) departments: Arizona; California, Berkeley; Chicago; Columbia; Cornell; Duke; Harvard; Indiana; Michigan; Minnesota; North Carolina, Chapel Hill; Northwestern; Ohio State; Penn; Penn State; Princeton; Stanford; Texas; California, Los Angeles; Washington; Wisconsin, Madison; and Yale. However, I exclude Texas for data reasons described below—leaving me with 21 departments. Although this list excludes some very strong departments, it captures most of the departments that have been considered “top” programs over the past quarter of a century.

Identifying Faculty

For each year between 1991 and 2017, I then identified faculty members in each of these 21 departments who were either (a) new assistant professors or (b) newly promoted associate professors. To do this, my undergraduate research assistants began by typing in the first and last name, PhD year, PhD university, and academic rank of every faculty member listed in each of the 21 departments in each of the 1991 through 2018 editions of the American Sociological Association’s (ASA) *Guide to Graduate Departments of Sociology* (e.g., American Sociological Association 2018). Note that departments are a bit inconsistent in how they list their faculty: In each annual edition of the *Guide*, some list their faculty at the start of the *previous* academic year, whereas others list their faculty at the beginning of the *upcoming* academic year. For example, in the 2006 *Guide*, some listed their faculty at the

start of the 2005–2006 academic year and others listed their faculty as of the fall of 2006. The University of Texas, however, has not contributed to the *Guide* since 2011 and so is excluded from my analysis. Information about faculty in the 21 focal departments was typed in twice by independent research assistants; I compared the two keypunched versions of the information and resolved all discrepancies.

To identify new assistant professors, I compared the faculty rosters of departments across consecutive years. If a faculty member did not appear in a department in year X but appeared as an assistant professor in that department in year $X+1$, I inferred that the faculty member *might* be a new assistant professor. To confirm this, trained undergraduate research assistants sought out the faculty member's CV or web page to study their academic career (using names, PhD year, PhD university, and name of employer to confirm their identity). To count as a "new assistant professor," a faculty member had to never previously have held a faculty position (excluding adjunct or visiting appointments) at any rank and in any institution in prior years. For example, I was not on the faculty roster of the University of Washington in 1997 but I appeared on the roster as an assistant professor in 1998. Because—as confirmed by my CV and web page—I never previously held a faculty position, I count as a new assistant professor at the University of Washington in 1998. Then, I was not on the faculty roster of the University of Minnesota in 2001 but I appeared on the roster as an assistant professor in 2002. Because my CV and web page show that I had previously been an assistant professor (at the University of Washington), I do not count as a new assistant professor at the University of Minnesota in 2002.

This method identified 342 new assistant professors in these 21 departments between 1991 and 2017. I show the distribution of these 342 new assistant professors over time and across departments in Figure 1. The number has fluctuated over time, with notable dips following recessionary periods. There have been many more new assistant professors in larger public—and especially Big Ten—universities than in private universities. The 342 new assistant professors are identified by name, along with other information described above, in Stata and Excel data files available at https://www.rob-warren.com/pub_trends.html.

Likewise, to identify newly promoted associate professors, I compared the faculty rosters of departments across consecutive years. If a faculty member appeared as an assistant professor in a department in year X and then appeared as an associate professor in that same department in year $X+1$, I inferred that the faculty member *may* have been promoted across those years. Again, to confirm this, trained undergraduate research assistants sought out the faculty member's CV or web page to study their academic career. To count as a "newly promoted associate professor," a faculty member had to never previously have held an associate or full professor position at any institution in prior years. Note that this method does not count the small number of faculty who obtained their first associate professor position by changing universities simultaneously with their promotion; faculty members had to appear as an assistant professor in one year and as an associate professor in the next year *at the same university*. This method also makes no distinction between associate professors who have tenure and those who do not.

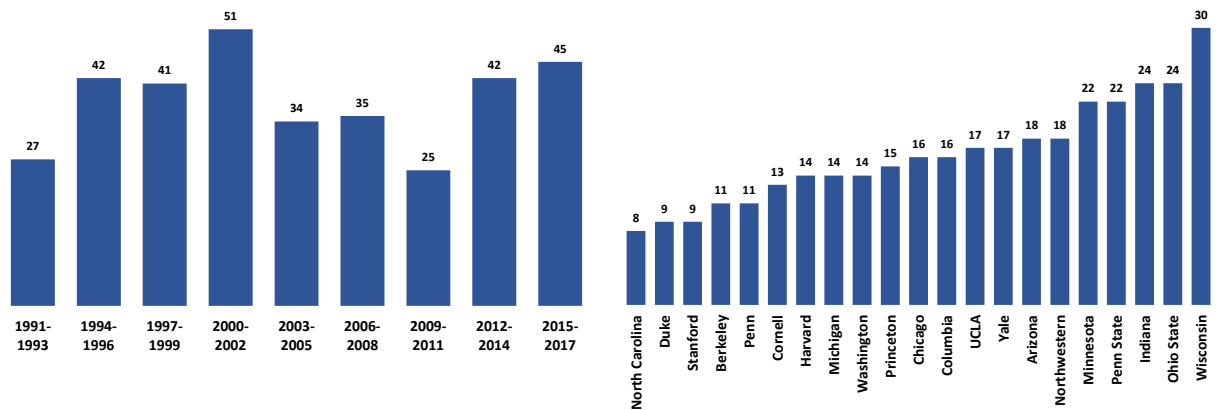


Figure 1: Number of new assistant professors by year and department.

This method identified 272 new associate professors in these 21 departments between 1991 and 2017. I show the distribution of these 272 newly promoted associate professors over time and across departments in Figure 2. This number has also fluctuated over time, with dips about six years after recessionary periods. Because there have been many more new assistant professors in larger public universities than in private universities, it is not surprising that this pattern holds for newly promoted associate professors as well. The 272 newly promoted associate professors are also identified by name, along with other information described above, in the Stata and Excel data files at https://www.rob-warren.com/pub_trends.html.

Counting Publications

Next, I counted how much the 342 new assistant professors had already published as of the year they began their first assistant professor positions. For example, since I started my first assistant professor position in 1998, my count includes everything I published up to *and including* 1998. Given publication lags, the logic here is that this count reflects the number of publications that would have appeared on people's CVs as "published" or "forthcoming" when they successfully applied for their first assistant professor positions.

Likewise, I counted how much the 272 newly promoted associate professors had published up to and including the year they first began as associate professors. For example, since I earned my PhD in 1998 and first began as associate professor in 2004, my count includes everything I published between 1998 and 2004. Again, the logic is that this count reflects the number of publications that would have appeared on people's tenure dossiers (excluding those published as graduate students) when they were first positively reviewed for promotion to associate professor.

