REFERENCES

The Career Dynamics of Self-Employment

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Drawing on the ideas of related areas, an informed design for the study of self-employment is developed. The study uses retrospective career life-history data from West Germany to model the process by which individuals move into and out of episodes of self-employment. The analysis focuses on (1) the process of entry into self-employment at various stages of the career; and (2) the career differences between the self-employed and the conventionally employed. In general terms, the findings show that those factors that account for one stage of the self-employment experience do not necessarily account for others. More substantively, the findings of this study point to the strong effects of social structural variables, especially those related to the family, as well as to the effects of previous self-employment experience.

Who becomes self-employed? What difference does it make? There are at least three reasons why social scientists should be better able than they have been to answer these questions: (1) Self-employment is not rare; it is experienced by many. In the U.S. in 1980, almost 12 percent of all native white males in the labor force were self-employed (Borjas, 1986). Britain, known for its entrepreneurial disinclinations, has approximately 2.5 million self-employed persons (Curran and Burrows, 1986); (2) Because it often involves the operation of small firms, self-employment has a tremendous impact on organizational populations. As the dynamics of organizational populations increase in theoretical importance, the process of self-employment becomes potentially more relevant to organization theory; and (3) Self-employment is also germane to the study of entrepreneurship and social class. The current paucity of knowledge about self-employment means that researchers working in these areas often either neglect the phenomenon or rely on impressionistic evidence.

Data on the career histories of individuals are used here to address the two questions about self-employment posed above. As discussed below, individuals can enter self-employment in a variety of ways, many of which do not involve the creation of new organizations. Nonetheless, organizational factors are likely to affect the processes by which individuals move into and out of all kinds of self-employment. Consequently, it is useful to draw on a number of sociological and organizational research traditions to build an informed model of the self-employment career process. Understanding these careers yields, in turn, findings of value for future research and theory on organizations and related areas.

The data analyzed concern the economy of West Germany. Contrary to the impression of many Americans, West Germany has many small firms (Lawrence, 1980). In 1963, a year for which comparable figures are available, there were 157,000 manufacturing establishments employing less than 10 persons in West Germany, compared to 121,000 in the United States (Prais, 1975). This represented 6.2 percent of the total manufacturing employment for West Germany and 2.4 percent for the United States. The abundance of small firms yields a considerable design advantage, since the inci-

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dence of self-employment should be higher than in that of a comparable American data set.

RELATED RESEARCH AREAS

Four research areas have particular relevance to the study of self-employment: entrepreneurship, organizational behavior, social class, and careers.

Entrepreneurship. Despite a large amount of research, there is still little agreement about how even to define entrepreneurship (Curran and Burrows, 1986). According to the *International Encyclopedia of the Social Sciences,* "there is agreement that the term includes at least a part of the administrative function of making decisions for the conduct of some type of organization" (Cochran, 1968:87). Frequently, the definition is further restricted to include only decision making about innovative activities or the founding of a new organization. There is thus some correspondence between entrepreneurship and self-employment, although it is not exact.

Previous theory and research on entrepreneurship have focused on either the characteristics of the individual entrepreneur or the social and economic conditions associated with entrepreneurship. Psychologists, for example, have examined the relationship between entrepreneurial behavior and personality characteristics such as creativity (Hagen, 1962) and the need for achievement (McClelland, 1967). Sociologists have identified group characteristics such as religion and sojourning status that have been linked with entrepreneurial behavior (Bonacich, 1973). And economists have attempted to explain entrepreneurship through the interaction of economic conditions and psychological factors (Knight, 1921; Penrose, 1959). In all three disciplines, researchers have typically asked either of two basic questions: Who is an entrepreneur? and When does entrepreneurial behavior arise?

The answers to these questions have varied, depending on the discipline, but in many instances there has been a strong reliance on the assumption that entrepreneurship is associated with some stable set of individual characteristics. There is little appreciation of the possibly transitory nature of the entrepreneur's status. Hence, there has been little or no research, of the sort presented here, on the process of becoming an entrepreneur through self-employment and the sociological and organizational contexts in which it unfolds.

Empirical research on entrepreneurship shows more clearly the often implicit assumption of stable individuals. In the typical study, the sample is drawn or the cases are selected from those already engaged in entrepreneurial activities (e.g., Copeman, 1955; Pelzel, 1963; Kaplan and Huang, 1974; Jeremy, 1984; Singh, 1985). The characteristics of the sample or the case are then examined to ascertain those factors that might account for entry into entrepreneurship and for success as an entrepreneur. In one such study, for example, J. Carroll (1965) observed that the founders of Filipino manufacturing enterprises were often foreign educated, had previous experience as independent businessmen, and were disproportionately associated with certain regions and religions.

Studies such as these, which draw samples based on some value of the dependent variable, suffer from the serious methodological problem of sample-selection bias (Heckman, 1979). In previous research on entrepreneurship, two kinds of sample-selection bias are prevalent. The first is a bias against nonentrepreneurs, who are usually not included in samples and who are at best compared to entrepreneurs only with the marginal distributions of basic variables (e.g., Nafziger, 1978). The second bias is against unsuccessful entrepreneurs, who are often underrepresented by the types of sampling frames used, such as directories of established firms (e.g., Jeremy, 1984).

