

**THE ROAD TO ENTITLEMENT:
THE IMPACT OF ADMINISTRATIVE IMPERATIVES, POWER DYNAMICS AND,
ORGANIZATIONAL DEMOGRAPHY ON THE CREATION OF NEW JOB TITLES**

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ABSTRACT

We examine the relationship between organization-level predictors and the demography of managers in the creation of job titles using longitudinal data on a sample of advertising agencies. Drawing on theories of job title proliferation, we argue that firms create more job titles in response to internal power dynamics and administrative imperatives but that the effect of power dynamics on job title creation is sensitive to who is given new job titles. Factors related to administrative imperatives (firm size, change in size and the average tenure of employees) influence the amount of job title creation independent of who gets new titles. Factors related to power dynamics (managerial mobility and the proportion of women in the firm) influence how many new job titles are created, but these effects differ depending on whether new job titles are created for women versus men or for incumbents versus new hires. Further, we find that administrative imperatives and power dynamics operate as countervailing forces for the creation of new job titles. These findings illustrate the importance of disaggregating the different processes that lead to job title proliferation and attending to the demographic characteristics of recipients of new titles for understanding changes in the job structures of organizations.

Organizational theorists have long understood that the creation of jobs is one of the fundamental activities of organizations. For instance, March and Simon (1958; 1994: 41) asserted that the process of grouping individual tasks into jobs and jobs into larger administrative units was one of the central problems facing organizations, and the task of explaining this process one of the purposes of organizational theory. Jobs serve several important roles in the structure of organizations. First, jobs and the titles associated with them, the administrative labels given to bundles of tasks, in part determine how work gets accomplished in organizations since the technical tasks associated with particular jobs are the very work of organizations. Second, job titles represent the opportunity structure of organizations (Baron, Davis-Blake, and Bielby, 1986); positions within organizations through which people move and to which various individual rewards are attached. For individuals, job titles often determine pay and other non-financial rewards, and may confer status, power, and special recognition to individual position-holders (Baron and Pfeffer, 1994). Organizations may take advantage of this aspect of job titles, using it to attract and retain talent, and to meet organizational and worker needs (Rousseau, 2005). Finally, the ability to create distinct jobs may be crucial to an organization's ability to innovate, adapt, and survive (Staw, 1990; Miner, 1990, 1991; Miner and Haunschild, 1994). Since jobs function as routines within organizations; the existence of a stable set of jobs and the creation of new jobs can enhance organizational and population level learning.

Perhaps because it is of such importance, the creation of new jobs and job titles is an activity of considerable costs for organizations, and is not undertaken lightly. As Stinchcombe (1965: 148) noted, "the process of inventing new roles, and the determination of their mutual relations and of structuring the field of rewards and sanctions so as to get maximum performance, have high costs in time, worry, conflict and temporary inefficiency." Thus, even though the structure of jobs exhibits relatively greater plasticity than other core features of organizations (Hannan and Freeman, 1984: 157), the process of creating jobs is a difficult one as the inertia caused by structural complexity acts to decrease the likelihood of many organizations successfully adapting their structures.

There is abundant evidence that organizations, even those situated in similarly structured organizational fields, differ in the extent to which they create differentiated their job structures (e.g., Baron and Bielby, 1986; Strang and Baron, 1991; Haveman, Swaminathan, and Johnson, 2009). And much of the research in organizational theory on job titles has focused on advancing organization-level explanations for the overall level of differentiation, or the proliferation, of job titles in organizations. By far the dominant explanation for why organizations move toward an ever increasingly detailed division of labor is the lure of administrative and technical efficiencies (e.g., Baron and Bielby, 1986; Miner, 1987). Other explanations for the structure of jobs in organizations depend less on assumptions of rationality. The division of labor, for instance, may reflect interpretations of agreed upon practice, or may be driven by power asymmetries in organizations and the demography of the organization's workforce (e.g., Baron and Bielby, 1986; Strang and Baron, 1990; Baron, Burton and Hannan, 1999). In total, the available empirical evidence suggests that, to varying degrees, all of these factors can drive the level of job title proliferation at any point in time.

But while there is an impressive body of knowledge on the structure of jobs and job titles in organizations, several issues merit further research. One issue is that most studies of job titles have focused on the overall structure of job titles that exist in organizations *at any given point in time* (Baron and Bielby, 1986; Baron, Davis-Blake, & Bielby, 1986; Strang and Baron, 1990) or on aggregated measures of job title diversity (e.g, Baron and Bielby, 1986; Strang and Baron, 1991). There has been far less research on the creation of jobs and job titles in organizations. The research that has been conducted has tended to focus on specialized cases, such as the creation of idiosyncratic jobs and employment arrangements (Rousseau, 2005; Miner, 1987) or on individual job sculpting and crafting (Bell and Staw, 1988; Wrzesniewski and Dutton, 2001). This omission is important for both conceptual and practical reasons.

Studies of the structure of job titles tell us little about the processes by which jobs and job structures are created. The emergence of new job titles in organizations provides a window through which to view the broader landscapes of organizational and opportunity structure, and to help to explain

how distinct divisions of labor arise across organizations. The level of job title creation serves as a critical indicator of the extent to which firms are willing or able to alter their structures. Conventional wisdom is that the factors that are correlated with the overall level of differentiation in job titles are also predictive of the rate at which new job titles are created and retained, since the overall level of job title differentiation is a function of the number of titles created and retained in the system. However, the assumption that factors that predict overall proliferation in the same way determine the creation of titles has not been tested. Most of the existing research is cross-sectional, which tells us little about how changes in factors that are associated with job title proliferation influence the dynamics of job title creation (Strang and Baron, 1990), nor about the extent to which organizations with more elaborated job structures continue to create job titles. Thus our first research question is whether the firm-level factors that explain the overall division of labor also explain the patterns of job title *creation*: specifically, do factors related to power asymmetries and administrative imperatives explain the rate at which new job titles are created in organizations?

A second issue is that previous research has tended to neglect the demographic characteristics of job title recipients. While existing research on job titles has examined whether there is variety in the jobs held by an organization's workers (e.g., Baron and Bielby, 1986; Strang and Baron, 1990) and among an organization's management (Baron, Burton and Hannan, 1999; Baron, Hannan and Burton, 1999), it has largely left unexplored the nature of that variety: specifically, whether the number and nature of job titles created differs with the demographic characteristics of individuals to whom job titles are assigned. To the extent that research on job title proliferation has addressed questions around the demographic characteristics of individuals, it has really only attended to one side of the demography issue: how differences in firms' demographic composition relate to differences in the level of job title proliferation.

It is problematic to ignore how demography affects job title creation for two reasons. First, there is considerable evidence that the demographic composition of firms has differential effects on the career outcomes of members of different demographic groups. For instance, the likelihood of men and women being hired or promoted or of exiting organizations varies with the relative number of men and women in

organizations, and the strength of these effects differs for men and women (Cohen et al, 1998; Elvira and Cohen, 2001). Thus it seems likely that individuals' demographic characteristics should matter for other labor market outcomes such as whether they receive new job titles.

A second reason it is problematic to ignore demographic issues when explaining job title differentiation is that there is abundant evidence that how tasks are distributed into jobs depends on the characteristics of those who hold the jobs. The segregation literature suggests that work may be designed specifically around the people who will hold the jobs (e.g., Skuratovicz and Hunter, 2004). Person-specific differentiation may occur at a micro level as jobs are tailored for and by job holders (e.g., Miner, 1987, Bell and Staw, 1988; Wrzesniewski and Dutton, 2001), or at a more structural level as different types of jobs are created or assigned to different types of people based on their demographic characteristics (Skuratovicz and Hunter, 2004). Thus, understanding more about the evolution of jobs and job titles in organizations requires in depth investigation of how the characteristics of individuals for whom job titles are created interact with the organization-level factors that propel job title creation.

As part of our first research question we asked whether power asymmetries within organizations explain the rate of job title creation. As power is often a product of the characteristics of individuals or groups in particular situations, it seems likely that power dynamics will differ across demographic groups within organizations and have differential effects on the creation of new job titles. Thus, our second research question is whether forces driving job title creation differ depending on who gets new job titles: specifically, do the forces related to power asymmetries differ in their relationship to the creation of new job titles, depending on the demographic characteristics of individuals who receive job titles.

A third issue with existing research on job title proliferation is that while there is strong evidence supporting the idea that multiple factors account for proliferation, there has been virtually no research examining how those factors might work in tandem. Conventional wisdom is that the multiple factors such as administrative imperatives and power asymmetries are additive and mutually reinforcing drivers of job title proliferation. But there are limits to how much change organizations can undertake at any one time (Hannan and Freeman, 1977), and high levels of one factor driving job title proliferation might act as

a countervailing force making organizations less responsive to other factors. Research is necessary that examines the joint effects of administrative imperatives and power asymmetries on job title creation rather than simply concluding that these factors associated with the creation of new job titles work in concert

We address these issues by developing and testing theoretical predictions about the role of organizational-level factors in the creation of job titles for people in different demographic groups. Using longitudinal data on a sample of managers in advertising agencies located in the greater New York City area, we focus on the creation of job titles for managers who vary along two demographic dimensions: whether job titles are assigned to incumbents or new hires or to men or women.

The work of managers provides an appropriate window through which to investigate these issues. The people holding managerial jobs are likely to have significant influence over the operations of the organizations for which they work and so structural changes in management jobs have organization-wide structural implications. Managers are responsible for organizational performance so understanding how their jobs are created and altered is important to understand how the organization itself performs. Managerial jobs are also associated with higher levels of rewards and so seem as desirable compared to non-managerial jobs (e.g., Skaggs, 2009). Finally, given the current economic environment, these jobs are of specific interest as the organization of management is a frequent target of attention in times of corporate downsizing and restructuring (e.g., Baron, Hannan and Burton, 1999; Dencker, 2008).

Advertising agencies serve as a rich venue for investigating the theoretical mechanisms underlying the creation of different types of job titles for three reasons. First, advertising agencies are fertile ground for job title creation. Professional service firms, such as advertising agencies, face a myriad of endogenous and environmental forces that can pressure firms into creating new roles, capabilities, and structures. For example, Sherer and Lee (2002) described how in response to the scarcity of junior lawyers emerging from elite law schools, law firms created non-partner-track roles, such as senior attorney and staff attorney to accommodate the need for legal talent. Further, because advertising agencies operate in a creative industry, there are multiple standards agencies can draw upon

for creating and assigning job titles (Robbins, 2002). Thus, creating new job titles is a relatively common tactic advertising agencies use to attract and retain key talent, to meet the needs of organizations and workers (Rousseau, 2005).

Second, because advertising agencies exist in a dynamic and competitive environment, they are exposed to the varying forces to which previous research has attributed the proliferation of job titles. For instance, advertising agencies simultaneously face administrative demands for efficiency and control, technical demands for functional expertise, and internal power dynamics due to the presence of highly autonomous professionals. The existence of these multiple forces makes advertising an excellent setting in which to compare the relative effectiveness of various theoretical predictors on the creation of different kind of job titles.

Finally, advertising agencies present a context in which the structure of work has significant consequences for firms. As with other professional service firms, the key strategic assets of advertising agencies are embodied in individuals' human and social capital rather than in physical assets or production processes (Coleman, 1988; Coff, 1997; Sharma, 1997). Thus, in advertising how work is structured and the job titles that managers hold are critical for organizational functioning.

