THE DEVELOPMENT AND INTERPRETATION OF ENTREPRENEURIAL TYPOLOGIES

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EXECUTIVE SUMMARY

The impact of the entrepreneur on the development and subsequent success of a new venture has been demonstrated in many studies. Indeed one of the most important judgement calls of professionals assisting entrepreneurs is to evaluate their strengths, limitations, management practices, and likelihood of success. Research has responded to the need for such evaluation with different attempts to identify the relevant characteristics of the entrepreneur that may bear upon the management practices and subsequent success of new ventures.

One direction of this research has led to the identification of different types of entrepreneurs. Entrepreneurs within each typology share common traits but differ significantly from those of other types. Such attempts are useful in that they identify key differences within the larger population of entrepreneurs and do so in a way that yields holistic and meaningful portrayals. More importantly, classifications allow us to make better predictions, based on membership in a specific typology, about the likely behavior, responses, and success of the entrepreneur. These offer a powerful conceptual tool for the evaluation of entrepreneurs during the start-up or early stages of a venture before the track record of the individual involved can be established and observed.

Research studies over the last decade appear to converge on two types of entrepreneurs, craftsmen and opportunists. Craftsmen usually come from a blue collar background with limited education and managerial experience. They prefer technical work to administrative tasks and are generally motivated by needs for personal autonomy rather than the desire for organizational or financial success. In contrast, opportunists are characterized by broader experiences and higher levels of education. They are more likely to be motivated by financial gains and the opportunity for building a successful organization. These two types have been widely accepted and have been found to differ

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in regard to an array of characteristics and behavior. For example, the two types appear to engage in different levels of explicit planning and information gathering in preparation for the start-up of business. The ventures shared by the two types can also be contrasted along such dimensions as size, capital, the presence of partners, and relatedness to prior experience. The two types also manage differently as exhibited in the formality of administrative procedures, allocation of time to different functions, spans of control, and levels of authority. Some evidence suggests that the typology even appears to distinguish entrepreneurs in terms of attitudes toward risk, adaptiveness to change, and cognitive processing of opportunities. Most important, the classification seems to suggest that typologies differ in regard to growth potential and the likelihood that ventures will proceed to the next life cycle stage. The classification consisting of these two types of entrepreneurs represents a critical contribution to the extent that it possesses strong predictive power regarding a range of entrepreneurial behavior and performance.

This study focuses upon the conceptual frameworks used and specific methods applied in developing entrepreneurial typologies. It examines the extent to which different entrepreneurial typologies are consistent. It seeks to alert us to how the methods used in developing typologies affect the results. It suggests that typologies developed to date lack comparability and predictive power.

A close examination of previous studies disclosed major differences in the criteria used to classify entrepreneurs. Thus, craftsmen in one study might have been identified on the basis of two characteristics, whereas another study employed as many as 50 criteria. In some studies, all entrepreneurs are classified into typologies, whereas in others, many entrepreneurs are "in-betweens" and left unclassified. The same labels have often been applied to types derived through divergent methodologies, suggesting a degree of commonality that may be misleading. There is the appearance of a body of consistent and additive knowledge about craftsmen and opportunist entrepreneurs that does not rest upon a careful consideration of the methodologies employed.

Yet, how likely are we to obtain the same groupings of entrepreneurs from different classification schemes as implicitly assumed in the cross-references we have accepted?This study explicitly evaluated the impact of such differences by contrasting the groupings of entrepreneurs obtained through three different classifications. It is, we think, the first empirical examination of the extent to which traditionally defined entrepreneurial typologies are sensitive to the classification criteria used. Patterned after demonstrated practices in the literature, this study grouped entrepreneurs using: (1) goals; (2) goals and background (education and experience); and (3) goals, background, and management style. Within each classification, entrepreneurs were divided into two groups using cluster analysis. The results showed that different classification criteria did result in different groupings. In particular, classification based solely on goal orientation demonstrated the most pronounced differences from the results of the other classifications. Second, we found that none of the three pairs of groups patterned closely the craftsman/opportunist delineation as described in the literature.

The primary conclusion that different groupings result from different classification frameworks should not be surprising, at least from a methodological standpoint. Yet the problem has been totally overlooked in the analysis and interpretation of entrepreneurial types. Very likely, the same labels may have been applied to rather different entities. What then are the implications for the use of this typology as an evaluative tool? First, we note that the definitions of craftsman and opportunist have not been resolved and take on as many variations as the number of studies on the topic. Second, the findings of each study have not really been corroborated by findings in other analyses. As such, the level of generalizability and confidence attached to each must be checked. Third, the cumulative evidence in the body of literature on entrepreneurial typologies cannot be taken as additive knowledge about the wide range of characteristics associated with each type. Hence, the predictive power of the craftsman–opportunist typology cannot be taken for granted. Fourth, it remains to be demonstrated what percentage of the population of entrepreneurs can be represented by the two types. How universal are craftsman and opportunist entrepreneurs or can only some entrepreneurs be classified in this way? Do other types, though yet unidentified, exist? The above reservations lead us to conclude that while the craftsman–opportunist classification appears to serve as a useful yardstick for measuring the potential behavior and likely success of entrepreneurs, its applicability and scope may have been

exaggerated to this point. This is not to say that typologies have little value, but rather to demonstrate the need for consistency and careful consideration of the definition of types before integrated and validated portrayals of entrepreneurs can be developed. Without these, the validity of our yardstick remains questionable.

INTRODUCTION

A central theme in entrepreneurial research focuses on the motivations and background characteristics of the entrepreneur. Historically, much of this research has examined how entrepreneurs[1] are similar to or different from the general population (see review by Vesper 1980). Much of the research has also centered upon how characteristics of entrepreneurs may contribute to success and eventual development of the new venture (Cooper et al. 1987; Van de Ven et al. 1984; Low and MacMillan 1988; Kimberley 1979; Mintzberg and Waters 1982). In recent years, increasing attention has been devoted to how groups of entrepreneurs differ from each other. Thus, there is explicit recognition that there is diversity among entrepreneurs and that understanding can be advanced through grouping them according to certain common characteristics (Smith 1967; Braden 1977; Filley and Aldag 1978; Dunkelberg and Cooper 1982; Smith and Miner 1983; Lorraine and Dussault 1987; Davidsson 1988; Lafuente and Salas 1989). The development of typologies represents a middle ground between treating each entrepreneur as unique and representing diverse populations through one set of averages.

