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GENERATING ENTREPRENEURIAL AND ADMINISTRATIVE HIERARCHIES OF UNIVERSAL HUMAN VALUES AS A BASIS FOR IDENTIFYING ENTREPRENEURIAL AND ADMINISTRATIVE POTENTIAL ACROSS CONTEXTS

by

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This dissertation is dedicated to behavioral researchers everywhere who believe in their calling and recognize the value of their contributions to the ongoing improvement of our ability to provide for the needs of our fellow human beings with ever-greater efficiency and effectiveness. It is dedicated to my wife, Barbara Janet Allison, who is a fellow believer, intuitive genius, prophet, and teacher without peer. She understands intimately the profound responsibility that we all share in our vocation to uphold our ethical obligations to others, to check our own power over the lives of others so no one suffers needlessly from our lapses in judgment, and in all things to seek equitable outcomes and honorable solutions, despite the injustices to which we ourselves are subjected. This dissertation is furthermore dedicated to my sons, Jamîl ʿAbdulkhâliq Voss, Mukhtâr Jamâluddîn Voss, and Noah Byron Allison, who remind me every day of the deeper, more enduring relevance of my work, and my mother, who has waited far too long for this. Ea animi elatio quae cernitur in periculis et laboribus, si iustitia vacat pugnatque non pro salute communi, sed pro suis commodis, in vitio est. It is dedicated to my mentor and best man Anson Seers, who set me on this path, then vanished. Sache que les intrépides sont enfin arrivés, malgré les sabots qui se jetèrent dans les rouages. It is dedicated to my committee. Clyde J. Scott patiently stood by me all the way in between medical emergencies. K. Mark Weaver's ingenious intuition originated this entire project. Diane E. Johnson agreed reluctantly to serve and then actually read and marked up all of my drafts. It was quite a shock. Wayne Hochwarter and James D. Leeper came aboard late in the game, making the invaluable sacrifice to take up where others had left off and ensure the integrity of the final details. Lastly, it is dedicated to the Reverend Dr. Harold B. Jones, Jr., whose few words along the way guided the ship to port in sometimes treacherous waters.

بِسْمِ ٱللَّهِ ٱلرَّحْمَٰنِ ٱلرَّحِيمِ

ABSTRACT

Universal human values are conceptual representations of complex patterns of choice behavior (Schwartz, 1996). More central than attitudes or beliefs (Rokeach, 1968), they transcend specific situations (Schwartz, 1993) and govern the selection and means of arriving at goals (Locke, 1991). Thus, within the role set, they influence behavior (Kahn, Wolfe, Quinn, Snoek, & Rosenthal, 1964) and perceptions of role expectations (Ravlin & Meglino, 1987).

Entrepreneurship is a complex pattern of behavior characteristic of managers who are innovative and inclined to take calculated risks in creating production (Schumpeter, 1936). Administratorship is a complex pattern of behavior characteristic of efficiency-minded process-smiths. Entrepreneurs typically find themselves in smaller firms of their own creation (Schein, 1985). Administrators are more often drawn to larger firms with a greater need for efficiency. Large firms are acutely interested in recruiting entrepreneurs and learning how to accommodate them (Brazeal & Weaver, 1996).

Fagenson (1993) demonstrated the ability of universal human values to distinguish clearly between entrepreneurs and administrators. Gray and Eylon (1996) showed the same distinctions in a comparison between successful and unsuccessful entrepreneurs. These studies used the Rokeach Value Survey (Rokeach, 1973). However, the theory of universal human values has progressed considerably since Rokeach, and a more powerful instrument is now available (Schwartz, 1996, 1999).

This study uses the Schwartz Value Survey to generate hierarchies of human values capturing the contrast between entrepreneurs and administrators, using business ownership

and foundership as alternative operationalizations of entrepreneurship, and managerial status alone as the operationalization of administratorship. Universal human values are compared in predictive power to risk propensity, innovativeness, and proactivity, the most valid scale measures of entrepreneurial behavior. Departing from previous studies, the present analysis is made more rigorous and generalizable by drawing subjects from the same population.

Universal human values are shown to be superior predictors of entrepreneurship, especially when entrepreneurship is operationalized as business foundership rather than business ownership. An algorithm is generated as a proxy for entrepreneurship in other contexts. Implications for career counselors, large organizations, and research into other behavioral patterns related to entrepreneurship are discussed.

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INTRODUCTION

This chapter addresses the need for the present research, introduces the theory of universal human values, and discusses entrepreneurial values and their relationship to entrepreneurial behavior. For purposes of this dissertation, an entrepreneur is one who "carries out new [economic] combinations" (Schumpeter, 1936, p. 78). An administrator, by contrast, is a manager dedicated to running, rather than starting, a business or business function. Both types of individuals are vital to economic competitiveness but in different, complementary ways. Identifying entrepreneurs as distinct from administrators is now a core strategic issue in managing large organizations (Cooper & Dunkelberg, 1986). Rokeach (1973) published early evidence that such differences in managerial style are reflected in personal hierarchies of universal human values. Fagenson (1993) empirically confirmed this fact. Meanwhile, Schwartz and Bilsky (1987, 1990) realized a significant advance in the theory of universal human values, improving our ability to quantify the entrepreneurship-administratorship distinction.

The goal of this dissertation is thus to fill a critical gap in the search for an unobtrusive means of identifying those people most critical to organizational innovation, *viz.*, entrepreneurs. Toward this end, this project seeks to define the distinct values hierarchies of entrepreneurs and administrators using the Schwartz Value Survey (Schwartz, 1999). The results stand to provide an efficient way to track the emergence and circumstances of entrepreneurially oriented individuals in large organizations. They also stand to provide a means by which to detect entrepreneurs early in their careers so as to accommodate their professional needs before workplace constraints perceived to be too

cumbersome begin to induce them to consider alternative employment. Lastly, they stand to improve the ability of researchers to assess entrepreneurial potential across cultural contexts. The following section examines each of these outcomes in sequence.

The Need for an Accurate Assessment of Entrepreneurial and Administrative Values

Tracking the emergence and circumstances of entrepreneurially oriented individuals in large organizations is important for two essential reasons. First, the selection of managers capable of assuming the enormous responsibilities associated with establishing and managing new corporate ventures is fraught with difficulty. The selection process is inherently contradictory. While top managers try valiantly to identify and groom the right individuals, corporate allegiances and internal politicking conspire to ensure that those who assume leadership of autonomous units are more likely to be people with greater seniority and loyalty to top management than actual entrepreneurial talent (Cyert & March, 1963). To be sure, it would be wrong to suggest that the most senior and loyal candidates are most lacking in the way of competence, but it would be equally wrong to pretend that seniority and loyalty are suitable proxy measures of entrepreneurship. Meanwhile, the organization also tries to rely on its compensation scheme to induce demand and hence competition among individual candidates to establish records of corporate achievement over the course of their careers. This "tournament" system assumes that the competitors' track records of accomplishments are adequate gauges of their actual ability to take on the responsibilities of the lucrative position that is advertised (Becker & Huselid, 1992). While the tournament system has had some success in North America at generally producing an adequate pool of talent from which to choose, however, it may have the opposite effect in less individualistic cultures. Moreover, even in the United States it falls short as a proxy measure of

entrepreneurship, since one's success at marketing oneself in this competition is greatly a function of corporate loyalties and administrative talent, in addition to actual entrepreneurial talent.

Detecting entrepreneurs early in their careers is important insofar as such detection enables organizations to accommodate their need for increasing decision-making latitude and room for experimentation over the course of their careers. When this is not the case, workplace constraints can come to be perceived as too cumbersome for entrepreneurially oriented people (Brazeal, 1996). It is suggested that entrepreneurs are already inclined to stay with large organizations just long enough to acquire needed skills before exiting and setting up their own ventures elsewhere (Schein, 1994). While it is unclear whether this exit is an unavoidable facet of the entrepreneurial personality or largely dependent upon the extent of the organization's accommodative structures, there is evidence that the entrepreneurially inclined would consider staying with a large organization if their entrepreneurial needs continued to be satisfied (Brazeal, 1996). The difficulty with accommodation revolves around the basic contradiction between the legal-rational structure of the bureaucratic organization (Bross, 1953). Despite the well documented desire of large organizations to make themselves over as relatively flat, loosely coupled systems (*cf.* Peters & Waterman, 1982), they cannot escape their essential role of constraining activity within them (Thompson, 1969). This is necessary for the sake of the efficiency that such structures are most adept at fostering. In order to overcome this limitation, organizations may explicitly target specific units, such as is often done for research and development, to grant a status of operating under relatively few constraints (Peters & Waterman, 1982). Unfortunately, this is by no means the same as granting entrepreneurs themselves such

latitude. The special units may be set up, and there may be entrepreneurs working within the organization's walls, but the task of matching up those entrepreneurs to those special units remains to be met. This cannot be met unless those entrepreneurs can be identified at an early stage in their careers. The relatively enduring nature of universal human values within each individual's make-up renders the use of values the ideal way to approach this task (Rokeach, 1968).

The ability of researchers to measure entrepreneurial potential across cultural contexts remains mostly to be achieved in the future. It is currently unclear whether entrepreneurship is significantly more common in individualistic than collectivistic societies or whether for some other reason our measures of it are peculiarly suited to North America. Regarding the former possibility, it has been suggested that entrepreneurship exists as a collectivistic phenomenon in collectivistic societies and as an individualistic phenomenon in individualistic societies (Chan, 1996). Regarding the latter, the historical development of measures of personality characteristics in the English-speaking world has led to the inevitable consequence that such measures, when used for assessing entrepreneurship, may enjoy very limited generalizability outside this domain. It is conceivable that entrepreneurship may indeed take on more than one form in more than one culture even when an instrument so thoroughly tested across cultures as the Schwartz Value Survey is used. However, if this is the case, then such a possibility can only be verified adequately using an instrument with maximum cultural generalizability.

A fourth benefit of the present research involves a third style of managerial behavior, after entrepreneurship and administratorship, which cannot be addressed directly herein. Intrapreneurship (Pinchot, 1985) is understood as a variant of entrepreneurship

peculiar to large organizations and potentially distinct from pure entrepreneurship. Currently, it is unknown whether intrapreneurs are simply entrepreneurs whose managerial style is sufficiently accommodated in large organizations, or whether something more basic distinguishes their motivations. There is some evidence, however, that their respective motivational makeups may not be identical (Brazeal, 1996). If this is true, then the establishment of entrepreneurial and administrative values hierarchies should serve as an invaluable aid to future research dedicated to investigating this phenomenon.

Entrepreneurship and Administratorship

Joseph Schumpeter's depiction of an entrepreneur is essentially that of a manager who is less content with running an enterprise than with creating "new combinations" (1936, p. 66). An administrator (often called "traditional manager," *e.g.*, Brazeal, 1996), by contrast, is a manager whose talents are ideally suited to ensuring a maximum of efficiency in running an enterprise. Both are necessary for an organization's success, but in complementary ways. Entrepreneurship is necessary for the creation of new products and the organizations that emerge to supply them, as well as new markets and the organizations that emerge to serve them. Entrepreneurial managers are vital for an organization's emergence and development approximately up to that point in the organizational life cycle at which the rate of increase in demand for the product or service in question ceases itself to rise (Quinn & Cameron, 1983). Up to that point, the need for efficiency is largely offset by the assurance of some degree of excess demand. This fact creates continuous slack, which the entrepreneurial process uses for organizational innovation (Villers, 1964). Administratorship is necessary for the efficient management of the same organizations. It is most vital to the organization as the organizational life

cycle's rate of increase in demand begins to decline (Quinn & Cameron, 1983). At this point, competition for a market that is no longer growing can become quite strong. Setbacks in an organization's efforts to maintain its market share are no longer offset by excess demand, which magnifies their impact on the organization's profitability. Now the talents of the administrator are called into play (Kimberly & Miles, 1980). The administrator meticulously scrutinizes the weak points in the organization's cost structure, works to eliminate duplication of effort, and refines and reinforces a network of command and control ideally suited to maximizing the organization's responsiveness to the priorities of top management (Thompson, 1969).

Success to the entrepreneur means engaging in a process of "creative destruction," *i.e.*, upsetting existing productive or competitive dynamics by introducing new product or marketing mixes, usually at substantial risk (Schumpeter, 1942, p. 132). Entrepreneurship is thus a general pattern of behavior mainly characterized by a propensity to create new economic structures. Not surprisingly, a certain combination of personality traits tends to be associated with entrepreneurship. Kuehl and Lambing (1990) described entrepreneurs as action-oriented, energetic, tolerant of ambiguity, and self-confident, with strong internal locus of control and high need for achievement. Timmons, Smollen, and Dingee (1977) described them as characterized mainly by personal drive, persistence, strong character, independence, educated risk-taking, building, and ethics. The concern for creating something new takes on an overarching role in the personal life of the entrepreneur. Entrepreneurs who are building value in their companies may actually demand such sacrifices of themselves that their personal financial picture suffers (Fraser,

1996). Considered by many to be utterly inscrutable (and consequently unpredictable), entrepreneurs remain difficult to detect, and entrepreneurship difficult to predict.

To the administrator, success is thoroughly quantifiable. It consists of profitability, market share, stock price, return on equity, return on assets, and so forth. The administrator does not seek to upset existing productive or competitive dynamics (Schumpeter, 1934). As long as the organization's profits continue to grow, the administrator is successful. Administratorship is thus a general pattern of behavior mainly characterized by a propensity to recognize flaws in organizational processes and recommend ways to overcome them. It involves effectiveness and efficiency, as well as incremental improvement, but not innovation *per se*. Those personality traits that have come to be associated with administratorship generally correspond to those associated with "successful managers" in early management texts. These overlap with Kuehl and Lambing's (1990) description of entrepreneurial attributes. However, Timmons *et al.* (1977) ascribed several distinctive traits to the administrator ("professional manager"), namely, proven skills and expertise, ability to direct and motivate, self-confidence, decisiveness, cautious risk-taking, and a propensity to keep the next job in view. The administrator is not deeply concerned with creating anything new for its own sake. The administrator's tolerance of ambiguity is also more limited than that of the entrepreneur. Lastly, administrators are conscientious and display a high need for power.

Entrepreneurship has long been difficult to measure, let alone define (Bygrave, 1989; Wortman, 1992). The study of entrepreneurship has consequently often depended on making a specific category of people thought to be entrepreneurial the object of analysis. The category used has often been the set of all self-employed people. However,

the motivations behind self-employment are varied. Entrepreneurship refers to qualities of an individual's behavior, not the circumstances of one's employment. Consequently, the set of all entrepreneurs intersects with, but is not identical to, the set of all owners of small businesses. Cooper and Dunkelberg (1986) demonstrated that the motivation to avoid having to work for others is a weaker antecedent to new startups than the motivation to do the kind of work one wants to do (p. 65). The latter motivation is associated with entrepreneurship (*cf.* "task motivation" in Bull & Willard, 1993). The former often describes an older individual who leaves the corporate world simply in order no longer to work for others. This is the income-substituter, someone that is unlikely to effect the "new combinations" that are essential to the entrepreneurial identity.

The task of distinguishing entrepreneurs from administrators has not been attempted nearly as often as that of identifying entrepreneurs for their own sake, or, especially in earlier days, of distinguishing successful from unsuccessful managers. Descriptions of the differences between these two managerial styles date back to Schumpeter (1934). Mintzberg (1973) advanced eight different managerial styles, one of which was the "entrepreneur." Identifying the administrator among Mintzberg's styles is more difficult, but the "insider" comes closest to meeting Schumpeter's (1934) emphasis on efficiency and the allocation of resources. Mintzberg (1973) offers as examples of the entrepreneur, "owner of small, young business" and "CEO of rapidly changing, large organization." His examples of an insider are "middle or senior production or operations manager" and "manager rebuilding after crisis." However, Fagenson's (1993) project appears to be the first empirical attempt to make an outright, empirical comparison of the two managerial styles. The recency of this emphasis is consistent with Stearns and Hills'

(1996) observation that the 1990s constituted the decade of legitimation for the disciplinary field of entrepreneurship itself. Despite the recency of this comparative approach, the importance of distinguishing between the two managerial styles is clear. There is no longer any doubt that innovation must be the central focus for the sake of competitiveness in the global economy (Hitt, Nixon, Hoskisson, & Kochhar, 1999). As a result of such studies as those of Davis, Morris, and Allen (1991) and Miller and Friesen (1982), many managers regard entrepreneurship as inherently good and a critical factor in a firm's success. A multitude of studies have reinforced these beliefs over the past two decades, suggesting that organizations displaying greater levels of entrepreneurial behavior tend to outperform less entrepreneurial organizations, particularly in dynamic and hostile environments (*e.g.*, Bourgeois, 1980; Covin & Slevin, 1991; Miller & Friesen, 1984; Peters & Waterman, 1982; Snow & Hrebeniak, 1980).

Entrepreneurship offers a means of extending the boundaries of an organization's capacities and reinvigorating the resource exchange necessary for maintaining viability even while competitors are drawing from largely the same resource base (Knight, 1997). According to Covin and Slevin (1991), entrepreneurship has an all-encompassing impact on organizational performance and is one of the most important sources of competitive advantage. Entrepreneurship provides "diversity" in the way in which an organization draws resources from its environment (Burgelman, 1983). Competitors have a difficult time predicting changes in the patterns that characterize that resource draw. As a consequence, they cannot interfere with it. Thus, from the perspective of strategic considerations, entrepreneurship can contribute to an organization's core competencies (Prahalad & Hamel, 1990). At the individual level of analysis, entrepreneurial values can be the source of

motivation behind the proactivity, opportunity-seeking, and problem-solving that bring about the expansion of an existing business and help meet the challenge of diversification, if necessary, as that business grows.

Despite the obvious value of entrepreneurship and an organization's ability to identify and recruit entrepreneurs into its ranks, no organization can afford to dedicate all of its resources to innovation (Thompson, 1969). Consequently, organizations need a means by which to distinguish those people with an enduring propensity to display entrepreneurial behavior from those gifted with the talents of the administrator. Insofar as managerial styles are indeed associated with enduring human values, as the evidence has thus far demonstrated quite clearly, specific knowledge of the entrepreneur's and administrator's respective values hierarchies must be obtained. The following section summarizes the history of the research into human values and the relevance of values to behavioral styles.

