

## ORGANIZATIONAL ROLES AND TRANSITION TO ENTREPRENEURSHIP

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**How can one predict entrepreneurship, an individual's participation in the founding of a new organization? We propose that the organizational context of an individual either accelerates or retards the likelihood of entrepreneurship, depending on the individual's role in the organization. The effects of role hinge, we argue, on the founder's charismatic identity, and the decoupling of this identity from the organization as it ages and grows. Our findings support the proposition that organizational properties that affect the likelihood of becoming an entrepreneur do so in opposite ways for organizational members and founders. We discuss how our theory and results demonstrate the value of a sociological perspective on entrepreneurship.**

The creation of new organizations is among the most important forces of social and economic development. New organizations catalyze economic growth, advancing new technologies, redefining products and services, and in some cases creating entirely new industries (Schumpeter, 1934). New organizations create new jobs, broadening the avenues available for social mobility and economic attainment (Carroll & Hannan, 2000). Many of the differences we see among the organizations around us stem from distinctions that first appeared among cohorts of new organizations, reflecting the social conditions that prevailed at the time (Stinchcombe, 1965). When these differences first arise, new organizations herald what may become new institutional forms, as occurred with the founding of the first labor unions, the first computer manufacturers, the first for-profit insurance companies, and the first health maintenance organizations. More generally, new organizations trigger institutional changes that may have been unthinkable at the time within established organizations.

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While most would agree on the importance of new organizations, there is little agreement about how or whether we can predict their birth. The explanation given for the creation of new organizations depends in large part on a researcher's level of analysis (Aldrich & Wiedenmayer, 1991). Researchers looking at individual new organizations see what appear to be extremely rare and inherently idiosyncratic cases of "entrepreneurship"—the participation by an individual in the founding of a new organization (Stevenson, Grousbeck, Roberts, & Bhide, 1999). By contrast, researchers looking from an aggregate level note that organizational foundations cluster in time and space (Dobrev, 2001; Saxenian, 1994; Schoonhoven & Romanelli, 2000; Stuart & Sorenson, 2003) and can best be explained by factors that also vary systematically in time and space—characteristics of society and economy rather than particular characteristics of individuals (Weber, 1958). So it is that the reasons we hear for the founding of new organizations depend on whom we ask: individual-level researchers pointing to the rare and creative acts of particular entrepreneurs, and macrolevel researchers observing systematic differences in the economic and social contexts surrounding the entrepreneur.

In this paper, we take an approach consistent with the view that generalizing about entrepreneurs requires the study of individuals, while generalizing about new ventures requires the study of organizations (Aldrich, 1992). Accordingly, we advance a theory that explicitly allows for the fact that entrepreneurship is understood to be the act of an individual founder whose actions are influ-

enced by her<sup>1</sup> sociodemographic make-up and human and social capital—a mosaic juncture of organizational roles, job properties, and labor market experiences. We also argue that the likelihood of entrepreneurial behavior is shaped by the structures of existing organizations and by prevailing institutional and market forces.

The centerpiece of our analysis is a model that shows how properties of organizations interact with the roles of individuals working in those organizations to predict new foundings. We agree with the assertion that the influence of existing organizations in predicting entrepreneurship constitutes “an important and unexplored source of heterogeneity” (Thornton, 1999: 37). In particular, we follow the lead of researchers who have looked at entrepreneurship as part of career dynamics, noting that entrepreneurs typically must leave one organization in order to found another (Carroll & Mosakowski, 1987). Taking this approach, one can identify features of the organizational context of individuals and theorize whether these features encourage or discourage entrepreneurship (Freeman, 1986). Our theory suggests that the effects of organizational context hinge on the individual’s role within the organization. We predict that the same organizational forces that steer one individual toward entrepreneurship will have the opposite effect for another individual, depending on the type of role that the individual occupies in the organization. In this way, characteristics of the organization and the roles of individuals in that organization interact to predict entrepreneurship.

## THEORY AND HYPOTHESES

### Organizational Roles and Entrepreneurship

In predicting entrepreneurship (the transition from leaving one organization to found another, expressed in terms of the career history approach), organizational roles matter for at least two important reasons. First, one’s ability to pursue a creative idea within the context of an existing organization—to mobilize resources in support of its development, and ultimately to bring it to fruition—is invariably affected by features of the organizational context; the pursuit of creative ideas is facilitated by an informal, fluid, and less constraining environment, where the rigidity of an established bureaucracy has not yet taken hold. Second, access to information about entrepreneurial opportunity, including the potential value of an innovative idea

outside the boundaries of the current organization, largely varies by an individual’s position in the organizational structure, which (among other things) affects the ability to learn about opportunities for entrepreneurship. We theorize about these issues below and specify hypotheses about the effects of organizations and organizational roles on transitions to entrepreneurship. We begin by drawing an important distinction between organizational *members* and *founders* that underscores our main argument that the impact of organizational context hinges on an individual’s role in the organization.

**Member transitions to entrepreneurship.** Although entrepreneurship typically is construed as the act of an individual, it is also shaped by the structural positions occupied by individuals as social actors. A nascent entrepreneur works within an existing organization that affects his likelihood of building a new organization. Formal work organizations secure and direct the actions of their members toward the accomplishment of prescribed objectives (Parsons, 1951). Such control over individuals tends to constrain the range of behaviors among organizational members (Barnard, 1948), aiming to ensure the continuity of formal organizations over time (Thompson, 1967) and to impose discipline so that actions remain consistent with the organizations’ purpose (Weber, 1968).

We think that the constraining effects of organizations on entrepreneurship increase as organizations develop. As Blau (1977) observed, as a social unit increases in size, its members are likely to have a greater proportion of their interactions with other members of the unit rather than with outsiders. Similarly, as an organization grows larger, we expect that members are likely to have less contact with those outside the organization and therefore less exposure to entrepreneurial opportunities. Furthermore, to the extent that contacts made within an organization are less heterogeneous than those made with the world outside, increasing organizational size also is likely to restrict the variety of members’ role relations (Blau, 1977). Members of young, small organizations are likely to have more varied, multifunctional role sets that are more likely to provide access to novel information and opportunities than the more homogeneous contacts likely within a larger and more developed work organization. In sum, we expect that as organizations grow and age, their members will see fewer opportunities for entrepreneurship.

Organizational development also decreases the chances that an individual will pursue an entrepreneurial opportunity should one arise. Weber’s thesis on charisma (1968) describes a process of devel-

<sup>1</sup> We prefer to avoid “his or her” and “he or she,” and so we alternate pronouns throughout the article.

opment toward rational bureaucracy in response to external pressures for conformity, and Weber's insights can readily be applied to organizations as they develop in size and time. An organization experiences a transition to rational bureaucratic authority as it encounters pressures to conform to the prescribed rules and norms of the external order. Such pressures build over time and increase with the organization's size, so formalization increases as organizations grow and age (Hannan, Carroll, Dobrev, & Han, 1998; Scott, 1975) and leads to diminishing incentives for entrepreneurship (Jensen & Meckling, 1976). As they age, organizations typically redefine the ways in which they rely on innovation and channel innovation to conform to their existing needs and "path-dependent" development. For this reason, older firms are likely to innovate more yet become less aligned with their external environments than are younger firms (Sørensen & Stuart, 2000). And as they grow, organizations develop hierarchies that are poorly suited to absorbing external information based on informal contacts (Berger, Miller, Peterson, Rajan, & Stein, 2004), which in turn diminishes the sources and variance of ideas that lead to nonincremental innovation (Dobrev, Kim, & Carroll, 2003; March, 1991). Overall, then, we expect that organizational members are less likely to innovate—that is, to deviate from prescribed routines—as their organizations become older and larger.