Our research differs from previous studies on the proliferation of job titles and the creation of idiosyncratic jobs (e.g., Miner, 1987, 1990, 1991) in several important ways. First, as we introduced above, where past studies of job title proliferation have focused on aggregated measures of the job title diversity in place at a given time as an organizational outcome, conditioned on the *static characteristics* of those organizations (e.g, Baron and Bielby, 1986; Baron, Davis-Blake, & Bielby, 1986; Strang and Baron, 1991), we examine the propensity of organizations to create job titles and the non-static organizational conditions and individual attributes that influence this propensity. This answers the calls for more work exploring the determinants of job title creation (Baron and Bielby, 1986) and for researchers to consider more seriously the very basic relationship between the organizing of work and organizations (Barley, 1996; Barley and Kunda, 2001; Lounsbury and Kaghan, 2001).

We also differ from past research in that we examine job title creation among a set of organizations engaged in similar activities over a period of time. Past empirical work has focused on the creation, alteration, and proliferation of jobs in a single, large organization (e.g., Miner, 1987; Strang and Baron, 1990) or organizations engaged in vastly different work and located in different organizational environments (e.g., Baron and Bielby, 1986; Baron, Burton and Hannan, 1999). By restricting our study to organizations in a single industry over a period of thirteen years, we are able to control for the institutional and market environments and focus explicitly on how organizations in similar environments differentially restructure their own sets of job titles in response to internal conditions.

We also contribute to research in organizational demography by examining a previously neglected labor market outcome for individuals, receiving new job titles, and the propensity of firms to confer these outcomes on individuals from different demographic groups as a function of their relative social positions in their organizations. This stands in stark contrast to a strict Weberian perspective, where positions in organizations are created separate from the individuals who hold them. Thus, we seek to demonstrate how the formal structure of organizations is influenced by its social structure, and that individuals receive differential access to new positions depending on their social positions.

Finally, past research has identified multiple drivers of job title proliferation (Baron and Bielby, 1986; Strang and Baron, 1990) treating them as independent forces acting on organizations. But forces that drive job title proliferation are not completely independent. Organizations are somewhat limited in their capacity to undertake and absorb change suggesting that there may be boundary conditions to the effects of forces for job title creation. In this study we explore the interplay between the various factors driving the creation of job titles and how the interaction of these forces uniquely contributes to or impedes job title creation.

In the next section, we discuss the conceptual mechanisms and develop hypotheses about the causes of job title creation. We then describe our setting, data, and the different categories of job titles that are created. After presenting our results, we discuss the significance of our findings for research on the creation of job titles and the structure of organizations more broadly.

Job titles and job title creation

Job titles simultaneously serve a number of functional and symbolic purposes for audiences inside and outside of organizations. They represent the formal structure of organizations, marking the territories and / or responsibilities of the managers who assume these roles. Job titles facilitate communication internally and externally. For employees, job titles provide important signals about how the organization views them and values their work (Baron and Pfeffer, 1994), and help them understand which other organizational members are responsible for performing different tasks. Externally, the labels assigned to jobs provide an organizational language (Meyer and Rowan, 1977: 349) that can be used to communicate to external stakeholders the activities that go on in organizations and the locus of responsibility for organizational actions. Robbins (2002) finds that distinct job titles within organizations typically are associated with distinct amalgamations of work and that similar job titles are associated with similar kinds of work.

Creating new job titles signals both past and planned changes in organizational structure or processes. For instance, the creation of a new job title may formalize changes that have already taken place in organizations through the accretion of tasks into existing jobs (Miner, 1991), such as managers, over time, having taken on roles or responsibilities that were outside the formal requirements of their particular job. In such cases, creating a new job title affords legitimacy and recognition to the newly combined set of tasks and signifies that the set of tasks are a part of the formal organizational structure. Alternatively, a job title may be created as an empty slot that will later be used to fill an organizational need independent either of the specific person who will fill the job or of pre-defined tasks already being performed by others within the organization (Miner, 1991). These placeholder job titles represent anticipated changes in the formal structure of organizations. Once created these new job titles become tangible; various rewards and perquisites are attached to job titles which are then assigned to real people who perform real tasks. For both past and planned changes, the use of new job titles represents change to existing organizational routines (Feldman, 2000; Feldman and Pentland, 2003).

There is often considerable diversity in the types of new job titles that are created. New job titles vary in how significant of a change they represent for organizations. Some titles will be completely new to an organization. Completely new job titles may indicate the creation or acquisition of new organizational capabilities or responsibilities, horizontal demarcations between managers' functional or divisional responsibilities (e.g., People Manager, Director of Fun) or vertical distinctions (e.g., Senior Vice President, Executive Vice President) that are created when new layers are added to an organization's hierarchy (Baron and Bielby, 1986). These new jobs and titles are created to capture work competencies that would not easily fit into the existing structure of job titles, and as such, represent a fairly dramatic change for the organization. A recent example from the popular press illustrates this. In 2009, President Obama created the position of Chief Performance Officer in his administration to help improve government efficiency and reform budget practices. He did so because he did not believe that responsibilities and competencies to provide oversight of these issues at a high level were associated with any existing governmental position. While this title existed in other organizations, it was new to the federal government.

Other newly-created job titles are unique combinations of job titles that are already in use in an organization (e.g., VP *and* Comptroller) or are elaborations of existing titles that specify the domains of an individual's work, based on functions, products, clients, or physical location (e.g., VP of *Human Resources*, VP of *Northern California*). We argue that such job titles represent a less significant change for organizations. These combined job titles signify horizontal distinctions that demarcate differences between jobs occupying the same level within a hierarchy (Baron and Bielby, 1986). For instance, President Obama also recently created the position of Assistant to the President for Energy and Climate Change. While the title of Assistant to the President already existed in the President's administration (e.g., Assistant to the President for Domestic Policy), one designating this particular area of responsibility did not.

Creating job titles that are completely new to organizations is likely to impose greater costs in terms of liability of newness than creating new job title combinations. Completely new job titles may be

closer to an organization's core and are more likely to fundamentally change the way work is done in organizations. There may also be greater risks for the jobs themselves. Miner (1991), for instance, demonstrates that a non-trivial proportion of newly created jobs vanish from organizations and those that are novel are the most likely to vanish. Though we do not theorize that the processes underlying the creation of job titles will differ for completely new and combined job titles, we use this distinction below to qualitatively understand the patterns of job title creation we observe in our research setting.

Mechanisms of job title creation

As we discussed above, past research on the proliferation of job titles provide several interrelated organization-level explanations for the existence of differentiated job titles (e.g., Baron and Bielby, 1986; Strang and Baron, 1990, Baron, Burton and Hannan, 1999; Baron, Hannan and Burton, 1999). One set of explanations is related to technical and administrative imperatives; job title proliferation increases the efficiency of organizations by specializing and differentiating among activities. It also provides an effective means for organizations to gain and maintain control over employees (Baron and Bielby, 1986). Another explanation is that job title differentiation is related to the power of organizations and the people they employed. A detailed division of labor helps satisfy the interests of different constituencies in organizations, with decisions about the organization of work being the result of political battles between groups who seek to preserve their power. Finally, institutional and market environments are drivers of job title differentiation as organizations seek to, respectively, preserve legitimacy to their constituencies and cope with environmental complexity by increasing internal complexity.

We focus on administrative imperatives and power-dynamics as drivers of job title proliferation. We argue that these explanations for differences in the level of job title proliferation can be extended to explain differences in the propensity to create new job titles across organizations—one of the underlying processes leading to overall job title proliferation. We make the assumption that completely new and combined job titles are created for reasons related to both administrative imperatives and power differentials. This is consistent with the available evidence suggesting that horizontal and vertical job title

proliferation occur in similar ways (Baron and Bielby, 1986; Strang and Baron, 1991). However, we expect that power differentials are likely to vary across potential recipients of job titles. Individuals, by virtue of their social position in firms, are likely to wield varying amounts of power compared to their employer and other employees. New employees at the time of their hiring, and incumbents at the time of their promotion, for instance, are likely to have sources of power available to them that other organizational incumbents will not. Similarly, men and women are likely to differ in their level of power as a function of their numerical representation within the organization (Kanter, 1977).

Below we develop specific hypotheses about each of these factors and the creation of new job titles, how factors related to power dynamics will differ depending on whether new hires or incumbents and men or women get the new titles, and how differences in power dynamics and administrative requirements might be observed. We then develop hypotheses about how administrative imperatives and power dynamics jointly operate on the propensity of organizations to create new job titles.

Administrative Imperatives. The dominant explanation used to account for the structure of job titles in organizations is technical and administrative imperatives. Organizations maintain more differentiated job structures because the efficient and effective performance of work demands them. One demand concerns matters of scale and scope; the greater the volume and range of activities performed by organizations the more a differentiated and specialized structure is necessary to effectively manage the operation (Baron and Bielby, 1986). Another administrative imperative comes from the need to gain control over workers. A greater division of labor can be seen as an efficient way to exert control over workers; if workers are given distinct job titles, it may be less likely that they will see themselves as similar and unite together against management (Baron and Bielby, 1986).

Following from the arguments about scale and scope, one measure of administrative imperatives is firm size. Organizational size can have opposing effects on the likelihood of firms using new job titles. On the one hand, a more detailed division of labor is typically associated with larger organizations. Large employing organizations have better-developed internal labor markets – hierarchically arranged jobs, few entry ports at the bottom, promotion from within, and structured career paths where firm-specific skills

are developed – than do small organizations (Stolzenberg, 1978; Granovetter, 1984; Pfeffer and Cohen, 1984). Further, large organizations are likely to have better developed human resource systems and thus resources to maintain a larger number of jobs. Larger organizations are also likely to have a greater need for more differentiated structures than small organizations with greater variation in the work done that gets done, meaning that there is a potential for efficiencies to be gained through more specialization in job functions and thus the use of more new job titles. For these reasons we expect that new job titles would be more likely to arise in large organizations. This argument is consistent with Baron and Bielby (1986) who find that size is positively associated with the proliferation of job titles.

The positive relationship between organizational size and the use of new job titles, however, is likely to be nonlinear. At some point, there will be diminishing returns to increased specialization or the increasing division of work. Larger organizations are likely to have more incumbents doing identical work, making job differentiation more difficult and less necessary. Further, firm size is associated with greater structural inertia and a reduced ability to make changes in an organization's structure such as creating new job titles (Hannan and Freeman, 1984). Finally, the largest firms tend to have the most developed bureaucracy (Weber, 1978) and more rules governing processes such as job title creation. In general, large organizations are likely to be governed by a more rational order than small firms (see Miner, 1987 for related arguments). Based on the diminishing returns to size that we have described, we predict:

Hypothesis 1: The number of new job titles created will increase with organization size but diminish beyond a certain point such that there will be an inverted-U relationship between firm size and the number of new job titles created.

In addition to size, we argue that two other organizational characteristics are indicative of administrative imperatives and thus lead to the creation of new job titles: organizational growth and average managerial tenure. Organizational growth is likely to have a strong effect on the administrative demands of firms. As organizations grow new and existing businesses, there is likely to be a greater need for increased managerial oversight, often requiring a greater number of managerial positions. Growth

can lead to elaborations of existing job titles as increasing scale necessitates subdividing tasks and responsibilities among managers. Growth can also lead to an increase in the number and type of functional roles in organizations as managers must now perform functional roles that were not done previously. Thus, as firms grow they will be more likely to create new and perhaps idiosyncratic jobs to handle new work (Miner, 1987). Consistent with this, Baron, Burton and Hannon (1999) provide evidence that firm growth in terms of the number of employees relates to proliferation of job titles for senior management. Therefore, we hypothesize:

Hypothesis 2: The number of new job titles created will increase with organizational growth.

