Gender Inequality and the Structure of Occupational Identity:

The Case of Elite Sociological Publication*

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Abstract

Purpose

While important changes have been made in the American workplace, gender inequality persists. Contemporary analyses of occupational segregation suggest that gendered roles and identities may be playing a role, yet few studies explicitly tackle the effects of occupational identity on female disadvantage at work. Moreover, most previous research ignores the structured, multidimensionality of occupational identity focusing on more overt one-dimensional forms of status differentiation. Using sociological work as a case, these analyses delineate how occupational identities contribute to and differentiate publication success – and thus status hierarchies – for men and women in the field.

Findings

Net of human capital, results demonstrate the pronounced effect of the structure of occupational identity on publication: An often hidden form of job-queuing, occupational identities are gendered and influence the publication process. Differential rewards based on subtly gendered distinctions prove an important source of persistent inequalities.

Social Implications

While gender alone may not directly influence publication in premier research journals for more recent cohorts of scholars, the gendered nature of research specialization and the distribution of rewards based, in part, on specialization presents a troubling, more subtle stratifying mechanism.

Originality/Value of the Paper

This paper contributes to our understanding of the puzzling pertinence of gender inequality in the academy by pinpointing how the organization of research into specialties is gendered and how this gendering of research affects important outcomes, such as publication. The paper also contributes to our broader understanding of inequality at work as an example of how occupational identity is multidimensional and networked.

Keywords: Gender Inequality, Occupational Identity, Science Studies, Social Networks

Gender inequality continues to pervade the American workplace. Across a wide array of employment outcomes, research has demonstrated persistent disadvantage: women receive less pay for similar jobs (e.g. Padavic & Reskin, 2002), are likely to be segregated in lower-paying occupations (e.g. Petersen & Morgan, 1995; Reskin, 1993; Reskin, McBrier, & Kmec, 1999), and are generally afforded fewer opportunities at work (e.g. Jacobs, 1992; Maume, 1999). Moreover, such barriers to equality are found across the board, from the food service industry, to state sector jobs, to biotech firms (Padavic & Reskin, 2002; Smith-Doerr, 2004).

Since Kanter's classic study of gender and work (1977a), we have known that inequality derives not only from job biases and discrimination, but also from the valuation of different types of work as well. Scholars have consequently developed an increasingly more nuanced perspective on how gender inequality operates through occupational structure (Cassirer & Reskin, 2000) and affects a diverse array of employment outcomes beyond income (Maume, 2004a). But do identity differences within an occupational field affect processes of inequality? That is, does occupational identity, or the rhetoric, discourses, and cultures within occupations (Fine, 1996), affect lingering workplace disadvantages? In this article, I argue that occupational identities are structured in meaningful and observable ways and that such dynamics indeed play a role in workplace gender stratification.

My case in point is an analysis of elite publication in the early careers of sociologists. Within academic labor, both the quantity and quality of publication has grown increasingly important factors in establishing status hierarchies by influencing hiring, promotions and raises,

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¹ Despite their limitations, case studies of professionals, such as physicians (Hoff, 1998), Wall Street financial professionals (Roth 2004), and lawyers (Kay & Hagan, 1998, Leicht & Fennell, 2001), have become increasingly more effective at and important to specifying the factors contributing to the persistence of gender inequality at work.

among other less formal workplace rewards. Drawing on unique data on the publication histories and biographical information of nearly 2,500 members of the American Sociological Association, I analyze whether gender stratification affects the likelihood of publishing in elite journals. Beyond speaking directly to individual characteristics, results provide general lessons pertaining to the role that occupational identity plays in the inequality process. I conclude by describing the importance of occupational identity to the maintenance of subtle and persistent forms of inequality at work.

INEQUALITY AND OCCUPATIONAL IDENTITY

Research on gender inequality in employment increasingly points to occupational identity as an important mechanism perpetuating female disadvantage in the workplace. Identity not only captures the extent and breadth of an employee's knowledge, but, in part, defines what is expected at work and the roles that individuals play within an organization. Gender stereotyping can influence these roles and expectations and also affect job mobility and evaluation (Ridgeway, 2002). Research on "emotional labor" (e.g. England & Folbre, 1999; Hochschild, 1983; Kanter, 1977b), for instance, highlights how gendered expectations track women and men into different jobs. Consequently, evidence from the analysis of the broader labor market indicates that although workplace sex segregation has declined (Tomaskovic-Devey, Zimmer, Stainback, Robinson, Taylor, & McTague, 2006) many people continue to work in gender segregated jobs (England, 2010). The differences in jobs and in types of work clarify how identity operates between occupations, but only suggest potential within occupation differences.

Occupational identity consists of a set of discursive strategies, rhetorics, and cultural markers that individuals use to make sense of their work life (Fine, 1996). These strategies are

often deployed as signals of demarcation drawing lines between groups of workers. Recent popular attention on modern food production describes how farmers, for example, develop distinct identities in relationship to their work relative to their production strategies (Pollan, 2007). These distinctions draw farmers together in the establishment of groups, such as the organic food movement, while also forming lines of division, such as the often contentious separation between industrial and organic farmers. Sociological research has also shown how corporations engage occupational identity to thwart unionization efforts (Cornfield & Kim, 1994), and the overall importance of work to individual identity and esteem (Snow & Anderson, 1987).

Occupational identities are structured relationally in several ways. First, identities derive meaning in relationship to other identities. In this way, occupational identities are socially-embedded much like other forms of distinction or *habitus* (Bourdieu, 1984). As such, difference drives meaning. Secondly, while a dominant identity may occasionally rise to the surface, identity is inherently non-stochastic (Bourdieu, 1984; White, 2008). In other words, occupational identity consists of "a bundle of accounts...that explain who one is and how one should be taken by others" (Fine, 1996). This "bundle" emphasizes the multifaceted nature of occupational identity. People may engage specific aspects of their occupational identity, or activate a particular component of their cultural "tool-kit" (Swidler, 1986), when a situation calls for it, but it is the "tool-kit" itself that constitutes the entirety of one's occupational identity.

