

Leaving a Legacy:
Position Imprints and Successor Turnover in Young Firms[•]

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ABSTRACT

We consider how local firm histories influence individual turnover rates in organizations. We argue that position imprints – the legacies left by the first incumbents of particular functional positions -- constrain subsequent position holders. We show that the functional experience of the person who creates a position influences the turnover rate of successors who later occupy that position. When the first position holder has an atypical background, all successors experience higher turnover rates. Individuals who are both typical with respect to the normative environment and similar to the position imprint have the lowest turnover rates. Surprisingly, we find lower turnover rates among individuals who match the position imprint even if they violate normative expectations. Thus, contrary to institutional theory predictions, we find that local firm histories dominate. In revealing how social structures emerge within firms and affect individual outcomes, our research revisits core topics of bureaucratization and organizational stratification including idiosyncratic jobs, occupational segregation, and differential mobility. In addition, we integrate structuralist and interactionist perspectives on role theory by considering how roles are created. Finally, in demonstrating the effects of position imprints on successor mobility we add a temporal dimension to theories of turnover.

INTRODUCTION

What accounts for differences in job tenure? Turnover and mobility, by providing differential opportunities for advancement and individual attainment, are key mechanisms for understanding occupational segregation, social stratification, and internal labor markets that have long interested sociologists (Baron and Bielby 1980; Jacobs 1989; Reskin 1993; Osterman 1987). Over decades of inquiry, scholars have elucidated several factors that contribute to job durations including both individual and structural characteristics (Rosenfeld 1992). While the traditional approach to job mobility highlights the match between individuals and jobs at a moment in time, more recent scholars have incorporated temporal dynamics and suggested that evolutionary patterns at the group level (Sorensen 2000) or across the industrial sector (Haveman and Cohen 1994) influence turnover propensities. This dynamic approach begins to highlight how the past impinges on the present. We expand on these insights and further emphasize the role that local history plays in shaping turnover propensities at the level of individual positions. The micro-level structures created when agents first establish organizational positions are important sources of internal constraint.

Firms begin with individuals filling newly-created positions. Three factors shape the initial allocation of responsibilities: the preferences and characteristics of the involved individuals, the technical needs of the organization, and the broader normative roles from which organizational positions are enacted. Within these constraints, the first person to hold a specific position defines the position based on his or her own skills and experiences (Miner 1987). This results in a position in which the first incumbent is likely to fit and be successful. Simultaneously, these position creators, in shaping positions in their own image, leave an imprint that matches their particular background characteristics. In doing so, they set limits for subsequent incumbents and influence the turnover rate of these successors. This occurs because position successors – those who come into a pre-existing position – must fit within the established expectations and boundaries of the position (Van Maanen

and Schein 1979). At the same time, we acknowledge that positions are shaped by external normative expectations and that the external environment limits the extent to which a position creator has free reign in defining his or her position (Toffler 1981). Thus, our theory of position imprinting takes into account firm-level idiosyncrasies and needs while acknowledging external normative pressures.

Differential turnover as a result of position imprints offer a mechanism by which both intraorganizational homogeneity (similar people working within a firm) and interorganizational heterogeneity (different profiles of executives across firms) are generated and maintained over time.

INTERNAL AND EXTERNAL SOURCES OF TURNOVER

Sociologists have long been interested in the sources and consequences of job mobility in general and executive job mobility specifically (Grusky 1960). In addition to job mobility being an important vehicle for individual attainment, it is a medium by which individuals influence organizations and vice versa (Baron and Bielby 1980).

Job mobility is produced both by individual characteristics and structural characteristics of the labor market and economy. For example, theorists have long documented the ways that individual characteristics such as gender, race and class shape mobility propensities (see Rosenfeld 1992 for a review). Some of the varieties of structural characteristics recently investigated by scholars include firm characteristics such as competitive position (Phillips and Sorensen 2003) and human resource management practices (Batt 2002). In addition, a growing literature highlights the interplay between individuals and structures in shaping mobility (DiPrete and Nonnemaker 1997; Barnett, Baron and Stuart 2000). This attention to both individuals and structure focuses attention on the dynamics of job mobility (Haveman and Cohen 1994). For example, Sorensen (2000) demonstrates that the job mobility of bank employees is more dependent on historical than contemporaneous demographic heterogeneity. We extend this growing interest in the temporal dynamics of job mobility. We focus on

how the original definition of a position influences the turnover rates of individuals who occupy that position.

Roles and positions are fundamental building blocks in organizational sociology, and role theory explains how positions are created and change over time. Winship and Mandel (1983) differentiate roles and positions by defining a role as a classification across social structures and a position as a location in a particular social structure. Roles represent abstract cultural notions about categories of positions, the kinds of people who should occupy these positions, and the bundle of tasks and responsibilities that are associated with a given position (Callero 1994). At the same time, within a given organization, there is a specific manifestation of this abstract role in a given position (Baker and Faulkner 1991). For example, in a formal organizational context there are general functional roles (e.g., finance) that are enacted as organizational positions (e.g., VP of finance).

We use both structuralist and interactionist perspectives on role theory to argue that both internal and external factors shape the turnover rate of a particular position. External constraints arise from the normative and cultural expectations about the role (Callero 1994). Internal constraints arise because individuals shape their own positions to varying extents (Graen 1976; Miller, Johnson, Hart and Peterson 1999), and the interactionist view focuses on how abstract roles are claimed by particular individuals who enact their positions in a given context (Turner 1985).

In addition to role theory, organizational theory offers two alternative views on how positions are constructed – an internal perspective arising primarily from constructionist theories and an external perspective arising primarily from institutional theories. Constructionist theories suggest that positions are negotiated within an organizational setting (Goffman 1959; Strauss 1978; Barley 1990). This internal logic implies that local context and individual position incumbents determine how responsibilities are allocated within an organizational setting. Taken to a logical conclusion, the internal perspective would predict idiosyncratic position allocations across firms and heterogeneity within a

population of firms. In contrast, institutional theory suggests that the external normative context exerts a powerful influence over organizational structures and practices that results in high levels of homogeneity and conformity within a population (Tolbert and Zucker 1983; Edelman 1990). This external logic suggests that organizational roles will be historically and culturally situated in a way that minimizes variation in positions across firms (Thornton and Ocasio 1999; Marquis 2004).

Normative Expectations

We turn first to this latter view, that organizational positions—even those in a new organization—are shaped by their environment (DiMaggio and Powell 1983; Scott 1995). Generalized expectations as well as specific stakeholders press firms to mimic other firms in their industry and region such that they have comparable positions and typical position incumbents (Baker and Faulkner 1991; Zuckerman 2000). Expectations from employees, customers, suppliers, and investors dictate the kinds of roles that should exist and the characteristics of the people who should occupy them. These expectations serve as normative constraints that limit the ability of any position incumbent to personalize the role. For example, Bechky (2006) finds that normatively defined roles allow individuals in temporary organizations (film sets) -- who may have never worked together before -- to efficiently navigate a variety of complex tasks.

For these reasons a position creator's ability to leave a legacy, as well as the position successor's ability to change the position, may be limited by normative role expectations. When an organization attempts to fill a position, they seek the requisite characteristics, skills and experiences and draw upon the established norms for what the appropriate background is for a position. For example, a human resources professional usually has past human resources experience. If the human resources professional instead has prior engineering experience, he or she does not match the normative expectations for that role. He or she is not typical. Pressures for “normalization” may lead firms to

prefer conventional positions with typical incumbents, people who fit the generalized expectations of the role; thus, we hypothesize higher turnover for atypical or non-normative position incumbents:

H1: Position incumbents with atypical prior experiences will have higher turnover rates than position incumbents with typical prior experience.

Internal Position Expectations and Position Imprints

Because so much of what we know about organizational roles, positions, and the division of labor derives from studies of well-established bureaucracies (e.g. Blau and Schoenherr 1971; Rosenbaum 1984), we often forget that organizations begin with a group of people making decisions about the initial allocation of tasks and responsibilities based on their own particular interests and capabilities as well as the needs of the organization. Entrepreneurship research demonstrates that firm founders bring experiences and ideas that importantly shape their organizations (Eisenhardt and Schoonhoven 1990; Gimeno, Folta, Cooper and Woo 1997). For example, Boeker (1988) finds that the firm strategy is influenced by the functional background the founders bring to the firm. Using this same logic, we argue that initial incumbents bring with them experience and ideas that importantly shape organizational positions. The preferences and characteristics of the initial incumbents, then, strongly shape how the initial position and combination of responsibilities are negotiated among the founding team.

Organizational positions incorporate both content (“what”) and process (“how”) characteristics (Van Maanen and Schein 1979). Indeed, the position creator can advocate for an activity portfolio and way of doing business that is consistent with his or her abilities. Not only does the first person attempt to shape the actual distribution of activities to cater to their particular preferences and play to their strengths and talents, but he or she defines the expectations for the position itself.

The influence of the individual is likely to be particularly vivid when roles are first enacted as brand-new positions in an organization. Prior to this moment, the role only exists as an abstraction.

The initial instantiation of a position within an organization must be created by the first person to occupy the position. It is in this “role-making” that individual agents set boundaries through their internal negotiations with other actors within the organization (Turner 1962; Graen 1976). This is not to say that this person has no other constraints; rather, an internal logic suggests that the primary influences on position definitions are the technical needs of the firm, the preferences of existing managers in the firm, and the knowledge and experience of the position creator.