Another serious methodological problem prevalent in studies of entrepreneurship is the static research design (e.g., Ahmed, 1977). Data on entrepreneurs are usually collected only cross-sectionally, and thus temporal equilibrium must be assumed when they are analyzed (Tuma and Hannan, 1984). Substantively, such designs reinforce the impression that entrepreneurship is a stable characteristic of individuals because these persons are examined at only one point in time. Observation over longer periods of time might yield a different impression.

Finally, a third major methodological deficiency in previous empirical research on entrepreneurship concerns scope. In the typical study, entrepreneurs of only one type are studied, e.g., manufacturing entrepreneurs (Erickson, 1959; Mathias, 1967; Blok, 1974; Singh, 1985). While such studies may have certain other design advantages, they are incapable of addressing the broader issue of who becomes an entrepreneur, nor do they allow one to assess how the life experiences of entrepreneurs differ from nonentrepreneurs.

Organizational behavior. Since most self-employment takes place in small and family firms, the relevant organizational behavior literature concerns these types of organizations. Both types have received considerable research attention, although most of it has focused on their structure and functioning. Small and family firms, for instance, are usually characterized as having flexible, informal structures with high levels of centralization in decision making. Typically, they are owner-managed and entrepreneurial in nature (Mintzberg, 1979). Thus it makes sense to think of the top officer as self-employed.

Because small firms are often the embodiment of their owner-managers, research conducted on them commonly emphasizes the characteristics of these individuals (e.g., Miller and Dröge, 1987). Such analyses leave one with the impression that these types of individuals are more likely to become self-employed, or at least be successful if they do. Again, selection bias contaminates this kind of logic because there is at best only an implicit comparison with those individuals who do not become owner-managers (e.g., Bruchey, 1980).

Analysts of family firms sometimes avoid this problem because they frequently attend to the executive succession problem.[1] In these firms, the pool of candidates available to assume the top position is clearly defined by family membership. The research question then becomes, Who among the family members will become the boss (Boswell, 1973)? Sub-

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The selection-bias problem remains, however, when analysis focuses on the initial owner-manager or founder of a family firm.

stantively, such processes highlight two important features about how some individuals become ''self-employed.'' First, the owner-manager position is taken over within an existing firm (in this case owned by one's family) rather than created as part of a new firm. Second, the process of assuming the owner-manager position is frequently a sequential one by which holding a subordinate position in the firm is the necessary prior stage. Both features suggest strong roles of social structural variables in affecting who becomes self-employed.

Social class. Well-designed empirical research on self-employment has been conducted by analysts of social class. For them, the self-employed represent a small but theoretically interesting social class, including both the petite bourgeosie and small employers. Many theorists see the analysis of these groups as crucial to understanding the class structure of the modern industrial world (Bechhofer and Elliot, 1981; Scase and Goffee, 1982).

Class-oriented research on self-employment treats the self-employed as a separate group and usually deals with them as it does all other classes. This means that intergenerational mobility flows into and out of the self-employed group are examined as a function of origin and destination classes (Goldthorpe, 1980; Hout, 1983). More recent research on intragenerational mobility has linked characteristics of individuals and jobs with movement into and out of self-employment. Hachen (1986), for instance, found that those persons with long job durations, with jobs in the state sector, and who are nonwhite are less likely to move from conventional to self-employment. Mayer and Carroll (1987) found that entry into self-employment upon entering the labor force is positively affected by father's socioeconomic status.

The deficiencies of these analyses arise from the treatment of self-employment as any other class. Most of the variables examined in social class analysis come from theories developed by considering the other, more prevalent classes. There is thus an ad hoc quality to the analyses of self-employment (Curran and Burrows, 1986). This is, of course, unfortunate because, as even class theorists recognize, the self-employed are sufficiently different from other classes as to deserve separate substantive treatment. Even obvious issues, such as the role of parentally owned firms and the effect of prior self-employment experience, fail to figure into most class analyses of the self-employed.

Research on the returns to self-employment is more straightforward and therefore does not have the same problem. However, only income has been seriously studied as an outcome variable and, although it has now become accepted that the self-employed earn more (Wright and Perrone, 1977), it would be helpful to study other outcomes as well. Self-employment qua entrepreneurship, for instance, is often associated with risk (Knight, 1921). Does this show up in the 'job' stability of the self-employed? The answer has implications for whether one interprets the higher monetary rewards associated with self-employment as justified or not.

Careers. With almost 12 percent of the labor force so engaged, it is obvious that self-employment affects many careers. Yet labor economists, organizational behaviorists, and

sociologists alike usually fail to take self-employment into account in their analyses of careers (Borjas, 1986; see, for example, Sørensen, 1975; Hall, 1976; Spilerman, 1977). Instead, the focus falls almost exclusively on job mobility patterns within and across established firms.

Self-employment may both affect and be affected by more conventional career processes. Those who engage in self-employment build up a unique kind of human capital that may be valuable in later self-employment and in other settings as well. Conversely, those whose career mobility in organizations is limited by educational, political, demographic, and racial factors may be especially attracted to the alternative that self-employment offers (Bonacich, 1973; Freeman, 1984).

What little career-oriented research there is on the topic suggests that self-employment does indeed make a difference. Fuchs (1982), for instance, found that men of retirement age who are self-employed are more likely to continue working, thus extending the length of their careers. He also found that men with experience as managers, professionals, and salesmen are more likely to be self-employed at the end of their careers.