While relatively little research directly captures the relationship between occupational identity and specific work-related outcomes, several recent strains of research point to the effects that unique job statuses, a central component of occupational identity, have on how individuals think about and engage in their work. For example, Broschak, Davis-Blake, and Block (2008)

find that nonstandard workers differ in their commitment to and productivity at work: temporary workers that are isolated from standard employees are less productive and more likely to have negative attitudes about their work, while workers who purposely arrange part-time assignments act similarly and share similar attitudes to standard workers. The workplace status, as either temporary, part-time, or standard, plays a significant role in how workers approach their jobs.

While again only touching upon occupational identity, research on gender and job structure also reveals how status and job structure interact to limit the aspirations of female employees. In their test of Kanter's (1977a) conclusion that opportunity structures shape workers' attitudes, Cassirer and Reskin (2000) find that aspirations for promotion are tied to organizational policies that encourage promotion among jobs disproportionately held be men. Thus, they confirm that "structure trumps gender" in terms of promotion aspirations (Cassirer & Reskin, 2000, p. 439).

This relationship between occupational identity and inequality may also operate as a subtle form of job queuing. Job queues "rank jobs in terms of their attractiveness to workers" (Reskin & Roos 1990:29). Similar to how workers rank jobs, workers likely choose occupational identities based on both economic and non-economic reasons including various forms of self-preservation both from those in strong positions viewing potential "threats" and those in weak positions seeking advancement. Yet, little attention has centered specifically on the implications of occupational identity for within occupational inequality. If women ascribe to particular identities more often than men within an occupational field, and these identities are less highly regarded, then identity would play an observable role in inequality.

INEQUALITY, IDENTITY AND THE CASE OF ACADEMIA

What one does at work influences occupational identity and academic labor is no exception. Academics have different teaching loads, research goals, and areas of specialization. Although sociologists, for example, work in the same occupation, within occupation segregation may occur. Different specializations indicate different occupational rhetorics that may be differentially rewarded. Specialty rhetorics may follow core methodological or theoretical rifts within an academic discipline. Occupational identity within university also contains other components, such as whether one works at a teaching college or research university. Like professional identities, occupational identities are chosen by workers, but this choice may be limited by structural factors through socialization, discrimination, or various forms of tracking. In this way, operating through specialization, occupational identity provides one potential mechanism driving within occupation segregation in sociology as sociologists may be "funneled" into particular research tracks.

The universities in which scientists work form one component of occupational identity. The relationship between gender and where one works in the academy provides initial indication of potential tracking or the "funneling process" that may take place within scientific fields (Cole, 1979, p. 7). Research on early careers from the American Sociological Association (Spalter-Roth & Lee, 2000) provides evidence of the role gender plays in this tracking process within sociology. As seen in figure 1, approximately 50% of both men and women have tenure track jobs. However, the research track shows some indication of the differences in placement between men and women. Men, for example, are more likely to have a position at research institutions. Men are also more likely to have a tenure track position within these institutions (see Grant & Ward, 1996). This funneling not only influences collegial networks, but also influences and is

influenced by how scholars identify themselves.

<Figure 1 about here>

Beyond differences that pertain to institutional affiliation, sociologists, as other workers, identify with specific specialties. Specialization not only indicates areas of work, but reaches into more subtle aspects of occupational identity and forms one foundation of the rhetorics and the cultural toolkits that workers engage to separate themselves from other others. A handful of studies examine either the structure of specialization within sociology (Cappell & Guterbock, 1992; Daipha, 2001; Ennis, 1992) or its effect (Karides, Misra, Kennelly, & Moller, 2001; Ward & Grant, 1991) on sociological careers; however, these two literatures remain disconnected. Research on the structure of specialization most often uses data on topical and methodological research areas to uncover the multidimensional nature of specialization. From this perspective, structure is generated by the overlapping of specialty areas. Two areas are connected if a scholar claims to be interested in them both. Using clustering techniques, for example, Ennis (1992) finds distinct cluster areas, such as Deviance and Control, Political and Macrosociology, and Theory and Culture, within sociology. These specialty clusters structure the sociological field beyond singular specialty areas. This structuring is consonant with Fine's (1996) observation that occupational identities are networked and bundled. Occupational identity operates multidimensionally.

Research on the effect of specialization consistently uncovers the role that identity plays in sociology and provides evidence that the distribution of specialty areas is gendered. Women, for example, are more likely to study gender (Ward, Gast, & Grant, 1992). This distributive effect may have significance to the publication process (Karides et al., 2001). This research accounts for specialization singularly, which begs the question: what role does the structure of

specialization play in the publication process? Specialization in employment, like other forms of identity, is more precisely conceived as multidimensional. In many occupations, workers specialize in numerous diverse tasks. The sociological profession is no different. Indeed, sociologists do not merely specialize in one topic, but specialize in multiple topics, methods, and theories. For instance, sociologists who study gender using qualitative methods from a Marxist perspective are likely to be quite different from those that study gender using quantitative methods, grounded in a rational choice perspective. What are the consequences of this structured form of identity for academic careers?

Status Dynamics and the Role of Publication

A significant body of research describes the role that cumulative advantage plays in the perpetuation of inequality (see Diprete & Eirich, 2006, for a review). Grounded in Robert Merton's research on science, the theory of cumulative advantage advances the notion that an individual's relative position in a hierarchy is a resource that influences one's future position (Merton, 1973). When considering status and gender inequality, the persistent effect of gendered status hierarchies, whereby women are often on the periphery (Vallas, 2003), translates into differential rewards to the disadvantage of female workers. For example, Maume (2004a) finds that the glass ceiling for managers increases over the life course: The gap between men and women in the probability of attaining managerial status increases over time highlighting the maintenance of status orders and the importance of early career opportunities.

Within academia, publication serves as a fundamental and essential status-based sorting mechanism. The frequency and visibility of publication – where manuscripts "land" – play a prominent role in the job offers and promotions that shape academic careers (Grant & Ward,

1991). What role, if any, does gender play in the publication process that in part grounds the status hierarchy in academia through mechanisms of cumulative advantage?