To count publications, trained undergraduate research assistants used three primary data resources. First, and by far most often, they located CVs online. In almost all cases, they located CVs that were at least recent enough for our

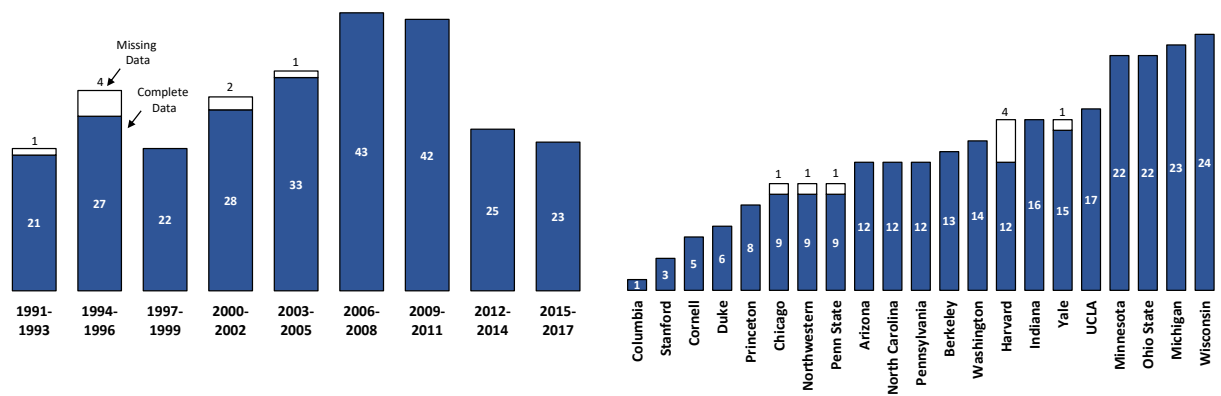


Figure 2: Number of newly promoted associate professors by year and department.

purposes (e.g., in my case, a CV from 2005 would have been recent enough because only publications through 2004 count for me). Second, they reviewed faculty web pages when full CVs were not found; some faculty maintain detailed web pages. Third, in a small minority of cases, they consulted Google Scholar and other public bibliographic databases to identify published work within the relevant range of years. They were able to obtain sufficient information for all 342 (or 100 percent) of the new assistant professors and for 264 (or 97 percent) of the 272 newly promoted associate professors. Figure 2 indicates the distribution of those eight missing newly promoted associate professors across years and institutions.

Beyond counting publications, the undergraduate research assistants also used these data resources to double-check the years in which faculty members obtained their PhDs, started their first assistant professor positions, and were first promoted to associate professor as well as the institutions in which those transitions occurred. Along the way, and for reasons described below, they also noted (1) each faculty member's gender, (2) whether new assistant professors had "gap years" between completing their PhDs and starting as assistant professors, and (3) whether newly promoted associate professors changed universities after starting their first assistant professor positions.

For new assistant and newly promoted associate professors, trained undergraduate research assistants counted each of the following categories of things as published in the relevant years:

1. articles published in the *American Sociological Review (ASR)* or the *American Journal of Sociology (AJS)*;
2. articles published in all other peer-reviewed academic journals;
3. book chapters; and
4. all other academic publications.

For new associate professors, they also counted the following:

5. books.

Books were not counted for new assistant professors because we saw no instance in which new assistant professors' books had publication years on or before the year that they started their first assistant professor position. The undergraduate research assistants also recorded whether the focal professor was the first author on each publication; so, for example, they separately recorded how many first-authored book chapters each person published as well as how many book chapters each person published as the second+ author.

Some things that appear in peer-reviewed journals—for example, short commentaries, replies to short commentaries, book reviews, editorials, introductions to special issues, letters to the editor—were not counted as peer-reviewed articles under items 1 or 2 above and were instead counted under item 4 above (“all other academic publications”). At the same time, other things that differ somewhat from traditional peer-reviewed journal articles—for example, published versions of association presidential addresses, full-length articles written in response to previous articles, articles published in special issues of journals—were nonetheless counted as peer-reviewed articles. Textbooks, textbook supplements, and edited volumes were all counted under item 4 (“all other academic publications”), not under item 5 (“books”). Some things that are valuable and scholarly—for example, blog posts, software, data files, newsletters, unpublished manuscripts, unpublished working papers, letters to newspaper editors, policy briefs—were not counted as publications at all.

I met weekly with the undergraduate research assistants to discuss and resolve problems they encountered (e.g., what to do if a CV didn't list the order of authors) or questions they had (e.g., whether unpublished articles nonetheless listed in the “publications” section of CVs should count). Two separate and independent undergraduate research assistants counted the publications for each faculty member, and a third (or sometimes I) reconciled discrepancies in their counts. For each faculty member, the resulting counts (broken out by first versus second+ author) for each of the categories of publications are available in Stata and Excel data files at https://www.rob-warren.com/pub_trends.html.

Sharing Data for Replication, Extension, and Correction

I am making all the data used in my analyses—including names of faculty members, names of their PhD and employing institutions, and counts of their publications—freely available. I came to this decision after weighing several factors. First, under any judicious interpretation of the “Common Rule” (e.g., the Department of Health and Human Services' 45 CFR 46), my research does not constitute human research. All the data collected and analyzed are freely and publicly available, were obtained through no intervention or interaction with people, and cannot reasonably be considered private. (My application to the University of Minnesota's Institutional Review Board, along with a letter attesting to this interpretation, is posted at https://www.rob-warren.com/pub_trends.html). Second, despite my efforts to ensure the quality of the data, there are almost certainly errors in them (e.g., in publication counts, in the years people started new positions) and I would like for

the affected individuals to be able to correct information pertaining to them. Going forward, I will periodically post both the original and updated versions of the data and results on my website. Third, I welcome replication and extensions of my research, and data sharing makes that possible; redacting the names or restricting access to the data do not. To that end, I have also posted the Stata code used to produce the results below on my website. Nonetheless, I understand that some readers who appear (by name) in the data may be unhappy with this decision. I would remind them that I have simply rearranged information that is already very easily available elsewhere.

Results

In Figure 3, I present trends over time in how much the 342 new assistant professors had published at the time they began their jobs. New assistant professors in the most recent years published roughly twice as much as new assistant professors did in the 1990s. Much of this growth is due to rising numbers of (non-*ASR*, non-*AJS*) peer-reviewed articles, although there has also been growth in the numbers of book chapters and other publications. Whereas the most recent cohort of new assistant professors averaged 4.8 peer-reviewed articles (including *ASR* and *AJS*), their counterparts in the early 1990s averaged only 2.5 articles.

Likewise, in Figure 3 I present trends over time in how much the 264 newly promoted associate professors had published at the time of their promotions. Here, increases over time in publishing have been more gradual—at least until the 2010s. However, publication patterns look different for “book people” and “article people.” In Figure 4, I present publication trends among newly promoted associate professors who had published zero books by the year they were promoted (“article people”); in Figure 4, I present those trends among newly promoted associate professors who published at least one book (“book people”). Among article people, trends look more like those for new assistant professors: In the 2010s, they published almost twice as many peer-reviewed articles as their counterparts in the 1990s. Among book people, the rise in publishing expectations has been much more gradual. However, even among book people, the number of peer-reviewed articles has risen; *book* people in the 2010s now publish as many articles as *article* people were publishing in the 1990s.