Finally, organizations with longer tenured managers are likely to face fewer demands for administrative control. Longer tenure is evidence of good fit between employees, their jobs and their organizations. Employees with better fit on all of these dimensions are likely to be more productive (e.g., Hoffman and Woehr, 2005; Jovanovic, 1979), which suggests that changes in the structure of jobs would not be necessary and might even be counter to efficient operations. Indeed, managers with longer tenure are likely to be comfortable with their current jobs and less likely to seek change within them. In contrast, organizations with lower average managerial tenure are more likely to exert control over, to reward and to better utilize their managerial workforce. Lower tenured managers are likely to be interested in developing or establishing career paths. Organizations with lower-tenured managers are more likely to assign new job titles to managers in order to direct their attention and effort. For these reasons we predict:

Hypothesis 3: The number of new job titles created will decrease with increases in average managerial tenure.

Our predictions about the effects of administrative imperatives on job title creation do not differ depending on the recipient of new job titles. Incumbents and new hires and men and women will be equally likely to get new job titles in response to technical and administrative demands. However, in the section below we argue that power asymmetries are likely to have differential effects for men and women, or for incumbents and new hires.

Power Dynamics. Administrative and technical demands are but one reason underlying the creation of job titles. The creation of job titles can also be driven by the power dynamics within and between groups of managers and the organization. Power asymmetries between demographically-different groups of managers or between managers and their organizations create an arena in which job titles may be used for negotiation or other attempts to stabilize or redistribute power. Power dynamics are likely to occur in organizations between members of different social groups who engage in status contests, leading organizations to use job titles as a mechanism for preserving or establishing status and identity differences between members of different social groups. These arguments, that power dynamics play a separate role from administrative imperatives in the proliferation of job titles are consistent with Baron and Bielby (1986) who argued that greater proportions of professional, technical and managerial workers and the existence of specialized personnel roles in organizations led to more job title proliferation. In part, this occurs because members of higher status groups use differentiation to reinforce their own power because people who are not members of the higher status groups are creating their own system of distinctions.

A related argument about how power dynamics influence job title creation concerns employee power with respect to the organization; situations where employers attempt to compensate for having less power or where employees attempt to exploit having more power. Employers in relatively weak positions may use job title differentiation as a way to reward and thus attract and retain employees. Managers in relatively strong positions may be more effective in negotiating for special concessions such as job responsibilities and titles (e.g., Rousseau, 2005). Such power dynamics are most likely to play out around changes in the employment relationship, such as when managers are hired or promoted.

Sex Composition. Power dynamics exist between men and women in organizations as a function of the gender composition of firms. Baron and Bielby (1986) and Strang and Baron (1990) argued that when there is a relative balance of men and women employed in an organization, more job titles were likely to exist to allow for the continued segregation of men and women into distinctly male and female work and that more differentiated jobs were more likely to go to those with more power. Evidence on the

effects of gender composition on the proliferation of job titles is conflicting. Strang and Baron (1990) found that when there was more balance in the proportion of women within work roles and occupations in the California Civil Service there was greater division of labor than in either male or female dominated occupations. In contrast, Baron and Bielby (1986) failed to find support for their prediction that fragmentation would be highest for intermediate percentages of women in an organization. Baron, Burton, and Hannan (1999) found that firms with fewer women one year after their founding ended up with greater job title proliferation for top management.

These inconsistencies might be reconciled by looking more directly at who gets the job titles in question: e.g., do newly created job titles go to men or to women. Employees in higher power groups are more likely to have access to differentiated jobs than those in lower status groups (e.g., Baron and Bielby, 1986). Building on these ideas, Baron and Pfeffer (1994) argued that members of the more powerful in-groups would be the most likely to be found in single incumbent professions as in-group members are more sensitive to finer distinctions. They show that white males are in fact more often found in single incumbent jobs since men generally are the majority members and so are more powerful in the workplace. In firms that employ more women, however women also begin to gain access to power (Kanter, 1977) and become part of their own in-group. Greater proportions of women allow women managers to build same-sex alliances, and build coalitions for social support, making women more able and willing to wield power in the workforce. As a result in firms with proportionately more women, we expect women to be more likely to receive newly created job titles. The pattern for men, however, will differ in response to increases in the proportion of women. At low levels of female representation, men may respond to the increased presence of women by seeking to differentiate themselves with distinct job titles. These distinct titles would allow them to preserve their status. Such effects are likely to reach a peak at fairly balanced proportions of women but once women pass a mid-point in terms of representation, men may lose power and thus be less likely to receive new job titles. Following, these arguments we predict:

Hypothesis 4a: The number of job titles created for women will increase with increases in the proportion of women managers.

Hypothesis 4b: The number of job titles created for men will have an inverted U-shaped relationship with the proportion of women managers.

Mobility. The movement of managers in and out of positions in firms is likely to be related to the creation of job titles for incumbents and new hires for several reasons. Managerial mobility can foster changes in job structures very directly by changing the existing match between people and tasks and thus necessitating the restructuring of work. Beyond such structural explanations of relationship between mobility and the creation of job titles, the movement of managers is both indicative of certain types of power dynamics and a source of these power dynamics. Managerial movement out of, within, and into organizations can serve as a measure of the degree to which power dynamics exist within organizations and in some cases actually alter power dynamics within organizations. Patterns of mobility can also serve as an indicator of a firm's competitive position, especially in managerial labor markets.

One variation on how power dynamics might operate in the creation of job titles concerns the relative power or status of an organization compared to other organizations. Organizations that are in stronger positions may have less need to create new job titles as they are able to offer other rewards to their employees, such as better pay, more job security, and a better overall work environment. In short, the "better" the organization, the less likely they will be to create new job titles. Consistent with this argument, is Phillips (2001) promotion paradox, where lawyers who work in law firms that are in weaker competitive positions relative to their peers, have a higher likelihood of promotion. One measure of the perceived quality of an organization is the stability of its internal labor markets, or how much turnover it is experiencing. Higher rates of turnover are likely indicative of organizational problems whether turnover is voluntary or involuntary. If the turnover is voluntary, employees may be dissatisfied with their work and workplace and seek better opportunities. Managerial exit may provide a signal to decision-makers that managers are dissatisfied and that there may be a need to upgrade managerial jobs or restructure job titles. Involuntary turnover may be indicative of problems in managing performance at the individual and organizational levels. The effect of managerial exit on the creation of job titles will be strengthened by another mechanism related to turnover. Higher rates of turnover are likely to spur new

job title creation as organizations consolidate and reassign job responsibilities to remaining managers. This consolidation process is likely to result in new job titles to reflect these new responsibilities. New job titles may result from organizations using job titles as rewards to retain incumbent managers in the face of turnover. For all of these reasons, we predict:

Hypothesis 5: The number of job titles created will increase with the number of managerial exits.

One might argue from our above discussion that it is incumbent managers who are likely to receive new job titles following managerial exit as firms redistribute tasks to other incumbent managers. However, we do not expect the effects of exit to differ depending on the recipient of the new job titles as both incumbents and new hires are likely to be in positions of more power with respect to an organization experiencing higher amounts of turnover and so both are more likely to get new job titles.

Managerial mobility may also affect power dynamics by altering the arena in which negotiations over job titles occurs, providing more power to some managers than to others. Compared to situations where there is little mobility and managers have limited power to make demands on their employers, periods of high mobility create situations in which managers are better able to wield power over their employers and so be more likely to seek unique arrangements. For instance, managers have the power and ability to negotiate their work arrangements upon first entering an organization, when employers are trying to attract them to their organization (e.g., Rousseau, 2005). When organizations are engaged in greater amounts of managerial hiring, this signifies a greater need for managers and creates a situation where employers may be more likely to make concessions such as giving new titles to managers who are being hired. There is empirical evidence to suggest that unique job titles can be used as an incentive to attract potential managers to organizations or to new positions within organizations (Baron and Pfeffer, 1994). New job titles confer status, prestige, or distinction that can overcome the reluctance of managers to accept positions. For instance, re-titling positions from conventional to novel titles, such as Human Resource Director to Director of People Management, or Director of Research and Development to Chief Innovation Officer, is one tool to attract high quality candidates who otherwise might decline the position. Similarly, when organizations engage in greater numbers of promotions, signifying a greater need for

managers to take on new responsibilities, managers are in a stronger position to negotiate new, differentiated, job titles as a form of reward and to create status distinctions, as an alternative to simply being promoted into existing job structures. In contrast, when organizations issue fewer promotions, managers have less leverage with which to negotiate individualized arrangements.

Our logic about managerial mobility and negotiating power suggests that new job titles are likely to be given directly to individuals who are in the strongest bargaining positions. In firms that are doing more hiring, newly-hired managers are likely to be more powerful than incumbents since they are the ones in position to negotiate the terms of employment. Thus, we expect that new job titles are likely to be created for *newly-hired managers* when organizations do extensive hiring but would expect to see few new job titles resulting for incumbents in response to hiring. In firms that are doing more promotions, it is incumbent managers that are in the position to negotiate new job titles. In contrast, newly hired employees, in the face of extensive promotions, are likely to receive few new job titles in the organization's internal labor market. Following the logic about power dynamics and hiring and promotions, we predict:

Hypothesis 6: The larger the number of managers hired, the greater the number of new job titles created for newly-hired managers. Number of managers hired will not affect the number of new job titles created for incumbent managers.

Hypothesis 7: The larger the number of managers promoted, the greater the number of new job titles created for incumbent managers. Number of managers promoted will not affect the number of job titles created for newly-hired managers.

Joint Effects of Administrative Imperatives and Power Dynamics. To this point we have argued that administrative imperatives and power dynamics are independent determinants of the creation of new job titles. We now examine how these two sets of forces jointly operate to influence the creation of new job titles in organizations. One possibility is that the combination of administrative imperatives and power dynamics increases the likelihood of organizations creating new job titles, either because these forces create additive pressures on organizations or because they are mutually reinforcing such that an

organization's exposure to one set of pressures to create job titles increases its susceptibility to other types of pressures. However, we argue that administrative imperatives and power dynamics are likely to operate as countervailing forces. When there are strong forces for job title creation coming from administrative imperatives, the effects of power dynamics are likely to be experienced less strongly. Conversely, when forces for job title creation from power dynamics are strong, the effects of administrative imperatives are likely to be experienced less strongly. We draw on two arguments to support our contention.

First, theories of structural inertia suggest that organizations have a limited capacity for the amount of change they can undergo at any one time (Hannan and Carroll, 1992). Change processes put organizations at risk, and the greater the change organizations attempt the greater its difficulty and the larger is the risk to organizational performance and survival. Even changes such as restructuring managerial responsibilities or incorporating new managerial skills and capabilities require the allocation of scarce financial and human resources for change to successfully occur. As a result, when organizations are responding to one set of pressures for creating new job titles, such as administrative imperatives, they may be more resistant and less likely to respond to the pressures from power dynamics. A related argument is that structural inertia tends to make firms less flexible and thus they are less likely to undertake and implement change. Since the same forces that create administrative imperatives, such as size and growth, also tend to promote structural inertia (Hannan and Freeman, 1984; Penrose, 1995), increases in administrative imperatives are likely to increase organizations' resistance to pressures to change from power dynamics.

