

Leaving a Legacy:
Role Imprints and Successor Turnover in Young Firms*

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ABSTRACT

We examine the process by which executive positions shift from being idiosyncratic and person-specific to being institutionalized organizational roles by studying entrepreneurial team evolution.

We argue that different firm bureaucratization patterns arise through differences in initial role definitions and the subsequent role succession rate. We propose that role creators imprint firm roles in ways that constrain role successors. Our findings reveal that the success of role incumbents – captured by their turnover rate -- is a function of both normatively prescribed role characteristics as represented in the labor market and the internally defined role expectations as established by the role creator. We demonstrate that internal and external forces simultaneously influence role creation and role succession. However, when internal and external forces are in conflict, we find that internal firm structures—role imprints—dominate the normative external context in determining turnover rates. This internal dominance offers a mechanism by which firm-level heterogeneity is maintained in the face of significant external pressures.

INTRODUCTION

Consider the inevitable moment when an entrepreneurial team – often with loose boundaries around responsibilities – must formally assign organizational roles to team members. Egos are bruised; expectations are dashed. While entrepreneurs may resist this moment, undifferentiated teams lacking structure and accountability can only get so far in a modern economy. State organizational registries require that a President be named. Investors, suppliers, and customers expect clear accountability for different functional areas. Ultimately, entrepreneurial firms that hope to grow and thrive are forced to assign people to specific areas of responsibility. This requires team members to take a hard look at qualifications, skills, and prior experiences, navigate the interpersonal terrain, and in due course allocate formal organizational roles. Interestingly, this important and often painful moment in the life of a nascent entrepreneurial firm is largely ignored or deemed unproblematic by the organizations and entrepreneurial literatures (see Clarysse and Moray, 2004 for an exception).

Academic understandings of organizational roles come from studies of large long-established bureaucratic organizations (e.g. Chandler, 1962; Blau and Schoenherr, 1971; Kanter, 1977; Rosenbaum, 1984). In a bureaucratic system, roles are defined bundles of tasks, activities, and responsibilities that exist irrespective of any particular incumbent (Weber, 1946; Scott, 1992). Ironically, because so much of what we know about organizational roles and the division of labor derives from studies of well-established bureaucracies, we often forget that these firms began as a group of people -- struggling to work together for a common purpose – making decisions about the initial allocation of tasks and responsibilities that eventually became codified as the firm evolves into a bureaucratic system.

We argue that, beyond being an organizational rite of passage, these initial role allocations define both how the roles interact internally with each other and, more importantly, how they interact externally

with the labor market. The initial role allocations put boundaries around tasks and responsibilities and shape job descriptions and expectations. When the organization needs to add additional members, or replace departing members, the legacy of the original role definitions becomes apparent. Thus, understanding both the sources and consequences of organizational role definitions becomes an important theoretical problem.

Consistent with this view, growing evidence suggests that initial imprints importantly affect how a firm evolves over time. Initial organizational blueprints influence the rate at which particular formal practices are adopted (Baron, Burton, and Hannan, 1996) and subsequent administrative intensity (Baron, Hannan and Burton, 1999). More specifically, the initial people matter: founding team composition shapes future top management team composition (Beckman and Burton, 2005).

We know that in the earliest days of a new firm, jobs are quite personal and are often created around individual strengths and talents (Baker and Aldrich, 1994). Although some idiosyncratic jobs – jobs shaped around a particular person – continue to be found even in the most long-established formalized organizations, most are highly rationalized. By contrast, all of the initial roles in entrepreneurial firms are, by definition, idiosyncratic (Miner, 1987; Aldrich, 1999). How these initial allocations of responsibilities, negotiated among founding teams, evolve into rationalized, institutionalized roles, and with what consequence, is poorly understood. We hope to shed some light.

Organizational theory currently offers two alternative views on how initial roles are established – an internal perspective arising primarily from interactionist theories and an external perspective arising primarily from institutional theories. Interactionist theories suggest that roles are negotiated and renegotiated within a firm (Graen, 1976; Strauss, 1978). The advent of a new technology may offer an

occasion for role renegotiation, but it is the local interactions that ultimately shape their evolution (Barley, 1986; 1990). This internal logic suggests it is the local context and individual role incumbents that determine the allocation of responsibilities. Taken to a logical conclusion, the internal perspective would predict idiosyncratic role allocations across firms and evolutionary trajectories that are dependent on particular local negotiations (although see Bechky, 2005, for an examination of stable role structures across temporary organizations). In contrast, institutional theory suggests that the external normative context exerts a powerful influence over organizational structures and practices (Tolbert and Zucker, 1983; Mezias, 1990; Edelman 1990; Dobbin and Sutton, 1998). Furthermore, this external logic suggests that organizational roles will be historically and culturally situated in a way that minimizes variation across firms (Thornton and Ocasio, 1999; Marquis, 2004).

Contemporary theorists advocate combining internal and external views to better understand specific organizational processes (Barley and Tolbert, 1997). We recognize that both internal and external logics are likely to importantly shape role evolution within a firm, yet neither offers a clear explanation of both the high levels of conformity in organizational roles that we observe across organizations (Dobbin, Dierkes, and Zorn, 2001) nor the persistent variation and experimentation that occurs (Robbins, 2005). Furthermore, the existing research on organizational imprints broadens our conceptualization of an internal logic. This work convincingly documents path-dependent variation and suggests the internal view is shaped not only by internal interactions but perhaps, more importantly, by the establishment of stable internal structures. However, this research does not explicate specific mechanisms (Davis and Marquis, 2005). Here we explore one mechanism – role imprints – that may help explain the pervasive firm heterogeneity and different rates of bureaucratization that characterize entrepreneurial firms.

We develop a theory of role imprinting where firms begin with individuals fulfilling organizational roles. Two factors shape the initial allocation of responsibilities: the preferences and characteristics of the individuals involved, and the broader normative environment in which the organizational roles are embedded. The role creator -- the first person to hold a specific organizational role -- defines the initial role based on his or her own skills and experiences (or attempts to do so in the initial negotiation between team members). Role creators, in shaping their roles in their own image, leave a role imprint that matches their particular background characteristics. In doing so, role creators impose constraint on subsequent role successors. Role successors -- those who come into a pre-existing role -- must fit the expectations of the role. At the same time, we acknowledge that roles are shaped by external normative expectations and that the external environment limits the extent to which a role creator has free reign in defining his or her role (Toffler, 1981). Our theory of role imprinting thus takes into account the firm-level idiosyncrasies demonstrated by the internal view while acknowledging the normative pressures recognized by the external view.

Our empirical work explores how internal and external pressures shape initial role definitions and path dependence influences role successors. Because it is difficult to observe bureaucratization directly, we use turnover as an indicator of the process. We propose that the match between the role successor and firm expectations shapes the likelihood the successor will stay in the role. In so doing, we build on a longstanding interest in organizational turnover generally, and entrepreneurial and executive succession specifically (Grusky, 1960; Boeker 1992; Ocasio, 1994, 1999; Rubenson and Gupta, 1996). We argue that turnover is the key mechanism by which roles and people become separated (Thornton and Ocasio, 1999). In our empirical work, we find that while both internal and external logics are important, internal expectations appear to dominate. Together, the role imprint and the normative context importantly shape the duration of role successors. The role imprint in particular offers a

theoretical mechanism to explain different rates and patterns of bureaucratization among competing firms.