Explaining the Trends

Earlier I outlined six possible explanations for increases over time in publication expectations in sociology. First, sociologists may simply be more productive in recent years—because they work harder and/or because of technology-related efficiencies. Second, hiring and promoting departments may be able to be more selective—to hold out for candidates with more publications—because of issues of supply and demand. Third, the increasing prevalence of postdoctoral and similar positions may be giving sociologists more time to publish before competing for assistant professor jobs or standing for promotion to associate professor. Fourth, the growing number of sociology journals over time may mean that articles that

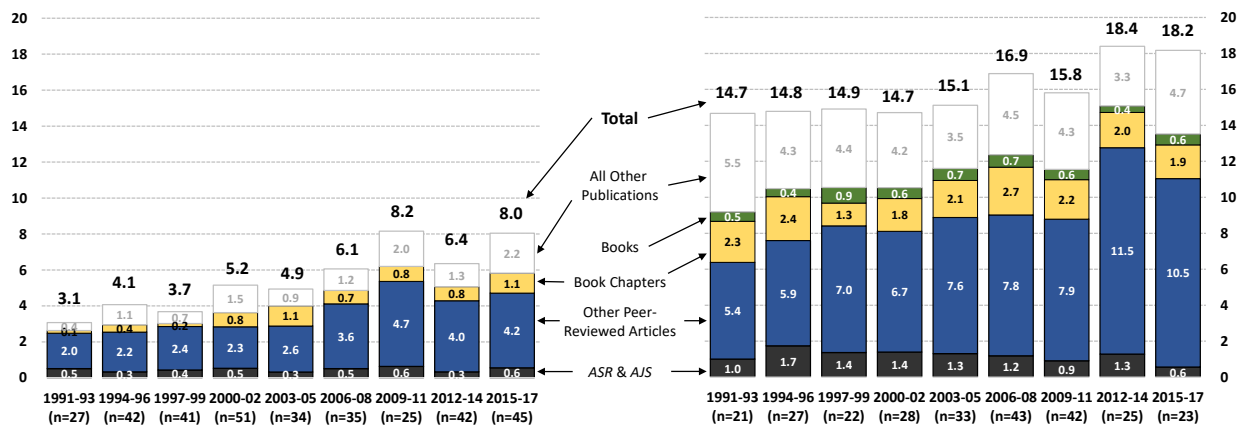


Figure 3: Mean number of publications by type and year. Shown are new assistant professors (left) and newly promoted associate professors (right).

once went unpublished now get published. Fifth, the trend toward greater numbers of coauthors on published articles may be inflating each sociologist’s publication count (regardless of whether more actual research is being published). Sixth, rising expectation for publication quantity may have resulted from greater numbers of women entering faculty positions. If women must produce more than men to achieve the same career milestones, then the rising number of women on sociology faculties may increase overall expectations for publication quantity.

The first of these explanations—rising productivity and efficiency—is ultimately unobservable and thus serves as a “residual” or default explanation. It is also the explanation that most senior sociologists have in mind when they reflect on why

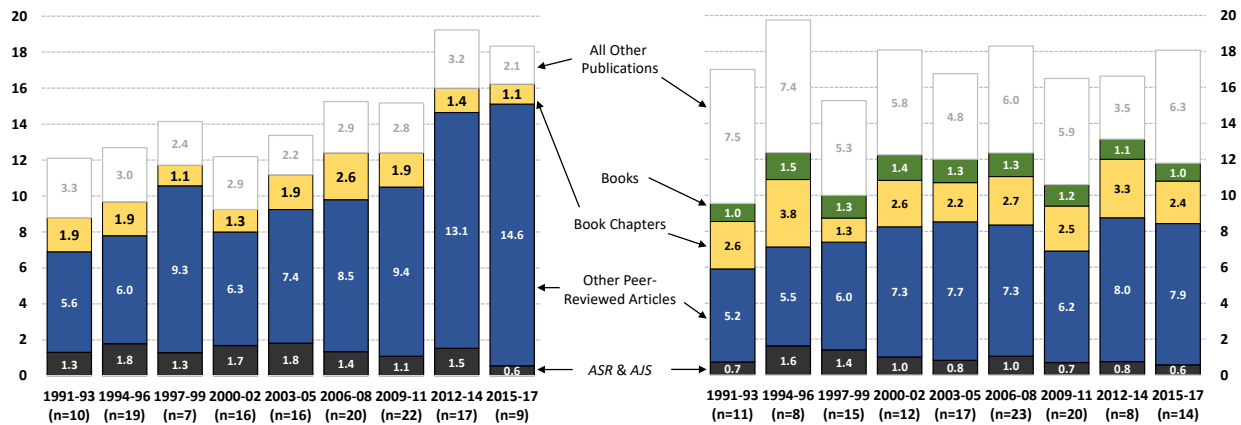


Figure 4: Mean number of publications among newly promoted associate professors by type, year, and whether they published a book (never [left] or one or more [right]).

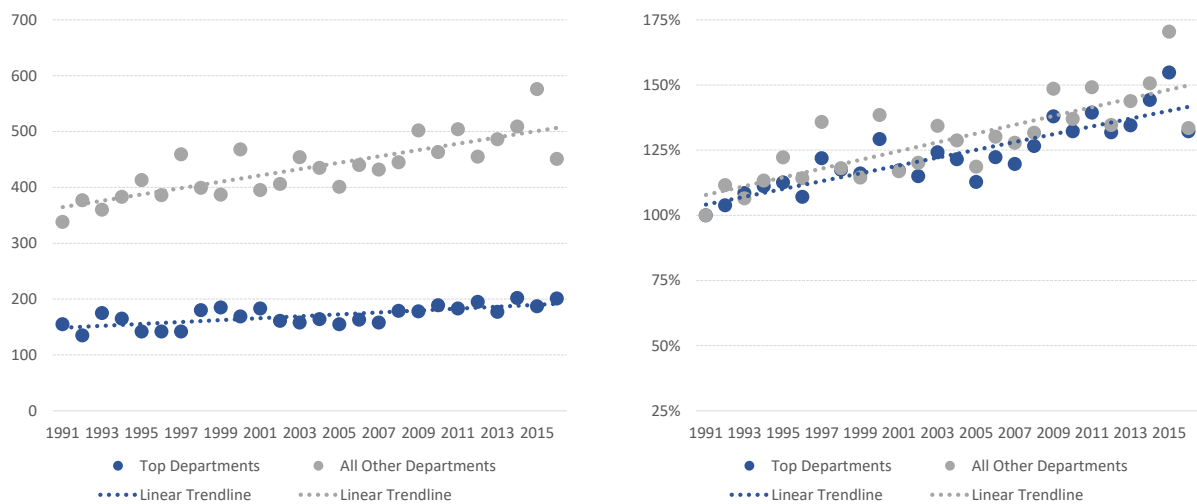


Figure 5: PhDs awarded, top sociology departments versus all others by year. Shown are the number of PhDs awarded and the percentage increase relative to 1991.

publishing expectations have risen. But how credible are the other five explanations? Below I address each in turn.