If exploratory innovation stifles as organizations develop, then why should potential entrepreneurs occupying member roles become more likely to remain with their firms rather than leave and found their own ventures? Established organizations are better able than young and small firms to accommodate the creative initiatives of their members. As firms become more formalized with age and size, they also typically develop internal systems for processing information about new opportunities. Formal career paths develop as an organization's "internal labor market" structures advancement opportunities (Baron & Bielby, 1980; Baron, Davis-Blake, & Bielby, 1986). Over time, these paths elaborate as new jobs are created around the initiatives and qualifications of individual members. More generally, larger, older organizations are characterized by the routinization of innovative opportunity and activity (Galbraith, 1973). We think that this routinization makes it less likely that innovative members of larger, older organizations will leave to build new organizations. In sum, we expect that members of larger, older organizations are less likely to innovate, and we expect that when they do, they are less likely to do so as entrepreneurs.

*Hypothesis 1. For members, the likelihood of leaving to build a new organization is a decreasing function of organizational age and size.*

**Founder transitions to entrepreneurship.** We expect the processes theorized above to operate very differently for an organization's founder. At least in the very formative years of a new venture, the founder's role entails more function and responsibility than that of any organizational member. Founders' ideas are imprinted in their creations and provide a blueprint for future organizational development (Baron, Hannan, & Burton, 2001; Phillips, 2002). More than this, unlike organizational members', the founder's identity is tightly linked to that of the organization and to its innovative endeavors. The founder's charismatic authority, inherent in the *role* of founder, allows her to speak for the organization not based on rationale, but rather purely on the basis of her identity as a founder (Weber, 1968).<sup>2</sup> But such charismatic domination, in Weberian terms, implies negation of and disregard for the law and order of the surrounding world. While organizational members occupy roles in which action is expected to be sanctioned by the organization, the founder occupies a role that remains above the disciplining forces of organizational rationality that affect members. And his identity as a founder reflects the properties of that role.

As an organization develops, however, we expect the founder's commitment to the venture to decline—in a pattern precisely the opposite of that experienced by organizational members—for two reasons. First, the charismatic aspect of the founder's role generates a powerful tension as the organization develops. When his organization is young and small, the founder can maintain the charismatic role in which person and position are tightly coupled. Innovations by the founder in this context remain consistent with her identity; her initiatives are acknowledged as such. As the organization develops and so becomes subjected to pressures from external constituents, however, charismatic authority dissipates in the face of rational bureaucracy. Pressures mount for the organization to conform to institutionalized designs and practices. Prospective customers and other organiza-

<sup>2</sup> Note that we do not relate personality to charisma (obviously, not all founders are equally—or at all—charismatic). Rather, in keeping with Weber's thesis, we view charisma as the basis for authority in nonbureaucratic (i.e., young and small) organizations and as emanating from an individual's position in an organization.

tions that engage in exchange mandate assurances of accountability and reliability (Hannan & Freeman, 1984); external investors force contractual agreements that diminish the founder's initially conferred decision-making independence (Kaplan & Strömberg, 2004). As charisma wanes under these pressures, the founder's original contribution to the venture becomes devalued not by choice but because of the demands for discipline and conformity posed by exogenous actors.

Under such discipline, charisma, personal distinction, and individual eminence give way to rational bureaucracy. Now the founder's innovative ideas channel into systems designed to make such initiatives part of the organization's routines. But for the founder, participating in routinized systems that constrain and shape innovation deny his own identity, taking innovation and making it yet another of the organization's routinized initiatives. So, the founder's identity is becoming, in White's (1992) terms, decoupled from her social context. Competing identities now struggle. Inside and outside the organization, the founder's role is redefined—his identity is no longer that of the charismatic as new contingencies shift power so that this initial identity no longer applies. In some cases, the founder stays on, taking on a new identity that conforms to the new contingencies of a legal-rational bureaucracy. Although this scenario has been played out in a few (probably overcited) cases, such as Seymour Cray's redefinition from charismatic founder to "technologist," we think that founders will generally not stay on as bureaucracy develops (Kaplan, Sensoy, & Strömberg, 2005). As Goffman (1952) observed, one's own conception of identity is slower to adapt than is one's socially conferred identity. We expect that changes in the founder's context will redefine her identity more rapidly than she will. Thus, with increasing bureaucratization, we expect to see an increase in the chances that the founder will leave the organization in search of another context where he can regain his identity of a founder.

A second reason for this dynamic is that founders are likely to be exposed to increasing opportunities to start yet another new firm as their organization develops. The founder role typically requires mediating relations between the firm and the world outside—investors, regulators, customers, and other businesses. As the organization grows, the number and variety of these external institutional contacts are likely to increase (Meyer & Rowan, 1977), implying an increasingly cosmopolitan role set for the founder of a developing organization. This increasing variety of external contacts in itself is likely to increase the founder's exposure to new

entrepreneurial opportunities. Meanwhile, the founder of a growing organization is likely to be publicly identified as having "what it takes" to succeed at building a new organization (by virtue of having achieved growth). Thus, we think the opportunities made available to founders to get involved in the formation of more new ventures are likely to increase as their ventures grow and expand. Altogether, these arguments imply:

*Hypothesis 2. For founders, the likelihood of leaving to build a new organization is an increasing function of organizational age and size.*

**Member heterogeneity.** The second argument leading to Hypothesis 2 underscores the importance of organizational position for acquiring information about entrepreneurial opportunities. Since our claim is that variation in access to such information hinges on whether or not an individual occupies the role of a founder, it is also important to examine the potential heterogeneity in access to information among members. In any organizational setting, the likelihood of members leaving and starting new organizations also depends on the properties of their roles as members. Specifically, the propensity of members to leave and start new ventures depends on their exposure to knowledge about existing opportunities in their external context. Acquiring such information is greatly enhanced for members occupying high-level positions that allow greater contact with the external world and thus the opportunity to broker information between insiders and outsiders (Fernandez & Gould, 1994; Friedman & Podolny, 1992; Thompson, 1967). Access to information unavailable to the rest of the organizational constituency augments top managers' formal authority with informal influence over other members (Burt, 1992; Tushman & Romanelli, 1983).

The key difference between members sitting at the helm of an organization and founders has to do with the *extent* to which exposure to such opportunities affects the likelihood to engage in entrepreneurial activity. According to our theory, the development of internal bureaucracy makes top managers less likely to leave (independent of their exposure to alternate opportunities), in the same way that internal bureaucracy affects rank-and-file members. Organizational founders, by contrast, in the formative years of their ventures are driven mostly by their identity as founders and are less responsive to other opportunities. As their organizations evolve, however, founders not only experience misaligned identities but are also presented with an increasing number of opportunities for entre-

preneurship because of their success as founders. Altogether, we expect that as organizational age and size increase, founders will change from being less to being more likely than any other members to leave and build new organizations. Inversely, all members—regardless of their position in the organization—will become less likely to transition to entrepreneurship as organizational age and size increase, though we expect top managers to have a persistently higher likelihood of becoming entrepreneurs than regular members. The distinction among members based on their hierarchical positions in the organization is important, and we will control for it in our empirical specification.

