

**THE CENTER FOR ECONOMY AND SOCIETY  
CORNELL UNIVERSITY, DEPARTMENT OF SOCIOLOGY**

**CSES WORKING PAPER SERIES**

**PAPER # 6**

James N. Baron and Michael T. Hannan

**“The Economic Sociology of Organizational Entrepreneurship:  
Lessons from the Stanford Project on Emerging Companies”**

**The Economic Sociology of Organizational Entrepreneurship:  
Lessons from the Stanford Project on Emerging Companies\***

James N. Baron and Michael T. Hannan

Graduate School of Business

Stanford University

Stanford, CA 94305–5015

September 3, 2003

---

\*Prepared for conference on “The Economic Sociology of Capitalism,” Cornell University, September 28-29, 2001. Please do not quote, cite, or distribute without authors’ permission. We acknowledge generous support from the Stanford Graduate School of Business, particularly the Center for Entrepreneurial Studies, the Human Resources Initiative, and the Stanford Graduate School of Business Trust, which enabled us to carry out the research described in this paper. We are also very grateful to Diane Burton, Greta Hsu, Ozgecan Kocak, Daniel Stewart, Aimee Noelle-Swanson, and the many other past and current students who have assisted in the SPEC project. In conducting this research, we have also received a great deal of helpful advice, input, and support from colleagues at Stanford, particularly Glenn Carroll, Irv Grousbeck, Charles Holloway, David Kreps, Charles O’Reilly, Joel Podolny, and Garth Saloner. We have also benefited from conversations with numerous entrepreneurs, human resources professionals, and venture capitalists about these results; we wish in particular to acknowledge and thank Debra Engel, Kathryn Gould, Felda Hardymon, Mike Levinthal, Burt McMurtry, and William Unger. Please direct correspondence to James N. Baron, Graduate School of Business, Stanford University, Stanford, CA 94305-5015; [baron\\_james@gsb.stanford.edu](mailto:baron_james@gsb.stanford.edu).

## **Introduction**

Discussions of the path of contemporary capitalism routinely focus on California's Silicon Valley, which is often viewed not only as the launching pad for technological breakthroughs, but also as the point of origin for major social trends and transformations in markets, economic institutions, organizational designs, and work arrangements. Over the last eight years, our research group—the Stanford Project on Emerging Companies (“SPEC”)—has tracked a large sample of Silicon Valley high-technology start-ups. The project aimed to examine how founders approached key organizational and human resource challenges in the early days of building their enterprises and to learn whether these activities have had enduring effects on the companies. Through interviews with founders, chief executives, and human resource (HR) directors—supplemented by quantitative information on strategy, HR practices, business partners, financing, and the like, obtained from public and private sources—we constructed a detailed record of the evolution of nearly 200 young technology start-ups.<sup>1</sup>

Without realizing it when we launched our study in 1994–5, we assembled the most comprehensive database to date on the histories, structures, and HR practices of high-tech companies in Silicon Valley, just as the region was about to witness an economic and technological boom of historic proportions. We returned to the field on several occasions, updating information on how the firms were faring; and, in 1997–8, we supplemented our study by adding a group of “new economy” companies to the sample, founded as part of the

---

<sup>1</sup>These companies were concentrated in computer hardware and software, medical devices and biotechnology, semiconductors, telecommunications and networking, and computer-related manufacturing or research. The typical SPEC company was born around 1989 (though the range is from 1980 through 1996). On average, the firms were just under six years old and employed roughly 70 people when we began to study them. For additional details, see the various publications from our research program cited in the References, as well as recent manuscripts posted on the SPEC website (<http://www-gsb.stanford.edu/SPEC>).

“dot.com” explosion. Having tracked this sample of companies during the ups and downs of the recent high-technology roller coaster, we have learned some valuable substantive and methodological lessons for economic and organizational sociology. In this paper, we summarize some conclusions that have emerged from our ongoing research on these companies and sketch some implications for those interested in understanding contemporary organizational entrepreneurship.

### **Founders’ Blueprints for High-Tech Start-Ups**

Neo-institutionalists have emphasized the importance of normative blueprints in shaping organization-building and organizational evolution (e.g., Meyer and Rowan 1977; Guillén 1994; Fligstein and Byrkjeflot 1996). They argue that those who design and manage organizations draw on culturally appropriate templates and conceptions of control in crafting structures, work roles, and employment relations, because this increases organizational legitimacy and because their own prior socialization presumably precludes doing otherwise (Fligstein 1987, 1990).

Organizational ecologists also have argued that legitimation is crucial in the early days of building and sustaining new kinds of organizations (Hannan and Carroll 1992). However, ecologists tend to view the imprint of founding conditions as being more indelible than is implied by many neo-institutional accounts, which stress the protean character of organizational arrangements. For instance, Hannan and Freeman (1984, p. 153) argue that survival prospects are enhanced by organizational features that promote reliability and accountability, including a coherent system for managing employees: “Testing for accountability is especially intense during organization building.... When membership involves an employment relation, potential members often want guarantees that careers

within the organization are managed in some rational way.” Among the most important factors in generating reliability and accountability, according to this account, are clearly specified forms of authority and well-understood bases of exchange between members and the organization. Hence, organizations stand to benefit by developing and institutionalizing coherent blueprints for employment relations that can generate reliability and accountability; once such a blueprint gets adopted, it is risky and costly for organizations to try to alter it.

A major goal of our SPEC research was to obtain fine-grained information suitable for testing this argument. Accordingly, the first stage of our project sought to understand the organizational *models* or *blueprints* that entrepreneurs brought to bear, explicitly or implicitly, in designing and launching their new ventures. One of our more intriguing initial findings was that founders espoused quite different mental models of the ideal organizational form for a technology start-up. This diversity is striking, given that we were looking at companies that are all concentrated in high technology industries, located in the same part of the country, and founded within a brief historical period by a set of people who are tightly connected by virtue of the labor mobility, dense social networks, and powerful brokers (venture capitalists, lawyers, and the like) that characterize Silicon Valley.

When we first visited each enterprise (hereafter referred to as the “time of sampling”), we asked founders what ideas they had when they were launching their company as to what it would look and feel like organizationally. (We also asked the then-current CEO in each firm a parallel question about the period corresponding to the date of the interview.) We probed by asking these leaders whether they had specific models in mind that they sought to emulate or avoid in building their companies. We tried to get at the *premises* that guided their thinking about how to organize employment relations and manage personnel.

In poring over the transcripts of interviews with founders and CEOs, we found that their notions about how to structure work and employment varied along three main dimensions—*attachment*, *coordination/control*, and *selection*—each characterized by a small number of distinct approaches from which organizational architects seemed to be choosing. Figure 1 summarizes the three dimensions and the main variants along each dimension, which capture the primary differences we unearthed among founders’ (and, later, CEOs’) notions of how to organize employment relations in high-tech start-ups.

(Figure 1 about here)

*Attachment.* Founders articulated three different bases of employee attachment, which we label *love*, *work*, and *money*. Some founders envisioned creating a family-like feeling and strong emotional bonds between the firm and its workforce to inspire motivation and help retain valuable knowledge workers. In this model, employees are bound to the firm by a strong sense of personal belonging and *love* for the company—in a sense, *love*. Within many other SPEC firms, the primary motivator for employees is the desire to work at the technological cutting-edge. Recognizing this, many founders anticipated providing opportunities for *interesting and challenging work* to attract and motivate retain personnel. Here, employees were not expected to be loyal to the company, the supervisor, or even co-workers per se, but instead to a project. Finally, other founders stated that they regarded the employment relationship as a simple exchange of labor for *money*.

*Basis of Coordination and Control.* A second dimension concerned the principal means of coordinating and controlling work. The most common conception involved reliance on *informal control through peers* or *organizational culture*. Other founders intended to rely on *professional control*; they implicitly assumed that workers were

committed and could do outstanding work because they had been professionally socialized to do so. (Not surprisingly, this approach tends to be accompanied by an emphasis on hiring high-potential individuals from elite institutions.) Professional control emphasizes autonomy and independence, rather than enculturation. A third group of founders envisioned achieving control via *formal procedures and systems*. Finally, some founders indicated that they planned to control and coordinate work by *direct oversight*, somewhat reminiscent of small capitalist firms in the late nineteenth century and early twentieth century.

*Selection.* The third dimension concerns the primary basis for selecting employees. Some founders conceived of the firm as a bundle of tasks, seeking employees to carry out particular tasks effectively. Because time and money tended to be their paramount concerns, the focus was on selecting employees who could be brought up to speed quickly and cheaply. In these cases, founders envisioned selecting employees having the *skills and experience needed to accomplish some immediate task(s)*. Other founders focused less on immediate and well-defined tasks than on a series of projects—often not yet even envisioned—through which employees would transition over time. Accordingly, they focused on *long-term potential*. Finally, some founders focused primarily on *values and cultural fit*, emphasizing how a prospective hire would relate with others in the organization.

*Relationships Among the Three Dimensions.* These blueprints can be classified into three types of attachment and selection and four types of control, yielding  $3 \times 3 \times 4 = 36$

possible combinations. However, we found that the observations cluster into a few cells, which we call the five basic model types for employment relations, summarized in Figure 2.<sup>2</sup>

(Figure 2 about here)

The *Engineering* model involves attachment through challenging work, peer group control, and selection based on specific task abilities. This model parallels standard descriptions of the default culture among high-tech Silicon Valley start-ups, such as the account provided by Saxenian (1994), and it is the modal employment blueprint among founders of SPEC firms. The *Star* model refers to attachment based on challenging work, reliance on autonomy and professional control, and selecting elite personnel based on their long-term potential. The *Commitment* emphasizes emotional or familial ties of employees to the organization, selection based on cultural fit, and peer-group control. The *Bureaucracy* model involves attachment based on challenging work and/or opportunities for development, selecting individuals based on their qualifications for a particular role, and formalized control. Finally, the *Autocracy* model refers to attachment premised on monetary motivations, control through personal oversight, and selection of employees to perform pre-specified tasks.