In another study, Borjas (1986) found some evidence for the claim that blocked career opportunities lead to self-employment. Using U.S. Census data he showed that not only are immigrants and some minorities more likely to be self-employed but that those with poor health conditions were especially likely in some cases. He also found some positive effects of education and labor-force experience.

Summary. Although at least these four bodies of social science literature address the topic of self-employment, the treatment as a whole is unsatisfying. Where there is developed theory, as in the entrepreneurship literature, there is questionable empirical evidence. Conversely, where there is well-designed empirical research, as in the literature on social class, there is less pertinent theory. In other areas, such as organizational research and research on careers, self-employment is simply given short shrift. Thus a need exists for well-designed and substantively informed research on self-employment. Such research might in turn inform all four of these literatures, although it may not fall squarely within any one of them.

THEORETICAL ISSUES

Given the fragmentation of previous research, it makes little sense to speak of theories of self-employment. There are, to be sure, specific theoretical arguments about which factors are likely to be associated with self-employment, e.g., immigration status. However, there is rarely any attempt to embed these arguments in a model of how the self-employment process operates. One of our goals here is to establish a framework for the development of such a model.

A first step in this direction is recognition of the obvious but fundamental fact that self-employment is episodic. Because it is so, theoretical arguments that rely on the stable attributes of individuals are bound to be incomplete—at best they can explain an individual's behavior at some particular point in life

or in interaction with some other situational phenomena. Consequently, those factors that lead to self-employment early in careers may be quite different from those associated with entry at later points.

A second step in establishing a framework involves identifying the various ways by which one can become formally self-employed. There are at least four common routes: (1) an individual goes into business for his- or herself by initiating a sole proprietorship to sell his or her services or other products; (2) an individual starts a new firm with at least one employee and operates it from the owner-manager position; (3) an individual assumes or inherits the owner-manager position of an existing firm he or she previously worked for or was associated with in some other way (e.g., family ownership); and (4) an individual purchases outright and begins to manage an existing firm for which he or she did not previously work. The factors that account for each mode are likely to differ and should all be considered in a general analysis of who becomes self-employed. The strength of various causal factors will depend in part on how prevalent each of the various modes is.

These two sets of simple observations suggest a modelling framework much different from that usually used to study self-employment or entrepreneurship. The importance of a dynamic perspective is clear: variables should have a chance to operate at any point in the career. The historical experience of an individual also needs to be considered—this may very well affect the operation of otherwise strong variables. Substantively, a distinction between stages of the life course seems appropriate, because the close association of these phenomena with labor-market behavior (Hogan, 1980) suggests that they are likely to interact with other variables in affecting self-employment. Finally, consideration of the ways one might become self-employed suggests that the common sequence of family employment to self-employment needs to be identified and studied explicitly as part of the process. Assuming this general framework decomposes the study of self-employment into a series of separate but interrelated research questions: Who becomes self-employed upon labor-force entry? Who takes family employment at that time? Who moves from family employment to self-employment? Who becomes self-employed after conventional employment? Who becomes family employed later in life? What consequences do any or all of these behaviors have? and Is self-employment less stable than conventional employment?

Previous arguments about self-employment and entrepreneurship fail to address questions with this degree of sophistication. For that reason, we do not propose any formal hypotheses for testing. Instead, we use the general framework just described to study the effects of three types of substantive variables that have long been thought to be important for understanding self-employment and entrepreneurship: religion, parental self-employment, and individual experience in self-employment.

Protestantism. Following Weber's (1930) classic statement of the Protestant ethic, many previous analyses of entrepreneurship, including a number of studies looking at self-em-

ployed entrepreneurs, have focused on the effects of religion and religious values (e.g., J. Carroll, 1965; Jeremy, 1984; Singh, 1985). It is generally expected from this literature that Protestants are more likely to become entrepreneurs and, once entrepreneurs, more likely to succeed. If so, such behavior should show up in higher rates of self-employment. There is no obvious reason, however, to expect an effect at any particular stage of the career. There is also some question as to whether the Protestant-ethic thesis is still valid today. Weber's later writing stressed the cult aspect of early Protestantism; a similar view has been advanced by Hagen (1962), who emphasized the entrepreneurial propensities of nonconformist religions.

Self-employed parents. Parental self-employment is easier to deal with within a life-course framework. The children of self-employed parents are likely to work in the family firm at an early age. Consequently, they should show higher rates of early (i.e., first jobs) career movement into family employment. Moreover, since they are also likely to inherit rights of ownership to the firm, these persons are more likely to move into self-employment, although probably at later points in the career. Taken together, these two expectations suggest a sequential process of movement into owner-management for those with self-employed parents: in the first early stage, they hold quasi-proprietary ''helping'' positions; in the second stage, they assume full ownership and control. Thus, the two types of positions should be interrelated—not only in the entry rates but also probably in their exit rates.

Besides providing an opportunity structure, self-employed parents also serve as role models. Children raised in such families are more likely to have an understanding of self-employment and to think of it as a realistic alternative to conventional employment (Young, 1971).

Individual experience. Of course, self-employment experience can also be gained without involvement in a family firm, and this, too, is likely to affect the propensity to become self-employed. Unlike those with only conventional employment experience, persons with prior self-employment experience are more likely to consider it a viable later career option. This may be especially true in those sectors in which self-employment does not necessarily involve large capital investments. In addition, a distinction should be made between length of experience and the sheer number of prior self-employment episodes. A single, long episode may develop fewer skills, but it is likely to indicate prior success. On the other hand, many prior episodes may give one more insight into self-employment, but such instability may indicate prior failures.