### Completing the Model of Transitions to Entrepreneurship

We specify the likelihood of an individual's becoming an organizational founder as a function of an extensive number of additional factors that are likely to affect entrepreneurship. Because these factors have been theorized extensively in previous research, we do not elaborate hypotheses about them. Note, however, that their inclusion in the model here is central to our claim of building an integrative model of the transition to entrepreneurship. We begin with a review of some important individual-level predictors and then move on to discuss the influence exerted by macro structural characteristics of a nascent entrepreneur's environment.

A large body of research addresses the link between demographic and social attributes and entrepreneurship. One line of argument suggests that entrepreneurship is especially appealing to members of minorities, who may face discrimination if employed in conventional settings (Bonacich, 1973). Substantial empirical support exists for the finding that foreign-born persons are disproportionately represented in self-employment (Borjas, 1986; Carroll & Mosakowski, 1987; Light & Rosenstein, 1995; Shane, 1996) and that the rate of new venture formation is higher in immigrant-populated areas (Pennings, 1982). The argument that the path to entrepreneurship begins with blocked opportunities in existing organizations has not been confirmed, however, in studies of the effects of race and gender. Indeed, African-Americans and women have been found to have a lower incidence of entrepreneurial activity (Carr, 1996; Light & Rosenstein, 1995). In combination, these findings imply that the higher business start-up propensity among immigrants might be a consequence of a unique combination of class and ethnic resources rather than of attempts to avoid institutional discrimination. The models presented below include

control variables for respondents' gender (*male*), ethnicity (*white*), and country of origin (*United States-born*).

Another important set of socioeconomic variables shown to affect entrepreneurship positively is related to the human and social capital of venture founders (Eisenhardt & Schoonhoven, 1990; Shane & Stuart, 2002). In addition to education and parental endowment, important characteristics include relevant skills and financial capital acquired in previous labor market experiences. Particularly useful are experiences in career occupations that facilitate the attainment of professional reputation and the development of extensive networks of interprofessional connections (Abbott, 1988). Previous entrepreneurship research incorporating these work experience predictors has built on the assumption that their aggregate effect is captured by examining the effect of either an employee's age (Shane, 1996) or years of work experience (Carroll & Mosakowski, 1987; Portes & Zhou, 1996).

We think that human and social capital acquired in one's most recent job will have a more pronounced impact on the likelihood of entrepreneurship than earlier experiences. Potential entrepreneurs gain valuable preparation by past work experience, but relative to the timing of transitions, what was learned may be forgotten and previously acquired skills may be lost or outdated. Similarly, upon job change, old networks become costly to maintain, and accumulated capital may have already been spent or invested elsewhere. It is thus important to separate the effects of cumulative and the most recent human and social capital. Accordingly, our model includes two types of measures of career experience. The first type captures overall labor market experience over an individual's entire career by (1) counting the cumulative number of organizations an individual worked for either as a member (*number of organizations as member*) or as a founder (*number of organizations as founder*) and (2) by constructing a duration measure of years passed since graduation (*time since MBA*). The second type of career experience measure we use controls for an individual's functional experience in her most recent position, distinguishing between *technological*, *professional*, and *multiple functional expertise*.

Our set of control variables accounting for properties of respondents' jobs also include measures of *job satisfaction* and *salary*, both of which have unambiguous implications for transitions to entrepreneurship. Individuals dissatisfied with their work will obviously consider various alternatives, including starting businesses, and the monetary rewards they currently enjoy are likely to be evalu-

ated vis-à-vis the possibility of financial success as entrepreneurs.

Prior *family business experience* is also a strong predictor of entrepreneurship (Carroll & Mosakowski, 1987; Shane, 1996), as is prior founder experience. At least two arguments can account for this so-called "occurrence dependence." First, experience in either a family business or as a founder might develop entrepreneurial abilities and resources that later prove useful for launching other businesses. Thought of broadly, this argument would include the development of reputation and social capital, in that the experienced entrepreneur occupies a social position that is likely to provide access to further entrepreneurial opportunities (Burt, 1992). A second way to explain positive occurrence dependence is by allowing for unobserved factors that affect the rate of starting new businesses and that are stable over time but vary from person to person (Heckman & Borjas, 1980). The existence of such unobserved heterogeneity is likely to spuriously affect an occurrence-dependence model, because those who were more likely to start businesses in the past are also more likely to do so in the future. Because of this possibility, we will control for occurrence dependence as part of our effort to rule out several alternative explanations for our model.

Another important demographic characteristic that we investigate is *individual age*. Although previous research has provided clear evidence that the propensity for new venture start-ups increases with age, the substantive interpretation has been unclear because researchers have treated age as concomitant to human capital (Carr, 1996; Shane, 1996). Further, this research has relied on cross-sectional data that did not allow the age effect to be separated from a possible cohort effect. By capturing the effect of human capital separately, namely in the form of organizational and functional experience, we treat age purely as a life course variable. Following Sanders and Nee (1996), we specify a quadratic function of age with the understanding that risk-taking propensity increases with age, perhaps because individuals acquire a certain level of security with age, but decreases at a later stage in life, when exposure to financial loss through high risk becomes harder to rationalize.

Most theories explaining entrepreneurship from a system-change perspective can be traced to Schumpeter's (1947) model, in which technological change triggers new venture formation. Technological innovation modifies the existing supply and demand balance, thereby opening the door for the formation of new enterprises focused on production lines based on emergent technologies. Re-

search conducted from this perspective typically uses a community of organizations or an entire industry as a unit of analysis (Aldrich, 1990; Romanelli, 1989; Shane, 1996; Tushman & Anderson, 1986). Nevertheless, findings about technology-driven organizational foundings can be tied to the increased availability of entrepreneurial jobs in newly established firms founded in response to economic demand. We associated the effect of externally induced probability for entrepreneurship with industries at the forefront of technological change, such as *high-technology industries* and *professional services industries*, which in previous research have been empirically shown to promote entrepreneurship (Steinmetz & Wright, 1989). Additionally, we will control for the relationship between technological advancement and entrepreneurial opportunities by including an annual measure for *new U.S. patents*.

In addition to technological progress, important political and socioeconomic developments might also stimulate or impede entrepreneurial activity, especially in periods when environmental selection produces high organizational turnover (Carroll, Delacroix, & Goodstein, 1988; Dobrev, 2001). Because increased entrepreneurial activity often triggers contagion and positive rate dependence (Delacroix & Carroll, 1983), we will control for the annual number of *new U.S. business firms*. We will also control for general macroeconomic conditions pertinent to entrepreneurial activity (*U.S. unemployment rate*, *U.S. gross domestic product (GDP)*, and *U.S. prime rate*). Finally, to account for federal policy that across time may incentivize in varying degrees the creation of new ventures, we will control for which party administration was in office (*Republican*).