What does it mean to refer to these types as “models” or “blueprints”? We are not claiming that these specific types are universal, exhaustive, or generalizable outside the population we studied. But, the specific types we identified have several important

---

<sup>2</sup>A significant number of companies differed from one (and only one) of the basic model types on only one dimension. We refer to these as *near-model* types. For instance, about 3% of founders envisioned basing attachment on love, selecting based on fit, and utilizing direct control. This combination represents a near-Commitment blueprint: it differs from the basic Commitment model firm in terms of control (only), and differs substantially (i.e., on two or more dimensions) from the other four model types. Such an organization suggests an autocratic cult variant on the Commitment model. We use the term *non-type* to refer to all other blueprints—firms in which the blueprint either (1) differs from two or more basic model types on one dimension (and

properties that are suggestive of what it means to describe organizations as adhering to culturally delineated templates. First, each of the model types exhibits a high degree of *coherence* or *internal consistency* among the three dimensions, suggesting that they complement one another to form an overarching system. For instance, consider a founder intending to control and coordinate via organizational norms and seeking to promote emotional bonds to the company itself (rather than attachment based on the specific work assignment), perhaps in order to create overarching goals among differentiated subunits. Here there would be a clear technical complementarity with selection mechanisms that screen for values and cultural fit, as in the Commitment model.

Second, these types display *cultural resonance* and *saliency* within this population. When we have described these archetypes to Silicon Valley employers, employees, and other knowledgeable parties, they understand the distinctions and frequently begin classifying organizations with which they have experience in these terms.

Third, the types reflect different logics of organizing within other institutions that actors in this organizational field have experienced; indeed, the labels for the types are fairly evocative of the characteristics. For instance, the Star blueprint, which is particularly prevalent among firms developing medical technology or pursuing research,<sup>3</sup> resonates closely with the model that underlies academic science, from which many of the founders and key scientific personnel sought for these start-ups are recruited. The Commitment model draws instead on familial imagery and the revered legend of Hewlett–Packard within Silicon

---

doesn't fall into any of the basic types) or (2) differs along two or more dimensions from every basic model type.

<sup>3</sup>Among SPEC firms in the medical technology or research sectors (including biotechnology), 42% were founded on a star model, compared to only 2% of firms in other industry sectors ( $p < .001$ ).

Valley, encouraging employees to view their associations with the firm in similar terms. The Engineering model resonates with the socialization that engineers receive in professional school and suits the Valley's highly mobile labor force. The Bureaucratic model is readily familiar to most employees from encounters with bureaucracies in numerous contexts. And the Autocracy model communicates a powerful and consistent message that employees are likely to have encountered elsewhere: as one SPEC founder put it, "You work (for me, the founder), you get paid (by me)..."

(Insert Table 1 about here)

Table 1 classifies SPEC companies according to the type of employment model coded from the interview responses provided by founders and by CEOs at the time of sampling.<sup>4</sup> Note that in labeling the cases that do not fit into any of the five primary categories as "non-type," we are not claiming that their employment models are necessarily incoherent or detrimental. For instance, consider a firm whose founder held a model of attachment based on challenging work, selection based on skills, and professional control. This blueprint falls, in a sense, midway between the Star and Bureaucracy models: changing the selection dimension from *skills* to *potential* would place it in the Star category, or changing the coordination dimension from *professional* to *formal control* would place it in the Bureaucracy category. This kind of hybrid blueprint might represent a reasonable "compromise" for firms that anticipate undergoing future transitions that will necessitate a

---

<sup>4</sup>Of the 183 companies in the SPEC sample, we were able to code the founder's and CEO's HR blueprint reliable from completed interview transcripts for only 165. The tabulation in Table 1 eliminates another 9 firms that were not directly comparable for one reason or another. (For example, a handful were linked to some other organization, either as a subsidiary or through a joint venture; and a few were created as not-for-profit research enterprises.)

more rationalized management approach. (However, this conjecture is not borne out by the evidence we report below concerning organizational performance).

Several aspects of Table 1 are interesting. First, note the diversity of organization-building templates among the SPEC companies. A number of perspectives on organizations and environments—particularly neo-institutional approaches—imply that we should not expect to find much diversity within this population. After all, the SPEC companies are all young; founded in the same period; quite small; concentrated in a single locale; in a narrow set of technology-based industries; and founded by a set of individuals (entrepreneurs, venture capitalists, etc.) who are tightly connected through social networks, patterns of career mobility, and other ties. To be sure, some of the variation in initial blueprints reflected in Table 1 reflects differences in industry and strategy among the companies in our sample. For instance, as noted above, the “Star” model predominates among medical and biotechnology firms. Yet, even *within* industries and among firms whose founders articulated similar competitive strategies, we observe quite striking differences in the organizational blueprints.

These intra-industry differences also do not square with some scholarly accounts of organizational forms. For instance, neo-institutionalists (e.g., Suchman 1994; 2000) have argued that venture capitalists and high-tech lawyers promote the diffusion of specific corporate structures and practices. Although we found a slight tendency for VC-backed companies to bureaucratize more and earlier (Baron, Burton, and Hannan 1999), organizational blueprints vary considerably among venture-backed companies. We attribute this variation, at least in part, to the fact that venture capitalists and law firms, like start-ups, operate in a competitive marketplace that encourages differentiation in their strategies and structures. Some VC companies, for instance, proudly trumpet their fondness for building

enduring companies based on strong, long-lasting emotional ties that transcend money, along the lines of our Commitment model.<sup>5</sup> Others are known for valuing technologies and products largely in isolation from considerations of organizational capability or quality of management. Still others are attracted to “star” cultures or, in some cases, even known to oppose efforts by founders to create any kind of distinctive culture at all during the start-up phase. Aspiring entrepreneurs in Silicon Valley recognize these differences, which no doubt enables a sorting process that matches entrepreneurs and venture capitalists with compatible perspectives and philosophies. For that reason, we see no reason for expecting any simple monolithic pattern of imprinting on initial organizational blueprints by VCs, high-tech lawyers, HR professionals, or others.

In the same vein, we cannot find any simple mapping between employment models on the one hand, and founders’ background characteristics on the other hand. One might expect, for instance, that founders who launched entrepreneurial ventures after working in older, more bureaucratic organizations would be more likely to adopt a bureaucratic template. Yet, for every founder in our sample whose thinking appeared to be consistent with that conjecture (based on interview transcripts), another reported a desire to escape what he or she had experienced in the past as dysfunctional bureaucratic pathologies, by building a new enterprise with a radically different culture and operating style.

For example, one founder, with a doctorate and over sixty published papers on fluid dynamics and laser techniques, explained his impetus to create a new company:

Interviewer: What was the impetus and the catalyst for founding [company name], and how did the company get started?

---

<sup>5</sup>For examples, see discussions by two prominent venture capitalists: Kathryn Gould of Foundation Capital and Dave Marquardt of August Capital (see <http://www.forbes.com/asap/2001/0528/057.html> and [http://www.siimage.com/press/06\\_19\\_00\\_chip-friendlyVCs.asp](http://www.siimage.com/press/06_19_00_chip-friendlyVCs.asp))

Founder: I always had an idea that I wanted to be independent and even as an engineer I wanted to hang out my shingle and operate as a professional rather than working for some company. I also felt that I didn't fit into the requirement that a person climbing the corporate ladder would fit into. I tend to be someone...[who doesn't] follow structure, I'm not able to do what I think is necessary to rise in a big company or to do government laboratory work.

I: What would that be?

F: I think you have to do certain bureaucratic things, you have to follow someone else's rules in the corporation, you have to kiss ass ... , the internal politics, you have to play the political game, and I could never bring myself to do that. I realized that not wanting (or maybe [not] being able) to do that, I'd be better off working independently. When you have a PhD in engineering or in science, you're really kind of stuck going into a big corporation or government lab and not that many people start companies and go out on their own. So there was a dilemma there and I did work at NASA for a while as a post-doc and [then] I went to a small company where I again had that experience and eventually I did run afoul of the management. I felt that my need for independence was conflicting with that company's President's idea of what was on the agenda. Eventually getting that urge to get out on my own was pretty strong... (Founder interview, firm #47, 8/9/94).

In a company manufacturing composite materials, one executive described how he and his colleagues on the founding team explicitly sought from the inception to create an organizational culture different from that of the large missile and defense contractor company where all the founders had worked previously. Another firm's founder, with a Ph.D. in information technology and considerable experience working in the research laboratory of a large corporation, described her impetus similarly:

Interviewer: Did you ... have an idea what type of company you wanted to have—what type of culture or atmosphere?

Founder: One of the things we did not like in a large company was bureaucracy, where things don't get decided or you can't do something because there is some policy that says you can't. Policies are guidelines, they're what the legal world bonds to—everything looks right. But if you need to go for something, you need to go for it.... I remember they had an administrator at [former employer, a large research lab] as you said farewell [to start your own company], telling us ... 'enjoy building your own bureaucracy.' And of course the minute you get three people in a room, you've got a bureaucracy. [But] I hope we're not as inflexible as very, very large companies grow to be. And that was certainly in our minds. In those early days we were small enough we had a monthly potluck and we specifically did that so family members would get to know each other so they would know who their husband and wife or whoever was spending time with at work so there would be a little more familiarity in the real sense of coming and going and that was a lot of fun. (Founder interview, firm #68, 9/16/94).

One factor *did* seem to bear directly on initial employment blueprints: the founder's intended business strategy. In particular, companies whose founders reported that they had intended to compete principally by superior marketing, service, or customer relationships

were significantly more likely to choose the Commitment model at founding.<sup>6</sup> We believe this association reflects a complementarity between relational contracting with both customers and employees: that is, when enduring relations with customers are vital to the strategy, enduring employment relations become critical because employees represent the ties to key customers.