This study focuses upon the development of entrepreneurial typologies. We suggest that the evolving stream of research on entrepreneurial typologies is proceeding forward without careful consideration and integration of its underlying premises. Thus, although terms such as "craftsman entrepreneur" or "opportunistic entrepreneur" are frequently encountered, there may be more consistency in the use of terms than in the underlying constructs.

These distinctions are not merely pedantic. If we are to improve our ability to advise entrepreneurs and to appraise their prospects, then we must determine what membership in particular typologies implies. If research on entrepreneurial studies is to make progress, then it is important that we build upon solid ground.

In this paper we first review classification theory and consider reasons for the utilization of typologies in many fields. We then examine the research done to date on entrepreneurial typologies. We note that, although entrepreneurial typologies may bear the same names, they often reflect major differences in the underlying constructs. The paper then tests explicitly, using a large data base, whether these distinctions in the way typologies are developed make a difference. Implications for researchers and for advisors to entrepreneurs are then developed.

CLASSIFICATION AND THEORY DEVELOPMENT

Classification or "systematics" is the science of developing typologies or arranging phenomena into categories (McKelvey 1982; Sneath and Sokal 1973). Typologies are derived either through empirical analysis or conceptual formulation. Typologies offer a way of organizing diversity, so that researchers can see patterns in complex phenomena. By isolating major

[1]Entrepreneurs are defined here as those who assume the risks of becoming owner-managers of firms, regardless of whether they then manage those businesses in innovative ways.

differences, typologies reduce the influences of confounding factors so that relationships can be more clearly detected. Relationships may be found for particular subgroups that do not apply to larger, pooled samples (Miller 1981; Hatten et al. 1978; Pinder and Moore 1979). Well-defined sub-groups enhance the chances for replicating results across studies through increasing the likelihood that samples can be drawn from intended sub-populations.

The process of classifying and labeling members of a population also shapes conceptual thinking in the following ways. Typology derivation begins with the selection of classification dimensions. This entails an explicit assessment of the theoretical and practical significance of the chosen dimensions. Typologies are often defined along multiple dimensions, leading to a more comprehensive or holistic understanding of the subject. Such "gestalts" capture interdependencies among attributes and presumably offer richer portrayals than a series of adhoc descriptions of single variables. Appropriately labeled, typologies facilitate easy recall and identification. Thus, a group of entrepreneurs labeled as "craftsman entrepreneurs" suggests a set of characteristics. Since properly derived typologies are intended to illuminate the essential differences or major sources of variance across subjects, the resulting types thus serve as explanatory or contingency variables in subsequent modeling efforts. As such, they emerge as pivotal concepts around which data interpretation can be undertaken.

Typologies have occupied a central role in the study of strategy (Hambrick 1984; Miller and Friesen 1977; Chrisman et al. 1988), organization (McKelvey 1975; Miller 1981; Pinto and Pinder 1972; Pugh et al. 1969; Gartner et al. 1989), and environment (Hambrick 1983; Dubini 1989; Lawrence and Lorsch 1967). In a review of taxonomies, McKelvey (1982) noted the contribution of classifications to the advancement of such disciplines as Physics, Chemistry, Mineralogy, Zoology, and Botany.

Against this theoretical backdrop, let us consider some of the specific typologies that have been developed and widely utilized in the field of entrepreneurship.

ENTREPRENEURIAL TYPOLOGIES

The study of entrepreneurs would seem to be a logical area of application for classification theory. Those who start businesses could be described by many attributes, including goals, background variables, and management methods. Since entrepreneurs can vary along these dimensions, it may be possible to cluster them into particular types, each consisting of entrepreneurs who have particular combinations of attributes in common. In the tradition of mid-range theory building, entrepreneurial types have been employed to explain a wide array of factors, which include performance of the entrepreneurial venture (Filley and Aldag 1980; Lafuente and Salas 1989), managerial practices (Lorraine and Dussault 1987), structure of the firm (Filley and Aldag 1978), degree of innovation (Davidsson 1988), venture start-up process (Dunkelberg and Cooper 1982), and even the entrepreneur's perception of opportunities (Davidsson 1988). As shown above, entrepreneurial typologies seem to play a central role in the developing literature on venture start-up, management, and subsequent performance.

Research on entrepreneurial typologies is relatively recent, starting with Smith's (1967) study of 52 organizational founders. In recent years, there has been a growing amount of work using the concept, with at least seven studies since 1977 (Braden 1977; Filley and Aldag 1978; Dunkelberg and Cooper 1982; Smith and Miner 1983; Lorraine and Dussault 1987; Davidsson 1988; Lafuente and Salas 1989). As will be noted later, most of the early studies formed typologies based upon a priori conceptual formulation. Some more recent studies have been based upon multi-attribute empirical analysis.

In the work done to date, two predominant entrepreneurial types have emerged, often termed "craftsmen" and "opportunists" (Smith 1967; Smith and Miner 1983; Lorraine and Dussault 1987; Davidsson 1988). The findings suggest that craftsmen usually come from blue-collar backgrounds with narrow educational and managerial experience. They preferred technical work to administrative tasks and generally had primary motivations of "making a comfortable living" (versus "making a lot of money"). They avoided risk-taking and were less likely to seek multiple investors or partners. Businesses led by such individuals were less adaptive to change and experienced lower growth.

By contrast, opportunists were characterized by broader experiences and higher levels of education. They demonstrated a proclivity for managerial challenges and were more oriented towards the future. They seemed more willing to change and exhibited greater confidence in their ability to respond to the environment. Their organizations grew rapidly while drawing on outside sources of funds and pursuing strategies that were diverse and innovative. These entrepreneurs were more likely to be motivated by financial gains and the opportunity for building a successful organization. Though labeled differently, Braden's (1977) "caretakers" and "managers" essentially parallel the craftsmen–opportunists classifications.