Second, power dynamics in organizations influence the creation of new job titles predicated on managers having the ability to exercise power or make demands to preserve or gain social status. The extent to which managers can wield power is likely contingent on the relative power of employers. For instance, large, growing organizations tend to be more powerful and influential than small, stable organizations. Thus, organizations that are large and growing are in strong negotiating positions relative to managers and are less likely to cede to managerial demands for new job titles. Similarly, organizations

with longer tenured managers tend to have relatively less power than their workforce and therefore are more susceptible to power in status demands. Taken together, our arguments about inertia and power suggest that stronger administrative imperatives are likely to dampen, and be dampened by, the effects of power dynamics on the creation of new job titles. Thus we predict:

Hypothesis 8: The effects of power dynamics and administrative imperatives on the number of new job titles created will be countervailing; the effects of power dynamics on the number of new job titles created will decrease with increases in administrative imperatives, and the effects of administrative imperatives on the number of new job titles created will decrease with increases in power dynamics.

DATA AND METHODS

We tested these hypotheses using data on a sample of advertising agencies headquartered in the greater New York City area during the period 1986 and 1998. Advertising is an appropriate setting for studying the creation of job titles for several reasons. First, because advertising is a complex professional service (Mills and Margulies, 1980), managers in most advertising agencies tend to have highly differentiated functional roles (Ibarra, 1992; Pattis, 1996) that are clearly delineated using job titles. Thus, as advertising agencies add new, or extend existing, competencies it is likely to be reflected in managers' job titles. Second, the advertising industry operates as an occupational internal labor market (Althauser and Kalleberg, 1981), particularly for firms in a limited geographic region such as the greater New York City area. Because formal career ladders in agencies tend to be relatively short, and advertising professionals are more likely to move up a hierarchy of firms rather than up their employer's hierarchy of jobs, the risk of manager mobility is relatively high, thereby promoting the creation of new job titles.

We obtained annual data on advertising agencies for the period 1986-1998 from The Standard Directory of Advertising Agencies (hereafter, the "Agency Red Book"), the most comprehensive source of information on advertising agencies in the United States. The Agency Red Book contains data on all

firms that are agencies of record for at least one national or multi-state advertiser that spends \$200,000 or more on media per year. The Agency Red Book provides organizational and financial data, the client rosters for agencies, and most importantly identifies the full names and job titles of agency managers.

We used a random sample of 153 advertising agencies headquartered in the greater New York City area as listed in the 1986 Agency Red Book. The sampling frame included all New York City area agencies with gross billings of \$3,500,000 or more for which the names of managers and the agencies' clients were available in 1986. A visual inspection of the data indicated that agencies with gross billings below \$3.5 million were unlikely to report the names of managers or clients. To construct the variables to test our hypotheses we required a minimum of three consecutive years of data, thus we omitted from the sampling frame agencies that did not also appear in the 1987 and 1988 directories. We also excluded from our sampling frame "house" agencies, proprietary advertising agencies established by client firms, reducing our final sampling frame to 261 firms. Because mortality rates of advertising agencies are high, to avoid survivor bias we purposively drew our sample from two subsets of advertising agencies, firms that survived until the end of our observation period and firms that failed prior to 1998.

For each agency we coded the names and exact job titles of every manager listed in the directory, and the characteristics of each agency, annually over the entire observation period or until the agency failed. We used these yearly observations to identify when job titles were created within an advertising agency, and to create histories of the careers of managers and client-agency tie dynamics. Two years of data were necessary to identify when job titles were created and when mobility events occurred giving us a sample size of 1,362 firm-year observations. Missing values on some of the variables reduced our usable sample size to 1,305 firm-year observations.

For the purposes of understanding where in advertising agencies job titles were created, we grouped job titles into a meaningful set of functional categories based on previous research on the advertising industry (Broschak, 2004; Ibarra, 1992) and published industry resources on careers in advertising (Pattis, 1996). We identified seven functional categories: *Administrative* jobs with responsibilities for operating the agency and its internal functioning (e.g., Chairman, Chief Executive

Officer, President, Chief Financial Officer, and any job with responsibilities for accounting, finance, and human resources); *Account services* jobs with responsibilities for coordinating advertising campaigns and being the primary point of contact between the client and agency); *Creative* jobs with responsibilities for developing and co-producing advertisements with clients); *Media* jobs with responsibilities for placing advertisements in media outlets (e.g., Media Director, Media Supervisor, and Media Buyer); *Other boundary spanners* jobs with responsibilities for interacting with third parties but not for day-to-day interaction with clients; *Production* jobs with responsibilities for transforming advertising concepts into tangible products for clients (e.g., Producer, Broadcast Director, Print Production Director, Traffic Supervisor, and Studio Manager), and *Research* jobs with responsibilities for client support functions, in particular strategic planning of client advertising (e.g., Research Director, Account Planning Director, and Strategic Planning Director). An eighth category labeled *Unknown* was created to capture generic job titles (Vice-President, Senior Vice-President, etc...). Three functional categories (Account Services, Creative, and Other boundary spanning) capture exchange managers; those individuals working in jobs closely related to creating advertising and working with clients (Broschak, 2004; Fichman & Goodman, 1996), with the other functional categories representing agency management (Administrative) or back office functions (Media, Production, and Research).

Dependent Variable

Our dependent variable is the number of job titles created in an advertising agency in a given year. We observed considerable variation in the job titles assigned to managers in the New York City advertising agencies. These job titles ranged from being quite simple (e.g., President) to being complex combinations of simple job titles (e.g., Chairman, Chief Executive Officer, President, and Account Executive; or President and Creative Director). We counted every unique combination of titles as a distinct job title and coded a total of 2,566 different job titles across our sample of agencies over the 13 year observation period. Our interest is not in the creation of job titles that are unique to our sample but with the creation of job titles that are new to any of the 153 agencies in our sample. So for instance, a job

title such as Vice-president, Chief Financial Officer may exist in Agency i but it is still new to Agency j the first time it appears in the Agency Red Book for that firm. Accounting for the fact that the same job titles can be used in multiple agencies, we coded a total of 5,957 different job title-agency combinations across our sample of 153 agencies over the 13-year observation period.

We defined job title creation as occurring in year t when a job title existed in agency (A_i) in year $t+1$ but did not exist in that same agency in year t . For each agency we created an indicator variable coded 1 in year t whenever a job title unique to agency A_i appeared in the Agency Red Book in year $t+1$. In any given year agencies may have created multiple unique job titles, therefore we summed the number of job titles created per agency per year. In any instances where more than one manager was assigned the same new job title in a given year, we only recorded one occurrence of that job title creation event. To better understand job title creation in the advertising industry, we distinguish between two different types of job title creation events. *New Job Title Creation* is defined as the creation of job titles that are entirely new to a particular agency, or are the creation of complex job titles where part of a job title is new to an agency but part previously existed (e.g., Executive Vice-president, Creative Director where the position of Executive Vice-president had previously existed but the position of Creative Director is new to the agency). *Combined Job Title Creation* is defined as elaborations of an existing job title (e.g., Vice-president to Vice-president-Finance) or the combination of two or more existing job titles that had previously been separate within that agency. We aggregated the data on job title creations to the firm level for each year. A total of 3,966 job titles were created during the observation period; 2,100 new job titles and 1,866 combined job titles. Thus, 66.6 percent (3,966 out of the total of 5,957) of job titles we observed had been created after the beginning of our observation period. To test the hypotheses that are specific to incumbents

versus new hires and for men versus women, we disaggregated the count of job titles created and performed our analyses on the subsets for that specific group.

Predictor Variables

We measured several variables to represent administrative imperatives. Firm size was measured as the annual gross billings for agencies in the focal year. Size was highly skewed so we used a log transformation before entering it into the analyses. Because we hypothesize a curvilinear effect of size we include both size and size-squared in the models. Firm growth was assessed by the change in the log of billings between time t and $t+1$. Average organizational tenure was calculated yearly as the mean tenure of all of an agency's managers. For managers already employed in 1986, left-censoring is a problem. To account for this, we determined tenure by following each manager's career with their current employer backward in time for a maximum of 10 years. Employment that began prior to 1976 was left censored and tenure clocks were assumed to start in 1975.

We measured four variables related to power dynamics. First, we identified our three types of manager mobility using the names, job titles, and employing firms for all managers reported by the agencies in our sample. Hiring events were coded as occurring in year t when a manager was listed in the Agency Red Book as an employee of the firm in year $t+1$ but was not listed as an employee of the same firm in year t . Exit events were coded as occurring in year t when a manager was listed as an employee of a firm in year t but was not listed as an employee of the same firm in year $t+1$. Promotion events were coded as occurring in year t when managers were observed at one job level in year t but at a hierarchically higher job level in year $t+1$ (e.g., Vice-President in year t and Senior Vice-President in year $t+1$). Job levels in advertising agencies are well-defined making identification of promotion events straightforward. The number of exit, promotion, and hiring events that occurred were summed annually for each agency. A total of 6,521 hiring events (57% men, 43% women), 6,375 exit events (60% men, 40% women), and 2,103 promotion events (67% men, 33% women) were recorded during the observation period. Men and

women were hired and exited roughly in proportion to their representation in the dataset but men were more likely to receive promotions than women. To determine whether new job titles were created for new hires or incumbents we created an indicator variable coded 1 if a new job title was created for managers in the year they were newly hired into an agency and 0 if created for managers who were already employed by the agency. New job titles were split relatively equally between new hires (1,906) and incumbents (2,062) despite the fact that hiring events represented only 21% of the individual manager observations in our dataset.

Second, we assessed the sex composition of agencies as the proportion of managers who were female. We first identified the sex of advertising agency managers using first names. In cases where first names were ambiguous (e.g., Pat) we followed previous research (Cohen et al., 1998; Gorman & Kmec, 2009) and coded sex based on whether the name was more frequently given to girls or boys according to the U.S. Census. A total of 727 managers (8.5%) were coded as having ambiguous names (284 men and 443 women). Of the 8,580 managers in our dataset, 5,109 (59.5 percent) were men, 3,364 (39.2 percent) were women, and 107 managers (1.3 percent) were uncodable due to only their initials being given in the Red Books.

Control Variables

We included a number of firm-level demographic control variables that may be related to the creation of new job titles. First, we included counts of the number of new job titles created in the previous year by each firm. Second, we controlled for the existing complexity in job titles with a count of the number of unique job titles in an agency at the beginning of a given year. Third, we controlled for the number of functions in which each firm had job titles. Fourth, we control for agency age as the number of years since founding because evidence suggests that firm age is related to the proliferation of job titles (Baron, Burton and Hannan, 1999). Firm age is associated with increased structural inertia (Hannan and Freeman, 1989) and has been found to diminish the likelihood of organizational change (Delacroix and Swaminathan, 1991). To control for geographic labor market characteristics we created a dichotomous

variable coded 1 if the agency was headquartered in New York City proper and 0 if located in the New York City suburbs or in other nearby towns. We controlled for whether agencies operated multiple offices as a measure of firm scope. We also controlled for firms' human capital by including the number of managers employed annually by agencies. Finally, in each model we included controls for each observation year to account for exogenous factors that could affect the creation of job titles¹.

Model Specification and Estimation

We performed analyses testing for the effects of power dynamics and administrative imperatives on the total number of job titles created per agency per year. To test our hypotheses about the effects of job title creation for men and women, and for new hires and incumbents, we reformulated our dependent variable and performed analyses for men and women and incumbents and new hires separately. We tested the hypotheses by pooling the yearly data and estimating models on the pooled cross sections using time series regressions. Because our dependent variables are counts of the number of job titles created we used negative binomial regression techniques to estimate our models and to correct for overdispersion in the data (Hausman, Hall, and Griliches, 1984; Ramaswamy, Anderson, and DeSarbo, 1994). We performed our analyses using the generalized estimating equations (GEE) method available in the SAS GENMOD procedure (SAS, 1997). We adjusted for the non-independence of observations (Diggle, Liang, and Zeger, 1994) by modeling the covariance structure within each firm, treating between firm observations as independent (Liang and Zeger, 1986).