ROLE CREATION AND ROLE CONSTRAINT IN ENTREPRENEURIAL FIRMS

In this paper we consider how positions are initially defined and how they become separated from persons. Studying new firms, watching them evolve over time, and examining both the internal structures and external pressures that shape firm roles offers a unique opportunity to engage multiple perspectives on the topic of role creation and evolution. By studying roles over time in emerging firms we can simultaneously examine firm-level idiosyncrasy and broader normative expectations and assess their relative impact.

Role creators

It is well established that organizational executives bring with them ideas and experiences that shape how they conceptualize and implement their job (Boeker, 1997; Sorensen, 1999; Kraatz and Moore, 2002). Relatedly, entrepreneurship research demonstrates that firm creators—founders—bring experiences and ideas that importantly shape perceptions of opportunities, firm strategies, systems and structures, and ultimately firm outcomes (Roure and Maidique, 1986; Eisenhardt and Schoonhoven, 1990; Gimeno, Folta, Cooper and Woo, 1997). For example, Shane (2000), examining founding entrepreneurs, demonstrates that the discovery of entrepreneurial opportunities can be attributed to individual differences in knowledge and experience. Using this same logic, we argue that role creators bring with them experience and ideas that importantly shape organizational roles.

In a new organization, the process of allocating tasks and responsibilities among the initial executives is a highly individualized process that, by definition, creates idiosyncratic jobs with respect to the new

firm. 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). Because roles are most fluid in their initial instantiation, the role creator importantly shapes the boundaries, the bundle of tasks, the set of responsibilities, and the measures of success. In fact, research on entrepreneurial firms finds that most early senior-level hires hold idiosyncratic jobs (Baker and Aldrich, 1994). Thus, just as the founding entrepreneurs shape their companies, role creators shape their initial roles based on their own knowledge and experiences.

The preferences and characteristics of the individuals involved, then, strongly shape how the initial roles and combination of responsibilities are negotiated among the founding team. Role creators, the first people to hold a particular role inside the organization, seek a task allocation that caters to their particular preferences and plays to their strengths and talents. Not only does the role creator attempt to shape the actual distribution of activities to match his or her own abilities, skills, and experiences, but also the role creator defines the expectations for the role itself. Job descriptions, job titles, and internal selection criteria are a tangible manifestation of organizational role expectations (Robbins, 2005). Thus, the specific person taking on a new role seeks to shape it in his or her own image.

Organizational roles incorporate both content (“what”) and process (“how”) characteristics (Van Maanen and Schein, 1979). Interestingly, the role creator shapes both what a role should entail and how tasks should be handled. Indeed, the role creator can advocate for an activity portfolio and way of doing business that is consistent with his or her abilities. This is not to say that the role creator has no other constraints; rather, an internal logic suggests that these decisions are based on the technical needs of the firm, the preferences of existing managers in the firm, and the knowledge and experience of the role 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, customer support and technical assessment of needs, and possibilities for product customization and therefore establish a role imprint. Because the initial choices shape both what the VP of sales does and how he or she goes about the job, the role creator is likely to seek a job definition such that he or she is likely to be successful. Xu and Aldrich (2005) argue that those employees likely to be found in newly created, idiosyncratic jobs are likely to be indispensable “gurus” on whom organizations become dependent. In fact, Miner (1991) finds that evolved jobs, jobs that are created around existing people have lower rates of failure. Thus, given the ability of the role creator to mold the role to suit him or herself, we hypothesize:

H1: Role creators will have lower turnover rates than role successors.

Role Imprints and Role Successors

Once a role is established, people inside and outside of the firm begin to build expectations about the tasks and responsibilities associated with a role (Katz and Kahn, 1978). The role creator has the benefit of an idiosyncratic job where role expectations were developed with the role creator in mind. However role successors face an established role with pre-existing expectations that were put in place by the role creator. The role creator has left an imprint that shapes the tasks and sets organizational expectations. So, not only do role creators enjoy the benefits of positions crafted to match their skills, but the role creator’s skills offer a path that role successors must follow in order to survive.

Individuals shape their own roles to varying extents (Graen, 1976; Miller, Johnson, Hart and Peterson, 1999), and roles and patterns of interaction change as technology or other external factors change (Barley, 1986), but these negotiations are difficult for the individuals involved. And, despite the

likelihood of continual negotiation, there are stable properties of the role that are passed from role taker to role taker because the people making the hiring decision, and the existing employees who need to interact with the role, have preset expectations regarding the boundaries of responsibilities, the requisite skills, and the metrics of success for the role (Van Maanen and Schein, 1979). As a result, role innovation is both rare and difficult (Black and Ashford, 1995). Thus, when the role creator leaves, those that follow are stepping into a more established role.

The constraints associated with role innovation lead us to expect role imprints to emerge in a similar fashion to organizational imprints. Research on emerging companies suggests that organizational imprints shape the process and outcomes that firms experience (Baron, Hannan and Burton 1999). This work brings history to the forefront as a tangible force that shapes firm decisions and structures. Although this work has focused on firm and team level outcomes and structures, we expect to see path dependence at the level of the role. Indeed, this may be a key mechanism by which organizational imprints are created. Although roles are likely to be shaped over time by all role holders, the role creator leaves an imprint that anchors the firm to a specific role construction. Role creators make initial choices about the tasks and responsibilities of the role that then constrain the options available to role successors—individuals that move into a pre-existing role. As roles become standardized, managerial discretion is limited (Aldrich, 1999; Dobbin et al., 2001).

The rarity of role innovation, combined with the power of organizational imprinting, imply that the experiences of the role creator will influence role successors. If role successors have substantially different backgrounds and skills, they should be less well-suited to the role and therefore less likely to stay in the role. 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 role successor,

perhaps the second or third VP of Sales, comes with a very different background—one more oriented towards marketing analysis or exploring possibilities for product customization. The experiences of the role successors may be well aligned with the direction the firm must go in order to develop and grow; however, the role successor still faces the prospect of shifting a set of expectations developed by the role creator, an executive that by definition held an influential, idiosyncratic job. Despite potential organizational benefits to this role transformation, the individual career consequence associated with such transformation is more questionable (Haveman and Cohen, 1994; Phillips, 2001). Thus we hypothesize:

H2: Role successors with prior experiences that are different from the role creator will have higher turnover rates than role successors with prior experiences that are similar to the role creator.

Normative Role Definitions

At the same time, organizational roles—even those in a new organization—are shaped by their environment. This is the second view through which we explore roles: the external or institutional logic that shapes firm choices (DiMaggio and Powell, 1983; Scott, 1995). Some theorists view the normative environment as a source of constraint (e.g. Mizruchi and Fein, 1999), while others express the positive and enabling features of institutional support mechanisms (Staw and Epstein, 2000; Washington and Ventresca, 2004). For our purposes, it is important to note that roles can be more or less strictly defined in the normative environment. Some roles have specific credentialing bodies and/or professional associations that begin to shape the content of the roles as well as the qualifications and characteristics of role incumbents. External certifiers simultaneously solidify the normative expectations for a role and homogenize the pool of potential role incumbents (Weeden, 2002). Other roles are deeply embedded in a history and tradition that make them both efficient and

inviolable (Zuckerman et al., 2003; Bechky, 2003). The implication is that many functional roles face limited influence from any specific individual incumbent. For example, there are legal constraints and expectations surrounding how a firm's financial statements should be prepared; and there are multiple professional credentials and licenses for accountants. Further, generalized expectations as well as specific stakeholders press firms to mimic other firms in their industry and region such that they have comparable roles and typical role incumbents (Zuckerman, 2000). In general, these are the expectations from employees, customers, suppliers, and investors both about the kinds of roles that should exist and the characteristics of the role incumbent. These mechanisms serve as normative constraints that limit the ability of any role incumbent to personalize the role.