Previous research has offered thorough exploration of the persistent effect of gender — where women experience a negative sanction — in the frequency of publication or the "productivity puzzle" (Cole & Zuckerman, 1984; Xie & Shauman, 2003). Less is known, however, about the effect of gender on the visibility of publication. Does a "prestige problem" mirror the known "productivity puzzle"? Given the increasing importance that the quality of a scholar's publication record plays in the academic reward system a scholar's acceptance into a prestigious journal is a first step in advancing within the academic status hierarchy.

From Cole and Zuckerman's (1984) examination of the "productivity puzzle" to Xie and Shauman's (2003) comprehensive analysis of scientific careers, research has illuminated many factors affecting why female scientists, on average and across disciplines, publish less than their male counterparts. Yet few studies explore the relationship between gender and elite publication – what I call "the prestige problem" – despite evidence that publishing in elite journals has significant impact on academic career trajectories, professional visibility, and occupational rewards (Grant & Ward, 1991). Similar to research on stratification within authority positions (e.g. McGuire & Reskin, 1993; Ridgeway, 2002), the increased presence of women within the sociological field does not guarantee equal acceptance into the most visible sociology journals. Acceptance into these journals can change academic opportunities and, thus, careers. Because quality and quantity are intertwined, factors that influence productivity likely influence prestige as well.

Net of human capital effects, numerous scholars have hypothesized that significant generational differences result from the growth of women in male-dominated occupations with

the more recent cohorts of female employees benefitting from occupational desegregation. This cohort effect hypothesis remains theoretically contentious for several reasons. First, this hypothesis may underestimate the role discrimination continues to play in the workplace.

Second, and in a similar fashion, the cohort effect hypothesis may overestimate the relatively recent strides made by women in the face of often hostile opposition. The empirical evidence, in fact, mirrors this disagreement with many scholars finding little or no cohort effect (e.g. Maume, 2004b; Prokos & Padavic, 2005), others finding significant cohort effects (e.g. Blau & Beller, 1988; Morgan, 1998; O'Neill & Polacheck, 1993), and a small proportion finding relatively mixed results (e.g. Bruckner & Aisenberry, 2005).

Consistent with arguments focusing on "social closure" (Tomaskovic-Devey, 1993) and similar to other occupations (Kanter, 1975; Thierry Texeira, 2002), many women likely experienced resistance during the initial influx of women into academic fields, and sociology specifically, during the 1970s. Recent cohorts of female sociologists with access to mentoring from these path-breaking women – female mentors who have risen in the occupational hierarchy, participated in the review process, and gained professional footing within the field (Ward & Grant, 1985; Grant & Ward, 1991) – might experience the publication process differently than the path-breaking cohort did (Ferber, 1988). Specifically, the mentoring process may benefit the recent cohort of scholars and increase the quality and quantity of publishing opportunities. The process of scientific publication provides an important, yet under-explored arena for examining generational differences in order to test the cohort effect hypothesis.

Potential cohort effects speak to the availability of important relationships in employment, such as mentors, but do not speak to the power of these relationships. For some time, sociologists studying work have shown the significance of social networks in situations as

diverse as job searches and promotions (Granovetter, 1985; Kanter, 1977b; Lin, 2000; Padavic & Reskin, 2002). Collegial networks provide invaluable sources of support, opportunity, and also introduce workers to workplace standards through informal sanctioning (McGuire, 2007; Osnowitz, 2006): Similarly, we have known for some time that collegial networks in science through co-authorship, institutional affiliation, and so forth affect the development of new ideas, which obviously plays a role in scientific careers (Crane, 1972).

As an indication of the types of scholars with whom one works, coauthorship networks connote one aspect of the workplace network in science that has implications for the maintenance of status hierarchies. Yet, little research on coauthorship networks has focused on the relationship between these important ties, occupational identity, and inequality in science (Park, 2007). Moreover, conclusions drawn from the available research is noticeably mixed. Moody (2004) finds that the female sociologists are strongly integrated into the core of the coauthorship network, which suggests positive conclusions regarding the place of women within this aspect of the research field. Ward and Grant (1991) uncover a less promising pattern – one wherein women coauthor more often than men, but in less visible outlets. Occupational identity might confound conclusions made about larger coauthorship trends by mediating the effect of collaboration within prestigious publications.

Scholars' occupational identity likely influences acceptance into the most visible journals. I expect cohort-based and network factors to explain a large portion of the prestige problem when controlling for individual attributes. Women in the most recent cohort likely have less of a disadvantage in prestigious publication than more senior scholars. Female sociologists are also likely to benefit from coauthorship. However, as Leahey (2006) suggests, specialization is a "missing link" within stratification research. Much of the current disadvantage experienced

by women in publication is likely explained by differences in occupational identity as seen by the more elusive specialization structure.

DATA AND METHODS

The data analyzed in this study result from the merging of two novel datasets. The first dataset consists of information on the publication history of sociology from 1975-2003 obtained from *Sociological Abstracts*. *Sociological Abstracts* catalogs research in sociology published in a wide array of journals from obscure interdisciplinary journals to the premier journals in the field. Recent research on specialization (see Leahey, 2006) and coauthorship (see Moody, 2004) within sociology reveal the many uses of this form of publication data. The second dataset consists of career information on nearly 2,500 members of the American Sociological Association (ASA) in 2004-05. Only members of ASA who earned PhDs at American universities and had published at least one journal article within the first decade of their professional career were included in the dataset. Limiting the analysis to those who published early in their careers alleviates some concern of selectivity bias. To clarify, due to the focus on ASA members and on those scholars who have published at least one article, this sample represents scholars with a high level of connection to the article-publishing aspects of sociological work.

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² Sociological Abstracts also catalogs sociological books, dissertations, presentations, book reviews, etc. In terms of scientific production, books provide an important alternative to journal publication (for a discussion of these differences, see Clemens, Powell, McIlwaine, & Okamoto, 1995); however, data limitations in this project prevent the ability to analyze the effect of book publication.