RESULTS

We begin with a descriptive portrait of job title creation among the New York City area advertising agencies we studied. Table 1 contains a breakdown of the number of individual-level observations and firm-level occurrences of job titles and job title creation in the different functional

¹ In results not shown here we also included controls for whether firms failed prior to the end of the observation period, for whether there was a change in the name of advertising agencies, for the number of clients served by agencies, and for the number of client relationships formed and dissolved in any given year. These variables were not significant and had no effect on the hypothesized effects, so were dropped from the models.

categories. There are 31,116 person-year observations in our dataset involving 8,580 different managers. As expected, nearly 50 percent of these observations were what Broschak (2004) referred to as exchange managers; individuals with jobs in Account Services (24.4 percent), Creative (19.2 percent), or Other Boundary Spanning (5.0 percent) roles who are the points of contact between the agency and client firms. Of the remaining observations, 17.9 percent are Administrative, 17.4 percent are back office functions, and 8.7 percent could not be classified into a functional category as some managers were only assigned a job title signifying hierarchical level (e.g., Vice-president). A small number of job titles (7.4 percent) fall into multiple functional categories either because managers held an administrative job title combined with a job title in another functional category (i.e., President and Account Executive), or a complex job title that spanned multiple functional categories (i.e., Production Director and Account Manager).

The creation of job titles was a fairly common occurrence with a total of 3,966 new job titles created over the 13-year observation period, an average of 3 job titles per agency each year. As Table 1 illustrates, a large portion of the job title creation was in administrative jobs. Nearly one-quarter of the job titles created were purely administrative positions. When we include the 85 percent of the multi-category job titles created that were at least partly administrative, administrative positions accounted for one-third of the job titles created. This gives credence to the idea that advertising agencies create job titles at least partly in response to administrative imperatives, to better manage the business of advertising agencies. Newly created job titles were relatively evenly split between *new job titles* (53 percent) and *combined job titles* (47 percent).

There are some notable differences in who receives new job titles. Only a minority of the managers in our dataset received new job titles. Of the 8,580 managers, 5,590 (65.2 percent) did not change job titles during the observation period, 2,269 (26.4 percent) received one new job title, 523 (6.1 percent) received two new job titles, and 198 (2.3 percent) received three or more new job titles. Table 2 illustrates that while job titles were created for men and women roughly in proportion to their overall representation in the dataset, there are considerable differences across functional categories. For instance, women represent 40 percent of the managers and 33 percent of the individual-year observations in the

dataset. But the number of job titles held by men, and the number of job titles created for men, is more than twice the number for women for administrative and creative jobs and more than three times that of women for multiple category jobs. Comparing new hires and incumbents, the number of job titles created is relatively equal in most of the functional categories except for administrative and multiple category job titles where incumbents are far more likely than new hires to receive new job titles.

Job title creation occurred somewhat regularly and steadily over our observation period. Job titles were created in 65 percent of the agency-year observations. Figure 1 shows the aggregate number of job titles created annually with the number of agencies in the sample each year plotted on the right axis. As this figure shows, though the number of new job titles created decreases over time, this decrease mirrored the attrition of agencies from the sample suggesting that the number of job titles created was relatively evenly distributed over time.

However, while job title creation occurs regularly over the observation period, there is considerable variance in the level of job title creation activity across agencies, suggesting that organizational factors may explain differences in the propensity to create job titles. Figure 2 is a histogram of the cumulative number of job titles created by each agency over this time period and shows that the concentration of job title creation is unevenly distributed. Half of the agencies in our sample created fewer than 15 job titles while one-quarter created fewer than 5 job titles. A small number of firms engaged in a large portion of job title creation, with 10 percent of agencies creating more than 60 job titles and 5 percent of agencies creating 80 or more job titles. The fact that only three firms created no job titles over our observation period suggests that most firms experienced some pressure or need to adapt their structures.

[Insert Figures 1 and 2 about here]

We now turn to our multi-variate analysis of job title creation. Table 3 contains the descriptive statistics and bivariate correlations of all the variables used in our models. Table 4 displays the results of the negative binomial regression models of counts of the new job titles created per firm per year. Model 1

shows the results of estimates of the number of new job titles created for all managers as a function of administrative imperatives and power dynamics variables, as well as controls. Models 2 and 3 estimate the number of job titles created for men and women, respectively. Models 4 and 5 estimate the number of new job titles created for newly hired and incumbent managers, respectively.

Hypotheses 1-3 contained predictions about the effects of administrative imperatives. In Model 1, as predicted, all of the variables related to administrative imperatives are significant and in the expected directions. Size has a curvilinear relationship with the number of job titles created, supporting hypothesis 1. The effect of size on the number of job titles created is positive over the entire range of the variable, but for the largest agencies the effect of increasing size begins to diminish. Consistent with hypothesis 2, growing firms are likely to create more job titles. Finally, average company tenure has a negative and significant relationship with the creation of job titles suggesting that firms with longer tenured managers are less likely to need to create new job titles, consistent with hypothesis 3. In Models 2-5, the effects of administrative imperatives on the creation of job titles for new hires versus incumbents, or men versus women, are generally consistent with the overall creation of job titles. In only one case, the effect of growth on the number of new job titles created for women, the coefficient fails to reach significance, though the effect is in the predicted direction. Overall, this pattern of findings is consistent with our predictions that the effects of administrative imperatives would not differ across job recipients.

Hypotheses 5 -7 contained the predicted effects of power dynamics. Hypothesis 4a predicted that the number of new job titles created for women would increase with increases in the proportion of women managers, while hypothesis 4b predicted there would be an inverted-U shaped relationship between the proportion of women managers and the number of new job titles created for men. In models 2 and 3, we examine whether there are differences in the number of job titles created for men and women separately. Our results support these hypotheses. In Model 3 of Table 4 the effect of proportion female on the number of job titles created for women is positive and significant. In results not shown here we tested for a curvilinear effect of proportion female but found no evidence of one. This result is consistent with hypothesis 4a. In Model 2 of Table 4, the proportion female managers exhibits a curvilinear effect on the

number of new job titles created for men, supporting hypothesis 4b. The pattern of relationships between other explanatory variables largely does not differ across men and women.

It is possible that our results for job titles created for men and women managers are not capturing power dynamics but rather are nothing more than the effect of the increasing representation of women managers in advertising agencies. That is, as the proportion of women managers increases more new job titles are created for women and fewer job titles are created for men. To assess this possibility we plotted the effect of proportion female on the number of job titles created for men and women managers in Figure 3 setting all the other independent and control variables at their means. The number of job titles created for women does increase with women's presence in advertising agencies, but the effect of proportion female has an inverted-U shaped relationship with job titles created for men. As the proportion of female managers increases, the number of job titles created for men initially increases, peaking at 0.26 and then decreasing as women obtain a greater percentage of managerial roles in agencies. This pattern is consistent with agencies using the creation of new job titles to appease threats to the power of male managers resulting from more and more women enter firms. Further evidence can be seen in Models 3 and 5 where the effect of proportion female is significant for incumbent managers but insignificant for newly-hired managers, suggesting that agencies are creating job titles in response to internal power dynamics resulting from the sex composition of their firms.

[Insert Figure 3 about here]

Hypothesis 5 predicted that in firms with more managerial exits, there would be more job title creation. Our results provided strong support for this hypothesis. The effects of the number of managerial exits on the number of new job titles created was positive and significant for all job titles and held regardless of the recipients of the new job titles. Hypotheses 6 and 7 predicted that the effects of the number of managers hired and promoted would lead to greater numbers of job titles for newly-hired and incumbent managers, respectively. In model 4 of Table 4 the number of managers hired has a positive

and significant effect on the number of job titles created for newly-hired managers while in model 5, there is no effect of the number of hires on job titles created for incumbent managers. This supports hypothesis 6. Similarly, in model 5 the effect of number of promotions on the number of job titles created for incumbent managers is positive and significant, while in model 4 the effect of promotions on job titles created for newly-hired managers is insignificant, supporting hypothesis 7.

Hypothesis 8 predicted that administrative imperatives and power dynamics would operate as countervailing forces. To test this hypothesis we examined interactions between our measures of administrative imperatives and power dynamics. Because our results are largely consistent across the different types of managerial mobility and across the different models in Table 4 (e.g., new hires versus incumbents, men versus women), in Table 5 we only present the results of interactions between number of hires and proportion female and our measures of administrative imperatives on the overall level of job title creation. We find partial support for hypothesis 8. The effect of the number of newly-hired managers on the number of job titles created has a negative and significant interaction with organization size, decreases with organizational growth, and increases with the average tenure of managers, consistent with hypothesis 8. When all three interactions are entered into the regression simultaneously, the interactions with size, growth, and average managerial tenure all remain significant. We see the same pattern of findings for interactions between the number of exits and number of promotions and our measures of administrative imperatives.

To better understand the interaction between hiring and size, we plotted this interaction in Figure 4 at three levels of organization size, the sample mean and one and two standard deviations above the mean, while holding all other variables at their means. Figure 4 shows that the effect of the number of managers hired has little effect on the number of job titles created in large firms but a strong effect in small firms. This result is consistent with our argument that the effects of power dynamics due to managerial mobility are strongest when administrative imperatives are low.

[Insert Figure 4 about here]

We fail to find support for interactions between sex composition and administrative imperatives. The effect of proportion female managers does not vary with organizational size or average managerial tenure. The effect of proportion female managers does increase with organizational growth, but this effect is opposite of what we predicted, failing to support hypothesis 8.

In results not reported here we explored whether our findings are driven by outlier firms; that is by the agencies that created large numbers of job titles relative to their competitors. We re-estimated our models twice, deleting the top ten percent and top twenty percent of agencies with the largest number of job title creations. Our results were largely unchanged from those reported here. Thus, we conclude the effect of administrative imperatives and power dynamics on the number of new job titles created hold for our sample of advertising agencies and are not driven by a few firms that created a large number of new job titles. We also examined performed separate analysis for two different types of job titles: combination titles and new titles. We might expect that creating job titles that are completely new to organizations, would come at greater costs in terms of liability of newness than creating new job title combinations and thus be likely to be driven by slightly different factors. However, the effects were essentially the same across the two types of titles, suggesting that they are governed by similar processes.

Finally, the effects of several control variables are noteworthy. There appears to be a tendency among firms regarding the propensity to create new job titles. Firms with higher numbers of unique job titles at the beginning of a calendar year tend to create more job titles. Further, the effect of being a multi-location agency has a positive effect on the number of job titles created; having a more complex organizational structure leads to more job title creation.

DISCUSSION AND CONCLUSION

We began this paper by posing questions about the creation of job titles: do factors previously identified as leading to greater overall job title proliferation also explain the emergence of new job titles in organizations; do these factors differ depending on who gets the new job titles; and how do these

factors work in tandem. A substantial body of work provides evidence that differences across organizations in the overall level of job title proliferation can be attributed to both power dynamics and technical imperatives but provides little direct evidence of the process of the creation of job titles and of who receives those differentiated job titles. Understanding the underlying process of job title creation is important for several reasons. It is fundamental to the building and alteration of organizational structure and shapes consequential outcomes for both organizations and individuals. Further, understanding whether there are differences in how new job titles are distributed to different types of people advances our understanding of differences in attainment.