Also noteworthy in Table 1 are the patterns of movement observed among firms whose blueprint changed, based on the responses provided to us by the founder and by the CEO at the time of sampling. Only 23 of the 156 firms in Table 1 (14.7%) changed from one of the five pure model types to another; and, of these, 17 moved between Engineering and Bureaucracy, the two closest pure model types (i.e., they differ only along one of the three dimensions shown in Figure 2). We do not observe firms routinely shifting among models that, on their face, appear highly distinctive (e.g., Commitment and Bureaucracy). Moreover, 79 of the 156 companies (50.6%) did not change their blueprint at all,<sup>7</sup> while another 47 (30.1%) changed on only one dimension.<sup>8</sup> The fact that we do not see firms frequently change their blueprints on multiple dimensions or move between very disparate blueprints bolsters our confidence in the validity of our typology of organizational blueprints.

---

<sup>6</sup>For instance, among the companies in Table 1, 36.4% of firms that intended to compete principally through marketing or customer relations adopted a Commitment or near-Commitment blueprint at their inception, compared to 10.4% of firms pursuing other strategies (technological innovation, technological enhancement, and/or cost);  $\chi^2(1)=10.48$ ;  $p=.001$ .

<sup>7</sup>Of the 48 companies that were classified in Table 1 as “non-type” at both time points, 15 (31.2%) had changed the blueprint in some respect.

<sup>8</sup>As one might imagine, the control–coordination dimension was the likeliest to have changed: 36.5% of the companies in Table 1 modified their HR blueprint along that dimension, compared to 19.2% and 17.3% on the attachment and selection dimensions, respectively.

## **Effects of Blueprints on Organizational Evolution**

As we noted above, founding premises about employment relations ought to be among the most difficult and contentious organizational features to alter. Changing these premises can erode skills, alter bases of power and status, call cherished belief systems into question, confuse outsiders about the organization's identity, and cloud a firm's reputation. Hence, another way of gauging whether our inductively derived typology captures meaningful distinctions in the "genetic material" of start-up firms is to examine whether a firm's founding model affects organizational evolution and whether efforts to alter the blueprint destabilize organizations.

In a series of recent papers, we have provided evidence in the affirmative on both counts. For instance, we have documented that firms whose founders initially championed a Commitment model subsequently developed less administrative overhead, especially relative to firms with Bureaucracy model founders (Baron, Hannan, and Burton 1999). Moreover, administrative intensity at the time of sampling was a function of the employment model initially espoused by the founder, not the model being espoused by the CEO at the time of sampling. In other words, the propensity for (or against) self-management appears to have been pre-programmed into SPEC companies from their inception.

Moreover, we have documented that changing the HR blueprint has a strong net positive effect on labor turnover, particularly among the most senior employees (Baron, Hannan, and Burton 2001). Labor turnover, in turn, has a strong negative effect on subsequent revenue growth, a crucial dimension of organizational performance for young technology companies seeking to demonstrate their commercial viability. Hence, this evidence is consistent with the population ecologists' view that efforts to change the

organizational blueprint destabilize enterprises in ways that harm performance, at least in the near-to-moderate term.

Though suggestive, these analyses suffer from some ambiguity about the temporal connection between model change and the outcomes being analyzed. After all, we do not know precisely *when* the organizational model changed; rather, we infer model change by comparing how founders and then-current CEOs responded to our questions about organization-building, based on interviews conducted at the time of sampling. In the analyses of labor turnover and administrative intensity, we also measured outcomes at or near the time of sampling, so one cannot be certain that the model changes were temporally prior. More compelling evidence of path dependence and of the destabilizing effects of change comes from our recent work, which examines how founders' employment models and changes in models up through the time of sampling have affected organizational performance *after* sampling. (Specifically, we examine performance outcomes through June 2001, which provides observations during the great boom of the late 1990s as well as during the bust of 2000–01.)

We focus on three performance outcomes: (1) time to initial public offering (IPO); (2) failure; and (3) for companies that have gone public, growth in market capitalization following the IPO (Hannan, Baron, Hsu, and Kocak 2002). We find that organization-building and high commitment HRM seem to pay, even in the turbulent “built to flip” environment of Silicon Valley. In particular, firms founded on a Commitment model were the fastest to go public, relative to otherwise comparable companies with different founding models. Companies with Star or Non-type founder blueprints were the least likely to go public, controlling for age, industry, revenues, venture capital financing, and macroeconomic

conditions (the prime interest rate and IPO activity in the company's industry). To gain an appreciation of the magnitude of the difference, consider two companies that were identical in every respect except that Firm A was founded on a Commitment blueprint (and did not change model) and Firm B's was founded on a Star blueprint (and also did not change model). Firm A's hazard of going public after the time of sampling was nearly five times (4.7) that for Firm B, a sizable difference indeed.<sup>9</sup> Companies with non-type blueprints (i.e., not fitting into any of our five pure types) were also relatively unlikely to go public, with a hazard that was only 16% of the hazard for otherwise comparable firms founded on a Commitment model.

Firms founded on a Commitment model were not only the most likely to go public but also the least likely to fail (i.e., go bankrupt, get acquired on very unfavorable terms, or disappear). Indeed, none of the firms with Commitment model founders failed. Among founder models, the Star blueprint fared second best insofar as failure is concerned, and Autocracy fared the worst.<sup>10</sup>

Companies founded along Star-model lines fared the best by far in terms of stock market performance following the IPO; the worst performers were companies founded on an Autocracy model. For instance, for a company founded on an Autocracy model, the predicted rate of growth (per month) in market capitalization following the IPO falls nearly 13% below that of a comparable company with a Star-model founder.

---

<sup>9</sup>The situation is actually a bit more complicated than this. For the hazard of IPOs—but not the hazard of failure or the rate of growth in market capitalization—adding CEOs' blueprints to the specification with the effects of founders' blueprints improves the fit significantly. And, it turns out that firms that changed from a Star blueprint to some other model had a hazard of IPO about as high as that of firms with the Commitment model at the start.

<sup>10</sup>The differences among models (aside from the contrast vis-à-vis Commitment) are not jointly significant.

As we noted above, the main focus of this research was to learn whether *changing* initial blueprints destabilized the SPEC companies. The answer is unambiguous. Companies that had changed their blueprint by the time of sampling subsequently were significantly more likely to fail; indeed, changing the HR blueprint raises the failure rate by more than 225%. And, if they went public, firms that had previously changed employment models saw their market values following the IPO fall substantially (and significantly) behind otherwise comparable firms whose models remained unchanged.<sup>11</sup> Only for the hazard of IPO do we fail to find a significant overall negative net effect of model change.<sup>12</sup>

Several things are worth noting about these results. First, these findings regarding the enduring imprint of founders' blueprints and the disruptive effects of blueprint change on organizational performance come from longitudinal analyses that control for numerous other factors that might be expected to affect the success of young technology ventures, such as company age, size, access to venture capital, changes in senior leadership, revenue growth, and the economic environment (e.g., the state of the stock market, interest rates and inflation, the IPO market, etc.). As best we can tell, neither initial blueprint choices nor changes in blueprints are simply proxies for some unmeasured determinants of performance.

Second, the enduring imprint of initial conditions on organizational performance is particularly striking given the setting we have examined: high technology start-ups in California's Silicon Valley. It is hard to imagine a context in which constant flux and change is a more routine fact of life than in our research site. The typical SPEC founder described

---

<sup>11</sup>Change in model did not affect speed to IPO or market valuation at the time of IPO.

the business strategy for his/her new venture as involving breakthrough technological innovation—being the first to generate a new product or service. In such a technological race, fast development of superior technologies and agile response to changes in technologies and markets might outweigh organizational capabilities in generating success. Furthermore, the geographical proximity, frequent labor mobility, and dense network ties among Silicon Valley firms are generally thought to provide founders with timely information about the activities of other enterprises, which should encourage the diffusion of managerial approaches and lower the difficulty and cost of changing organizational blueprints. Finally, the benefits of having a consistent, reproducible organizational structure might not loom as large in Silicon Valley: the fluid labor market; the rapid pace of technical, market, and social change; and the abundance of relative newcomers in the regional economy might make consistency less of a virtue than in some other venues. In short, we cannot imagine a setting where companies are *less* constrained by their origins or *less* destabilized by organizational change than Silicon Valley's high tech sector in the mid-to-late 1990s.

Although the Commitment and Star models appear to have contributed to success over the period we have studied, one could easily imagine it having turned out otherwise. For instance, some observers might be inclined to agree with a founder whom we interviewed for our study, a prominent and highly successful Silicon Valley entrepreneur who argued that founders make a grave error if they articulate a particular cultural model in the early days of an enterprise:

---

<sup>12</sup>There is, however, an interesting pattern of interactions, with firms founded along star lines benefiting most from blueprint change in terms of the odds of going public and firms founded along engineering and commitment lines benefiting the least (for details, see Hannan et al. 2002, Table 6). There is also an indirect link between blueprint change and the odds of going public. Model change is associated with labor turnover,

...Organization models and culture are a source of failure for start-ups.... In order to have a successful company organization, one must first have a successful company. Companies that strive to put in place organizational norms and models, cultures from the outset, are working on the wrong thing. HP's written document of seven corporate objectives got written almost 20 years after the company was started, after more than 20 years of practice building a successful company.... We in Silicon Valley have forgotten this and have become too enamored with "Gosh, I've started a company, now I have to have a culture." One of the first mistakes I made when I got involved with [prior company] was at one company meeting I got up and outlined what the company culture was.... After the meeting one of the other founders came up to me and said, "You've only been here 3 months, the company is only a year old.... Why don't we come back in five years and do this?" (CEO interview, firm #45, 7/13/94).

Alternatively, institutional theory presumably implies that adopting the Engineering model (the Silicon Valley default) might prove especially beneficial in the years spanned by our study. Or, one could have speculated that—given the inevitable need for more bureaucratic managerial approaches as start-ups grow and mature, and given the perils of organizational change—firms would profit from embracing a Bureaucracy blueprint from the outset. Although these conjectures are eminently plausible, each is inconsistent with our findings.