³ Data limitations reluctantly prevent the analysis of scholars having earned their degree from foreign institutions or scholars who are not members of the ASA. Obviously, these scholars might differ in substantial ways indicating the international breadth of sociology.

The two datasets were match-merged by name. Match-merging names within two distinct databases presents some concern because authors may occasionally change their name. This happens most frequently with the use of middle initials as Moody (2004) describes. However, unlike Moody's (2004) analysis of tens of thousands of authors, the size of this dataset allows for a manual cross-check of proximate names during the match-merge

In order to test the cohort effect hypothesis, the sample was split in two. The two samples consist of members of ASA who earned PhDs at American universities prior to 1989 (n=1,322) or between 1989 and 1999 (n=1,077). Nineteen Eighty-Nine is a milestone year for the sociologists within this sample as it is the first year that women earn a majority (52%) of the PhDs awarded. Having hypothesized a cohort effect, I also ran multiple models trying to isolate the particular period a cohort effect may have occurred within this data. These tests provide evidence that cohort differences first appeared in 1989.

I use a nested set of logistic regression models to evaluate the role of gender in gaining acceptance into one of the two most prestigious sociological journals – *American Sociological Review (ASR)* and *American Journal of Sociology (AJS)*. Impact factors for 1999 indicate that *ASR* and *AJS* are the two most cited general journals (The Thomson Corporation, 2005). Previous research also identifies the importance of publication in these elite journals (Leahey, 2007). Although particular specialty areas may have more visible publications that are topic-specific, this analysis seeks to locate potential stratifying mechanisms in the most visible

⁴ This milestone roughly corresponds with trends in the population of sociologists as a whole: the gender "tipping point" within sociology occurred in 1988 (National Science Foundation, 2001).

⁵ Annual Review of Sociology possesses the top impact factor in 1999; however, its uniqueness as a review journal prevents its inclusion in this analysis of research production.

discipline-wide journals in order to clarify how stratification occurs across areas of specialization.⁶

Variables and Descriptive Statistics

Table 1 presents descriptive statistics for each of the variables in this analysis. The variables address four general categories derived from the previous research: prestigious publication – the dependent variable – gender, individual and network characteristics, and specialization clusters. The table is divided by the two cohorts offering an initial glance into the differences created in part by time.

<Table 1 about here>

Elite Publication and Gender

The elite publication and gender variables are central. Elite publication captures whether a scholar has published in *ASR* or *AJS* in either graduate school or the first ten years of their career. Having published in one of these outlets is the referent. As a binary variable, it appropriately serves as the dependent variable in the logistic regression models that follow. The mean of 23.5% for the first cohort and 14.7% for the second cohort relates levels of elite publication. This difference illustrates an important characteristic of this data: while scholars in the first cohort had the full ten years of their careers to experience elite publication, some scholars in the second cohort had substantially less due to the point in which the publication data ends. For example, the publication data ends in 2003 and, therefore, accounts for only the first four years of the careers of those sociologists earning their PhD in 1999. The distribution of men and women in the field

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⁶ The models thus follow Shauman and Xie's (2003) general model proposing that intervening variables, in addition to the independent affects of gender, play an important role in the publication process.

for the affected years, however, does not differ substantially from the distribution in preceding years.

Gender is a binary variable with males coded as 1 (60.7% male for the first cohort and 48.2% for the second cohort). This difference likely captures the continued growth of women earning PhDs in sociology from 1975-1999 (Spalter-Roth and Lee, 2000).

Individual and Network Characteristics

As potential influences in elite publication, individual and network effects are difficult to extrapolate from one another. The institutional prestige of a scholar's doctoral program, for example, may indicate one's level of academic success (an individual characteristic), but it also influences opportunities to coauthor (a network effect). In order to account for potential overlap, I include multiple indicators of both individual and network characteristics in this analysis.

I use Burris's (2004) measure of institutional prestige for authors' PhD-granting institutions – a continuous measure.⁷ This measure ranks all PhD-granting institutions within sociology from the highest (94, Wisconsin) to the lowest (1, Georgia State) (first cohort mean=70.1, second cohort mean=69.1). The fact that many authors received their PhDs prior to the construction of the measure in 2004 might appear to be of concern. However, previous research suggests that rankings remain extraordinarily stable over time (Burris, 2004; Keith & Babchuk, 1994 and 1998).⁸

⁷ Supplementary models indicate the superiority of this measure compared to more traditional reputation-based measures of departmental prestige (such as the *Gourman Report* or *US News & World Report* rankings). The measure is correlated with, but unique from the National Research Council's decennial departmental rankings.

The number of previous publications is a continuous variable. The average number of previous publications is 3.9 for the first cohort and 1.5 for the second cohort, a likely product of the decreased amount of time represented in the second cohort.

Years prior to first publication (year of first publication minus year of PhD completion), similar to measures of years prior to PhD completion, serves as a measure of disciplinary age. It also functions as a proxy to control for differences in life circumstances and scholarly ambitions for sociologists (first cohort mean=2.4, second cohort mean=1.1). Sociologists often publish in graduate school and, therefore, this measure's minimum ranges below zero. The difference between the cohorts in terms of mean years prior to first publication likely represents differences in the discipline between the cohorts with an increased dependency on evaluating young scholars through publication and increased publishing opportunities.

I account for formal properties of the structure of sociology by including scholar's nodal degree within the coauthorship network constructed by Moody (2004). Nodal degree is one of the most simple network statistics and also one of the most revealing. Nodal degree captures the number of connections a node has within a network. As Wasserman and Faust (1994, p. 100) state, "The degree of a node is a measure of the 'activity' of the actor it represents."

Coauthorship degree is the number of connections, or unique coauthors, that a scholar possesses. In this sample, the mean coauthorship degree for the first cohort is 5.76, while the second cohort mean is 2.3.

⁸ Ideally, this model would include prestige of sociologists' current institutions as well, but this was unfeasible for two reasons. First, the use-contract between the author and the American Sociological Association for the membership data explicitly states that the author cannot match names to current institutions for privacy concerns. Secondly, the sociologists in this dataset likely work in a variety of institutions – liberal arts, "Research I," etc. – which cannot be consistently compared with any known prestige measure.