Outcomes. The effects of self-employment are slightly better understood. Empirical research usually shows a positive financial return to self-employment (Wright and Perrone, 1977). Less clear are the effects on employment stability. On the one hand, many new enterprises fail within a very short period of time (see Carroll, 1984), suggesting self-employment is unstable. This depiction coincides with the notion of the entrepreneur as a risk-taker (Knight, 1921). On the other hand, a person who assumes control of an existing firm may be taking over a stable, long-lived business that has already sur-

vived the liability of newness. In either case, experience in self-employment may factor into affairs.

Returns to family employment are more complicated. In terms of wages, those in subordinate positions usually make less than they might in conventional employment (Boswell, 1973; Bonacich, 1973). However, because they are members of the owning family it is likely that they indirectly derive financial returns. Even if not, the promise of future succession into the owner-manager position may provide sufficient motivation for them to accept lower wages. In terms of stability, family employment probably shows lower than usual amounts of job changing because of the large number of spouses holding such positions.

Control variables. As with most labor-market processes, self-employment is likely to be driven in part by human capital variables. Even if not, controlling for such variables is critical when examining the effects of variables of substantive interest. Relying on standard models of job mobility (e.g., Carroll and Mayer, 1986), we controlled for birth cohort, sex, education, prestige of job, and labor-force experience. Birth cohort and sex were included because they define the sampling stratification scheme of the data we used. Education in West Germany is peculiar in that it routinely involves an intensive component of occupational training (Max Planck Institute, 1983). Nonetheless, we did not expect a priori that either general or occupational education should be related to movement into or out of self-employment. Finally, since both prestige and labor-force experience have strong negative effects on overall labor-force mobility, we expected that they would operate similarly for movement into self-employment.

DATA

The data used here were collected by Karl Ulrich Mayer (1979, 1981a, 1981b, 1984) and are part of the West German Life History Study. The data constitute a nationally representative sample of the life experiences of citizens in the Federal Republic of Germany and West Berlin. The sample was stratified along two dimensions: sex (half men and half women) and birth cohort (one third each from the grouped years of 1929–1931, 1939–1941, and 1949–1951). The sample was drawn from approximately 14,000 household listings in 420 primary sampling units (for details, see Brückner et al., 1984).

From each of the 2,172 respondents, professional interviewers collected a complete retrospective career history. They asked respondents the exact beginning and ending dates of each job they had ever held, including ''jobs'' of self-employment. For each job and self-employment experience, respondents also identified the occupation, the industry, the size of the firm, and the beginning and ending compensation levels. Information on more general types of events such as schooling and religion was also collected.

Retrospective data do not suffer from the more serious problems of panel data, such as mortality and changing measurement conditions (Featherman, 1979). However, they are potentially subject to errors of recall and, for this reason, Mayer and his colleagues took special precautions to ensure the quality of the data. Prior to data collection at the national

level, a pilot study was conducted in Konstanz to compare systematically data collected prospectively and retrospectively from the same individuals (see Tölke, 1980; Papastefanou, 1980). The findings were used to develop interview schedules and field procedures that generated the most accurate responses. After the national data were collected, the life-history protocols were checked thoroughly. Over 4,000 man-hours were spent reviewing the internal consistency of the interview information and soliciting initially missing data. In this task, about 15 percent of the respondents were contacted again in one manner or another. The result was a fairly representative data set—Blossfeld's (1987) comparisons between the life-history data and the German micro-census show no statistically significant differences across the two samples in cohort-specific, cross-sectional distributions of educational levels, occupational training, employment status, size of locality, and region of residence.

Using data from West Germany also offers some advantages for measuring self-employment. Small firms in West Germany are officially designated "*mittelstaendische Unternehmen*." This designation requires that a firm must be legally and financially independent and that the owner must actively participate in its management (Hull, 1983). Closely related to this categorization of firms is an official employment classification scheme known as "*berufliche Stellung*." Besides being an official pension category, the *berufliche Stellung* publicly acknowledges job types in West Germany (Hartmann, 1959). This scheme categorizes self-employment separately from conventional employment and differentiates among types of self-employment, such as agricultural, professional, and familial employment. Both classification schemes make it easier for respondents to identify themselves as self-employed. They also make it less likely that unmeaningful (perhaps tax-related) reports of self-employment are given.

Because of its representativeness, and because of its selection on the basis of birth cohorts rather than employment criteria, the life-history sample has the obvious advantage of not being biased toward the self-employed. It also has the advantage of comprehensiveness, both temporally and economically. Temporal comprehensiveness allows the analysis of self-employment dynamically as part of the career life history. Within such a context, it makes little sense to think of self-employed "persons" and much greater sense to think of episodes of self-employment. Economic comprehensiveness allows the examination of the full range and distribution of self-employment. For this reason we did not restrict our attention to a single type of self-employment, although because it is such a different phenomenon, we did not examine self-employment in agriculture except occasionally as a control.