For example, within the technical and strategic boundaries of the firm, the first vice-president (VP) of sales may determine whether sales includes some combination of direct or channel sales, marketing analysis and customer support and therefore establish a position imprint. Because these initial choices shape both what the VP of sales does and how the job gets done, the position creator is likely to seek a job definition such that he or she is likely to be successful. An implication of performing a job well is that the firm will want the position incumbent to remain in the position for a long time. For example, Xu and Aldrich (2005) argue that those employees in newly created, idiosyncratic jobs are likely to be indispensable “gurus” on whom organizations become dependent. Similarly, individuals who are able to tailor a job to meet their own personal needs enjoy greater job satisfaction (Wrzesniewski and Dutton 2001) and will be unlikely to depart. Thus, given the ability of the creator to mold the position to suit him or herself, we hypothesize:

H2: Position creators will have lower turnover rates than position successors.

Position Imprints and Position Successors

Once position creators have established an initial allocation of tasks and responsibilities that map with their own experiences, job descriptions, job titles, and internal selection criteria become tangible manifestations of position expectations (Robbins 2005). These initial boundaries are further solidified through interaction with other position holders who develop expectations about what the position entails, how its tasks should be accomplished, and what kind of person is best suited to fill the

position (Graen 1976; Toffler 1981; Baker and Faulkner 1991). These “role-others” have claims to their own tasks and they have expectations for how their role fits with other roles in the organization (Turner 1985). When the first incumbent leaves, those that follow are stepping into a more established position. Thus, when the organization needs to replace departing or promoted members, the legacy of the original position definitions necessarily becomes apparent. Despite the likelihood of continual negotiation, there are stable properties of the position that are passed from position taker to position taker because the people making the hiring decision, and the existing employees who need to interact with the position, have preset expectations regarding the boundaries of responsibilities, the requisite skills, and the metrics of success for the position.

Our concept of position imprints draws upon ideas of organizational imprinting (Stinchcombe 1965). Research convincingly documents that organizational imprints shape internal structures and processes as well as firm outcomes. For example, initial organizational blueprints influence the rate at which formal practices are adopted and subsequent administrative intensity (Baron, Burton, and Hannan 1999). Although most work on imprints has focused on firm level outcomes and structures, we expect to see path dependence at the level of the position. As positions are enacted in organizations, they generate position-specific expectations for both what is done and how it is done.

Position imprints imply that the experiences of the position creator, and the match between that person and subsequent incumbents, will influence the turnover of position successors. Given that established positions are relatively difficult for individuals to alter (Nicholson, 1984), if position successors have substantially different backgrounds and skills, they should be less well-suited to the position and therefore less likely to stay in the position. Relatedly, position incumbents that do not match the expectation of role-others and the established boundaries of the position will be more likely to exit.

For example, consider again the first VP of Sales in a computer software firm who comes from a sales background and focuses the firm primarily on direct sales. The position successor, perhaps the second or third VP of Sales, comes with a very different background—one more oriented towards marketing analysis. The experiences of the position successors may be well aligned with the direction the firm must go in order to develop and grow; however, the position successor still faces the prospect of shifting a set of expectations developed by the position creator. Thus we hypothesize:

H3: Position successors with prior experiences that are different from position creators will have higher turnover rates than position successors with prior experiences that are similar to the position creator.

Normative Expectations and Position Imprints

To this point, we have considered the consequence of internal and external pressures separately, yet we expect successors to face both. The simultaneous impact of internal and external constraints is vivid when examining the transitions of position successors: typical (normative) or atypical (non-normative) successors who follow typical or atypical position creators. We illustrate these different transitions in Figure 1.

The transitions from typical position creators to typical successors (Cell 1) are the unproblematic succession events that are portrayed in stylized studies of organizations and labor markets. There is a clearly defined position in the organization and there is a pool of candidates with the requisite skills and experience to fill this position. Successors face neither internal nor external constraint; therefore, this transition provides the baseline turnover rate against which other transitions can be compared. When the first position holder has an atypical background, however, he or she is more likely to have created an idiosyncratic job with unusual tasks and responsibilities. It will likely be difficult for any successor to fit in the position. Consider, for example, a finance position. The normative background for a finance executive is finance. This is a functional area with external

certifying bodies and specific expectations of the position. If the first finance executive in a firm is atypical and has an engineering background, subsequent finance executives can fall into one of the three cells in Figure 1. First, subsequent executives can be similar and also bring an atypical engineering background (Cell 4). An atypical successor with an engineering background has the advantage of matching the initial incumbent and faces no internal constraint but faces significant normative constraint. These atypical successors can either attempt to develop the position in a more typical fashion without any relevant experience to draw on or continue in the position as it was developed but have a difficult time interacting with and conveying legitimacy to external constituents. Second, a subsequent finance executive can have a typical finance background and fit the normative but not internal expectations (Cell 2). Although the successor will look like the broader labor market for the position, he or she will not have the experiences—or the associated approach to the task—that those within the firm expect. This typical finance executive may struggle because he or she may have been assigned responsibilities that are marginal from a finance perspective, may be modifying templates created according to an engineer's logic, or may need to create financial processes and procedures that have to-date either been nonexistent or been in the domain of another executive. The successor either attempts to modify the role to be more normative, or tries to do a job created from a different perspective and with different assumptions. Efforts to expand or contract the domain of the position may run afoul of the boundaries of other executive positions and cause conflict. Furthermore, because organizational processes encourage internal stability and consistency over time (Hannan and Freeman 1984; Aldrich 1999), even if the original requirements are no longer appropriate or relevant, a successor faces significant constraint when he or she deviates from those expectations. Finally, a subsequent finance successor can have a different atypical background, an operations background for instance, and face both internal and external constraint (Cell 5). This successor is not well-suited to

continue in the position as developed or convey legitimacy to external constituents. Given the challenges all three scenarios reveal, we hypothesize:

H4: Position successors who follow atypical position creators will have higher turnover rates than position successors who follow typical position creators.

Thus far in our theorizing, we have been agnostic as to the relative strength of internal and external sources of constraint. Instead we have hypothesized effects for both without stating which we expect to dominate. However, our approach has the potential to adjudicate among several competing predictions. On the one hand, internal perspectives highlight the local negotiations among interacting executives that reify position definitions and boundaries. Logically extending the internal perspective would imply that having a match between the position creator and subsequent successors – regardless of whether the match is among two atypical position holders or two typical position holders – should lower turnover rates. On the other hand, external perspectives (i.e. institutional theory) would predict that external sources of constraint should dominate. This would imply that the normative benefits of transitioning from atypical position creators to typical position successors should outweigh the costs of having a successor who does not match the position imprint.

Theories of bureaucratization and professionalization similarly emphasize external normative constraints; however, they recognize that firms evolve and mature over time (Weber 1946; Scott 1992). Thus, while the initial positions may begin highly atypical and idiosyncratic (Baker and Aldrich 1994), as firms mature and are subjected to external influences their positions are redefined to conform to external expectations. In entrepreneurial firms this happens as founders are replaced by professional managers (Hellmann and Puri 2002).

All of the theoretical perspectives imply that the most successful transitions – those where successors enjoy the longest tenures -- will be from typical position creators to typical successors (Cell 1 in Figure 1) and the least successful transitions will be from a typical position creator to an atypical

successor (Cell 3 in Figure 1) and between atypical creators and successors who are mismatched (Cell 5 in Figure 1). The first faces no constraint, the latter two face both internal and external constraint; thus, we hypothesize:

H5a: Typical position successors who follow typical position creators will have the lowest turnover rates when compared to other types of transitions.

H5b: Atypical position successors who differ from the position creator will have the highest turnover rates when compared to other types of transitions.

Because our theoretical propositions do not assign relative weights to internal and external constraints, and because extant theories do not offer clear predictions about expected successor tenure in the transition from atypical creator to typical successor (Cell 1 in Figure 1) or the transition from atypical creator to a matching atypical successor, (Cell 4 in Figure 1) we do not develop directional hypotheses for these transitions. Instead we explore these turnover rates empirically to examine whether successors facing internal or external constraint face have higher turnover rates.

METHOD

Testing our hypotheses requires information about firms, positions and individual incumbents over time. We must observe positions as they are created in settings where the position has the potential to be filled by multiple incumbents. Because our outcome of interest is individual turnover, we must attempt to control for the individual, organizational, and environmental factors that might influence turnover. For all of these reasons, we have chosen to study the executive turnover of functional executives in entrepreneurial organizations. Examining the emergence and evolution of functional positions in new organizations offers a unique opportunity to observe how social structures are created and stabilized.

Executive positions have discretion and visibility and thus provide a useful sample to study. Unlike most research on executive turnover, we consider all of the top executive positions, not simply

the CEO. Indeed, there are many reasons to believe that the causes of turnover for the top-most executive might be unique as these leaders can be subjects of scapegoating (Boeker 1992), political intrigue (Ocasio 1994), or changing cultural conceptions (Fligstein 1990). We explore this in greater detail below.