Supply and demand. If (1) the supply of sociology PhD holders has risen over time but (2) the availability of new assistant professor positions has not kept pace, then hiring and promoting departments may be in a stronger position to hold out for individuals with greater prior productivity, as expressed by numbers of publications. In Figure 1, I showed that the number of new assistant professor positions in the top 21 departments has remained more or less stable over time (aside from the recession-era dips in 1991–1993 and 2009–2011). Likewise, I showed in Figure 2 that the number of assistant professors promoted to associate has also remained more or less stable in those departments (again, minus recession-era dips echoing trends in hiring new assistant professors). So, (2) above seems to be true.

Has the number of sociology PhD holders risen over time? In Figure 5, I show the counts of PhDs awarded each year between 1991 and 2016 by 19 of the top sociology departments—the 21 included in the analyses above minus Columbia and Penn (for whom complete data were not available from the *ASA Guide*). I also show the counts of sociology PhDs awarded by *all other* American departments in those years. The latter is derived from the National Science Foundation Survey of Earned Doctorates (NSF-SED), with which I used the Doctorate Records File and selected “Sociology” for the discipline. For each year, I began with the NSF-SED counts and subtracted the counts for the 19 top departments. Figure 5 shows that the number of PhDs awarded has steadily increased over time. In Figure 5, I convert the counts to percentages relative to the 1991 counts. As the figure shows, in both the top 19 departments and in all other departments, there were about 50 percent more PhDs awarded in recent years as compared to 1991.

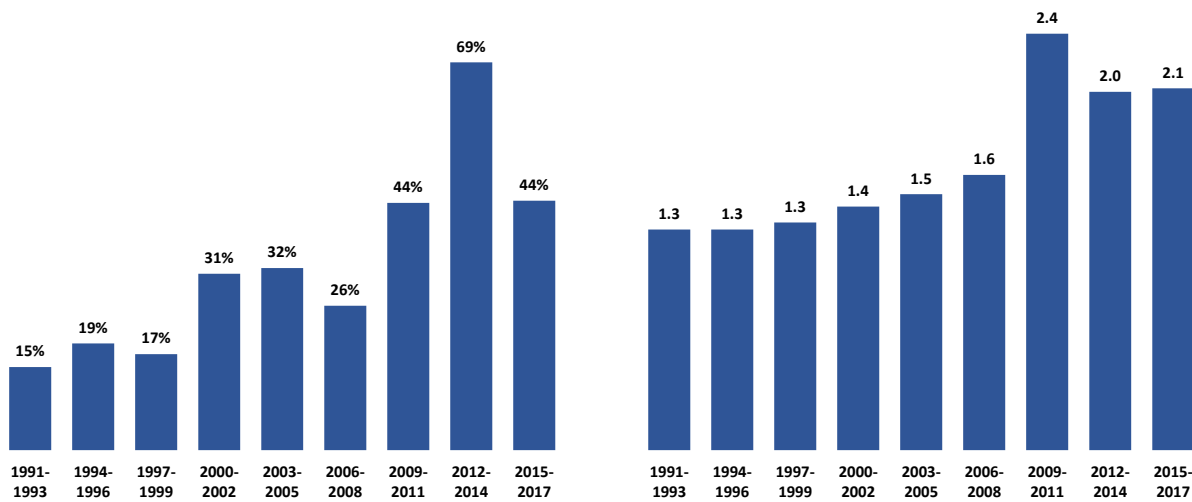


Figure 6: New assistant professors with a gap of one or more years between obtaining their PhDs and starting their first assistant professor positions by year. Shown are the percentage with one or more gap years and the mean number of gap years among those with any gap.

Taken together, there is no general increase in the availability of new assistant professor positions in the top 21 departments, nor are those departments promoting more assistants to associate. However, there is a steadily growing supply of PhD recipients. According to my data, about 90 percent of new assistant professors in the top 21 departments since 1991 received their PhDs from another of those top 21 departments. The fact that top departments (1) are now producing about 50 percent more PhDs than they produced in the early 1990s and (2) hire from other top departments 90 percent of the time but (3) are hiring and promoting faculty in approximately the same numbers as then suggests that hiring and promotion committees are now in a stronger position to hold out for candidates with higher numbers of publications.

Increasing numbers of postdoctoral positions. Figure 6 shows the annual percentage of new assistant professors in the top 21 departments who had a gap of one or more years between completing their PhD and starting their first assistant professor positions. Many of these “gaps” are filled with postdoctoral positions, although others are filled with visiting appointments, adjunct positions, and other jobs. Whereas such “gap years” were relatively rare in the early 1990s, they are now much more common. In recent years, almost half of new assistant professors had gap years. Furthermore, among those taking any gap years, the average gap is getting longer over time: As shown in Figure 6, the typical gap rose from 1.3 years in the early 1990s to 2.1 years more recently.

What this implies is that the pool of applicants for new assistant professor positions has changed over time such that more and more applicants have had additional years in which to publish from their dissertations and other projects. Graduate students applying to start new assistant professor positions straight out of graduate school are thus facing stiffer competition. From hiring departments’

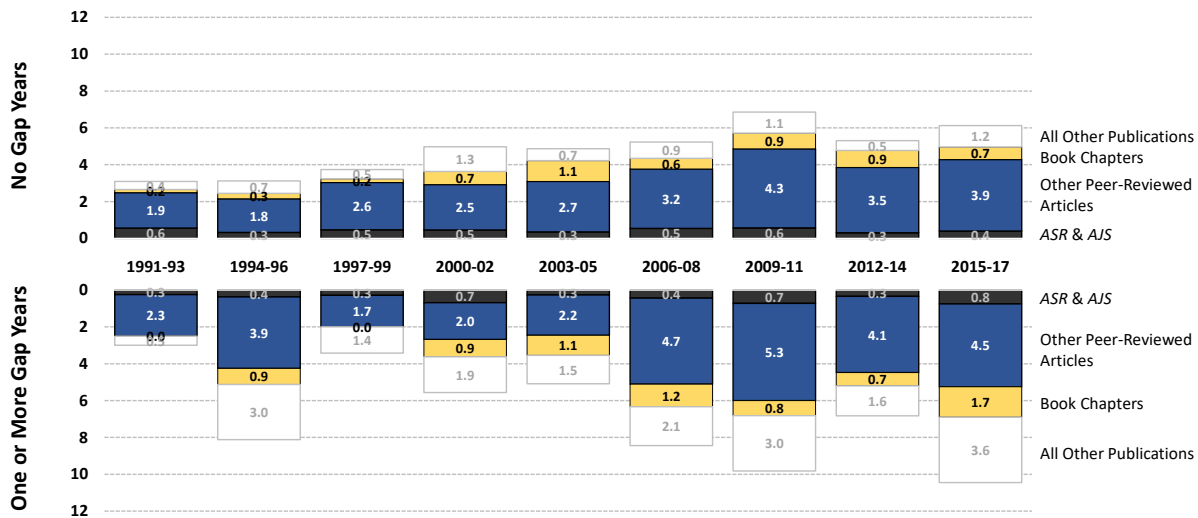


Figure 7: Mean number of publications for new assistant professors by type, year, and whether the new assistant professor had gap years.

points of view, candidates with gap years have more of a publication track record and may be a “safer bet” to be successful.