In line with the focus on career dynamics, the unit of analysis was the job spell, not the individual. We identified self-employment episodes of jobs with two different variables in Mayer's data. The first and most important variable is the respondent's self-reported *berufliche Stellung* classification. Because this classification scheme is widely used in the West German labor market, it is well known by the populace and hence, in our opinion, constitutes a reliable measure of self-employment. For this reason, we assigned priority to this

variable and defined as self-employed anyone with a response that so indicates.

The second variable used to identify entrepreneurs was a self-reported "sector" code. The question for this variable also asks about self-employment and, for family enterprises, it includes some details about the respondent's relationship with the owner. However, because of the novelty of this classification and technical problems with this question, the answers to this question are not nearly as reliable as those to the institutionalized *Stellung* question. Consequently, we assigned secondary priority to this variable and used it primarily to identify persons in positions of quasi-self-employment in family firms, e.g., the wife of the legal owner of a firm who also works in the firm. Although by a general functional definition these persons might be considered self-employed, we refer to them as employed in family enterprises. Throughout the analysis, we distinguish between persons who are self-employed and those who are family members employed in family firms, because, as we argued above, the labor dynamics of the two types of positions are likely to differ.

These classification procedures allow a wide variety of activities to be included as self-employment. For example, each of the following would be counted as self-employment, provided that no other full-time job was held simultaneously: the owner-manager of a manufacturing firm; the owner-manager of a wholesale or retail distribution network; the operator of a self-owned pub or restaurant; the manager of an independent day care center; and an attorney with his or her own firm. Each of these positions has in common an organizational independence not found in conventional employment.

Table 1 presents some basic descriptive statistics on the employment and self-employment episodes found in Mayer's data. Of the 6,732 total episodes, 279 of these—about 4.1 percent—fall within either self- or family employment. As would be expected, the highest percentage of those whose first job is an "entrepreneurial" episode are in family enterprises. The age data show a similar pattern. Also, as might be expected, fewer women are found in self-employment, but more are found in the family enterprises. Finally, in an analysis not shown here, we found that these episodes of self-employment are fairly well distributed across industries. This finding confirms the representativeness of the sample and suggests that our classification scheme is not heavily weighted toward any particular form of self-employment.

Table 1

Characteristics of Self- and Family-Employment Episodes

	Number of episodes	% as First jobs	% Held by women	Mean age at beginning of episode (in years)	Mean firm size (in number of employees)
Self-employed in manufacturing, commerce, and service	174	5.2	26.4	30.5	11.7
Employed in family enterprise in manufacturing, commerce, and service	105	41.9	58.1	23.1	8.56
All job spells in sample	6732	31.5	42.9	23.8	457

Table 2 lists the variables used in the analysis and briefly describes how each was measured. This table also gives the variable names used in reporting estimates in the tables below.

Table 2

Variables Used in the Analysis

Variable	Variable name	Description
Sex	SEX	Dummy variable, coded 1 for women and 0 for men.
Cohort	C2	Dummy variable, coded 1 for those born in 1939–1941 and 0 otherwise.
Cohort	C3	Dummy variable, coded 1 for those born in 1949–1951 and 0 otherwise.
General education	GED	Scale of highest level of general education completed, coded 0 if no degree, 1 if elementary school degree, and 2 if secondary school degree.
Occupational education	OED	Scale of highest level of occupational education completed, coded 1 if no vocational training, 2 if apprenticeship, 3 if skilled-worker training, 4 if technical school degree, and 5 if university degree.
Occupational prestige	STATUS	Scale of social prestige of occupation, based on the extensive work of Wegener (1985) using German survey data.
Labor-force experience	LFX	Measured as the number of months elapsed since entry into first job.
Self-employed parents	ENTP	Dummy variable, coded 1 if either parent was self-employed, 0 otherwise.
Religion	PROT	Dummy variable, coded 1 for Protestants and 0 for others.
Religion	OTHER	Dummy variable, coded 0 for Catholics and Protestants, 1 otherwise.
Self-employment experience	EDUR	Duration in prior self-employed positions, measured in months.
Self-employment experience	ETIMES	Number of different prior episodes of self-employment.
Self-employment experience	ENT1 PENT1	Dummy variables, coded 1 for current and prior self-employment, respectively, in manufacturing, commerce, and service.
Family-employment experience	ENT2 PENT2	Dummy variables, coded 1 for current and prior family employment, respectively, in manufacturing, commerce, and service.
Agricultural self-employment experience	ENT3 PENT3	Dummy variables, coded 1 for current and prior self-employment, respectively, in agriculture.
Agricultural family-employment experience	ENT4 PENT4	Dummy variables, coded 1 for current and prior family employment, respectively, in agriculture.

EMPIRICAL ANALYSIS

To study the process by which individuals move into and out of self-employment we used the stochastic modeling framework described in Coleman (1981) and Tuma and Hannan (1984). This means that in many of the analyses the dependent variable is the instantaneous rate of movement into and out of self-employment. (In other analyses we used ordinary-least-squares-regression techniques.) This rate is formally defined as:

$$r(t) = \lim_{dt \to 0} \frac{Pr[\text{move } t,\ t + \Delta t | \text{ available at } t]}{dt}$$

where $Pr(.)$ indicates the probability of a move into self-employment given that the person is ''at risk'' to experience such a move. We used a duration-based model of movement; intuitively, the rate can be thought of as being inversely related to the duration in a given state before a transition occurs.