Our results provide strong evidence that factors related to both power and technical aspects of an organization account for job title creation and that the factors related to power differ with the recipient of the job. We find that three separate measures of technical and administrative imperatives predict the creation of new job titles. Organizations that are larger (up to a point), that are growing and that have lower average tenure are more likely to create new job titles. These patterns are similar whether either of the two types of job titles are created for new hires, job incumbents, men or women, though there were some unexpected differences between men and women. The main exception is that growth is not significant for women. This seeming anomaly provides further evidence that contrary to popular wisdom growth does may not be an equalizing force for men and women and may in fact disadvantage women (e.g., Haveman, Broschak, and Cohen, 2009).

We find that several measures related to power differentials in organizations predict the creation of both combined and new job titles and that these effects differ depending on who the job is created for. The proportion of women in the firm predicted differential patterns of job title creation for men and women. Women in firms with higher proportions of women are more likely to receive new job titles than women in firms with lower proportions. This effect holds across values of this independent variable. There is no point at which the addition of more women stops having a positive effect. Compared to men in firms with fewer women, men in firms with more women are less likely to get new job titles once their firm has reached about 25 percent women. These findings provide further evidence that the gender

composition of firms shapes organizational outcomes (e.g., Tolbert et al, 1995; Cohen et al, 1998; Elvira and Cohen, 2001; see Williams and O'Reilly , 1998 for a review) and more generally that men and women may be differentially affected by firm structure (e.g., Haveman, Broschak, and Cohen, 2009). By connecting gender composition to the allocation of new titles, we also contribute to a growing literature connecting the content of work to inequality processes (e.g., Kalev, 2009). We show that there are some differences in how men and women are given jobs and job titles, an outcome that has been shown to relate to attainment. Interestingly, when there are more women present, it is more often the women who are being segregated into new jobs, not the men.

Factors related to employee mobility were also predictive of the creation of new job titles. More titles are created when there were more exits. Organizations may be responding to challenges in labor markets by using new job titles to attract employees and to retain those already in the organization. In addition, they may be responding to more immediate needs to reconfigure work in response to exit.

Proportionately more new job titles were created for new hires in organizations where there was more hiring and for incumbents in organizations where there was more promotion. This is consistent with the explanation that new titles of all types are created for people who are in positions of greater negotiating power. Overall, the patterns related to employee mobility and job title creation is consistent with predictions about how power differentials might be related to job title creation for groups in different positions of power. Yet our work can only suggest that power dynamics drive this process. Future research might disentangle some of these reasons that hiring and promotion leads to new job titles.

In addition to providing evidence on factors related to power, the findings on hiring, promotion and exits adds evidence to the growing body of literature documenting that mobility drives important organizational outcomes. Mobility processes influence the very patterns of organizational life; how firms structure activities. Researchers from a variety of theoretical perspectives have shown that inter- and intra-organizational mobility, the movement of people into, out of, and within organizations, shapes several important organizational outcomes. For instance, researchers have demonstrated how the movement of executives into and out of organizations influences the strategic decisions of firms (Singh,

House, and Tucker, 1984; Boeker, 1997; Kraatz and Moore, 2002) and their progeny (Phillips, 2002; Agarwal et al., 2004). A separate stream of research has linked mobility processes in and between organizations to the demographic composition of firms (Haveman, 1995; Cohen, Broschak, and Haveman, 1998). Other researchers have shown that mobility processes influence the knowledge and capabilities of organizations (Sorensen, 1999; Rosenkopf and Almeida, 2003; Song, Almeida, and Wu, 2003). And numerous studies have established a link between managerial mobility and various measures of firm performance, including the ability to maintain client relationships (Broschak, 2004) and firm survival (Carroll, 1984; Haveman, 1993; Dobrev, 1999; Wezel, Cattani, and Pennings, 2006). We now provide evidence that mobility explains alterations to the very structure of organizations.

Finally, our findings on the countervailing effects of administrative imperatives and power dynamics allows us to see these processes as working in tandem rather than as independent or competing forces. Our findings fit well with the idea that organizations can only attend to so much change at any one time. Because of the nature of our analysis, we cannot know whether high levels of administrative imperatives dampen the effects of high levels of power dynamics or vice versa. It seems likely that both are true. Further research might investigate these interactions further.

This research provides further evidence that not all jobs (and job titles) are created equal. There is already evidence that differences in the actual founding process of new job titles are of consequence to organizations. Miner (1991) distinguishes between four types of job founding events: opportunistic hires, evolved jobs, planned novel job, and job reclassification. These types of events differ in the source of change (for instance, internal versus external) and in the type of duties (novel versus existing duties) that are grouped into jobs. Different outcomes accrue to newly created jobs depending on their type or founding conditions. Miner (1991) finds that novel jobs in one bureaucracy have a higher rate of dissolution than pre-existing jobs.

By showing that the structure of job titles changes in response to other changes in an organization, our study contributes to evolutionary perspectives on jobs and careers (Miner, 1991; Haveman and Cohen, 1994; Philips, 2001; Moss, Salzman, and Tilly, 2008). The ecology of opportunity

in these organizations is clearly embedded in an environment, that of an organization, and is altered by events that affect organizations more broadly. Rather than organizations being passive conduits that simply house the structure of opportunities for individual managers, the structure of opportunity in these organizations evolves as the organizations themselves evolve and change. Thus, organizations and jobs co-evolve.

This research is but a first step toward increasing our understanding of job title creation. Our study is not without limitations. We investigated the effects of organizational factors on one type of structural change (e.g., job title creation) using a sample of firms within a single service industry where job title creation was relatively common. It is unclear whether our results generalize to other types of structural change, or to firms in other industries, so we would recommend caution in extrapolating our findings to other arenas. Further, we focused specifically on the creation of new job titles.

Organizational learning and adaptation is also apparent when jobs and job titles vanish from the organizational landscape (Miner, 1991). Whether the job titles we observe survive, or whether managerial mobility affects the disappearance of job titles from organizations, should be explored in future research.

However, the outcome we study—the creation of new jobs—is a significant organizational event and our study may inform larger ongoing debates about the changing structure of work in society. Understanding the conditions under which job title creation occurs may inform our theories about the effects of technology and other types of organizational change on work. Macro-level changes in the structure of work ultimately are created through the micro processes we articulated. An important follow-up question to our study is whether and how such micro-level changes aggregate in society and how this relates to the distribution of rewards.

We explicitly set out to understand the creation of jobs at one particular level of analysis, within individual firms. One can only speculate about how the creation of new jobs at other levels of analysis, such as within an entire industry, might be affected by various organizational and institutional

characteristics. The answers provided in this study, and answers to questions like those posed here, will advance our understanding of the ecology of organizational and opportunity structures.

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Figure 1: Number of Job Titles Created, 1986-1997