An external perspective suggests that both the role creator's ability to leave a legacy as well as the role successor's ability to change the role may be limited by normative expectations in the field. When an organization attempts to fill a position, they seek the requisite characteristics, skills and experiences. There exist 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 function. When an organization chooses an individual who deviates from these normative expectations, the role incumbent will have a more difficult time in the organization and face higher rates of turnover (Thornton and Ocasio, 1999). Pressures for "normalization" may lead firms to prefer conventional roles with typical incumbents, people who fit the generalized expectations of the role; thus, we hypothesize higher turnover for atypical or non-normative role incumbents:

H3: Role incumbents with atypical prior experiences will have higher turnover rates than role incumbents with normative prior experience.

The Effect of Atypical Role Imprints on Role Successors

To this point, we have considered the consequence of internal and external logics separately, yet we expect role successors to face both internal and external influences simultaneously. Much of the existing work where these logics are combined involve more macro-level processes such as firm founding, differences across national contexts, and the co-evolution of organizational forms (Guillen, 1994; Romanelli, 1991; Haveman and Rao, 1997). We expect to see both internal and external pressures within an individual firm as well. Such an examination will aid our understanding of the micro-level processes by which firms evolve and a mechanism of path dependence within firms.

The dual influence of the internal and external environment suggests that role successors will have lower turnover to the extent that they match normative expectations and are similar to the role creator. We have no a priori expectations about which one will dominate; indeed, we expect both to occur. In some cases, however, the role creator will be atypical or non-normative. In such cases, the role successors can match normative expectations or internal expectations from the role creator but not both. By examining how role successors are influenced by atypical role creators, we can begin to untangle how these internal and external logics work in concert.

Interestingly, if the role creator is atypical with respect to the normative environment, the firm—and all role successors—will be particularly constrained since it will be both difficult to find a successor with similar experiences and difficult to conform to the unusual role. Role successors different from the role creator suffer a penalty, and role successors that do not meet external expectations suffer a penalty, so a role creator that does not meet expectations likely offers a particularly strong challenge for role successors. The role creator with an atypical background is more likely to have created an

idiosyncratic job unusual tasks and responsibilities. Thus it will be more difficult for any role successor to succeed in the role. If the firm finds a successor whose experiences are consistent with the atypical role creator, and there are likely to be very few, that successor will still face the external constraint of being atypical or non-normative. For example, the normative background for a finance executive is finance. This is a functional area with external certifying bodies and specific expectations of the role. If the first finance executive in a firm has an engineering background, subsequent finance executives can be similar and also bring an engineering background, or be different and bring a different—and mostly likely a finance—background. A successor with an engineering background faces no internal constraint but significant normative constraint. This successor may attempt to develop the role according to normative expectations—without the actual experience to know what that might look like—or may continue on in the role as it was developed and have a difficult time interacting with and conveying legitimacy to external constituents. In either case, we anticipate a high rate of turnover as the successor struggles to accomplish the finance-specific tasks associated with the role.

Alternately, if a firm replaces an atypical role creator with a more normative role successor, the role successor will face the internal constraint of being different from the role creator. Although the role successor will look like the broader labor market for the role, he or she will not have the experiences—or the associated approach to the task—that those within the firm expect. More importantly, the role successor is likely entering a role where the actual tasks and responsibilities are different from those he or she has experienced in the past. 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 normative role successor faces significant constraint. Again turning to our example of the successor following an initial finance executive from an engineering background, if the successor brings a finance background, he or she fits the normative but not internal

expectations. This finance executive may struggle because he or she may have responsibilities that are marginal from a finance perspective, may be modifying templates created according to an engineer's logic, or may need to creating financial processes and procedures that have to-date been nonexistent. The role successor either attempts to modify the role to be more normative, or tries to do a job that was created from a different perspective and with assumptions. Regardless, we expect high rates of turnover.

Based on the above logic, when a firm has initial roles that are atypical with respect to the broader labor market, role successors will always be constrained by the legacy of the role creator. To the extent that both internal and external pressures influence rates of turnover, we expect following an atypical role creator to always be difficult. Thus, we hypothesize:

H4: Role successors who follow atypical role creators will have higher turnover rates than role successors who follow normative role creators.

METHOD

Data and Sample

This paper uses data on the executive teams in 170 entrepreneurial high technology firms in California's Silicon Valley. The focus on firms within a single region allows us to hold constant key labor market and environmental conditions. Within the region, we focused on industries engaged in computer hardware and/or software, telecommunications (including networking equipment), medical and biological technologies, research, and semiconductors. Rather than focusing on a specific industry, as has often been the case (e.g., Eisenhardt and Schoonhoven, 1990), studying a wide range of industries allows us to talk about top management and founding teams more generally. The firms in

the sample had at least 10 employees and were no older than 10 years old. By excluding very small firms we increase the likelihood that we are observing multi-function executive teams. 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). The original sampling frame explicitly over-samples young and small firms. Among our sample firms, about half were founded before 1989 and the median age of the firms at the time of first contact in 1994 was five years. The 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, our 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, we may under sample firms with unusual or atypical employees and founders and may have fewer firms that begin with non-normative role creators. Thus we should be less likely to find non-normative internal path dependent processes.

The identities and career backgrounds of the founding team as well as some data on the current management team were obtained through interviews. In order to compile the data for this study, we constructed a monthly database of every founder and every executive that ever worked for one of the sampled firms from founding through July 2001. We began with the founding team and recorded each subsequent executive addition and departure. On average we observe a firm for 9 years and thus have sufficient longevity to observe multiple succession events. We included all executives that ever held the title of vice-president or higher, and tracked these executives before and after their employment with our sample firm to create individual career histories. We relied on a variety of internal company documents such as business plans and promotional documents containing biographical information about the founding and executive teams to both build a list of individual executives and also to

simultaneously construct the career histories. Aside from the company sources (interviews, company documents, and web pages), we scoured outside sources for data on the founders and top managers of the firms. We used *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. Since all firms were residing in Silicon Valley at the time of sampling, we also used *The San Jose Mercury News* archives as a source of information. *The Mercury News* has a regular column on promotions, movements, and resignations in the Silicon Valley. Over a four-year period we searched all of our sources for people individually using multiple sources for data completing at least four complete searches for each person and spending thousands of person-hours searching for career data on team members. 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. The detailed career histories we have obtained are not common (Bunderson and Sutcliffe, 2002). This intensive data collection for young privately held firms is one reason for the scarcity of studies on entrepreneurial careers.

Despite our best efforts, we still face the problem of missing data. One challenge is that we cannot easily distinguish between missing data and no prior experience. This makes it difficult to measure the extent of the problem. For example, we confirmed that at least 38 founders started the company directly after school (generally science or engineering Ph.D.), so their prior employment experience was non-existent. Fortunately, the firms all operated primarily in the Silicon Valley, an area where there has historically been tremendous movement between firms (Saxenian, 1994, Fallick et al., 2004), and the local paper follows those movements affording us rich longitudinal career histories on a relatively large sample of executives. When an exit date was not announced by the firm, we could often infer an exit

date by an announcement that the executive was hired somewhere else or another executive was hired into the same role in our sample firm.

