

Origins of Organizations: The Entrepreneurial Process

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Abstract

This chapter combines insights from organizational theory and the entrepreneurship literature to inform a process-based conception of organizational founding. In contrast to previous discrete-event approaches, the conception argues that founding be viewed as a series of potential entrepreneurial activities – including initiation, resource mobilization, legal establishment, social organization, and operational startup. Drawing on an original data set of 591 entrepreneurs, the study examines the effect of structural, strategic, and environmental contingencies on the relative rates with which different founding activities are pursued. Results demonstrate that social context has a fairly pervasive impact on the occurrence and sequencing of founding processes, with one possible exception being the timing of legal establishment.

Introduction

The process whereby formal organizations emerge from the actions and interactions of individuals has long held a privileged place in social theory. Weber turned his attention to the origins of organizations in his J.D. dissertation (1889), which involved a comparative analysis of property rights and the capacity of those rights to yield organizations that are legally separate from the individual entrepreneurs that found them. For Joseph Schumpeter (1947), the origin of formal organizations lay less in the development of distinctive juristic actors and more in the development of new production functions within a society – that is, in the operational and innovative rather than legal development of organizations. Both Weber's legal and Schumpeter's operational criterion can be contrasted with a third perspective in which *social* organization is the defining hallmark of collective actors; thus, Homans (1950: 456-459) considered individuals' efforts to combat isolation to be a key motivation in the emergence of new formal groups (see also Ruef, Aldrich and Carter 2003). Meanwhile, social movement analysts (Olson 1968; Oberschall 1973: Chapter 4) called attention to resource mobilization as yet another facet of the formation of goal-oriented collectivities.

While early scholars framed the emergence of formal organizations primarily in theoretical and qualitative terms, considerable analytical leverage was introduced during the 1980s by researchers using quantitative accounts of organizational founding (e.g. Delacroix and Carroll 1983; Hannan and Freeman 1987, 1989; Aldrich and Staber 1988). Inspired by an evolutionary perspective (Hannan and Freeman 1977; Aldrich 1979; Kimberly 1979), these models placed emphasis on the ecological conditions tying the origins of new organizations to the broader development of organizational populations and societal sectors. For the sake of analytic simplification, quantitative models typically relied on the convenient fiction that organizational foundings could be treated as discrete events. At the same time, both entrepreneurship scholars (Katz and Gartner 1988) and organizational sociologists (Hannan and Freeman 1989: 148-149) recognized the fiction and called for further research on the origins of organizations as a social *process* rather than event. Paralleling the varied interests of classical scholars, these researchers noted that organizational emergence might involve a number of potential stages, such as

initiation, resource mobilization, legal establishment, social organization, and operational start-up. More generally, bringing these activities back into the analysis of founding held the promise of connecting macro-level organizational theory with the more traditional micro-level emphasis of the sociology of work.

Despite such calls to arms, quantitative treatments of organizational founding have often remained silent on the issue of process. Studies that do consider the distinctive -- and sometimes prolonged -- stages of organizational founding have appeared outside the mainstream of organizational theory, primarily in the entrepreneurship literature (see Aldrich 1999: Chapter 4, for a review). Reynolds and White (1997) summarize the results of two surveys tracking organizations from conception to adolescence, with each survey addressing no less than seventeen potential startup activities.¹ The survey data suggest considerable diversity in the number of startup activities undertaken by entrepreneurs, the sequencing of activities, and the rates with which these activities are accomplished. Given this diversity, the ostensible pattern whereby organizations emerge has been justifiably referred to as "chaotic and disorderly" by some commentators (Aldrich 1999: 77). Indeed, the only consistent patterns identified thus far in the entrepreneurship literature are tied to *outcomes* that distinguish entrepreneurs who have successfully founded an organization from those who are still trying or have given up (Carter et al. 1996).

This chapter is motivated by the paucity of empirical findings in the entrepreneurship literature and a proposal for a process-based formulation of organizational founding. The motivation entails a set of theoretical and methodological considerations. First, with some exceptions (e.g. Van de Ven et al. 1999), process-based studies of organizational founding have not attended to the structural, strategic, and environmental context within which startup activities are pursued. To some extent, this inattention may have resulted from the tendency of scholars to focus on lifecycle metaphors of organizational emergence, which consider parallels between immanent human

¹ One survey, conducted in 1992, considered a representative sample of 1,200 adults in Wisconsin, while the other, conducted in 1993, considered a representative sample of 1,016 adults across the United States. Reynolds, White, and colleagues used the concept of a *nascent entrepreneur* -- an individual who is thinking about starting a business and has taken at least two major steps toward realizing this goal -- to define "organizations in the making". Applying this criterion, 80 and 40 nascent entrepreneurs were ultimately identified for the Wisconsin and national surveys, respectively. Such small-scale surveys of entrepreneurs have now largely been superseded by more ambitious efforts, such as the Panel Study of Entrepreneurial Dynamics (PSED) (Reynolds 2000).

development processes and organizational creation (Miles and Randolph 1980). Contingency theorists have argued persuasively against such metaphors, noting that entrepreneurial processes are likely to be affected significantly by social context: e.g. organizational form and environment (Lawrence 1993; Amburgey and Rao 1996).

A second concern derives from the diversity of human capital that underlies empirical research on founding processes in the entrepreneurship literature. By taking samples of entrepreneurs from the general population, entrepreneurship researchers aspire to be representative in their conclusions. At the same time, however, they also increase the variance of individual characteristics that must be factored into an explanation of the founding process (see Reynolds and White 1997: Chapter 4). Given the relatively small samples of entrepreneurs obtained in existing surveys, controlling for these individual factors has proven difficult, and, moreover, tangential to a research tradition that has departed from the once-popular emphasis on talents and traits of individual entrepreneurs (Gartner 1988; Aldrich 1999). From the perspective of a sociology of work, an alternative research design can be developed that samples from specific sub-populations (in which human capital is largely controlled for) and draws primary attention to the contextual features of entrepreneurial activities.

While it is impossible to address these issues definitively in one sitting, this chapter starts to unpack the process surrounding the creation of formal organizations. It begins with an analytical motivation for sorting founding events into a small number of startup stages and summarizes the use of these stages in existing research on organizational founding. Next, I draw theoretical connections between aspects of the entrepreneurial context -- including organizational structure, strategy, and environment -- and the rates with which startup stages are pursued. Event history models are applied to test the resulting hypotheses on a data set of startup efforts among 591 nascent entrepreneurs, active between 1945 and 1999. A concluding discussion addresses implications for current discrete-event approaches to modeling entrepreneurial activities.

The Process of Organizational Founding

The organizations literature points to two distinct research strategies employed in identifying events in the process of organizational founding. One, employed primarily by entrepreneurship researchers, is inductive and emphasizes the specific activities undertaken by nascent entrepreneurs in creating businesses and nonprofits: e.g. looking for physical facilities, investing personal funds in an organization, writing a business plan, etc. (see Reynolds and White 1997). Another strategy, employed primarily by organizational sociologists, is deductive and emphasizes theoretical ideal-types as sub-processes in the creation of organizations. For instance, organizational ecologists have identified initiation, resource mobilization, legal establishment, social organization, and operational startup as crucial startup activities (Hannan and Freeman 1989). Viewing startup activities as steps toward institutionalization, scholars in the institutional tradition have identified innovation, habitualization, objectification, and sedimentation as critical stages (Tolbert and Zucker 1996).

Both inductive and deductive strategies have their merits: the inductive approach lends itself to immediate operationalization by considering the concrete startup activities observed in empirical contexts; the deductive approach lends itself to theoretical generalization. In the following discussion, I combine both strategies by mapping operationalizations of organizational founding within the existing literature to the ideal-type processes noted in Hannan and Freeman's (1989) influential statement on organizational ecology.

Initiation

The process of initiation refers to a declared intention on the part of one or more nascent entrepreneurs to found an organization. Specific activities linked to initiation can include: serious discussion about starting a new organization, the formation of a founding team, public announcements regarding the intention to organize, and the public naming of a new collective identity. Initiation events provide the weakest criteria whereby a formal organization can be said to exist. Insofar as formal organizations are defined to be goal-

directed, boundary-maintaining activity systems (see Aldrich 1999), the process of initiation merely provides a general specification of collective goals and draws a boundary around one or more members (e.g. nascent entrepreneurs) committed to achieving those goals.