However, this change in the structure of sociologists’ career may not be the whole story. In Figure 7 I show trends over time in publication counts for new assistant professors who had gap years (top half of Figure 7) and those who did not have gap years (bottom half). Not surprisingly, those with gap years generally publish more. More importantly, *the trend toward higher publication counts also holds among those with no gap years*: For those beginning their first assistant professor position the same year they obtained their PhDs, publication counts have roughly doubled since the early 1990s. So, although the number of junior sociologists taking gap years has certainly grown, it is not clear that this explains all the trends among new assistant professors.

What about newly promoted associate professors? As shown in Figure 8, the total number of years between earning the PhD and being promoted to associate professor has risen somewhat over time. Part of the increase is due to the growing length of time people take between earning their PhDs and beginning their first assistant professor positions. This very modest increase depicted in Figure 8 is unlikely to account for much of the rise in publication counts among newly promoted associate professors.

More sociology journals. In 1992, the Social Science Citation Index’s *JCR* listed 70 journals in the category “Sociology.” In 2016, as noted above, that number was 143. This implies that there are now twice as many journals in which sociologists’ work might appear in print, potentially increasing their count of published articles over time. In Figure 9, I report—separately for new assistant professors (on the left) and newly promoted associate professors (on the right) and separately for the periods 1991 through 1993 and 2015 through 2017—the average number of peer-reviewed

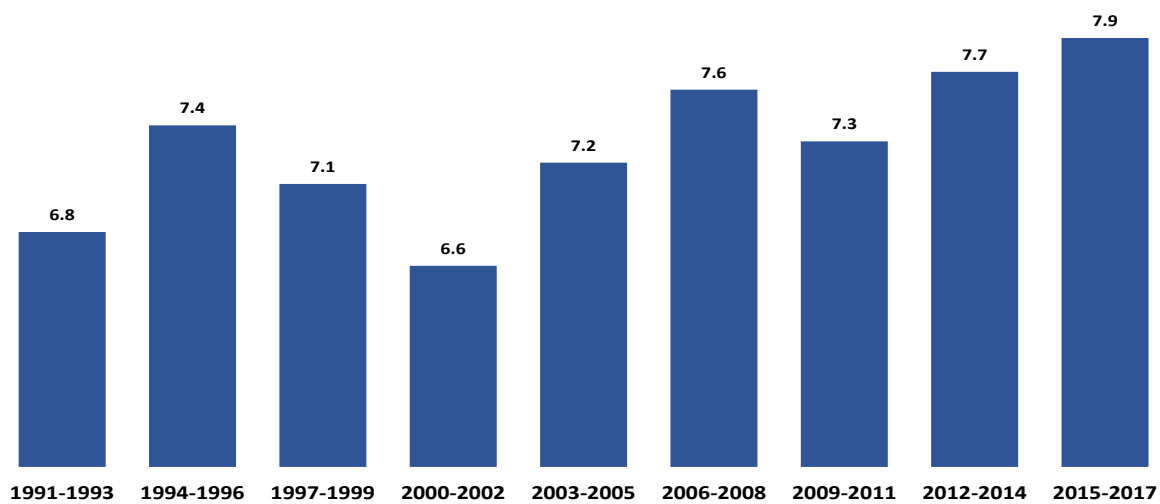


Figure 8: Mean number of years between earning PhD and being promoted to associate professor among newly promoted associate professors by year.

articles published in three categories of journals: (1) those classified as sociology in *both* the 1992 and 2016 *JCR* (e.g., *ASR*, *Sociology of Education*); (2) those *never* classified as sociology in *either* the 1992 or the 2016 *JCR* (e.g., *Demography*, *Social Science & Medicine*, *PLoS ONE*); and (3) those classified as sociology in the 2016 *JCR* but not in the 1992 *JCR* (e.g., *Social Science Research*, *Gender & Society*, *Population and Development Review*). If the growing number of sociology journals is driving the increase in publication counts, we should observe most of the growth in that third category of new sociology journals. As shown in Figure 9, however, the most dramatic growth is in the number of articles appearing in journals *never* classified as sociology.

Most articles published in the category of “new” sociology journals (i.e., those added to the *JCR* between 1992 and 2016) appeared in journals that existed long before 1992 but were simply not counted among the sociology titles in the *JCR*—journals like *Work and Occupations*, *Social Science Research*, *Social Science Quarterly*, and *Population and Development Review*. Relatively few articles published between 2015 and 2017 appeared in sociology journals first issued after 1992.

Sociologists’ tendency to publish more peer-reviewed articles in recent years is not primarily driven by the growing number of sociology journals. It is, however, driven at least in part by sociologists’ increasing tendency to publish in nonsociology journals—that is, interdisciplinary journals and journals entirely in other disciplines.

More coauthors per article. In Figure 10, I show the distribution of the number of authors on each peer-reviewed article published by new assistant professors, by newly promoted associate professors, between 1991 and 1993, and between 2015 and 2017. Among new assistant professors, the distribution of the number of authors on articles looked the same from 2015 to 2017 as from 1991 to 1993: The

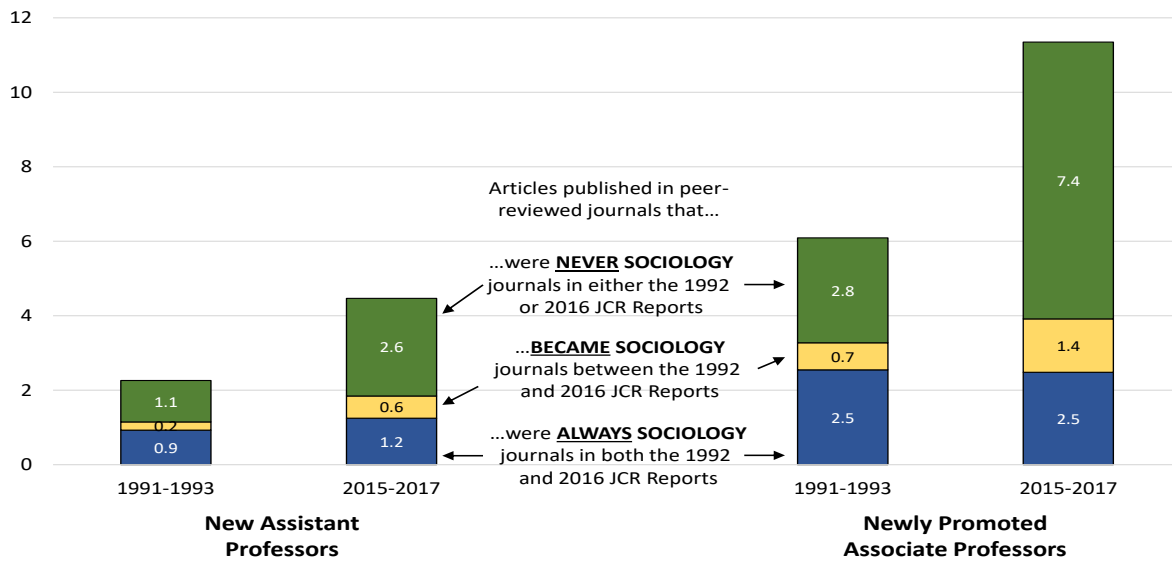


Figure 9: Articles published in journals classified as “sociology” in the 1992 and 2016 *Journal Citation Reports* by rank and year.