Our general research strategy was to examine separately the rates of movement into self-employment and family employment. To model movements out of rather than into these positions, we simply redefined the risk set to include only those already holding such positions. Our goal in all analyses was to specify the rates of movement as functions of the substantive variables of interest.

It is well known that rates of job change show duration dependence (Sørensen and Tuma, 1981). Ordinarily, duration in the job shows an inverse relationship with the rate: the longer one stays in the job, the less likely one is to change jobs. Because our interest was in the contribution of the substantive variables to self-employment behavior—not the duration dependence of this behavior—we chose not to model duration dependence explicitly. Instead, we used a nonparametric specification of duration dependence, the so-called proportional hazards model of Cox (1972). This model specifies the rate to be:

$$r(t) = h(t) \exp (b_1X_1 + \ldots + b_nX_n) ,$$

where the X's are exogenous variables of interest, the b's are coefficients estimating the effects of these variables, and $h(t)$ is some unknown nuisance function that affects every sample member in the same way. Since one need not specify the nuisance function in any greater detail, the generality of this model is very appealing. Interpretations that might be given to this function include duration dependence, as well as many other types of time-dependent or time-independent disturbances. We estimated the model with partial-likelihood methods (Cox, 1975), which yield unbiased and high-quality estimates of the effects of exogenous variables (Efron, 1977). Moreover, with estimates from event-history data of the type used here, the model does not employ the usual assumption of temporal equilibrium (Tuma and Hannan, 1984).

We begin by analyzing the rates of movement into self-employment-related first jobs, the rates of movement into self-employment at later stages in the career, and finally, we explore how self-employment affects later labor-market experiences.

Self- and Family Employment As First Jobs

For this analysis we examined the rate of movement into first ''jobs'' only. We defined the beginning of this process as date of birth and estimated the rate of movement into self- and family-employment first ''jobs.'' If respondents take a first job in conventional employment, then they become ''censored'' at the time of entry into the job (Tuma and Hannan, 1984). Although our interest here was in estimating the effects of independent variables on the rates of entry into these jobs, we could not specify all the substantive variables discussed earlier because some are drawn from work histories (which, of course, are nonexistent for those who have not yet

Table 3

Partial Likelihood Estimates of the Rates of Movement into Self- and Family-Employment at Labor-Force Entry*

Dependent state	C2	C3	SEX	GED
Self-employed in manufacturing, commerce, and service	.554 (.792)	−.845 (1.17)	−.810 (.862)	−.552 (.460)
Employed in family enterprise, in manufacturing, commerce, and service	−3.24• (1.88)	.884• (.435)	1.68• (.404)	.114 (6.10)

• $p \leq .05$ (one-tailed test).
* Standard errors are shown in parentheses.

entered the labor force). Partial likelihood estimates of the effects of the available variables are presented in Table 3.

Only occupational education shows a statistically significant effect in the equation for entry into self-employment. This variable's effect is negative, predicting that those with higher levels of occupational education are less likely to become self-employed at labor-force entry. The global test for this equation compared to a simple constant-rate model—given by the chi-square value shown in the table—indicates no improvement of fit. Movement into full-fledged self-employment at time of entry into the labor force thus appears to be a quasi-random process (at least with respect to the variables examined here), a finding not totally surprising, given the rarity of this event.

By contrast, the equation for initial movement into family employment shows four statistically significant variables and improves considerably over a constant-rate model. Of substantive interest here are the positive effects of Protestantism and female gender. These effects are due to something other than parentally controlled family firms, because the self-employed parents variable is not significant.

Later Movement into Self- and Family Employment

This analysis examined how one becomes self-employed after entry into the labor force. Table 4 presents some important descriptive data on this process: it shows the probabilities of entry into self- and family employment by type of position currently held, conditional on being in the labor force, and conditional on having changed "jobs." The table can be used, for instance, to infer that of those persons who were not self- or family employed, and for whom a job change was observed, approximately 2.6 percent entered into positions of self-employment in manufacturing, commerce, or service. The vast majority of these persons—our estimate is 96.5 percent—entered into conventional jobs.

Several observations about entry into self-employment can be made from Table 4. First, in all instances the most likely destination for those who leave self- or family employment is conventional employment. Second, those who are self-employed move only to other forms of self-employment or to conventional employment; they do not move into subordinate positions in family enterprises. Third, those employed in family enterprises frequently move into positions of self-employment. Presumably, these moves involve assuming control over family enterprises in which these individuals were pre-

Table 3 *Continued*

OED	ENTP	PROT	OTHER	χ^2	D.F.	*N*
−.862• (.506)	.111 (.868)	.741 (.776)	−5.43 (80.5)	12.2	8	2051
3.27 (2.59)	−6.79 (7.71)	.983• (.362)	−2.18 (32.9)	170	8	2118

viously subordinate. Since family employment attracts the highest number of first job entrants, this finding confirms our preconception that much self-employment comes only in stages that occur across the life course.

Table 4

Conditional Probabilities of Entry into Self- and Family Employment by Type of Position Currently Held

	Destination			
Origin	Conventional employment and agriculture	Self-employed in manufacturing, commerce, and service	Employed in family enterprise in manufacturing, commerce, and service	Total of origin
Conventional employment	.965	.026	.009	1.00
Self-employed in manufacturing, commerce, and service	.77	.23	0	1.00
Employed in family enterprise in manufacturing, commerce, and service	.52	.26	.22	1.00

Table 5 presents partial likelihood estimates of the effects of the substantive variables on the rates of movement into self- and family employment after entry into the labor force.