Not surprisingly, the use of initiation activities to mark the founding of organizations is rare in the empirical literature. Some notable exceptions appear to involve the creation of so-called 'minimalist' organizations (Aldrich et al. 1994; Halliday, Powell and Granfors 1987). For instance, Aldrich and Staber examined the founding patterns of trade associations by treating the appearance of a new association name in one or more data sources as indicative of a founding event (1988: 118-119). The mere appearance of a name does not necessarily mean that the association in question is legally established or has hired permanent staff or even operates on a day-to-day basis. However, this operationalization of organizational founding is entirely consistent with the minimalist nature of trade associations, which require few resources or ongoing activities for their existence (Aldrich et al. 1994).

Initiation activities are also relevant when researchers wish to examine the social structure linking entrepreneurs (or other helpers) at the inception of a new organization. Research interest may hinge on the network sources of ideas triggering the creation of an organization (Ruef 2002a) or the mechanisms bringing founders together (Ruef, Aldrich and Carter 2003). To avoid success bias, researchers examining such early initiation processes tend to employ research designs that sample nascent entrepreneurs – individuals who are beginning to take serious steps toward starting a venture but need not have an operational venture in any sense of the word. The Panel Study of Entrepreneurial Dynamics (PSED) represents one of the most ambitious efforts to sample entrepreneurs with this type of research design (see Reynolds 2000).

Resource Mobilization

As a startup stage, resource mobilization includes activities such as looking for permanent facilities and equipment, buying or leasing permanent facilities and equipment, and seeking or receiving external financial support. Aside from these more obvious aspects

of resource mobilization, nascent entrepreneurs also tend to prepare documents at this founding stage that permit them to seek support from funders, philanthropists, or potential members. In the case of growth oriented for-profit organizations, the writing of a business plan is seen as a major step in the process of resource mobilization. Historically, organizations such as hospitals, labor unions, and professional associations have also developed charters that are critical in mobilizing support around a set of common goals.

Given the implicit connection between resource mobilization and the broader literature on collective action (Oberschall 1973), it is not surprising that operationalizations emphasizing this stage of organizational founding are often directed toward formalized social movements (see Hannan and Freeman 1987; McCarthy et al. 1988). Hannan and Freeman's study of the emergence of national labor unions is a case in point. They focus on foundings as a joint effort among a set of workers or local unions to create a national union that will protect their interests. In particular, foundings are delineated by the "date of a national convention that writes a charter for a new union or the date on which a merger between unions is ratified at national conventions" (1989: 149). These events, which entail resource mobilization occasioned by a key organizational document, can be distinguished from both legal establishment and initiation. With respect to the former, it can be noted that union charters are not necessarily *legal* documents in the eyes of the state and that a national union mobilized in this fashion may in fact be an illegal entity. With respect to the latter, a comparison with the operationalization applied to a minimalist organization, state bar associations (Halliday, Powell and Granfors 1987), suggests the following difference: for bar associations, members simply meet under the auspices of a collective identity; for labor unions, the conventions studied have the specific outcome of mobilizing support around (and ratifying) an organizational charter.

While conventional economic wisdom suggests that successful attempts at resource mobilization are crucial to the survival of new organizations, existing research provides only limited support for this contention, even among for-profit organizations. For instance, a study of bankruptcy and dissolution events among several hundred business startups revealed that the mobilization of external financing (either debt or equity-based) actually *increased* disbanding rates (Ruef 2002b). When entrepreneurs accept funding from stockholders, investment banks, venture capitalists, wealthy individuals, and the like, they

may also expose themselves to the whims and fickle attachments of the investors. More generally, large-scale capitalization from external sources commonly imposes the risk of external control rather than the fruits of resource infusion.

Legal Establishment

The legal establishment of an organization involves formal recognition by the state that it operates as a legitimate collective entity. Activities involved in legal establishment may include: filing letters of incorporation or partnership, applying for a license to operate, receiving a legislative mandate, and seeking trademark or patent protection for core ideas associated with the enterprise. Weber's (1889) pathbreaking work defined the legal concept of joint liability as particularly important in the origins of modern organizations. With the full development of joint liability in contemporary systems of law, formal organizations could be fully separated from their founders and stakeholders in a manner that effectively hypostatized vital events (e.g. foundings, mergers, etc.) at the organizational level (see Coleman 1974).

Macro-level studies of organizations evidence considerable reliance on legal delineations of organizational founding, perhaps owing to the readiness with which these are identified in archival data sources. However, there also appears to be a substantive pattern linking the use of legal founding events with particular types of organizational forms. In particular, many of the forms that can be studied most readily with legal markers -- government bureaus (Kaufman 1976), life insurance companies (Budros 1993), railroads (Dobbin 1995), day care centers (Baum and Oliver 1992), and voluntary social service organizations (Singh, Tucker and Meinhard 1991) -- are located in highly institutionalized environments. These environments are defined by the importance of regulative and normative controls operating within them (see Scott 2002) and thus resonate with a legal-rational conception of organizational founding.

In the sociology of work, little micro-level research exists to reveal how entrepreneurs actually go about choosing one legal structure for their ventures as opposed to another. Although practical advice on legal strategy is plentiful (e.g. Khandekar and Young 1985), there is no descriptive evidence to suggest how quickly legal status tends to

be pursued, what goals influence the choice of legal structure, and what constraints this choice subsequently imposes on founding activities. Consequently, my examination of this startup stage will be largely exploratory in character.

Social Organization

As a startup stage, social organization entails such activities as the initial hiring or recruiting of permanent participants, the creation of authority systems, the development of motivational inducements or monitoring structures, and the emergence of social roles (Aldrich 1999: Chs. 5-6). Given my definition of initiation processes, such social organization applies explicitly to individuals *outside* the team of nascent entrepreneurs.

Recent scholarship has sought to clarify the effects of founder choices with respect to models of social organization. Examining a unique sample of interviews from Silicon Valley startups, Baron, Hannan and Burton (1999) distinguish founders' human resource models by (a) their source of employee attachment (pecuniary versus non-pecuniary benefits); (b) their bases of coordination and control (e.g. formal oversight versus peer culture); and (c) their mechanisms of employee selection (e.g. skill-based versus cultural fit). Although the cross-tabulation of these dimensions yields a large number of possible combinations, only five employment models were identified with considerable frequency in the sample of business startups. These include the classic Weberian model of bureaucracy, a Taylorist model of autocracy, and three other employment models – which stress collective commitment, employee 'star' potential, and a meritocratic engineering culture, respectively.

In a separate analysis, Baron, Hannan and Burton (1996) study how different human resource (HR) practices emerge to support the social organization of new ventures. Among the Silicon Valley firms in their study, these practices include the development of employee orientation programs, organization charts, written performance evaluations, and the like. Because my interests in this chapter hinge on more generic patterns of organizational creation, I focus on the founding activity that serves as a precondition for the development of these more sophisticated HR practices – the hiring of a new organization's first non-founding member.

Operational Startup

The operational stage of organizational founding may include such events as announcing a service or product, developing an initial prototype for a service or product, and successfully completing the delivery of a service or product to external stakeholders. Among the various processes of organizational founding, social theorists have often viewed the operational stage of founding as having the most telling effects for society as a whole (Schumpeter 1947). This fact alone may account for the popularity of operational startup in studies of founding.

Considering the particular populations in which an operational criterion has been applied, another pattern becomes evident which parallels that noted for legal establishment above. One finds that much research emphasizing operational startup – Hannan and Freeman's (1989) study of semi-conductor manufacturers (see also Schoonhoven et al. 1990); Baum, Korn and Kotha's (1995) study of fax transmission services; Delacroix and Solt's (1988) study of wineries; and Hannan et al.'s (1995) study of automobile producers – examines forms that are embedded in environments with high technical complexity. Two general exceptions should, however, be noted. First, operationalizations considering operational startup are often applied when data is unavailable on the principal founding events of interest -- as for some organizations in Ranger-Moore, Banaszak-Holl and Hannan's (1991) study of two heavily regulated forms, banks and life insurance companies. Second, operational startup appears to be the customary event type analyzed when organizational forms do not fall within one of the theoretical rubrics associated with other founding processes: including minimalist forms (initiation), collective action forms (resource mobilization), and forms in highly institutionalized arenas (legal establishment). Thus, research on hotels (Ingram and Inman 1996) and newspapers (Hannan and Freeman 1989; Delacroix and Carroll 1983) has employed operational startup as an indicator of organizational founding.