A number of other studies have resulted in more than two categories. Filley and Aldag (1978) factor-analyzed the attributes of entrepreneurs and their organizations along three latent dimensions. These dimensions were labeled "craft," "promotion," and "administrative." Managers and organizations with high "craft" scores resembled the craftsman type as defined in earlier studies. Those with high "promotion" scores were formed to exploit temporary opportunities. Growing rapidly, these organizations were loosely structured and were highly oriented towards change. Characterized by higher degrees of task differentiation and layers of hierarchy, organizations demonstrating high "administrative" scores consisted of larger, complex firms led by professional managers who adopted formal planning and control systems.

Respondents in the Dunkelberg and Cooper (1982) study were divided into "craftsmen," "growth-oriented" and "independent" entrepreneurs. The first two types resembled the craftsman–opportunist categories in other studies. "Independents" were mostly driven by a need for personal autonomy. Though the latter experienced the highest growth rate among the three groups, they had the least supervisor and work experience. They also had the highest percentage with graduate school education. In a classification of Spanish entrepreneurs, Lafuente and Salas (1989) identified four types: "craftsman"—motivated by the nature of the work; "family" entrepreneurs who placed a high priority on family welfare and meeting a challenge; "managerial" entrepreneurs who sought prestige and self-development; and "risk" entrepreneurs who demonstrated a strong preference for risk-taking. The first two groups resembled "craftsman" entrepreneurs in earlier studies, whereas the last two demonstrated similar characteristics as "opportunists."

In sum, the literature on entrepreneurial typologies provides consistent support for the two dominant types, craftsmen and opportunists. Other types may exist although the profiles generated thus far do not converge on a clearly defined third category. See "Appendix I" for a summary of these studies.

Despite apparent agreement across studies, we should note that the typologies reported to date reflect the idiosyncracies of particular studies. Differences can be found in the definitions of entrepreneurs, sample characteristics, methodologies, and variables employed. One difference, which may be of fundamental importance, relates to the variables used in the classification of entrepreneurs. None of the studies on entrepreneurial typologies has

employed the same set of criteria. There are overlaps and similarities but not full agreement on this important choice. Furthermore, within the entrepreneurship literature, there has been almost no explicit examination of the implications of the choice of divergent classification variables, either for the forming of typologies or for the subsequent interpretation of differences across classifications. Thus, an increasing body of research has utilized entrepreneurial typologies without consideration of whether the methods used are substantially affecting the results.

CLASSIFICATION CRITERIA USED IN PRIOR STUDIES

Braden's (1977) classification of managers and caretakers was based on the entrepreneur's motivations for starting a company. Respondents chose one of four statements that best described their intentions. These were "to provide you with steady employment," "to let you do the kind of work you want to do," "to provide a moderate income for you and your family," and "to make you wealthy." (Braden 1977, p. 54)

Lafuente and Salas (1989) also focused solely on the motivations of entrepreneurs. In this study, entrepreneurs rated the importance of 12 objectives: opportunities to prove oneself; produce something that is perfect; build up something; pursue a challenge; have variety and adventure; allow for improvisation; help relatives; gain security; lead; work in a prestigious company; develop oneself; and have high earnings.

Goal statements similar to those of Braden (1977) were also used in the classification by Dunkelberg and Cooper (1982). In addition to these four goal variables, four additional classification variables tapped the degrees of growth and also of change in the business, the presence of formal controls, and how comfortable the entrepreneur felt with technical versus managerial problems. Lorraine and Dussault (1987), in contrast, employed only two attributes: former education and past experience.

Relative to the above, a second group of analyses incorporated a much larger set of criteria in their classifications. Smith (1967) as well as Smith and Miner (1983) incorporated breadth in education and experience, social orientation (reference group, degree of social involvement, and communication ability), management style, use of formal processes, functional strategies, and nature of competitive environment. Davidsson's (1988) test of Smith's typology examined 17 characteristics similar to those just mentioned. Types derived by Filley and Aldag (1978, 1980) were built on an even broader set of 45 to 55 characteristics. These included goals, presence of formal systems and procedures, managerial style, attitudes toward employees, and degree of anticipated change.

These studies examined above might be thought of as falling into two groups that represent fundamentally different approaches to classification (McKelvey 1982, pp. 15–17). The first group falls into the family of *special classifications,* which is based on a small number of attributes. This type of classification is useful in circumstances in which researchers are interested in the implications of specific factors. Examples would be primary motivations of the entrepreneur or amount of formal education. Thus, if entrepreneurs are classified according to primary motivation, then the research can examine how other variables, such as management style or performance, vary by these types.

The second group, known as *general classifications,* defines types on the basis of a comprehensive set of characteristics. Such classifications would be more suited to the derivation of generic types or representative profiles of the underlying population. General classifications provide the integrated or holistics portrayals we would think of in a gestalt.

These classifications incorporate interdependencies or interactions among all relevant attributes identified in the received theory of the field.

In the process of defining types, general classifications involve the assignment of non-zero weights to all potentially relevant dimensions. The contribution of each attribute to the classification is determined within the empirical analysis. On the other hand, special classifications assign non-zero weights only to a few dimensions. As such, special classifications "predetermine" the contributions of different attributes and "force" differentiation among population members to take place only along a highly restricted set of characteristics. For example, if entrepreneurs are classified according to prior education, then typologies will differ along this dimension. As such, special classifications carry a heavier burden of conceptualization and theoretical assessment of selected and omitted dimensions.

Two related outcomes should be noted. First, when a small number of criteria are used to define groups, within group variances of *these* classification dimensions tend to be low. For instance, if entrepreneurs are classified according to primary motivation, then the entrepreneurs within each group would show little variance along this dimension. In the extreme but not infrequent case, when each value of a categorical variable gives rise to a group (such as having supervisory experience or not), within-group variances of that variable would be zero. As more variables are introduced, tight within-group variances along the classification criteria are harder to achieve. Measured on a multivariate basis, similarity among members of the same group can be higher on some attributes and lower on others. Members are not likely to exhibit identical values on all dimensions. Thus, if entrepreneurs are classified according to several measures, such as primary motivation, education, and management style, they would demonstrate some variance along each of these dimensions within each group. As such, special classifications produce groups with a much higher degree of homogeneity along the classification criteria than general classifications.