Universal Human Values and Behavioral Consistency

The theory of human values is rooted in the very early observation that rather few stable, salient principles tend to dominate the choices and sensibilities of human beings under a wide variety of circumstances. It is impossible to say with certainty who was first to make this observation, but it is visible in Adam Smith's (1759) treatise on moral sentiments. Smith (1759) referred to moral sentiments approximately as theorists today might refer to human values. As an example, he defined self-command as a principle guiding individual judgment of the fortunes and misfortunes of others (pp. 191-220). The greater one's self-command, the less is the difference between how one reacts to the plight of strangers and how one reacts to the plight of loved ones, or to one's own plight.

In Smith's usage, the concept of moral sentiments captures two extremes of sensibilities, one self-effacing and focused solely on showing compassion for others, the other self-absorbed and oblivious to the predicaments of others. Smith was not inclined to treat these extremes with the objective indifference characteristic of modern theorists; he advocated the middle ground. However, he did recognize the real variation that one finds in society, noting that human beings are basically self-interested creatures in each of whom the social milieu induces a gradual revision of sensibilities along very personal lines.

A major underlying assumption in Smith's (1759) treatise and in later works expounding the nature of human values is behavioral consistency. That is, these general principles that guide behavior do not abruptly shift from one day to the next. Rather, they tend to govern behavior in a relatively stable manner over the course of a considerable period of time. However, neither are they static structures of the personality. Instead, experience and education can gradually alter them. Most importantly, they are seen as a way to ensure consistency of judgment, decision-making, and action over a considerable period of one's life. Thus, they serve as basic criteria by which individuals assess and compare possible courses of action.

The relationship between behavioral consistency and values was probably first raised in a manner relevant to modern research by W. G. Everett (1918). He saw "moral values" as serving to guide human behavior to serve the purposes of society (p. 45). Thus, Everett saw values as a social phenomenon. He suggested, in effect, that there is an array of values that all human beings in a society should be taught to adopt, for the sake of their society's coherence. This normative construal of values dominated the early thinkers until

about the 1940s. Thenceforth, researchers began to explore human values as essentially a psychological phenomenon. The most important contributors to this line of inquiry were probably Kluckhohn (1951), Rokeach (1973), and Schwartz and Bilsky (1987), who each brought about a major advance in the study of universal human values. Of these, Rokeach must be regarded as the central theorist. Rokeach consolidated the earlier values theories from a wide variety of disciplines into a coherent theory that is still recognized as fundamentally valid today. All theorists have assumed that the overall consistency in the behavior of a given individual over time is both a reliable fact and a testament to the validity of values as a psychological construct.

Rokeach (1968, 1973) integrated the literature on values that had developed by the mid-1960s among the various disciplines displaying an interest in the topic. He presented a theory of human values based on the following corollaries: (1) the total number of distinguishable values is relatively small (*cf.* Williams, 1968); (2) all people possess the same values, but prioritize them differently; and (3) values are organized hierarchically. This last corollary more specifically describes values as unambiguously ranked arrays of idealized end-states of existence and idealized modes of conduct, respectively. Rokeach described values as being shaped by culture, social institutions, and personality factors. He also described them as having an impact on all areas of social life. Rokeach conceptualized values as relatively enduring, deeply ingrained beliefs about personally or socially preferable modes of conduct and end-states of existence, termed instrumental and terminal values, respectively. He specified that values are distinct from attitudes, social norms, needs, traits, and interests.

Rokeach (1973) broke down a large sample of Americans into subgroups, and published each group's characteristic values hierarchy. This approach to values research offered a degree of comparative predictability among the subgroups. That is, Rokeach saw values hierarchies as offering the potential to distinguish groups of people from one another, such as men from women, older people from younger people, African from European Americans, high-income from low-income Americans, and so forth. This would then make it possible to predict the relative propensity of each comparison group to make certain choices under various circumstances. To compare such groups, one looks for values showing significantly different mean rankings between them. Those values that show such a difference are believed to be the essential determinants of differences in general motivations between the groups. Group comparisons in the literature have most often focused on such differences as nationalities (Apasu, Ichikawa, & Graham, 1987; Connor, Becker, Kakuyama, & Moore, 1993; Howard, Shudo, & Umeshima, 1983), subcultures (Valencia, 1989; Wood & Howell, 1991), and sex (Fagenson, 1993; Feather, 1982).

The predictability of general behaviors on the basis of values has extensive empirical support. This is premised mainly on evidence that choice behavior is predicted by values with good consistency. This consistency in choice behavior translates into a rather consistent pattern of general behavior over time. Research that has posited values hierarchies as independent variables has focused mainly on psychological traits, *e.g.*, perceptions of rewards (Apasu, 1987) and honesty (Shotland & Berger, 1970), or on choice behaviors within an ethics (Finegan, 1994; McCabe, Dukerich, & Dutton, 1991) or consumer-behavior (Becker & Connor, 1981; Cannon, 1982) context. In addition, despite

the unrefined state of the available tools, support has already been found for the general relationship between values and entrepreneurial *versus* administrative behaviors (Voss, Weaver, & Brazeal, 1996).

Preliminary Evidence Suggesting Distinct Entrepreneurial and Administrative Values

At present, the tools available for either tracking the progress of entrepreneurially oriented individuals in large organizations or distinguishing between entrepreneurs and administrators consist of self-report measures of behavior. The most direct measure of entrepreneurial behavior with this goal is Stevenson and Sahlman's (1986) behavioral-orientations scale. This is designed to distinguish between entrepreneurs and administrators, but it does not have a strong empirical history. Its six semantic-differential items are somewhat complex and a potential source of confusion, and they may be limited by a social-desirability effect among managers exposed to media applauding the virtues of the corporate entrepreneur (Crowne & Marlow, 1964; for a relevant example *cf.* also Haire, Ghiselli, & Porter, 1966, p. 24). An early alternative is Braden's (1977) 4-item scale that distinguishes between "caretakers" (administrators) and "managers" (entrepreneurs). Another is Filley and Aldag's (1978) 40-item scale intended to distinguish among "craft," "promotion" (two types of entrepreneurs), and administrator types, of which Cooper and Dunkelberg (1986) found only eight items capable of distinguishing between entrepreneurs and administrators. These scales do not address the full breadth of entrepreneurial behavior reflected in Stevenson and Sahlman's (1986) scale, but their empirical history is generally better. Another approach is Timmons *et al.*'s (1977) scale of attributes and role requirements, a peer-review scale, which Brazeal (1996) converted into a self-report measure. Of those just mentioned, this scale comes closest to a values scale because it addresses achievement

orientation, long-term orientation, and internal locus of control, all of which are closely allied to universal values as presented on Schwartz's (1999) scale (*cf.* also Locke, 1991). Nevertheless, if so viewed, it is a very limited one.

Later, Gray and Eylon (1996) demonstrated the differences in ranked values between successful and unsuccessful entrepreneurs, respectively, incidentally reinforcing the validity of Fagenson's (1993) findings by showing that the values hierarchy associated with entrepreneurs *versus* administrators is completely consistent with that of successful *versus* unsuccessful entrepreneurs. Unlike Fagenson (1993), Gray and Eylon (1996) used the complete Rokeach Value Survey. Eight of 36 values tested showed significant differences between successful and unsuccessful entrepreneurs. By comparison, 4 of 36 values showed significant differences between males and females. These were identical to Fagenson's findings with the addition of one value that Fagenson had not tested. The distinctions found between successful and unsuccessful entrepreneurs are summarized in Table I-2. Without exception, among those values featured in Fagenson's (1993) study, the only values associated with successful entrepreneurship were entrepreneurial values, as defined by Fagenson's study. None of Fagenson's entrepreneurial values was found to be associated with unsuccessful entrepreneurship, but one of her administrative values was. Based on the combined findings of Fagenson (1993) and Gray and Eylon (1996), entrepreneurs and administrators are evidently far more distinguishable than successful and unsuccessful entrepreneurs. However, this constitutes the extent of the current research in this domain.

	Entrepreneurial Values	Administrative Values
Terminal	[5.20] self-respect [5.65] freedom [6.22] a sense of accomplishment [8.55] a world at peace [8.94] an exciting life	[5.57] true friendship [6.49] wisdom [6.58] salvation [8.66] pleasure
Instrumental	[4.31] honest [5.02] ambitious [5.66] capable [6.56] independent [7.55] courageous [8.69] imaginative [9.11] logical	[3.25] loving/compassionate [5.51] forgiving [6.04] helpful [7.59] self-controlled

Number in brackets indicates mean ranking of 15 values listed. This table only lists values shown to be significantly different between entrepreneurs and administrators.

Table I-1—Fagenson's (1993) Findings: Entrepreneurs *versus* Administrators

	Successful Entrepreneurs' Values	Unsuccessful Entrepreneurs' Values
Terminal	[5.58] freedom	[6.55] wisdom
Instrumental	[7.46] independent [7.96] broadminded* [9.07] courageous	[5.44] responsible* [10.63] polite* [14.65] obedient*

Number in brackets indicates mean ranking of 18 values listed. This table only lists values shown tobe significantly different between successful and unsuccessful entrepreneurs. Asterisks (*) denote values not included in Fagenson's (1993) study.

Table I-2—Gray & Eylon's (1996) Findings: Successful *versus* Unsuccessful Entrepreneurs

After consideration of Fagenson's (1993) and Gray and Eylon's (1996) findings, a retrospective examination of Rokeach's (1973) analyses stands out in bold relief. Rokeach observed, among the many groups of people that he compared in his landmark study, several conspicuous differences between the values hierarchies of service station dealers and oil company salesmen. Unfortunately, he only reported significant differences between each of these categories and the general population, which were numerous. Nevertheless, he added, "Separate statistical analyses reveal that salesmen are even more achievement-, status-, and competence-oriented and more concerned with personal values than are dealers, and they are less concerned with such conventional moral values as being *clean*, *forgiving*, *obedient*, and *polite*" (Rokeach, 1973, p. 157). Indeed, a cursory comparison of his findings with later work by Fagenson (1993) and Gray and Eylon (1996) suggests that the salesmen in

Rokeach's sample were significantly more entrepreneurial than were the dealers.[1] However, this finding went unnoticed until Fagenson's (1993) study, which revealed striking differences between actual entrepreneurs and administrators defined *a priori* on the basis of their respective work situations. Although she used an incomplete version of the Rokeach Value Survey (Rokeach, 1973), 20 of the 29 values tested showed significant differences between the two groups, compared to only 3 values that showed significant differences between males and females in the same sample.

Independent of these developments, the theory of human values saw notable advances from Rokeach (1968) to Schwartz and Bilsky (1987), and from the Rokeach Value Survey (Rokeach, 1973) to the Schwartz Value Survey (Schwartz, 1999). These advances began with a cross-cultural assessment of the Rokeach Value Survey using cluster analysis to identify broad differences in values based on national culture (Schwartz & Bilsky, 1987). This initial analysis then spurred considerable refinement of Rokeach's theory of human values informed by the national-cultural dimensions of Hofstede (1980), resulting in a vastly improved scale. Of its 57 items (universal human values), the Schwartz Value Survey includes most of the 36 values featured on the Rokeach Value Survey, with several refinements and additions. It thus offers the potential for both greater predictability and greater generalizability than that which was previously afforded by the Rokeach Value Survey.

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[1] Using the combined findings of Fagenson (1993) and Gray and Eylon (1996) to define "entrepreneurial" *versus* "administrative" values, dealers (N = 235) ranked 31% of the entrepreneurial values and 73% of the administrative values more highly than did salesmen (N = 69) in Rokeach's sample. Since each group ranked the same number (12) of such values more highly than the other group, chance alone would suggest 50% in each case.

Goal of the Dissertation

The present dissertation uses an improved version of Fagenson's (1993) basic approach to generate values hierarchies differentiated on the basis of entrepreneurial *versus* administrative style in managers. Fagenson (1993) used an incomplete Rokeach Value Survey (RVS) and nevertheless found significant differences between administrative and entrepreneurial values that afforded a remarkable degree of predictability (Voss, Weaver, & Brazeal, 1996). These differences were also intuitively consonant with the differences between entrepreneurs and administrators discussed in the literature. However, this dissertation will employ the Schwartz Value Survey (SVS). The RVS cannot be administered simultaneously for comparison (Schwartz, 1999, personal communication) because most of the RVS is reproduced in the SVS, but it may be possible to make indirect comparisons between the two scales by taking advantage of their considerable overlap.

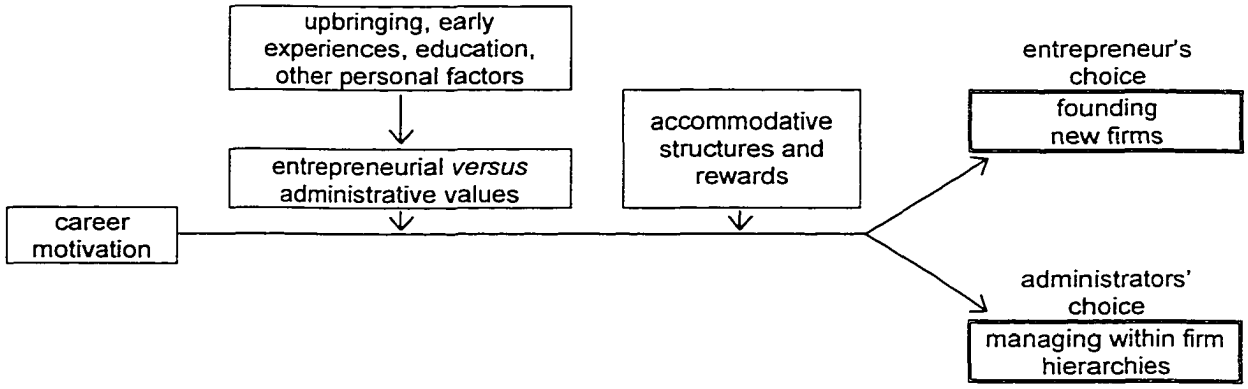


Figure I-1—Impact of Entrepreneurial and Administrative Values on the Managerial Employment Path

The model presented (see Figure I-1) shows the associations proposed in this dissertation. These compare values along an entrepreneur-administrator continuum between actual entrepreneurs and administrators as operationalized in a manner similar to that set forth by Fagenson (1993). Consistent with Cooper and Dunkelberg's (1986) study of paths to business ownership, the individual's motivation for pursuing self-employment or

employment in large firms is given central importance. Consistent with Schumpeter's (1936) emphasis on business foundership as central to the definition of entrepreneurship, actual business foundership in each respondent's history will complement business ownership as categorical proxies for entrepreneurship. Consistent with Locke's (1991) motivation theory, human values are the main influence on motivation. Lastly, consistent with Brazeal's (1996) finding relating to differences in how well large organizations accommodate entrepreneurial behavior, accommodative structures and rewards are posited as having a more proximate moderating effect on the choice of managerial employment path.

The remainder of this chapter features a discussion of the need for further research and a statement of the problem. The specific objectives of the study are then presented, followed by the anticipated contributions, and the plan of study.

The Need for Further Research

Brazeal (1996) found organizational structures and rewards to be motivators of managerial behavior in large organizational environments. She showed that organizations can facilitate, as well as hamper, entrepreneurial behavior on the basis of how they manage these organizational attributes. Consistent with her findings, other researchers have pointed up the critical relationship between organizational structure and organization-level entrepreneurship. An organizational structure at odds with the informational and resource needs of entrepreneurs operating within the walls of the organization will inhibit the organization's ability to transform its entrepreneurial potential into market activity and organizational performance (Covin & Slevin, 1986, 1991; Lumpkin & Dess, 1996; Zahra, 1993). Moreover, it will encourage entrepreneurial attrition and

undermine its own innovativeness. Management must consequently do what is feasible to create an organizational environment that fosters entrepreneurship by means of carefully thought-out combinations of rewards and structural enablements. Nevertheless, more research is necessary to verify what rewards and structural enablements are most critical. In order to progress in this area, it is necessary to be able to identify with confidence who the entrepreneurs actually are in an organization. The theory of universal human values offers a way to identify such people on the basis of their actual behavioral patterns rather than *via* less direct criteria. However, no studies so far have empirically assessed the complete array of differences between entrepreneurial and administrative values. Fagenson (1993) came closest to this goal, but her work resulted in incomplete data due to the use of a truncated version of the Rokeach Value Survey. Moreover, in the light of the advances represented by the Schwartz Value Survey, it is no longer current. Without taking this research to its logical conclusion, using the most up-to-date measure of universal human values and the most valid operationalization of entrepreneurship and administratorship, the true extent of the role of entrepreneurial *versus* administrative values on the performance and job choices of managers will remain a matter of speculation rather than be brought to light as empirical fact. The present dissertation addresses gaps in previous research by examining two research questions:

1. What are the differences between entrepreneurial and administrative values?
2. How do human values compare to the most current scale alternatives in predicting entrepreneurial and administrative choice behavior?

Statement of the Problem

There have been no attempts to show how entrepreneurs and administrators ("traditional managers," "professional managers," or sometimes "bureaucrats") differ using any value survey in its complete form. No attempts have been made to measure the differences between entrepreneurs and administrators using the latest and most comprehensive measure of universal human values, *viz.*, the Schwartz Value Survey (Schwartz, 1999). With the exception of Voss, Weaver, and Brazeal (1996), no attempts have been made to quantify the differences in values hierarchies between entrepreneurs and administrators into a single score that could be used in other contexts. Meanwhile, all that is available for predicting entrepreneurial behavior in large organizations is a scale featuring the key entrepreneurial terms and principles that every successful manager is expected to know today, *viz.*, Stevenson and Sahlman's (1986) scale. It is likely that many of those respondents who score high on entrepreneurship using this scale do so because they are familiar with the terminology and prefer to be seen as entrepreneurial. Moreover, even insofar as that scale can be thought to measure entrepreneurship well as the construct is currently defined (*cf.* Schein, 1994; Stearns & Hills, 1996), it has yet to be refined adequately to demonstrate due statistical reliability. Within the domain of small business, all that can be done currently is painstakingly to narrow down respondent samples to true entrepreneurs as opposed to income-substituters before we can even begin analyzing our data. This means that considerable time or survey space must be devoted solely to narrowing down the sample. Then, only a limited portion of the respondent set can be used for the statistical analysis. Clearly, this is not feasible for every study that needs to be undertaken to understand entrepreneurial behavior. What is lacking most is

the availability of a single scale that will reliably reflect the full complexity and range of entrepreneurial behavior, whether applied to small business or within large organizations.