Our final database contained information on 1,464 executives, holding 1,866 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 1950 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 role as well as past experience. We examined roles 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 looked at the titles executives held in prior companies and assumed these titles represented their area of experience and responsibility. We chose these functional areas to be broad in our conception of background and to mirror the breadth of experiences represented in individual titles. General management is a function that largely encompasses individuals with general management experience in a business unit. Although the CEO or President could be aggregated in the “general management” functional category, there is a long tradition of studying succession among the top-most position in a firm. President/CEO is not a functional area in a strict sense, but 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 external pressures (Boeker, 1992). For these reasons, we treat President/CEO as a distinct category. Our results are substantively the same with or without the inclusion of President/CEO.

According to organizational socialization and role transformation theories, roles with high levels of discretion are more easily customized and modified by incumbents than are roles with low levels of discretion (Nicholson, 1984). It is for precisely this reason that it is interesting to study executives. Because the roles exist at the top of an organizational hierarchy, incumbents enjoy a great deal of latitude. However, because they are visible to a wide range of stakeholders, they are also highly constrained. For these reasons, executive functional roles are a useful subset of organizational roles to examine internal and external pressures. We collected a mean of 2.28 roles for each function in a firm (maximum of 18). An individual role may encompass multiple functional areas (and did so in 11% of the roles) and a person can have prior experience in all, none, or some, of these functional areas.

Dependent Variable

In an organizational context, one way to measure how well an individual fits a particular role is to examine the duration of the employment relationship. When a firm hires an employee and when a person agrees to take a position, both parties typically expect that the new incumbent will successfully fulfill the role 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 (Khurana, 2002; Finlay and Coverdill, 2002). The goal of this intensive recruitment and selection process at the executive level is to increase the likelihood that new hires both stay with the firm and positively contribute. This recruitment process may not be as elaborate in the beginning stages of entrepreneurial firms because human resources professionals tend to be added later in a firm (Welbourne and Cyr, 1999); 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.

There is a long tradition of studying turnover in organizations generally and executive succession in particular (e.g. Grusky, 1960; Brown, 1982). While there are some arguments for the benefits of turnover—either as a tool for organizational adaptation (Wiersema and Bantel, 1993), or an anti-inertial force (Tushman and Romanelli, 1985)—in general, most theorists agree that executive turnover is problematic (see Staw, 1980 for a review). In young firms in particular, the problems of inertial management are rarely problems that turnover can solve. First, replacing executives is an expensive proposition for an organization both in terms of time and money. Qualified and competent executives exist in a relatively thin pool and are in a highly competitive labor market; thus they are difficult to find and recruit (Khurana, 2002). Furthermore, 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 and Burton, 2005). Thus we examine those factors that impact a role holder's job exit rate, arguing that high exit rates indicate an individual-role mismatch.

Our dependent variable is the turnover of an individual holding a role within a firm. Turnover is seen as an indication of role fit with the assumption that lower person-position exit rates indicate greater fit between the individual and the role. 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 (Wanous, 1992; Cable and Parsons, 2001) and job survival (Caldwell and O'Reilly, 1985; Saks, 1994; Kammeyer-Mueller and Wanberg, 2003) are common outcomes of interest. In our sample, when an individual changes roles within the firm, this may also be a success (e.g., a promotion from CFO to CEO). When an individual leaves one role and takes on different role within

the same firm, this is recorded as an exit from the role but not a turnover event (the person exits the risk set for that position). Thus, we did not consider movements within a firm to be a turnover event.

Turnover is calculated for each person-role. A person-role begins each time an individual begins a job with a new set of responsibilities, and the role ends when the person acquires a new set of responsibilities with a different job title or the person leaves the firm. We examined roles across the above-mentioned functional areas, and a role can include any combination of those functional areas.

Independent Variables

For each of our 11 functional areas (sales, marketing, customer service, operations, finance, administration, human resources, strategic planning, business development, science/engineering/research and development, general management, and executive management), we calculate a role sequence variable. The first individual who fills a particular functional role in an organization is considered the role creator and holds role sequence number one. After creating the role sequence variable for each functional area, we were able to construct the following independent variables.

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

Difference from Role Creator. We examine the difference between the role creator and each role successor by comparing background experiences. We examined all 11 different functional background experiences that an individual could have had in his or her prior jobs. We first looked to see whether the role creator had each type of functional background experience and 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. We similarly created a composite of dummy variables for the background of the role successor for the same 11 functions. For each role, we then calculate the squared difference between the two role holders. This gives us the absolute difference in backgrounds between two role holders within a function. 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 differences between the two role incumbents across the eleven functional areas so that the theoretical range for our difference variable is from zero (identical backgrounds of two role holders) to eleven (completely different backgrounds of two role holders).

Difference from normative role expectations. In order to calculate a score for difference from normative role expectations, we calculated the average background within a function for all role holders. This score is the proportion of role 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 variables represent the generalized expectation for what an individual background should look like for someone in a given functional role. 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. Our difference score is then the summed absolute difference between the role incumbent's background and the average background across all eleven functional areas. This is akin to calculating the distance between the role incumbent and the average role incumbent. For each person-role in the firm, we then have a measure of the difference in background of the role incumbent from the average or norm for the role.

Atypical role creator. We calculated the atypical role creator variable by examining the role creator for each of the 11 roles. We look at the difference from normative role expectation for the role creator in each role (as calculated above). This variable is put in the model for all role successors in that area to demonstrate how role creator atypicality shapes the turnover rate of role 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 one industry that has a significantly higher turnover: computer hardware/software. 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 both of which are less subject to problems of missing data in our sample.

Individual controls. We control for the number of prior jobs held by each individual prior to the current role. This controls both for the amount of data collected by person (and thus addressing data limitations in our sample) as well as the possibility that individuals with an extensive job history are job-hoppers (Farber, 1994). This also controls for the extent of prior socialization in functional roles. We counted the total number of prior jobs for each person (maximum of eight), but results are similar using a maximum of three prior jobs. We also control for whether the person held an executive role in the past. This serves as an indicator of the experience of the role incumbent with executive level work, and it also measures the marketability of the executive. Note that our measure of prior jobs and executive experience does not include internal promotions within a firm, but instead relies on functional role and hierarchical level of the last achieved position in a prior firm.

We control for whether a role 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 role that encompasses two or even three functional areas simultaneously (e.g., the individual may be both the VP of marketing and sales). We include a control variable in all analyses for these multi-functional roles. Individuals with multiple functional responsibilities may have a higher rate of exit because they are likely atypical for at least one of their functions; alternately, the role may be

particularly suited to them, especially if it is an idiosyncratic combination of roles, thus decreasing the rate of exit. In addition, these multi-function roles have implications for how our independent variables are calculated. Take, for example, the position of VP of sales and marketing, where someone is simultaneously the first VP of Marketing and the second VP of Sales (and holding a VP of Sales and Marketing position). This is coded as a new role because this is a new combination of functional areas. However, we code this role sequence as the first role sequence (role creator) for marketing and the second for sales. If we instead created a new sequence variable every time functions were recombined, most roles would be held by role creators. We pursue a more conservative approach in that we expect role imprinting to occur along functional lines. At the same time, we would count this observation as a role creation. When an individual takes on a functional area that has not been formally assigned to a position before, we believe they accrue the benefits of a role creator and code these as role creation.