The Multidimensionality of Occupational Identity: Sociology's Specialization Structure

No research connects what we know about the multidimensionality of occupational identity
directly with publication outcomes. Consistent with the discussion above, I operationalize
occupational identity through research specialization. Following Daipha (2002) and Cappell and
Guterbock (1992), I generate the specialization structure of this sample of sociologists by
performing a cluster analysis on the matrix of scholars connected to other scholars through
shared ASA areas of research interest – a two-mode network (Breiger, 1974; Wasserman &
Faust, 1994).

Faust, 1994).

Creating a distance matrix, I construct the connections between scholars through research interests in order to create a meaningful network. The strength of the connections between actors is determined by the number of interests that they share. The distance matrix, thus, indicates that actors with similar connections are closer together and those without connections are pushed further away within the network. A cluster routine using Ward's minimum-variance method locates the hierarchical differences between groups of actors within the matrix. Clustering is sensitive to the algorithm used in the analysis. Different clustering routines can generate dissimilar results. Ward's method is one of the most successful and widely used hierarchical clustering routines (Milligan, 1980). Following Hair and Black (2000), I use Ward's routine in order to minimize within-cluster differences and the "chaining" of observations that occurred when other popular routines were tested.

The fact that individuals within the dataset can only be assigned to one specialization cluster, while they can select multiple research interests constitutes one critical advantage of this

⁹ The ASA asks members to list a maximum of four research areas in which they are most interested. The vast majority of scholars list four areas.

approach. I include all 73-research interest areas in the cluster analysis allowing for overlap between numerous groups. I name each cluster by the three most common areas of specialization observed by a simple means test. These procedures generate ten specialization clusters that are entered into the model as dummy variables. "Cluster Ten: Quantitative-Demography-Family" is the reference group. Switching the reference group obviously changes the relationship between the specialization clusters, but does not change the model as a whole. I selected Cluster Ten as the referent in keeping with the common perception that the most visible sociological journals favor quantitative methods.

Figure 2 illustrates the relationship between singular research interest areas and specialization clusters. This figure constitutes the network of the 25 largest specialty areas in the largest specialization cluster (Cluster 6:Theory-Culture-Qualitative). The size of the nodes, representing specialty areas, denotes the frequency of the specialty area. Central nodes within the network are more central to the cluster. Here, we can see that theory, culture and qualitative are central to Cluster 6, in addition to science, applied sociology, and religion. While these specialty areas might logically coalesce, this cluster depicts why specialization should be operationalized multidimensionally as it also includes quantitative, economic, social movements, etc. In fact, if this cluster was extrapolated beyond twenty-five singular specialty areas, nearly all of the 73-areas would be included. Appendix 1 further illustrates this point. Each of the clusters in this analysis is dominated by a handful of specialty areas, yet each cluster is also very diverse.

<Figure 2 about here>

The specialization clusters speak to the qualitative differences between sociologists: scholars who study theory and ethnography may be different than those who study theory and demography. However, specialization clusters do not speak to the location of actors within the

specialization structure. In order to capture this dimension of identity and specialization, I include a measure of typicality based upon the network centrality of the groups to which a scholar belongs. The procedures used to develop this measure are consistent with popular uses of two-mode networks, especially those that examine association memberships (e.g. Cornwell & Harrison, 2004 and Lee, 2007). Here, I construct a network graph of the shared relationships between specialty areas. An extension of the slice seen in Figure 2, this graph depicts the relationships between all 73 of the specialty areas. Two specialty areas are connected if at least one sociologist nominates them both among his/her areas of specialization. Next, I determine the betweenness centrality for each of the section areas. Betweenness centrality is a measure of a node's (in this case a section area's) position within the network. This particular centrality score measures the extent to which a node is between all other nodes in the graph. If a node has a high centrality score than it is said to have a greater likelihood of controlling communication in the network (Freeman, 1979).

Last, I find the average of the centrality scores for the areas nominated by each of the sociologists. While raw centrality scores are indicative of the ability to bridge diverse groups (Everett & Borgatti, 2005), the average centrality score of the groups to which scholars belong captures the opposite - the conventionality of one's groups. Lower scores, for example, identify sociologists who bridge less connected groups. The two cohorts have relatively similar mean average network centrality scores: 84.5 and 84.29, respectively.

RESULTS

Gender Composition and Specialization

The gender composition of specialization provides a cursory glance into the mediating effects of the boundaries that structure scientific work. Figure 3 presents the percentage of female sociologists within each specialization cluster. Moreover, this figure provides an initial glimpse into the critical similarities and differences between cohorts.

<Figure 3 about here>

For example, in the first cohort sex composition is balanced or tips in favor of women in four of the ten clusters. This expands to five clusters in the second cohort, as women dramatically increase their presence in Cluster Seven: Social Psychology-Small Groups-Theory. Interestingly, the four clusters that were balanced or dominated by women in the first cohort become more dominated by women in the second. For example, female sociologists comprise just over 70% of Cluster Two: Gender-Race-Sexualities in the first cohort and comprise nearly 90% in the second. At the same time, the proportion of women in each of the clusters has increased, such as in the referent group Cluster Ten: Quantitative-Demography-Family. This traces the increased proportion of women in sociology more generally witnessed in Table 1 and in the previous literature (England, Allison, Li, Mark, Thompson, Budig & Sun, 2007; Roos & Jones, 1993; Spalter-Roth & Lee, 2000).

The gender composition of specialization clusters and the changes between cohorts provides initial evidence of the factors mediating inequality in sociological publication. The story remains mixed: we see clear evidence of decreased segregation within sociology as a whole, but we also see signs that certain specialization clusters, such as Cluster Two, are being studied almost solely by females.

Gender Gaps and Prestigious Publication

Tables 2 and 3 present the odds ratios for the variables affecting the likelihood of publishing in an elite journal for the two cohorts, from 1975-1988 and 1989-1999. ¹⁰ Publication in elite journals (Table 2.model 1 and Table3.model 1) appears gender stratified according to these baseline models. Males are approximately twice as likely in the first cohort and 50% as likely in the second.