The payoff that SPEC firms seem to have reaped from high commitment cultures deserves particular emphasis. Interestingly, "commitment" was widely pronounced dead in Silicon Valley not long after we first visited the SPEC companies in the mid 1990s. Loyalty, long-term employment, well-defined careers, and similar notions generally came to be viewed as quaint and outdated constructs for a new economy that thrives on constant mobility, "employability," flexibility, and a new generation of employees with shorter attention spans and a heartier appetite for personal fulfillment outside of work. At the first conference we organized for the CEOs and HR executives of the SPEC companies, in 1995,

---

which in turn diminishes subsequent revenue growth (Baron, Hannan, and Burton 2001). Revenue growth, in turn, is a very strong predictor of the odds of going public (Hannan et al. 2002, Table 5).

almost everyone in the audience professed unabashed support for the Commitment model.<sup>13</sup>

A little over a year later, at a second conference, virtually nobody in the auditorium wanted to be associated with that moniker.

Yet, ironically, the minority of firms with Commitment-model founders has actually outperformed the rest of the SPEC sample in terms of survival and speed to IPO. The field of competitive strategy teaches that for something to be a source of competitive advantage, it must be relatively scarce and difficult for competitors to emulate. This appears to be no less true in the arena of *human resources strategy*. Perhaps the relatively strong performance of the Commitment firms stems precisely from the fact that the model ran counter to the conventional wisdom, which pronounced it unworkable in Silicon Valley in the late 1990s. Moreover, the signals a company sends by championing the Commitment model are especially powerful in a world in which relatively few companies are sending these signals. In emphasizing the organizational benefits of conforming to prevalent and accepted models, neo-institutional theorists should not lose sight of the potential benefits of *differentiation* and *distinctiveness*, especially for those aspects of organizational structure and practice that might activate gift exchange when organizations deviate from what is customary or convenient.<sup>14</sup>

One other pattern of results in our analyses supports our assertion that founders' employment models get indelibly imprinted on their new ventures. In the analyses of

---

<sup>13</sup>It is important to stress that we coded blueprints from the three underlying dimensions, based on how founders and CEOs talked about their companies, not from choices among a menu of alternative labels. There was often little relationship between the model that a given founder or CEO publicly endorsed at one of our conferences on the one hand and the interview responses that we coded for their firm on the other hand. In hindsight, it was a good design decision not to provide our respondents with a checklist of blueprints from which to choose.

<sup>14</sup>A number of venture capitalists with whom we have shared our findings also tell us that the resilience of the Commitment model resonates with their experience. They note that the technological and economic uncertainties inherent in high-tech entrepreneurship, combined with the interpersonal stresses involved, put a premium on employees and organizational designs that can cope and adapt. In their judgment, blueprints that manage to capture the hearts and minds of employees up front can better achieve this adaptation.

organizational performance discussed above, we estimated specifications in which each of the outcome measures depends on the founder's blueprint *and* on the blueprint of the CEO at the time of sampling. Given that the CEO's model is more proximate to the outcomes, one might expect it to have stronger and more systematic effects on performance outcomes than does the employment model associated with the founder. This does not turn out to be the case in our analyses. In terms of model fit, specifications that use founders' blueprints (and change in blueprint) do as well as those that use CEOs' blueprints (and change in blueprint).<sup>15</sup>

### **The Process of Launching Companies: Evidence on the Sequencing of Entrepreneurial Activity**

Entrepreneurship has not been a particularly vibrant or high-status focus of research within most scholarly fields, including organizational and economic sociology (for a useful overview, see Thornton 1999). Yet, quite apart from the obvious relevance of entrepreneurship to public policy and economic development, many of our theories about organizations and environments differ most pointedly in their claims about the processes of organization-building and organizational evolution. This observation suggests that studying samples of nascent enterprises is likely to prove especially informative in adjudicating among rival theoretical accounts.

Our ongoing study of the SPEC companies has generated some insights that might have broad conceptual and methodological implications for students of organizations and

---

<sup>15</sup>We do not have enough power to make finer discriminations in most cases. In particular, for failure and growth in market capitalization, specifications with both founders' and CEOs' employment blueprints and change in blueprint do not improve significantly over more constrained specifications that drop either the founder blueprint effects or the CEO blueprint effects.

entrepreneurship. First, any study that seeks to examine “start-ups” confronts an ambiguity that is both vexing from a methodological standpoint and intriguing from a theoretical standpoint: it is often difficult to specify precisely when (and how) an organization has come into (or out of) existence. We originally conceived the SPEC project as a corrective to the acute survivor bias characterizing most research on organizational design and human resource practices, which looks at the structures and practices of large, long-lived enterprises. We soon recognized that a significant selection process confronts any effort to construct a large representative sample of entrepreneurial companies. This occurs because any feasible sampling frame must utilize listing(s) of firms (industry or business press publications, lists of venture-funded enterprises, marketing directories, etc.) that, by definition, only include enterprises that have completed enough organization-building activity to capture the attention of whomever is responsible for compiling the lists. Whereas population demographers have access to comprehensive data on abortions and neonatal mortality, researchers interested in *organizational* births, for the most part, do not. We do know that mortality rates for small organizations are very high (Carroll and Hannan 2000, Chapter 13).<sup>16</sup> So it should not be altogether surprising that mail we sent to sampled SPEC companies was frequently returned to us marked “Addressee Unknown” or “No Forwarding Address.”

Moreover, we discovered that the sequence of steps involved in starting a new company varied markedly among the SPEC firms, making it difficult to identify a set of invariant stages or characteristics that constitute the formation of an organization (also see Hannan and Freeman 1989, pp. 147–9). As part of our efforts to understand the company

---

<sup>16</sup>It is less clear that mortality rates are also elevated for young organizations. Much, but not all, recent research shows that the apparent liability of newness is actually a liability of smallness (Carroll and Hannan 2000).

formation process, we asked informants the questions reproduced in Figure 3.<sup>17</sup> To summarize the diversity of company-formation sequences observed among our firms, we constructed measures of the earliest date reported by the firm for each of the following events:

- Organization- or identity-building (earliest of: mission or values statement,<sup>18</sup> organization chart, personnel manual or handbook, or hiring of first full-time personnel specialist)
- Product (first product announcement or sale<sup>19</sup>)
- Financing (receipt of external financing or venture capital)
- Patent issued
- Hiring first employee(s)
- Preparing business plan
- Legal incorporation

(Insert Table 2 about here)

Table 2 summarizes differences in the start-up sequences.<sup>20</sup> We believe there is considerable noise in the information we obtained about the precise timing of specific events, and we are currently attempting to resolve some ambiguities in the information that respondents provided to us regarding the sequencing of various events. Accordingly, our intent in summarizing these data in this chapter is purely exploratory; we view these results as suggestive, but by no means as definitive.

Not surprisingly, legal incorporation and/or drafting a business plan were most likely to rank among the earliest company-building activities. For more than three-quarters of the

---

<sup>17</sup>Questions A and B (shown in Figure 3) were directed to founders as part of a questionnaire they were asked to complete prior to our interviews. Question C was asked of the HR informant on a questionnaire filled out prior to that interview.

<sup>18</sup>Both the founder and HR informant surveys asked about the timing of the company's first mission/values statement. If the founder provided a response, we used that information; otherwise, we relied on the date provided by the HR informant.

<sup>19</sup>Information on the timing of a product prototype was only available for companies sampled in 1995 or later; of those, fewer than half of those companies listed a date for a prototype, and only 12 companies indicated having a prototype before their first product announcement and/or sale. The results are generally comparable if we include the product prototype variable in our definition of the timing of product-related events.

companies, legal incorporation was one of the first two events observed among the set of company-building activities we examined, and nearly half drafted a business plan as one of the first two steps in launching the new enterprise. Yet, consistent with other studies of entrepreneurship (e.g., Carter, Gartner, and Reynolds 1996), we find remarkable variation in the sequence of events that characterize the start-up phase of these young technology-based companies.

Indeed, in more than one-fifth of the companies, early entrepreneurial activities were directed toward formalizing a distinctive identity and/or organizational configuration for the new enterprise, either through employment-related policies and activities (drawing an organization chart, drafting a personnel manual, or hiring a full-time HR director) or by promulgating a statement of organizational mission and vision. We view these as different ways in which entrepreneurs sought from the inception to create a distinctive identity and organizational ethos for their nascent enterprises. Various excerpts from our interviews illustrate these intentions and efforts:

**Financial trading and risk management software company** (Founder/CEO interview, firm #130, 7/18/95)

Interviewer: Was it a pretty quick decision [to start your own firm] or had you been kind of discussing it [with the other founders] for a while?

Founder: It was a pretty quick decision.

I: You just saw an opportunity and just wanted to ---

F: Well, actually we knew that we didn't like working at [former employer]. There was a fundamental distaste for what was going on there in any number of areas. But one could say that we felt like leaving because we actually didn't have a business plan or know even what industry we were going to get into. We just knew that as a collection of bright people that we would eventually settle on

---

<sup>20</sup>In some firms that did not fill out the event grid, informants provided dates for particular company-building activities during the course of our interviews. Table 2 analyses a subset of 143 SPEC companies (among those in Table 1) for which we had reliable and complete information on the timing of two or more company-building activities from the event grid and/or interview responses.

something that would be very good. We were right. We dedicated the first six months of our time to just researching what the opportunities were in front of us. We knew we wanted to do client server tools. What we didn't know was what industry we wanted to go into. Was it hospital, was it finance, was it this, was it that? Eventually we settled into finance because of the problems that were there and there was less of a price point when solving that industry's problems. But, we didn't sit around and talk about how we were going to compete with our then current employer. That [was] just not in the cards. We actively—from, say, maybe June 1, 1989, something like that, clearly by April or May—the disenchantment had settled into a fairly deep degree where one had emotionally bowed out of certain processes that were happening at [former employer]. It was a rapid move to make a decision to leave from that point on.

I: How soon after you did start researching the possibilities, did you decide on heading into the financial area?