## METHOD

### Data

Estimating our model is challenging, requiring data on individuals who are at risk of becoming entrepreneurs even if they do not ultimately start a new business. By its nature, the organizational founding event is typically known only after it takes place. Meanwhile, the risk set of nascent entrepreneurs who do not make the transition to entrepreneurship is systematically excluded from observation (Aldrich, 1990). Avoiding this problem by sampling from the population at large is difficult, however, because entrepreneurship is a relatively rare event. For this reason, we chose not to attempt to collect a representative sample and instead focused on collecting data for a more refined risk set of individuals who we thought would be

likely to experience entrepreneurship. Although this approach obviously limits the generalizability of our results, it vastly improves our ability to obtain unbiased and efficient estimates of our model parameters.

For these reasons, we estimated our models on data collected from a career history survey that we administered to all MBA alumni of an elite U.S. business school. We received completed (or partially completed) surveys from 5,283 individuals, thus attaining a response rate of 43 percent.<sup>3</sup> Respondents were asked to provide complete accounts of their career histories, describing the core features not only of their previous positions, but also of the organizations where they were employed. Information about any job changes was also collected, along with some general demographics.

Because our goal in this project is to study the entrepreneurship dynamic as it unfolds throughout entire careers, and because we needed data not only to measure organizational properties but also to construct a model of the transition to becoming a founder, we excluded incomplete surveys whenever handling the missing values through interpolation was infeasible. Fortunately, paring down the data to only those respondents for whom we had complete records ( $n = 2,692$ ) did not introduce a detectable bias in the final sample. We examined the distributions of basic demographic covariates before and after the exclusion of missing cases. Comparing the frequencies of variables like class and birth cohort, years of work experience, gender, and ethnicity indicated that the two sets of distributions were remarkably similar.

Particularly important for our research was that respondents were asked to indicate if and when they had assumed the role of organizational founder. We coded years in which a reported job change led to assuming the role of company founder as years in which a transition to entrepreneurship occurred. This coding rule followed from our definition of entrepreneurship as the act of founding a new organization and, consistently with our theory, distinguished it from (1) self-employment not involving the creation of a new organization and (2) a mere investment in a new venture without any personal involvement.

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<sup>3</sup> This rate compares favorably with the response rates obtained in prior organizational analyses based on the survey method: Kelly and Dobbin (1999) and Dobbin and Sutton (1998) reported 45 percent response rates; Miliken, Martins, and Morgan (1998) reported 18 percent; Lincoln and Kalleberg (1985), 35 percent; and Blau, Falbe, McKinley, and Tracy (1976), 36 percent.

To measure organizational roles, we relied on answers to a survey question that asked respondents to indicate their primary positions in their organizations. Those who reported being in the *founder role* were coded as such and distinguished from members. To account for heterogeneity among members, we coded respondents occupying high-level managerial positions with responsibilities for the long-term strategy of their firms or units as *top managers*. We also controlled for each position's *span of control*, calculating a ratio representing the fraction of organizational members under (both direct and indirect) control of the person occupying that position.

After an elaborate logical cleaning procedure, we restructured the data in an event history format in which a single spell accounted for each job held by each respondent during his labor force experience since graduation from the MBA program. We then divided these spells into person-year segments in order to update independent variables. Annual data for the macroeconomic variables were obtained from the following sources: the U.S. Department of Labor, Bureau of Labor Statistics, for unemployment rate; the U.S. Department of Commerce, Bureau of Economic Analysis, for GDP; the Board of Governors of the Federal Reserve System for the prime rate; the U.S. Bureau of the Census, Statistics of U.S. Business, for the number of new firms; and the U.S. Patent and Trademark Office for annual new patents. We analyzed a data file with 51,406 person-year records with the range of years per respondent varying from 1 to 44. The longest-lived start-up organization in our sample is confined to the longest career history of a founder in the sample—43 years. While this limit in the observed age variance of entrepreneurial firms also limits the applicability of our findings to a certain range of the actual firm age distribution, we do not want to understate the wide range covered by our data, especially with respect to what our theoretical propositions imply. As organizations grow and age, they face demands from their environments and constituents for reliability and accountability (Hannan & Freeman, 1984). We do not think that any organization can grow to comprise 468 employees or survive for 7.4 years (the means of the observed size and age distributions of entrepreneurial firms in our sample) without being exposed to pressures for formalization.

## Model and Estimation

We estimated our models in terms of the instantaneous transition rate (Blossfeld & Rohwer, 1995; Tuma & Hannan, 1984). This approach requires

**TABLE 1**  
**Descriptive Statistics and Correlations<sup>a</sup>**

Variable	Minimum	Maximum	Mean	s.d.	1	2	3	4	5	6	7	8
1. Organizational tenure at start of spell	0	43	6.79	7.61								
2. Republican	0	1	0.58	0.49	.03							
3. U.S. unemployment rate	1.9	9.7	6.20	1.42	.07	.33						
4. New U.S. business firms ( $\times 10^{-3}$ )	36.11	808	534	211	.10	-.07	.30					
5. New U.S. patents ( $\times 10^{-3}$ )	22.2	123	83.29	22.74	.06	-.18	-.06	.77				
6. U.S. GDP <sup>b</sup>	7.31	8.96	8.50	0.38	.10	-.06	.26	.96	.85			
7. U.S. prime rate	1.75	18.87	8.55	3.32	.09	.40	.73	.43	.02	.41		
8. Individual age	22	65	41.67	10.24	.57	.02	.14	.33	.25	.34	.19	
9. Time since MBA	0	43	14.86	10.38	.60	.03	.13	.28	.21	.29	.17	.96
10. Male	0	1	0.91	0.28	.12	.06	-.01	-.20	-.20	-.19	-.03	.15
11. White	0	1	0.95	0.22	.07	.04	-.01	-.13	-.13	-.13	-.02	.09
12. United States-born	0	1	0.95	0.22	.05	.02	-.00	-.06	-.06	-.06	-.01	.03
13. Salary ( $\times 10^{-4}$ )	0	1,061	26.15	40.05	.06	-.02	-.00	.06	.06	.06	.00	.02
14. Job satisfaction	1	7	5.76	1.28	.22	-.02	.00	-.01	-.02	-.01	.01	.25
15. Span of control	0	1	0.21	0.35	.08	.02	.04	.07	.04	.07	.05	.16
16. High-technology industry	0	1	0.10	0.30	-.06	-.02	.01	.06	.06	.06	.02	-.08
17. Low-technology industry	0	1	0.24	0.42	.06	.00	-.05	-.14	-.12	-.14	-.06	.01
18. Professional services industry	0	1	0.63	0.48	-.01	.01	.04	.09	.07	.09	.05	.04
19. Multiple expertises	0	1	0.32	0.47	.04	-.00	.04	.13	.11	.14	.06	.11
20. Single professional expertise	0	1	0.58	0.49	-.07	.00	-.02	-.08	-.07	-.08	-.03	-.15
21. Single technical expertise	0	1	0.06	0.23	.04	.01	-.03	-.09	-.08	-.09	-.04	.04
22. Family business	0	1	0.16	0.36	.08	.00	.02	.06	.04	.05	.03	.17
23. Number of organizations as founder	0	5	0.24	0.59	-.06	-.01	.04	.15	.13	.15	.06	.19
24. Number of organizations as member	0	13	2.15	1.58	-.15	-.00	.05	.17	.14	.17	.07	.36
25. Top manager role	0	1	0.21	0.41	.03	.01	.01	.02	.02	.03	.01	.06
26. Founder role	0	1	0.15	0.35	-.00	-.00	.04	.12	.10	.12	.06	.13
27. Organizational age	0	396	41.94	41.89	.23	.02	-.01	-.06	-.06	-.05	-.01	.04
28. Organizational size <sup>c</sup>	-2.30	13.82	6.50	3.42	.13	.01	-.04	-.16	-.14	-.16	-.05	-.12