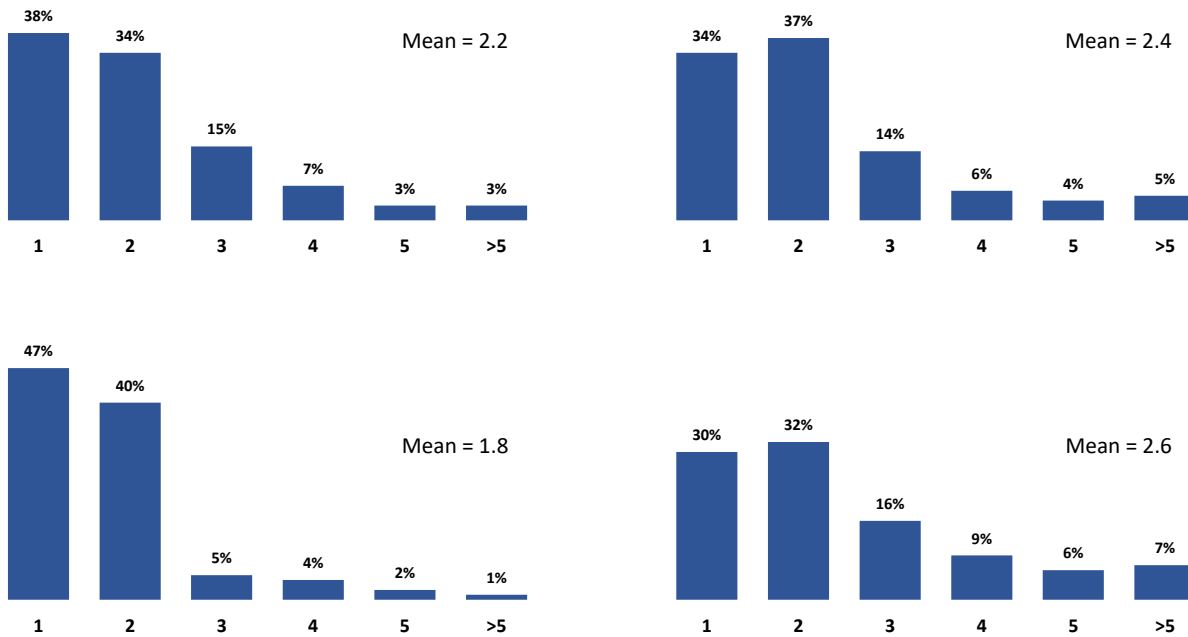


Figure 10: Distribution of the number of authors on articles by rank and year. Shown are new assistant professors (1991–1993; top left), new assistant professors (2015–2017; top right), new associate professors (1991–1993; bottom left), and new associate professors (2015–2017; bottom right).

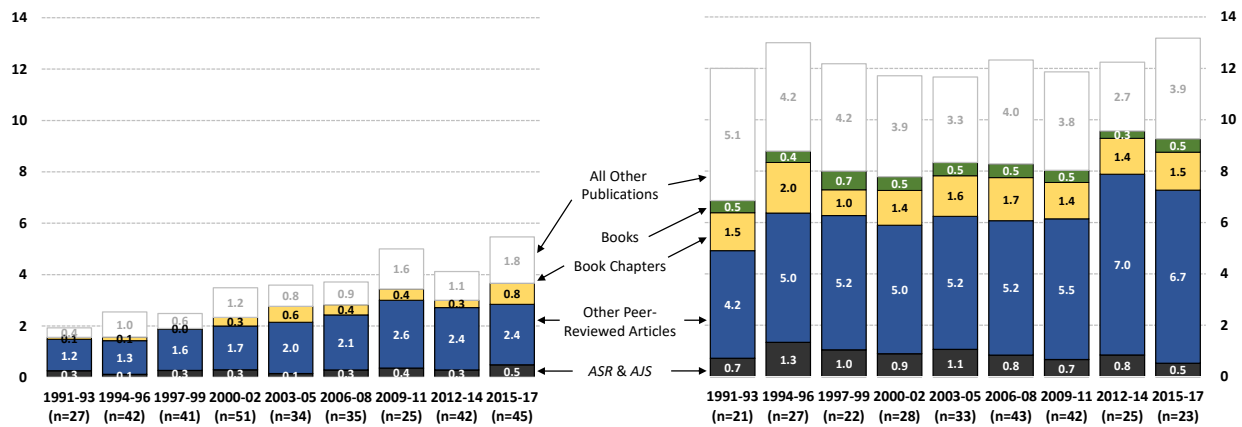


Figure 11: Mean number of first-authored publications by type and year. Shown are new assistant professors (left) and newly promoted associate professors (right).

mean is about the same (2.4 now as compared to 2.2 then), and the percentage of articles with just one author is about the same (34 percent now as compared to 38 percent then). On the other hand, articles published by newly promoted associate professors tend to have more coauthors in recent years: The mean has gone from 1.8 to 2.6, and the percentage of articles with just one author declined from 47 percent to 30 percent. In short, newly promoted associate professors are becoming more collaborative in their article publications, but new assistant professors are not.

How much do these patterns affect trends over time in the number of peer-reviewed articles? Figure 11 is the same as Figure 3 but is limited exclusively to articles in which the focal professor is listed as the first author. For new assistant professors, the number of first-authored articles (Figure 11) and the total number of articles (Figure 3) each roughly doubled over time. This makes sense given that the distribution of the number of coauthors on new assistant professors' articles has remained unchanged over time. In contrast, the changing distribution of the number of coauthors explains part of the growth in journal article publications among newly promoted associate professors. Whereas the total number of articles published by newly promoted associate professors roughly doubled over time (Figure 3), the number of first-authored articles grew by only about 50 percent (Figure 11) from about 4.9 from 1991 to 1993 to about 7.2 from 2015 to 2017. The tendency toward more coauthors on journal articles explains part of the increase in journal article publication counts among newly promoted associate professors but not among new assistant professors.