F: About the three-month mark.

I: Did you have a formal business plan at some point? When would that have been?

F: In the September through November time frame of '89. From the three to six-month mark, we wrote our business plan. Our first document that we ever wrote actually was the Employee Handbook.

I: Is that right?

F: We were so disenchanted with the way employees were treated at [our former employer] that we said, "Let's build something on a rock solid foundation where we take care of our people, [decide] what our culture is, [what we] cared about." That took us about three months to put together.

I: That was the first thing you did?

F: The first thing we did.

**Business process automation software company** (Founder interview, firm #134, 8/95)

I: I'm curious to know how you've seen the corporate culture develop and change over time. You've been with [Company] since Day One. I know in the fourth month after founding you got together to put together the company tenets. Although they've grown and expanded, they are still with the company today. [Is this correct?]

Founder: [They were] actually discussed before then. We had discussed those before and during the founding. I think they officially were written on paper about that time. I think the main tenets are the same. The basic ideas of what makes [our company] different...we have a bit different focus than a lot of companies. Things like saying that everyone is "sales and support." This is not just something to say. If you are talking to a customer, you own that customer's problem. You don't necessarily have to solve that, but it's your job to make sure that customer gets the person needed if you can't solve the problem. We're serious about being serious about that....

The idea is to set down a set of guidelines and ideas and say, "You can make a difference. You can have an impact on the company and you can do the right thing and move that forward." That was the idea. You come in from Day One knowing that's where you're headed.

**Biotechnology instrumentation company** (Founder interview, firm #23, 7/14/94)

Interviewer: Did you have a model or blueprint of what the company would become?

Founder: In a sense it was modeled to be totally unlike [my prior employer]. As [different] as I could possibly get it. They are extremely autocratic. The president is king. He pretended he made all the decisions.

I wanted a company with ground up participation of management. Not only from the management team but people on the floor. I genuinely believe we achieved that. Our employee turnover is extremely low even with our stock price having been creamed by a bad quarter. Our employees are very happy and I think they enjoy working here. They think they are listened to and paid attention to. [My co-founder] is particularly good at a participative management style. That's helped set the tone. Sometimes we are criticized by employees who say, "You should just quit listening and do something." So in some people's opinion there is almost too *much* participation. I suppose you could find one employee who says, "They never listen to me." But not very many.

**E-business infrastructure software company** (Founder interview, firm #206, 11/17/97)

Interviewer: Was there a particular kind of culture you wanted to create in the company?

Founder: Absolutely. Given our backgrounds at Sun and SGI [Silicon Graphics]—which are fairly similar in the way the companies are run—I think we certainly wanted to create the whole regular flex time and sort of very loose model, hiring very qualified people but delegating responsibility out to them as opposed to running it as a traditional, non-Silicon Valley company.

For instance, most of our hires are extremely experienced people who even managed projects at larger companies. They require very little supervision. When you are a start-up you don't have time to sort of waste on teaching people, getting them up to speed, or micromanaging them.

**Biomedical research company** (HR interview, firm #108, 8/4/95)

Interviewer: Can you briefly describe how you got involved with Dr. XXX [founder] and YYY [company]?

HR Consultant: Very early in their growth, I believe at the time they had three employees, I was contacted by their VP of Finance. We were referred to him by someone who had worked with us. YYY is a very unique company in that most of our clients come to us when they have 50-100 employees and they are embroiled in some problems and issues. They say, "Come in and save us. Fix these problems for us." YYY approached us when they had three employees and said they wanted a HR consultant very early on. They wanted to do things right from the very beginning. It's very unique. We met with them and set up an initial relationship where we provided one day a week service, 8 hours a week on-site doing HR work. Eventually they grew beyond that. They are up to three days now. Now they are actually growing beyond that where they need a full-time HR professional. We're working with them to identify and get one hired for them.

Other entrepreneurs voiced sentiments similar to those of a founder who left a large semiconductor company to create a company producing ATM networking products. He argued that many technology companies stumble by focusing principally on one nifty technological idea or by chasing immediate market opportunities. In his view, the key sustainable advantage for a company such as his is the ability to *execute*, which in turn

requires organizational excellence, built by focusing tirelessly on employees and culture from the inception:

Founder: The next ten years are going to be dictated by companies who have the ability to execute in the time to market manner. That's the name of the game.

I: So what are ways that you are making sure you have the best in that area?

F: Complete infrastructure, complete understanding and respect for all the different disciplines from concept to delivery, the follow-through, support, after sales maintenance, you name it. The whole thing. The demeanor. How you are received at the front desk. How people talk within/without the company. It's the culture. You have to have a culture....

I: Did the founders have a model in mind for how the employment relationship should be managed?

F: Absolutely. We basically believe that every employee is the most [important] employee to the company. We decided long ago to do what it takes to keep the employees happy. (Founder/CEO interview, firm #154, 7/31/95)

As the data in Table 2 indicate, however, these companies were somewhat atypical in their early attention to building organizational excellence and/or a distinctive cultural vision or mission. SPEC companies were a bit more likely to have announced or sold a product and considerably more likely to have secured financing as the first step in company formation than to engage in organization- or identity-building. And Table 2 suggests that many more entrepreneurs were hiring employees in the earliest stages of launching their new enterprises than were focusing on issues of organization- or identity-building. Indeed, there appears to have been a trade-off between early hiring of employees versus focusing initially on organization- and identity-building: among founders who hired employees as one of their first two company-building activities, 49% embraced one of our five pure employment models, compared to 64% of the remaining founders ( $\chi^2=3.10$ ,  $df=1$ ,  $p=.078$ ). Those entrepreneurs who envisioned the most enduring attachments to their employees—those who chose the Commitment model at founding—were particularly slow to hire their first employees: only 9% of founders whose firms were built along Commitment model lines

reported hiring their first employee(s) as one of the first two events among our list of company formation activities, compared to 42% of the remaining founders ( $\chi^2=4.71$ ,  $df=1$ ,  $p=.030$ ). Presumably, founders who embraced the Commitment model were more selective and devoted more effort up front to architecting their culture and employment practices.

An exploratory examination of the event sequence data suggests some other interesting differences in the sequence in which founders launched their new enterprises as a function of the initial employment blueprints they embraced. For instance, those companies that were initially product-driven were a bit less likely to exhibit one of the five coherent (pure-type) HR blueprints at the inception.<sup>21</sup> More importantly, the product-driven companies were considerably more likely to *alter* their initial employment model over time.<sup>22</sup> This suggests that the early-mover advantages that technology-based companies might garner by being quick to launch products is counterbalanced by at least two potential disadvantages: failing to embrace a coherent organizational blueprint initially and/or having to modify the blueprint significantly at a later date, both of which have adverse effects on subsequent performance, according to the analyses we summarized above.

Not surprisingly, an early focus on organization/identity building is related to the specific employment blueprint that founders selected. Among the firms classified as being

---

<sup>21</sup>Among companies in which a product-related event occurred first on our list of activities, 38.5% displayed one of our five pure employment model types; among the rest of the sample, the fraction was 60.0% ( $\chi^2=2.25$ ,  $df=1$ ,  $p=.134$ ). (The pattern is somewhat different if we define product-driven foundings as those in which either the *first or second* company-building activity was product-related. Here, we find that companies that developed products early were somewhat more likely than others to adopt a Commitment model and less likely to adopt any of the four other pure model types: if we trichotomize founders' HR model into non-type, Commitment, and all other pure types,  $\chi^2=4.82$ ,  $df=2$ ,  $p=.090$ ). Some founders and venture capitalists that we have interviewed suggest that the Commitment model might be particularly well suited to firms that need to hire, mobilize, and retain a loyal captive sales force to gain momentum for early generation products, which might explain this observed association among companies that were relatively quick to launch products.

founded on an Engineering model (nearly a third of the sample), *not a single founder* reported that the first activity in launching the company was related to organization- or identity-building.<sup>23</sup> In contrast, firms founded along Star, Bureaucracy, or Commitment model lines are over-represented among the companies in which the first event was related to organization- or identity-building.<sup>24</sup> Moreover, there is a strong association between having legally incorporated the firm as one of the first two company-building activities (clearly the default approach to company building; see Table 2) and adopting the default HR model (namely, Engineering); 38% of the firms that were early to incorporate were founded along Engineering model lines, compared to only 18% of the remaining companies ( $\chi^2=4.68$ ,  $df=1$ ,  $p=.030$ ). These results are very consistent with our characterization of the Engineering model as the Silicon Valley default, constituting a simple, “out of the box” approach to building a high-technology start-up that eschews explicit organization- or identity-building.

Predictably, companies that focused early on organization- or identity-building were also more likely to *retain* their initial employment blueprint: among SPEC firms in which the first event reported related to organization- or identity-building, 75% did not change the HR blueprint, compared to 47% of the other enterprises ( $p=.059$ ).<sup>25</sup> Interestingly, firms that obtained early external financing were also somewhat more likely to retain the founder’s initial employment blueprint: among companies that secured external financing as one of the

---

<sup>22</sup>Among the product-driven companies, 35.5% retained their founder’s model and 19.4% changed on all three dimensions, whereas corresponding percentages for the rest of the sample are 52.7% and 0.9%, respectively ( $\chi^2=18.84$ ,  $df=3$ ,  $p=.001$ ).

<sup>23</sup>Nor did any of the 10 companies classified as Autocracies or near-Autocracies report an organization- or identity-building activity as their first milestone event.

<sup>24</sup>For the cross-tabulation of founders’ HR model with a dummy variable for whether the first event was related to organization-building,  $\chi^2=9.57$ ,  $df=5$ ,  $p=.088$ . (If near-type cases [see fn. 2] are grouped with their corresponding pure model type,  $\chi^2 = 9.93$ ,  $df=5$ ,  $p=.077$ ).

first two company-building activities, 60% retained their initial employment blueprint, compared to 45% of the remaining enterprises ( $p=.103$ ).<sup>26</sup> These results suggest that securing funding early in the firm's history might have given entrepreneurs an external mandate and time cushion to plan for the future by mapping out a scalable identity and organizational design.