Surveys of universal human values seem to offer a way around these limitations. The Rokeach Value Survey (Rokeach, 1968, 1973) has demonstrated strong test-retest reliability, and the Schwartz Value Survey (Schwartz & Bilsky, 1987) has thus far evidently also shown strong reliability as well. The research into universal human values, particularly in the marketing literature, has shown that values do indeed reflect patterns of behavior, especially choice behavior. If we can operationalize entrepreneurial values using existing surveys of universal human values as a starting point, this should greatly facilitate the job of the researcher into entrepreneurship.

Objectives of the Study

The purpose of the present research is to generate two hierarchies of universal human values using the most advanced values survey available (the Schwartz Value Survey). These values hierarchies will reflect entrepreneurial and administrative behavioral patterns, respectively. The intent is to be able to use a score generated from the statistically valid differences between these values hierarchies in other research contexts as a proxy for the noted behavioral patterns. Meanwhile, a comparison will be made between the strength of the predictability afforded by the survey of universal human values and that evidenced from those scale variables that are most widely used in distinguishing entrepreneurs and administrators today, namely, risk propensity, innovativeness, and proactivity. If the present research project shows definitively that universal human values both distinguish between entrepreneurs and administrators and afford greater predictive power than the proposed scale alternatives, the main research objectives of this study will be met, and further refinement of

the resulting entrepreneurship score through continued sampling will be warranted so as to enhance its predictive power.

Contributions of the Study

Empirical research beyond Fagenson (1993) is needed to formulate an adequate understanding of the values associated with entrepreneurship. Such a development would open the way for assessing the mobility and employment paths of entrepreneurially oriented managers in large organizations. It would also offer business consultants and career counselors a device for assessing the personality compatibility of prospective entrepreneurs and the career choices they are considering. Lastly, it can provide a basis for defining the values profiles of intrapreneurs *versus* entrepreneurs.

Regarding the likelihood that existing measures of entrepreneurial behavior will ultimately become confounded by the many seminars and popular management books to which managers are constantly exposed these days, values surveys offer a solution for two main reasons. First, values are further removed from the subject matter of popular sources on the virtues of entrepreneurship than are descriptions of behaviors or attitudes about work. They are therefore less vulnerable to the effects of normative appeal. Second, values are normatively positive rather than neutral. The top several entrepreneurial and administrative values, respectively, would therefore be about equal in appeal. Seminars on the virtues of the entrepreneurial manager would not be likely to change respondents' perceptions of administrative values to look less appealing. By comparison, as is evident in Stevenson and Sahlman's (1986) scale, it is difficult to word behavioral or attitudinal items in a way that minimizes this effect.

Plan of Study

The first chapter of this dissertation provides an overall introduction to the dissertation by presenting the problem investigated, the importance of entrepreneurial values, a model depicting how values inform managerial employment path, the objectives of the present dissertation, and significant contributions to the extant literature. Chapter II presents a review of the pertinent literature on entrepreneurship and universal human values. The conceptual design and hypotheses are presented in Chapter III. The methodology, including a discussion of the research instruments and scales, as well as the sampling plan, is then presented in Chapter IV. Data analysis is presented in Chapter V. The sixth and final chapter presents the conclusions, implications, limitations, and recommendations for future research.

CHAPTER II

REVIEW OF THE LITERATURE

The purpose of this chapter is to review the extant literature relevant to the theory of universal human values and the characteristics of entrepreneurs. The first section of the chapter reviews the history of the research into human values. Subtopics focus on the literature prior to Rokeach (1973), Rokeach's theory of human values, and Schwartz's (1992) motivational-domain theory of universal human values. Included in this section are discussions of role theory and Locke's (1991) motivation theory as they relate to values. In addition, work values and Hofstede's (1980) cultural dimensions are discussed briefly to clarify their relevance to the theory of universal values. The second section explores the history of the research into entrepreneurship with an emphasis on the distinction between entrepreneurs and administrators. Subtopics focus on the major psychometric and demographic approaches to studying entrepreneurship that figure into the scientific history of this topic, with implications for the application of the theory of universal human values. A final subtopic concentrates on the major components of entrepreneurial orientation and its relevance to universal human values.

Section I

History of Research into Universal Human Values

Universal human values constitute that subset of theoretical human values that transcend specific situations (Schwartz, 1992). Usually called "individual human values" or simply "human values" by researchers prior to Schwartz and Bilsky (1987), their importance has long been underestimated in behavioral research because of the lesser degree of short-term predictability that they afford. Being the most "central" of

psychological constructs advanced to predict behavior (Krech & Crutchfield, 1948, p. 251), they influence a broader range of behaviors than can be said of attitudes but do so with greater subtlety. Likewise, they are considered to have a weaker association than attitudes with many specific behaviors of interest to theorists because they govern patterns of behavior that require longer time spans and more varied environmental contexts to observe.

Rokeach (1973) was the first to integrate the diverse literature on human values across the disciplines. He formulated the fundamental theoretical framework by which we understand them today. He also noted that universal human values are "central" in another sense as well:

> The [universal human] value concept, more than any other, should occupy a central position ... able to unify the apparently diverse interests of all the sciences concerned with human behavior. (p. 3)

Other theorists, notably Kluckhohn (1951) and Williams (1956, 1968), shared this opinion. Schwartz (1992) summed up the definitions of values advanced by these pioneers as "the criteria people use to select and justify actions and to evaluate people (including the self) and events" (p. 1). Significantly, Rokeach and Schwartz both emphasized an understanding of values as criteria governing human action rather than as attributes of the conceptual or physical objects that people tend to hold in some esteem. This is of fundamental importance in today's research into human values. It clearly defines human values as a completely abstract psychological construction. Human values are not associable with specific stimuli. They are thus distinct from valence (*e.g.*, in expectancy theory). Since they are not activated by the salience of any specific stimuli, as attitudes are, they are associated with broader patterns of behavior and a higher level of

behavioral consistency than attitudes (Rokeach, 1968, 1973; Schwartz, 1992, 1993, 1994, 1996; Schwartz & Bilsky, 1987, 1990).

Kluckhohn (1951) defined universal human values as "conception[s], explicit or implicit, distinctive of an individual or characteristic of a group, of the desirable which [influence] the selection from available modes, means, and ends of action" (p. 395). This emphasis on "the desirable" remains essential to the theory of values up to today. Since Rokeach (1973), researchers have subscribed to the theory that values exist in relatively stable hierarchies. The complete, undifferentiated set of values in everyone's hierarchy is theoretically identical. However, the order of priority of those values differs from person to person. In each circumstance, behaviors must be selected from those patterns thought to be most "desirable" (Kluckhohn, 1951, p. 395; Sitaram & Haapanen, 1979, p. 149), "useful," or "worthwhile" (Kahle, 1983, p. 43) to the individual. To exemplify, thrift and comfort may compete when negotiating the family budget, but during courtship it may be thrift *versus* acceptance. The prioritization of values thus serves as a "standard for a person to judge" the appropriateness of certain actions within a given context (Sitaram & Cogdell, 1976, p. 163).

Weeks, Chonko, and Kahle (1989) suggested that people develop values "to help them[selves] deal with complex situations and to summarize strategies that have previously facilitated or hindered adaptation" (p. 346). This heuristic approach to values has substantial support in the motivation literature but leaves the question open as to whether values can indeed be explained adequately merely as heuristics. Samuelson and Allison (1994) advanced this research somewhat in two experiments in which the use of egalitarian resource distribution as a social decision heuristic in a group resource-sharing

task was examined. They found general support for the idea that people do indeed resort to values as heuristics in their decision-making in social interaction.

Other researchers have further advanced support for the link between values and behaviors, including Beatty, Kahle, Homer, and Misra (1985); Kahle (1985, 1986); Kahle, Beatty, and Homer (1986); and Swenson and Herche (1994). Research has also supported a link between values and communication (Sitaram & Haapanen, 1979) and decision-making (Sitaram & Cogdell, 1976). A number of theorists have examined the effect of values congruency on attitudes and performance (*e.g.*, Balazs, 1990; Cameron & Freeman, 1991; Meglino, Ravlin, & Adkins, 1991; Miceli & Near, 1994; Weeks, Chonko, & Kahle, 1989). Values congruency is a measure of the similarity between one's personal values hierarchy and that of the organization or social environment in which one functions. In general, the more deviant one's personal values hierarchy is from the mean values hierarchy of the people with whom one attempts to function, the more difficult it is to perform well. Overall, the research that has looked at the relationship between human values and behavior has either explored differences in behavior related to relatively distal goals or assessed the impact of values congruency on more proximal behaviors such as turnover.

Universal Human Values Prior to Rokeach (1973)

Human values were first conceptualized in association with morality (*e.g.*, Everett, 1918). By the middle of the twentieth century, however, a number of theorists had raised an interest in human values as a purely psychological construct outside the context of moral considerations. Foremost among these was Kluckhohn (1951), who clearly distinguished between values serving as ends in themselves and values serving as

means to those ends (terminal and instrumental values, respectively). There followed notably Kluckhohn and Strodtbeck (1961), Piaget (1965), and Scott (1965), who maintained Kluckhohn's (1951) distinction between means and ends. Meanwhile, Allport, Vernon, and Lindzey (1951), Maslow (1959), Morris (1956), and Woodruff (1942) all devoted their work to ends or end-states. Scales for measuring values turned up. Among the early scales were Allport, Vernon, and Lindzey's (1951) scale featuring theoretical, economic, aesthetic, social, political, and religious values; the "ways to live" scale published by Morris (1956) featured thirteen generalized lifestyles in a Likert format; and Kluckhohn and Strodtbeck (1961) proposed five universal value orientations.

Conceptual comparisons between values and attitudes were common in the early literature. These often focused on the confusion that was frequently caused by loose usage of the term "values." Specifically, some writers used the term in the sense of valence, or the personal "value" ascribable to an object or the outcome of an action. In reality, such an ascription reduces the concept to an attitude. Scott (1965) clarified the difference between attitudes and values by explaining that, while attitudes do indeed serve to explain behaviors, values serve both to explain and to justify them. He also suggested that one could reach a point at which a subject expresses a value by asking for explanations of action until it is no longer possible to explain without justifying. Once a person reaches an "ultimate justification" for a given action, that person is said to have expressed a value. By this means, Scott (1965) sought to remove the stimulus from the concept as thoroughly as possible, leaving behind a purely abstract motive.

Rokeach's Theory of Values

Rokeach's (1968) treatise on human values thoroughly distinguishes values from attitudes and beliefs, while definitively tying values to patterns of behavior. Rokeach described values as more "central" than attitudes. By this he meant that values are "functionally connected or in communication with" a broad array of beliefs and attitudes rather than with a narrow stimulus (Rokeach, 1968, p. 5). Values hierarchies are therefore expected to influence a variety of beliefs and attitudes. On this basis, they should predict general patterns or styles of behavior rather than behavioral responses to specific stimuli. These are observable over time in the propensity of an individual to make certain types of choices that cumulatively determine one's direction through life and career.

While values are conceptually abstract enough to apply regardless of stimulus, attitudes are stimulus-specific. For example, a person may value friendship while harboring a negative attitude about certain people in the wake of unfortunate experiences with them. Thus, human values as theorized by Rokeach may be conceptualized as stimulus-general constructs. This view is supported and conceptualized in further detail by Schwartz, who specified that values "transcend specific situations" (1993, p. 4). This suggests that for one's values to change through exposure to stimuli (rather than through experience, maturation, or education) one would have to experience some significantly different pattern of affect resulting from exposure to a broad category of stimuli rather than to repeated contact with a specific stimulus. As an example, people who are strongly inclined to take risks would have to experience dissatisfaction with outcomes associated with a broad array of risk-related activity before becoming disillusioned with this mode of behavior overall. Otherwise, their attitude toward certain perceived sources of risk

might change, while their risk propensity remains intact. Human values therefore change more slowly than attitudes over the course of one's life. Consequently, they should serve as better predictors of general behavioral patterns. In addition, consistent with their more central nature, values include a motivational component (Locke, 1991; Schwartz, 1996), while attitudes do not.

Values are divided into two major classifications, *viz.*, terminal (the more central) and instrumental. Terminal values refer to "end-states of existence" (Rokeach, 1973, p. 7), an idea first proposed within the domain of psychology by Woodruff (1942). For Rokeach, such end-states of existence depict an idealized, enduring condition of life on various social levels. For example, the following terminal values are found on the Rokeach Value Survey (RVS): a comfortable life; true friendship; national security; a world of beauty. All of these concepts are associable with readily recognizable imagery, once one is confronted by it. However, the available array of images representing any of them is virtually infinite. Each person's conception is also unique and itself variable, despite how readily people will agree with the label.

Instrumental values refer to "modes of conduct" (Rokeach, 1973, p. 7). These do not depict an idealized condition, but rather describe an ideal way to behave. As descriptors, they are all adjectives, in contrast to the substantive formulation of the words and phrases representing terminal values. For example, an observer may describe a subject's conduct as ambitious, clean, independent, or self-controlled, each of which is in fact an instrumental value on the RVS. Like terminal values, the imagery associable with instrumental values is both personal and highly variable. However, there is probably more consensus among people regarding what constitutes a given instrumental value than

what constitutes a terminal one. Instrumental values are easily captured by the descriptive labels available in every natural language to portray aspects of human character. Terminal values, by contrast, attempt to paint pictures that may not be quite the same in the mind of one person as in the mind of another.

Rokeach (1968, 1973) acknowledged that there are theoretically many more instrumental than terminal values. This is consistent with their different degrees of centrality. Despite this, he limited each of the two lists on the RVS to eighteen items, a figure he determined to be sufficient to cover with near comprehensiveness the complete array of terminal, but not necessarily instrumental, values. As for instrumental values, he again listed eighteen, intending to cover the breadth of conceptualizable instrumental values but not necessarily their entire depth. That is, the list of instrumental values taken as a whole should be expected to reflect the actual hierarchy of instrumental values just as the list of terminal values is expected to reflect the actual hierarchy of terminal values, but with less nuance. This was an attempt at parsimony necessitated by the empirical finding (Rokeach, 1973) that an excessively long list degrades reliability.

The values on the RVS are intended to be maximally different from one another. As a consequence, they cannot be thought of as reflective survey items, each attempting to capture some aspect of the same underlying psychological characteristic. Specifically, some meaning lies in how much independent importance survey respondents give a specific value. Respondents who rank salvation high on their list can validly be said to prize the abstract idea of salvation itself as a worthwhile goal in their lives. However, Rokeach (1973) suggested that there is even more meaning in how respondents rank a given value against other values. Respondents who rank salvation higher than mature

love will make basic behavioral choices differently from those who rank mature love higher than salvation. Rokeach thus gave supreme importance to his rank-ordering approach to conform to his psychodynamic theory of values. He believed the rank-ordering to reflect people's attributing different degrees of importance to the values as the cumulative product of repeated past attempts to reconcile conflicting values in real-life situations over the course of their lives. As chance would have it, each new situation we encounter in life tends to activate more than one value as a criterion for response. Often there is conflict between them that forces us to select one over the other to govern our choice. Over time, we tend to prioritize the values that come into play in our day-to-day lives in an increasingly consistent way. The habitual priorities of our values then tend to coalesce into relatively stable hierarchies. These, in turn, influence our decision-making and hence our behavioral patterns in a way that has greater long-term consistency, although less short-term predictability, than attitudes.

Because of the overriding importance of the relative priority of each value in a hierarchy, the conceptual degree of distance between two values in succession (*i.e.*, the absolute difference in strength of affect) is not relevant to Rokeach's (1968) theory. However, because of the differentiation of strength of affect among the values that becomes conditioned in an individual by virtue of repeated prioritizing, a survey administered in Likert format should generally reflect the same hierarchies. The only problem that this format poses is the certainty of ties among several of the values. To address this issue, Munson and McIntyre (1979) made an empirical comparison. They found no significant difference in reliability between rankings and Likert-style ratings in aggregated data. This suggests that either method may be used in the aggregate. Most

management and marketing applications of the RVS have used the Likert format. A more detailed account of the ranking *versus* rating method is provided in Chapter III.

The Role of Values in Role Theory

Role theory (Merton, 1949, 1957) is the basic behavioral theory of social psychology (Katz & Kahn, 1966). It is a general theory that depicts the behavior of the individual actor (focal person) as primarily guided by behavioral expectations transmitted within the ambient domain of immediate action. Kahn, Wolfe, Quinn, Snoek, and Rosenthal (1964) described a "role episode" as follows. First, sent roles constitute expectations transmitted by means of any number of verbal or nonverbal cues to the focal person. Role senders are those referents that send the expectations. Since sent roles ultimately arrive *via* the perceptual apparatus with which the focal person is equipped, Kahn *et al.* (1964) also found it appropriate to speak of received roles. These correspond to the form that sent roles have taken by the time the focal person has mentally processed the information of which they consist. Kahn *et al.* (1964) used Merton's (1949, 1957) term "role set" for the set of all role senders relevant to a given role, however broadly or narrowly defined. (In some disciplines, "role set" refers instead to the set of all roles that a given individual finds relevant, a confusing difference in terminology that need not be entertained herein beyond calling attention to it.) Although we can expect a given role set generally to constitute those identifiable people who have an observable influence on the focal person, we must unavoidably consider the focal person's unique perception of whose sent roles matter. It is conceivable for these referents to include familial, social and spiritual role senders insofar as they have a bearing on the focal person's behavior within the environment in which we are interested. However, Kahn *et al.*'s (1964)

interpretation of the role set limits referents to organizational role senders (the theoretical "office"). This is consistent with Merton's (1949, 1957) emphasis on one's social status (*e.g.*, job) as the criterion by which to identify the role set. In deference to the primacy of subjectivity in the definition of the role set, Kahn *et al.* (1964) referred to the organizational component of one's experienced role set as the "psychological organization" (p. 12).