Micro-level analyses of operational startup have appeared primarily under the guise of time-to-market studies. For instance, Schoonhoven and colleagues (1990) considered the factors affecting operational startup among a sample of semiconductor manufacturers.

They found that having a functionally diverse founding team (e.g. one that includes both marketing and manufacturing expertise) increased the rate with which operational startup was achieved, while attempts at technical innovation among entrepreneurs tended to reduce the rate of operational startup. The latter finding may, however, be sensitive to how innovation is defined. When 'innovation' simply implies deviance from a dominant organizational form, such deviation can remove constraints from an otherwise rigid process of operational startup. For example, in a study of U.S. medical schools, I found that the orthodox, university-affiliated medical schools took significantly *longer* to achieve operational status than those organizations that adopted irregular medical philosophies (e.g. homeopathic schools) or those that were organized independently from a university (Ruef 2004). The difference between these findings and those of Schoonhoven and colleagues hinge on the nature of innovation in each context. Schoonhoven et. al (1990) consider how attempts to create new knowledge (or synthesize existing knowledge in new products) can delay operational entry. On the other hand, my study of medical schools suggests that deviations from a dominant organizational model that employ an alternative, *preexisting* template can actually increase the rate of operational startup.

Contextual Influences on Founding Stages

The preceding literature review suggests that there is often a pattern linking discrete operationalizations of founding events with the theoretical inclinations of a researcher and / or the types of organizations being analyzed. When consideration is limited to individual organizational populations, such patterns may have substantial justification: e.g. tracking the emergence of social protest organizations via instances of legal recognition seems less sensible than identifying instances of initiation or resource mobilization (the legal aspect of emergence could be seen instead as a marker of cooptation). For many types of organizations, though, it is not immediately evident that one founding stage should be favored over another as an indicator of organizational emergence. Thus, initiation, resource mobilization, legal establishment, social organization, and operational startup are all valid objects of study for populations of business enterprises.

This consideration calls for a comparative analysis of influences on various stages of organizational founding. In the following discussion, I analyze contextual influences -- aspects of organizational structure, strategy, and environment -- that have proven to be significant in scholarship on organizational founding processes. Given previous research in the sociology of organizations and work, six contextual influences are considered to be of particular interest. Competition, legitimacy, and regulation are the environmental factors that have received the greatest attention in organizational ecology and institutional analysis (Carroll and Hannan 2000; Scott 2001). Both organizational ecologists and management theorists have also examined the relation of strategic factors to founding processes, including the niche width of emerging organizations (Carroll and Swaminathan 1992) and the extent to which innovator or reproducer strategies are pursued (Aldrich 1999; Schoonhoven, Eisenhardt and Lyman 1990). Finally, recent attention has turned to the way that founding processes are affected by the structure of new organizations -- in particular, their level of independence from existing formal organizations.

While drawing substantive parallels with population-level processes, the following discussion formulates its measures and hypotheses at the level of the emerging organization and the work activities undertaken by entrepreneurs. This involves some rethinking of the way that contextual influences on startup activities are conceptualized. For example, the well-known density-dependence argument of population dynamics suggests that founding rates are affected by the levels of legitimation and competition evidenced for a particular organizational population (Carroll and Hannan 2000). At the micro-level, this involves two separate processes -- (a) to what extent do competition and legitimation affect the decision of individuals to become entrepreneurs in a given population or industry; and (b) to what extent do competition and legitimation affect the rate with which various startup activities are successfully pursued? The present analysis is concerned exclusively with the second micro-dynamic (the process of entrepreneurship) and thus tailors its measures to the vantage point of the entrepreneur.

Structural Independence

Sociologists have distinguished between a number of basic types of entrepreneurial entry into populations or industries, including *de novo* entries, *de alio* entries, and spin-offs (Carroll, Bigelow, Seidel and Tsai 1996; see also Aldrich 1999: 275-276). *De novo* starting events involve the development of an independent venture that has no pre-existing formal linkages to another organization. Spin-offs and *de alio* starting events represent sponsored and lateral entries of established organizations into new niches, respectively.

Whether an emerging organization is structurally independent or linked in one fashion or another to pre-existing arrangements is likely to have a substantial impact on its startup process. First, the structural inertia of mature organizations (see Hannan and Freeman 1984) is likely to adversely affect rates of initiation for ventures that they sponsor. The preliminary phase of organizing, in which one or nascent entrepreneurs gather and declare their intention to create a new collective enterprise, is comparatively simple for autonomous startups. But when a startup is sponsored through existing organizational arrangements, the initiation stage often requires that a subset of members be dislodged from established roles in order to work with (or become) new organizational leaders. Given the habituation and oligarchical tendencies in many mature organizations (Michels 1968 [1915]; Barron et al. 1994), this process may be both cognitively difficult and politically contested.

Hypothesis 1. Independent startups are initiated more quickly than sponsored startups.

In other respects, sponsored entry can ameliorate the strains of starting a new venture. The established entity offers resource endowments, consisting of both financial and social capital, to a spin-off or franchise. Independently of the actual scale of these endowments, the mere existence of external ties to organizational sponsors conveys positional advantage (Hannan 1998): a sense of reliability and accountability, as seen by other stakeholders. As a result, the process of resource mobilization among sponsored starting events is expected to proceed more rapidly, and more successfully, than it does among *de novo* foundings.

Hypothesis 2. Independent startups are slower to mobilize resources than sponsored startups.

A second type of endowment involves taken-for-granted routines and competencies that are carried from an existing formal organization to a sponsored entrant. Some of these routines entail operational know-how directed at the development of services or products that are similar to those of the sponsoring entity. Other routines involve more basic principles of social organization, providing templates for authority systems, role relations, and incentives that can be adopted by a new venture from an existing organizational infrastructure. Given these stocks of existing routines, founding processes involving operational startup and social organization among structurally dependent entrants are likely to be accelerated.

Hypothesis 3. Independent startups are slower to hire or organize employees than sponsored startups.

Hypothesis 4. Independent startups are slower to become operational than sponsored startups.

Niche Generalism and Specialism

In addition to structural features, the pace and sequencing of startup processes in an emerging organization is likely to be affected by strategic 'blueprints' maintained by its founders. While many of these blueprints evolve during the process of founding itself, two strategic dimensions are tied to an organizational idea in more primordial ways and may provide causal explanations for the character of the founding process: (1) niche *generalism* and *specialism*; and (2) *reproducer* versus *innovator* strategies (see Aldrich 1999).

The distinction of generalist and specialist strategies was introduced by Hannan and Freeman (1977, 1989), who noted that some formal organizations (*generalists*) occupy a wide niche that allows them to draw on resources and information in a variety of

environments, while others (*specialists*) concentrate their efforts on a narrow niche that is focused within a more limited environmental context. The relative fitness of organizations conforming to these two strategies depends on the variability of environmental conditions. Specialist organizations are most viable when environmental conditions fluctuate within a narrow range; generalists perform better when environmental turbulence and uncertainty is high.

With respect to founding stages, niche-width strategies are likely to have their most pronounced impact on resource mobilization processes. Stinchcombe's (1965) argument on organizational imprinting noted that organizations tend to adapt to the environmental conditions prevailing around the time of their founding (see also Kimberly 1979). If so, specialist organizations may have an initial advantage in extracting resources, at least given short-term stability in the environment. Entrepreneurs employing a specialist strategy are able to customize their organization's blueprint to the particular interests and cognitive assumptions of sponsors during the founding stage. Those with a generalist strategy, on the other hand, must appeal to a variety of audiences and environments. The generalist organizations are difficult to categorize and therefore will be slower to mobilize resources initially (Zuckerman 1999).

Hypothesis 5. Startups with a generalist strategy mobilize resources more slowly than specialists.

Reproducer and Innovator Strategies

Organizational scholars make a second strategic distinction in examining how organizations confront new, innovative opportunities in their social environment. Organizations with an *innovator* strategy, sometimes referred to as 'first movers' (Brittain 1994), attempt to enter quickly into niches opened by technical or institutional change. Through their novel routines and technologies, they are able to take advantage of intrinsic growth rates in new organizational populations or to redefine environmental constraints in more mature industries. Organizations with a *reproducer* strategy, on the other hand, rely

on more established routines and technologies; their key advantage is the efficient use of resources rather than the speed with which they confront innovative possibilities.