Data and Sample

This paper begins with a sample of entrepreneurial high technology firms in California's Silicon Valley that were studied as part of the Stanford Project on Emerging Companies (SPEC) (see Baron, Hannan and Burton 1999 for a detailed description) but includes additional data on individual executives. The SPEC sample contains firms in the computer hardware and/or software, telecommunications (including networking equipment), medical and biological technologies, research, and semiconductor industries, and the sample has many advantages for our purposes. First, focusing on firms within a single region allows us to hold constant key labor market and environmental conditions that might impact turnover. Second, firms in the sample had to have at least 10 employees and be less than 10 years old. The restriction to less than 10 years old (at the time of a 1994-95 interview) facilitated the recollection of information and is consistent with other research examining new ventures (e.g., Certo et al. 2001). In addition, by relying on a sample that excludes very small firms, we increase the likelihood that we are observing multi-function executive teams. The SPEC sampling frame necessarily results in a sample that is success-biased as firms survived an average of five years before the time of the interview. As a result, the sample is not representative of all small businesses but rather emphasizes high-potential high-technology new ventures. To the extent that our sample excludes firms that failed in their first five years, and those that remain small, it likely under samples firms with unusual or atypical employees and founders. Thus, we may have fewer firms that begin with non-normative position creators. This bias implies that we have a very conservative test of our

theoretical propositions as we should be less likely to find non-normative internal path dependent processes.

In order to compile the data for this study, we constructed a database of every founder and every executive who ever held the title of vice president or higher from founding through July 2001. We began with the founding team members, whose identities were obtained via the original SPEC interviews, and recorded each subsequent executive addition and exit including job title, start date and departure date. We tracked these executives before and after their employment with the SPEC sample firm using company sources (interviews, company documents, and web pages), archival sources including *Lexis/Nexis*, *Dow Jones Interactive*, *Edgar Archives* (useful for firms about to go public and for top managers that have been involved with public companies), and extensive web searches. Historically there has been tremendous movement between firms in Silicon Valley (Saxenian 1994, Fallick, Fleischman, and Rebitzer 2004), and the local paper, *The San Jose Mercury News*, follows those movements in a regular column on promotions, movements, and resignations.

We collect rich longitudinal career histories on a relatively large sample of executives. Over a six-year period we spent thousands of person-hours searching all of our sources multiple times. We completed at least four searches for each person. In addition, we confirmed, via interview or telephone, the career histories collected through 1996-97 with the person designated by the CEO or the HR person for nearly 50% of the companies. This increased the reliability of the earliest executive team data, the most difficult period to gather consistent data through archival sources.

Our final database contained information on 1,461 executives, holding 1,863 different positions in 169 unique firms, beginning with the founding month through July 2001. Executives that do not leave their position by July 2001 are right-censored. Although the original sample contained 174 firms and 1,950 person-positions, we were missing individual data and important firm controls for several firms and thus eliminated them from our final sample. For each executive, we coded his or her

current position as well as past experience. We examined positions and background in 11 functional areas: sales, marketing, customer service, operations, finance, administration, human resources, strategic planning/business development, science/engineering/research and development, general management, and President/CEO. We chose these functional areas to be broad in our conception of background and to mirror the breadth of experiences represented in individual titles. President/CEO is not a functional area in a strict sense and could be aggregated under the general management function. However, there is evidence that both the antecedents and consequences of succession for top-most executive are different (e.g. Haveman 1993). Furthermore, the President or CEO of a firm has more power than any other executive; thus, this role may be better insulated from internal and external constraints (Boeker 1992). For these reasons, we treat President/CEO as a distinct category although our results do not change with or without the inclusion of President/CEO.

On average we have data for 2.27 position incumbents for each function in a firm (maximum of 17); thus, we have a position creator and slightly over one successor for each function in a firm. As we will show, however, there is wide variation these numbers across functions and firms. An individual position may encompass multiple functional areas (and did so in 11% of the positions) and a person can have prior experience in all, none, or some, of these functional areas.

Collecting career histories from archives poses two distinct challenges. First, because companies do not consistently announce when individuals leave a position, it is difficult to find accurate departure dates. However, we could often infer an exit date by either an announcement that the executive was hired somewhere else, or that another executive was hired into the same position in our sample firm. This approach underestimates spells of unemployment in individual career histories and does not account for time when positions are unoccupied. Thus, the duration of time incumbents hold positions is biased upward. We are comfortable with this empirical strategy because it biases the data against us.

A second data challenge arises because we cannot easily distinguish between missing data and no prior experience. For example, we confirmed that at least 38 founders (11% of the founders) started the company directly after school (generally science or engineering Ph.D.), so the prior employment experience of these founders was accurately non-existent. Overall, we were unable to find career information for individuals prior to their employment in a SPEC firm for 17% of our sample. It is likely that some subset of these executives, like the founders, had no prior employment experience. But it is also possible that these people held positions that did not get media exposure, either because the position was too junior or their prior firm was not media-worthy. This possibility makes it difficult to measure the extent of the missing data problem. However, as we describe below, in all of our analyses we control for the amount of data we have for an individual. Additionally, we find in supplementary analyses that excluding all executives with no prior experience (and thus overestimating the extent of the missing data) does not substantively impact our results. We also ran analyses excluding firms where more than 50% of the positions had no experience and again results were substantively the same.

Dependent Variable

Our dependent variable is the turnover of an individual holding a particular functional position within a firm. Turnover is treated as an indication of position fit with the assumption that lower person-position exit rates indicate greater fit between the individual and the position. This is the same as saying that job duration is positively associated with fit. This assumption is well supported in the organizational socialization literature where intentions to turnover (e.g. Wanous 1992) and job survival (Caldwell and O'Reilly 1985) are common outcomes of interest.

When a firm hires an employee and when a person agrees to take a position, both parties expect that the new incumbent will successfully fulfill the job requirements and the employment relationship will have some longevity. At the executive level in particular, new hires are often only brought on board after lengthy courtships, extensive background checking on the part of both parties,

and elaborated interactions among incumbent executives and the prospective hire (Finlay and Coverdill 2002; Khurana 2002). This recruitment process may not be as elaborate in the beginning stages of entrepreneurial firms; however, early hires often involve group input (Aldrich and Von Glinow 1992) and personal networks (Baker and Aldrich 1994). Regardless of the age of the firm, the goal of hiring is the same: to hire someone who will stay with the firm.

Most theorists agree that executive turnover is problematic for firms (see Staw 1980 for a review). There is substantial evidence that executive turnover is disruptive to operations, particularly in times of growth (Haveman 1993), demoralizing to organizational members (Baron, Hannan and Burton 2001), and a source of organizational instability due to knowledge loss (Carley 1992). Particularly in a young firm, individual executive exits harm the firm's prospects of success (Beckman, Burton and O'Reilly forthcoming; Boone et al. 2004).

Turnover is calculated for each person-position. A person-position begins each time an individual begins a job with a new functional title, and ends when the person no longer occupies that functional position or the person leaves the firm. Note that a move from VP of Manufacturing to Senior VP of Manufacturing is not coded as a position exit because the function did not change. We examined the above-mentioned 11 functional areas, and a position can include any combination of those functional areas. In our sample, when an individual changes functional positions within the firm, this may also be a success (e.g., a promotion from CFO to CEO). Thus, when an individual leaves one position and takes on a different position within the same firm, we record the transition as an exit from the position and the person exits the risk set for that position. This transition is not considered a turnover event; rather, the person-position observation is right-censored.

Independent Variables

For each of our 11 functional areas, we calculate a position sequence variable. The first individual who fills a functional position in an organization is considered the position creator and holds

sequence number one. After creating the sequence variable for each functional area, we examined all 11 different functional background experiences that an individual could have had in his or her prior jobs. We coded a dummy variable for each of the 11 functional experiences indicating whether, in his or her prior three jobs, the individual ever had a job with the particular functional responsibility. From these sequence variables and the 11 variables representing past experience, we were able to construct the following independent variables.

Atypical functional experience. We first calculated the average background within a position for all position holders holding that position before and including the year of hire. This score is the proportion of position holders that bring experience in each of the 11 functions. So for example, a small proportion of HR executives bring marketing experience; whereas virtually all bring HR experience. Thus, the average range for the background of each functional area can range from zero (no one has this experience) to one (everyone has this experience). These 11 time-varying variables represent the generalized expectation for what an individual background should look like for someone in a given position at a given point in time. Because we are looking at a relatively large number of firms and people, these generalized expectations calculated from our sample are likely to be representative of the local labor market at the time of hire. Our difference score is then the summed absolute difference between the incumbent's background and the average background of position holders in a particular position across these 11 functional areas. For each person-position in the firm, we then have a measure of the difference in background of the incumbent from the average or norm for the position.

Position Creator. The position creator is the first individual to hold a given functional position in the organization. We create a set of dummy variables, one for each function, indicating whether the position is being occupied for the first time. When the creator leaves the position, other individuals become position successors (second, third, etc.). Thus, the dummy variable is coded one if the person is the creator, and zero if the person is the second or later role incumbent (a successor).

Difference from Position Creator. We examine the difference between the position creator and each successor by comparing background experiences. We compared the composite of 11 functional background experience variables of the position creator and of the position successor. For each position, we calculate the absolute difference between the two position holders. For example, two executives that either both had or both did not have marketing experience have a difference of zero; whereas, if one executive had marketing experience and the other did not, they have a difference score of one for that functional area. We then sum the absolute differences between the two role incumbents across the eleven functional areas. The theoretical range for our difference variable is from zero (identical backgrounds of two incumbents) to eleven (completely different backgrounds of two incumbents). The actual observed range is from zero to six.