<Table 2 about here>

<Table 3 about here>

Model 2 in each of the tables introduces the individual and coauthorship degree measures and provides strong evidence that the individual factors and the structure of sociology indeed play a role in the prestige problem. Publication in elite journals appears gender stratified when specialization is not considered in the models following previous research on the publication of knowledge work (McNamee & Willis, 1994) and inequality in scientific communities (Long, Allison, & McGinnis, 1993). For example, the variables disciplinary age and the number of previous publications are both negative analogous to the notion that differing styles lead to differing paths of publication. The longer one is excluded from elite publication – either through self-selection or due to the review process – the lower the likelihood that one will gain inclusion. Also consistent with previous research (e.g. Moody, 2004; Ward & Grant, 1991), coauthorship is a statistically significant predictor of elite publication. However, unlike Ward and Grant's (1991) claim that coauthorship is a gendered research style, coauthorship degree does not substantially

¹⁰ These tables present odds ratios derived from logistic regressions to ease interpretability; however, note that when interpreting odds ratios those ratios below 1 are negative effects, while those that are above 1 are positive effects.

affect the role that gender plays within this aspect of article publication. Each additional coauthor increases the likelihood of elite publication in each cohort, but the female disadvantage in each of these models remains relatively stable and significant.

Models 3 in Table 2 and Table 3 highlight the utility of looking at the specialization structure in addition to individual and network effects. These cumulative models deserve closer scrutiny when comparing the evolution of the publication process. First, besides the sex variable, each of the variables in the first two models remains significant. Individual and network effects explain a large portion of the prestige problem as anticipated. However, the addition of specialization clusters helps to clarify what types of scholars are publishing in elite journals beyond these previously considered variables.

First, the centrality of the areas to which scholars belong matters for elite publication. For both cohorts, increases in scholars' average area network centrality score decrease the likelihood of publication. This finding suggests that scholars that connect less typical areas are more likely to publish in elite journals.

Second, relative to those scholars in Cluster Ten: Quantitative-Demography-Family, sociologists are less likely to experience elite publication for both cohorts. This effect is not statistically significant across the board. In this first cohort, clusters with a "social problems" bent, such as Cluster Two: Gender-Race-Sexualities and Cluster Eight: Medical-Mental Health-Aging, are significant, although Cluster Two is only moderately so. Scholars in Cluster Two are approximately 68% less likely to experience elite publication, while scholars in Cluster Eight are 74% less likely when compared to those in the reference group. This is also the case for the second cohort. Scholars in Cluster Two are approximately 71% less likely to publish in an elite journal, while scholars in Cluster Eight are 80% less likely. Recent research on the central issues

of sociological research indicates that sociologists are growing increasingly more interested in social problems research making the increasing disadvantage of these particular specialization clusters within elite publication even more troubling (Moody & Light, 2006).

The fact that Cluster Six: Theory-Culture-Qualitative is significant and negative across both cohorts suggests a stable substantive and methodological disadvantage within these journals. And, mirroring the conclusions drawn from Figure 3, this effect appears to have increased. Assignment to Cluster Six is not significant for the first cohort, while, for the second cohort, members of Cluster Six are 71% less likely to publish in either of these elite journals.

Several specialization clusters do not exhibit this same stability. Through these differences, we can observe shifts in the discipline. While insignificant in the cumulative model for the first cohort, Cluster Five: Race Relations-Education-Demography is significant and negative for the second cohort. In sum, the specialization structure captures intersections between groups that would be cumbersome to capture using popular statistical techniques, such as testing for significant interactions. In this case, we see that the multidimensionality of specialization is statistically relevant and worthy of further exploration in analyses of scientific publication.

How do the individual and network effects and the specialization structure impact gender stratification in publication for the two cohorts? The story becomes relatively clear. Consistent with previous research regarding the frequency of publication (Cole & Zuckerman, 1984), gender impacts the visibility of publication for the first cohort. The addition of the specialization structure measures drastically reduces the effect of gender, yet males are still 50% more likely to publish in elite sociological journals than females. On the other hand, following Morgan (1998), a cohort effect exists in sociological publication. Gender is insignificant in the model predicting

publication for the second cohort of scholars. ¹¹ The specialization structure mediates the gender effect for the most recent cohort.

The effect of specialization appears to be particularly important for gaining access into the top-tier journals. Table 2 in the Appendix offers initial evidence that gender is less salient in predicting publication patterns among those who have already published in a prestigious journal. Analyses predicting the number of elite publications for those at the top indicate that the specialization structure predicts little if any of the variation among scholars. On the other hand, coauthorship degree and its relationship to gender appear to be of most importance. This auxiliary analysis further highlights the unique processes determining first publication in an elite sociological journal: The relationship between gender and specialization profoundly affects access to this mechanism of the disciplinary status hierarchy.

SUMMARY AND CONCLUSION

Gender inequality persists at work. One important source of gender inequality in academic labor is the publication process both in terms of the number of publications, or the productivity puzzle, and the type of publication or what I call the prestige puzzle. In this analysis, I have shown the persistence of the prestige puzzle and described how it has changed over time. Occupational identity is a mechanism through which gender inequality operates within prestigious sociological publication. By viewing the differences between two cohorts in relationship to the likelihood of elite publication, we see that the standalone gender effect for the more recent cohort loses statistical significance once the effect of the specialization structure is taken into account. This

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¹¹ Supplemental analyses indicate that no significant interactions exist between any of the variables constituting the specialization structure or degree of coauthorship and the sex variable.

shift does not indicate a spurious relationship between gender and access to rewards, but rather clarifies the importance of accounting for occupational identity in analyses of the reward distribution process.