The differences in efficient resource use are likely to be most apparent in resource mobilization processes among emergent innovators and reproducers. The novelty of technologies and routines in innovative organizations demands both aggressive and rapid resource mobilization. The development of innovations imposes costs well beyond the mere reproduction of existing routines; moreover, innovators are forced to deploy resources rapidly in seeking first mover advantages in a market niche. Nascent entrepreneurs employing a reproducer strategy are able to offset resource requirements with the relative efficiency of established organizational routines, becoming more likely to attract resource support in a slow, methodical fashion.

Hypothesis 6. Startups with an innovator strategy mobilize resources more quickly than those employing a reproducer strategy.

The other impact on founding processes involves operational startup. As I have noted above, two opposing implications follow from the use of an innovator strategy. On the one hand, the creation of new knowledge (or synthesis of existing knowledge to create new products) can prolong operational entry (Schoonhoven et. al 1990). Entrepreneurs who are true first movers must deal with uncertainty that is readily avoided by those adopting a reproducer strategy. On the other hand, reproducers also face constraints when they adopt existing organizational templates that are specified relatively precisely. As a result, some entrepreneurs who are subject to strict normative guidelines (e.g. franchisees) may actually increase the delay until operational startup when employing a reproducer strategy.

Technical Environment

Emerging organizations encounter both technical and institutional pressures from their environment (Meyer and Scott 1983). Technical demands include such features as competing with existing organizations in a niche, attracting a qualified pool of labor,

attracting investment capital, acquiring production inputs, and protecting intellectual property. Like organizational structure and strategy, an organization's technical environment is likely to have implications for its early life history -- in particular, for those founding sub-processes that are oriented toward material-resource considerations. Technical demands on a new venture will increase the rate with which nascent entrepreneurs pursue resource mobilization efforts. Confronted with strong competition in input, output, and labor markets, entrepreneurs will be more inclined to turn to external actors for material support (although actual mobilization success may be more elusive). Meanwhile, operational startup, a second process oriented toward material-resource considerations, is likely to be constrained by competition and technical demands. As entrepreneurs encounter difficulties in securing inputs, technologies, or labor, organizational delivery of products and services will typically be delayed.

Hypothesis 7. Startups in highly competitive environments are quicker to attempt resource mobilization.

Hypothesis 8. Startups in highly competitive environments are slower to become operational.

The multidimensional nature of competitive pressures makes it difficult to tease out influences with respect to other startup activities. Competition over intellectual property can postpone legal establishment, but competition for skilled labor may encourage an organization to accelerate legal approval as a sign of stability to prospective members. Similarly, competition in the labor market often makes social organization more problematic, while competitive pressures in a product or service niche may stimulate recruitment of members early on. Given these opposing dynamics, no clear hypotheses can be offered for a general effect of competition on legal establishment or social organization.

Institutional Environment

Institutional demands represent a feature of the organizational environment that may be seen as orthogonal to technical demands (Meyer and Scott 1983). The institutional environment comprises cognitive rules concerning the recognizability of organizational structures and activities, normative rules concerning the appropriateness of structures and activities, and regulatory rules concerning the legality of structures and activities (Scott 2001). In ecological formulations, cognitive rules are assessed via the legitimation effect in density-dependence specifications (Carroll and Hannan 2000). Normative and regulatory rules are typically represented jointly as historical period effects that influence rates of organizational founding within particular populations.

Neoinstitutional theory suggests that the effect of environmental demands on the founding process will reflect a certain homology between the types of institutional rules and the stage of founding being examined. Organizations confronting complex *regulatory* rules -- e.g. employment law, product liability law, environmental law, etc. -- will move more aggressively to establish themselves legally and limit liability on the part of owners. Those confronting systems of *normative* oversight -- e.g. professional certification or accreditation (see Ruef and Scott 1998) -- will incorporate formalized commitment to these systems in their founding rituals.²

Cognitive rules are more fundamental than those evidenced by normative and regulative frameworks, insofar as they suggest what types of emerging organizations are likely to be recognized by customers and competitors (Scott 2001). Recognizability of organizational form has perhaps its most determinate effects on operational startup. When the services or products of a new venture are readily compared to extant social artifacts, the announcement and delivery of such output to consumer markets is simplified considerably. Moreover, basic mimetic processes allow the emerging organization to copy operational routines from comparably situated corporate actors. When the template for a

² Given the variability with which accreditation and certification processes apply to different organizational forms, they have not been included as a feature of the five generic founding stages.

new venture is less conventional, these processes of social comparison and imitation are likely to be inhibited.³

Hypothesis 9. Startups facing strong regulatory environments are quicker to establish themselves legally than those facing weak regulation.

Hypothesis 10. Startups adopting a cognitively legitimated form are quicker to become operational than those adopting a form that is not widely recognized.

Summary of Contextual Influences

Figure 1 summarizes my propositions concerning the effects of organizational structure, strategy, and environment on the relative pace of various stages in the founding process. Contrary to earlier research, these propositions suggest that there may be clear patterns to the founding process once contextual influences are taken into account. To use one example, an expected modal pattern of organizing for independent startups could feature an initiation stage, followed by resource mobilization, legal establishment, social organization, and operational startup. But sponsored foundings (involving ventures backed by a prior organizational infrastructure) may deviate from this sequence in predictable ways. Resource mobilization, social organization, and operational startup may occur earlier. Initiation activities -- e.g. official declarations concerning a starting event or the creation of a founding team -- may well be postponed until other stages are already under way.

[Insert Figure 1 About Here]

More generally, the propositions suggest a general pattern in which the sequencing of startup activities and the salience of contextual influences interact with one another.

³ Arguably, similar processes of imitation could apply to other founding stages – initiation, legal establishment, social organization – among cognitively legitimate organizational forms. In those cases, however, the demand-side aspect of the argument (focusing on the recognition of organizational output in some market or non-market arena) is not as pronounced.

While structural factors affect the timing of startup activities throughout the founding process, strategic factors are more relevant early in the ideal-type sequence (especially, with respect to resource mobilization) and environmental factors become more relevant later in the sequence. As entrepreneurs move from conception to established organization, the theory suggests that the flow of their activities becomes increasingly exposed to conditions outside the organization itself.

Aside from the impact of contextual factors on the timing of startup activities, the activities themselves can also affect the timing of one another. Operational startup may be more likely when successful resource mobilization brings financial capital into a new venture. Delayed legal incorporation could slow down operational startup rates. Current substantive evidence regarding such interdependencies is mixed (Schoonhoven, Eisenhardt and Lyman 1990) or non-existent (Amburgey and Rao 1996: 1273), largely owing to the lack of models that incorporate transitions for multiple startup activities. As a result, specific hypotheses concerning activity interdependencies are not advanced here; instead, these dynamics are considered in an exploratory mode in the following empirical models.

Data, Measures, and Methodology

Data

Founding processes were examined empirically using an original dataset on nascent entrepreneurs who attempted to start business organizations between 1945 and 1999.⁴ Following previous research on nascent entrepreneurs, a two-stage sampling strategy was applied. In the first wave, an initial sample of 5,028 business professionals were surveyed. To reduce the variance of human capital, all professionals in the targeted sampling frame included alumni receiving MBA (masters of business administration) degrees from a graduate business program in the western United States. This sampling frame explicitly controls for the wide variety of educational experiences and business skills typically found among nascent entrepreneurs (see Reynolds and White 1997), but also limits the

⁴ Selected information was also collected on the role of these individuals in creating non-profit organizations and other non-business entities. To limit the heterogeneity of organizational forms being analyzed, the present empirical study is concerned exclusively with the founding of business enterprises.

representativeness of the entrepreneurs studied. Given that the emphasis of the present study is on contextual factors affecting emerging organizations rather than individual-level factors, this trade-off appears to be justified.⁵

The business professionals were asked whether they had ever "*tried* to start a business" or spent some part of their career working as the founder of a startup. Those responding in the affirmative (N=1786) were included in the sampling frame of a more extensive survey of nascent entrepreneurs. These individuals were then asked to identify the nature of their most recent entrepreneurial effort, the steps involved in attempting to create the business, the types of innovations introduced, the environment of the organization during the period of founding, and various outcomes of the entrepreneurial process. Some 769 surveys were received, yielding a response rate of 43%.

As in any retrospective design, there were concerns about the ability of founders to accurately recall events in the founding process, particularly for serial entrepreneurs (those who had founded more than one venture during their careers). To improve recall, detailed information was only requested for the entrepreneurs' most recent attempted startup. Whenever possible, secondary data sources and surveys of multiple founding team members were used to confirm dates of startup activities. In general, recall accuracy appeared to be high due to the ability of entrepreneurs to consult written documentation (business plans, papers of incorporation, etc.) that provide an organizational memory of these events.