Atypical position creator. We created the atypical position creator variable by assigning the position creator's atypical experience score to each successor. This variable demonstrates how position creator atypicality shapes the turnover rate of successors.

Control Variables

Firm and Industry Controls. We first controlled for firm age. We used the earliest of three dates: incorporation, hiring of first employee, or start of "normal business operations" as the date of founding and update age monthly. We also coded whether the firm had an initial public offering (IPO) and include it as a control because previous research has found firms that have gone public have higher rates of founder departure (Boeker and Karichalil 2002). In the IPO month, public ownership was coded one and remains so for all subsequent months. Turnover may also vary by industry (Harrison, Torres and Kukalis 1988). We include the two industries that have turnover rates that differ significantly from high technology in general. Computer hardware/software has significantly higher turnover and manufacturing occasionally exhibits lower turnover rates. Finally, we controlled for top management team size and team growth. Team size was measured as the number of executives with a

title of vice-president or higher in a given month. Team growth was the proportionate change in number of executive team members in the preceding two quarters. Growing teams may have higher rates of turnover as firms may be less dependent on particular employees; alternately, growing teams are an indicator of firm success which tends to reduce turnover rates (Finkelstein and Hambrick 1996). In our sample, team growth was highly skewed, with many teams not growing, so we created a dummy variable equal to one if the team was growing. In supplementary analyses, we controlled for firm size (as measured by number of employees) and firm growth but the results of these variables did not substantively change our hypothesized results. Further, firm size is largely captured by the firm age and team size variables.

Individual controls. We control for the number of prior jobs held by each individual prior to their current position in a SPEC firm. This controls both for the amount of data collected by person (and thus addresses data limitations in our sample) as well as the possibility that individuals with an extensive job history are job-hoppers (Farber 1994). Individuals for whom we have no prior career information (for which we can not discern whether this is accurate because they are starting their career or we are actually missing data) are coded as 0, and where we have prior information this variable represents the total number of prior jobs for each person (maximum of eight). We also control for whether the person held an executive-level position in the past. This serves as an indicator of the experience of the incumbent with executive level work, and it also measures the marketability of the executive. Note that our measures of prior jobs and executive experience do not include internal promotions within a firm but instead rely on function and hierarchical level in prior firms.

We control for whether a position in our focal firm incorporates multiple functions. For the vast majority of roles (89%), an individual operates within a single function at a time. However, in some cases, an individual occupies a position that encompasses two or even three functional areas simultaneously (e.g., VP of finance and engineering). We include a control variable in all analyses for

these multi-functional positions. Individuals with multiple functional responsibilities may have a higher rate of exit because they are likely to be atypical for at least one of their functions; alternately, the position may be particularly suited to them, especially if it is an idiosyncratic combination of functions, thus decreasing the rate of exit. However, when an individual takes on a functional area that has not been formally assigned to a position before, we believe they accrue the benefits from being the position creator even if he or she already holds other functional responsibilities within the firm. When multi-function roles implied comparisons with multiple position creators, we took the largest difference. Our logic was that individuals holding a position with two creators (in different functions) are more constrained than those that follow in the footsteps of only one creator.

We also control for whether the person is a member of the founding team. Succession rates have been shown to vary by the position held by firm founders (Haveman and Khaire 2004). Finally, we control for whether there is a positive imprint. We code a position as having a positive imprint if the creator moved to another position within the firm after vacating the initial position. An internal move suggests the person had been successful within the firm and thus is likely to have left a positive imprint. On the one hand, a positive imprint suggests that the position has been conceptualized in a fashion that has been successful, making it easier for successors. On the other hand, a positive imprint may suggest that the position creator has left very large footsteps to follow, making it more difficult for successors to live up to the residual expectations. In either case, the success of the creator may have an impact on the successor.

ANALYSIS

We conduct event-history analysis on monthly observations (Cleves, Gould, and Gutierrez 2002) to predict executive succession, updating covariates monthly. We report Cox proportional hazards model using maximum likelihood estimation and robust estimates of standard errors clustered by individual position to account for non-independence of observations within a position over time

(Lin and Wei 1989). As its name implies, the Cox proportional hazards model assumes that the hazard ratio is proportional over time. We test this assumption for all of the covariates and globally for each model based on the generalization by Grambsch and Therneau (1994). We found that the hazard rate for founders and non-founders were not proportional. Founders do not leave in the first year on the job, whereas non-founders have a relatively smooth exit rate across the duration of the job. As a result, we use a stratified estimation technique where the baseline hazard of founders is allowed to differ from non-founders. Thus, the founder effect does not have a reported coefficient but is instead accounted for in the baseline hazard rates. Results are similar using a Weibull parameterization (the parametric model that most closely resembles our data according to the Akaike (1974) Information Criterion), a piecewise exponential model, and a non-stratified Cox model. Thus, in our analytic framework, individual executives are at risk for exiting their position from the first month of their employment and we model the hazard rate of actual exits. Individuals leave the risk set when they leave the firm, when they move to another position in the firm, when the firm dies or is acquired, or on July 2001. Only the first event (leaving the firm) is coded as a turnover event.

RESULTS

We begin with a descriptive portrait of our sample.¹ We observe a total of 1,863 positions and 1,113 position exits over our observation period. Table 1 presents the distribution of individual executives across functional positions and provides a variety of summary statistics. This table reveals that most firms start with a President/CEO and usually have a science or engineering vice president within the first two years of founding. The mean firm age for first President/CEO is 9 months, with a standard deviation of 16 months, and 98% of all firms have a President/CEO during our observation period. The science/engineering executive is typically the second to join. As can be seen by the

¹ A variable correlation matrix is available on the ASR website.

standard deviation of firm age at position creation, there is an enormous range around when positions are added to firms. For each function, there was at least one firm where the position existed within three months of founding and also at least one firm where the position was created in year 10 or later.

The median duration of executives in our sample is just over 2.5 years (32 months) and Table 1 reveals that there is variation in durations across functions. Functions also differ in the number of successors we observe. Although most of our observations are of position creators (46%) or immediate position successors (23%), we have some third or later successors in all functions except HR. We also see differences across functions in the typical background of incumbents. For finance, human resources and science functional areas, most incumbents have background experience in the function. In contrast, most of the CEOs in our sample have no prior CEO experience (they often have prior general management or prior science experience), and most business development executives come from another functional area as well. This suggests that there is variation in normative expectations across functional areas, with some areas having much more homogeneity of background for the average incumbent. Table 1 also reports the typical background of position creators.

Across all functions, the overall median tenure is shorter than the median tenure for position creators. This suggests position creators stay longer, offering descriptive support for Hypothesis 1. Given these patterns we are confident that our sample gives us an ability to at least provide preliminary empirical evidence to test our hypotheses.

Table 2 presents the descriptive statistics. We see that 24% of our position observations are firm founders. Thus, the majority of our executives join the firm after founding. Over 45% of the observations have prior senior executive experience, and 32% of the position creators are promoted internally. The average firm has an executive team of about three people. Incumbents vary in the extent to which they have atypical experience with a score ranging from 0 when the incumbent perfectly matches the normative expectations to a maximum difference of 5.32. The difference from

position creator score range is slightly higher, ranging from 0 to 6, when comparing the backgrounds of position creators and successors. The correlation between these two difference measures (.67 between difference from position creator and atypical experience) suggests that, although many position creators meet the normative expectations, there is variation among the creators.

We test our hypotheses and present the results of our turnover analyses in Table 3. We report hazard ratios, so entries greater than one are positively associated with turnover rates and entries less than one are negatively associated with turnover rates. We report two model specifications. In Panel A we aggregate across all functional roles and all firms. We report stratified Cox models where we stratify by founder status and thus allow the baseline turnover rate for founders and non-founders to differ. In Panel, B, we considered the possibility that unobserved firm-level heterogeneity that might influence turnover rates. In this panel we allow the baseline hazard rate to vary for each individual firm in addition to continuing to stratify by founder. This approach is conceptually similar to running regression models with firm fixed effects. In supplementary analyses we allowed for the possibility that different functional roles have different baseline hazards and stratify by both founder and by function. These results did not differ from Panel A.