Gender. If (1) women must publish more than men to achieve the same career milestones and (2) women are a growing share of sociology faculties, then these two trends may increase overall publication expectations over time. Part (2) appears to be true: Women are earning a higher percentage of sociology PhDs over time (American Sociological Association 2013), and in Figure 12, I report the percentage of the 342 new assistant professors and the 272 newly promoted associate professors

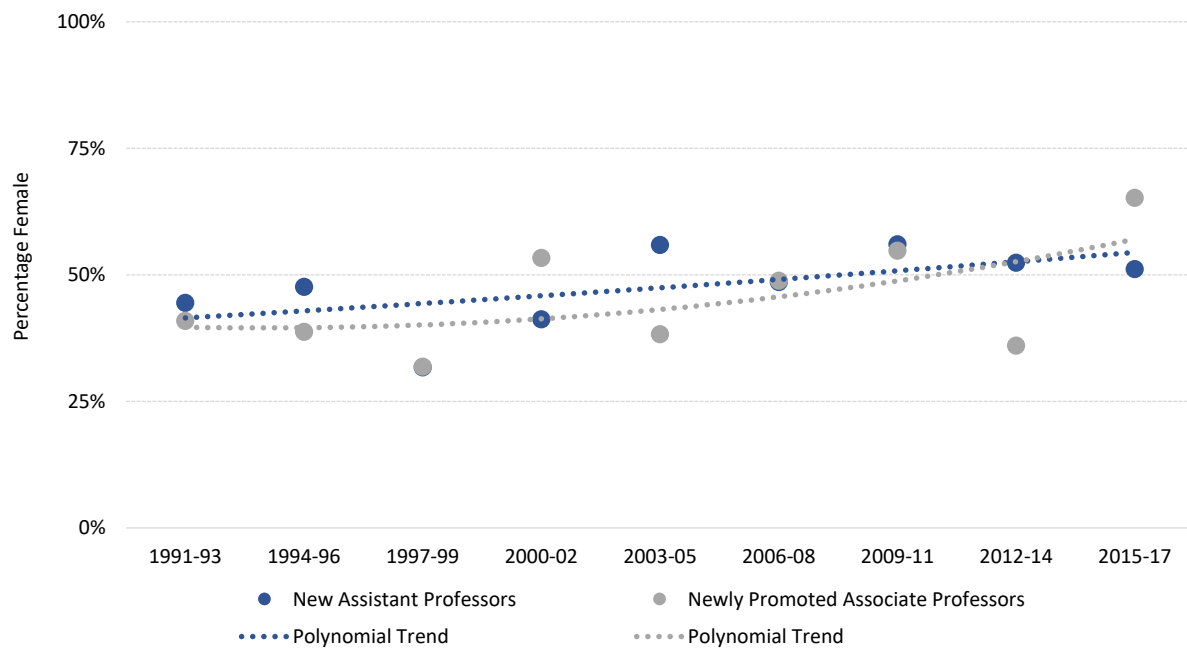


Figure 12: Percentage of new assistant and newly promoted associate professors who are female by year.

who are female. In both cases, the share of faculty who are female has gradually risen over time.

But do women publish more than men to achieve the same career milestones—at least in these 21 departments? In Figures 13, 14, and 15, I report gender-specific publication counts over time for new assistant professors, newly promoted associate professors who published no books, and newly promoted associate professors who published at least one book. In all three figures, both men's and women's publication counts have risen over time and to about the same extent. However, the key question in these figures is: Do women publish more than men at the time of these career milestones? In general, the answer is no: Men publish as much or more than women—although there are deviations from this pattern—across eras. There may be many reasons for this, ranging from biases in the publication process to unequal divisions of household labor to inequitable teaching or service assignments. But, because women do not generally publish more than men, because both men and women have experienced increases in publication counts, and because changes to the share of women on faculties has been slow, it is unlikely that rising publication expectations can be attributed to these gendered processes.

Discussion

Figure 3 provides clear empirical evidence in support of what many senior sociologists seem to believe: Today, publishing expectations are substantially higher than



Figure 13: Mean number of publications for new assistant professors by type, year, and gender.

they were a generation ago for sociologists seeking their first assistant professor positions or promotions to associate professor. New assistant professors and newly promoted associate professors who do not write books must now publish about twice as much as their peers did in the early 1990s. Even book-writing newly promoted associate professors publish many more journal articles than they used to.

What explains these trends? At the outset, I laid out six theoretically plausible factors that might have increased expectations for the quantity of publications in sociology. I argued that technological improvements in computing and communications may have simply made sociologists more productive; that changes to sociologists’ career patterns (in the form of growing numbers of postdoctoral positions) may have given them more time to publish before seeking assistant professor positions or promotion to associate professor; that the growing number of sociology journals may mean more opportunities to publish articles that otherwise might not have appeared in print; that a tendency toward more collaboration may have inflated the number of coauthors per publication and thus the number of publications per person; and that gender biases in the academy may have combined with a trend toward more female sociology PhDs to increase publishing expectations.

I found little support for the “changing career patterns” argument: It is true that more and more new assistant professors have had gap years between obtaining their PhDs and starting their first assistant professor positions, and it is also true

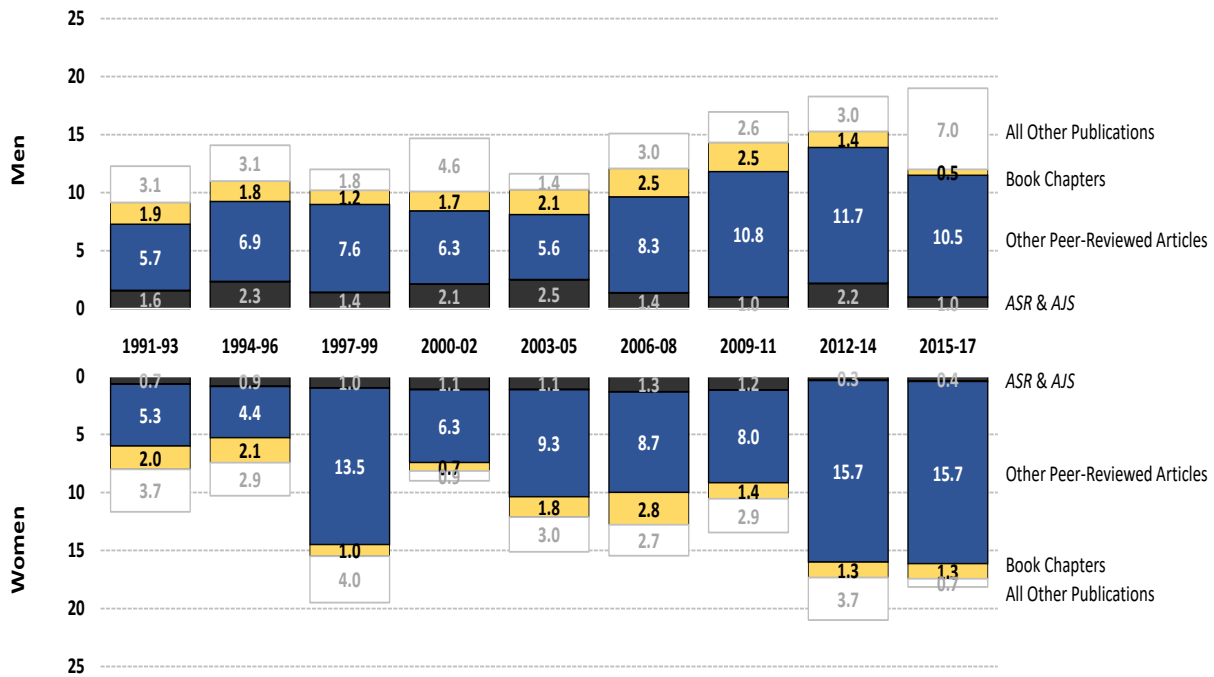


Figure 14: Mean number of publications for newly promoted associate professors who published zero books by type, year, and gender.