Dependent Measures

The process of entrepreneurship was characterized through an inventory of nine founding activities (see Table 1; *Appendix*, Q3). Three of the activities can be mapped in a one-to-one fashion onto the ideal-type startup stages reviewed earlier. Thus, the initiation stage is demarcated by the creation of a founding team, social organization by the hiring of the first employee, and legal establishment by either incorporation or the establishment of a proprietor- or partnership. Due to the typically prolonged nature of resource mobilization

⁵ At the same time, it must be acknowledged that rates of entrepreneurial activity for this group are likely to be far greater than those found in the general population and that their distinctive human capital may lead to more successful startup activities than those of other entrepreneurs.

and operational startup, multiple activities were analyzed to consider these founding stages. Resource mobilization includes the preparation of a business plan, as well as obtaining (initial) external financing. Operational startup includes the announcement of a product or service, as well as the sale / delivery of a product or service.

[Insert Table 1 About Here]

The survey instrument asked respondents to indicate the month and year for each founding activity undertaken, as applicable. Among the 769 respondents, 74 omitted questions related to the process of entrepreneurship and another 104 only identified a single activity. Following previous research on nascent entrepreneurs (see Reynolds and White 1997), those individuals only performing a single startup activity were excluded from further analysis. The reasoning behind this exclusion is both methodological and substantive. Methodologically, the concept of a startup 'sequence' is rendered vacuous by foundings that only involve a single activity. Substantively, there is an interest in focusing on entrepreneurs who are seriously pursuing the idea of founding a new organization. Many startups involving a single activity (e.g. organizing a founding team or writing a business plan) do not necessarily suggest a durable commitment by the entrepreneur.

The overall frequency of founding activities in the remaining 591 emergent organizations varies slightly. An initiation activity (e.g. the creation of a founding team) is implemented in all of these ventures at some point, while 82% hire an employee, and only 64% of the ventures obtain external funding during the founding process.⁶ Further insights into the timing of founding activities can be gained by separating them into sequential stages, where a stage is defined to be a period of time where one or more of the activities in the inventory are begun. Seventy-four percent of the initiation events occur during the first stage of organizational founding, while a mere eighteen percent of the events involving operational startup occur during that stage. More generally, the sequential distribution of activities conforms to a typical pattern of organizing that begins with initiation, proceeds to resource mobilization, legal establishment, and social organization,

⁶ Note that the initiation process (creation of a founding team) is effectively a 'trivial' startup activity in 167 of the cases that involve only a single entrepreneur.

and concludes with operational startup. The one wrinkle in this general pattern is the culminating phase of resource mobilization (in the form of external financing), which often occurs at some length after preliminary mobilization efforts (e.g. the writing of a business plan) have been undertaken. As suggested earlier, this reflects the prolonged nature of mobilization activities during the founding process.

Independent Measures

Structure. The structure of an emerging organization is characterized by its dependence on a prior organizational infrastructure. When entrepreneurs found independent startups, these are classified as *de novo* foundings. Other types of startup events subsume purchases or takeovers of existing businesses, startups sponsored by existing businesses, and franchises (*Appendix, Q1*).

Strategy. I evaluated the niche-width strategy of a new venture in terms of the cumulative number of industries that the venture's founders sought to compete in. Niches were selected from a standardized list of 60 industries (*Appendix, Q2*). *Specialist* organizations are those seeking to compete in relatively few industries, while *generalist* organizations seek to compete in a larger number of industries. A second dimension of organizational strategy was gleaned from founders' attitudes toward innovation. Innovative practices -- introducing new types of products or services, introducing new methods of production, developing new supplier linkages, etc. -- were grouped into eight analytical categories (*Appendix, Q4; Ruef 2002a*). *Reproducers* are represented by those entrepreneurs pursuing a relatively small number of these types of innovation; *innovators*, by contrast, attempt to take on a large number of innovative practices in founding their ventures. Rather than dichotomizing the variable, tendencies toward an innovator strategy were measured via the cumulative number of categorized innovations proposed for an emergent organization.

Environment. Entrepreneurs' perceptions concerning competition, regulation, and legitimacy at the time of founding serve as indicators of the organizational environment. Entrepreneurs were asked to rate pressures posed by five technical features of the

environment, six regulatory features, and two features related to the cognitive legitimacy of their organizational form (Q5). These variables were then included in a confirmatory factor analysis (Bollen 1989) that tied the observed indicators to three latent variables (competition, regulation, legitimacy) and covariances among them. Factor scores for each of the latent variables were extracted using the estimated regression loadings from the CFA (see Ruef [2002b] for further details).

Process. Time-varying covariates were included to capture the effects of different startup activities on one another, with each activity being represented by a dichotomous event variable (1 indicating that the event had occurred prior to a given spell, 0 indicating that it had not). To conserve degrees of freedom, only one event was used to represent the effects of resource mobilization (developing a business plan) and one was used to represent operational startup (announcing a product or service). The effects of legal establishment and social organization on other startup activities were also considered. Because initiation (the formation of a founding team) is a trivial startup event for emerging organizations that only have a single founder, it was not incorporated into the process specification.

Control Variables. The analysis of founding processes controls for entrepreneurs' perceptions of environmental munificence (the carrying capacity available to sustain organizations like their new ventures). Munificence is calculated as a weighted function of fourteen economic, political, social, and technological conditions prevailing at the time of organizational founding (see Ruef 2002b, Table A1). Entrepreneurs were asked to rate both the favorability and importance of each condition with respect to their venture. Ten-point ratings of favorability were rescaled to range from -4.5 (highly unfavorable) to 4.5 (high favorable), with 0 indicating average conditions along some dimension. An overall measure of munificence was obtained from the mean of the favorability ratings, with each one weighted by its relative importance to the entrepreneur.

A separate variable controlled for the amount of first-stage financing available to the venture, independently of external funding and resource mobilization efforts. This resource base includes endowments deriving from the entrepreneurs' personal savings, family savings, asset-based (e.g. real estate) or quasi-equity financing. All finance amounts

are adjusted by the consumer price index (CPI) for inflation to 1999 dollars and subjected to a natural log transformation for purposes of analysis.

A statistical control was also included to address the fact that organizational founding processes may proceed at different rates in industries with lower fixed capital costs (e.g. service industries) than those with high capital costs (manufacturing). A dummy variable distinguishes service industry ventures from those devoted exclusively to manufacturing.

Missing Values. For the first-stage financing variable, a conditional mean imputation procedure was employed to replace missing values and ensure that a maximum number of cases could be retained for analysis (see Little 1992). Cases with missing values on any of the remaining independent and control variables were removed by listwise deletion. This reduced the total number of organizations in the analysis to 532.

Methodology

Event history analysis was employed to model the rate with which founding activities were pursued in the sample of emerging organizations. To allow for the concurrence of startup processes, the seven activities identified in Table 1 were represented as separate event streams. The time clock for each stream began with the first month in which a nascent entrepreneur reported a founding activity for his or her venture. Nonparametric exploratory analyses revealed a monotonic decrease in founding activity rates over the period of organizational emergence. For instance, a firm that had not hired an employee by time point t was more likely to do so at that point than at any later time point $t + \Delta t$. The following Gompertz model captures this effect of organizational aging:

$$r(t) = \exp(B' X) \exp(Ct) \quad (1)$$

where $r(t)$ is the hazard rate for a founding activity, t indexes organizational age, \mathbf{X} is the matrix of independent variables, \mathbf{B} is the vector of coefficients indicating the effects of the variables in \mathbf{X} , and \mathbf{C} is a constant term indicating the rate at which startup activities

decrease with organizational age. Right-truncation of organizational histories occurs when organizations are dissolved, merged, acquired or when the end of the study period (October 1999) is reached. Maximum likelihood techniques were applied to obtain the model estimates.

Results

I estimated the effects of contextual factors on rates of founding processes using Rohwer's (1999) Transition Data Analysis (TDA) program. Table 2 reports the results for resource mobilization and operational startup, while Table 3 reports estimates for initiation, legal establishment, and social organization.