In contrast to the analysis of labor-force entry, in which the self-employed-parents variable was not significant, here it shows larger positive and significant effects. Evidently those persons with self-employed parents are quicker to move into family employment and self-employment themselves at points in their careers other than their first jobs.

The religion variables again show some support for the Protestant-ethic argument. Protestants show a greater rate of movement into self-employment, as do the other non-Catholic religions. Interestingly, at this stage of the career, Protestants also show significant dispropensities toward family employment. When coupled with the findings from the labor-force-entry analysis, which showed that Protestants were more likely to move into family employment as a first job, a picture emerges of Protestants starting out early in their careers in family firms and then later moving into ownership positions. Thus it may be the entrepreneurial success of Protestants that is responsible for their lower rates of movement into family employment at this career stage.

As expected, experience in self- and family employment shows positive significant effects on the rate of movement into self-employment. The effect of prior self-employment is greater than that of prior family employment. It also appears that length of experience is not important, only the fact of it.

In general, these models perform much better than those estimated for labor-force entry into self- and family employment. This enhanced performance comes as a result of the estimated stronger effects of the three substantive variables under study.

Effects of Self- and Family Employment

Finally, we examined how the labor-force experience of those in self- and family employment differs from those engaged in conventional employment. We concerned ourselves with three different labor-force outcomes: (1) the rate of "job" change; (2) the compensation received at the beginning of the employment episode; and (3) the change in compensation throughout the employment episode.[2] We investigated the effects of both current employment status (which tells how the self-employed differ) and prior employment status (which tells about the long-term effects of self- and family employment). We used partial-likelihood techniques for the rate analyses and ordinary-least-squares procedures for the wage analyses.

Table 6 presents estimates of the differences in labor-force outcomes. The variables labelled ENT1 through ENT4 are dummies for current occupancy of each of four types of self- and family employment (because we wanted the comparison to be with conventional employment, we included dummies for self- and family employment in agriculture). The coefficients of these variables estimate the difference between a given type of self- or family employment and conventional employment; comparisons of the coefficients with each other yield estimates of the differences between the types of self- and family employment. The variables labelled PENT1 through PENT4 are dummy variables indicating prior experience in self- or family employment; these coefficients estimate the long-lasting effects of such positions. We present two equations for each type of labor-force outcome. The first estimates the effects of current self- and family employment, controlling

2
Since the compensation data are self-reported, interpretation is somewhat ambiguous, especially for the self- and family employed. Nonetheless, we treated them as though they are accurate measures of financial returns and comparable across types of employment.

Table 5

Partial Likelihood Estimates of the Rates of Movement into Self- and Family Employment after Entry into Labor Force*

Dependent state	C2	C3	SEX	GED	OED	STATUS
Self-employed in manufacturing, commerce, and service	.201 (.197)	.423• (.243)	−.123 (.193)	.139 (.180)	.197 (.120)	−.004 (.005)
Self-employed in manufacturing, commerce, and service	.158 (.197)	.401• (.242)	−.081 (.193)	.129 (.176)	.196 (.120)	−.005 (.005)
Employed in family enterprise in manufacturing, commerce, and service	.880• (.346)	.132 (.466)	.325 (.319)	−.047 (.350)	−.071 (.256)	−.016 (.012)

• $p \leq .05$ (one-tailed test).
* Standard errors are shown in parentheses.

for standard labor-force characteristics. The second equation includes also the effects of prior experience in either status.

Perhaps the most interesting effect of self- and family employment is that of stability. Although entrepreneurship, and by association self-employment, often invokes an image of risk (Knight, 1921), the estimates here show the reverse to be true: in all instances, the self- and family employed have significantly lower rates of "job" change than the conventionally employed. Moreover, the point estimates of the coefficients suggest that the ownership position is more stable than family employment. Apparently self-employment is one of the most stable positions in the labor force, despite high rates of business failure.

Prior self- and family employment show far fewer effects on rates of job change. Only for family employment in manufacturing, commerce, and service is a statistically significant difference with conventional employment found. This effect is positive, indicating that those who have previously been employed by the family firm in manufacturing, commerce, or service have less stable careers than others.

In terms of compensation, employment status also shows strong effects. For starting wages, self-employment outside agriculture involves considerably higher compensation. By contrast, family employment and self-employment in agriculture show less compensation than the average conventionally employed person. However, these estimates may be misleading, since they concern self-reported wage, not profit. They also ignore indirect benefits accruing through the accumulation of family assets.

For the change in wage equations, no significant differences are found between conventional employment and self- and family employment in the nonagricultural sector. Similarly, prior self- or family employment shows few wage effects of either kind. The only exception is that prior family employment apparently has a positive effect on later starting wages.