These variations in company-building sequences suggest some interesting avenues for theoretical and empirical investigation, particularly given the path-dependent development we have documented. Table 2 shows that ties to outside stakeholders (e.g., financiers, customers) provide the initial catalyst for some start-ups, whereas other companies focus inward in their formative period (e.g., developing mission statements, policy handbooks, etc.) Such initial differences might plausibly affect how firms evolve. Moreover, the payoffs from focusing externally rather than internally might vary across types of environments.

It would also be invaluable to examine how receiving financing and/or having a clearly defined product early in a firm's history affects its firm's life chances, subsequent evolution, and performance. On the one hand, one might expect that quickly surmounting those milestones improves an organization's likelihood of gaining external acceptance and weathering the challenges facing young, small, high-tech enterprises. On the other hand, Barnett and his collaborators (Barnett and Hansen 1996; Barnett and Sorenson 2000) have argued that survival prospects are enhanced when firms face more formidable competition in their early years. If so, then the experience of confronting a series of early challenges might

---

<sup>25</sup>The results are very similar if we use a measure of whether either of the *first two* activities in launching the company was related to organization- or identity-building.

<sup>26</sup>The firms that first lined up external financing were also a bit more likely to adopt a Bureaucracy or near-Bureaucracy model at founding—12%, versus 4% for the rest of the sample ( $\chi^2=3.18$ ,  $df=1$ ,  $p=.075$ ).

actually prove *beneficial* to (surviving) organizations in the long run.<sup>27</sup> One founder whom we interviewed invoked similar reasoning in justifying his decision to decline abundant venture capital in the middle of 1990, just as he was launching his new endeavor:

Founder: I had the interest and support of the two VCs that I was working for.... Of course, they and many other groups like [Kleiner Perkins and Institutional Venture Partners] were interested in doing a large amount of money to get started. I think \$3.5 million was the last deal on the table for incorporating or before anything more than a presentation [about] starting the company. We rejected that idea.

Interviewer: Why did you reject the venture capital?

Founder: We rejected *that much* venture capital. Maybe it's because I was working for two VCs. Adding up the numbers of ownership and that kind of stuff [is] the way to do two negative things. First, you give up control of the company. Second, it makes you feel like you are spending important money. There is only one source of important money and that's from customers. Very poor cultures get created when you start spending large amounts of venture capital. It's the unusual organization that can recover and ramp straight up and go from a culture where it's OK to think of venture money as good money.

I: You felt bringing in venture capital would create a culture that might not look as closely at the customer as you would if you...

F: ...[T]he real reason for the business ... is to make profits and to serve and create great products and services. As many smart people as there are in the Valley, it's amazing how many people think it's a good thing to show up on the Money Tree<sup>28</sup> with big numbers next to your name. Our goal was to show up on the Money Tree with as little numbers as possible next to our name.

We took a couple hundred thousand from these guys and \$100K from me and that was our seed money and we were going to try to go as far as possible with that. We didn't have a product decision at that time. This presentation proposed characteristics of products and a portfolio of applications in the system network management area. We didn't actually make the final selection of our first product until January '91. (Founder interview, firm #134, 7/28/95)

Some commentators, such as Collins and Porras (1994), have also claimed that products or technologies provide an unstable foundation on which to build enduring organizations. In their view, early attention to organization- and culture-building promotes long-term adaptation and performance, insulating firms from the uncertainties associated

---

<sup>27</sup>A different stream of work in organizational ecology, labeled density delay theory, finds a robust pattern that runs counter to this argument. To wit, organizations founded in periods of high density within the relevant organizational population experience elevated mortality rates in infancy and throughout their lifetimes. Carroll and Hannan (2000, Chapter 1) review the evidence.

with technologies, products, and markets. It would be interesting to examine whether the type and magnitude of “lock-in” that firms experience—in technology, customer relationships, culture, and so on—depends on the domain that was given earliest priority.

## **Future Directions**

The findings that have emerged to date from our study suggest some profitable directions for future theory development and empirical research on the economic and organizational sociology of entrepreneurship.

*Theory Development.* The SPEC project has sought to operationalize the menu of employment blueprints from which entrepreneurs were (explicitly or implicitly) selecting in shaping their enterprises. We hope that future studies will gauge the degree to which our findings generalize to other kinds of organizations and other environments.

A particularly interesting question about generalizability concerns whether our conclusions regarding the relative performance among blueprints apply to a period of marked economic contraction, given that for the most part we tracked the SPEC companies during the course of an unprecedented technological and market boom. Since early in 2000, however, conditions have deteriorated markedly in Silicon Valley, raising intriguing questions about whether the same organizational factors that were advantageous during good times have served firms well when times were tougher. In supplementary analyses, we have explored whether our conclusions are altered by including the recent period of economic decline or, more generally, by allowing the effects of blueprints and of model change to vary

---

<sup>28</sup>Presumably, a reference to the “Money Tree™” survey of venture-capital corporate investments conducted by PricewaterhouseCoopers, which is published quarterly in the *San Jose Mercury News*.

across periods of boom and bust.<sup>29</sup> Those analyses are by no means conclusive—for instance, relatively few additional IPOs have occurred since 2000—but in general they suggest that our broad conclusions about the relative performance of different blueprints and the adverse effects of blueprint change apply equally to periods of expansion *and* contraction.

The diversity in start-up sequences summarized in the previous section raises interesting questions about the essential ingredients of “organization.” Among the SPEC companies, we observe some enterprises that were financed before having either products, employees, a business plan, or a legal identity; other ventures had products or customers before being endowed with any other resources; some had crafted mission statements before having any employees, products, customers, or funding; and so on. Moreover, our research made clear that start-ups are not simply younger, smaller versions of the more established organizations that have been commonplace subjects of scholarly research on organizations. For instance, a number of SPEC firms did not have a CEO for a considerable period of time after their founding (see Baron, Hannan, and Burton 2001). Often, there was little clear delineation among the roles of founders until external constituents (customers, financiers, etc.) demanded it. Indeed, accounts tracing the evolution of some now prominent technology companies emphasize that the initial entrepreneurial catalyst or impulse was frequently not even clearly commercial—for example, the efforts of two Stanford Ph.D. students to catalog their favorite web sites, which ultimately spawned Yahoo!; or the tinkering by (husband and wife) IT managers at Stanford’s Business and Engineering schools who wished to network their respective systems, which eventually became Cisco Systems. In short, one of the most fascinating and distinctive features of high-tech entrepreneurship in Silicon Valley—the

---

<sup>29</sup>Hannan et al., 2002, *ibid.*

absence of any clear company-building steps, sequences, structural characteristics, or even commercial intentions that provide a workable definition *ex ante* of what constitutes a “start-up”—represents a significant conceptual and methodological challenge to organizational scholars.

More broadly, given the importance of the “form” construct to organizational ecology<sup>30</sup> and the emphasis that neo-institutionalists have placed on cultural templates, we have remarkably little theory to guide us in identifying *ex ante* the set of possible models or blueprints from which entrepreneurs might select in crafting new organizations. We need stronger theoretical grounds for predicting which kinds of models emerge within given settings and what determines the diversity of the menu of acceptable models. Neo-institutionalists have argued that the specific kinds of cultural prescriptions for organizing that are promulgated, as well as the consequences for organizational success, depend on the measurability of output (Meyer and Scott 1983), the role played by various professional groups, and processes of imitation and regulation (DiMaggio and Powell 1983). We speculate that some other factors also affect the type and diversity of organization-building models observed in a specific setting:

*Social and occupational heterogeneity among founders and key external stakeholders (venture capitalists, etc.).* If entrepreneurs import models from their cultural or vocational backgrounds, then the range of backgrounds represented among the architects of organizations in any field is likely to influence the types and diversity of models that are considered. For instance, as the focus of internet companies has shifted from technology to content, it is likely that the entrepreneurs drawn to new ventures in this sphere import models

that have developed in advertising, journalism, education, and other domains, supplanting more engineering- or technology-driven models that predominated at the inception of the industry.

It has also sometimes been asserted that increased access to venture capital for female entrepreneurs would help redress women's under-representation in high technology. This argument seems to presume that female entrepreneurs would create organizational models that are more attractive to female scientists, technicians, and engineers than the dominant models in existence. In the same vein, Fligstein (1987; 1990) has argued that the ascendance of chief executive officers with particular occupational backgrounds (finance, law, etc.) within large organizations has altered the dominant "conception of control" brought to bear in running those companies.

*Social and demographic heterogeneity among the prospective labor force.* Hannan (1988) argued that diversity in career outcomes depends in large measure on the diversity of organizational forms within a sector. He suggests that a more diverse menu of organizational forms serves to reduce ascriptive inequalities by providing a more varied set of employment opportunities that can be matched to differences in worker abilities, experiences, and preferences. This line of reasoning suggests that we might observe a more varied menu of organizational models in those locales and industries having the most diverse prospective labor force in terms of socioeconomic and cultural background.

*Stage of industry evolution.* Work by organizational ecologists on density-dependent evolution suggests that industries tend to experience characteristic stages of early

---

<sup>30</sup>See Ruef (2000); Pólos, Hannan, and Carroll (2002); McKendrik and Carroll (2001); McKendrik, Carroll, Jaffee, and Khessina (2001).

legitimation, followed by more intensive competition (Hannan and Carroll 1992). It seems reasonable to conjecture that conformity to a small number of culturally acceptable organizational models will be greater when legitimation concerns are paramount: in the early stages of industry evolution and for the sorts of entrepreneurial ventures for which legitimacy is most problematic (e.g., for-profit child care versus for-profit laser-tag parlors). In contrast, intensification of competition might encourage differentiation, particularly as enterprises seek to distinguish themselves in the labor market by embracing distinctive human resource blueprints.