Role theory clarifies the effect of universal human values on the perceptions and response patterns of the focal person within the theoretical role set. The focal person responds to the totality of expectations from both external cues and internal (personality) factors, notably human values. Human values thus constitute one of the role senders relevant to the role set. They signal to the focal person to make certain choices within the context of the role set, independently of external role senders. These choices include both the particular goals that should be set to meet expectations and the means by which to attain them. Here is a simple example. If, between two focal persons, the first ranks the value "honest" more highly than the second, then the appearance of anything dishonest or deceptive in a potential goal under consideration is likewise more likely to disqualify that goal as a viable choice for the first focal person than for the second.

Yet human values do significantly more than merely act as additional role senders. They also shape perceptions (Postman, Bruner, & McGinnes, 1948; Ravlin & Meglino, 1987). This has the effect of modifying role expectations as they make their way from the status of sent roles to that of perceived roles. Specifically, some external cues may be lost while others are magnified in their perceived importance to the focal person during this process. Working off the previous example, this effect might be

illustrated as follows. If, between two focal persons, the first ranks the value "honest" more highly than the second, then the appearance of anything dishonest or deceptive in a potential goal under consideration is likewise more likely to be noticed by the first focal person than by the second.

The overall effect of values on the actions of entrepreneurs and administrators from the perspective of the role set therefore has to do with the selection of means and ends, in addition to perceptions of the availability of viable means and ends. Figure II-1 shows a modification of Kahn *et al.*'s (1964) role set model incorporating entrepreneurial and administrative values. Although this model might at first glance seem to assume that there is an entrepreneurial and an administrative solution to every problem, it should be clear upon further inspection that focal persons of distinct managerial styles will often seek distinct goals and solutions. Insofar as a given working environment is short on the resources or support necessary to pursue the goals and solutions suited to one's actual managerial style, the result may be frustration and ultimately departure.

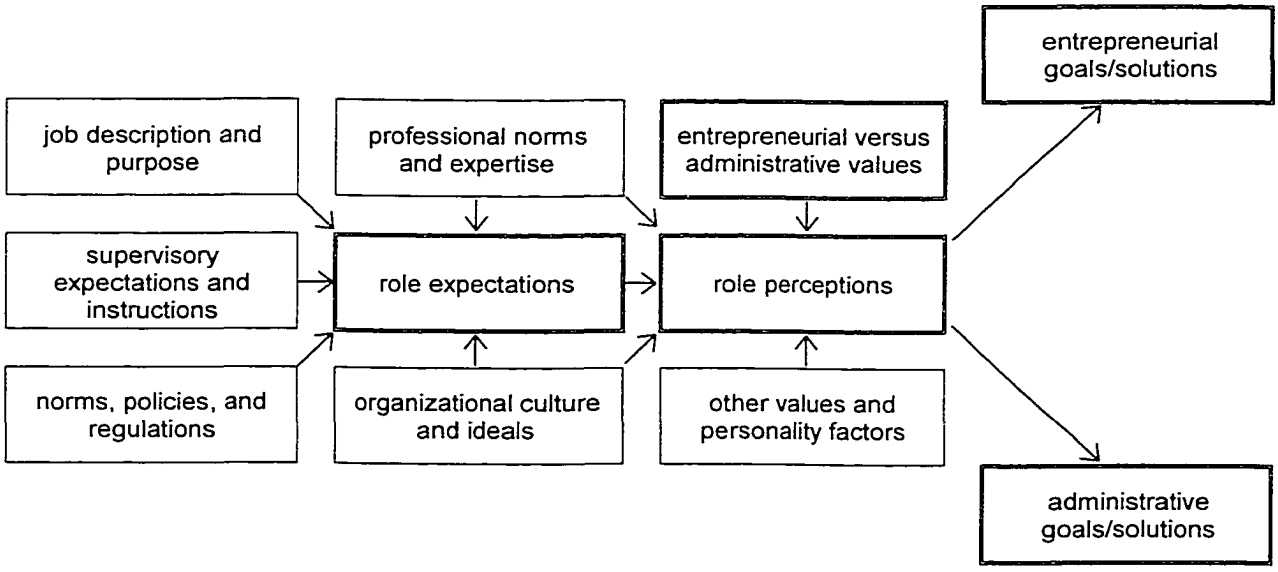


Figure II-1—Impact of Entrepreneurial and Administrative Values on Behavior within the Role Set Model

Role theory therefore helps us understand how entrepreneurial and administrative values influence workplace behavior. Two central considerations are role ambiguity and role conflict, and how the focal person reacts to them. The focal person's entrepreneurial or administrative values makeup will tend to determine both how to remedy either type of role confusion and whether the current state of that role confusion within the workplace is in fact sufficiently intolerable to warrant exit.

Kahn *et al.* (1964) described role ambiguity as lack of clarity in role sendings (p. 21). Subsequent research has suggested up to five conceptually discrete forms, *viz.*, goal, method, criterion, role sender, and scheduling ambiguity (Breaugh & Colihan, 1994; Dougherty & Pritchard, 1985; King & King, 1990; Sawyer, 1991). The ideal solution to role ambiguity is to seek clarification from role senders. However, people with high tolerance for ambiguity, such as entrepreneurs (Kuehl & Lambing, 1990), are more likely to invent their own solutions than ask for additional guidance. This fact may also explain why Voss, Seers, McGee, and Huhmann (1996) found business students to be very resistant to confusion caused by ambiguous role sendings alone. Entrepreneurs are also more likely to prefer a work environment in which the means and ends of action are not too rigidly prescribed (Brazeal & Weaver, 1996). By extension, a person with strong entrepreneurial values is likely to behave quite differently in an ambiguous environment from one with strong administrative values.

Kahn *et al.* (1964) provided a definition of role conflict in terms of the relevant cause-effect dynamic within the theoretical office: "[L]ack of agreement or coordination among role senders produces a pattern of sent expectations which contains logical incompatibilities or which takes inadequate account of the needs and abilities of the focal

person" (p. 21). They identified four subtypes of role conflict, *viz.*, intrasender, intersender, interrole, and person-role. They called a fifth type role overload, "a complex, emergent" form of role conflict "combining aspects of intersender and person-role conflicts" (p. 20). Brazeal's (1996) findings concerning the intrapreneur's need for accommodative structures and rewards may suggest that entrepreneurially oriented individuals have greater difficulty coping with role conflict than administratively oriented individuals. The ideal solution to role conflict is to confront role senders and renegotiate roles. In reality, it is probably safe to say that relatively few people actually do this. Some people try to meet expectations despite their incompatibilities and the very futility of the attempt. Others reinterpret or disregard certain role sendings, possibly to be reprimanded later. Some high-intensity working environments, in fact, may demand actors to whom reprimands are inconsequential against the primacy of the mission and who thus become accustomed to precisely this manner of coping with role conflict. The US Army evidently trains its officer candidates with precisely this effect in mind (Voss, 1986, personal experience).

Kahn *et al.* (1964) attributed the choice of coping strategy to factors of individual personality, which by definition include values. The attrition that is expected among entrepreneurially oriented managers for want of accommodation in large organizations would suggest a variety of person-role conflict resulting from incompatible managerial style, *i.e.*, entrepreneurial values in an environment demanding administrative values. Voss, Seers, McGee, and Huhmann (1996) found that most perceived role ambiguity is likely to result from conflicting, not ambiguous, role sendings. Hence, entrepreneurially oriented managers should experience greater role ambiguity arising from their managerial

style alone than should administratively oriented managers. If, as Kuehl and Lambing (1990) found, entrepreneurs do indeed have greater tolerance for ambiguity, inadequate accommodation of the entrepreneurial managerial style may not immediately result in the focal person's departure, but may be preceded by coping strategies that strike superiors as lack of consideration for organizational rules and protocol, or even insolence. Thus, the entrepreneurially oriented manager may be perceived as not fitting into the organization's culture. As a result, departure may follow any of several possible antecedents, including the conflict itself, the resulting ambiguity, or direct pressure from superiors to conform.

Locke's Conceptualization of Values and Motivation

In Locke's (1976) goal-setting theory, values are posited as the most basic drivers of goal-oriented behavior. They serve to induce certain emotions and desires, which drive intentions or goals. These, in turn, foster directed attention, mobilize energy, create persistence, and bring about the development of performance strategies. Locke's demonstration of the fundamental effect of values on goal-directed behavior constitutes probably the most clearly specified theoretical association between values and behavior. It also corroborates the "central" position of values in the human psyche posited by Rokeach (1968). Locke's theoretical connection between values and behavior was probably the consequence of his choice of definition. Rand (1964) had defined a value as "that which one acts to gain and/or keep" (p. 25). Branden (1966) had defined a value as anything that can be regarded as promoting one's welfare. Neither definition is as specific as that advanced by Kluckhohn (1951) and maintained by later theorists, referring to a conception of the desirable. Rather, these others leave the way open for concrete as well as abstract conceptualizations, observable as well as idealized, valence as well as values

per se. However, both perspectives imply something that invites some degree of effort to pursue or maintain. Locke (1976) based his goal-setting model of motivation, within which the difference between valence and values is immaterial, on these definitions.

Locke (1991) advanced a theoretical framework for understanding motivation in which he placed values in a position of relative "centrality" that falls between basic human needs, which are more central, and goals, which are less central. Thus, from greatest to least centrality, Locke's (1991) motivation sequence incorporates: (1) needs; (2) values, in addition to motives arising from considerations of equity and expectancy; (3) goals and intentions; (4) expectancy and self-efficacy, which partially reinforce goals and intentions; (5) performance; and finally (6) satisfaction *via* the perception of rewards. He proposed a motivation hub composed of the linkages among goals, self-efficacy, and performance. This is distinct from the motivation core, or essence. Locke's (1991) motivation sequence model places values in the motivation core, where they determine goals and intentions. More interested in the motivation hub, where all real activity takes place, Locke nevertheless recognized the critical importance of the motivation core, the source of all energy necessary for substantive performance and persistence in a course of action.

The connection between human values on the one hand, and goals, intentions, and performance on the other, established by Locke's model through the theoretical apparatus of motivation is a critical development in the literature integrating the theory of universal human values into the conceptual repertoire of the research into entrepreneurship. As a parallel development, Schwartz's (1992) theory depicts groups of universal human values as composing "motivational domains" that underlie broad patterns of behavior. This

independent development both adds greater dimension to and corroborates Locke's (1991) conceptualization. Locke's motivation sequence model complements the domain-specific role theory model by explaining broader patterns of behavior. Here, human values serve to guide the selection of goals and intentions outside the context of meeting expectations as well. Figure II-2 shows a modification of Locke's (1991) model depicting entrepreneurial and administrative values.

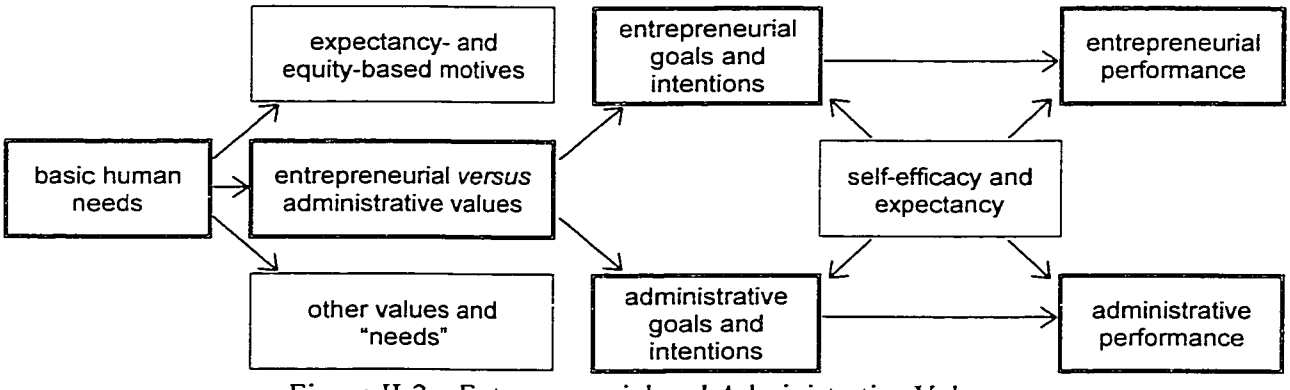


Figure II-2—Entrepreneurial and Administrative Values in Locke's (1991) Motivation Sequence Model

Both Locke (1991) and Schwartz (1992) posited human values as serving ultimately to meet basic human needs. Locke (1991) defined such needs as of the type investigated by Maslow (1959: physiological, safety, social, esteem, and self-actualization needs) and Deci and Ryan (1985: need for competence and self-determination). Schwartz and Bilsky (1987) identified these along with several others in eight specific "motivational domains," namely, enjoyment, security, achievement, self-direction, restrictive-conformity, prosocial, social power, and maturity (to which three more were added later, *cf.* Schwartz, 1992, 1993). These overlap in content with Locke's (1991) motivation core, where Locke placed certain "needs" such as McClelland's (1951) need for achievement, affiliation, and power. To Locke, these did not appear to be quite as basic to human existence and thus were more akin to values than needs. Schwartz and

Bilsky (1987) approached the issue differently, noting that basic human needs are generally expressed in terms of human values (idealized concepts that serve as abstract goals) rather than in terms of their underlying organismic properties. For example, the "achievement" motivational domain is an epiphenomenon of the "basic need to develop and use skills to obtain from the physical and social environment those resources required to thrive" (p. 552).

From the perspective of Locke's (1991) motivational sequence model, therefore, entrepreneurial and administrative values constitute two viable approaches to satisfying the complex needs of a human being in modern society. However, they also serve to propel a human being along a generally predictable career path. Of course, this assumes some degree of freedom of economic choice and predictably different structural and reward accommodations between self-employment and working in large organizations. The importance of Locke's (1991) model is the central role played by human values as a source of motivation that informs goals.

Work Values

The term "work values" has caused some confusion in the research into universal human values. On the one hand, universal human values are sometimes called "work values" in the literature (*e.g.*, Ralston, Holt, Terpstra, & Yu, 1997). On the other, attitudes toward certain facets of work or work environments have been categorized as "work values" (Dose, 1997; Elizur, 1984; Meglino, Ravlin, & Adkins, 1991; Pryor, 1979; Ravlin & Meglino, 1989; Ravlin, Meglino, & Adkins, 1989; Zytowski, 1970). Connor and Becker (1994) concluded from their context-specific nature that they are actually attitudes. This distinction is critically important in investigating the ability of human

values to capture the entrepreneurial and administrative patterns of behavior. We should expect attitudes toward work to be related to the human values underlying these patterns, but the former would be an inadequate representation of the latter. The stimulus-specific nature of attitudes prevents them from being construed as legitimate representations of generalized patterns of behavior.

Ultimately it must be conceded that there is no clear line to separate values from attitudes at this level of abstraction. If there is arguably a motivational component, then they satisfy a prerequisite of values according to Rokeach (1968). If they can be styled as "idealized" or "conceptions of the desirable," then they satisfy another. Thus, many of the conclusions that can be drawn from empirical applications of work values generalize into the realm of universal values. However, in order to be considered universal human values, they must not be context-specific (Schwartz, 1993). Consequently, although work values may not clearly be attitudes, as Connor and Becker (1994) suggested, they cannot be considered "universal," with the same implications for generalizability across the full range of human contexts that universal values have. They are clearly more specific than universal values, probably overlapping Locke's (1991) motivation core and hub insofar as they can be characterized as types of goals pursued to satisfy a need (Super, 1973). In Zytowski's (1970) wording, work values constitute "a set of concepts which mediate between the person's affective orientation and classes of external objects offering similar satisfaction" (p. 176). By "affective orientation," Zytowski seems to wish to bridge the gap between human values and attitudes.

To be sure, scales measuring work values often feature some nomenclature that would be described as universal values by Rokeach or Schwartz. Examples include

"achievement-prestige" (O'Connor & Kinnane, 1961), "prestige," "independence," and "creativity" (Pryor, 1981), and "achievement," "safety," and "comfort" (Gay, Weiss, Hendel, Dawis, & Lofquist, 1971). However, these scales also include such context-specific interests as "conditions and associates" (O'Connor & Kinnane, 1961), "aggrandizement" (Gay *et al.*, 1971), and "coworkers," "physical activity," and "money" (Pryor, 1981). These facets of career interests, which imply valence rather than values, may help explain why entrepreneurs and administrators tend to choose different work environments. However, they would probably not serve to capture the full breadth of entrepreneurial and administrative patterns of behavior, generalize outside the context of the workplace, or resist social-desirability effects due to their more specific wording.

Hofstede's Cultural Dimensions

Hofstede (1980) identified four dimensions of culture (to which a fifth was identified later) said to account for basic commonalities in attitudes, decision-making, and behavior within a culture and differences among cultures. The first four values that Hofstede identified were power distance, individualism-collectivism, uncertainty avoidance, and masculinity-femininity. Power distance refers to a culturally informed base of assumptions regarding differences in status and a society's inclination to accommodate them. Collectivism is the tendency to synchronize one's goals with those of one's reference group; individualism is the opposite tendency. Uncertainty avoidance refers to a preference for structured over unstructured situations, with clear rules of behavior. Masculinity is the tendency to value assertiveness, performance, success, and competition over quality of life, warm relationships, service, care for the weak, and solidarity; femininity is the opposite (Hofstede, 1992). The fifth (Hofstede & Bond,

1988) is long-term orientation. This refers to a propensity to act in a way that is oriented toward the future rather than the immediate present, such as by saving money and showing persistence in one's affairs. The opposite pole of this dimension emphasizes both a present and a past orientation, including respecting tradition, fulfilling social obligations, and saving face. Scores on each dimension fall on a continuum with an upper and lower extreme. Each of the world's national cultures falls somewhere along the continuum of each dimension as a matter of national identity. A national culture is usually construed as the mean culture of a nation-state, but the same analyses can be applied equally well to cultural differences based on region (*e.g.*, Kahle, 1986), the urban-rural divide, and ethnicity (*e.g.*, Valencia, 1989).