Second, we note that in either type of classification, omitted variables are allowed to vary within each group and to do so in both positive and negative directions. Thus, in special classifications, these attributes not used in the classification procedure are allowed to take on diverse values within each group. General classifications, in contrast, seek homogeneity among a large set of classification variables. The tradeoff between the two types of classifications is that tight within-group variances will be achieved on a small number of variables in special classifications, whereas a lesser degree of homogeneity will be obtained with a larger set of variables in general classifications.

Without dispute, each type of classification serves a legitimate purpose. A problem arises, however, when we fail to note the distinction between groups formed using these different approaches. Extant practices associated with the formulation and interpretation of entrepreneurial typologies present such a danger. While both special and general classifications have been used, authors have not explicitly recognized these differences and the implications of utilizing these different approaches. Types obtained in different analyses were often given the common set of "opportunist–craftsman" labels. No recognition was explicitly directed at the conceptual implications of variables omitted from special classifications but incorporated in general classifications.

The magnitude of problems created by such divergent definitions is unclear. Logically, one would expect the problem to be less serious when high correlations exist among all relevant descriptors of entrepreneurs. For instance, if virtually all entrepreneurs classified as craftsmen because of their motivation also tended to have relatively low levels of education, then entrepreneurs would be grouped in about the same way, regardless of which variable was used for classification purposes. If researchers feel intuitively that certain variables tend

always to correlate together, they may conclude that the choice of classification variables does not make a material difference. However, entrepreneurship is a young field of study and correlations among all potentially relevant attributes have not been examined extensively. Moreover, we have no means of prescribing "problematically low" levels of correlations nor of predicting their consequences. Considering the evolving role occupied by typologies in the conceptual development of the field of entrepreneurship, it would be helpful to evaluate these differences in an explicit and systematic manner. This study provides such an assessment.

RESEARCH DESIGN

Research Question

In the current study, evaluation of divergent entrepreneurial classification approaches revolves around the central question: How would the use of different sets of classification variables (variables already used in the extant literature) affect the groupings of entrepreneurs? If the grouping of entrepreneurs is robust and not sensitive to the choice of classification variables, then we need not be concerned about the considerable differences in approaches used in prior research. However, if the classification procedures are not robust, then statistical differences across types would vary depending upon what variables are used for classification purposes. The following empirical analysis (which we think is the first of its kind) will examine the statistical behavior of entrepreneurial groups derived under different classifications. These tests will enable us to assess the degree of comparability between different classification attempts and the extent to which findings on the "same" entrepreneurial type can be integrated across studies.

Sample and Variable Definition

This research is based on what we believe to be the largest and most representative samples of small businesses studied to date. A survey focusing on new businesses was administered in May 1985 to members of the National Federation of Independent Businesses who reported that they had recently become owners. Of the 4,814 entrepreneurs who responded, 2,994 had become owners no earlier than 1984, that is during the preceding 17 months. These entrepreneurs, who might be considered as new business owners, had, on the average, been in business for 11 months at the time of the first questionnaire. The sample included a cross-section of industries, geographic areas, and types of businesses. The initial questionnaires solicited information on the entrepreneur's background, motivations, prior training, nature of business, start-up process, and the nature of their environment. A follow-up questionnaire was mailed to the entrepreneurs one year later, in 1986. A total of 1,190 responded, reporting subsequent developments and management practices, including one dimension that may be particularly relevant to the development of entrepreneurial typologies, i.e., how they allocated their time. All of their businesses had achieved a degree of success, in the sense that they survived to the time of the second questionnaire, when the average business was 23 months old.

From the above sample, only businesses from the retail and personal services sectors will be examined. This decision follows established precedence whereby authors either examined one sector (Lorraine and Dussault 1987) or ran separate analyses for such groups as retail and manufacturing firms. Prior analysis of the data in this sample showed clear

differences across industries in such important characteristics as start-up size and entrepreneurial background, suggesting that it would be unwise to pool across industries. Retail and personal services are similar, in that both involve selling to consumers, both involve serving local or regional markets, and both involve lower barriers to entry (in terms of capital requirements or professional training) than many of the other industry categories. Statistical tests indicated that these two sectors had similar start-up size and demonstrated similar management practices in terms of time allocated to managing employees, record keeping, maintenance, cash management, and planning for future growth. The pooling of personal services and retail firms was also undertaken in an earlier study by Vozikis and Glueck (1980). The focus is thus upon retail and personal services firms, which made up about 65% of the initial sample. After case-wise deletion of missing values across 2 years of responses, the sample consisted of 510 entrepreneurs, all of whom had responded to both the first- and second-year questionnaires.

In selecting the variables for this analysis, we note that the primary purpose of this research is not to develop new variables by which entrepreneurs might be classified. Rather, it is to determine whether the choice of classification variables makes a difference. Therefore, to the extent possible, we adhered closely to the precedents set by the prior literature in the choice of variables and the questions employed in operationalizing these concepts. The literature review and "Appendix I" showed that criteria used to date in classifying entrepreneurs can be grouped into three categories: (1) goals; (2) background in terms of education and managerial experience; and (3) management style. These will be incorporated in this study. The specific variables, their corresponding measures, and prior literature sources are described below and summarized in Table 1.

Goals at the time of starting the business were based upon the relative rankings of the following four motivations: (1) to let you do the kind of work you wanted to do; (2) to avoid having to work for others; (3) to make more money than you would have otherwise; and (4) to build a successful organization.[2] Education and experience reflected the highest level of formal education and the highest level of supervisory responsibility attained by the entrepreneur.[3] Management style was based in part upon the extent of agreement of the following statements: (1) "In my business, operating controls and methods are in writing," and (2) "I am most comfortable in selling or handling technical problems rather than working on management issues."[4] In addition, management style was based upon responses to the question of how the entrepreneur allocated his or her time.[5]

As we consider the effect of moving from special classifications to more general ones, three classifications (A, B, C) will be performed employing a hierarchical structure of classification dimensions as shown in the following:

	Classification dimensions
Classification A:	Goals
Classification B:	Goals, background (education/experience)
Classification C:	Goals, background (education/experience), management style

[2]These questions are based primarily upon the work of Braden (1977) and Dunkelberg and Cooper (1982).