Calculating difference scores for multi-functional roles is difficult because of the possibility of comparing role successors to more than one person. For example, in the VP of sales and marketing example where an individual is the first VP of marketing and the second VP of sales, there is only one difference score, difference from the first VP of Sales. However, if the combined VP of sales and marketing position was held by the second VP of marketing and the third VP of sales, then there would be two possible difference scores to calculate. For the analyses presented here, when multi-functional roles require comparing difference scores across multiple people, we took the largest difference. Our logic was that individuals holding a position with two role creators (in different functions) are more constrained than those that follow in the footsteps of only one role creator.

We also control for whether the person is a member of the founding team. Succession rates have been shown to vary by the role or position held by firm founders (Haveman and Khaire, 2004).

Furthermore, founder turnover has received extensive study (Wasserman, 2003). Founders have personal power in new ventures that may protect them in their roles thus leading to longer than expected durations (Rubenson and Gupta, 1996). Finally, we control for whether there is a positive role imprint. We code a role as having a positive role imprint if the role creator moved to another position within the firm after vacating the initial role. This suggests the role creator has been successful within the firm and thus is likely to have left a positive role imprint. If the role creator has been successful, and has left a positive imprint, this may have an impact on the role successor's duration. On the one hand, a positive role imprint suggests that the role has been conceptualized in a fashion that has been successful, making it easier for role successors. On the other hand, a positive role imprint may suggest that the role creator has left very large footsteps to follow, making it more difficult for role successors to live up to the residual expectations. In either case, the success of the role creator may have an impact on the role successor.

ANALYSIS

In the executive succession literature survival analytic techniques are commonplace (e.g. Boeker, 1992; Ocasio, 1999; Thornton and Ocasio, 1999; Boeker and Karichalil, 2002). Thus, we conduct event-history analysis on monthly observations (Cleves, Gould, and Gutierrez, 2002). We report a Cox proportional hazards model using maximum likelihood estimation, robust estimates of standard error (Lin and Wei, 1989), and stratified by founder. We use robust estimates of standard error clustered by each individual role to account for non-independence of observations within a role over time. The Cox proportional hazards model assumes that the hazard ratio is proportional over time, and we test the assumption for all of the covariates and globally for each model based on the generalization by Grambsch and Therneau (1994). When we tested the non-proportional hazards assumption, we found that the hazard rate for founders was not proportional. This is because 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 where the baseline hazard of founders is allowed to differ from nonfounders. 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. We calculate role turnover monthly, with all of the covariates updated monthly where appropriate. Thus, in our analytic framework, individual executives are at risk for exiting their role 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 on July 2001.

RESULTS

We begin with a descriptive portrait of our sample and the patterns that are revealed. We observe a total of 1,113 role exits over our observation period. Table 1 presents the distribution of individual executives across functional roles and provides summary statistics on the number of executives, the firm age when the role is first occupied, and the median durations across functions. This table reveals that most firms start with a President/CEO and usually have a science or engineering vice president within the first six months of founding, not surprising given the high technology nature of the sample. This table also importantly reveals that not all role creators are firm founders. For example, the first executive in a marketing role joins a firm that is, on average, more than 2.5 years old. The median duration of executives in our sample is just over 2.5 years (32 months) and there is variation across functions. Functions also vary in the number of successors we observe. Although most of our observations are of role creators (44%) or immediate role successors (23%), we have some third or later successors in all functions except HR (see Table 1). We have the fewest number of human resource role incumbents in our sample, which is expected given both the long duration of the role and

the late age at which a human resources role is added to the firm (6.75 years). We also see differences across functions in the typical background of role incumbents. For finance, human resources and science functional areas, most role 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 role incumbent. Across all functional roles, the overall median tenure is shorter than the median tenure for role creators. This suggests role creators stay longer in the role, offering descriptive support for Hypothesis 1. Given these patterns we are confident in our ability to at least provide preliminary empirical evidence to test our hypotheses.

Table 2a and 2b present the descriptive statistics and correlations. Here we see that 31% of our role observations are firm founders (correlation .34), demonstrating that a majority of our executives join the firm after founding. Over 40% of the role observations have prior senior executive experience, and 26% of the role creator observations are promoted internally. The average firm has an executive team of about six and a half people, and role incumbents have a wide range of difference from the role creator and the normative role (zero to six). The correlation between the difference measures (.63 between difference from role creator and difference from normative role) suggests that, although many role creators meet the normative expectations, there is variation among the role creators. The correlation table also reveals that firms that go public are more likely to be old (.52) and to have larger teams (.55). The combination of these three variables (team size, firm age, and going public) captures firm success.

We test our hypotheses and present the results of our turnover analyses in Table 3. We report hazard ratios in our tables, so entries greater than one are positively associated with turnover rates and entries less than one are negatively associated with turnover rates. Several of the control variables are significant, and Model 1 presents the control variables alone. Across all specifications we see that executives in public companies are more likely to turnover than those in private companies. This may be due to their greater visibility or their ability to achieve financial liquidity. Similarly there is a higher turnover rate for computer industry executives indicating greater mobility in this industry. Firm age, having a role with multiple functions (and thus a more complex role), team growth and team size have no significant impact on the hazard rate. However, when we look at a continuous measure of team growth, rather than a dummy variable, we see that growth decreases the rate of turnover (except at very high levels). The continuous variable, however, violates the assumptions of the proportional hazard. Because these are control variables, and because the continuous estimation does not change the significance of the other independent variables, we report the simpler model with a dummy variable for team growth.

We also controlled for the past experience of the person in the role. We see that experienced executives—those who have held other prior senior management roles 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 role creators move internally we argue they leave a positive role imprint. We find that positive role imprints decrease the rate of turnover. This raises the possibility, however, that the role creator continues to exert an influence on the role, even from another position, if her or she is still working for the firm (as opposed to role creators that move internally, leave a positive role imprint, then later leave the firm). In supplementary analyses, we created a variable that coded whether the role creator was in the firm during the role successor's tenure, and

we find this variable also reduces the rate of turnover (it was correlated at .23 with the variable capturing a positive role imprint). The inclusion of this variable, however, does not alter our hypothesized effects discussed below. This suggests that the influence of the role imprint is independent of the role creator still being part of the firm. In fact, role successors benefit from the role creator remaining with the firm. This suggests competition or power struggles with the role creator are less of a problem than loss of knowledge or support. This support of the role creator, however, does not mitigate the difficulty of being different from him or her. 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 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.

Model 2 shows support for Hypothesis 1 where the role creator has a significantly lower rate of turnover. Role creators are 16% less likely to leave the firm suggesting role creators more than firm founders are able to establish roles that increase their fit within the organization. Model 3 tests Hypothesis 2 and shows that role successors who are different from the role creator have an 8% higher exit rate than those that are more similar. In support of Hypothesis 2, we find that role successors that have different past functional experiences than the role creator have higher rates of turnover. In Model 4 we examine the robustness of Hypothesis 2. First, it is possible that the positive effect in Model 3 is driven by the second role successor. That is, the positive effect could be interpreted as the difference from the prior incumbent rather than difference from the role creator. Model 4 constrains the sample to only 3rd or later role successors in order to fully assess the distinction between “difference from role creator” and “difference from prior role incumbent.” Importantly, we again achieve statistical

significance suggesting having different experiences than the role creator increases turnover rates. In supplementary analyses, we find these results are unchanged when controlling for whether the role successor was the second role incumbent. Furthermore, we also 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 role incumbent that shapes the role in ways that make it difficult for subsequent role successors. Therefore, we find strong evidence in support of Hypotheses 1 and 2. The role creator has lower rates of turnover, and role successors have higher rates of turnover to the extent that their backgrounds are different from the role creator.