Hofstede's monumental (1980) study started an independent line of research into cultural, as opposed to individual, values, until Schwartz and Bilsky (1987, 1990) proposed a theory of values integrating Rokeach's individual-level model with Hofstede's cultural-level model. Using smallest-space analysis, Schwartz and Bilsky (1987) found that individual values cluster within two-dimensional regions coinciding with Hofstede's individualism and collectivism, respectively, in addition to a smaller, mixed region. This clear correspondence called into question the distinction between individual human values and the cultural dimensions introduced by Hofstede (Schwartz, 1990). Further analysis strongly suggested that the individualism-collectivism dichotomy actually represents a distinction in interest facets, or general criteria guiding the formation of individual values hierarchies toward a given norm within each society. That cluster of values corresponding to individualism consisted of values seen by members of a society as serving individualistic interests. That corresponding to collectivism consisted

of values seen as serving predominantly social interests. The mixed cluster was seen as serving the interests of individuals and the collectivity more or less equally and was interpreted as representing adult maturity.

Other studies (Leung, 1987; Triandis, 1987) also called into question the individualism-collectivism model, suggesting that it might be less polarized than as depicted in Hofstede's typology, and providing independent corroboration for Schwartz and Bilsky's observations. Further inspection by Schwartz and Bilsky (1990) showed that smaller clusters of values serve more specific interests, each conceptually associable with a basic human need. These smaller regions in the smallest-space map were labeled "motivational domains" (*cf.* the preceding discussion about Locke's motivation theory). Eventually, Schwartz and Bilsky (1990) and Schwartz (1990, 1992, 1993, 1994) found that Hofstede's cultural dimensions informed but did not match up perfectly with motivational domains.

Schwartz and Bilsky's Motivational-Domain Theory of Universal Human Values

Schwartz and Bilsky (1987, 1990) theorized that values have both a structure and a content aspect. The former refers to "a set of dynamic relations among the motivational types." The latter refers to "the type of goal or motivational concern" that the value expresses (Schwartz, 1993, p. 4). The structure theory of values is an elaboration on Rokeach's (1973) simpler hypothesis that values are inherently incompatible with one another, competing for primacy in each situational context in which one finds oneself. This notion was developed further by Feather (1975), who wrote, "[O]ne can conceive of a value as an abstract structure involving an associative network which may take different forms for different individuals" (p. 16). Schwartz and Bilsky (1987, 1990) advanced the

notion that some values compete with each other, others coexist without conflict, and still others reinforce each other. While the mutually competitive nature of values formed the basis for Rokeach's (1973) affirmation of the hierarchy theory of values, Schwartz and Bilsky's departure lay in defining the nature of the hierarchy as more accurately a structure in which values compete, reinforce or coexist depending on the motivational nature of their content. This is particularly important to the theory of human values from the standpoint of measurement, because Rokeach's forced-choice ranking procedure depends wholly on his theory that all values compete with all others. This method was initially used in Schwartz and Bilsky's analyses but was eventually discarded as unnecessary and ultimately antithetical to a theory of values based on motivational domains. Meanwhile, the axiom that human values are meaningful only in terms of their mutual arrangement remains, suggesting that the total strength of affect represented by the sum of scores on a survey of human values should be equal for all respondents.

Schwartz (1993) hypothesized eleven motivational domains of values. It is convenient first to enumerate those that are analogous to, or derived from, Maslow's (1959) theory of the hierarchy of needs. Of these, only physiological needs fail to translate into a motivational domain for Schwartz (1993). Maslow's security and social needs translate into Schwartz's security and benevolence domains, respectively (Kluckhohn, 1951; Williams, 1968; also for the latter McClelland, 1961). Maslow's esteem needs translate into Schwartz's achievement domain (McClelland, 1961). Finally, Maslow's self-actualization needs translate into Schwartz's universalism domain (Schwartz, 1990). From McClelland (1961) we have a fifth domain—power (Gordon, 1960; Schutz, 1958). Partially rooted in Freudian theory are the sixth and seventh

domains, namely hedonism (Bentham, 1838; Freud, 1933; Morris, 1956; Williams, 1968) and conformity (Freud, 1930; Morris, 1956). Lastly, there are the domains of self-direction (Bandura, 1977; White, 1959), stimulation (Berlyne, 1960), tradition (Radcliffe-Brown, 1952; Sumner, 1906), and spirituality (King, 1954; Niebuhr, 1935; Tillich, 1956). To each motivational domain may be assigned a number of specific values, some of which carry meaningful connections to other motivational domains and thus the potential for activating them indirectly.

Schwartz's (1993) "dynamic structure of value relations" rests predominantly on the principle of an "interests facet" in the theory of values. "If values are viewed as goals, then their attainment must serve the interests of the individual and/or of some collectivity" (p. 13). Values serving individual interests are said to compete with those serving collective interests, and *vice versa*. Regarding this distinction between individually and collectively motivated values, Schwartz (1990) was careful to point out that this should not be confused with the individualism-collectivism dimension of national culture featured in Hofstede's (1980) study. Rather, individualism-collectivism should be expected to moderate this and other dynamics of the values structure in quite independent fashion. In Schwartz and Bilsky (1990) study, maturity values fell on the boundary between the two regions, into which individually and collectively motivated values, respectively, clustered. This confirmed their hypothesis that maturity-related values serve both types of interests simultaneously. Schwartz and Bilsky's (1990) study was also intentionally multinational. This was planned in order to develop and refine the theoretical framework of human values across cultures. The premise underlying this approach was Feather's (1975) criterion of functional equivalence, meaning that values

across cultures may be deemed comparable if they are of similar importance and are associated with similar behaviors. This is a critical development that is likely to have broad implications for the utility of a concept of entrepreneurial and administrative values in cross-cultural research.

Section II

Entrepreneurship

Entrepreneurship is a concept that has persisted at least since Richard Cantillon's use of the term *entrepreneur* in 1755 to refer to a person who uses business judgment under conditions of uncertainty (Hebert & Link, 1988). It literally means, quite simply, "one who undertakes," although the English equivalent "undertaker" means something rather different and more dismal. Among 20th-century writers, the central theorist is Joseph Schumpeter, whose definition of an entrepreneur as someone who creates "new combinations" through a process of "creative destruction" (1936, p. 66; and 1942, p. 132, respectively) benefits from great popularity among practitioners. Some theorists are convinced that entrepreneurship is effectively a label for a variety of types of idiosyncratic behavior that cannot be measured or predicted (Baumol, 1993; Johannisson & Senneseth, 1990; Low & MacMillan, 1988). However, most are of the opinion that entrepreneurship is indeed possible to measure and predict (Bygrave, 1989; Herron & Robinson, 1993; Schein, 1985, 1994; Stevenson & Gumpert, 1985). The difficulty lies in defining entrepreneurship in a way that adequately captures the breadth of its complexity without compromising its generalizability. Understanding it as a general, rather than context-specific, pattern of behavior seems to be a partial solution. Meanwhile, keeping it conceptually close to the creation of new economic structures is critical.

The most salient attributes of the entrepreneur are summarized in Schein's (1985) definition of entrepreneurship (which he had earlier called creativity). These are the propensity to create "something new, involving the motivation to overcome obstacles, the willingness to take risks, and the desire for personal prominence in whatever is accomplished" (p. 30). Kuehl and Lambing (1990) described entrepreneurs as action-oriented, energetic, tolerant of ambiguity, and self-confident, with strong internal locus of control and high need for achievement. Among these definitions, the particular motivation of the entrepreneur stands out clearly as the defining characteristic. More fundamentally, the strength of that motivation may be the most critical attribute.

Bull and Willard's (1993) theory of entrepreneurship focuses on prediction *via* a framework that begins with motivation. From a very careful review of the literature, Bull and Willard (1993) theorized that entrepreneurship occurs, according to Schumpeter's (1936) definition involving "new combinations," when four conditions are met. The first is task-related motivation, defined as "some vision or sense of social value embedded in the basic task itself that motivates the initiator to act." The second is expertise, defined as "present know-how plus confidence to be able to obtain know-how needed in the future." The third is expectation of gain for self, defined as "economic and/or psychic benefits." The fourth is a supportive environment, defined as "conditions that either provide comfort and support to the new endeavor, or that reduce discomfort from a previous endeavor" (p. 188). Naturally, entrepreneurship requires more than merely the prevalence of entrepreneurial values to occur. However, the similarity between Bull and Willard's requisite conditions and Locke's (1991) motivational sequence cannot go unnoticed. Bull and Willard have placed the motivational component of entrepreneurship up front,

corresponding to a region overlapping Locke's motivation core and hub. This is the nexus between human values and explicit goals. Not coincidentally, this is also where Bull and Willard have specified that the entrepreneur's "vision or sense of social value" spur the initial action that can lead to an entrepreneurial undertaking. The next two conditions, expertise and expectation of gain for self, fall squarely within Locke's motivation hub in the form of self-efficacy and expectancy, respectively. While the fourth condition does not find as explicit a place within Locke's (1991) theory as the first three, the question of how to accommodate entrepreneurial behavior in organizations is of very strong current relevance to the research into entrepreneurship (Brazeal, 1996; Brazeal & Weaver, 1996). It would appear that Bull and Willard's (1993) efforts at constructing a theory of entrepreneurship have corroborated the preeminent role of motivation in such a theory, and in so doing have provided added justification to the use of human values as a valid way to approach the study of entrepreneurship.

The use of self-employment status as a proxy for entrepreneurship has caused some problems in entrepreneurship research. One's assumption of a sole proprietorship cannot be said to be a reliable indicator of entrepreneurship in and of itself because the motivations for doing so may differ greatly from person to person. Yet even today, the proliferation of studies that simplistically equate self-employment with entrepreneurship is rather great. Schein (1994) wrote:

> ...self-employment and starting up businesses to survive economically in midlife because of being laid off or early retired should not be treated as equivalent or similar to entrepreneurship. Let us not fall into the trap of minimizing the psychological distance between self-employment and entrepreneurship. (p. 87)

In making the distinction between people who seek self-employment from those who are entrepreneurs *per se*, Schein (1994) noted that the former, whom we can classify as

income-substituters, "often will buy a business and run it rather than creating it.... [W]hat they want is freedom and economic security" (p. 88). True entrepreneurs, on the other hand, are described in quite different terms: "If they are employed, they are using that employment to build knowledge and funds in order to break out and start a business. Their self-concept has much less to do with autonomy and much more to do with building and self-aggrandizement. They are more narcissistic, self-confident, creative, and assertive" (p. 88). This is not to say that a true entrepreneur is indifferent to freedom and autonomy (contrary to the prevailing views, *cf.* Bull & Willard, 1993; Levenhagen & Thomas, 1990; Rockey, 1986). However, it is clear that without the latter qualities (narcissism, self-confidence, creativity, and assertiveness), in addition to others, the motivations dominating a given subject's endeavors are likely to have more to do with getting away from authority (Collins & Moore, 1964) than with creating and innovating.

Stevenson (1987) considered it a *sine qua non* that entrepreneurs create and own an organization, thus excluding all those who come into their positions by any means other than by creating them. Dyer (1994) proposed that "the core attribute of an entrepreneur is the ability to found new enterprises" (p. 7). As noted above, Schein (1985) distinguished the income-substituter from the entrepreneur by emphasizing the search for autonomy and independence in the former and entrepreneurship *per se* uniquely in the latter. It is Schein's (1994) view that

> ...we need to study both groups, but we need to be careful not to lump them together unless our data really show them to be similar. In an age where defensive self-employment is becoming more and more necessary as companies keep up their frenzy of downsizing, we need to understand much better how this process works and how people will manage it. At the same time, we must not abandon research that is very specifically focused on the much smaller group of entrepreneurs who will, in fact, build the new enterprises that will ultimately pull the society out of its economic doldrums. (p. 30)

A lucid point of departure for separating entrepreneurs from the larger set of managers is Timmons' (1994) bidimensional classification of promoters, inventors, administrators and entrepreneurs. This scheme places creativity and innovativeness on one axis and general management knowledge, skills, and networks on the other. Inventors and entrepreneurs score high on the former dimension, while administrators and entrepreneurs score high on the latter. Thus, entrepreneurs and traditional managers differ along the creativity/innovativeness dimension. This is consonant with most authors (*e.g.*, Dyer, 1994; and Schein, 1985, 1994), who have seen the creativity/innovativeness dimension as the essential characteristic of the entrepreneur. Meanwhile, entrepreneurs and inventors are distinguished along the management skills dimension. It is probably valid to suggest that Timmons' model assumes the preexistence of the requisite motivation. However, the character of that motivation is absent therefrom.

Fagenson (1993), upon whose work a significant portion of the present study rests, based her operationalization of entrepreneurs *versus* administrators ("traditional managers") on the criterion of founding a new enterprise. She began by identifying small-business owners and then used a sequential approach to narrow down her sample to individuals meeting her definition of "entrepreneur," *viz.*, those who are "responsible for establishing and managing a business for which [they have] assumed the financial and psychological risks" (p. 415). After screening companies according to the most widely applied definition of a small business used by the US Small Business Administration ($N < 500$ employees), she selected only those owners who had founded the organizations they were currently running. Only 5% of small-business owners in Fagenson's (1993) sample fell into the category of income-substituters. However, this proportion is likely to

vary widely from sample to sample, as demonstrated by Cooper and Dunkelberg's (1986) example from which 49.3% would have been excluded using Fagenson's criteria. For her sample of traditional managers, Fagenson identified persons in charge of one or more other persons in large organizations.

Brazeal (1990, 1996) used one's status as manager of an autonomous unit (AU) as a proxy for intrapreneurship. This approach followed Hisrich and Peters' (1986) proxy of one's status as manager of a new venture group for the entrepreneurial champion. However, one must be wary of the likelihood that the selection of managers for autonomous units often operates according to some criterion other than demonstrated entrepreneurial behavior. This is precisely the point of seeking to generate accurate data reflecting the distinction between entrepreneurship and administratorship. Brazeal's first choice was to use Stevenson and Sahlman's (1986) behavioral-orientation scale to differentiate these two groups of people. Unfortunately, that scale demonstrated a level of reliability too poor to warrant that approach.

Psychometric Approaches to Entrepreneurship

Early research in the field of entrepreneurship examined individual personality traits and demographic variables. Under the rubric of personality traits were mainly need for achievement, locus of control, and risk aversion. As explained previously, variables of the type included here as personality traits overlap considerably with universal human values (Schwartz & Bilsky, 1990). Viewed from this perspective, the range of values that each represents is quite restricted, as each generally corresponds to no more than a single motivational domain in the theory of universal human values. Consequently, their ability to predict entrepreneurial behavior can be expected to be quite limited from this

perspective. Perhaps more importantly, they have not generally been used for the specific purpose of distinguishing entrepreneurs from administrators, but rather have mostly been seen as possible markers for entrepreneurship alone. A perusal of Fagenson's (1993) and Gray and Eylon's (1996) findings suggests that the effort to distinguish between these two behavioral patterns is probably easier and more likely to lead to significant outcomes than trying to detect entrepreneurship as a *Ding an sich.*

Need for Achievement. High need for achievement has been empirically linked to entrepreneurial behavior. McClelland (1961) posited that some societies produce more entrepreneurs because of a socialization process that creates a high need for achievement. He substantiated this thesis by content-analyzing the folklore of a wide range of societies, including many technologically primitive ones. McClelland reported that a high need for achievement influences the decision to enter entrepreneurial occupations and even affects the development of whole cultures that encourage this trait. These and other studies conducted mostly in the 1960s demonstrate that high need for achievement is associated with personal responsibility, setting and achieving goals, a desire for feedback, and the likelihood of entering an entrepreneurial position (Brockhaus, 1982; McClelland, 1961, 1965, 1967; McClelland, Atkinson, Clark, & Lowell, 1953; McClelland & Winter, 1969).

However, Low and MacMillan (1988) found McClelland's conclusions to be applicable to many individuals, not just entrepreneurs. Also, research has failed to link high need for achievement and the decision to own and manage a business (Sexton & Bowman, 1985). The reason for this is probably visible within the framework of Schwartz's (1993) theory of motivational domains. The achievement domain consists of a cluster of values that mainly serve to satisfy those sources of motivation to which

Maslow (1959) referred as esteem needs. As such, while it is possible that this domain is more closely related to entrepreneurial than administrative behavior, it is not necessarily to be expected. Both entrepreneurial and administrative values can induce a person to pursue a course of action that satisfies esteem needs. Nevertheless, McClelland's (1961) conclusions from his analysis of several societies would suggest that these values are more closely related to the creativity and innovativeness aspects of entrepreneurship than with administratorship. This is supported by Fagenson's (1993) and Gray and Eylon's (1996) findings, which demonstrate a clear association between entrepreneurship and the values "courageous," "imaginative," and "broadminded."

Locus of Control. Locus of control refers to the degree to which people perceive events in their lives to be under their control, or to be unrelated to their choices and therefore beyond their control (Sexton & Bowman, 1985). These contrasting perceptions are referred to as internal and external locus of control, respectively. Research indicates that individuals with high internal locus of control often have a more pronounced need for achievement (Brockhaus, 1982; Gurin, Gurin, Las, & Beattie, 1969; Lao, 1970). This relationship has led some to conclude that entrepreneurs may be characterized by high internal locus of control. However, subsequent research has led to contradictory findings (Brockhaus & Nord, 1979; Hull, Bosley, & Udell, 1980). For example, two studies found entrepreneurs to be more internally oriented than administrators (Brockhaus, 1975; Pandey & Tewary, 1979), while other studies found no significant differences (Brockhaus & Nord, 1979; Mescon & Montanari, 1981; Sexton & Bowman, 1984a, 1984b). On the other hand, Brockhaus (1982) correlated locus of control data reported on entrepreneurs in 1975 to their success rates in 1978. Those still in business in 1978 were

indeed found to be more internally oriented than those whose businesses had expired. Brockhaus concluded that their internal locus of control might have resulted in greater motivation actively to seek to influence their own success.