that newly promoted associate professors have taken somewhat longer to earn their promotion after obtaining their PhDs. However, the marked increase in publishing expectations is also observed—and in about the same magnitude—among those who did not have gap years. Likewise, I found little support for the argument that the growing number of sociology journals has meant more opportunities to publish articles that previously might have gone unpublished. There are, in fact, many more sociology journals now than in the early 1990s. However, as shown in Figure 9, almost all the growth in the number of published articles is in nonsociology journals. More and more sociologists are publishing in places like *Demography*, *Social Science and Medicine*, *PLoS ONE*, and the *American Journal of Public Health*—all journals that existed in the early 1990s, too. Finally, I found little support for the gender-based explanation. Although it is true that women are earning greater and greater shares of sociology PhDs and are increasingly represented among new assistant professors and newly promoted associate professors, they are not publishing more than men. For new assistant professors, I also found little support for the argument that increased publication expectations are driven by a tendency to include more coauthors on publications. The distribution of number of authors on new assistant professors’ journal articles has not changed over time.

For new assistant professors, the growth—the doubling—of publication expectations appears to be driven by (a) the supply of new PhDs and the demand for new



Figure 15: Mean number of publications for newly promoted associate professors who published at least one book by type, year, and gender.

faculty and perhaps (b) technological advances that aid productivity. The number of new sociology PhDs awarded has increased by 50 percent since 1991, but the number of new assistant professor positions—at least in the top departments—has not nearly kept pace. Hiring committees have thus been able to be more selective and favor applicants with higher numbers of publications before they start their first faculty jobs.

Among newly promoted associate professors, these same conclusions both hold: (a) Supply and demand and perhaps (b) technological advances that aid productivity each appear to have driven the increase in publication expectations. However, newly promoted associate professors’ publication counts have also increased over time because (c) the number of coauthors on their publications has grown over time. This inflates per-person publication counts without increasing the total volume of published work.

I surmise that two basic market forces are at work, and that these forces—perhaps combined with increases in actual productivity—largely drive growing publication expectations. First, sociology departments are producing more PhDs but (at least the top) departments are not hiring more new assistant professors or promoting more assistant professors to the associate level. There are a host of largely economic and fiscal reasons for these trends having to do with the organization and financing of higher education. Second, over time, sociologists have come to work

more and more in interdisciplinary subfields. As shown in Figure 9, the growth in the number of published articles over time is driven by increased publishing in journals outside of sociology; these are mainly journals in demography, public health, and public policy. The move toward working and publishing more in these interdisciplinary fields—which more often involve larger, grant-funded collaborative teams—has also increased the number of coauthors on newly promoted associate professors' articles.

Of course, these two forces are likely related: As fiscal pressures on universities and departments have increased, they may have found it easier and more financially beneficial to invest in hiring in areas in which it is possible to attract grant funds to support larger, collaborative, interdisciplinary projects. The financial pressures that (especially public) universities have faced in recent decades has led the supply of new sociology PhDs to outstrip the demand and has also incentivized universities, departments, and individual sociologists to invest more heavily in interdisciplinary subfields that attract external grant money to campuses—and that also lead to publications in interdisciplinary or other-disciplinary journals as a second+ author.

There are at least three serious limitations of my work. First, I have not quantified the degree to which increasing publication expectations have been driven by increases in productivity-enhancing technology (e.g., in greater computing power or in communications). Increasing productivity is thus a residual explanation, one I could not observe directly. It makes sense that sociologists are more productive today than they were a generation ago, but my sense is that the forces described above are at least as important. Second, there is a basic elitism inherent in my research design: I have only studied 21 of the top sociology departments. I would reiterate my claim that these 21 departments are important: Their faculty lead most professional societies, edit the top journals, dominate major grant-proposal review panels, and otherwise have disproportionate influence on the discipline. But I do not know whether my results would hold were I able to study a broader set of departments. Third, I have said nothing about trends in the quality of published work over time. How growing expectations for publication quantity have impacted the quality of published work remains to be seen.

At the outset, I noted that it is important to study rising publishing expectations in sociology for several reasons. Individual sociologists seem to be under greater and greater pressure to produce. Talented scholars consequently may be leaving the field in the face of increasing expectations and in the absence of additional resources. Rising publication expectations, I argued, may exacerbate disparities between “have” and “have-not” departments; they may also exacerbate disparities across subgroups within departments. Finally, I argued, these growing expectations may shape the topics junior scholars choose to study and the methodologies they choose to deploy. In the end, my conclusions leave me concerned that rising publication expectations—driven by issues related to the supply of new PhDs, the demand for new faculty, and the attractiveness of more lucrative interdisciplinary subfields—are doing long-term damage to the discipline and those who aspire to work in it.

Notes

- 1 To be precise, in my empirical work, I describe and attempt to explain trends over time in the quantity of sociologists' published work. I take the quantity of publications by new assistant professors and by newly promoted associate professors to indicate prevailing expectations of hiring committees and promoting departments. Even if publishing a particular amount is not a formal or necessary requirement for being hired or promoted, if those who actually get jobs or promotions are publishing more over time, then the number of publications that aspiring sociologists must achieve has also risen. Few faculty mentors would tell their graduate students or junior colleagues to aim lower than prevailing rates of publication. In this sense, the average number of publications by all graduate students or assistant professors is much less important than the number of publications by those who get jobs and tenure.
- 2 The fact that male faculty publish (on average) more than their female counterparts does not negate the seemingly contradictory possibility that women must publish more than men to achieve the same career milestones. Both facts can be true at the same time.
- 3 Again, I take the quantity of publications by sociologists who get jobs or promotions to indicate the expectations of hiring departments and promoting universities. Aspiring graduate students emulate their successful predecessors, and aspiring associate professors emulate those who successfully went before them. I am not studying trends over time in how much the average graduate student or assistant professor publishes. I am studying trends over time in rates of publication among those who are successful in getting new assistant professor jobs or promotions to associate professor. Faculty mentors do not advise their graduate students to aim for the average—they advise them to aim for the number of publications required to get an assistant professor position.

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