that one specify the functional form of duration dependence. We represented variation in job tenure ( $\mu$ ) as a stochastic, piecewise-exponential function in which the breakpoints for the pieces are denoted as  $0 \leq \tau_1 \leq \tau_2 \leq \dots \leq \tau_p$ . Assuming  $\tau_{p+1} = \infty$ , there are  $P$  periods:  $I_p = \{\mu | \tau_p \leq \mu \leq \tau_{p+1}\}$ ,  $p = 1, \dots, P$ . This is a flexible specification that does not require strong parametric assumptions about the functional form of tenure dependence in the rate. Instead, this model splits the duration axis into periods and then constrains the rate to be constant within those periods, but allows it to vary between them. Having explored the distribution of transition events ( $n = 1,557$ ), we chose to break job tenure ( $\mu$ ) into four periods:  $0 < \mu \leq 1$ ,  $1 < \mu \leq 15$ ,  $15 < \mu \leq 25$ , and  $\mu > 25$ . The model we estimated has the following general form:

$$r_j(\mu_j) = r_j(\mu_j)^* \exp(k_p) \exp(a_F SF_j + a_M SM_j + b_F TF_j + b_M TM_j), \mu \in I_p,$$

where  $r_j(\mu_j)$  is the rate of organizational founding by person  $j$  and  $\mu_j$  is  $j$ 's tenure in a work organization

at a given point in time;  $r_j(\mu_j)^*$  is the baseline rate for person  $j$  estimated as a function of observables;  $k_p$  denotes a set of job tenure-specific effects;  $S$  and  $T$  measure the size and age of person  $j$ 's work organization at a given point in time;  $F_j$  and  $M_j$  are 0/1 indicator variables measuring whether person  $j$  is the founder or a member (nonfounder) of her current work organization ( $F_j = 1 - M_j$ ); and the  $a$ 's and  $b$ 's are parameters to be estimated. If organizational age and size increase the rate of new venture formation by founders, as we expect, then we should find  $a_F > 0$  and  $b_F > 0$ . And if organizational age and size decrease the new venture formation rate for members (nonfounders), consistently with our theory, then the opposite pattern will appear for members:  $a_M < 0$  and  $b_M < 0$ .

Estimates of the model were obtained using the statistical software TDA 5.7 (Blossfeld & Rohwer, 1995). As do most hazard rate estimation packages, TDA uses algorithms that take into consideration the fact that not all job spells end in an event. Such "right censoring," if not explicitly allowed for in the likelihood function, would otherwise lead to

**TABLE 1**  
**Continued**

9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27
.19																		
.11	.04																	
.05	.04	.24																
.04	.07	.04	.00															
.26	.06	.03	.01	.15														
.17	.09	.03	.02	.15	.19													
-.10	-.05	-.05	-.04	-.06	-.05	-.06												
.01	.06	.03	-.01	-.04	-.00	.01	-.19											
.05	-.01	.01	.02	.10	.03	.04	-.44	-.73										
.12	.04	.02	.01	.06	.11	.39	-.09	-.01	.06									
-.15	-.05	-.03	-.02	-.04	-.13	-.32	.08	.03	-.07	-.81								
.03	.03	.02	.02	-.06	.00	-.10	.04	-.01	-.02	-.17	-.29							
.19	.05	.03	.02	.02	.13	.32	-.12	-.01	.11	.20	-.17	-.05						
.21	.05	.01	.02	.07	.12	.28	-.05	-.10	.13	.17	-.15	-.03	.26					
.37	.06	.05	-.00	-.05	.03	.01	.01	-.04	.02	.00	-.01	.00	.04	.04				
.06	.02	-.01	-.03	.00	.04	.09	-.00	.04	-.05	.20	-.14	-.07	-.12	.05				
.15	.04	.00	.01	.10	.18	.37	-.07	-.09	.14	.19	-.15	-.05	.35	.73	-.10	-.21		
.05	.02	.03	.02	-.01	-.04	-.25	-.16	.10	-.02	-.13	.11	.01	-.21	-.28	-.07	.08	-.34	
-.13	.02	-.03	-.04	.01	-.09	-.41	.11	.20	-.25	-.21	.18	.06	-.42	-.38	-.15	.07	.43	.52

<sup>a</sup>  $n = 51,406$ .

<sup>b</sup> Logarithm of (GDP in billions of 1996 chained dollars).

<sup>c</sup> Logarithm of (number of employees + 0.1).

severe bias in the model estimates (Tuma & Hannan, 1984).

**RESULTS**

The descriptive statistics in Table 1 provide an overview of our sample. These statistics summarize the pooled career histories, so the observations are person-years. The majority of our respondents were white, male, native-born Americans; the average age was 42 years, and the average yearly salary (adjusted to 1997 dollars) was approximately \$262,000. The most frequently occurring functional expertise was a single expertise in a professional service such as marketing, consulting, finance, or law, and the most frequent industry context was a professional service industry. About one in five person-years represented a top-level manager (a CEO, general manager, president, or business-unit president): about one in seven represented a founder; and about one in six person-years represented an individual employed in a family busi-

ness. The variable span of control revealed that on average, our respondents had a fifth of the employees in their organization reporting to them, but the dispersion was substantial, ranging from having no subordinates to having all employees of the firm as direct or indirect reports.

**Hypothesis Tests**

Table 2 shows our model estimates in a series of hierarchically nested specifications. The baseline, model a, included all of our controls pertaining to individual demographics, job properties, career experience, broad economic and sociopolitical conditions, and organizational roles. In model b we added the organizational age and size covariates. Both coefficients were negative and significant, and model fit improved substantially. This model did not, however, provide a test for the hypotheses because we had not yet conditioned the organizational age and size effects on organizational roles, as our theory posits.