To consider the strength of the role imprint, in supplementary analyses we explored the effects of role creators who are also firm founders, the job duration of the role creator, and the age of the firm at the time the initial role is created. These were all attempts to better understand what factors influence the strength of the role imprint; however, none of these variables were significant. We find that the role creator can be a powerful influence even when not a firm founder. This is further supported by the fact that the role creator leaves an imprint even when the role is established later in the firm's life. Finally, although a continuous measure of role creator job duration was not significant, we created a dummy variable for whether the role creator held the initial role for less than one year. In this case, the role successor is less likely to leave. This suggests that the role imprint may take a year to be established, although having a role creator with a short tenure did not have any significant interactions with our hypothesized variables.

Finally, we wondered whether these role imprints varied by the tenure of those already in the firm. We argued that role imprints arise from the tasks and responsibilities assigned to a role as well as the

expectations for the role from those in the firm. A long tenure of existing team members may result in a stronger role imprint and thus more constraint for role successors. Consistent with this, we found that the longer the tenure of other roles in the firm, the more significant the penalty of being different from the role creator. This suggests that, consistent with our theory, the expectations of others influence the strength of the role imprint.

Whereas Models 2-4 are primarily concerned with internal firm role definitions, Model 5 explores the external normative context. Model 5 tests Hypothesis 3 and finds support for our claim that role incumbents who are different from normative expectations have higher rates of turnover. Role incumbents who differ from the normative role have a 15% higher rate of turnover than role incumbents that are more similar to the norm. Model 6 examines the difference from role creator and difference from normative simultaneously, and we find the internal imprint, difference from role creator, to have the strongest effect. Although Model 6 suggests that being difference from role creator is more important than difference from normative expectations, these effects may vary by function. As noted in Table 1, some functions have more narrow expectations than others. For those functions that have more stringent normative expectations, we would expect difference from normative expectations to matter more than in functions where the typical role incumbent is less rigidly defined. In supplementary analyses, we reran Model 6 with the subset of roles that are in the HR, finance or science areas. Consistent with this logic, we found that difference from role creator was no longer significant and difference from normative expectations was close to significance. This suggests that firm-level idiosyncracies will be less influential in functional areas where there are strong normative expectations.

Models 7 and 8 offer evidence in support of Hypothesis 4 in which we argue that although atypical role creators may be advantaged (as all role creators are), their role successors will be disadvantaged. Model 7 demonstrates that role successors who follow an atypical role creator have an 18% higher rate of turnover. In Model 8, we see that the increased hazard of turnover from following an atypical role creator remains even controlling for whether the role successor is different from the role creator or different from average. Following in the footsteps of an atypical role creator remains difficult regardless of the role successor's experience. Thus, we find support for our claim that role creators with backgrounds that deviate from normative expectations create idiosyncratic roles that are difficult for role successors to fill. Importantly, this suggests that the role imprint matters regardless of the experience of the role successor. This points to path dependency within the firm.

We explore the survival functions of role successors in more detail in Figure 1. We create a median split for atypical role creators, separating role creators that were greater than the median difference from normative expectation from those that were less than the median difference. We create a similar median split for role successors that were different from the normative expectations, distinguishing typical and atypical successors. From these two variables, we created four possible succession patterns: typical successors following typical creators (165 roles), atypical successors following typical creators (94 roles), atypical successors following atypical creators (250 roles), and typical successors following atypical creators (116 roles). We graphed the survivor function for these four different groups of role 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 (for founders and firm age) (StataCorp 2001). In Figure 1, we see that the highest rates of survival (lowest turnover) are among typical role successors that follow typical role creators. There are clearly advantages to matching the normative expectations. However, we see that the atypical role successors

following atypical role creators have the next highest rate of survival. The mismatched role successors (atypical role creator-typical role successor; typical role creator-atypical role successor) are practically indistinguishable and have the lowest survival rate. A stratified log-rank test for equality of the survivor functions reveals that these differences are significant (largely driven by differences in non-founder role successors and the increased survival of typical role creators-typical role successors). Although the difference between the survivor functions for the atypical role creators-atypical role successors and the mismatched role successors is not significant, this difference may be due to the fewer number of observations for the mismatched events. Figure 1 demonstrates advantages to meeting normative role expectations and to being consistent with the role creator; it is interesting to note that those role successors inconsistent with the role creator, even when the role creator is atypical, have the lowest survival rates of all.

DISCUSSION

In this paper we examine the internal, historical and external forces that shape how roles evolve over time. We find strong evidence supporting role imprinting: role creators leave their legacy in a role definition that suits their own particular background. Role imprints result in lower rates of turnover for role creators and shape the turnover propensities of role successors. Role successors have lower turnover rates when their backgrounds match that of the role creator, even when examining the third or fourth role successor. In addition, all role incumbents have higher rates of turnover if they have different backgrounds than the normative expectation for that role (although it is difference from role creator that matters more across the board). Notably, the higher turnover rates are passed on to role successors when it is the role creator that is atypical or non-normative. This suggests that idiosyncratic roles, and in particular atypical roles, are difficult for role successors to fill. Even if the role successor fits the normative expectations for that role, the successor has a higher turnover rate when the role

creator is atypical. The imprint of the role creator can work against conformity to normative expectations. This internal path dependence offers constraint that rivals and sometimes trumps external normative constraint, and this helps to explain heterogeneity across firms. Although the firm may expect and benefit from the evolution of roles over time (Miner, 1994; Aldrich, 1999), the process by which it occurs may have negative career consequences for those in the organization.

In this study we take a nuanced view that allows normative expectations to differ across particular roles. Roles are created within the context of a broader organizational need and existing labor market, and normative constraint differs by role. Rather than examine this pattern across multiple functions, as we do in this paper, there may be interesting variation between functions. Our ability to convincingly perform such an analysis is limited by the relatively small sample sizes within each function; thus such an analysis is outside the scope of this paper. But, as fodder for future research, we explored the differences across functions. In our data we see that finance roles and marketing roles have higher rates of turnover than other roles. In finance, this may be because the finance role is well-brokered and has high normative pressure, making mobility between firms easier. In marketing, however, there is more variety in the make-up of role incumbents. The typical marketing executive has a median distance from normative expectations of 1.68 (1.39 is the average). This greater variation would suggest lower normative constraint. If normative constraint is linked to mobility, we would expect to see lower rates of mobility. However, the high turnover rates that we observe in marketing suggest that variation in normative pressure does not explain mobility. Instead, high turnover may be due to the closeness of the marketing function to the external community. Thus much is left to be understood about the relationship between types of normative pressure and mobility, and this is worthy of future research.

Our view of the external pressure in this paper is specific to a particular region and consistent across firms. In addition to field level expectations, we know that specific external stakeholders (e.g., venture capitalist and investment bankers) have preferences that are imposed onto firm-level choices (Stuart, Hoang and Hybels, 1999; Hellmann and Puri, 2002; Gulati and Higgins, 2003). Others have linked external stakeholders and internal mobility (Beckman and Phillips, 2005). Interestingly, we do not find that executives in firms with venture capital are penalized for non-normative experiences more than executives in other firms. It is important to note, however, that the time period and location of our study—Silicon Valley in the 1990s—may be a setting where institutionalized norms were widespread. Even firms that did not receive venture capital or go public during our sample period likely faced strong normative pressure.