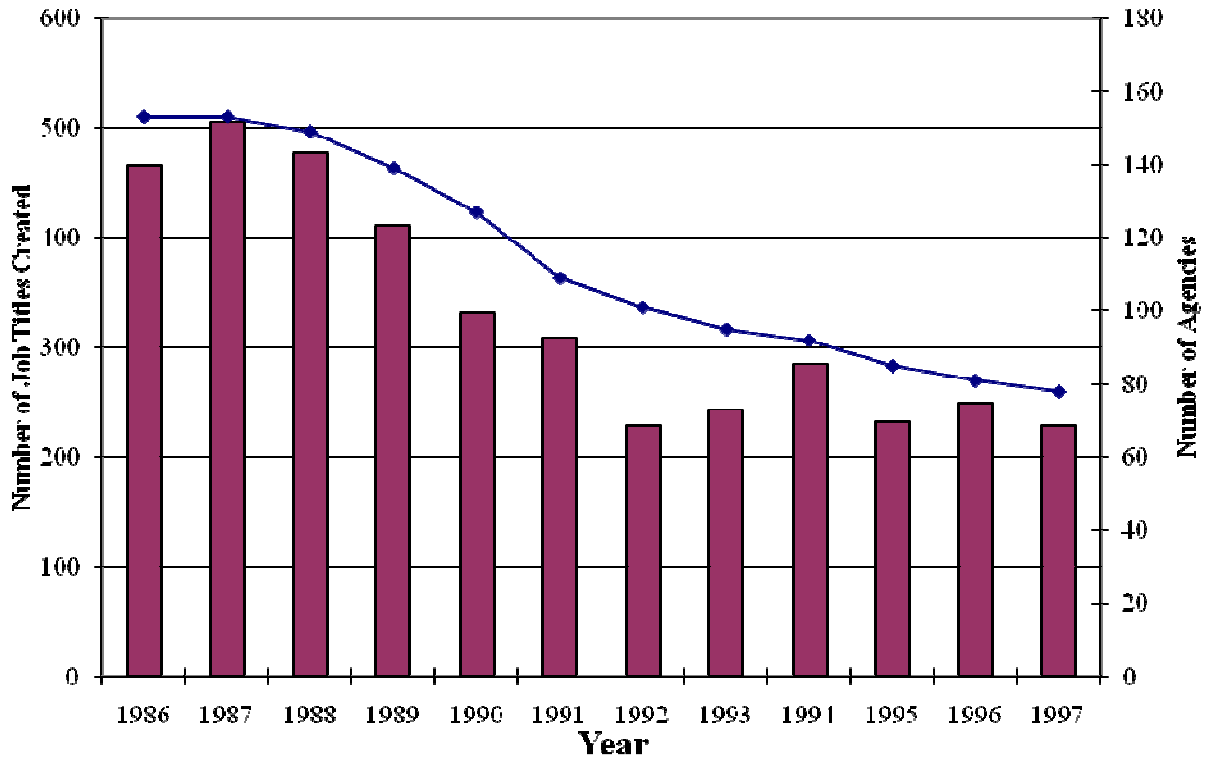


Figure 2: Job Titles Created per Agency

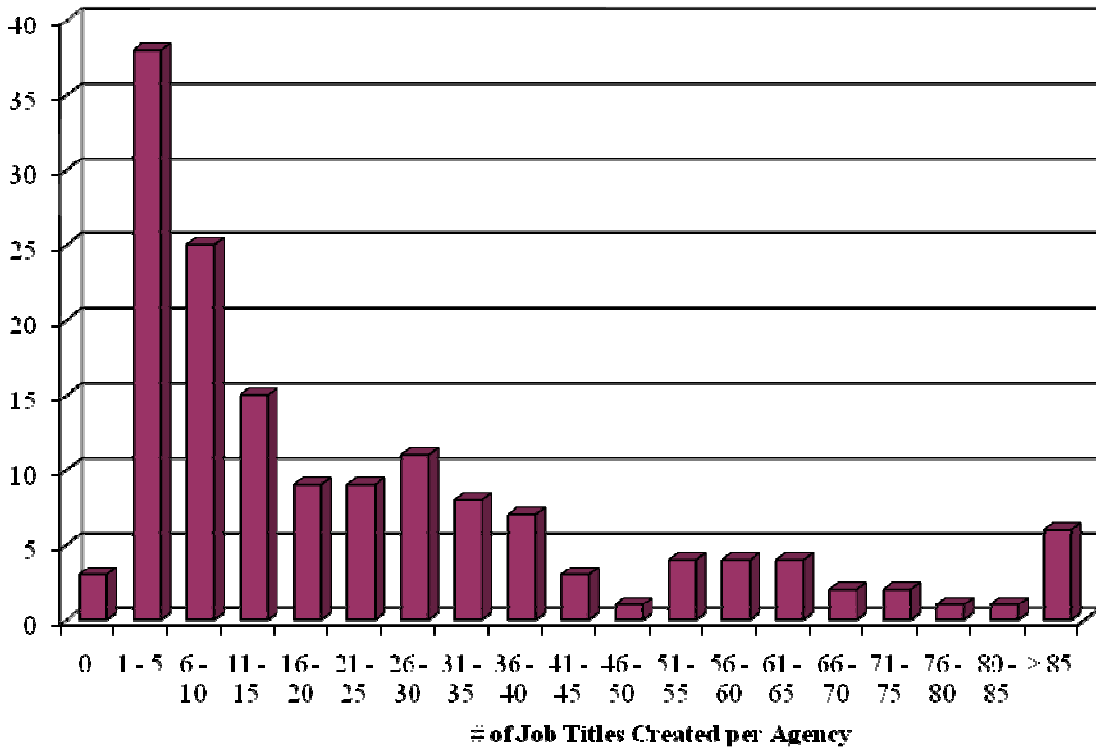


Figure 3: Effects of Proportion Women Managers on Number of New Titles

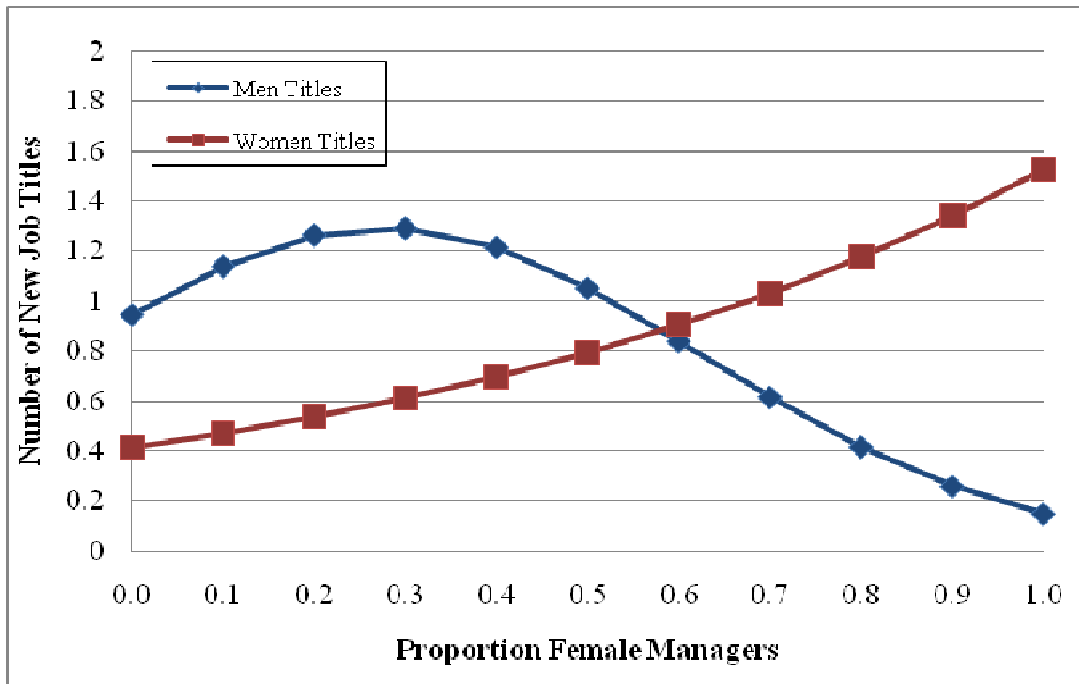


Figure 4: Effects of the Interaction between Size and Hiring on Number of New Titles

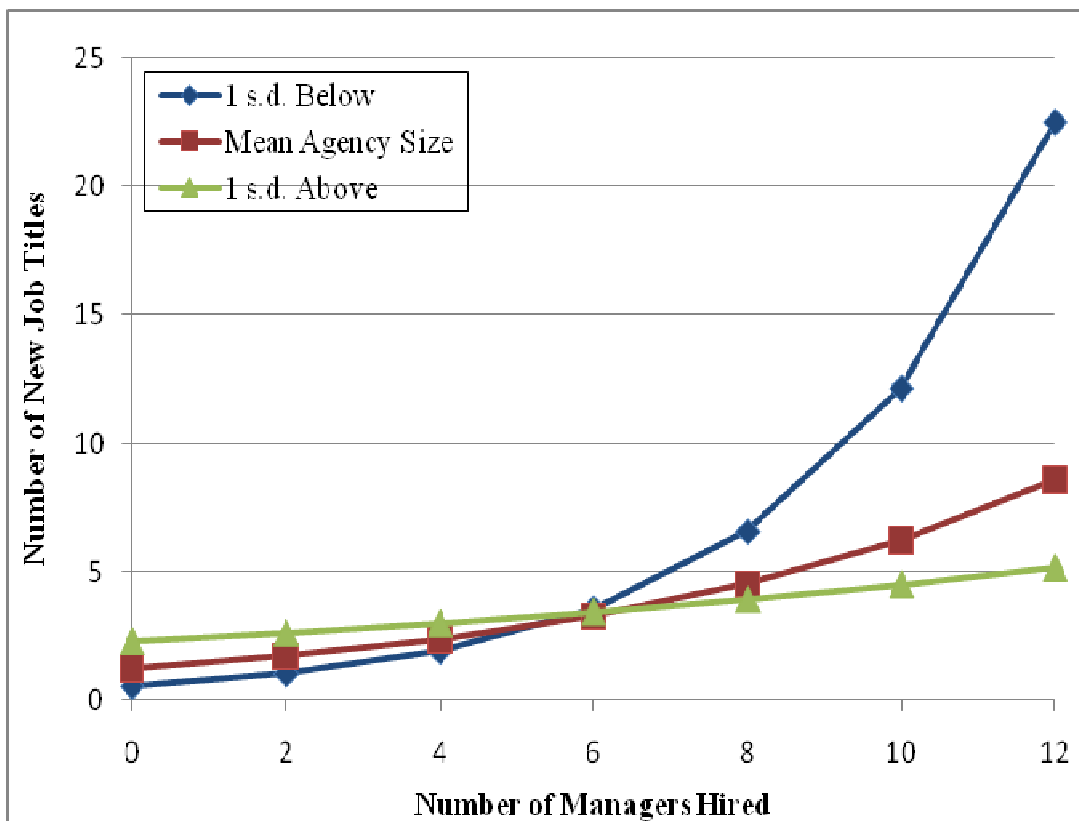


Table 1
Aggregated Job Title Creation in New York City Advertising Agencies, 1986-1997

Functional Category	Number of Observations (Individuals)		Number of Agency-unique Job Titles		Number of Job Titles Created		Number of New Job Titles Created		Number of Combined Job Titles Created	
Administrative	5,576	17.9%	1,349	22.7%	932	23.5%	458	21.8%	474	25.4%
Account Services	7,593	24.4%	937	15.7%	624	15.7%	322	15.3%	302	16.2%
Creative	5,977	19.2%	957	16.1%	587	14.8%	328	15.6%	259	13.9%
Media	2,391	7.7%	530	8.9%	339	8.5%	190	9.1%	149	8.0%
Other boundary spanning	1,561	5.0%	508	8.5%	381	9.6%	249	11.8%	132	7.1%
Production	2,307	7.4%	623	10.5%	397	10.0%	253	12.1%	144	7.7%
Research	709	2.3%	208	3.5%	150	3.8%	81	3.9%	69	3.7%
Unknown	2,700	8.7%	170	2.9%	97	2.4%	24	1.1%	73	3.9%
Multiple Categories	2,302	7.4%	675	11.2%	459	11.6%	195	9.3%	264	14.1%
Total	31,116	100%	5,957	100%	3,966	100%	2,100	100%	1,866	100%

Table 2
Aggregated Job Title Creation in New York City Advertising Agencies, 1986-1997: By Gender and Incumbent Status

Functional Category	Number of Observations Male vs. Female		Number of Agency-unique Job Titles Male vs. Female		Number of Job Titles Created Male vs. Female		Number of Job Titles Created New Hires vs. Incumbents	
	M	F	M	F	M	F	New Hires	Incumbents
Administrative	3,963	1,571	1,011	432	658	266	385	547
Account Services	4,530	2,968	727	489	394	221	311	313
Creative	4,479	1,405	796	360	427	155	303	284
Media	1,122	1,261	306	324	168	169	184	155
Other boundary spanning	910	641	311	226	218	156	242	139
Production	1,252	1,042	367	318	205	190	221	176
Research	367	342	126	104	81	69	79	71
Unknown	1,934	737	137	67	68	26	46	51
Multiple Categories	1,790	458	531	158	346	110	133	326
Total	20,347	10,425	4,318	2,478	2,565	1,362	1,904	2,062

Table 3: Descriptive Statistics and Bivariate Correlations

Variable	N	Mean	S.D.	1	2	3	4	5	6	7	8	9	10
1. Number of new job titles	1305	2.72	4.37										
2. Number of new hires new job titles	1305	1.31	2.35	.87 [•]									
3. Number of incumbents new job titles	1305	1.41	2.60	.90 [•]	.56 [•]								
4. Number of men's new job titles	1305	1.64	3.05	.95 [•]	.79 [•]	.88 [•]							
5. Number of women's new job titles	1305	0.85	1.43	.81 [•]	.69 [•]	.73 [•]	.62 [•]						
6. Log (Agency billings)	1305	17.24	1.69	.49 [•]	.38 [•]	.48 [•]	.47 [•]	.39 [•]					
7. Agency growth	1305	.02	0.25	.21 [•]	.25 [•]	.13 [•]	.21 [•]	.13 [•]	.07 [•]				
8. Average tenure of managers	1305	6.38	2.88	-.22 [•]	-.21 [•]	-.18 [•]	-.19 [•]	-.21 [•]	-.22 [•]	-.07 [•]			
9. Number of managers exiting	1305	4.38	6.79	.58 [•]	.46 [•]	.55 [•]	.54 [•]	.49 [•]	.61 [•]	.02	-.25 [•]		
10. Number of managers hired	1305	4.16	7.09	.78 [•]	.78 [•]	.61 [•]	.73 [•]	.60 [•]	.55 [•]	.23 [•]	-.23 [•]	.68 [•]	
11. Number of managers promoted	1305	1.46	3.36	.76 [•]	.51 [•]	.82 [•]	.76 [•]	.61 [•]	.50 [•]	.12 [•]	-.16 [•]	.61 [•]	.66 [•]
12. Proportion female managers	1305	0.35	0.17	-.06 [•]	-.06 [•]	-.04	-.10 [•]	.08 [•]	-.19 [•]	-.04	.10 [•]	.01	-.02
13. Agency age (years)	1305	29.04	23.54	.25 [•]	.18 [•]	.26 [•]	.27 [•]	.16 [•]	.47 [•]	-.03	.19 [•]	.42 [•]	.36 [•]
14. Number of unique job titles	1305	12.72	11.90	.66 [•]	.49 [•]	.68 [•]	.63 [•]	.56 [•]	.66 [•]	.07 [•]	-.22 [•]	.71 [•]	.62 [•]
15. Number of new titles created last year	1305	2.45	4.24	.50 [•]	.40 [•]	.49 [•]	.49 [•]	.41 [•]	.49 [•]	.07 [•]	-.26 [•]	.52 [•]	.46 [•]
16. Number of job title functions	1305	5.03	1.27	.35 [•]	.26 [•]	.35 [•]	.31 [•]	.32 [•]	.45 [•]	.06 [•]	-.23 [•]	.36 [•]	.29 [•]
17. Multi-location agency (1=yes)	1305	0.30	0.46	.33 [•]	.27 [•]	.30 [•]	.31 [•]	.25 [•]	.54 [•]	.06 [•]	-.18 [•]	.43 [•]	.36 [•]
18. New York City headquarters (1=yes)	1305	0.74	0.44	.12 [•]	.10 [•]	.10 [•]	.11 [•]	.10 [•]	.27 [•]	.05	-.09 [•]	.14 [•]	.13 [•]
19. Number of managers	1305	19.95	24.75	.58 [•]	.41 [•]	.61 [•]	.56 [•]	.47 [•]	.75 [•]	.05	-.21 [•]	.83 [•]	.70 [•]

(Table 3 Continued)

Variable	11	12	13	14	15	16	17	18
11. Number of managers promoted								
12. Proportion female managers	-.01							
13. Agency age (years)	.33 [•]	-.14 [•]						
14. Number of unique job titles	.70 [•]	-.06 [•]	.40 [•]					
15. Number of new titles created last year	.53 [•]	-.04	.25 [•]	.69 [•]				
16. Number of job title functions	.31 [•]	.06 [•]	.13 [•]	.55 [•]	.50 [•]			
17. Multi-location agency (1=yes)	.31 [•]	-.06 [•]	.41 [•]	.42 [•]	-.32 [•]	.25 [•]		
18. New York City headquarters (1=yes)	.11 [•]	-.08 [•]	.10 [•]	.15 [•]	.06 [•]	.10 [•]	.18 [•]	
19. Number of managers	.70 [•]	-.05	.56 [•]	.87 [•]	-.01	.42 [•]	.47 [•]	.16 [•]

[•]p < .05; two-tailed test.