**TABLE 2**  
**Piecewise Exponential Models of the Transition to Entrepreneurship<sup>a</sup>**

Variable	Model a	Model b	Model c
Organizational tenure ( $\mu$ )			
$0 < \mu \leq 1$	-10.65* (3.03)	-10.20* (3.02)	-10.45* (3.02)
$1 < \mu \leq 15$	-10.40* (3.03)	-10.02* (3.02)	-10.20* (3.02)
$15 < \mu \leq 25$	-10.81* (3.03)	-10.26* (3.02)	-10.48* (3.02)
$\mu > 25$	-10.62* (3.03)	-9.90* (3.02)	-10.22* (3.02)
Socioeconomic and political context			
Republican	0.05 (0.06)	0.05 (0.06)	0.05 (0.06)
U.S. unemployment rate	0.05 <sup>†</sup> (0.03)	0.05 <sup>†</sup> (0.03)	0.05 <sup>†</sup> (0.03)
New U.S. business firms ( $\times 10^{-3}$ )	-0.0001 (0.001)	-0.0002 (0.001)	-0.0002 (0.001)
New U.S. patents ( $\times 10^{-3}$ )	-0.005 (0.003)	-0.01 <sup>†</sup> (0.00)	-0.01 <sup>†</sup> (0.003)
U.S. GDP <sup>b</sup>	0.85* (0.41)	0.90* (0.41)	0.93* (0.41)
U.S. prime rate	-0.02 (0.01)	-0.02 (0.01)	-0.02 (0.01)
Individual demographics			
Individual age	0.04 <sup>†</sup> (0.02)	0.04 <sup>†</sup> (0.02)	0.05 <sup>†</sup> (0.02)
Individual age squared/100	-0.06* (0.03)	-0.06* (0.03)	-0.07* (0.03)
Time since MBA	-0.02 <sup>†</sup> (0.01)	-0.01 (0.01)	-0.01 (0.01)
Male	0.28* (0.10)	0.32* (0.10)	0.31* (0.10)
White	-0.21* (0.10)	-0.24* (0.10)	-0.24* (0.10)
United States-born	-0.20 <sup>†</sup> (0.11)	-0.25* (0.11)	-0.26* (0.11)
Job properties			
Salary ( $\times 10^{-4}$ )	-0.004* (0.001)	-0.003* (0.001)	-0.003* (0.001)
Job satisfaction	-0.20* (0.02)	-0.20* (0.02)	-0.20* (0.02)
Span of control	0.37* (0.08)	0.16 <sup>†</sup> (0.08)	0.08 (0.09)
High-technology industry	0.42* (0.09)	0.33* (0.10)	0.33* (0.10)
Low-technology industry	-0.25* (0.07)	-0.13 <sup>†</sup> (0.07)	-0.13 <sup>†</sup> (0.07)
Professional services industry	0.29 <sup>†</sup> (0.17)	0.29 <sup>†</sup> (0.17)	0.30 <sup>†</sup> (0.17)
Multiple expertise	-0.01 (0.06)	-0.03 (0.06)	-0.03 (0.06)
Single professional expertise	0.06 (0.13)	0.07 (0.13)	0.06 (0.13)
Single technical expertise	0.15 (0.19)	0.16 (0.19)	0.21 (0.19)
Family business	-0.05 (0.08)	-0.26* (0.08)	-0.23* (0.08)
Career experience			
Number of organizations as founder	0.28* (0.05)	0.25* (0.05)	0.25* (0.05)
Number of organizations as member	0.09* (0.02)	0.06* (0.02)	0.07* (0.02)
Organizational roles			
Top manager	0.26* (0.07)	0.28* (0.07)	0.30* (0.07)
Founder	0.25* (0.10)	0.03 (0.10)	-0.36* (0.14)
Organizational properties			
Organizational age		-0.003* (0.001)	-0.003* (0.001)
Organizational size <sup>c</sup>		-0.08* (0.01)	-0.09* (0.01)
Dynamic processes			
Founder $\times$ organizational age			0.02* (0.01)
Founder $\times$ organizational size			0.10* (0.03)
Log-likelihood	-6,721.95	-6,666.67	-6,658.05
Number of spells/number of events	51,406/1,557	51,406/1,557	51,406/1,557

<sup>a</sup> Standard errors are in parentheses.

<sup>b</sup> Logarithm of (GDP in billions of 1996 chained dollars).

<sup>c</sup> Logarithm of (number of employees + 0.1).

<sup>†</sup>  $p < .10$

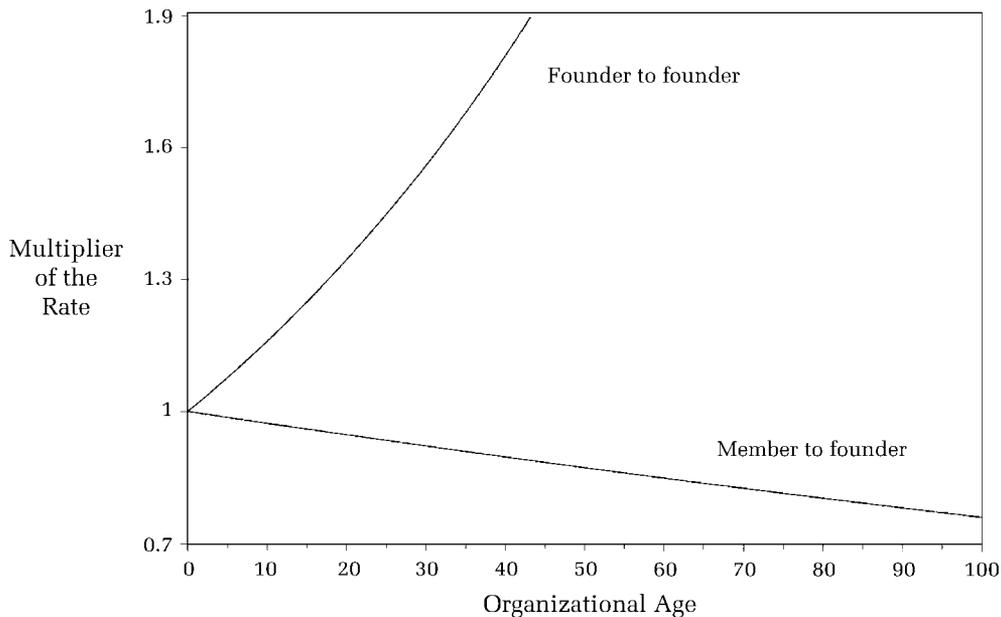
\*  $p < .05$

Two-tailed tests.

We tested the hypotheses in model c by including the interactions of founder role with organizational age and size. We argued that organizational age and size deter organizational members from becoming entrepreneurs but push founders to become serial entrepreneurs. In accord with our theory, the effects of organizational age and size were

negative and significant (lending support for Hypothesis 1), while the interaction effects were positive and significant (confirming Hypothesis 2), and their coefficients were larger than the main effects.<sup>4</sup> So, founders become more likely to leave their organizations as they grow and develop and pursue opportunities for repeat foundings. By contrast,

**FIGURE 1**  
**Organizational Age and Transition to Entrepreneurship**



members become less likely to do so as organizational age and size increase.

The negative and significant baseline founder effect was consistent with our depiction of the founder as deeply attached to his venture when it is young and small; at that stage, the founder is much less likely than members to leave and found a new firm. Also as expected, the effect associated with

holding a top management position was positive and significant. This finding suggests that at the early stages of an organization's history, members in such positions are more likely than both regular members and founders to transition. However, although this *relative* difference from other members persists as organizational age and size increase, this pattern reverses relative to founders because the effects of organizational age and size push members and founders in opposite directions.