[Insert Tables 2 and 3 About Here]

Rates of resource mobilization tend to be higher among organizations claiming innovative practices and products than those who implement established routines (see Table 2, Models 1 and 2). Potential stakeholders are attracted to the novelty offered by innovators, while entrepreneurs relying on such novelty must be quick to mobilize lest competing organizations gain first mover advantages. A similar, though statistically less significant, effect can be noted for specialist organizations. Ventures having a narrow niche width are better able to focus the presentation of strategic blueprints (e.g. business plans) to potential stakeholders than generalist organizations. This mobilization advantage, however, does not translate into significantly higher rates of external funding events among specialists.

The expected difference in resource mobilization between autonomous (*de novo*) startups and structurally dependent foundings is reflected modestly in the timing of external financial support. A prior infrastructure conveys slight positional advantages to spin-offs and franchises seeking external funding ($p < .10$). The analysis identifies a more significant influence on external funding rates based on the resource base enjoyed by an emerging venture. The negative effect suggests that entrepreneurs with a sizable endowment of assets from a sponsoring organization can bootstrap their new venture and put off resource

mobilization during the founding process. Entrepreneurs in industries with lower fixed capital costs (the service sector) are also likely to delay resource mobilization.

In general, environmental influences on resource mobilization are limited. Competitive pressures do not encourage entrepreneurs to pursue mobilization efforts more aggressively than those positioned in less competitive environments. The main environmental influence on rates of external funding is munificence. Resource-rich environments for these ventures encourage substantially higher rates of funding (up to a rate multiplier of 1.57) than environments perceived as having an average level of munificence.

Process variables in the founding sequence suggest that resource mobilization is typically initiated early among other startup stages. Entrepreneurs who delay developing an organizational blueprint (business plan) are significantly less likely to do so once other startup events – such as legal establishment, social organization, and operational startup – have been accomplished. To a large extent, this reflects a fundamental difference between those entrepreneurs who opt to code the blueprint of their venture into documented form before engaging in organizing activity and those who forego the exercise in abstraction entirely in favor of practice. External funding events are not as sensitive to startup sequence as business plan development, although entrepreneurs are less likely to pursue external resources once they have achieved operational startup.

Consistent with predictions, the operational startup of new organizations is affected by their cognitive legitimacy and technical environment (Table 2, Models 3 and 4). Operational startup is accelerated for emergent ventures adopting widely recognized (legitimate) organizational forms. Those ventures enjoying the greatest cognitive legitimacy announce products or services at a rate that is 1.38 times that of forms having limited legitimacy. Meanwhile, technical pressures dampen rates of operational startup, with the most competitive environments yielding product-to-market cycles that are half as fast as environments with low levels of competition.

The analyses do not support the hypothesis that a prior stock of organizational routines and competencies among franchises and spin-offs speeds up operational startup. Examining the process variables, it appears that the influence of funding is largely reserved for resource mobilization efforts (which encourage operational startup) rather than initial

assets provided by entrepreneurs or sponsoring organizations. There is also no clear impact from the pursuit of an innovator strategy on operational startup. As suggested previously, this ambiguous result is likely when the opportunity costs of creating new products or services are not separated analytically from the opportunity costs of conforming to an existing organizational architecture.

Influences on founding activities that target aspects other than material-resource factors are summarized in Table 3. Rates of initiation – i.e. the organization of an entrepreneurial founding team – subsume only those ventures that have more than one founder and therefore eliminate trivial initiation events. The formation of a founding team is often slowed among ventures built on a prior infrastructure, given the structural inertia inherited from pre-existing organizations. Michels' "law of oligarchy" (1968[1915]) suggests that the conservative and staid leadership of established organizations may politicize the selection of new leadership, especially when the development of spin-off organizations is considered. Process variables also reveal the difficulty of bringing together a viable founding team when other key aspects of the organizing process -- resource mobilization, legal establishment, and hiring -- have already been accomplished.

The results for legal establishment (Table 3, Model 2) stand out among the other founding processes insofar as there are few factors of theoretical interest that appear to influence these activities substantially. The estimate for the effect of complex regulative environments does not suggest a positive impact on rates of legal establishment and fails to reach statistical significance. The decoupling between legal emergence and organizational context may, of course, be due to a number of aspects of the research design: i.e. attention limited to business organizations, insufficient variance in regulatory structures, or an overly general characterization of institutional detail across a variety of industries and organizational fields. In Model 2, one intriguing finding is that independent startups tend to be quick to establish themselves legally. The lack of backing from extant juristic actors, especially via sponsorship or franchise arrangements, encourages *de novo* startups to seek legal approval to an extent that seems unnecessary for startups with other corporate support.

Rates of social organization – the initial hiring of employees – are also affected by the structure of an emerging venture (Model 3). Sponsored foundings allow templates for

authority structures, incentive systems, and roles to be transferred from an extant formal organization to a new venture, increasing rates of social organization in the process (1.22 times that of comparable de novo foundings). Initial resource endowments do not accelerate social organization, but subsequent resource mobilization events have a highly significant impact (increasing hiring rates by a factor of 1.39). As in the case of initiation and legal establishment, environmental context has no clear effect on the timing of social organization among new ventures.

Discussion

In contrast to previous studies of founding processes, which have characterized them as chaotic and disorderly, the results noted here suggest several relationships between founding activities and the social context confronted by entrepreneurs. Structural features of an emerging venture have a marked influence on rates of founding team formation, social organization, and, to a lesser extent, resource mobilization. The strategies embraced by nascent entrepreneurs are reflected in the prevalence and speed of resource mobilization. Features of an organization's technical and institutional environment primarily influence operational startup. Indeed, the one aspect of founding that is only modestly affected by social context is the emergence of an organization as a juristic actor (legal establishment).⁷ The analyses do suggest that independent startups pursue legal establishment more aggressively than sponsored startups. Additional research is required to determine whether legal establishment is decoupled from the institutional environment of an emerging venture or whether this decoupling is an artifact of the present research design, reflecting somewhat limited variation in the institutional environment of the organizations studied.

Like contextual variables, process variables also have a substantial impact on the occurrence of startup events. In some cases, aspects of the entrepreneurial process appear to drown out independent or control variables. For instance, the initial resource base of entrepreneurs has no significant effect on the operational startup or social organization of

⁷ Stated more formally, there is no significant improvement in model fit between the model of legal establishment and a baseline Gompertz specification that only includes process variables (likelihood ratio $\chi^2 = 11.6$, $\Delta df = 9$, ns).

a new venture, but subsequent resource mobilization events accelerate these startup activities considerably. More generally, the process effects point to an underlying founding pattern that begins with initiation activities, proceeds to resource mobilization, legal establishment, and social organization, and concludes with operational startup.

Given the impact of contextual factors, observed sequences of organizational founding behaviors are not likely to reveal fixed patterns. Instead, sequences display predictable departures from each other based on organizational structure, strategy, and environment. These empirical results suggest the relevance of contingency views of formal organizations (see Lawrence 1993 for a review) to the definition and analysis of organizational vital rates. Contingency theorists have long claimed that the routines and structures of established formal organizations should depend on key aspects of organizational form and environment. Translated into an evolutionary-ecological framework, this claim implies that the emergence of formal organizations should likewise be analyzed with some attention to the socially embedded character of organizing processes (see also Ruef 2002b).

Conclusion

Organizational founding can be characterized by two underlying micro-dynamics. One micro-dynamic considers a risk set of *potential* entrepreneurs (individual or collective) that are exposed to social, technological, and economic opportunities and constraints over their life course. A small number of these potential entrepreneurs make a serious commitment to starting one or more formal organizations, thus becoming *nascent* entrepreneurs (Reynolds and White 1997). In the second micro-dynamic, the nascent entrepreneurs embark on a series of startup activities that construct a new collective entity. Discrete-event accounts of this founding process pick up on a narrow subset of the startup activities and conceptualize organizational emergence in those terms.

By virtue of the level of analysis employed (that of the emerging organization), the emphasis in this paper has necessarily been limited to the second micro-dynamic in the founding process. An account of both aspects of organizational founding cannot rely on the organizational unit of analysis, since " 'non-events' (the absence of foundings in some

period) are as important as are observed foundings for testing theories about founding rates" (Hannan and Carroll 1992: 197). A complete micro-analytic of organizational founding begins with potential entrepreneurs as the units of analysis (Zucker 1989), while corresponding macro-analytic accounts consider founding rates at the level of the organizational population or industry. Despite the fact that the results presented here are conditional on a committed founding effort by the nascent entrepreneur, several preliminary insights can be drawn with respect to these more general models of organizational founding.