Publication is influenced through formal structures, such as the coauthorship network, and informal structures, such as the structure of occupational identity (e.g. Crane, 1972; Karides et. al., 2001; Moody, 2004). However, the nature and development of specialization and, therefore, identity deserves further attention especially as it pertains to questions of causality. Do male and female scholars differentially self-select into specialty areas, are they encouraged by mentors to specialize in different specialty areas, or does discrimination in the early stage of careers result in social closure? Nonetheless, the end result is likely the same, regardless of the causal processes at work. For example, scholars may self-select fields of study that may hinder their acceptance within the larger discipline, while increasing their clout within subfields. This process is likely to be deeply embedded in the social structure in which people work and may further reinforce disciplinary difference. In other words, self-selection out of prestigious general publication, while certainly a reasonable response by those experiencing disadvantage, does not nullify the broad picture of inequality processes within sociology. When disadvantaged actors choose less restrictive paths to advancement, the broader disciplinary or occupational structure still reflects the boundaries reinforcing the status quo based on traditional paths of career advancement.

Future research should explore this process more thoroughly in several ways. First, research should attempt to connect the "pipeline" from the early stages of education to professional outcomes. Following Costello (2005), how do self-selection processes and structural impediments in early stages of one's career effect occupational identity and resultant rewards?

Second, early career decisions likely influence publication processes and need to be explored in greater detail. What processes both agentic and structural lead scholars to choose one type of work or workplace over another? Last, and most important, interventions into the pipeline, especially those that occur in early stages of professionalization, warrant further analysis.

Research on inequality has increasingly focused on the subtle forms of social closure that prevent the amelioration of stratification. This research extends from the evaluation of "soft skills" in hiring practices (Moss & Tilly, 2001) to the use of bureaucratic structures to hide discrimination (Light, Roscigno, & Kalev, 2011) or perpetuate occupational segregation (Huffman, 1995) to how organizational forms may "hide" opportunities for promotion (Smith-Doerr, 2004). The dependent variables in these studies remain consistent with research on more overt forms of social closure: hiring, firing, raises, and so forth. However, scholarship on inequality benefits from the incorporation of more subtle possible locations of closure, such as non-monetary workplace rewards. Finally, contemporary data and methodological innovation increasingly permit the analysis of multidimensional and intersectional relationships between characteristics affecting inequality. Occupational identity, for example, operates both singularly and clusters in patterned and meaningful ways. As a dimension of identity, specialization reaches beyond individual characteristics to the structure of work itself. Thus, the evaluation of these more elusive structures can provide new directions for the analysis of inequality at large.

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Table 1. Descriptive Statistics by Cohort

Table 1. Descriptive statistics by Conort		Cohort 5-1988	Second Cohort 1989-1999		
	`	Standard		Standard	
Variables	Mean	Deviation	Mean	Deviation	
Dependent Variable					
Prestigious Publication	0.235	0.235	0.147	0.354	
Having published in ASR or $AJS = 1$					
The Prestige Problem					
Sex	0.607	0.489	0.482	0.500	
Male=1					
Individual and Network Characteristics					
Institutional Prestige ¹	70.138	23.220	69.140	23.742	
Number of Publications	3.900	4.573	1.477	2.098	
Disciplinary Age	2.408	2.773	1.063	1.784	
Years from PhD to First Publication					
Degree of Coauthorship	5.763	6.650	2.298	2.806	
Expertise Structure					
Average Area Network Centrality	84.495	6.237	84.291	6.708	
Clusters					
Cluster One: Political-Comparative-Economic	0.203	0.403	0.199	0.399	
Cluster Two: Gender-Race-Sexualities	0.068	0.252	0.092	0.289	
Cluster Three: Work-Gender-Economic	0.076	0.266	0.058	0.235	
Cluster Four: Family-Demography-Youth	0.057	0.233	0.079	0.270	
Cluster Five: Race Relations-Education-Demography	0.122	0.327	0.153	0.360	
Cluster Six: Theory-Culture-Qualitative	0.210	0.408	0.210	0.407	
Cluster Seven: Social Psychology-Small Groups-Theory	0.042	0.200	0.037	0.189	
Cluster Eight: Medical-Mental Health-Aging	0.105	0.307	0.080	0.271	
Cluster Nine: Deviance-Criminal Justice-Law	0.064	0.244	0.048	0.214	
Cluster Ten: Quantitative-Demography-Family	0.052	0.222	0.044	0.204	
N	1,322		1,077		

¹ Author's PhD-granting Institution

Table 2. Getting In: Odds Ratios from Logistic Regression Models Predicting Elite Publication, First Cohort (1975-1988)

Variable	Model 1	Model 2	Model 3
Sex	2.049 ***	1.944 ***	1.505 *
Male (Coded as 1)			
Institutional Prestige ¹		1.032 ***	1.031 ***
Number of Publications		0.810 ***	0.805 ***
Disciplinary Age Years from PhD to First Publication		0.819 ***	0.825 ***
Degree of Coauthorship		1.113 ***	1.130 ***
Specialization Structure Average Area Network Centrality			0.974 *
Clusters			
(Referent=Cluster 10: Quantitative-Demography	-Family)		
Cluster One: Political-Comparative-Economic			1.330
Cluster Two: Gender-Race-Sexualities			0.321 *
Cluster Three: Work-Gender-Economic			0.680
Cluster Four: Family-Demography-Youth			0.462
Cluster Five: Race Relations-Education-Demogra	aphy		0.548
Cluster Six: Theory-Culture-Qualitative	0.626		
Cluster Seven: Social Psychology-Small Groups-	0.961		
Cluster Eight: Medical-Mental Health-Aging			0.263 **
Cluster Nine: Deviance-Criminal Justice-Law			0.643
N	1,322	1,322	1,322
Likelihood Ratio Chi-Square	26.8 ***	339.5 ***	387.5 ***

^{*} p<.05 ** p<.01 *** p<.001

¹ Author's PhD-granting Institution

Table 3. Getting In: Odds Ratios from Logistic Regression Models Predicting Elite Publication, Second Cohort (1989-1999)