Consequently, despite some mixed findings in the literature, there does seem to be a significant difference between entrepreneurs and administrators in locus of control. This is relevant to universal values within Schwartz's (1993) self-direction domain. The actual differences between entrepreneurs and administrators within this domain are reflected in Fagenson's (1993) findings, in which "independent" is ranked more highly among entrepreneurs than among administrators. Gray and Eylon (1996) found the same difference, namely a higher mean ranking of "independent" among successful than unsuccessful entrepreneurs. Values reflecting high internal locus of control on the SVS may include "choosing own goals," "influential," and "social power," among others. An opposing value is "accepting my portion in life." None of these appears on the RVS, so it seems very likely that the SVS will be capable of detecting this facet of entrepreneurial psychology more completely than the RVS could have.

Risk Aversion. Risk aversion is specifically a psychological trait (Sexton & Bowman, 1985). It is not the direct opposite of risk propensity (discussed below under Entrepreneurial Orientation) because it is considered a psychological trait that theoretically underlies a pattern of behavior characterized by the avoidance of action in support of which too little information is available. It is not, however, that pattern itself. It is very closely related to tolerance for ambiguity (Kuehl & Lambing, 1990) and partially akin to uncertainty avoidance (*cf.* Hofstede, 1980), but the entrepreneurship literature usually treats it as an attitude toward risk rather than an attitude toward

ambiguity. To be sure, the terminology is rather inconsistent in the literature. For example, Brockhaus (1982) focused on "risk propensity" as the perceived probability of receiving those rewards associated with the successful outcome of a risky situation. Consequently, for Brockhaus, risk propensity is a psychological trait. By contrast, Sitkin and Pablo (1992) distinguished among risk perception, risk preference (the opposite of risk aversion), and risk propensity. Their use of the term "risk propensity" is consistent with Brockhaus's (1982) conceptualization but not with his formal definition (which includes risk preference), nor with his empirical operationalization (which measures risk perception, rather than risk preference or risk propensity). Instead, risk propensity is regarded as a thoroughly behavioral construct thought to moderate the relationship between low risk aversion and actual risk-taking behavior.

Palmer (1971) suggested that risk measurement and risk-taking are the primary functions of entrepreneurship. However, as with internal locus of control, some studies have found no evidence of differences in risk aversion between entrepreneurs and administrators (*cf.* Brockhaus, 1982). Nevertheless, Sexton and Bowman (1985) concluded that risk aversion may indeed distinguish entrepreneurs from administrators. In two separate studies, they found potential entrepreneurs to have lower risk aversion than non-entrepreneurs (Sexton & Bowman, 1984a, 1984b). This is consistent with the view of most current theorists (*e.g.*, Bull & Willard, 1993; Schein, 1985). Busenitz (1999), however, demonstrated that perceptions of risk are lower among entrepreneurs than among administrators, under the same conditions, a finding that would be consistent with the observation that human values govern perception itself (Postman *et al.*, 1948; Ravlin & Meglino, 1987). Consequently, low risk aversion is not likely to translate smoothly

into high risk propensity. Nevertheless, Fagenson's findings may reflect lower risk aversion among entrepreneurs in the association between "an exciting life" and entrepreneurship. The SVS features "daring," "an exciting life," and "a varied life" as possible correlates.

Problems with Psychometric Approaches to Entrepreneurship. Cooper and Dunkelberg (1986) suggested that, while entrepreneurs may differ psychologically in certain ways from the general population, the nature of those differences is not predictable (*cf.* also Low & MacMillan, 1988). According to Churchill and Lewis (1986), more empirical studies involving entrepreneurial traits had been conducted than almost any other type of entrepreneurship research. Looking back on many years of such attempts, Gartner (1988) suggested that the study of entrepreneurs' personal characteristics offers little hope of furthering our understanding. Low and MacMillan (1988) concluded in a review of psychological theories concerning entrepreneurs that:

> ...being innovators and idiosyncratic, entrepreneurs tend to defy aggregation. They tend to reside at the tails of population distributions, and though they may be expected to differ from the mean, the nature of those differences are [*sic*] not predictable. It seems that any attempt to profile the typical entrepreneur is inherently futile. (p. 148)

In a similar argument, Bull and Willard (1993) stated that there is no "typical entrepreneur." According to them, except for the intensity of an entrepreneur's motivation to carry out actions, psychological traits are not a significant variable in the theory of entrepreneurship.

Despite the tone of these arguments, they highlight some important facts that must be taken into consideration in the study of entrepreneurial values. The central problems with studying entrepreneurs as individuals involve attempting to isolate psychological traits that might predict specific instances of entrepreneurial success rather than long-

term patterns of entrepreneurial behavior. An individual who innovates is not necessarily an entrepreneur, nor does an entrepreneur behave in every instance as an innovator. Nevertheless, by and large, an entrepreneur can be expected to innovate significantly more often than an administrator does over the course of time. Moreover, an entrepreneur can be expected to innovate under conditions of uncertainty more readily than an administrator. Contrary to Low and MacMillan (1988), it has been shown clearly that entrepreneurs and administrators differ noticeably in their values hierarchies (Fagenson, 1993), while successful entrepreneurs have likewise demonstrated different values hierarchies from unsuccessful ones in precisely the same patterns (Gray & Eylon, 1996). Furthermore, these differences have been shown to prevail in large organizations (Voss, Weaver, & Brazeal, 1996).

It is likely that the search for stable psychological differences has been hampered by the choice of psychological dynamic investigated. Psychometric approaches have generally tried to predict entrepreneurship based on the equivalent of a limited subset of universal values. These effective clusters of values have been conceptualized and operationalized outside the theoretical context of universal values, which may also have undermined the effectiveness of the measures. Lastly, these studies have often not attempted to distinguish entrepreneurs from administrators, but rather to predict entrepreneurship *per se*. Regarding this, it is important to point out that many factors intervene and conspire to influence the entrepreneur's success and career path. Consequently, it is critical to maintain that the most reliable theoretical principle underlying entrepreneurship is going to be a broad, long-term dynamic rather than a narrow cluster of traits treated with the specificity and immediacy of attitudes.

Meanwhile, Fagenson's (1993) and Gray and Eylon's (1996) findings strongly suggest that the fundamental distinction between the entrepreneur and administrator be the focus of study, for this appears to be more readily discernible than "entrepreneurship" alone.

Demographic Approaches to Entrepreneurship

According to Bird (1989), an individual's experiences and upbringing can influence the development of skills, values, and needs that serve as important drivers to entrepreneurship, but these will be moderated by certain demographic variables. Demographic approaches to entrepreneurship most commonly examined include age, sex, education, and ethnicity. Work experience is often included in this category as well. Demographic variables are relevant to universal human values as antecedents, based on the demonstrated relationship (*cf.* especially Rokeach, 1973) that has been shown thus far. This is based on the observation that values change gradually over time as individuals mature and in accordance with the uniqueness of their life experiences (Rokeach, 1968). Regarding work experience in particular, there is a mutually causal relationship between this and universal human values. Not only does work experience influence values, but values go a long way toward determining the work environments in which one will self-select and acquire those experiences.

Age. The range from age 25 to 40 is frequently cited as that stage in one's life in which entrepreneurial decisions are most likely to be made (Bird, 1989; Howell, 1972). Liles (1974) suggested that during this period, many individuals have acquired sufficient experience, competence, and self-confidence, but have not yet incurred overriding family or financial obligations or established an absolute commitment to a large company. However, the age at which one decides to go into business is widely distributed (Gasse,

1977) and can be expected to vary with the sample chosen for a particular study (Bird, 1989). Despite this, some differences do seem to exist. Cooper and Dunkelberg found that the founders of new enterprises are more often in their twenties than in their forties, while those who purchase new enterprises are predominantly in the latter age category. Begley and Boyd (1987) and Cooper, Willard, and Woo (1986) have suggested that younger entrepreneurs (with a lower limit of about 22-25 years of age) may be more successful than older ones. Also, Ronstadt (1984) found that the earlier one starts an entrepreneurial career, the longer one is likely to remain in it, despite venture failures.

While much of this makes intuitive sense, it is also important to the study of universal human values because age represents two very closely related dynamics, namely, the maturation process and a change in basic needs. Rokeach (1973) noted that several values may change in priority over the course of people's lives in very predictable fashion. Chief among these are some values that Fagenson (1993) found to distinguish entrepreneurs from administrators. Specifically, "freedom," "an exciting life," "ambitious," "independent," "courageous," and "imaginative" can all be expected to be stronger among people in their 20's than among people in their 50's. Conversely, "wisdom," "salvation," "loving/compassionate," and "forgiving" can be expected to increase in importance as one grows older. In addition, age represents generational norms. Because of the identification of an individual with a particular age cohort, age may be found to correlate closely with certain values that have changed from one generation to the next (Rokeach, 1973).

Education. Formal education may facilitate entrepreneurial success by providing for the development of competencies such as innovativeness and facility in acquiring

resources. These competencies are thought to be important for success in many entrepreneurial ventures (Bird, 1989; Ronstadt, 1984). For example, education can be especially important in highly technical industries because anything less than a specialized degree will fail to provide an individual with the necessary skills. However, Brockhaus and Nord (1979) proposed that educational level and entrepreneurial development might be negatively related, perhaps because a lack of education limits the ability to find challenging work. Cooper and Dunkelberg (1986) found that a significantly greater number of people who started or purchased their enterprises had less than a college degree than those who had inherited or been promoted or brought into the new firm. They attributed this to difficulties common to many entrepreneurs in relating to authority figures and a propensity to leave school early to go into work for themselves (*cf.* Collins & Moore, 1964). This increases the propensity to start a business (Howell, 1972).

However, the effect of education on entrepreneurial values may actually prove to be the opposite. While it seems reasonable to generalize from the common experience of many people that entrepreneurs tend to have trouble with authority figures, this trait may not be necessary to the development of entrepreneurship. It is frankly bizarre to suggest that entrepreneurs might all turn out to be the irascible bullies we knew in grade school, although in some contexts a strong or even abrasive personality might help provide the firmness necessary to make decisions despite strong opposition. It is probably truer to suspect that some entrepreneurs consist of those who could not function well in an environment demanding any degree of conformity, while others consist of people who

are successful precisely because they interact well with other business leaders and are well respected in their communities.

Indeed, Voss, Weaver, and Brazeal (1996) found a positive, rather than negative, correlation between educational level and entrepreneurial values in a sample of high-level managers in very large US organizations. This effect appeared to involve mainly terminal values. Part of the reason for the discrepancy between this study and that of Collins and Moore (1964) may lie in the particular eras from which each of the two studies derives its sample, coupled with the type of businesses investigated. The Collins and Moore (1964) study focused on Michigan manufacturing firms in the early 1960s, a time and set of industry conditions in which it was relatively unusual to have a college degree. Those who did have one tended to dedicate themselves to the stability of the large enterprise. Meanwhile, the Voss, Weaver, and Brazeal (1996) study focused on large, successful organizations in the late 1980s. By that time, business schools had become more industry-focused, college degrees had become more common, and entrepreneurs would have seen education as a more viable means of acquiring necessary skills and knowledge in order to work for themselves (*cf.* Schein, 1985).

Work Experience. An entrepreneur's previous experience in specific industries, whether as a manager or as an entrepreneur *per se*, has been associated with entrepreneurial development (Timmons, 1994). Industrial experience (technological or market) can provide the entrepreneur with key competencies and information for recognizing opportunities, evaluating and managing risk, and increasing growth (Bird, 1989). A lack of such experience may be overcome by acquiring an existing venture or through training and a lot of zeal (Bird, 1989; Vesper, 1980). Bird (1989) has questioned

the significance of management experience to entrepreneurial success, but studies have shown that experience in middle management is significantly and positively related to sales growth and optimism for success (Cooper *et al.*, 1986). Generally, entrepreneurial experience is considered a good predictor of whether a person will start another venture (Bird, 1989). In fact, entrepreneurial experience has demonstrated a relationship with optimism in new-venture development (Cooper *et al.*, 1986), sales growth, and new-venture success (Timmons, Muzyka, Stevenson, & Bygrave, 1987).

Schein (1985) suggested that entrepreneurially oriented individuals may often take on managerial positions with some motivation to acquire skills and contacts through that experience and then move on to self-employment once this is accomplished. Voss, Weaver, and Brazeal (1996) found a pronounced increase in the prevalence of entrepreneurial values among managers in large organizations after the first five years of their longevity, followed by a significant decrease after ten years. While this might corroborate Schein's observation, it also seems to suggest that work experience itself may be a source of development of entrepreneurial values. This notion is supported by Cooper and Dunkelberg's (1986) finding that people who start new businesses are likely to have more varied job experience than those who purchase them, who in turn have more varied job experience than those who were promoted or brought into new enterprises.

Ethnicity. Ethnic background is thought to influence the type of industry entered and possibly the success of the venture (Bird, 1989). This is generally attributed to obstacles such as a shortage of experience, paucity of contacts, or a shortage of credibility with financial institutions. Thus, number and size of businesses owned by ethnic minorities can be attributed to experience handicaps and a constrained opportunity

environment. However, an increasingly segmented marketplace may make the non-work experiences of minorities (*e.g.*, cultural or lifestyle differences) an important entrepreneurial resource (Bird, 1989).

Ethnicity takes on special importance within the framework of universal human values. Hofstede (1980, 1985) suggested that national subcultures could be expected to manifest deviations in cultural dimensions compared to the dominant national culture. Kahle (1986) observed this same phenomenon associated with regional subcultures. Such differences will be captured in the SVS, which generally incorporates the content of Hofstede's cultural dimensions and has been developed through extensive cross-cultural applications (Schwartz, 1993). Rokeach (1973) made some comparisons among the major US ethnic groups (Americans of African, European, and Hispanic descent) and found some differences in their values hierarchies, the most striking being the much higher ranking of "equality" among African Americans (in the late 1960s). Valencia (1989) noted similar differences between European and Hispanic Americans. Insofar as some of these differences might involve values that also correspond to the entrepreneurship-administratorship distinction, ethnicity may prove to predict some degree of entrepreneurial behavior.

Problems with Demographic Approaches to Entrepreneurship. According to Low and MacMillan (1988), demographic studies of entrepreneurship have suffered from small sample sizes, non-comparability of samples, and static terms of reference. In general, demographic categories cannot be expected to offer more than a very indirect source of predictability of entrepreneurial behavior. Worse, they are even less practical than they are viable sources of predictability. The recruiter who knows that entrepreneurs

are more often young than old may feel inclined to favor young people in the hiring process, but this is at best a rough, faulty criterion subject to a plethora of intervening variables. In the end, demographic categories are probably most useful for corroborating other approaches to measurement. The availability of information tying certain demographic categories to entrepreneurship should also prove useful for purposes of controlling for them while attempting to isolate more basic correlates of entrepreneurship.

Entrepreneurial Orientation

The distinction between entrepreneurial traits and orientation is subtler than the terminology might suggest. Entrepreneurial traits have been treated as a psychological dynamic to be measured at the individual level of analysis using standard measurement instruments. By comparison, entrepreneurial orientation has been treated either as a behavioral or as a cultural dynamic manifested at various levels of analysis, from the individual level to that of the organization. Much of what is studied in the way of entrepreneurial orientation incorporates the individual and organization levels of analysis simultaneously because of the central role of the individual entrepreneur who is also an organization's founder. Often, organization-level behavior is easier to measure than individual-level behavior due to the entrepreneur's focus on organizational, not individual, performance. Meanwhile, researchers have not usually been very clear regarding the level of analysis governing their discussions of entrepreneurship within this domain. For purposes of this dissertation, entrepreneurial orientation is equivalent to entrepreneurial behavior reflected in an organization's culture and performance, but that behavior may be measured either at the individual or at the organization level of analysis, depending on the goals of the researcher. It is especially relevant to the topic of

entrepreneurial and administrative values, as the literature emphasizes patterns of behavior rather than on personality traits or demographic categories.

Covin and Slevin (1991) argued that the effectiveness of entrepreneurs can most readily be measured in terms of their respective organizations' performance, which is considered a function of a complex interaction of organizational dynamics and the entrepreneur's specific behavior. Covin and Slevin (1991) emphasized behaviors over attributes as giving meaning to the entrepreneurial process. Thus, behavior is the central fixture of entrepreneurial orientation, which makes entrepreneurial orientation directly relevant to universal human values (*cf.* Schwartz, 1996). This subsection will address the main features of entrepreneurial orientation treated in the literature. These include risk propensity, innovativeness, and proactivity.

Risk propensity. Lumpkin and Dess (1996) described entrepreneurial orientation as characterized by risky behaviors such as the incurring of heavy debt or the commitment of large quantities of resources aimed at seizing opportunities in the marketplace. This reflects a preference for high-risk projects that have a chance of very high returns, rather than a propensity to invest in low-risk projects with lower, but more predictable, rates of return (Slevin & Covin, 1990). Nevertheless, no business endeavor is devoid of risk. Consequently, risk-taking must be viewed along a continuum ranging from a nominal level (*e.g.*, depositing money into a bank with a known interest rate) to highly risky actions (*e.g.*, bringing an unprecedented product to market).

Other research has identified additional factors that may be important in predicting risk-taking. These include previous risk-taking behavior (Thaler & Johnson, 1990), how the risk problem is framed (Kahneman & Tversky, 1979), and the ability to

perform under risky conditions (Slovic, Fischhoff, & Lichtenstein, 1980). These diverse findings reflect, to some degree, an inability to find consistent patterns when investigating risk-taking associated with entrepreneurship (Lumpkin & Dess, 1996). However, inconsistencies in the risk-taking propensity of entrepreneurs (Brockhaus, 1982), and equivocal relationships between risk-taking and performance (Begley & Boyd, 1987) may be the result of an inconsistent differentiation in the literature between risk propensity and low risk aversion (Sitkin & Pablo, 1992). These are properly conceptualized as behavioral and attitudinal constructs, respectively. Indeed, careful study and investigation may overcome individual aversion to a specific opportunity. Thus, an entrepreneur may take more risks than would be predicted based solely on that entrepreneur's responses on a scale designed to measure risk aversion. By extension, the entrepreneur's organization may take risks that the entrepreneur as an individual would not (Lumpkin & Dess, 1996).