If organizations adopt prescribed models to gain legitimacy and to develop coherent identities, then we also might expect to observe the emergence of clear cultural templates only after an industry or sector has achieved a certain scale. By analogy, nametags are seldom worn by guests at an intimate dinner party or by academics at a small research conference, because the small number of invitees and their connectedness through social networks reduces the need for that sort of external identifier. In the same vein, we might expect that the emergence of and reliance on a culturally prescribed model is most likely within organizational fields that consist of a relatively large number of enterprises, all of which share certain latent characteristics (that serve as viable bases for a common external identity) but lack direct connections or linkages among one another so that socially-constructed identity markers are valuable (see Pólos, Hannan, and Carroll 2002). McKendrick and Carroll (2001; McKendrick, Carroll, Jaffee, and Khessina 2001) have recently presented some evidence on the emergence of organizational forms within the disk-array industry that is broadly consistent with this speculation. They find that organizational forms were slow to arise in this large and rapidly growing industry because entrants lacked

common initial identities: they came from many diverse industries and did not concentrate geographically. However, the rise of a large number of new firms in the population (with no identity in another industry) appears to have sparked the common pattern of density-dependent legitimation, which McKendrick and Carroll interpret as indicating that a coherent form had coalesced.

*Interfirm ties.* Finally, descriptions of Silicon Valley invariably emphasize the fluidity of its labor markets, the density of social and professional networks, and the prevalence of other prominent intermediaries (venture capital firms, law firms, trade publications, etc.) that promote wide and rapid diffusion of information. Such an environment would seem likely to contain a relatively small menu of cultural blueprints, which diffuse quickly throughout the relevant population. In contrast, when labor markets are not so fluid, or networks so dense, or informational intermediaries so prevalent, it seems reasonable to expect a somewhat larger menu of models emerging and less conformity to that menu being observed.

We noted above that entrepreneurs' origins are likely to influence the types and diversity of organizational models that they consider. Various studies (e.g., Burton, Sørensen, and Beckman 1999; Dobrev and Barnett 1999) have suggested that a great deal of entrepreneurial activity emanates from well-established organizations, either overtly (spin-offs and carve outs, joint ventures, etc.) or covertly (by employees who are unable to pursue specific opportunities in their current place of employment and hence leave to form new ventures). The role of established organizations (corporations, banks, government agencies, etc.) in fostering entrepreneurial ventures deserves additional study. Involvement of such

organizations might reduce the diversity of organizational models pursued, as mature organizations superimpose relatively bureaucratic blueprints on the nascent endeavors. Alternatively, if well-established organizations stimulate entrepreneurship *unintentionally* or *unwillingly*—for instance, through oppressive policies or limits on pay and promotion that encourage “brain drain”—then we might expect entrepreneurship to resemble social movement activity, with decidedly anti-bureaucratic overtones, as we observed in several of the SPEC founder transcripts quoted above.

More broadly, a useful focus of inquiry would examine how insider versus outsider status (with respect to the region, culture, and industry in which entrepreneurs’ new ventures are located) affects the types and diversity of organizational models that emerge within a given organizational field. Ruef (2002) has recently demonstrated that entrepreneurs are more likely to leverage “weak ties” than stronger ties when the new ventures they are launching are highly innovative and depart from their prior endeavors. If those results generalize to innovations in organizational form, they suggest that we should observe more novel and diverse models when entrepreneurs are either themselves “outsiders” or else draw heavily on network ties that link them to outsiders.

We offer one additional speculation, based less on our SPEC project than on our causal observations of entrepreneurship in Silicon Valley versus other regions. At a Silicon Valley conference on electronic commerce, which occurred before the current “dot-com” shakeout, a high-tech CEO discussing entrepreneurial opportunities told his audience: “You have to remember, this is not the PC era.” He meant that unlike the era of entrepreneurship that yielded the personal computer—when individuals were mortgaging their homes, running up huge credit card debt, and the like—would-be entrepreneurs riding the dot-com wave

believed that they confronted relatively little financial risk. After all, a buoyant labor market, generous VC funding, and in some cases ample personal resources (prior stock option payouts, accumulated home equity, etc.) served to minimize the apparent downside financial risk from pursuing ventures in the “new economy.” This might have been somewhat more pronounced within Silicon Valley, but one suspects it was also the case along Route 128 and elsewhere.

Suppose, then, that the salient risks to entrepreneurs are primarily *social*: fear of the reputational consequences of failing in their new ventures. What seems to be distinctive about Silicon Valley in this respect is the almost complete absence of any social stigma attached to failure. Indeed, it has been sometimes suggested that the next best outcome to an audacious success is an audacious failure (or, perhaps, a well-managed and dignified failure). More generally, we suspect that the traditional sources of status in a community affect the perceived reputational risks associated with entrepreneurship. For instance, status has historically been tied much more closely to employment in large, long-lived bureaucracies—such as universities, government bureaus, hospitals, or financial services companies—in the Boston area (and in other locales, such as Japan and Europe) than in Silicon Valley. Hence, we contend that would-be entrepreneurs along Route 128, in the Randstat, or in Oxbridge face not only the same challenges of procuring resources as their colleagues in Silicon Valley, but also a greater risk to their reputations and a more formidable challenge in fashioning plausible and legitimate social accounts of their careers.

This line of argument suggests that we should expect to see more entrepreneurial activity in regions where status has not historically been associated with long-term employment in large, old, bureaucratic organizations. (Given the current dot.com shake out,

it is also interesting to speculate whether the reabsorption of unsuccessful entrepreneurs might prove more challenging in contexts where status has had more traditional origins. For instance, relative to Silicon Valley entrepreneurs, we predict much tougher sledding for the Oxbridge crowd that, in search of “e-wealth,” abandoned the investment banks, consulting firms, university positions, and British civil service posts to which their compatriots have traditionally flocked.) And, this argument suggests that entrepreneurship will flourish most in those industries and locales within which the Schumpeterian gale of creative destruction is most forceful—that is, where pre-existing sources of status have been weakened due to economic, technological, and social changes (such as plant closings, downsizings, etc.) that have altered the organizational landscape, obsolesced the traditional routes to status, and thereby reduced the perceived social risks to entrepreneurship.

Finally, our results have potential implications for several broad issues concerning the contours of contemporary capitalism addressed by a number of the papers in this volume. First, some neoinstitutionalists (e.g., Davis and Marquis, this volume) posit a convergence toward generic form of capitalism. Such convergence may indeed be occurring; indeed, there are indications within the SPEC sample of a tendency for firms to evolve toward more bureaucratic, professionalized managerial structures. Nonetheless, we have found quite disparate templates for organizing being adopted by high-tech Silicon Valley entrepreneurs, with persistent effects on the evolution and performance of their companies, despite numerous forces that would ostensibly promote convergence. The existence of so much organizational diversity and path dependence among the SPEC companies—all young enterprises that were founded in one locale, industrial sector, and time period—leaves us

skeptical about theories suggesting a common destination state for the structure or form of capitalist firms.

Our results suggest that high tech companies are not all created alike. Yet neither are they entirely unique. Both scholarly and popular discussions of entrepreneurship commonly put enormous weight on the role of the founder(s) in molding the culture, structure, and evolution of the firms they launch. Notwithstanding founders' idiosyncrasies, we can characterize their implicit organizational blueprints along a small number of dimensions and into a small number of distinct types, which our research shows differ significantly in their evolutionary trajectories and performance outcomes. In short, even if entrepreneurs formulate unique visions for their nascent enterprises and leave their personal mark in many ways during the formative stages of organization building, technology entrepreneurs seem to be choosing implicitly from a relatively small menu of distinct recipes in launching their companies. Founders may indeed embed their distinctive visions and values on the enterprises they create, or they may simply be conduits through which economic, social, or cultural forces systematically shape organizational blueprints. Our results here demonstrate that those blueprints are consequential for the pace of bureaucratization, but they do not resolve the thorny issue of the distinctive contribution made by founders and other actors in building and changing organizations.

Countless other interesting questions could be asked about the origins of new firms in capitalist economies, and numerous useful data sources and research approaches should be marshaled besides the ones we have discussed here. Nonetheless, we believe the theoretical issues and research approaches sketched here will ultimately prove invaluable not only in

augmenting our understanding of entrepreneurship in capitalist economies, but also in strengthening economic and organizational sociology.

<b>Basis of Attachment &amp; Retention</b>	<ul style="list-style-type: none"> <li>■ Compensation (“money”)</li> <li>■ Qualities of the work (“work”)</li> <li>■ Work group as community (“love”)</li> </ul>
<b>Criterion for Selection</b>	<ul style="list-style-type: none"> <li>■ Skills</li> <li>■ Exceptional talent/potential</li> <li>■ Fit with the team or organization</li> </ul>
<b>Means of Control &amp; Coordination</b>	<ul style="list-style-type: none"> <li>■ Direct monitoring</li> <li>■ Peer and/or cultural control</li> <li>■ Reliance on professional standards</li> <li>■ Formal processes and procedures</li> </ul>

FIGURE 1: DIMENSIONS OF EMPLOYMENT BLUEPRINTS

DIMENSIONS			EMPLOYMENT MODEL
Attachment	Selection	Coordination/Control	
Work	Potential	Professional	<b>STAR</b>
Work	Skills	Peer/cultural	<b>ENGINEERING</b>
Love	Fit	Peer/cultural	<b>COMMITMENT</b>
Work	Skills	Formal	<b>BUREAUCRACY</b>
Money	Skills	Direct	<b>AUTOCRACY OR DIRECT CONTROL</b>

FIGURE 2: TYPOLOGY OF EMPLOYMENT BLUEPRINTS, BASED ON THREE DIMENSIONS

A. When would you date the beginning of normal business operations?

B. When, in relation to the above date, did you accomplish the following activities?

Activity	Never	Prior to commencing normal operations	After commencing normal operations	Month/Year
Legally establish the company	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Prepare a business plan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Retain an attorney	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Establish an accounting system	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Obtain first external financing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Write a mission or values statement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hire an employee	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Develop a marketing plan	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Announce a product	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Have a working prototype	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
File a patent application	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Sell first product	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hire a full-time sales/marketing specialist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hire a full-time financial officer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Hire a full-time personnel specialist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

C. Listed below are various types of human resources documents, practices and systems which an organization might have. For each item that your organization currently has, please indicate when it was created and the last time it was significantly modified. (Check the "Not Applicable" column if your firm does not have the item.)