TABLE 4 - Negative Binomial Regression Models of the Number of New Job Titles

Independent Variables	Model 1		Model 2		Model 3		Model 4		Model 5	
	New Titles		New Titles Men		New Titles Women		New Titles New Hires		New Titles Incumbents	
Log (Billings)	1.471	***	1.866	***	1.620	***	1.122	***	2.121	***
	(0.308)		(0.356)		(0.391)		(0.421)		(0.430)	
Log (Billings) ²	-0.034	***	-0.043	***	-0.040	***	-0.026	*	-0.051	***
	(0.008)		(0.010)		(0.010)		(0.012)		(0.011)	
Agency growth	0.384	***	0.460	***	0.218		0.399	***	0.333	*
	(0.118)		(0.132)		(0.156)		(0.140)		(0.158)	
Average company tenure	-0.075	***	-0.071	***	-0.095	***	-0.079	***	-0.065	***
	(0.014)		(0.015)		(0.020)		(0.019)		(0.017)	
Proportion female	1.335	*	2.280	**	1.307	***	-0.240		1.955	**
	(0.630)		(0.877)		(0.296)		(0.238)		(0.725)	
Proportion female ²	-1.892	*	-4.134	***					-2.428	*
	(0.822)		(1.186)						(0.958)	
Number of manager exits	.026	***	0.025	***	0.025	**	0.028	*	0.018	***
	(0.006)		(0.006)		(0.010)		(0.011)		(0.006)	
Number of managers hired	.052	***	0.034	***	0.042	***	0.091	***	0.006	
	(0.006)		(0.005)		(0.007)		(0.009)		(0.004)	
Number of managers promoted	.085	***	0.075	***	0.076	***	-0.008		0.134	***
	(0.014)		(0.014)		(0.014)		(0.013)		(0.017)	
Agency age	0.002		0.005	***	0.002		0.003		0.003	
	(0.002)		(0.002)		(0.002)		(0.002)		(0.002)	
Firms' Number of Unique Titles	0.029	***	0.023	***	0.034	***	0.038	***	0.016	***
	(0.005)		(0.004)		(0.005)		(0.007)		(0.005)	
Number New Titles Created t-1	-0.003		-0.002		-0.010		-0.003		-0.003	
	(0.010)		(0.008)		(0.009)		(0.006)		(0.011)	
Number of Job Title Functions	0.023		0.017		0.074		-0.026		0.081	
	(0.038)		(0.043)		(0.050)		(0.037)		(0.048)	
Multi-location agency	0.177	**	0.170	*	0.026		0.186	*	0.157	
	(0.066)		(0.073)		(0.090)		(0.077)		(0.085)	
New York City headquarters	-0.112		-0.179		-0.011		-0.053		-0.194	*
	(0.084)		(0.092)		(0.096)		(0.102)		(0.092)	
Number of managers	-0.029	***	-0.024	***	-0.028	***	-0.035	***	-0.016	***
	(0.004)		(0.004)		(0.005)		(0.005)		(0.004)	
Intercept	-14.602	***	-19.141	***	-16.913	***	-11.079	***	-21.925	***
	(2.921)		(3.302)		(3.766)		(3.814)		(4.023)	
Quasi Log Likelihood	-3862.3	***	-325.1	***	1858.3	***	813.1	***	313.7	***
d.f.	27		27		26		26		27	

Values are unstandardized regression coefficients. Standard errors are shown in parentheses. There were 1305 firm-years observed and 842 occurrences of job title creation. Controls for years are included but not shown. * p<.05, ** p<.01, *** p<.001. Significance levels are two-tailed for control variables and hypothesized effects.

TABLE 5A- Negative Binomial Regression Models of the Number of New Job Titles Hiring Interactions

	Model 1		Model 2		Model 3		Model 4	
Independent Variables								
Log (Billings)	1.485	***	1.448	***	1.566	***	1.300	**
	(0.361)		(0.304)		(0.301)		(0.353)	
Log (Billings)2	-0.031	**	-0.034	***	-0.037	***	-0.027	**
	(0.010)		(0.008)		(0.00*)		(0.009)	
Agency growth	0.152	*	0.685	***	0.360	**	0.341	**
	(0.091)		(0.145)		(0.121)		(0.120)	
Average company tenure	-0.045	***	-0.072	***	-0.110	***	-0.072	***
	(0.013)		(0.014)		(0.015)		(0.014)	
Proportion female	1.028		1.243	*	1.194		0.895	
	(0.640)		0.6200		0.6179		0.6122	
Proportion female2	-1.761	*	-1.818	*	-1.664	*	-1.550	
	(0.8370)		(0.810)		(0.812)		(0.801)	
Number of manager exits	0.024	***	0.025	***	0.027	***	0.025	***
	(0.005)		(0.006)		(0.006)		(0.005)	
Number of managers hired	4.090	***	0.066	***	-0.011		3.277	***
	0.4195		0.0494		0.0158		0.4515	
Number of managers promoted	0.076	***	0.081	***	0.082	***	0.073	***
	(0.013)		(0.014)		(0.014)		(0.013)	
Number of managers hired * Log (Billings)	-0.385	***					-0.306	***
	(0.043)						(0.046)	
Number of managers hired * Log (Billings)2	0.009	***					0.007	***
	(0.001)						(0.001)	
Number of managers hired * Agency growth			-0.037	***			-0.021	*
			(0.011)				(0.010)	
Number of managers hired * Average company tenure					0.012	***	0.009	***
					(0.003)		(0.002)	
Agency age	0.002		0.003		0.001		0.002	
	(0.002)		(0.001)		(0.002)		(0.002)	
Firms' Number of Unique Titles	0.026	***	0.030	***	0.028	***	0.026	***
	(0.004)		(0.005)		(0.005)		(0.004)	
Number New Titles Created t-1	-0.005		-0.002		0.006		0.001	
	(0.008)		(0.010)		(0.010)		(0.007)	
Number of Job Title Functions	0.005		0.027		0.022		0.004	
	(0.035)		(0.038)		(0.037)		(0.033)	
Multi-location agency	0.109		0.155	*	0.166	**	0.099	
	(0.060)		(0.068)		(0.060)		(0.057)	
New York City headquarters	-0.031		-0.110		-0.119		-0.040	
	(0.079)		(0.083)		(0.082)		(0.07&	
Number of managers	-0.020	***	0.030	***	-0.027	***	-0.021	***
	(0.003)		(0.004)		(0.00\$)		(0.003)	
Intercept	-16.155	***	-14.385	***	-15.083		-14.085	
	(3.359)		(2.878)		(2.848)		(3.304)	
Quasi Log Likelihood	-4559.6		-3830.9		-3968.5		-4481.2	
d.f.	29		28		28		31	

Values are unstandardized regression coefficients. Standard errors are shown in parentheses. There were 1305 firm-years observed and 842 occurrences of job title creation. Controls for years are included but not shown. * p<.05, ** p<.01, *** p<.001. Significance levels are two-tailed for control variables and hypothesized effects.

**TABLE 5B - Negative Binomial Regression Models of the Number of New Job Titles
Sex Composition Interactions**

	Model 1	Model 2	Model 3	Model 4
Independent Variables				
Log (Billings)	1.036 (0.566)	1.518 (0.304)	*** 1.474 (0.310)	*** 1.097 (0.580)
Log (Billings)2	-0.021 (0.015)	-0.035 (0.008)	*** -0.034 (0.008)	*** -0.022 (0.015)
Agency growth	0.376 ** (0.118)	-0.292 (0.190)	0.383 (0.118)	** -0.318 (0.194)
Average company tenure	-0.078 *** (0.015)	-0.074 *** (0.014)	-0.082 *** (0.022)	*** -0.089 (0.021)
Proportion female	-14.665 (14.864)	1.274 (0.635)	* 1.201 (0.675)	-14.900 (15.183)
Proportion female2	-2.127 * (0.828)	-1.932 * (0.822)	* -1.863 (0.810)	* -2.125 (0.815)
Number of manager exits	0.026 *** (0.006)	0.025 *** (0.006)	0.026 *** (0.006)	0.026 *** (0.006)
Number of managers hired	0.052 *** (0.006)	0.052 *** (0.006)	0.052 *** (0.006)	0.052 *** (0.006)
Number of managers promoted	0.084 *** (0.014)	0.085 *** (0.014)	0.085 *** (0.014)	0.085 *** (0.014)
Proportion female * Log (Billings)	1.997 (1.642)			1.996 (1.663)
Proportion female * Log (Billings)2	-0.061 (0.045)			-0.061 (0.046)
Proportion female * Agency growth		2.082 *** (0.546)		2.126 *** (0.560)
Proportion female * Average company tenure			0.019 (0.063)	0.037 (0.065)
Agency age	0.003 (0.002)	0.002 (0.002)	0.002 (0.002)	0.003 (0.001)
Firms' Number of Unique Titles	0.028 *** (0.004)	0.029 *** (0.005)	0.029 *** (0.005)	0.028 *** (0.004)
Number New Titles Created t-1	-0.005 (0.010)	-0.002 (0.010)	-0.003 (0.010)	-0.004 (0.009)
Number of Job Title Functions	0.020 (0.038)	0.025 (0.038)	0.023 (0.038)	0.022 (0.038)
Multi-location agency	0.174 ** (0.066)	0.181 ** (0.065)	0.178 ** (0.066)	0.178 ** (0.065)
New York City headquarters	-0.105 0.0829	-0.118 (0.083)	-0.113 (0.084)	-0.112 (0.081)
Number of managers	-0.027 *** (0.004)	-0.029 *** (0.004)	-0.029 *** (0.004)	-0.027 *** (0.004)
Intercept	-11.102 * (5.288)	-15.050 *** (2.881)	-14.584 *** (2.922)	-11.611 * (5.431)
Quasi Log Likelihood	-3865.7	-3841.9	-3858.7	-3839.4
d.f.	29	28	28	31

Values are unstandardized regression coefficients. Standard errors are shown in parentheses. There were 1305 firm-years observed and 842 occurrences of job title creation. Controls for years are included but not shown.
* p<.05, ** p<.01, *** p<.001. Significance levels are two-tailed for control variables and hypothesized effects.