Innovativeness. Innovativeness in entrepreneurship refers to the pursuit of novel or creative solutions to challenges (Knight, 1997). This includes the development or enhancement of products and services and new administrative techniques and technologies for performing organizational functions. Schumpeter (1934) identified a variety of forms of innovativeness aside from mere improvements in technology. These include: (1) introducing a new or good or a good with improved quality; (2) introducing a new way to produce or handle a commodity; (3) opening a new market; (4) securing a new source of supplies or raw materials; and (5) reorganizing an industry, such as by creating or breaking up a monopoly position.

Bahrami and Evans (1987) observed that continuous innovation alters competitive boundaries and reduces product and process life cycles. Schumpeter's (1942) economic process of "creative destruction" involves the disruption of current market structures by the introduction of new goods or services. The result is a shift in resources away from existing organizations and the emergence of new organizations. Thus, innovativeness reflects a disposition toward engaging in and supporting newer ideas, novelty, experimentation, and creative processes. The result may be new products, services, or technological processes (Lumpkin & Dess, 1996). The degree of innovativeness varies from organization to organization (Hage, 1980), as it does from entrepreneur to entrepreneur. Nevertheless, it represents with regularity a basic willingness to depart from existing technologies or practices and venture beyond current bounds (Kimberly, 1981; Stopford & Baden-Fuller, 1994).

Lumpkin and Dess (1996) classified innovations as either product-market or technological. Product-market innovation focuses on product design, market research, and advertising and promotion (Miller & Friesen, 1978). Technological innovation consists primarily of product and process development, engineering, research, and an emphasis on technical expertise and industry knowledge (Maidique & Patch, 1982). In either conceptualization, innovativeness is considered a behavioral pattern that is central to the entrepreneurial process (Lumpkin & Dess, 1996; Miller, 1983).

Measures of innovativeness have necessarily focused on the organization level of analysis rather than the individual level of analysis because that is the focus of the entrepreneur's critical efforts. Researchers have used the level and number of resource expenditures in an organization as a proxy for innovation. Hage (1980) argued that the

more professionals and specialists there are in an organization, the higher the level of innovation. In support of this view, Miller and Friesen (1982) found a positive relationship between organizational innovativeness and a reliance on technically trained specialists. An alternative is Miller and Friesen's (1982) innovation scale that assesses an organization's future plans regarding the development of new products and services. Both Hage's (1980) criterion and Miller and Friesen's approach have the disadvantage of requiring the organization to be somewhat large in order to assess their innovativeness. Newly emerging organizations would be more difficult to assess.

In an effort to include technological innovation, Zahra and Covin (1993) focused on "technology policy." They measured the degree to which organizations employ technological development and seek to build a reputation for trying new methods and technologies. Saleh and Wang (1993) supplemented Miller's focus on product-market innovativeness with questions concerning efforts to synthesize diverse activities across functional lines and flexibility in adapting new processes. Finally, Miller (1987, 1988) used expenditures on research and development as a percentage of sales to measure technological innovation, in addition to a measure of product-market innovation.

Proactivity. Venkatraman (1989) suggested that proactivity refers to behavior aimed at anticipating and acting on future needs by seeking new opportunities, introducing new products and brands ahead of competition, and strategically eliminating operations that are in the mature or declining stages of the life cycle. Therefore, proactivity pertains to a willingness to initiate actions to which competitors then respond. As such, it is crucial to entrepreneurship because it suggests a forward-looking perspective that is accompanied by innovative activity (Lumpkin & Dess, 1996). Thus, an

organization can be assessed as novel, forward-thinking, and innovative without necessarily being proactive, and hence ahead of the competition.

Miller and Friesen (1978) suggested that the level of proactivity in decision-making can be assessed by determining whether the entrepreneur's decisions shape the environment (high score) by introducing new products, technologies, and administrative techniques. A proactive organization attempts to introduce new products, services, and administrative technologies ahead of competitors (Slevin & Covin, 1990). Viewed as the opposite of reactivity, proactivity is associated with aggressive posturing in relation to competitors (Knight, 1997). Emphasis is on execution and follow-through, and a drive toward achieving objectives by whatever reasonable means are necessary (Khandwalla, 1977). According to Zahra and Covin (1995), entrepreneurs can often develop a competitive advantage through quick response to market opportunities. Proactivity can result in first-mover advantages and superior performance. Entrepreneurs' ability to exploit asymmetries in the marketplace can allow their organizations to capture unusually high profits and establish brand recognition. Also, as learning and experience allow entrepreneurs to improve their product-market strategies, such first-mover advantages may build upon themselves. Thus, proactivity, seen as taking the initiative to anticipate and pursue new opportunities and participate in emerging markets, has become an important component of entrepreneurial orientation (Lumpkin & Dess, 1996).

Problems with Entrepreneurial Orientation. Entrepreneurial orientation is theoretically more closely related to universal human values than psychometric or demographic approaches, by virtue of the emphasis on patterns of behavior (*cf.* Schwartz, 1996, for this emphasis). It is also arguably a more accurate way to assess

entrepreneurship, judging from the literature. However, it generally restricts the researcher to measuring it at the organization level of analysis rather than at the individual level of analysis. This precludes the utility of existing measures from organizations that seek to recruit entrepreneurs, that wish to assess how well they are accommodating those entrepreneurially oriented individuals already working for them, or that desire to know whether and where entrepreneurially oriented individuals might happen to be serving in their organizations. Consequently, the utility of the concept of entrepreneurial orientation to distinguishing between entrepreneurs and administrators is not in its available measures as a proxy for entrepreneurship, but in its ability to inform the selection of organizations from which to draw an administrative sample. If entrepreneurially oriented individuals are likely to be found in organizations that manifest a high level of entrepreneurial orientation, then a proliferation of such organizations in the "administrative" sample can be expected to erode the demonstrable distinction between entrepreneurial and administrative values. Consequently, it would be helpful to control for this effect using some available measures.

Chapter Summary

Chapter II presents a review of the extant literature relevant to the study of universal human values and entrepreneurship, with specific aspects of role theory and motivation theory included insofar as they assist in clarifying the connection between universal human values and entrepreneurship. The first topic reviewed some of the early research into universal human values, focusing on the evolution and consolidation of the theory under Rokeach (1968) and its subsequent advancement introduced by Schwartz and Bilsky (1987). It also demonstrated the common theoretical underpinnings of human

values as abstractions of behavioral patterns mainly *via* the linkage afforded by the research into motivation. The second section reviewed the background research in entrepreneurship, focusing on attempts to distinguish entrepreneurs from administrators and the relevance of each attempt to universal human values. It covered traits, demographic approaches, and the behavioral patterns ordinarily understood to be reflected in the common facets of entrepreneurial orientation. The next chapter presents the conceptual framework and hypotheses for this dissertation. It includes a description of the sample, a discussion of data collection instruments, and an overview of the data collection procedure.

CHAPTER III

CONCEPTUAL FRAMEWORK AND HYPOTHESES

The purpose of Chapter III is to present the conceptual framework of this dissertation and advance hypotheses based on those aspects of the framework that are measurable using a cross-sectional methodology. The conceptual framework (see Figure III-1) incorporates two general hypotheses relating to universal human values. First, entrepreneurs and administrators are clearly distinguishable on the basis of their values hierarchies. This will be demonstrated by identifying significant differences in the mean importance given to many of the values in the survey by business owners and non-owner administrators, and between business founders and non-founder administrators. Second, the differences in values between entrepreneurs and administrators will generally correspond to the motivational domains predicted on the basis of previous studies to be associated with entrepreneurship and administratorship, respectively. This will demonstrate that the differences identified in previous studies were not artifactual, but rather meaningful and useful for purposes of prediction. The conceptual framework also incorporates hypotheses relating to risk propensity, innovativeness, and proactivity, as described in the foregoing literature review, for purposes of comparing the predictive power of these traditional measures against that of universal human values. These comparisons will be made using logistic-regression analysis in order to produce results interpretable as an expected percentage of correct identifications. The differences in values between entrepreneurs and administrators will furthermore be reduced by this means to a single score in order to demonstrate the utility of the SVS as a way to capture entrepreneurship as a behavioral pattern to facilitate analyses in other research designs and contexts.

The ultimate purpose of this study is to generate entrepreneurial and administrative values hierarchies that can be reduced to a quantitative score that represents the degree to which individual respondents are inclined to exhibit general behavioral patterns consistent with either entrepreneurial or administrative approaches to day-to-day living, referred to in this study as "entrepreneurship" and "administratorship," respectively. The hypotheses advanced in this dissertation are intended to serve as a means by which to verify that such a score can indeed serve as a valid differentiator between the two behavioral patterns under study.

The conceptual framework is developed in the first section. The content of entrepreneurial and administrative values, based on the theory of universal human values, is treated first, as careful depth is required to establish the basis for presenting formal hypotheses. The remaining antecedent variables used in this study follow. Then, the outcome variables are treated. Finally, the control variables are discussed.

Conceptual Framework

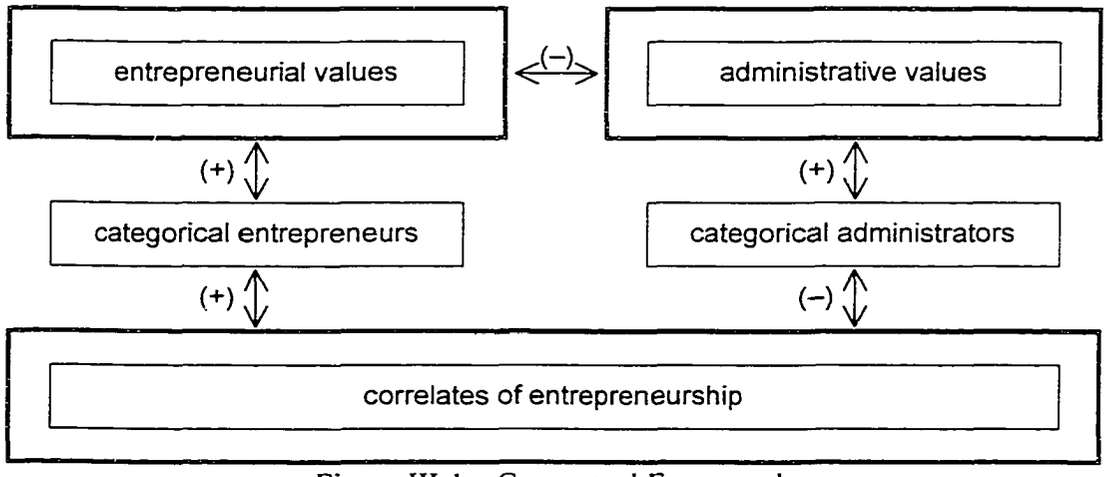


Figure III-1—Conceptual Framework

A simple representation of the conceptual framework within which this study is constructed is presented in Figure III-1. Hypotheses are formulated with reference to

specific variables, as discussed previously. These variables are presented in Figure III-2, the research framework, which is an expanded version of the first illustration that incorporates information from the discussion that follows. In general, the hypotheses seek to examine: (1) differences in universal human values between entrepreneurs and administrators; and (2) the positive and negative correspondences between correlates of entrepreneurship, and entrepreneurial and administrative values, respectively.

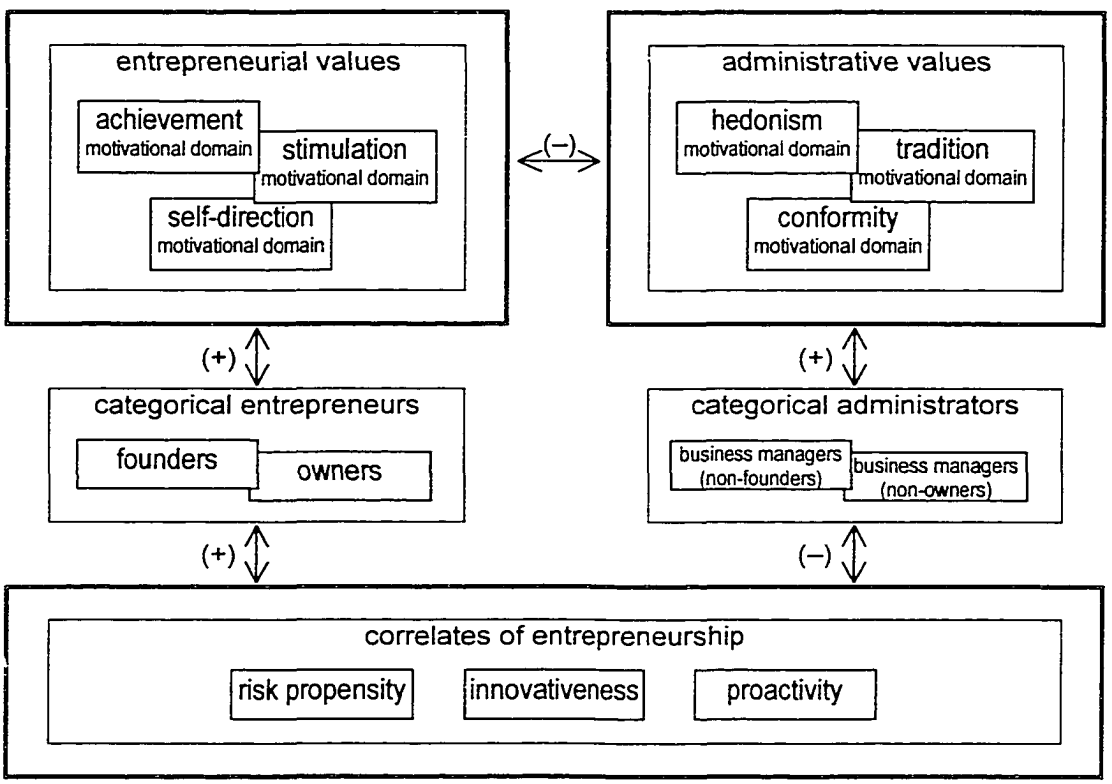


Figure III-2—Research Framework

The Content of Entrepreneurial and Administrative Values

The universal human values that define the behavioral patterns of entrepreneurs and administrators have been shown to differ significantly along lines roughly predictable with respect to their self-evident content (Fagenson, 1993). For example, entrepreneurs will more often rate or rank a value such as "creativity" higher compared to other values than would administrators, consistent with the theoretical association between entrepreneurs and this

particular characteristic of the personality. These differences are also reflected in successful *versus* unsuccessful entrepreneurs (Gray & Eylon, 1996) in a way that is too consistent to be the result of random chance.[2] The differences thus far observed in empirical studies (Fagenson, 1993; Gray & Eylon, 1996) can be used as a basis for predicting which domains of universal human values on the Schwartz Value Survey (Schwartz, 1999) will likewise show significant differences between entrepreneurs and administrators. This is true by virtue of the fact that exploratory studies are essentially hypothesis-generating in their utility (Pedhazur & Schmelkin, 1991). Table III-1 shows values from the Rokeach Value Survey (Rokeach, 1973) that have been shown to correlate with entrepreneurship and administratorship, respectively, as a combination of the results from both Fagenson (1993) and Gray and Eylon (1996). Values are included under either the entrepreneurial or the administrative category only if they were ranked significantly higher in their assigned category than in the competing category.

	Entrepreneurial Values		Administrative Values	
Terminal	an exciting life[1] a sense of accomplishment[1] a world at peace[1]	freedom[1,2] self-respect[1]	pleasure[1] salvation[1]	true friendship[1] wisdom[1,2]
Instrumental	ambitious[1] broadminded[2,3] capable[1] courageous[1,2]	honest[1] imaginative[1] independent[1,2] logical[1]	forgiving[1] helpful[1] loving/compassionate[1]	obedient[2,3] polite[2,3] self-controlled[1]

[1]Fagenson (1993), based on mean ranking of 15 values.
[2]Gray & Eylon (1996), based on mean ranking of 18 values.
[3]Value not included by Fagenson (1993) but significant per Gray & Eylon (1996).

Table III-1—Entrepreneurial and Administrative Values from the Rokeach Value Survey

[2] Of the 29 human values featured on her truncated version of the RVS, Fagenson (1993) found 20 to distinguish between entrepreneurs and administrators. Correctly selecting one of these at random thus involves a probability of 20/29 or $p = .689655$. Selecting one at random in addition to identifying the correct managerial style with which to associate it results in half of this, or $p = .344828$. Gray and Eylon (1996) correctly identified four of these, with no incorrect identifications. Therefore, the probability that this is a completely chance occurrence is $p = .344828^4 = .014139$.

Two additional considerations will affect the hypotheses that result from the observations tabulated in Table III-1 regarding the actual differences between entrepreneurs and administrators. The first involves the similarities and differences between the Rokeach Value Survey and the Schwartz Value Survey. The second has to do with the trait approach to studying entrepreneurship and how findings in that area might inform an assessment of which domains of values to expect to correlate with entrepreneurship or administratorship.

Values that are identical or very similar on the Rokeach Value Survey and Schwartz Value Survey will be maintained in their respective categories and reflected in the hypotheses, insofar as they correspond closely to one or more motivational domains in Schwartz's theory of values. In addition, values that appear on the Schwartz Value Survey but not on the Rokeach Value Survey can be expected to include some that are similar in content to those that are otherwise expected to differ between entrepreneurs and administrators. Schwartz's (1990) theory of universal human values adds the critical component of motivational domains to the theoretical apparatus currently available to researchers. This facet of human values represents a clustering of values around each of several specific foci of human motivation. Thus, it is appropriate to identify the motivational domains governing those values that have previously shown to distinguish entrepreneurs from administrators and then predict, based on a consideration of all available evidence, a general association between one or more values in certain motivational domains and the distinction between entrepreneurship and administratorship. The values comprising each such domain can thus be considered potential markers of the domain for hypothesis-testing purposes. Table III-2 divides the values from Table III-1 into motivational domains in Schwartz's (1994) model.