Documents	Not Applicable	Month/Year developed	Month/Year last modified
Mission or values statement	<input type="checkbox"/>		
Organization chart	<input type="checkbox"/>		
Standardized employment application	<input type="checkbox"/>		
Written job descriptions	<input type="checkbox"/>		
Personnel manual or handbook	<input type="checkbox"/>		
Written employment tests	<input type="checkbox"/>		
Written performance evaluations	<input type="checkbox"/>		
Standard performance evaluation form	<input type="checkbox"/>		
Written affirmative action plans	<input type="checkbox"/>		
Standard employment contract for exempt employees	<input type="checkbox"/>		
Employee grievance or complaint form	<input type="checkbox"/>		
Legal agreements about intellectual property/non-competition	<input type="checkbox"/>		
Regular employee morale survey	<input type="checkbox"/>		
Newsletter or other regular company-wide correspondence	<input type="checkbox"/>		
<b>Systems and Practices</b>			
Human resources information system	<input type="checkbox"/>		
Company-wide electronic mail	<input type="checkbox"/>		
Employee suggestion system	<input type="checkbox"/>		
Employee involvement programs (e.g., quality circles)	<input type="checkbox"/>		
Background checks of prospective employees	<input type="checkbox"/>		
Employee orientation program	<input type="checkbox"/>		
Job rotation program	<input type="checkbox"/>		
In-house training	<input type="checkbox"/>		
Regular company-wide meetings	<input type="checkbox"/>		
Regular company-sponsored social events	<input type="checkbox"/>		

FIGURE 3: ORGANIZATION-BUILDING INFORMATION GATHERED FROM SPEC RESPONDENTS\*

(\*Note: A and B were asked of Founders; C was asked of HR Informants.)

Founder's Model	CEO's Model						Total
	Commitment	Star	Engineering	Bureaucratic	Autocratic	Non-type	
Commitment	7 (17)	0 (1)	0 (0)	0 (0)	0 (2)	4 (2)	11 (22)
Star	0 (0)	6 (6)	1 (1)	1 (1)	0 (0)	5 (5)	13 (13)
Engineering	0 (1)	0 (0)	25 (25)	12 (13)	1 (1)	11 (9)	49 (49)
Bureaucratic	0 (2)	0 (1)	2 (2)	5 (6)	0 (0)	1 (0)	8 (11)
Autocratic	0 (1)	0 (0)	0 (0)	0 (1)	3 (5)	2 (3)	5 (10)
Non-type	3 (2)	1 (0)	9 (9)	8 (10)	1 (1)	48 (29)	70 (51)
Total	10 (23)	7 (8)	37 (37)	26 (31)	5 (9)	71 (48)	156

TABLE 1: FOUNDER AND CEO MODELS OF EMPLOYMENT RELATIONS IN SPEC FIRMS\*

\*Note: Italicized results (in parentheses) group “near-type” cases with their pure-type counterparts; see fn. 2 in text for explanation.

Event <sup>§</sup>	Firms in which Event Occurred First	%	Firms in which Event Occurred First or Second	%
	Organization- or identity-building	12	8.4	30
Product	13	9.1	31	21.7
External financing	23	16.1	42	29.4
Patent	5	3.5	10	7.0
Hired first employee(s)	24	16.8	57	39.9
Business plan	48	33.6	65	45.5
Legal incorporation	67	46.9	109	76.2

<sup>§</sup>See text for definitions of events.

TABLE 2: DIFFERENCES AMONG SPEC COMPANIES IN TIMING OF KEY EVENTS (N=143)\*

\*Note: Percentages in third column do not sum to 100% (or to 200% in fifth column) because multiple events co-occurred in some firms and are therefore double-counted.

## References

- Barnett William P., and Morten Hansen. 1996. "The Red Queen in Organizational Evolution." *Strategic Management Journal* 17:139–57.
- Barnett William P., and Olav Sorenson. 2000. "The Red Queen in Organizational Creation and Development." Unpublished manuscript, Graduate School of Business, Stanford University.
- Baron, James N., M. Diane Burton, and Michael T. Hannan. 1996. "The Road Taken: Origins and Early Evolution of Employment Systems in Emerging Companies." *Industrial and Corporate Change* 5(2):239–75.
- \_\_\_\_\_. 1999. "Engineering Bureaucracy: The Genesis of Formal Policies, Positions, and Structures in High-Technology Firms." *Journal of Law, Economics, and Organization* 15:1–41.
- Baron, James N., Michael T. Hannan, and M. Diane Burton. 1999. "Building the Iron Cage: Determinants of Managerial Intensity in the Early Years of Organizations." *American Sociological Review* 64:527–47.
- \_\_\_\_\_. 2001. "Labor Pains: Organizational Change and Employee Turnover in Young, High-Tech Firms." *American Journal of Sociology* 106:960–1012.
- Burton, M. Diane, Jesper B. Sørensen, and Christine Beckman. 1999. "Coming from Good Stock: Career Histories and New Venture Formation." Paper presented at American Sociological Association annual meeting, Chicago, August.
- Carroll, Glenn R., and Michael T. Hannan. 2000. *The Demography of Corporations and Industries*. Princeton: Princeton University Press.

- Carroll, Glenn R., and Anand Swaminathan. 2000. "Why the Microbrewery Movement? Organizational Dynamics of Resource Partitioning in the U. S. Brewing Industry." *American Journal of Sociology* 106:715–62.
- Carter, Nancy M., William B. Gartner, and Paul D. Reynolds. 1996. "Exploring Start-Up Event Sequences." *Journal of Business Venturing* 11:151–66.
- Collins, James C., and Jerry I. Porras. 1994. *Built to Last: Successful Habits of Visionary Companies*. New York: HarperCollins.
- DiMaggio, Paul J., and Walter W. Powell. 1983. "The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields." *American Sociological Review* 48:147–60.
- Dobrev, Stanislav D., and William P. Barnett. 1999. "Organizational Roles and Transitions to Entrepreneurship." Research Paper No. 1587, Graduate School of Business, Stanford University.
- Fligstein, Neil D. 1987. "The Intraorganizational Power Struggle: The Rise of Finance Presidents in Large Corporations." *American Sociological Review* 52:44–58.
- . 1990. *The Transformation of Corporate Control*. Cambridge: Harvard University Press.
- Fligstein, Neil D., and Haldor Byrkjeflot. 1996. "The Logic of Employment Systems." Pp. 11–35 in *Social Differentiation and Social Inequality*, edited by James N. Baron, David B. Grusky, and Donald J. Treiman. Boulder, CO: Westview Press.
- Guillén, Mauro F. 1994. *Models of Management: Work, Authority, and Organization in a Comparative Perspective*. Chicago: University of Chicago Press.

- Hannan, Michael T. 1988. "Social Change, Organizational Diversity, and Individual Careers." Pp. 161–74 in *Social Structures and Human Lives*, edited by Matilda White Riley. Newbury Park, CA: Sage and the American Sociological Association.
- Hannan, Michael T., James N. Baron, Greta Hsu, and Ozgecan Kocak. 2002. "Staying the Course: Early Organization Building and the Success of High-Technology Firms." Unpublished manuscript, Graduate School of Business, Stanford University.
- Hannan, Michael T., and Glenn R. Carroll. 1992. *Dynamics of Organizational Populations: Density, Legitimation, and Competition*. New York: Oxford University Press.
- Hannan, Michael T., and John Freeman. 1989. *Organizational Ecology*. Cambridge: Harvard University Press.
- McKendrick, David G., and Glenn R. Carroll. 2001. "On the Genesis of Organizational Forms: Evidence from the Market for Disk Drive Arrays." *Organization Science*, forthcoming.
- McKendrick, David G., Glenn R. Carroll, Jonathan Jaffee, and Olga M. Khessina. 2001. "In the Bud? Analysis of Disk Array Producers as a (Possibly) Emergent Organizational Form." Paper presented at Academy of Management annual meeting, Washington D.C., August.
- Meyer, John W., and Brian Rowan. 1977. "Institutionalized Organizations: Formal Structure as Myth and Ceremony." *American Journal of Sociology* 83:340–63.
- Meyer, John W., and W. Richard Scott. 1983. *Organizational Environments: Ritual and Rationality*. Beverly Hills, CA: Sage.

- Pólos, László, Michael T. Hannan, and Glenn R. Carroll. 2002. "Foundations of a Theory of Social Forms." *Industrial and Corporate Change* 11: 85–115.
- Ruef, Martin. 2000. "The Emergence of Organizational Forms: A Community Ecology Approach." *American Journal of Sociology* 106:658–714.
- . 2002. "Strong Ties, Weak Ties, and Islands: Structural and Cultural Predictors of Organizational Innovation." *Industrial and Corporate Change*, forthcoming.
- Saxenian, AnnaLee. 1994. *Regional Advantage: Culture and Competition in Silicon Valley and Route 128*. Cambridge: Harvard University Press.
- Suchman, Mark C. 1994. "On Advice of Counsel: Law Firms and Venture Capital Funds as Information Intermediaries in the Structuration of Silicon Valley." Unpublished doctoral dissertation, Department of Sociology, Stanford University.
- \_\_\_\_\_. 2000. "Dealmakers and Counselors: Law Firms as Intermediaries in the Development of Silicon Valley." Pp. 71–97 in *Understanding Silicon Valley: The Anatomy of an Entrepreneurial Region*, edited by Martin Kenney. Stanford, CA: Stanford University Press.
- Thornton, Patricia H. 1999. "The Sociology of Entrepreneurship." *Annual Review of Sociology* 25:19–46.