Across all 10 models reported in Table 3, we see that executives in public companies are more likely to turnover than those in private companies. This may be due to their greater labor market visibility or their ability to achieve financial liquidity. There is higher turnover for individuals in the computer industry, and lower turnover for individuals in the manufacturing industry. We see that experienced executives—those who have held other prior senior management positions and many prior jobs—have higher turnover rates. This implies that experienced senior executives have greater career mobility than less experienced executives. In contrast, when position creators move internally (positive imprint) it decreases the rate of turnover for position successors. This finding is robust across a variety of specifications and only becomes statistically insignificant in model 5a and 5b. This finding

raises the question of whether the promoted position creators continue to exert an influence on the position because they are still working for the firm (as opposed to position creators that move internally, leave a positive imprint, then later leave the firm). In supplementary analyses, we find turnover is reduced when the position creator was in the firm during the successor's tenure. The inclusion of this variable, however, does not alter our hypothesized effects discussed below. This suggests that the influence of the position imprint is independent of the position creator still being part of the firm. In fact, successors benefit from the position creator remaining with the firm. This implies that power struggles with the position creator are less of a problem than loss of knowledge or support. We also find in supplementary analysis that when position successors come from within the firm (an internal promotion), they have higher turnover rates. Individuals who have been promoted may be attractive to other firms, or individuals may simply tire of working for the same organization. Including the promotion variable does not change any of the below results. Thus, having the support of the position creator and being promoted into the current position do not mitigate the difficulty of being different from the position creator. Finally, being a firm founder is part of the stratified estimation of the hazard rate and thus no hazard ratios are reported. When we model a piecewise exponential model controlling for founder status or a Weibull model with firm founders as an ancillary parameter, we see weak evidence that firm founders have lower rates of turnover, but the founder effects are overshadowed by our hypothesized variables. As a result, we report here the simpler Cox models.

Models 1a and 1b test Hypothesis 1 and offers partial support for our claim that position incumbents with atypical experience (experience different from the norm) have higher rates of turnover. In Model 1a, we find that incumbents with atypical experience have a 14% higher rate of turnover than more typical incumbents. The coefficient is slightly positive, but not statistically significant in Model 1b. It is likely that the effect of atypical experience is absorbed in varying baseline

turnover rates for each individual firm, suggesting that there may be firm level differences in how atypical positions tend to be. We thus find modest evidence in favor of Hypothesis 1.

Models 2a and 2b show support for Hypothesis 2 where the position creator has a significantly lower rate of turnover. Position creators are 22% less likely to leave the firm suggesting position creators are able to establish positions that increase their fit within the organization.

Models 3a and 3b test Hypothesis 3. The results demonstrate that successors who are different from the position creator have an 11% higher exit rate than those that are more similar. Thus, in support of Hypothesis 3, we find that successors that have different past functional experiences than the position creator have higher rates of turnover.

Models 4a and 4b examine the extent to which following an atypical position creator leads to higher turnover rates for successors. We find that successors who follow atypical position creators do indeed have substantially higher turnover propensities. The increase in turnover rates ranges from 15-23%. We therefore have support for Hypothesis 4, that position creators with atypical backgrounds create idiosyncratic positions that are difficult for successors to fill. This suggests that although atypical position creators may be advantaged (as all first position holders are), their successors will be disadvantaged.

Models 5a and 5b offer a more refined investigation of the consequences of different types of transitions. We created a series of dummy variables that explicitly test the different transition types noted in Figure 1. The omitted category is the transition from a typical position creator to a typical successor. All of the other transitions have positive hazard ratios, suggesting support for Hypothesis 5a: typical-typical successions have the lowest turnover rates. Hypothesis 5b argued atypical position successors who differ from position creators will have the highest turnover rates. This would suggest the last two variables in Table 3, typical-atypical transition and mismatched atypical-atypical transition, should have the highest hazard ratios. The results vary slightly across the specifications, but the typical-

atypical transition has only a marginally higher hazard ratio than the typical-typical transition (the omitted category) and the hazard ratio is always the lowest in the model. This surprising effect may indicate that firms needing specialized experience bring someone idiosyncratic into a position. The mismatched atypical-atypical transition, however, is always significantly higher than the typical-typical transition, and it has the highest hazard ratio in Model 5a. Thus, Hypothesis 5b has mixed support.

We graph the survival functions of position successors in Figure 2. We create a median split for atypical position creators, separating those who were greater than the median levels of atypical experience from those who were less than the median. We create a similar median split for position successors that had atypical experience, distinguishing typical and atypical successors. We also created a median split for the difference between the position creator and position successor, to differentiate between matched and mismatched atypical-atypical transitions. From these three variables, we created five possible succession patterns: typical successors following typical creators (287 positions), atypical successors following typical creators (180 positions), typical successors following atypical creators (195 positions), matched atypical successors following atypical creators (195 positions), and mismatched atypical successors following atypical creators (298 positions). We graphed the survivor function for these five different groups of position successors, estimating a separate Cox regression model for each group with the survivor function adjusted for founder and firm age. This amounts to examining zero values of the covariates (thus examining non-founders and firm's at founding) (StataCorp 2005).

In Figure 2, we see that, as expected, the highest rates of survival (lowest turnover) are among typical successors that follow typical position creators. There are clearly advantages to matching the internal and external expectations. However, we see that the matched atypical successors following atypical position creators have the next highest rate of survival. This implies that internal constraints may be more powerful than external constraints. The mismatched successors (atypical creator-typical successor; typical creator-atypical successor, mismatched atypical creator and successor) are practically

indistinguishable and have the lowest survival rates. A stratified log-rank test for equality of the survivor functions reveals that these differences between the matched and mismatched transitions are significant (largely driven by increased survival of typical position creators-typical successors).

Although the difference between the survivor functions for the matched atypical position creators-atypical successors and the mismatched successors is not significant, this difference may be due to the fewer number of observations for the matched atypical transitions. Figure 2 demonstrates advantages to meeting normative expectations and to being consistent with the position creator. It is interesting to note that those successors inconsistent with the position creator, even when the position creator is atypical, have the lowest survival rates of all – a finding that runs counter to standard predictions about the benefits of conforming to normative expectations.

In Table 4 we present excerpts from a range of supplementary analyses where we test the robustness of our results and attempt to rule out alternative explanations. We do not report all of the control variables as their magnitude and significance is comparable to what was reported in Table 3. We begin by exploring an alternative measure of atypical experience that does not rely on statistical averages. In the first two models of Table 4 we measure whether a position incumbent has any prior experience in the relevant functional position. In this case, having prior relevant experience lowers turnover rates (Model 1). In addition, this alternative measure of atypical experience does not eliminate the effect of being different from the position creator (Model 2). Thus we have increased confidence that we have support for our H1 and H3 claims that atypical position incumbents have higher turnover rates than typical position incumbents and that position successors who are different from the position creator have shorter tenures than position successors who are similar to their position creator.

In Model 3 we test the robustness of our position imprint findings and examine whether our evidence in support of H2, that position creators enjoy longer tenure, is true regardless of when the position is created. This is to rule out the possibility that position creators who either found or join a

very young firm may be unusually invested in their position and stay longer, or by virtue of working at an unknown entity may have worse labor market alternatives than other people. We interact the position creator variable with the firm age when the position was created. This interaction is not statistically significant indicating that position creators enjoy longer durations than other position incumbents, regardless of whether the firm is young or old when the position is created. Thus, we are increasingly confident that position creators are able to craft jobs in which they are well-suited and likely to remain.

In Models 4 and 5 of Table 4 we explore the robustness of our finding that successors who are different from the position creator have higher turnover rates. This is a further exploration of the internal perspective that suggests local negotiations should be most important. Interestingly, traditional internal perspectives tend to avoid temporal interactions. If temporal consequences were considered, the important comparison likely would be between a position holder and his/her immediate predecessor. Thus, it is possible that the positive effect of position imprints is driven by the second successor. That is, the positive effect could be interpreted as the difference from the prior position incumbent rather than difference from the position creator. In Model 4 we created a variable measuring the difference from the prior role incumbent. This is the difference between the 1st and 2nd incumbent, the 2nd and 3rd incumbent, and so on. The effect is not significant, affording some confidence in our interpretation that it is the first more than the prior position incumbent that shapes the role in ways that make it difficult for subsequent position successors. This also helps reduce the concern that our results are driven by firm-level effects, because it is clearly the position creator and not the prior position holder that influences the turnover of position successors. Model 5 constrains the sample to only 3rd or later position successors in order to fully assess the distinction between “difference from position creator” and “difference from prior position incumbent.” Importantly, we again achieve statistical significance, despite a much smaller sample. Finally, we examine the

simultaneous influence of internal and external constraint to further explore Hypotheses 4 and 5.

Model 6 examines the difference from position creator and atypical experience simultaneously, and we find the internal imprint, difference from position creator, to have the strongest effect.

To further consider the strength of the position imprint, in supplementary analyses we explored the effects of position creators who are also firm founders, the job duration of these founder position creators, and the average tenure of the contemporaneous team. These were all attempts to better understand what factors influence the strength of the position imprint. For example, founders may be held in particularly high esteem and leave strong imprints, position creators with short tenures may leave only weak imprints, and long tenured colleagues may have actual memories of the position creator that strengthen the imprint. First, we find that the position creator can be a powerful influence even when not a firm founder. Second, when the position creator held the initial position for less than one year we find that the successor is less likely to leave. This suggests that the position imprint may take a year to be established, although the continuous variable for position creator tenure did not have any significant interactions with our hypothesized variables. Finally, we found difference from position creator to be more important when the existing team had longer tenure. This demonstrates the importance of role-others in maintaining position expectations. Taken together we find strong evidence of position imprinting.