To confirm this conclusion, we tested for the possibility that organizational age and size effects for top managers might be the same as those for founders and different from those for other members. So we estimated a model (not shown, but available from the authors) in which we included interaction terms between top management position and organizational age and size. These interaction effects were not significant and confirmed our conjecture that the propensity of top managers to transition—in contrast to organizational founders—decreases as organizations grow and age, as it does for all other members. The difference between members in top positions and other members was the continuously higher likelihood of the former, compared to the latter, to transition to entrepreneurship. But this difference was not conditional on organizational evolution.

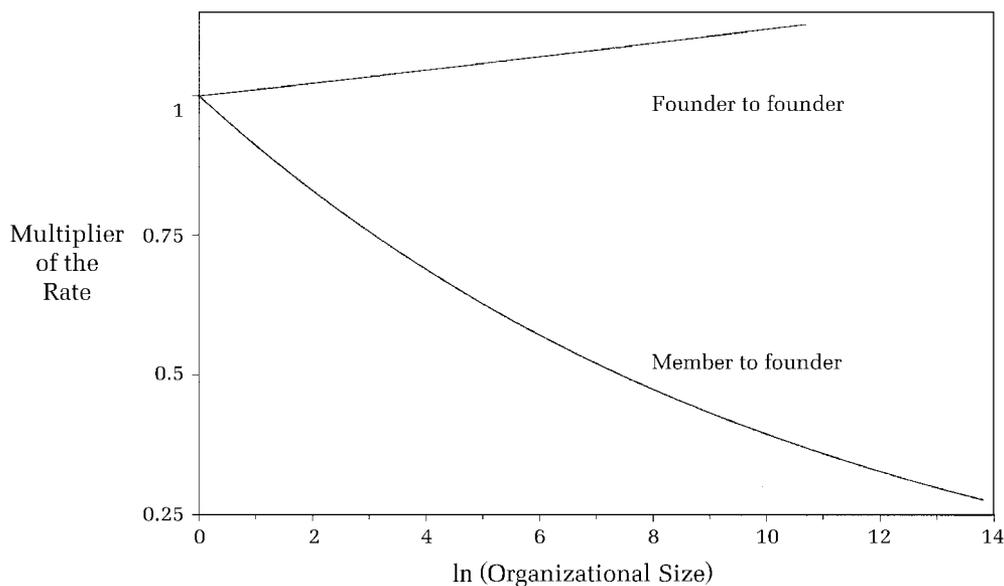
Model c presents our most complete specification of the transition to entrepreneurship, and we used its coefficients to visually illustrate our findings in Figures 1 and 2. The figures show the plots

<sup>4</sup> Evaluating our prediction about the effect of organizational age ( $T$ ) is complicated by the fact that, for founders, organizational age equals job tenure ( $\mu$ ). Consequently, our prediction is supported only if  $b_F > 0$  and if this effect is still positive when combined with the baseline predicted age effect for members ( $b_M$ ) and with the baseline predicted effect of  $\Delta k$ , which is the effect of changes in the coefficients of the job tenure constants ( $k_p$ ) for both founders and members. Looking at the estimates for the job tenure constants, we note that the rate increases between the first two and between the last two segments, but it declines between the second and the third segments ( $k_3 - k_2 < 0$ ). So to confirm the positive age effect of organizational age for founders during the third job tenure segment ( $15 < \mu \leq 25$ ), we computed the multiplier, taking as an example the midpoint of the segment, which stands at (just over) 20 years:

$$\begin{aligned} \text{Multiplier} &= \exp(k_3 - k_2) \exp(b_M \text{ TM} + b_F \text{ TF}) \\ &= \exp(-10.4830) - (-10.2034) \exp(-.0027 \\ &\quad \times 20 + .0175 \times 20) = \\ &= \exp(-.2796) \exp(.2960) = 1.0162. \end{aligned}$$

So, we confirmed that the overall organizational age effect for founders during the third job tenure segment was also positive.

**FIGURE 2**  
**Organizational Size and Transition to Entrepreneurship**



of the estimated relationships between organizational age and size and the rate of entrepreneurship, with controls for whether an individual was an organizational member or founder. Figure 1 reveals that working in a 40-year-old firm reduces the likelihood a member will become a founder by one-tenth. This fraction is how much a founder's likelihood of leaving increases if his venture is 6 years old. Figure 2 illustrates that an organization with 2,000 employees ( $\ln$  size = 7.6) increases the probability that the current founder will leave to found a new venture by about one-tenth yet decreases the chances that a current member will exit to become an entrepreneur by roughly one-half.

### Other Effects

Of the variables controlling for the broad economic and sociopolitical environment, only GDP (transformed to its logarithm in our estimation) had a significant effect, revealing that in periods of economic growth, the rate of new organizational foundings increases. All demographic variables exhibited significant effects. Men were more likely to become start-up founders, but a strong, positive effect on the transition to entrepreneurship was associated with respondents being foreign-born or nonwhite. As previous network research has shown (Mehra, Kilduff, & Brass, 1998), minorities (but not women) are more likely to face exclusionary pressures and thus are not well integrated into mainstream settings. Therefore, they may be more

likely—either because of perceived social marginalization or because of access to specific ethnic resources—to pursue unconventional employment opportunities.

The effects of the first-order and the squared terms of individual age supported the expected curvilinear pattern. The rate of entrepreneurship initially rose as an individual aged but eventually changed direction and declined with increasing age. Turning to the effects of structural job properties, we note that high salary and job satisfaction act as deterrents to entrepreneurship by way of pulling individuals to remain in their organizations. We also found that working in high-technology manufacturing industries increased an individual's rate of entrepreneurship by more than a third, while working in family-owned firms (which respondents might or might not have founded) significantly decreased the hazard.

Estimates for the organizational experience covariates revealed that the greater the number of firms in which a respondent had worked either as a member or as a founder, the greater the rate of transition to entrepreneurship. We suspect that organizational knowledge is directly proportional to an individual's multiple exposure to different organizations. We thus interpret the positive effect on the rate of the cumulative number of organizations worked for as support for Freeman's (1986) idea that as much as organizations learn by doing, organization members become depositories of that knowledge. In practical terms, exposure to many

different companies provides an opportunity to build a set of entrepreneurial requisites, such as expertise about organizational design and know-how about developing organizational routines and practices, setting up operations, dealing with various constituencies, and the like. Our results imply that the likelihood of becoming a founder more than doubles after the third new venture founding experience, and it increases by almost one-half after a respondent has changed jobs (as a member) among organizations six times.

## DISCUSSION AND CONCLUSION

We began by asking how to explain the birth of new organizations. Our theory and results demonstrate the merits of taking a sociological approach to this question, specifically emphasizing the importance of organizational context in either triggering or retarding the entrepreneurial behavior of individuals, depending on their roles. Members of organizations become unlikely to leave their organizations to build new ones as their organizations age and grow—evidence that organizations are effective in shaping and constraining the innovative behavior of their members. These same forces of routinization and constraint, however, have the opposite effect on founders, who become increasingly likely to leave and start a new organization as their current organization develops. Overall, these patterns of results shed light on the underlying social processes through which an existing organization both retards and triggers the building of new organizations, and our theory is able to predict for whom and under what conditions these opposing effects will take shape.