[3]These questions parallel the work by Smith (1967), Smith and Miner (1983), and Lorraine and Dussault (1987).

[4]These questions are based on those utilized by Filley and Aldag (1978).

[5]Management time was not used as a classification variable in any of the referenced studies. However, it seems to relate closely to some of the variables used by Smith (1967) and Filley and Aldag (1978).

TABLE 1 Variables Definition

Goals[1]

When you went into your business, what were your most important goals? (Indicate with a "1" the most important goal, a "2" the next most important goal, a "3" the third most important goal, and a "4" the fourth most important.)

Do work:	To let you do the kind of work you wanted to do
Avoid:	To avoid having to work for others
Makemon:	To make more money than you would have otherwise
Sucorg:	To build a successful organization

Education[2]

Level of formal education

E1 = 1 if high school or less, otherwise 0

E2 = 2 if enrolled in graduate education, otherwise 0

Experience[3]

S = 1 if supervisory experience, otherwise 0

Own = 1 if managed or owned a prior business, otherwise 0

For each statement, write the number that indicates the extent to which you agree or disagree with each statement:

(1) Agree strongly (2) Agree somewhat (3) Neither agree or disagree (4) Disagree somewhat (5) Disagree strongly

Management Style

Opcontrol:[4] In my business, operating controls and methods are in writing

Techprob: I am most comfortable in selling or handling technical problems rather than working on management issues

Approximately how much of your time is allocated to the following activities: (Please put the approximate percentage of your time spent in these areas over the course of the last 12 months.)

TA1[5]—% Dealing with employees

TA2 —% Record-keeping (financial, government forms, etc.)

TA3 —% Direct selling or customer contact

TA4 —% Actual production or provision of services

TA5 —% Maintenance, upkeep, cleaning of physical plant

TA6 —% Purchasing or dealing with suppliers

TA7 —% Cash management and arranging financing

TA8 —% Planning firm growth/change

TA9 —% Other

[1]Based in modified form upon questions used by Braden (1977) Dunkelberg and Cooper (1982), Filley and Aldag (1978, 1980).

[2]Based on education variables employed by Smith (1967), Smith and Miner (1983), and Davidsson (1988).

[3]Variables measuring prior experience are based on those used by Smith (1967), Smith and Miner (1983), and Davidsson (1987).

[4]Questions upon operating controls and technical problems were based upon the work of Filley and Aldag (1978, 1980) and Dunkelberg and Cooper (1982). Variables pertaining to emphases given to different functional areas were based on survey used by Lorraine and Dussault (1987).

[5]Time allocation priorities were examined in studies by Farmer (1978) and Van de Ven et al. (1984).

These three schemes progress from a narrow set (special classification) to a broad scheme with all three classes of characteristics included (general classification). This structure parallels what we observe in the literature, which yields types defined only on the basis of the entrepreneur's start-up intentions in some studies (Braden 1977; Lafuente and Salas 1988) to types that are formed from diverse characteristics in others (Smith and Miner 1983; Filley and Aldag 1978). Excluded in this analysis are measures of the entrepreneur's social ori-

entation, communication ability, or propensity toward risk-taking. Though these have been used in some prior studies, they were not as frequently employed and have not represented critical points of departure in the definition of typologies. As such, we will examine the impact upon classifications of the three major groups of variables to maintain some degree of focus and keep the task of interpretation at a manageable level of complexity.

Methodology

In the development of each of the classifications, cluster analyses were performed to derive types. Three sets of dimensions as depicted previously in Classifications A, B, and C were used. The analysis employed the Ward method, a common hierarchical clustering algorithm. (Anderberg 1973; Lorr 1983) The Ward method merges two clusters, which results in the smallest increase in the overall sum of squared within-cluster distances. The sum comprises all distances from each case in the cluster to the centroid of the cluster. The implied distance measure employed by this method is the squared Euclidean distance. Variables were first standardized to eliminate the differences in scales of measurement.

Determination of the appropriate number of groups or types is a key but arbitrary decision in cluster analysis. Guidance is provided by the increase in within-cluster distances as groups are merged. Relatively large increases signify the merging of less similar clusters. Despite such indications, the decision is largely subjective in nature (Arnold 1979; Harrigan 1985). No parametric statistics are available to indicate the degree of "significant" increase. Moreover, all increases tend to be quite large when a small number of clusters remains in the final stages of the analyses. This decision must then be made with strong prior theoretical assessment. In this analysis, we select the two-cluster solution as the basis of comparison across the three classification schemes. This choice explicitly builds on the extant literature, which has converged on two major types of entrepreneurs: craftsmen and opportunists. If the population can indeed be classified into these two generic types, then a two-cluster solution should generate groups that mirror the characteristics of each of these types.

Two-cluster solutions were obtained for the three separate classifications, moving from the most "specific" classification scheme (A—based upon goals only) to the most "general" basis of classification (C—based upon multiple criteria). For each pair of clusters obtained under each classification (A, B, and C), cluster means were computed for all variables; *t*-tests were used to compare the variable means between each pair of clusters under each of three classifications (Table 2). Group memberships resulting from the three different classifications are also cross-tabulated in Table 3.

RESULTS

Refer to Table 2 for results on the three classifications.

Classification A: Classification Based on Goals

Under Classification A, the two groups (designated here as Groups 1 and 2) differed in a statistically significant manner along the goal variables, which was the only set of criteria used. All four goal variables were significant at the $\alpha = 0.01$ level. This is not surprising since these variables were used as the basis for classification. The two groups did not differ along any of the education/experience variables. Of the 11 management-type descriptors, only three were significant. Based on the goal characterisitics, Group 1 can be thought of