At the organizational (micro-) level, the effect of context and unobserved heterogeneity on relative rates of founding activities may serve to accentuate or diminish observed dynamics at the population (macro-) level, depending on what operationalization of founding events is employed. As Carroll and Hannan emphasize, an ecological perspective relates "events occurring to individuals ... back to the population level by the use of counting procedures ... [I]n the simplest case, population size gets incremented and decremented as a result of the simple aggregation of birth and death events" (2000: 25). If empirical studies emphasize a particular stage of organizational founding (e.g. legal establishment) and many organizations dissolve before achieving that stage, then these studies may undercount foundings. Moreover, if the undercount is not uniform across the history of a population (if, for instance, legal establishment is more difficult early on), then empirical findings involving population dynamics can be affected.

Additional research and simulation studies are required to determine how founding event timing impacts the evolution of organizational populations (see Ruef [2004] for some initial steps in this direction). Such research can relate the present study to a more general sociological issue: how can the actions of ordinary entrepreneurs, assessed on a time scale of months or years, possibly make any difference in the evolution of industries, assessed on a time scale of decades or centuries? Further research is also required to clarify the relationship between founding processes and the micro-dynamics of entrepreneurship: the decision of potential entrepreneurs to become committed founders. In contrast to the present study, this line of research requires attention to individual life histories; in particular the human and cultural capital that entrepreneurs are able to develop, as well as the social contexts that they are embedded in. Representative samples of potential

entrepreneurs from the general population, such as the PSED, are central in developing this broader micro-level account of the dynamics of organizational founding.

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Appendix: Selected Components of Survey Instrument

I. General Information

1. Many new ventures are built on a pre-existing organizational infrastructure. Which of the following statements most accurately describes your venture? (**check one only**)

Independent Start-Up	Purchase / Takeover of Existing Business	Franchise	Start-Up Sponsored by Existing Business	Other (SPECIFY)
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

2. Using the identifiers below, please enter the code(s) that most accurately reflect the industry (or industries) your venture competes within.

Service

- | | |
|---------------------------------------------|-------------------------------------|
| 1 Accounting | 19 Insurance |
| 2 Advertising | 20 Investment Banking/Brokerage |
| 3 Architecture | 21 Investment Management |
| 4 Arts | 22 Legal Services |
| 5 Commercial Banking | 23 Management Consulting |
| 6 Construction/Real Estate Development | 24 Marketing Services |
| 7 Diversified Financial Services | 25 Multimedia Services |
| 8 Education | 26 Public Relations |
| 9 Electronic Commerce-Retail | 27 Radio/TV/Cable/Film |
| 10 Electronic Commerce-Other Services | 28 Real Estate Finance |
| 11 Entertainment/Leisure/Sports | 29 Religious Service |
| 12 Environmental/Waste Management/Recycling | 30 Retail/Wholesale |
| 13 Food/Lodging | 31 Social Services |
| 14 Foundation | 32 Telecommunications Services |
| 15 Government | 33 Transportation Services/Shipping |
| 16 Hardware/Software/Systems Services | 34 Utilities |
| 17 Health Care Services | 35 Venture Capital |
| 18 Import/Export/International Trade | 36 Diversified Service |

Manufacturing

- | | |
|-----------------------------------------|------------------------------------------|
| 37 Aerospace | 49 High Tech-Multimedia Products |
| 38 Agriculture | 50 High Tech-Networking |
| 39 Apparel/Textiles | 51 High Tech-Optics |
| 40 Automotive/Transportation Equipment | 52 High Tech-Semiconductors |
| 41 Biotechnology | 53 High Tech-Telecommunications Products |
| 42 Chemical | 54 High Tech-Other |
| 43 Consumer Products | 55 Industrial Equipment |
| 44 Energy | 56 Medical Instruments & Devices |
| 45 Extractive Mineral/Natural Resources | 57 Pharmaceuticals |
| 46 High Tech-Computers/Hardware | 58 Printing/Publishing |
| 47 High Tech-Computers/Software | 59 Rubber/Plastics |
| 48 High Tech-Consumer/Electronics | 60 Diversified Manufacturing |

II. Creating the Organization

3. When did you first accomplish the following activities?

	Never	Month/Year
a. Bring together a founding team	<input type="checkbox"/>	_____
b. Legally establish the company	<input type="checkbox"/>	_____
c. Prepare a business plan	<input type="checkbox"/>	_____
d. Obtain first external financing	<input type="checkbox"/>	_____
e. Hire an employee	<input type="checkbox"/>	_____
f. Hire an outside CEO	<input type="checkbox"/>	_____
g. File a patent / trademark application	<input type="checkbox"/>	_____
h. Announce a product/service	<input type="checkbox"/>	_____
i. Sell first product/service	<input type="checkbox"/>	_____

4. What innovations did you hope to deliver when your organization was founded?
(**check all that apply**)

	Comments
a. Introduce a new type of product / service	<input type="checkbox"/> _____
b. Introduce a new method of production	<input type="checkbox"/> _____
c. Introduce a new method of distribution	<input type="checkbox"/> _____
d. Introduce a new method of marketing	<input type="checkbox"/> _____
e. Develop new supplier linkages	<input type="checkbox"/> _____
f. Enter an unexploited market niche	<input type="checkbox"/> _____
g. Reorganize the industry	<input type="checkbox"/> _____
h. Other type(s) of innovation	<input type="checkbox"/> _____

III. Environment of the Organization

5. Please rate each of the following items on a scale of 1 to 10, with '1' being the lowest and '10' being the highest. Use 'n/a' to indicate that a question does not apply to your organization.

	At Time of Founding	Factor Loadings
How significant was the competition faced by the organization . . .	-----	
(a) In terms of the product or service overlap with existing organizations?		1.00
(b) In terms of attracting a qualified labor pool to the organization?		1.06
(c) In terms of attracting venture / investment capital?		0.91
(d) In terms of acquiring production inputs (materials or technologies)?		0.78
(e) In terms of protection of patents / intellectual property?		0.45
How recognizable were the organization's product(s) / service(s) . . .	-----	
(f) Among actual or potential customers?		1.00
(g) Among actual or potential competitors?		1.26
How relevant are the following kinds of regulation to the organization . . .	-----	
(h) Employment / labor law?		3.11
(i) Trade regulation / tariffs?		2.28
(j) Environmental law?		2.49
(k) Securities law?		1.29
(l) Product liability / consumer protection law?		3.13
(m) Other regulations? _____		1.00

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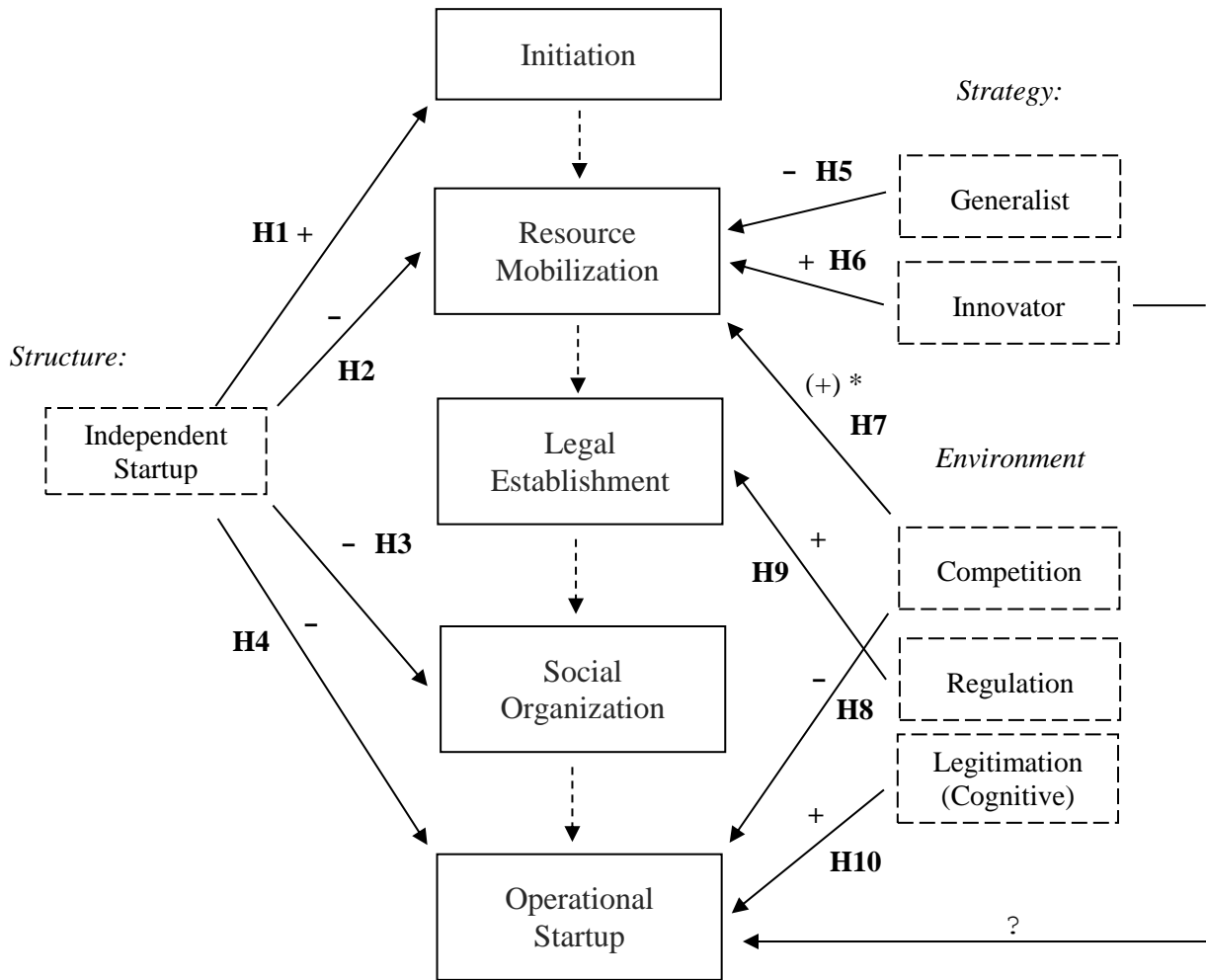
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Figure 1. Contextual Influences on the Timing of Founding Processes