Although the empirical results from the transition analysis offer strong support for our theory, they do not immediately rule out a variety of alternative explanations based on different interpretations of the meaning of organizational age and size. By these alternative accounts, organizational development may represent processes only partly or not at all related to the processes about which we theorize. We took pains to ensure that such plausible alternatives cannot explain away our results.

For example, one alternative explanation suggests that if founders stay long enough with their ventures, they will eventually become less likely than members to leave once the initial transition from a start-up to a more formal entity has been completed. We rejected this alternative by showing that the organizational age and size effects are in fact monotonic on the founder transition to entre-

preneurship.<sup>5</sup> Another alternative explanation suggests that founders may leave once they have accomplished their goals and simply want to cash in on their investments, or they may leave if they are involuntarily replaced by venture capitalists or company boards. Since both of these events are likely to occur only after a venture has reached a certain level of maturity, we tested and eliminated the possibility that our organizational age and size effects were merely turnover effects.<sup>6</sup> Finally, although our data are particularly strong—including career histories frequently spanning dozens of years—and appropriate for testing our theory, they did not include the measures needed to test arguments about differences in psychological profiles (McLelland, 1961). Yet given results from additional model specifications,<sup>7</sup> we are confident that

<sup>5</sup> If the effects of organizational age or size on a founder's transition to entrepreneurship were positive for the low counts of the variables' distributions and negative for the high counts, our results might have been spurious because in the early stages, founders necessarily work in younger (and usually smaller) companies. We tested for these patterns by estimating a model (available from the authors) with quadratic specifications for the main effects of organizational age and size. The results confirmed that our effects were not merely due to a misspecification of nonmonotonic age and size effects.

<sup>6</sup> Our theory predicts that changes in a developing organization increase the likelihood that a founder will leave to found yet another organization, not mere turnover effects. To check for the possibility that our findings might reflect a general turnover effect, we estimated a model for the founder-to-member transitions (available from the authors). In contrast to the effects estimated in the transition to entrepreneurship (Table 2, model c), the effects of organizational age and size in the founder-to-member transitions had significant, *negative* effects. This suggests that as a company grows in age and size, its founder—unlike the members of the firm—is likely to leave and found a new start-up, but if such an opportunity for repeat entrepreneurship does not exist, the founder remains even less likely to leave than members. Our results in support of Hypothesis 2 hold only for transitions to entrepreneurship, in accord with our theory.

<sup>7</sup> A concern we had with our findings is that they might indicate enduring, person-specific differences in reactions to organizational size and age, rather than effects that hinge on organizational roles, as we claim. A "personological" explanation might suggest that individuals differ in their needs to be creative, achieve goals, take risks, and the like. These individuals might be more likely to leave and pursue available alternatives or create new ones. If this type of individual is also more likely to become an entrepreneur, then our findings might spuriously reflect this unobserved heterogeneity. That is, if

individual traits, espoused by psychologists (Stewart & Roth, 2001) and economists (Moskowitz & Vissing-Jørgensen, 2002) alike as significant drivers of entrepreneurship, cannot explain away our findings.

Like any other first-order theory, our role-based approach to studying entrepreneurial transitions has limitations that future research needs to address. One such limitation gives rise to concern with the external validity of our findings. Clearly, the sample population from which our data were drawn is not generally representative. This fact has two implications: First, we thought it unwise to explicitly formulate hypotheses about individual and group-level effects on the rate of entrepreneurship that, to date, constitute the core of the sociological research stream in entrepreneurship (Thornton, 1999); thus, we were unable to contribute to that research stream. Second, the trade-off in the data between higher occurrence of entrepreneurship and lower variability on important social attributes curtailed our ability to investigate how organizational roles might combine and interact with other structural job properties, ecologies of affiliation, and individual characteristics to affect the likelihood of becoming a founder. For example, building on our and other earlier findings that entrepreneurial opportunities vary by each person's structural position in an organization (Burt, 2004; Krackhardt, 1995), a more detailed analysis might demonstrate the significance of the structure and properties of members' informal networks. Further research in this direction might also reveal how processes of ecological contagion that result in "job flocking" career patterns among "homophilous" in-

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some individuals are both more likely to found organizations and more likely to be repelled by organizational age and size, then we might be able to account for our results without recourse to our theory about roles. This speculation raises the question, Do the effects of organizational age and size change as the same individuals go from experiencing the member-to-founder transition to experiencing the founder-to-founder transition? Our theory predicts that the effects of organizational age and size change, even for the same individuals, while the alternative explanation suggests that organizational age and size effects will always be positive for these individuals—even when they are organization members. With this concern in mind, we estimated a model (available from the authors) that confirmed that founders who were *more* likely to leave to become founders again as their organizations developed were also *less* likely to become founders while they were members of old and large organizations. This finding eliminated the possibility that person-level differences could explain away our organizational age and size effects.

dividuals (Dobrev, 2006) affect entrepreneurial transitions.

Our findings have interesting implications for entrepreneurial patterns over time. We expect to see that many entrepreneurs will conform to the stereotype of the repeat founder who engages time and again in building new organizations. Our explanation for this pattern, however, is not that these individuals are particularly gifted at entrepreneurship, nor that they have some dispositional traits that continuously drive them to new organizational foundings. If such person-specific explanations were true, after all, our findings would not have reversed as they did once founders assumed the role of member (see footnote 7). Rather, we would argue that the serial founder is repeatedly given greater opportunities to engage in entrepreneurship and is repeatedly engaged in an ongoing attempt to define herself in the role of founder. This process tends naturally to generate repeat foundings, because the more successful the entrepreneur is in building new organizations, the more the consequent organizational development will make her likely to do so again. Searching for an identity that tends to be denied by the very organization that he builds, the entrepreneur is chronically faced with an increasing need to leave the organization he founded in order to build another.

These patterns of effects also help to determine the sizes and numbers of organizations that we see at any given point in time. Often, the decision to build a new organization implies a decision against innovating within an established organization. On one extreme, if all new ideas were launched in the form of brand new businesses, then the organizational world would be made up of extremely large numbers of single-venture organizations. On the other extreme, more new ideas launched within existing firms would lead to high rates of growth among relatively few, extremely large organizations. In this way, entrepreneurship competes with other avenues for creative activity inside established organizations, ultimately determining the fundamental trade-off between the size and number of organized social units (Hawley, 1950). Our results suggest that for the vast majority of individuals, their internally focused role as organization members makes it increasingly likely that their innovations will contribute to the growth of existing organizations rather than the proliferation of new ones. Only for founders and, to a lesser extent, for others with externally oriented roles is there a tendency for new innovation to fuel entrepreneurship.

In conclusion, we think that our understanding of entrepreneurship would be advanced in important ways if future research took up two challenges.

First, we think that research on entrepreneurship would benefit greatly from depicting entrepreneurship as an outcome of organizational processes (Freeman, 1986)—a perspective enabled by the career history approach to modeling entrepreneurship in economic sociology (Carroll & Mosakowski, 1987). Second, theories of entrepreneurship (to the extent that they exist) have the greatest opportunity to advance if they explicitly allow for the fact that different organizational contexts either retard or stimulate foundings, and that these effects hinge on the roles of individuals.

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