Variable	Model 1	Model 2	Model 3	
Sex	1.512 *	1.524 *	1.241	
Male (Coded as 1)				
Institutional Prestige ¹		1.037 ***	1.036 ***	
Number of Publications		0.860 **	0.856 **	
Disciplinary Age Years from PhD to First Publication		0.850 **	0.863 *	
Degree of Coauthorship		1.135 ***	1.144 ***	
Specialization Structure Average Area Network Centrality			0.969 *	
Clusters				
(Referent=Cluster 10: Quantitative-Demograph	hy-Family)			
Cluster One: Political-Comparative-Economic			0.733	
Cluster Two: Gender-Race-Sexualities			0.290 *	
Cluster Three: Work-Gender-Economic			0.436	
Cluster Four: Family-Demography-Youth			0.548	
Cluster Five: Race Relations-Education-Demog	graphy		0.393 *	
Cluster Six: Theory-Culture-Qualitative	0.289 **			
Cluster Seven: Social Psychology-Small Group	0.890			
Cluster Eight: Medical-Mental Health-Aging			0.200 **	
Cluster Nine: Deviance-Criminal Justice-Law			0.729	
N	1,077	1,077	1,077	
Likelihood Ratio Chi-Square	5.7 *	93 ***	125 ***	

^{*} p<.05 ** p<.01 *** p<.001

¹ Author's PhD-granting Institution

Appendix 1. Percentage of Prominent Specialty Areas in Specialization Clusters¹

	Specialty Areas (%)									
	Sex and	Race						Social		Historical-
Specialization Clusters	Gender	Relations	Family	Medical	Quantitative	Political	Theory	Psychology	Demography	Comparitive
Cluster One: Political-Comparative-Economic	8.70	3.73	3.11	3.73	8.49	41.41	16.98	1.86	4.14	37.89
Cluster Two: Gender-Race-Sexualities	76.19	12.70	32.80	14.28	4.23	3.70	8.47	8.99	1.06	2.65
Cluster Three: Work-Gender-Economic	39.63	7.93	14.02	6.10	10.37	8.54	1.22	3.05	4.89	5.49
Cluster Four: Family-Demography-Youth	22.36	13.66	88.20	8.70	8.07	1.86	1.24	6.21	50.31	0.62
Cluster Five: Race Relations-Education-Demography	11.04	66.87	1.84	7.06	4.00	12.58	5.83	4.60	21.47	8.28
Cluster Six: Theory-Culture-Qualitative	13.89	11.51	9.07	12.30	5.95	4.56	23.21	8.33	4.56	2.98
Cluster Seven: Social Psychology-Small Groups-Theory	2.53	7.37	26.32	3.16	17.89	2.11	27.37	95.79	1.05	0.00
Cluster Eight: Medical-Mental Health-Aging	12.00	5.78	16.44	75.11	16.89	0.89	3.56	27.56	5.33	1.33
Cluster Nine: Deviance-Criminal Justice-Law	8.09	1.47	0.74	3.68	17.65	2.21	5.88	14.71	2.21	3.68
Cluster Ten: Quantitative-Demography-Family	3.44	14.66	21.55	13.79	93.10	3.44	4.31	11.21	49.12	9.48

¹ Speciaty areas indicate the top 10 most frequently chosen areas by ASA members within the sample

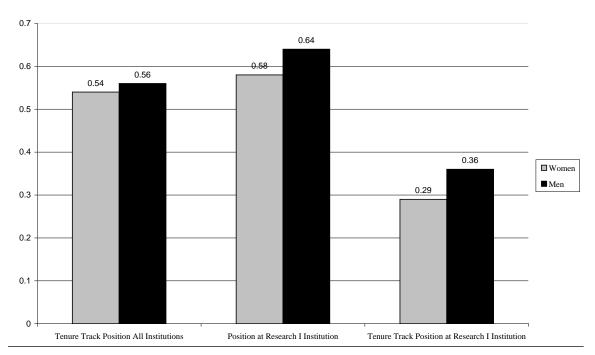
Appendix 2. Stratification at the Top: OLS Coefficients for the Determinants of Number of Elite Publications

	1st Cohort	: 1975-1988	2nd Cohort: 1989-1999		
	Model 1	Model 2	Model 1	Model 2	
Variable	Beta	Beta	Beta	Beta	
Sex	0.122 *	0.086	0.155	0.122	
Male (Coded as 1)	(0.229)	(0.201)	(0.241)	(0.241)	
Institutional Prestige ¹		0.092		0.048	
Ç		(0.006)		(0.005)	
Number of Publications		0.351 ***		0.145 *	
		(0.031)		(0.049)	
Disciplinary Age		0.137 **		0.034	
Years from PhD to First Publication		(0.044)		(0.06)	
Degree of Coauthorship		0.356 ***		0.199	
		(0.013)		(0.05)	
Degree X Sex Interaction				.514 ***	
2 optoo 12 son interaction				(0.058)	
Number of Cases	311	311	158	158	
R^2	0.015	0.263	0.024	0.349	

^{*} p<.05 ** p<.01 *** p<.001

¹ Author's PhD-granting Institution

Figure 1: Gender Composition and Academic Placement



Source: Spalter-Roth and Lee 2000

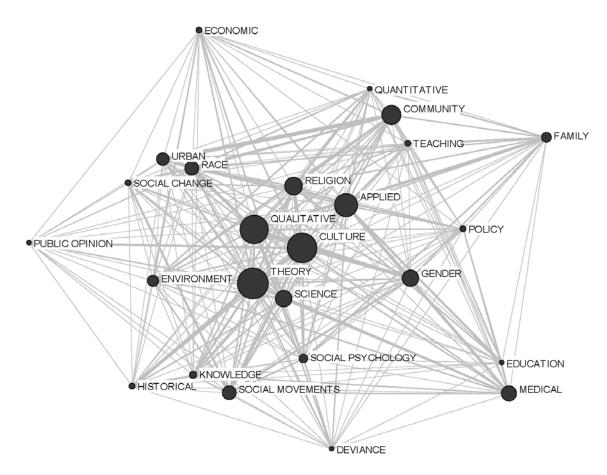


Figure 2: The Relationship between Specialization Clusters and Specialty Areas

Note: This figure constitutes the network of the 25 largest specialty areas in the largest specialization cluster (Cluster 6:Theory-Culture-Qualitative). Node size denotes the frequency of the specialty area.

Figure 3: Gender Composition of Specialization Clusters (Proportion Female)