Note: Positive signs (+) indicate that a characteristic increases the rate with which a founding process is completed by entrepreneurs. Negative signs (-) indicate that a characteristic decreases the rate.

* Competition is predicted to increase the rate with which resource mobilization is attempted, but not its successful completion.

Table 1. Frequency, Timing, and Sequencing of Organizational Founding Processes (Total N = 591)

<i>Process</i>	Overall Frequency	Mean Time to Event (months)	First Stage	Second Stage	Third Stage	Fourth(+) Stage
<i>Initiation:</i>						
Create Founding Team	591	3.1	439 (74%) [†]	99 (17%)	33 (6%)	20 (3%)
<i>Resource Mobilization:</i>						
Prepare Business Plan	468	6.0	263 (56%)	134 (29%)	48 (10%)	23 (5%)
Obtain External Financing	378	14.4	35 (9%)	110 (29%)	115 (30%)	118 (31%)
<i>Legal Establishment:</i>						
Incorporate / Establish Partner- or Proprietorship	547	4.8	199 (36%)	232 (42%)	88 (16%)	28 (5%)
<i>Social Organization:</i>						
Hire First Employee	482	10.5	91 (19%)	123 (26%)	134 (28%)	134 (28%)
<i>Operational Startup:</i>						
Announce Product / Service	404	11.0	72 (18%)	97 (24%)	108 (27%)	127 (31%)
Sell Product / Service	499	10.7	88 (18%)	104 (21%)	114 (23%)	193 (39%)

[†] Includes 167 'trivial' instances of initiation involving ventures formed by a single entrepreneur.

Table 2. Factors Affecting Rates of Resource Mobilization and Operational Startup among Sampled Organizations (N=532) †

Variable	<i>Resource Mobilization</i>		<i>Operational Startup</i>	
	Business Plan (Model 1)	External Funding (Model 2)	Product / Service Announced (Model 3)	Product / Service Sale (Model 4)
B Vector Constant	1.296 (0.196) ***	-0.030 (0.207)	-0.793 (0.225) ***	-0.674 (0.204) ***
C Vector Constant	-0.559 (0.054) ***	-0.415 (0.037) ***	-0.613 (0.049) ***	-0.511 (0.043) ***
<i>Structure:</i>				
Independent Startup	0.056 (0.112)	-0.181 (0.121) #	0.111 (0.123)	0.140 (0.112)
<i>Strategy:</i>				
Generalist	-0.102 (0.055) *	-0.055 (0.059)	0.066 (0.055)	0.009 (0.052)
Innovator	0.132 (0.042) ***	0.149 (0.044) ***	0.042 (0.046)	-0.040 (0.042)
<i>Environment:</i>				
Competition	0.014 (0.056)	0.026 (0.062)	-0.148 (0.058) **	-0.084 (0.049) *
Regulation	0.010 (0.050)	0.019 (0.055)	-0.075 (0.057)	-0.035 (0.051)
Legitimation (Cognitive)	0.052 (0.049)	-0.019 (0.057)	0.101 (0.056) *	0.092 (0.048) *
<i>Process:</i>				
Resource Mobilization	---	---	0.406 (0.116) ***	0.309 (0.106) **
Legal Establishment	-1.261 (0.134) ***	0.014 (0.127)	-0.097 (0.125)	0.091 (0.115)
Social Organization	-0.593 (0.167) ***	0.044 (0.132)	0.084 (0.125)	0.320 (0.111) **
Operational Startup	-1.135 (0.210) ***	-0.609 (0.141) ***	---	---
<i>Control Variables:</i>				
Resource Base	-0.001 (0.010)	-0.021 (0.011) *	-0.005 (0.010)	0.012 (0.009)
Munificence	0.049 (0.038)	0.100 (0.041) *	0.036 (0.039)	-0.063 (0.036) #
Service Industry	-0.262 (0.121) *	-0.338 (0.131) **	0.184 (0.138)	0.445 (0.128) ***
Number of Events	429	356	366	449
Number of Spells	2515	2515	2515	2515
-2 Log Likelihood (d.f.)	424.39 (14)	1410.80 (14)	1289.22 (14)	1182.12 (14)

p ≤ .10; * p ≤ .05; ** p ≤ .01; *** p ≤ .001; one-tailed tests for hypothesized effects, two-tailed otherwise.

† Standard errors are in parentheses.

Table 3. Factors Affecting Rates of Initiation, Legal Establishment, and Social Organization among Sampled Organizations (N=532) †

Variable	Initiation (Model 1)	Legal Establishment (Model 2)	Social Organization (Model 3)
B Vector Constant	1.188 (0.198) ***	1.026 (0.182) ***	-0.117 (0.203)
C Vector Constant	-0.446 (0.068) *	-0.683 (0.064) ***	-0.563 (0.046) ***
<i>Structure:</i>			
Independent Startup	0.335 (0.119) **	0.234 (0.104) *	-0.196 (0.110) *
<i>Strategy:</i>			
Generalist	-0.000 (0.057)	-0.007 (0.048)	-0.066 (0.050)
Innovator	0.039 (0.045)	-0.027 (0.040)	0.039 (0.041)
<i>Environment:</i>			
Competition	-0.091 (0.059)	-0.038 (0.050)	-0.007 (0.054)
Regulation	0.000 (0.056)	-0.045 (0.047)	-0.067 (0.050)
Legitimation (Cognitive)	0.086 (0.052) #	0.072 (0.047)	0.074 (0.051)
<i>Process:</i>			
Resource Mobilization	-0.440 (0.121) ***	0.010 (0.093)	0.331 (0.100) ***
Legal Establishment	-0.876 (0.162) ***	---	0.220 (0.105) *
Social Organization	-0.588 (0.216) **	-0.475 (0.162) **	---
Operational Startup	-0.060 (0.279)	-0.575 (0.189) **	-0.136 (0.127)
<i>Control Variables:</i>			
Resource Base	-0.003 (0.009)	0.005 (0.009)	-0.010 (0.009)
Munificence	0.078 (0.042) #	0.008 (0.034)	0.036 (0.035)
Service Industry	0.326 (0.127) **	-0.154 (0.114)	0.077 (0.124)
Number of Events	395	501	446
Number of Spells	1981 ‡	2515	2515
-2 Log Likelihood (d.f.)	262.66 (15)	341.60 (14)	1148.19 (14)

$p \leq .10$; * $p \leq .05$; ** $p \leq .01$; *** $p \leq .001$; one-tailed tests for hypothesized effects, two-tailed otherwise.

† Standard errors are in parentheses.

‡ Analysis is limited to those organizations with more than one founding team member (N=395).