Although Model 6 suggests that being different from the initial position incumbent is more important than having atypical experience, these effects may vary by function. As noted in Table 1, some functions have more narrow expectations than others. We ruled out the possibility that our imprinting results were being driven by functional differences through our supplementary analyses that stratify by function. However, for those functions that have more stringent normative expectations, we would expect having atypical experience to matter more than in functions where the typical role incumbent is less rigidly defined. Unfortunately we are limited in our ability to fully explore differences

by function because we have relatively small numbers of creators and successors within each function. However, we conduct supplementary analyses exploring the CEO position in Models 7 and 8 of Table 4. The CEO position has both weaker normative requirements, as evidenced by only 12% of the CEOs having prior CEO experience in Table 1, and more latitude and discretion (Boeker and Karchalil 2002). This suggests that, if our theory is correct, CEOs should be less influenced by internal and external constraint because the norms are unclear and individual discretion is high. In Models 7 and 8 we examined whether our effects for atypical experience and difference from position creator are weaker for CEOs. We centered the difference scores to reduce collinearity, and we found both interactions to be negative and significant. The relationship between atypical experience and turnover, as well as the relationship between difference from position creator and turnover, is weaker for the CEO position. We cannot determine whether these effects are driven by the power of the CEO position or by the weak normative expectations, but the results are suggestive and offer encouragement for future research.

Our final supplementary analysis, reported in Model 9, was to explicitly examine whether certain transitions were easier later in a firm's life. Specifically, we examined whether an atypical to typical transition was easier for positions that are created later in a firm's life. The expectation is that firms that are filling positions with more typical people are professionalizing, and we expect this type of normalization to occur later in a firm's life. Indeed, we find that the turnover rate for a typical successor following an atypical position creator is lower for positions created later. However, the size of this effect is extremely small (1%), so the firm-level needs to professionalize do not play a major role in individual turnover rates. Overall, Table 4 demonstrates the robustness of our findings and suggests some logical extensions to the theory.

DISCUSSION

In this paper we examine the internal historical and external normative forces that shape how positions evolve over time. We find strong evidence of position imprinting. Position creators leave their legacy in a position definition that suits their own particular background. Position imprints consistently result in lower rates of turnover for position creators. Furthermore, successors have lower turnover rates when their backgrounds match that of the creator, even when examining the third or fourth successor. Position imprints are, therefore, clearly established as a source of internal organizational constraint that powerfully influences individual turnover propensities. However, unlike traditional conceptions of internal constraint that focus on contemporaneous sources such as interpersonal interactions among current position holders (e.g., Van Maanen and Schein 1979), position imprints, like other imprints, emphasize history and initial conditions (Stinchcombe 1965).

We also find evidence of external pressures. All incumbents have higher rates of turnover when they have an atypical background for their position. However, we importantly find that these higher turnover rates are also passed on to successors when it is the creator whose background is atypical. This suggests that atypical positions are difficult for successors to fill. Even if the successor fits the normative expectations for that position, the successor has a higher turnover rate when the position creator is atypical. Beyond providing further evidence in support of our notion of position imprinting, this suggests that for young firms, internal sources of constraint may be more salient than external. Position imprints generate path dependence through their impact on position successors and their succession rates.

Internal path dependence offers constraint that rivals, and sometimes trumps, external normative constraint. This implies that firms do not normalize quickly or easily. Instead, firm-level idiosyncrasies established at founding persist over time through position imprints. Although the firm may expect and benefit from the evolution of positions over time (Miner 1994; Aldrich 1999), the

process by which it occurs may have negative consequences for individuals. Furthermore, if position evolution via succession is done without sufficient attention to external normative expectations, it may have negative consequences for the firm as a whole.

There is some evidence that turnover in entrepreneurial firms is problematic (Beckman et al., forthcoming); yet, some specific types of turnover may be beneficial to the firm. For example, the organization may learn through turnover and the experiences of new executives (March 1991) even if those executives do not remain in the firm. Although quick executive exits are not the goal of the firm, there may be an individual-organization paradox where events that are beneficial at one level are detrimental to another (Phillips 2001). For example, the transition from atypical position creators to typical position successor may be hazardous to the individual incumbent who is asked to make the transition, but overall the transition may be beneficial to the firm. Indeed, in supplementary analyses, we found that firms making atypical to typical transitions were more likely to go public, supporting the idea that these firms are professionalized as they approach important milestones (Hellmann and Puri, 2002). This implies that traditional images of the bureaucratization process, where positions in a firm become more typical over time may mask a great deal of uncertainty and instability for individuals. Initial imprints influence how firms evolve, how quickly they add or lose talent, and may ultimately affect the rate at which they grow. Our research suggests, at a minimum, a great deal of variation in firm and position maturation rates and, more likely, different path dependent outcomes.

Our research is broadly consistent with a promising line of work that seeks to reconcile the structuralist and interactionist perspectives of role theory (Baker and Faulkner 1991; Callero 1994, Bechky 2006). Where structuralists are willing to acknowledge agency, they relegate it to the periphery and suggest that agents are able to make modest modifications “on the margin.” At the other extreme, strong proponents of interactionist theories suggest a contested process whereby individuals invent roles and negotiate their relative positions in situ. Our research considers the initial “agents” who take

roles from the cultural environment and create organizational positions. By examining the evolution of positions from inception, we highlight how individual agency at the moment of creation shapes lasting organizational structures, sometimes without regard for external normative pressures.

Limitations

It is important to note that our view of the external pressure in this paper is specific to a particular region with a clear identity. These factors may limit our ability to see variance in normative expectations across firms (although not across functions). Furthermore, our initial sampling frame was of firms that have survived an average of five years and grown to at least ten employees. These firms are already quite successful by entrepreneurial standards and may have internalized a good deal of normative expectations. In addition, during the time period and region we study, the background variance among people within a function is relatively stable over time. These limitations, however, suggest dominant normative expectations should overwhelm local imprints. Importantly, we do not find this to be the case. Instead, we find strong non-normative internal path-dependent processes. Indeed, the imprint of local history may be even stronger in contexts with less consistent normative pressure. While we recognize that normative expectations vary across roles, we are limited in our ability to convincingly analyze this variation by relatively small sample sizes within each function. Thus much is left to be understood about the relationship between types of normative pressure and mobility, and this is worthy of future research and would amplify the growing literature on positional constraints and individual career outcomes (Weeden, 2002; Zuckerman et al., 2003).

It is important to recognize that we examine a relatively short time span compared to studies that examine how role expectations change over time (Fligstein 1990; Stovel, Savage & Bearman 1996). Future research might profitably examine position evolution over a longer period of time. We find the position creator is important for, on average, the eleven years of a firm's life that we observe. We can not rule out the possibility that the direct relationship between the creator and successors weakens

over time (after the first decade of life). At the same time, it is possible that initial conditions may continue to play an indirect role by setting a path dependent process in motion (Beckman and Burton 2005). Over time, the difference between incumbents may dissipate as similar people are hired. For example, March and March (1977) find that school superintendents in a particular district appear increasingly similar at higher levels in the hierarchy. This may also occur over time within a position.

Finally, by emphasizing position boundaries we draw attention to patterns of interaction within and across organizations over time. However, with archival data we do not observe the actual tasks and responsibilities associated with the position and instead rely on our coded job titles as proxies. In addition, we do not know why executives left the organization or why they moved internally. The empirical fact that executives different from the position creator have higher exit rates may be driven by individual preferences, organizational choices, or both. Like much of the extant empirical literature on executive turnover, we can not easily differentiate these alternatives. But because our context is bounded in time and space, there is little reason to expect that the push and pull effects would differ dramatically across individual position incumbents. We assume that the background of the incumbent shapes their approach and preference for particular tasks and responsibilities as well as their ability to succeed in the role (Phillips 2002). A more qualitative assessment of what positions entail and how they evolve would be a useful complement to our work (see Bechky 2006 for an example).

Contributions and Implications

In spite of these limitations, our research extends our understanding of turnover and mobility and importantly speaks to several important theoretical traditions within sociology. First, we offer a temporal perspective on individual turnover that considers local firm histories. Thus, our research provides an alternative perspective on executive turnover. Second, in considering social structure within firms, we revisit core topics in organizational stratification including segregation, differential mobility, and idiosyncratic jobs in organizations. Finally, we propose a mechanism of bureaucratization

and present a descriptive portrait of the process and its consequences for both individuals and organizations. We conclude with a brief discussion of each of these topics.

Our findings suggest that executive turnover may not only be a function of individual labor market choices or contemporaneous top management team dynamics. Instead, we demonstrate that there are important structural predeterminants – position imprints --that make positions more or less amenable to executive successors. In making this argument and demonstrating the importance of position imprints, we join a growing cadre of scholars who are attending to the temporal dynamics of individual mobility (Haveman and Cohen 1994; Phillips 2001, 2005; Sorensen 2000). Our contribution is to recognize that position imprints establish the boundaries around and between functional positions and constrain position incumbents. For theorists interested in turnover and mobility, we provide an example of a new kind of career interdependence (Barnett and Miner, 1992) -- temporal interdependence -- whereby a position holder's turnover propensities are influenced by a person who may have created the position many years earlier. And while there may be no conscious memories of this position creator in the current executive population; the legacy of this position creator is embedded in the position itself. We know that homophily drives firm formation (Ruef, Aldrich, and Carter 2003), and position imprints are a mechanism by which homophily is maintained over time.