This leads to a discussion of the limitations of our study. First, our empirical setting is a single region with a clear identity. This 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 ten employees. These firms are already quite successful by entrepreneurial standards and may have internalized a good deal of normative expectations. These limitations, however, suggest dominant normative expectations will overwhelm local imprints. Importantly, we do not find this to be the case. Instead, we find strong non-normative internal path-dependent processes that suggest the imprint of local history may be even stronger in contexts with less consistent normative pressure.

Because of our archival data we only begin to understand roles and role mobility. We do not observe the actual tasks and responsibilities associated with the role 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 role creator have higher exit rates may be driven by individual preferences, organizational choices, or both. Disentangling these alternatives will require further research. Finally, we assume that the background of the role incumbent shapes their approach and preference for particular tasks and responsibilities as well as their ability to succeed in the role (Phillips, 2002). Although this assumption is consistent with the tact taken in much of the demography research (Finkelstein and Hambrick, 1996) and other empirical work on top management teams (Boeker, 1997; Kraatz and Moore, 2002), it is an assumption untested by our research. A more qualitative assessment of how what these roles entail and how they evolve would be a useful complement to our work (see Bechky, 2005 for an example).

Future research might profitably examine role evolution over a longer period of time. We find the role creator is important for, on average, the nine years of a firm's life that we examine. Presumably the direct relationship between the role creator and role successors weakens over time (after the first decade of life), but 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 role incumbents may dissipate as similar people are hired. March and March (1977) find that school superintendents in a particular district appear increasingly similar at higher levels in the hierarchy but this may occur over time within a role as well. Relatedly, particular historical and cultural contexts may reveal different patterns surrounding role imprints and normative constraints. In the time period and region we study, the background variance among people within a function is relatively stable over time, but these are useful areas for future research.

Our findings are similar to recent findings by Saks and Ashforth (2000) in that we find strong evidence that new incumbents enter a strong context that constrains their ability to adapt. Here we show that

the *initial* top managers craft roles that leave a lasting legacy on the firm. This research then suggests that executive turnover may not only be a function of individual labor market choices or contemporaneous top management team dynamics. There are important structural predeterminants that make roles more or less amenable to executive successors.

While most scholars considering person-organization fit presume that a “match” is the result of a careful dyadic process, we consider how “fit” is influenced by local history (the role creator) and extra-organizational processes. This view extends much of the existing literature on top management teams and person-organization fit (Chatman, 1991; O’Reilly, Chatman, and Caldwell, 1991; Hambrick and Mason, 1984) by taking both a dynamic view of firms and contextualized view of positions. Job seekers are often counseled to obtain a “realistic job preview” (Phillips, 1998) and to meet the people with whom they will need to work; however, rarely are they counseled to investigate the background and characteristics of the role creator, or even their immediate predecessor. Yet, our findings about role imprints and path dependence suggest an understanding of the internal history may not only be worthwhile, it may be essential for understanding person-organization fit.

Our work also speaks to research on negotiated exchange (Strauss, 1978). Although role incumbents work to alter role requirements and reinforce role expectations through interaction, the structural view aids in understanding how expectations are also shaped by the position itself (Handel, 1979; Ranson, Hinings and Greenwood, 1980). Although our work cannot directly engage negotiated exchange theory --- we never directly observe initial role negotiations -- our research suggests that the role imprint is an important factor for understanding the challenges faced by role successors in shaping and negotiating their role. We argue that role imprints shape the distribution of tasks and responsibilities as well as the expectations of other firm executives, but we cannot disentangle these possibilities. A qualitative

examination of the interactions among executives would help explain in more detail how these role imprints constrain role successors.

Our work also speaks to extra-role behavior such as taking charge or other counter-role behavior (Morrison and Phelps, 1999). We find that, although counter-role behavior (behavior that differs from expectations) may benefit the organization when the initial role has been incorrectly specified, the individual attempting to change the role will face challenges. The organization may learn through turnover and the experiences of new executives (March, 1991) but the executives bringing new knowledge may turnover quickly. In fact, our findings support the view that individual mobility can be associated with positive organizational outcomes (such as survival, see Phillips, 2001).

For entrepreneurs and entrepreneurial scholars, our research builds on research suggesting the importance of initial conditions (Aldrich, 1999; Baron, Hannan, and Burton, 1999, 2001). There is a sense that jobs are ‘placeholders’ that can be filled with more qualified executives at later points in the firm’s history. Our research suggests this strategy may come at high cost, where new firms make initial choices that limit their ability to assimilate new executives with different experiences—perhaps even if bringing on someone new was anticipated. To the extent that entrepreneurial firms early on allocate role responsibilities that are reflected in the titles of jobs (Robbins, 2005), the characteristics of the role creator will shape the success of role successors. Practically, this suggests entrepreneurs should think carefully about initial role decisions.

In addition, we provide an alternative view of entrepreneurial firm development (Rubenson and Gupta, 1996; Boeker and Karichalil, 2002). Instead of a life cycle or maturation model where all firms have an unstructured childhood, a painful adolescence, and ultimately become structured bureaucratic

adults, our research suggests, at a minimum, we will expect a great deal of variation in maturation rates and, more likely, different path dependent outcomes. Initial imprints influence how firms evolve, how quickly they add or lose talent, and ultimately the rate at which they grow.

Change in entrepreneurial firms, and in high-technology firms in particular, is inevitable (Schoonhoven and Jelinek, 1990). Some argue that an organizational ability to adapt and change can be provided by idiosyncratic or atypical roles that encourage internal diversity (Aldrich, 1999). But organizational benefits are not inconsistent with individual struggles, and these struggles are likely to become evident when executives leave and an attempt is made to re-formulate the role according to a different set of expectations. As an extension to this work, it would be interesting to examine how change occurs through internal “accrual mobility” — where the same person holds a role that evolves and becomes a new role (Miner and Estler, 1985) – by examining movements within a firm.

For both entrepreneurial research and organization theory, we offer a window into the process of role evolution and identify the initial role structure as an important mechanism of the bureaucratization process. We see that roles remain shaped by their initial formulation, as people cycle through the role. This mechanism brings to life the oft cited, but rarely examined, separation of persons from roles (Weber 1946).