TABLE 2 The Impact of Classification Criteria on Cluster Characteristics

	(A) Classification by goals		(B) Classification by goals, education/experience		(C) Classification by goals, education/experience, management style	
Variables	"Independents" (Group 1, n = 226)	"Organization builder" (Group 2, n = 284)	"Craftsman" (Group 3, n = 419)	"Administrative" (Group 4, n = 91)	"Craftsman" (Group 5, n = 467)	"Administrative" (Group 6, n = 43)
Goals						
DOWORK	2.77	2.22^{+++}	2.50	2.31	2.47	2.40
AVOID	1.58	3.60^{+++}	2.71	2.68	2.71	2.63
MAKEMON	2.88	2.40^{+++}	2.57	2.83^{++}	2.60	2.74
SUCORG	2.86	1.94^{+++}	2.34	2.31	2.34	2.35
Background						
E1	0.42	0.39	0.46	0.14^{+++}	0.44	0.000^{+++}
E2	0.10	0.08	0.000	0.48^{+++}	0.004	0.98^{+++}
S	0.12	0.11	0.000	0.64^{+++}	0.100	0.28^{++}
OWN	0.23	0.28	0.29	0.09^{+++}	0.27	0.16^{+}
Management Style						
OPCONTRL	2.93	2.73^{++}	2.82	2.80	2.81	2.88
TECHPROB	2.84	2.85	2.75	3.24^{+++}	2.81	3.17^{++}
TA1	9.45	10.80	9.87	11.70	9.88	13.67^{+}
TA2	11.74	12.90	12.23	13.11	12.33	12.99
TA3	30.99	29.85	30.79	28.36	30.39	29.98
TA4	19.46	14.30^{+++}	17.05	14.45	16.92	12.96
TA5	6.83	6.80	6.72	7.23	6.82	6.76
TA6	9.23	10.24	9.93	9.14	9.85	9.21
TA7	5.75	7.88^{+++}	6.94	6.89	6.89	7.37
TA8	5.87	6.70	5.98	7.92^{+}	6.32	6.44
TA9	0.69	0.54	0.48	1.20	0.61	0.63

$^{+}$Significant at α = 0.10.
$^{++}$Significant at α = 0.05.
$^{+++}$Significant at α = 0.01.

TABLE 3 Cross-Tabulation of Group Memberships by Classification

		Classification B		Classification C	
		3 (n = 419)	4 (n = 91)	5 (n = 467)	6 (n = 43)
Classification A	1 (n = 226)	183 (81%)[a]	43 (19%)[a]	203 (90%)	23 (10%)
	2 (n = 284)	236 (83%)	48 (17%)	264 (93%)	20 (7%)
Classification B	3 (n = 419)			419 (100%)	0 (0%)
	4 (n = 91)			48 (53%)	43 (47%)

[a]Of the 226 entrepreneurs originally in Group 1, 81% were then classified into group 3, and 19% in Group 4.

as "independents" who placed a high priority on not having to work for others. In contrast, the second group was motivated by the chance to build a successful organization. These "organization builders" were more likely to adopt formal controls and documentation (opcontrl), to spend less time on direct provision of services (TA4), and to devote more time to cash and financial management (TA7).

Classification B: Classification Based on Goals and Background

When background variables depicting education and management experience were added in this classification, the entrepreneurs were reclassified into two new groups (designated here as Groups 3 and 4). Statistical differences between types did not resemble results obtained under Classification A. All four background indicators now yielded significant differences between the two types. Only one goal variable was significant (makemon). In addition, two management variables were also statistically different between the two groups.

The two groups in Classification B can best be distinguished by education level and prior management experience. None of the Group 3 members reported any form of graduate education or prior supervisory experience. Group 4 members, on the other hand, tended to have reached a higher level of achievement on both counts. Group 3 members, however, were more likely to have owned a prior business. They expressed a stronger preference for technical problem-solving over administrative work (techprob) and spent less time on planning for growth (TA8). The label "craftsman" is given to Group 3 as we consider the education and style characteristics of these entrepreneurs. Note however that Group 3 members did not show particularly high preferences for craftsman-related goals such as autonomy or doing the type of work they like to do. (This point will be discussed later.) Group 4 members resembled the "administrative" type derived by Filley and Aldag (1978). Thus Group 4 is labeled "administrative."

Classification C: Classification Based on Goals, Background, and Management Style

Classification C, involving multiple criteria, resulted in Groups 5 and 6. Group differences changed only moderately as we moved from Classification B to C. All the background variables remained significant. Directions on these differences were also consistent with the prior classification. The two groups still differed in the likelihood of having had graduate training, management experience, and prior ownership of another business. The group with lower education and management background was again characterized by a stronger incli-

nation towards technical problems (techprob). They also spent less time dealing with employees (TA1). Time spent on planning (TA8) was no longer significant. Groups 5 and 6 were given the same respective labels as Groups 3 and 4.

Cross-Tabulation of Group Memberships

In developing typologies, an important question is the extent to which individuals exhibit stable membership across different classifications. We thus examine the membership of individual entrepreneurs within each typology and note how that changes as we move from special to general classifications. If the overlap between classifications is strong, then we should observe a one-on-one mapping, i.e., entrepreneurs who cluster together under classification A would also cluster together under classification B. To illustrate, the majority of Group 1 entrepreneurs (from Classification A) should map onto either Group 3 or Group 4 (from Classification B) but they should not be divided across both. Group 2 should then map onto the remaining group. Similar comparisons would be made between Classifications A and C, and B and C.

Table 3 shows that Classification A failed to show the type of one-on-one mapping described earlier with Classifications B and C. Group 3 from Classification B became the "home" of Groups 1 and 2 (81% and 83%). Similarly, Group 5 from Classification C contained 90% and 93% of Groups 1 and 2 members. (Note that Groups 3 and 5 are both very large, reflecting the fact that most of the entrepreneurs had no graduate education.) Entrepreneurs originally classified into Groups 1 or 2 of Classification A thus showed little tendency to cluster together in the groups formed under Classifications B or C. Classifications B and C showed a high degree of overlap, with 100% of Group 3 members appearing in Group 5. However, Group 4 was almost equally divided between Group 5 (53%) and Group 6 (47%).

DISCUSSION

The analysis showed that different classification criteria produced different groupings of entrepreneurs. Although this may not be surprising from a methodological standpoint, it does raise a number of basic questions about the universality and validity of entrepreneurial types as they have been formulated in the extant literature. The concerns do not pertain to each previous study taken singularly. Rather, they challenge the strong degree of perceived agreement across entrepreneurial classifications. This, in turn, has implications for interpretation of prior research.