We extend the research that demonstrates how initial conditions play an important role for firms (Aldrich 1999; Baron, Hannan, and Burton 1999). For example, Baron et al. (2001) find an increase in aggregate turnover when organizations change the employment blueprint under which the firm was founded. They argue that while all change is disruptive, it is somewhat easier to change from an aberrant blueprint, or to a blueprint that is less distant from the firm's starting point. We shift the level of analysis from the firm to the position and similarly find that turnover is greater when position successors are very different than the position creator and when position successors have atypical

experience. Our longitudinal examination of succession rates by position allows us to explore organizational change in more detail and explicate the process by which firms do or do not evolve.

Our work holds promise for future research on organizational stratification. Much of the research on turnover and mobility in organizations examines the differential mobility of men and women (c.f., Rosenfeld 1992). Our work suggests that position imprints are a potential mechanism by which these patterns are maintained. Although we look at functional background as the key source of imprinting, extensions of this work should examine other attributes and ascribed characteristics that could be imprinted at position creation. In an exploratory analysis of our sample, we considered whether gender imprinting occurred. We found, to the contrary, that the gender of the *prior* position incumbent shaped turnover but being of a different gender than the position creator did not influence turnover. This suggests, for gender, recency is more important than imprints, but in our context women make up only 7% of the executive positions (152 of 1863). The gendering of jobs and backgrounds may be such that women, as a category, are not leaving strong imprints in the male-dominated environment of Silicon Valley. Existing work in this context found that early gender composition shapes the attainment of women over time as well as the administrative intensity of the organization structure (Baron et al. 1999; Baron, Hannan, Hsu and Kocak 2002) but at the executive level the numbers of women are still quite small. Despite the weakness of this particular sample, we think our approach has promise for understanding stratification more generally. Indeed, current work demonstrates the creation of gender hierarchies in newly formed organizations (Phillips 2005), and position imprints may be one way in which these hierarchies persist over time.

Our research dovetails with Miner's extensive work on idiosyncratic jobs. According to Miner (1987), idiosyncratic jobs have two characteristics: 1) the person prompts creation of the job; and, 2) the abilities and interests of the person dictate the combination of job activities (Miner, 1987: 327). Although we do not focus on why the particular position was created, we do suggest position creators

create jobs around their abilities and interests. Miner (1990) describes several sources for idiosyncratic jobs – those initiated by the original person, by the organization, or through accretion – and an understanding of these sources would be useful in future work on position imprints. One of the limitations of our work is that we do not know why a position was created. In spite of this limitation, our results are consistent with Miner’s finding that these idiosyncratic jobs (or atypical position imprints) are less likely to be routinized (Rura and Miner 2000). We suggest that the reason these jobs are not routinized is because atypical position creators generate increased turnover for all position successors. This turnover and lack of position stability makes routinization difficult. The fact that Miner (1991) does not find a relationship between idiosyncratic jobs and job death further supports our contention that bureaucratization occurs in a lumpy fashion with many mismatches and turnover events over time. Thus, our results suggest that incremental professionalization is difficult and offer words of caution to nascent organizational designers. Overall, both our work and Miner’s work emphasize firm heterogeneity, but we point to local constraint whereas Miner sees individual organizations as more flexible.

There is a sense among practitioners and academics who doubt theories of path dependence and inertia that jobs are ‘placeholders’ that can be filled with more qualified executives at later points in the firm’s history (Hellmann and Puri 2002). Our research suggests this strategy may come at high cost if new firms make initial choices that limit their ability to assimilate new executives with different experiences. By highlighting the extent to which initial position creators do or do not conform to external expectations, we move away from claims that all new positions in a new firm are idiosyncratic (Baker and Aldrich 1994) and can begin to explore the sources and consequences of firm level differences in organizational positions.

Conclusion

For organization theorists, we offer a window into the process of organizational evolution and identify the initial position definitions – position imprints – as an important mechanism of the bureaucratization process. We see that positions remain shaped by their initial formulation as people cycle in and out. This mechanism brings to life the oft cited, but rarely examined, separation of persons from roles (Weber 1946); however, our findings suggest that this separation may be more problematic than was heretofore realized. The experiences of the initial position incumbent shape the evolution of positions through differential turnover. In this way, position imprints create firm-level heterogeneity in how roles are enacted. Future research should examine how the bureaucratization process differs both across functions and firms.

For theorists interested in turnover and mobility, we explore the micro-structures of local history that shape turnover propensities at the level of the position. Examining the internal and external forces that shape individual mobility and job duration speaks to the larger sociological traditions that compare structure and agency. In this research we seek to elucidate how agents create some of the less visible sources of constraint in organizations. These micro-structures, reified through path dependence, are some of the key building blocks by which differential turnover persists. Future research should examine how individuals create other important micro-structures that contribute to broader patterns of organizational stratification and occupational segregation.

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Figure 1.
Position Creator and Position Successor
Transition Types

		Position Successor	
		Typical	Atypical
Position Creator	Typical	<p align="center">Cell 1 N=287</p> <p align="center">No constraint</p>	<p align="center">Cell 3 N=180</p> <p align="center">Internal & External Constraint</p>
	Atypical	<p align="center">Cell 2 N=195</p> <p align="center">Internal Constraint</p>	<p align="center">Cell 4 (<i>matched</i>) N=105</p> <p align="center">External Constraint</p> <hr/> <p align="center">Cell 5 (<i>mismatched</i>) N=298</p> <p align="center">Internal & External Constraint</p>

**Figure 2:
Survivor Functions for Role Successors by Transition Type**

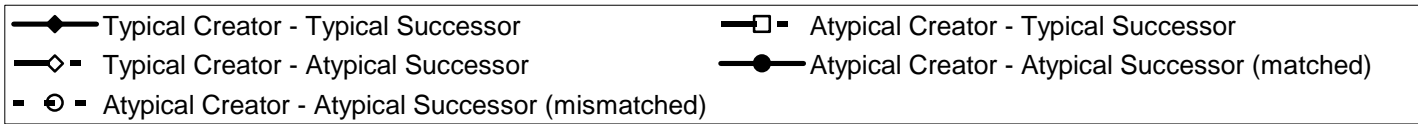
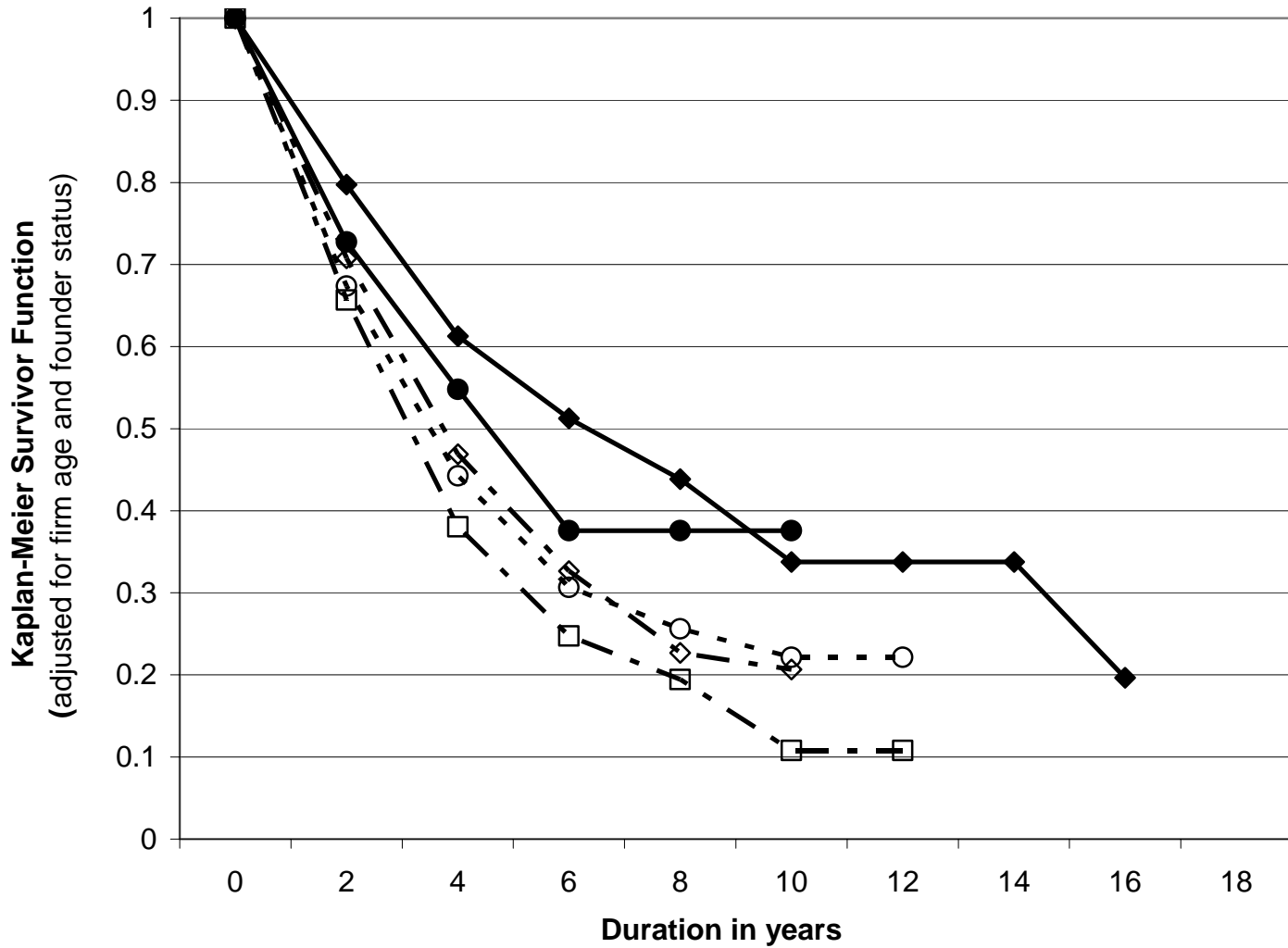