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Table 1. Roles and Role Incumbents by Function: Descriptive Statistics

| | N of Pos. | Median Firm Age at 1st Position (months) | Median Duration | Median Duration at 1 st Position | Avg. N in each function | Max. N of pos. holders | Percentage of role holders with prior experience in function |
|-------------------------------|-----------|--|-----------------|---|-------------------------|------------------------|--|
| President/ CEO | 401 | 0 | 38 | 51 | 2.25 | 10 | 10% |
| General Manager | 192 | 48.5 | 29 | 39 | 3.36 | 18 | 44% |
| Science/ Engineering | 364 | 5 | 38 | 53 | 2.78 | 11 | 77% |
| Marketing | 229 | 32 | 24 | 30 | 2.07 | 8 | 41% |
| Finance | 235 | 29 | 30 | 38 | 2.09 | 8 | 62% |
| Sales | 233 | 31 | 25 | 26.5 | 2.13 | 8 | 48% |
| Operations/ Manufacturing | 177 | 29 | 33 | 42 | 1.95 | 7 | 33% |
| Service/ Support | 49 | 54 | 27.5 | 35 | 1.47 | 4 | 23% |
| Admin. | 78 | 45 | 37 | 47.5 | 1.72 | 6 | 41% |
| Bus. Dev./ Strategic Planning | 93 | 56 | 27 | 34.5 | 1.72 | 6 | 12% |
| HR | 40 | 81 | 38 | 40 | 2 | 2 | 70% |
| Overall | 1866 | 22.5 | 32 | 40 | 2.28 | 18 | 42% |

Table 2a. Descriptive Statistics

| Variable | Mean | S.D. | Min | Max | N Obs. |
|------------------------------------|-------------|-------------|------------|------------|---------------|
| IPO | .51 | .50 | 0 | 1 | 89352 |
| Computer Industry | .42 | .49 | 0 | 1 | 89352 |
| Firm Age | 89.58 | 47.98 | 0 | 257 | 89352 |
| Prior Senior Management Experience | .41 | .49 | 0 | 1 | 89352 |
| Number of Indiv. Prior Jobs | 1.74 | 1.20 | 0 | 8 | 89352 |
| Team Size | 6.63 | 4.55 | 1 | 30 | 89352 |
| Team Growth | .18 | .38 | 0 | 1 | 89352 |
| Founding team member | .31 | .46 | 0 | 1 | 89352 |
| Multi-function role | .11 | .31 | 0 | 1 | 89352 |
| Positive role imprint | .26 | .44 | 0 | 1 | 89352 |
| Role creator | .54 | .50 | 0 | 1 | 89352 |
| Difference from role creator | 1.29 | 1.11 | 0 | 6 | 42699 |
| Difference from normative role | 1.39 | .68 | 0.44 | 5.32 | 89352 |
| Atypical role creator | 1.39 | .65 | 0.44 | 3.77 | 42699 |

Table 2b. Correlations

| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|------|------|
| 1. IPO | 1.00 | | | | | | | | | | | | | |
| 2. Firm Age | 0.52 | 1.00 | | | | | | | | | | | | |
| 3. Comp Industry | -0.16 | -0.14 | 1.00 | | | | | | | | | | | |
| 4. Team size | 0.55 | 0.29 | -0.08 | 1.00 | | | | | | | | | | |
| 5. Team growth | 0.04 | -0.13 | 0.01 | 0.26 | 1.00 | | | | | | | | | |
| 6. Prior management exp. | 0.11 | 0.01 | -0.01 | 0.05 | 0.04 | 1.00 | | | | | | | | |
| 7. N of prior jobs | -0.03 | -0.12 | -0.01 | -0.13 | 0.01 | 0.33 | 1.00 | | | | | | | |
| 8. Founding team member | -0.37 | -0.39 | 0.02 | -0.31 | -0.02 | -0.15 | .24 | 1.00 | | | | | | |
| 9. Multi-function role | 0.00 | 0.01 | -0.02 | -0.04 | -0.03 | 0.04 | -0.05 | -0.05 | 1.00 | | | | | |
| 10. Positive role imprint | 0.16 | 0.06 | -0.10 | 0.13 | 0.05 | 0.04 | 0.03 | -0.01 | -0.02 | 1.00 | | | | |
| 11. Role creator | -0.38 | -0.35 | 0.06 | -0.35 | -0.01 | -0.10 | 0.06 | 0.34 | 0.17 | -0.25 | 1.00 | | | |
| 12. Difference from role creator | -0.08 | -0.07 | 0.13 | -0.07 | -0.01 | 0.23 | 0.11 | -0.21 | 0.13 | -0.11 | 0.02 | 1.00 | | |
| 13. Difference from normative role | -0.04 | -0.06 | 0.06 | -0.09 | -0.01 | 0.33 | 0.25 | 0.01 | 0.20 | -0.05 | 0.03 | 0.63 | 1.00 | |
| 14. Atypical role creator | -0.04 | -0.04 | 0.00 | -0.04 | -0.01 | 0.18 | 0.07 | -0.15 | 0.08 | 0.03 | -.006 | 0.56 | 0.44 | 1.00 |

Table 3: Event History Analysis: Effect on Turnover Rate of Role Creators and Role Successors^{*}
Hazard Ratio and Standard Errors

| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) |
|--|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| IPO | 1.56** (.13) | 1.54** (.13) | 1.44** (.17) | 1.29 (.24) | 1.57** (.13) | 1.45** (.17) | 1.46** (.17) | 1.46** (.17) |
| Firm Age | 1.00 (.00) | 1.00 (.00) | 1.00 (.00) | 1.00 (.00) | 1.00 (.00) | 1.00 (.00) | 1.00 (.00) | 1.00 (.00) |
| Computer industry | 1.53** (.09) | 1.53** (.09) | 1.56** (.13) | 1.64** (.19) | 1.51** (.09) | 1.56** (.13) | 1.61** (.13) | 1.59** (.13) |
| Team Size | 1.00 (.01) | 1.00 (.01) | 1.00 (.01) | 1.00 (.01) | 1.01 (.01) | 1.00 (.01) | 1.00 (.01) | 1.00 (.01) |
| Team Growth | 1.02 (.08) | 1.02 (.08) | .89 (.10) | .91 (.15) | 1.02 (.08) | .89 (.10) | .89 (.10) | .90 (.10) |
| Prior senior management experience | 1.27** (.08) | 1.26** (.08) | 1.30** (.12) | 1.43** (.18) | 1.21** (.08) | 1.29** (.12) | 1.30** (.12) | 1.28** (.12) |
| Number of past jobs | 1.06* (.03) | 1.06* (.03) | 1.08* (.04) | 1.08 (.06) | 1.04 (.03) | 1.08* (.04) | 1.08* (.04) | 1.08* (.04) |
| Multi-function role | 1.07 (.10) | 1.13 (.11) | 1.02 (.13) | .87 (.27) | 1.01 (.10) | 1.01 (.13) | 1.03 (.13) | 1.01 (.13) |
| Positive role imprint | .77** (.06) | .75** (.05) | 1.00 (.08) | 1.12 (.13) | .78** (.06) | 1.00 (.08) | .98 (.08) | .98 (.08) |
| Role creator (=1) | | .84** (.06) | | | | | | |
| Difference from role creator | | | 1.08* (.04) | 1.10* (.06) | | 1.07† (.05) | | 1.03 (.05) |
| Difference from normative role incumbent | | | | | 1.15** (.05) | 1.02 (.07) | | 1.02 (.07) |
| Atypical role creator on role successor | | | | | | | 1.18** (.07) | 1.14* (.08) |
| Wald Chi-Square (df) | 135.78 (8) | 141.84 (9) | 80.91 (9) | 51.28 (9) | 146.37 (9) | 80.72 (10) | 82.96 (9) | 84.44 (11) |
| N | 1866 | 1866 | 1064 | 575 | 1866 | 1064 | 1064 | 1064 |
| Exits | 1113 | 1113 | 632 | 313 | 1113 | 632 | 632 | 632 |
| Obs (Monthly) | 89352 | 89352 | 42699 | 22202 | 89352 | 42699 | 42699 | 42699 |

**p<.01; *p<.05; † p<.10; one-tailed test for hypothesized variables

^{*} Stratified by founder, with robust standard errors clustered by role.

**Figure 1:
Survivor Functions for Role Successors**