First, the results in Table 2 demonstrate that group differences obtained in special classifications did not retain their statistical significance when the number of criteria was expanded. Hence, the derivation of entrepreneurial types does not appear to be robust with respect to the choice of typing criteria. The differences were particularly pronounced when the goal variables were supplemented by background indicators. The addition of management style variables to background indicators did not result in as large a difference. The results in Table 3 show that individual entrepreneurs often shift group membership as classification variables are added.

Note that differences observed in the current analysis would likely be amplified across studies. Our research design retained the same sample, survey instrument, variable definitions, and methodology across classifications. The only variation was in the choice of clustering criteria. The latter were introduced in a hierarchical manner where A was a subset

of B, and B a subset of C. Across other studies, differences would exist in sample selection, survey design, data collection, variable operationalization, and methodology. Typing criteria would not be monotonically nested as in the three classifications in this study. These factors strongly raise doubt as to the likelihood of obtaining similar types across studies. Very likely, similar labels may have been attached to divergent entities.

The analysis also yielded an unexpected outcome that pertains to the craftsman–opportunist distinction. Across the three classifications, we did not obtain the clear-cut tradeoffs in goals, which characterize opportunists and craftsmen. As described in the literature, opportunists are motivated by financial success and the chance to build a successful enterprise. Craftsmen, in direct contrast, pursue independence and the chance to work in a problem area of personal interest. If this characterization is correct, we should see one group placing high rankings on success, both financial and organizational, and low rankings on autonomy and doing what they want to do. The reverse would be true for the other group.

This tradeoff should be most observable in Classification A, where goals were the only classification variables. Yet, even in this context, we failed to obtain such a differentiation. (Note that individual respondents were asked to rank the relative importance of the goals, so that they could not place equal importance on more than one goal.) Even so, the average rankings in Group 1 were about the same for three of the four goals: "doing the type of work you wanted," "making more money," and "building a successful organization." In Group 2, the most emphasized goals were those for "doing the type of work you wanted" and "building a successful organization." Neither group showed the clear-cut trade-offs in goals that one might have expected. This pattern was repeated under Classification B and C. Hence, it appeared that financial and personal motivations were *simultaneous* rather than *mutually exclusive* driving forces.

The question raised here is not one of the existence of craftsmen and opportunists types as depicted in the received theory of the field. Rather, we query how representative these may be in describing the population of entrepreneurs. Do these types capture the majority or only a small fraction of entrepreneurs? Are these the only two clusters or two among many clusters? Do these represent perhaps the extremes or the most archtypical groups of entrepreneurs?

Prior studies provide some clues to these questions. A number of authors selected solutions that led to more than two clusters: Filley and Aldag (1978), Dunkelberg and Cooper (1982), and Lafuente and Salas (1989). While only the last of these employed cluster analysis, all three studies demonstrated the same point—that two groups might not be sufficient for describing their samples. Even though Davidsson (1988) supported Smith's two types of entrepreneurs, the author specifically pointed out that a three-group solution would be better. Certain studies assigned points or factor scores to entrepreneurs and classified into groups those that were at the high or low ends of the distributions (Smith 1967; Filley and Aldag 1978). Those in the middle were not labeled or included in further analysis. In these cases, only a portion of the businesses were classified into the two groups. This study showed that, when a two-cluster solution was used to group all entrepreneurs, the resulting profiles of the two groups did not match well with the two generic types (craftsmen and opportunist) described in the literature.

It is clear that there is a great deal of diversity among entrepreneurs. Goals, background variables, and management styles do not cluster as tightly or as consistently as we might have expected. This means that typologies are sensitive to the classification criteria chosen and that the often-used craftsman–opportunist typology may only have limited applicability. There are a number of implications for researchers:

1. Unless care has been used in the choice of classification variables, it may be that hypotheses are being generated from one set of typologies and then tested with data from other typologies that differ in important ways. (Even though the same titles may be used, the typologies may differ because of the classification variables chosen.)
2. Our ability to replicate other researchers' findings may be hampered. This in turn hinders the accumulation and cross-validation of a critical mass of knowledge.
3. Findings may be generalized in inappropriate ways. For example goal differences found in special classifications and in smaller samples have been extended to the population at large and presumed to represent critical universal tradeoffs.
4. As these generalizations become widely accepted, they shape the conceptual frameworks that guide the process of hypothesis development and data collection. To the extent that we do not anticipate any additional categories, survey instruments would not systematically allow for the identification of other types, and model specifications would not unveil the true effects of types.

Noting these concerns, our recommendations to researchers suggest the following:

1. Research focused on the derivation of typologies must offer a strong theoretical framework for the choice of selected as well as omitted entrepreneurial characteristics. If classification of entrepreneurs had been found to be robust, then choices of criteria would not have a pronounced effect on the relationships being examined. A broader range would have been available for experimentation and idiosyncratic preferences. However, it is clear that typologies are very sensitive to the classification criteria chosen. Given the inconsistencies underlying the derivation of types and the absence of strong theoretical priors, we may first have to examine the impact of specific entrepreneurial characteristics on performance, the degrees of variation within the population of entrepreneurs, and the conceptual implications for classification. This procedure lays the foundation for the construction of typologies that may be similar to or different from those developed to this point. In addition to explicit selection of criteria, the number of groups selected as a solution and the observations dropped from classifications should be clearly reported and appraised.
2. With respect to the choice of group structure, researchers would naturally seek to apply constructs used in the past. However, we should recognize the limitations of the widely accepted and seemingly safe two-group solution. Stronger consideration should be given to alternative structures or additional categories even though these have not been clearly identified or consistently supported in the past. Researchers must highlight the decision rules they employ, the percentage of their samples *not* classified, and the nature of these "middle of the road" entrepreneurs.
3. For those who employ the entrepreneurial type as a predictor of strategy and performance in young firms, one must pay close attention to the differences across prior studies and how these may bear on the development of hypotheses. The positive correlations among type, strategy, and performance reported in the past do not necessarily reveal the same relationships. Thus, statements about typology–performance linkages may reflect the relationships between goals and performance, background and performance, or management style and performance.