Table 1. Positions and Position Incumbents by Function: Descriptive Statistics

	N of Pos.	% Firms with Position Creator	Mean Firm Age at Position Creation (months)	Standard Deviation of Firm Age at Position Creation (months)	Median Position Duration (months)	Median Duration for Position Creator (months)	Average number of positions observed per firm	Maximum number of positions in a firm	Percentage of position holders with prior experience in function	Percentage of position creators with prior experience in function
President/ CEO	401	98%	9	16	38	45	2.21	9	12%	7%
Science/ Engineering	361	72%	25	29	39	49	2.76	11	71%	71%
Finance	235	67%	42	34	31	35	2.09	8	72%	66%
Operations/ Manufacturing	177	53%	46	40	37	44	1.94	7	35%	36%
Sales	233	60%	47	35	24	26	2.11	7	57%	56%
Marketing	229	66%	49	44	30	37	2.06	8	50%	48%
General Manager	192	41%	56	44	28	44	3.38	17	18%	22%
Admin.	78	28%	58	37	32	38	1.68	6	47%	45%
Bus. Dev./ Strategic Planning	93	34%	62	39	22	24	1.66	6	14%	13%
Service/ Support	49	19%	63	41	35	37	1.43	4	29%	28%
HR	40	20%	79	42	51	51	2	2	75%	71%
Overall	1863	100%	41	40	32	41	2.27	17	44%	42%

Table 2. Descriptive Statistics

Sample	Variable	Mean	Std. Dev.	Min	Max
All Position Incumbents (N=1863)					
	Prior senior management experience	0.46	0.50	0	1
	Number of past jobs	1.79	1.21	0	8
	Multi-function Position	0.11	0.32	0	1
	Positive Imprint	0.32	0.46	0	1
	Firm Founder	0.24	0.43	0	1
	Atypical Prior Experience	1.46	0.71	0	5.32
	Position creator (=1)	0.46	0.50	0	1
	Difference from position creator	0.79	1.09	0	6
	Atypical Position Creator	1.39	0.66	0	4
	Relevant Prior Functional Experience	0.36	0.48	0	1
	Difference from prior position incumbent	0.77	1.09	0	6
	President/CEO Position	0.22	0.41	0	1
Successors (N=1006)					
	Atypical-Atypical Transition	0.10	0.30	0	1
	Atypical-Typical Transition	0.18	0.39	0	1
	Typical-Typical Transition	0.27	0.45	0	1
	Typical-Atypical Transition	0.17	0.38	0	1
	Mismatched Atypical-Atypical Transition	0.27	0.45	0	1
Firms (N=169)					
	Firm Growth	0.01	0.08	0	1.00
	Firm Age (in months at end of observation period)	138.32	42.97	30	256
	IPO	0.52	0.50	0	1
	Computer Industry	0.48	0.50	0	1
	Manufacturing Industry	0.05	0.21	0	1
	Team Size (at end of observation period)	2.99	2.63	1	20

Table 3: Event History Analysis: Turnover Rates of Position Creators and Successors.

	Panel A					Panel B				
	(Stratified by Founder)					(Stratified by Founder and Firm)				
	(1a)	(2a)	(3a)	(4a)	(5a)	(1b)	(2b)	(3b)	(4b)	(5b)
IPO	1.53*** (0.12)	1.49*** (0.12)	1.52*** (0.12)	1.53*** (0.13)	1.38** (0.17)	1.79*** (0.28)	1.77*** (0.27)	1.81*** (0.28)	1.81*** (0.28)	2.05** (0.53)
Firm Age	1.00 0.00	1.00 0.00	1.00 0.00	1.00 0.00	1.00 0.00	1.00 0.00	1.00 0.00	1.00 0.00	1.00 0.00	1.00 0.00
Computer Industry	1.49*** (0.09)	1.51*** (0.09)	1.49*** (0.09)	1.50*** (0.09)	1.56*** (0.13)					
Manufacturing Industry	0.53+ (0.19)	0.51+ (0.19)	0.51+ (0.19)	0.53+ (0.19)	0.31 (0.24)					
Team Size	1.01 (0.01)	1.00 (0.01)	1.00 (0.01)	1.01 (0.01)	1.01 (0.01)	1.07*** (0.02)	1.07*** (0.02)	1.07*** (0.02)	1.07*** (0.02)	1.08*** (0.02)
Team Growth	1.01 (0.08)	1.02 (0.08)	1.02 (0.08)	1.02 (0.08)	0.87 (0.10)	0.94 (0.09)	0.94 (0.09)	0.94 (0.09)	0.94 (0.09)	0.80+ (0.10)
Prior senior management experience	1.22** (0.08)	1.26*** (0.08)	1.23** (0.08)	1.22** (0.08)	1.27** (0.12)	1.26** (0.10)	1.26** (0.10)	1.24** (0.10)	1.25** (0.09)	1.22+ (0.13)
Number of past jobs	1.04 (0.03)	1.06* (0.03)	1.05+ (0.03)	1.05 (0.03)	1.07+ (0.04)	1.03 (0.04)	1.04 (0.04)	1.03 (0.03)	1.03 (0.03)	1.07 (0.05)
Multi-function Position	0.99 (0.09)	1.13 (0.11)	1.02 (0.10)	1.01 (0.09)	1.12 (0.19)	1.11 (0.12)	1.21+ (0.13)	1.12 (0.12)	1.10 (0.12)	0.98 (0.19)
Positive Imprint	0.77*** (0.06)	0.72*** (0.05)	0.74*** (0.05)	0.76*** (0.06)	0.96 (0.08)	0.86+ (0.07)	0.83* (0.07)	0.85+ (0.07)	0.86+ (0.07)	1.13 (0.12)
Atypical Prior Experience	1.14** (0.05)					1.07 (0.06)				
Position creator (=1)		0.78** (0.06)					0.84* (0.07)			
Difference from position creator			1.11*** (0.03)					1.08* (0.03)		
Atypical Position Creator				1.19*** (0.05)					1.15** (0.06)	
Atypical-Atypical Transition					1.30+ (0.21)					1.42+ (0.27)
Atypical-Typical Transition					1.29* (0.16)					1.56** (0.22)
Typical-Atypical Transition					1.16 (0.15)					1.31+ (0.20)
Mismatched Atypical-Atypical Transition					1.34* (0.17)					1.50** (0.21)
Log-likelihood	-6856.88	-6855.63	-6855.12	-6854.40	-3486.34	-1824.70	-1823.71	-1822.89	-1822.55	-991.25
Chi-square	145.05	146.74	153.71	148.65	77.48	82.41	85.20	88.26	88.95	61.84
Number of Positions	1863	1863	1863	1863	1006	1863	1863	1863	1863	1006
Exits	1113	1113	1113	1113	597	1113	1113	1113	1113	597
Observations	88020	88020	88020	88020	40168	88020	88020	88020	88020	40168

Note: Two-tailed tests for all variables; + p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Coefficients reported as hazard ratios, robust standard errors clustered by position reported in brackets.

Table 4: Event History Analysis: Robustness Checks on Turnover Rates of Position Creators and Successors.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Relevant Prior Functional Experience	0.81** (0.06)	0.83** (0.06)							
Difference from position creator		1.07* (0.03)			1.14* (0.07)	1.08* (0.04)		1.13*** (0.04)	
Position creator (=1)			0.79* (0.08)						
Firm Age at Position Creation			1.00* 0.00						1.00* 0.00
Position creator * Firm Age at Position Creation			1.00 0.00						1.70*** (0.25)
Difference from prior position incumbent				1.02 (0.03)					
Difference from normative position incumbent						1.01 (0.06)	1.14* (0.07)		
CEO Position							1.14* (0.07)	1.19+ (0.12)	
CEO Position * Difference from normative position incumbent							0.69** (0.08)		
CEO Position * Difference from position creator								0.83** (0.05)	
Atypical-Typical Transition									1.70*** (0.25)
Firm Age at Position Creation * Atypical-Typical Transition									0.99** 0.00
Log-likelihood	-1821.92	-1820.11	-1823.17	-1822.31	-475.40	-1822.86	-1820.36	-1819.37	-990.48
Chi-square	91.76	95.07	86.96	82.85	36.27	88.29	95.84	100.92	60.15
Number of Positions	1863	1863	1863	1861	575	1863	1863	1863	1006
Exits	1113	1113	1113	1112	313	1113	1113	1113	597
N	88020	88020	88020	87833	22202	88020	88020	88020	40168

Note: Two-tailed tests for all variables; + p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Difference variables are centered in models that include interaction terms.

Cox Models Stratified by Founder and Firm. Coefficients reported as hazard ratios, robust standard errors clustered by position reported in brackets.

All models include the same control variables as presented in Table 3. They are omitted for clarity of presentation; however, full models are available on the ASR website.

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