DISCUSSION

One of our primary goals here has been to show that using a life-course perspective on self-employment and entrepre-

Table 5 *Continued*

LFX	ENTP	PROT	OTHER	EDUR	PENT1	PENT2	χ^2	D.F.	*N*
−.0002 (.001)	1.06• (.180)	.262 (.172)	.879• (.522)	.002 (.002)	–	–	59.2	11	5310
−.001 (.001)	.969• (.187)	.286• (.173)	.922• (.522)	–	1.31• (.384)	.727• (.347)	79.5	12	5311
−.009• (.003)	1.93• (.299)	−.512• (.299)	−6.26 (32.4)	.001 (.001)	–	–	85.6	11	6015

Table 6

Estimates of the Effects of Current and Prior Self- and Family Employment on Labor-Force Outcomes*

Dependent variable	Intercept	C2	C3	SEX	GED	OED	STATUS	LFX	ENT1	ENT2
Rate of job change	–	.129• (.036)	.208• (.040)	.246• (.032)	.162• (.034)	−.055• (.024)	−.007• (.001)	−.004• (.0002)	−.727• (.124)	−.542• (.130)
Rate of job change	–	.129• (.036)	.208• (.040)	.246• (.032)	.162• (.034)	−.059• (.024)	−.007• (.001)	−.004• (.0002)	−.793• (.127)	−.622• (.133)
Log starting wage	5.73	.340• (.024)	.671• (.026)	−.520• (.020)	.094• (.020)	.117• (.015)	.005• (.001)	.003• (.0001)	.467• (.065)	−.211• (.098)
Log starting wage	5.76	.335• (.024)	.665• (.026)	−.520• (.020)	.093• (.020)	.114• (.015)	.005• (.001)	.003• (.0001)	.443• (.066)	−.257• (.099)
Change in wage	1040	51.4• (19.8)	44.1• (23.4)	−132 (17.1)	69.7• (16.1)	5.34 (11.7)	1.76• (.496)	−.353• (.106)	−55.4 (55.3)	9.57 (78.6)
Change in wage	1040	51.0• (19.9)	43.8• (23.4)	−133• (17.1)	59.9• (16.1)	4.92 (11.7)	1.76• (.496)	−.341• (.108)	−56.6 (55.6)	11.6 (80.1)

• $p \leq .05$ (one-tailed test).
* Standard errors are shown in parentheses.
† Reported measure of fit is R^1 for the regression equations and χ^2 for the rate equations.

neurship gives a much different image than the usual static, cross-sectional perspective. By now, that difference should be obvious. We have seen that the probability of a person entering into self-employment at any stage in the life cycle is heavily dependent upon prior engagement in self- or family employment. Perhaps even more important, we have seen that important individual characteristics such as religion affect some aspects of the self-employment process and not others. Such findings could be ascertained only with great difficulty—if at all—from the usual static research design, such as has been used in some other studies of the effect of religion (e.g., J. Carroll, 1965; Jeremy, 1984; Singh, 1985).

Similarly, the finding of greater "job" stability among the self- and family employed addresses a question that does not even occur to those using a static research design, yet this important implication of self- and family employment may attract many to these positions. It may also be partly responsible for the retention of diverse organizational solutions in society, an important industrial policy issue (Hannan and Freeman, 1988).

In substantive terms, these findings point to the strong role of social structures in affecting who becomes self-employed. Generally speaking, in West Germany, Protestants are more likely than Catholics to become self-employed, but the ways in which they do so depend heavily on their career stage and often involve a sequential process beginning with family employment. Likewise, having self-employed parents affects the likelihood of a person becoming self-employed or family-employed but only after one has already participated in the labor market in some other fashion.

The overall picture of self-employment that emerges from this analysis is more complex than that used by any of the four literatures reviewed earlier. While we have not had the data needed to test the arguments about individual attributes of the kind used in the entrepreneurship literature, these findings show that at a minimum these theories are incomplete explanations and need to take social structural variables

Table 6 *Continued*

ENT3	ENT4	PENT1	PENT2	PENT3	PENT4	DUR	LAMAGE	Fit†	D.F.	*N*
−1.77•	−.245•	–	–	–	–	–	–	761	11	5802
(.290)	(.087)									
−1.76•	−.250•	.084	.390•	−.655	−.022	–	–	770	15	5802
(.294)	(.088)	(.163)	(.126)	(.410)	(.089)					
−.546•	−1.75•	–	–	–	–	–	–	.413	11	4335
(.210)	(.163)									
−.370•	−1.72•	.062	.153•	.084	−.303•	–	–	.417	15	4335
(.213)	(.163)	(.078)	(.071)	(.191)	(.059)					
774•	−347•	–	–	–	–	1.43•	−165•	.110	13	3879
(158)	(132)	–	–	–	–	(.117)	(12.3)			
801•	−346•	15.9	−11.8	−179	−18.3	1.43•	−165•	.110	17	3879
(161)	(132)	(64.3)	(56.5)	(150)	(48.0)	(.117)	(12.4)			

into account. On the other side of the coin, sociological theories of class and careers tend to be incomplete explanations themselves because of their failure to consider life-course dynamics. Obviously, what is needed here is more research drawing from ideas found in all these literatures.

Progress in this area may have wide implications. Although organizational theory has traditionally focused on the structure and activities of already existing organizations, recent theoretical developments reflect an interest in broader organizational phenomena. Within each of three major new theoretical perspectives—organizational ecology (Hannan and Freeman, 1977), institutional organizational sociology (Meyer and Rowan, 1977), and transaction-cost economics (Williamson, 1975)—the processes by which organizations are founded or disestablished have become theoretical focal points. While self-employment does not always generate a new organization, it is one important mechanism by which new organizations arise. Thus, organization theory may profit indirectly from future research in this area.

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