What are the implications for practice? Entrepreneurial typologies have seemed to be a useful way of thinking about entrepreneurs. Thus, entrepreneurs who engage in self-assessment and those who provide resources and advice to other entrepreneurs need to have ways of anticipating problems and predicting performance. It would be convenient to think

of entrepreneurs being classified into two primary types with a predictable set of experiences, problems, strengths, and probabilities of success. An increasing body of literature has certainly encouraged the adoption of such generic profiles. The potential of the existing craftsman–opportunist framework appeared very strong in that it seemed to shed light on a wide range of behavior. However, the work presented here suggests that the world may be more complicated. While the craftsman–opportunist classification appears to serve as a useful dimension, its applicability and predictive capability may have been exaggerated to this point. Thus, in the future, we may be able to develop useful typologies that enable us to see patterns, to anticipate problems, and to predict performance. However, at our present stage of understanding it is better to recognize that there is great diversity, and that only some entrepreneurs fit the idealized "craftsman" and "opportunist" classifications.

LIMITATIONS

This study is limited in execution and focus. While the sample is one of the largest to date, it includes only owner-managers of new firms. In terms of methodology, this study employed only the Ward method of clustering. While Ward is a frequently used method, it would be helpful to examine the impact of classification criteria across other hierarchical and non-hierarchical clustering algorithms. Similarly, the distance measure could be expanded from the squared Euclidean distance to other indicators. The clustering solution chosen was the two-group structure and did not examine the impact of divergent classification criteria in cluster solutions with more than two groups.

In terms of focus, this study examined only one dimension of the classification problem. Other factors also contribute to the validity of typologies. One issue is the temporal stability of types. Do group members retain the same characteristics over time? If they do change, do group members evolve in the same direction? To what degree is that direction predictable from current group membership?

While this study focuses on the influence of divergent classification criteria, it did not provide an appraisal of the appropriateness and relative importance of different criteria. Should goals, background characteristics, and management practices be used in the first place? Another key question pertains to the degree of homogeneity within type. For typologies to be useful, members within one group must demonstrate greater homogeneity with each other than with members in other groups. Yet within each group, members are not completely identical. To what degree can members vary and still be classified as one group? Hence, even though we demonstrated the outcomes of different classification criteria, we have only addressed one part of a much bigger challenge.

SUMMARY

We note that entrepreneurship is a young field of study. As such, the common language that gives rise to pattern recognition, theory building, and hypothesis testing is still developing. Typology constitutes part of this language. In this respect, this study suggests that extreme caution must be exercised as we interpret previous findings on entrepreneurial types. Though significant agreement appears to link different studies, divergencies may be hiding underneath similar labels. Moreover, direct comparisons are often not possible given the different methodologies and instruments employed across studies. Craftsmen–opportunist classifications may be highly convenient ways of anchoring our classifications and descriptions of entrepreneurs, yet the polarity inherent in such a distinction was not supported on

a large sample. This analysis does not call into question prior studies on an individual basis. Rather, it challenges the conclusion that, in aggregate, we have succeeded in classifying the population of entrepreneurs into two robust categories with, by and large, consistent differences across categories. Given the central role of classification in the theoretical development of entrepreneurial behavior and performance, it is important that close examination be given to this critical subject.

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APPENDIX

Summary of Entrepreneurial Typologies

Study	1. Smith 1967	2. Braden 1977	3. Filley and Aldag 1978
Sample	52 initiators of firms	69 technical entrepreneurs in Michigan	211 chief executives of manufacturing firms and 61 chief executives of retailing firms
Unit of Analysis	Individuals	Individuals	Organizations
Dimensions	52 items: • Background • Education • Work experience • Reasons for quitting previous job • Social/business behavior	4 items: • Goals	40 items: • Goals & attitudes of managers • Business strategy • Management systems • Management style • Board of Directors
Conclusions	2 types: 1. Craftsmen—less education/work experience • Blue collar • Less adaptive to change • Lower growth 2. Opportunists: • Managerial orientation • Broader experience	2 types: 1. Caretakers: • Single source of financing • Focus on R & D/custom products 2. Managers: • Standard & customized products • Use of outside funds	3 types of organizations: 1. Craft: less complex, less adaptive, slower growth • Managers are technically oriented and less likely to take risk 2. Promotion: highly adaptive to change; high profit and growth rates 3. Administrative: complex, hierarchical, formal management systems

Study	4. Dunkelberg and Cooper 1982	5. Smith and Miner 1983	6. Lorraine and Dussault 1987
Sample	1,805 small business owners	38 owners/founders in Oregon firms ≥5 years of age	Creators-owners-managers in Quebec manufacturing firms <1 year old
Unit of Analysis	Individual	Individual	Individual
Dimensions	9 items • Goals • Attitudes • Management style • Nature of business	14 items • Background • Social involvment • Communication ability • Management styles • Strategies • Planning systems • Sources of capital	2 categories • Education • Experience
Conclusions	3 types: 1. Craftsmen—less well-educated, lower growth 2. Independent—highest % with graduate school training • Lowest work experience • Highest growth 3. Growth—owned previous firms, more varied background, and supervision experience	2 types: 1. Opportunists associated with more adaptive, higher growth firms 2. Opposite was true for firms associated with craftsman entreprenuers	2 types: 1. Craftsmen—less education and managment experience; less explicit goals; small businesses, fewer investors, production-oriented 2. Opportunists—more balanced attention to different tasks, formal plans

(*continued*)

APPENDIX *continued*

Study	7. Davidsson 1988	8. Lafuente and Salas 1989
Sample	306 Swedish small firm managers	360 Spanish owners of private firms, mostly over 5 years old
Unit of Analysis	Individual/firm	Individual
Dimensions	17 dimensions describing education, management experience, prior ownership, internal locus of control, self-confidence, importance of control, recruiting difficulty, sales mix, growth, aspirations	12 dimensions: goals
Conclusions	Generally supported Smith's 2 types of craftsman/rigid firms and opportunist/adaptive firms. However, a 3-group cluster solution would provide stronger contrasts between the two hypothesized types	4 types: 1. Craftsman: an opportunity to prove oneself or build something perfect 2. Managerial: work in a prestigious company; opportunity to develop oneself 3. Security/family: build family welfare 4. Risk—challenge, work diversity as key motivation. No clear patterns emerged between entrepreneurial types and personal characteristics, management, and performance