Motivational Domain	Entrepreneurial Values	Administrative Values
ACHIEVEMENT	ambitious[1] a sense of accomplishment[1,4] (successful)[6] capable[1]	
HEDONISM		pleasure[1]
STIMULATION	an exciting life[1] courageous[1,2,4,5] (daring)[6]	
SELF-DIRECTION	freedom[1,2] imaginative[1,4] (creativity)[6] independent[1,2,4]	
UNIVERSALISM	a world at peace[1] broadminded[2,3]	wisdom[1,2]
BENEVOLENCE	honest[1]	forgiving[1] helpful[1]
CONFORMITY		obedient[2,3] polite[2,3] (politeness)[6] self-controlled[1,4] (self-discipline)[6]
(no stable domain)	logical[1,4] (intelligent)[6] self-respect[1]	loving/compassionate[1,4,7] salvation[1,4] (a spiritual life)[6] true friendship[1]

[1]Fagenson (1993), based on mean ranking of 15 values.
[2]Gray & Eylon (1996), based on mean ranking of 18 values.
[3]Value not included by Fagenson (1993) but significant per Gray & Eylon (1996).
[4]From Schwartz & Bilsky (1990)—dropped from later modifications.
[5]Formerly in the MATURITY motivational domain, *i.e.*, current UNIVERSALISM.
[6]Closest equivalent on the current Schwartz Value Survey (Schwartz, 1999).
[7]No close equivalent on the current Schwartz Value Survey (Schwartz, 1999).

Table III-2—Entrepreneurial and Administrative Values (Rokeach) in their Respective Motivational Domains

Table III-2 demonstrates a clear delineation along the lines of motivational domains for most of the values found thus far to differ between entrepreneurs and administrators (or successful and unsuccessful entrepreneurs). Two of the domains (UNIVERSALISM and BENEVOLENCE) show one value each in the opposing hierarchy. These may be examples of motivational domains that do not wholly fall into either category. That is, entrepreneurship and administratorship may share specific aspects (subsets) of certain motivational domains while being each uniquely associated with certain other motivational domains. The logic of Table III-2 consequently is insufficient by itself to warrant the assignment of any of those motivational domains uniquely to either hierarchy.

Prior to the consideration of how the trait theories of entrepreneurship might suggest how to categorize the remaining values on the Schwartz Value Survey in order to generate the hypotheses relevant to individual values, an intervening step is necessary. This involves

incorporating into Table III-2 the remaining values from the Schwartz Value Survey in their respective motivational domains. Table III-3 displays all of the values from the Schwartz Value Survey in their respective motivational domains. All values not previously featured on the Rokeach Value Survey are placed provisionally in the middle column for consideration in the subsequent discussion.

Motivational Domain	Entrepreneurial Values	Uncategorized Values	Administrative Values
POWER		·authority ·preserving my public image ·social power[1] ·wealth	
ACHIEVEMENT	·ambitious[2] ·capable[2] ·successful	·influential	
HEDONISM		·cheerful[2] ·enjoying life ·self-indulgent	·pleasure[2]
STIMULATION	·an exciting life[2] ·daring	·a varied life	
SELF-DIRECTION	·creativity ·freedom[2] ·independent[2]	·choosing own goals ·curious	
UNIVERSALISM	·a world at peace[2] ·broadminded[2]	·a world of beauty[2,3] ·equality[2,3] ·protecting the environment ·social justice ·unity with nature	·wisdom[2]
BENEVOLENCE	·honest[2]	·loyal ·responsible[2,3]	·forgiving[2] ·helpful[2]
TRADITION		·accepting my portion in life ·devout ·humble ·moderate ·respect for tradition	
CONFORMITY		·honoring of parents and elders	·obedient[2] ·politeness ·self-discipline
SECURITY		·clean[2,3] ·family security[2] ·national security[2,3] ·reciprocation of favors ·social order	
(no stable domain)	·intelligent ·self-respect[2]	·healthy ·inner harmony[2] ·mature love[2] ·meaning in life ·privacy ·sense of belonging ·social recognition	·a spiritual life ·true friendship[2]

[1]Fagenson's (1993) study included the non-Rokeach value "power," but with no significant outcome.
[2]Identical to a value on the Rokeach Value Survey (Rokeach, 1973).
[3]Rokeach value that has not shown a significant relationship in any study thus far.

Table III-3—Entrepreneurial and Administrative Values (Schwartz) in their Respective Motivational Domains before Categorizing Values Unexamined in Previous Studies

General observations of patterns exhibited in Table III-3, coupled with relevant discussions of trait theories of entrepreneurship and the opposition/reinforcement structure of human values as explicated by Schwartz (1992), may now be called upon to determine whether and how each motivational domain should be expected to correspond to entrepreneurs, administrators, or neither group. In order to accomplish this, each motivational domain displayed in the previous table is scrutinized separately. The result will be displayed in Table III-4. Because the studies referenced here used predominantly US samples, as will the present study, the relative positions considered here will be limited to those corresponding to Schwartz and Bilsky's (1990) US sample, rather than to all of the national groups included therein.

ACHIEVEMENT. Need for achievement has been associated with entrepreneurial behavior in all types of societies (McClelland, 1951). Fagenson (1993) found three values related to achievement on the Rokeach Value Survey (a sense of accomplishment, ambitious, and capable) to be ranked significantly higher among entrepreneurs than among managers. Of these, two survive *per se* in Schwartz's (1999) modified survey (ambitious, capable), and a third (successful) appears similar in content to Rokeach's terminal value "a sense of accomplishment." These are accompanied by one more (influential) to compose the complete ACHIEVEMENT motivational domain, as it currently exists (Schwartz, 1999). The combination of theory and empirical evidence in this case strongly suggests that the ACHIEVEMENT motivational domain be understood as reflecting an innately entrepreneurial pattern of behavior.

H1 Entrepreneurship will be positively associated with one or more values comprising the ACHIEVEMENT motivational domain (ambitious, influential, capable, successful).

STIMULATION. Fagenson (1993) found a significant difference between entrepreneurs and administrators in their mean rankings of the values "an exciting life" and "courageous." The former persists on the current Schwartz Value Survey, while the latter is similar in content to the current value "daring." In Fagenson's study, these values ranked 6 and 8, respectively, of the 20 values that showed significant differences between the two managerial types. In theory, entrepreneurs are thought to be both highly proactive (Lumpkin & Dess, 1996) and risk-seeking (Lumpkin & Dess, 1996; Sexton & Bowman, 1985; Slevin & Covin, 1990). Taken together, these two characteristics would appear to be strongly consistent with the expectation that entrepreneurs should likewise give high priority to the values constituting the STIMULATION motivational domain (an exciting life, daring, a varied life). They thus would be expected to correlate strongly with entrepreneurship, not administratorship, just as the existing evidence shows. Consequently, the motivational domain of STIMULATION is expected to be positively associated with entrepreneurship.

H2 Entrepreneurship will be positively associated with one or more values comprising the STIMULATION motivational domain (an exciting life, a varied life, daring).

SELF-DIRECTION. The SELF-DIRECTION motivational domain comprises five values on the Schwartz Value Survey. Two of these (freedom, independent), are identical to values on the Rokeach Value Survey. In addition, one (creativity) is similar in content to a value on the Rokeach Value Survey (imaginative), such that it is likely that they are analogous. In addition to these, one Rokeach value (logical) was found in Schwartz and Bilsky's (1990) analysis to correspond to the SELF-DIRECTION domain as well. Of these six values, the four values that appear on the Rokeach Value Survey have been clearly identified as entrepreneurial (Fagenson, 1993; Gray & Eylon, 1996). The empirically demonstrated association between internal locus of control and entrepreneurship (Brockhaus, 1982), along

with the salience of proactivity among entrepreneurs (Lumpkin & Dess, 1996) reinforces the validity of these values as reflections of entrepreneurial behavior. Consequently, in the light of the clear conjunction between theory and empirical evidence in this regard, the SELF-DIRECTION motivational domain will be predicted to be associated with entrepreneurship.

H3 Entrepreneurship will be positively associated with one or more values comprising the SELF-DIRECTION motivational domain (freedom, independent, creativity, curious, choosing own goals).

HEDONISM. The combined findings of Fagenson (1993) and Gray and Eylon (1996) give mild support for associating HEDONISM/ENJOYMENT with administratorship. This association is far from clear, however, because only one marker (pleasure) showed a significant difference between entrepreneurs and administrators (Fagenson, 1993). Another value that was featured on the Rokeach Value Survey, "cheerful," did not show significant differences. Consequently, if this motivational domain is advanced as being related to administratorship, it relies on a single value to justify this expectation. On the other hand, this association would be consistent with the content-analytical findings of Timmons *et al.* (1977), at least as contrasted with entrepreneurs. The latter group is depicted in that study as being uniquely characterized by "hard work," "sacrifice," "business comes first," and "long hours in early years" (p. 56). The HEDONISM/ENJOYMENT motivational domain consists essentially of values that place emphasis on seeking comfort in the present rather than foregoing comfort for a future reward. In Schwartz and Bilsky's (1990) findings, HEDONISM/ENJOYMENT is always adjacent to ACHIEVEMENT (associated with entrepreneurship). However, it is usually, but not always, adjacent to a motivational domain associated with administratorship as well (CONFORMITY in Israel, the United States, Spain, and Finland). Meanwhile, it is found in opposition to MATURITY/UNIVERSALISM or PROSOCIAL/BENEVOLENCE. Consequently, one could expect mixed findings, even though the

combined empirical evidence from Fagenson (1993) and Timmons *et al.* (1977) would suggest a stronger association with administratorship. Given the lack of more specific empirical information, in conjunction with Timmons *et al.*'s (1977) observations, the present study will expect an association with administratorship but not entrepreneurship.

H4 Administratorship will be positively associated with one or more values comprising the HEDONISM motivational domain (pleasure, cheerful, self-indulgent, enjoying life).

TRADITION. No previous studies used any of the values in the TRADITION motivational domain featured on the current version of the Schwartz Value Survey (Schwartz, 1999). In terms of content, these values refer to a bias toward observing the constraints and priorities already put in place by one's predecessors. While there are some elements of the entrepreneurial ethics mentioned previously, at least in the case of "devout" and possibly "respect for tradition," there is little additional reason to expect any of these values to correspond to entrepreneurship. On the other hand, their emphasis on acting within and around existing constraints would correspond to administratorship, as administrators are thought of as preferring to work within certain constraints to reduce the ambiguity of their decision-making. Consequently, although the empirical basis for making a prediction in this case is weaker than in the previous cases, the theoretical association between administratorship and the kinds of qualities represented by TRADITION would appear markedly more consistent than is the case with UNIVERSALISM and BENEVOLENCE, whose mixed evidence is treated above. It will therefore be hypothesized herein that administratorship will be associated with the values comprising the TRADITION motivational domain.

H5 Administratorship will be positively associated with one or more values comprising the TRADITION motivational domain (accepting my portion in life, moderate, devout, humble, respect for tradition).

CONFORMITY. In the case of the CONFORMITY motivational domain, all three of the values that also appear on the Rokeach Value Survey (obedient, politeness, self-discipline) have been shown clearly to be associated with administratorship. These values do not appear to be associated with any traits that have been theoretically linked to administratorship. However, the CONFORMITY motivational domain lies in direct opposition to the SELF-DIRECTION motivational domain in Schwartz and Bilsky's (1990) findings for Israel and the United States, and in close opposition for Germany, Australia, Spain, and Finland. Consequently, it is reasonable to expect an association between administratorship and CONFORMITY.

H6 Administratorship will be positively associated with one or more values comprising the CONFORMITY motivational domain (obedient, politeness, self-discipline, honoring of parents and elders).

POWER. Although Rokeach never included "power" in his survey, Fagenson (1993) inserted it into her truncated version of the Rokeach Value Survey and found no significant differences between entrepreneurs and administrators. While this outcome may indicate that entrepreneurs and administrators are indeed alike in the POWER motivational domain, Fagenson chose to insert that value into the list of instrumental values (all adjectives) as the only abstract noun, without modification. It is thus impossible to conclude whether the lack of significance she found was the result of the content of the value itself, or of the grammatical form in which the concept was expressed. Meanwhile, there is reason to believe that both entrepreneurs and administrators give the values belonging to the POWER motivational domain some noticeable importance (*cf.* for the former argument, Carland, Hoy, Boulton, & Carland, 1984; and for the latter, Hornaday & Bunker, 1970). However, Fagenson's (1993) results did not suggest that either managerial type holds "power" in very high esteem, as they ranked it somewhere between tenth and twelfth place in a list of fifteen

values. Thus, POWER is not expected to show significant differences between entrepreneurs and administrators.

UNIVERSALISM. The UNIVERSALISM motivational domain does not correspond to any known trait that has been theoretically associated with entrepreneurship. Consequently, there is no *a priori* reason to predict that the values in this domain will be associated more with entrepreneurship or administratorship. However, Schwartz and Bilsky (1990) found the former MATURITY motivational domain, which is currently called UNIVERSALISM, to lie adjacent to SELF-DIRECTION (associated with entrepreneurship) in all cultures, suggesting a possible role of reinforcing SELF-DIRECTION. The other motivational domain lying adjacent to MATURITY is SECURITY (associated with neither managerial type) in both Israel and the United States. The UNIVERSALISM/MATURITY motivational domain lies in opposition to HEDONISM/ENJOYMENT in Israel, the United States, and Hong Kong. Based on this consideration alone, most UNIVERSALISM values are likely to be associated with entrepreneurship, although one or more should also be associated with administratorship, while others are not likely to be associated with either managerial type.

The combined findings of Fagenson (1993) and Gray and Eylon (1996) strongly support an association between three values from UNIVERSALISM and entrepreneurship (a world at peace, broadminded, and courageous), and between one value from this domain and administratorship (wisdom). It is possible that respondents among successful entrepreneurs perceived "broadminded" as a facet of creativity and so responded accordingly. Meanwhile, entrepreneurial respondents may have perceived "courageous" to be associated with low risk aversion. This does not, however, explain the entrepreneurial preference for "a world at peace" or the administrative preference for "wisdom." Moreover,

Schwartz and Bilsky's (1990) analysis, which used Rokeach's (1973) data for the US sample, did not find any of these values to be empirically associated with the ACHIEVEMENT domain among Americans. (The STIMULATION domain had not yet been incorporated into the theory, but its marker value, "an exciting life," was empirically associated with the ACHIEVEMENT domain in that analysis.) Given the mixed findings associated with the UNIVERSALISM domain, despite the strong results for specific values reported by Fagenson (1993), no hypothesis will be advanced associating this motivational domain with either entrepreneurship or administratorship.

BENEVOLENCE. As in the case of UNIVERSALISM, the BENEVOLENCE motivational domain lacks any theoretical association in the trait literature with either entrepreneurship or administratorship. However, under its previous label of PROSOCIAL, it finds itself in opposition to ACHIEVEMENT in Israel, Germany, Australia, Hong Kong, and the United States, and in close opposition to ACHIEVEMENT in Spain and Finland as well (Schwartz & Bilsky, 1990). This suggests that it may be a correlate of administratorship, since ACHIEVEMENT is expected to be associated with entrepreneurship.

The placement of "honest" among entrepreneurial values from Fagenson's (1993) findings may be a consequence of administrators' placing "loving/compassionate" first. For both groups, "honest" ranked high (1st place among entrepreneurs, 2nd place among administrators). The difference in ranking between entrepreneurs and administrators for this value, in fact, amounted to only 2% of variance explained. Moreover, because Fagenson (1993) employed Rokeach's standard ranking method rather than a rating technique (*cf.* Munson & McIntyre, 1979), the difference between how entrepreneurs and administrators ranked "honest" is likely to be inflated, as demonstrated in a Monte Carlo study designed to

test this effect (Voss, 1999). In mild contrast, Timmons *et al.*'s (1977) content analysis of the characteristics of entrepreneurs and administrators perceived by business students and managers ascribed both "ethics" and "own values and standards" uniquely to entrepreneurs (p. 56). Therefore, it is possible that "honest" does indeed constitute a valid marker for entrepreneurship. Nevertheless, if this is so, then it constitutes the sole exception in the BENEVOLENCE motivational domain. Two values in this domain (forgiving, helpful) clearly belong to administrators (11% and 12% of variance explained in Fagenson's study, respectively). The remaining values (loyal, responsible) are more difficult to assign. Entrepreneurs and administrators alike ranked "responsible" high (3rd and 4th place, respectively) in Fagenson's study. Despite Timmons *et al.*'s (1977) findings related to entrepreneurial ethics, the evidence does not seem strong enough to expect the relationship between entrepreneurship and "honest" to hold. As in the case of UNIVERSALISM, the mixed findings regarding the BENEVOLENCE motivational domain justify refraining from advancing any hypothesis associating BENEVOLENCE with either entrepreneurship or administratorship.

SECURITY. The last motivational domain to consider is SECURITY. Three of the values associated with this motivational domain also appeared on the Rokeach Value Survey (family security, clean, national security), but with no evidence of significant differences between entrepreneurs and administrators. Meanwhile, the content of these values may be associated with either managerial type. For example, "reciprocation of favors" suggests an informal means of achieving security more characteristic of entrepreneurs than administrators. Given the lack of either strong empirical or theoretical evidence suggesting a substantive difference between entrepreneurs and administrators on these measures, no

relationship between the SECURITY motivational domain and either entrepreneurship or administratorship will be hypothesized in the present study.

Other values. A number of values on the Schwartz Value Survey demonstrate unstable associations with the motivational domains across cultures (Schwartz, 2000, personal communication). Many of these composed the former SPIRITUALITY motivational domain, but this domain appears to be culture-specific. Those values that have thus far shown significant differences between entrepreneurs and administrators include self-respect (entrepreneurship) on the one hand, and a spiritual life and true friendship (administratorship) on the other. All of these emerged with rather strong levels of significance in Fagenson's (1993) study. Analyzing each of these values separately, in most cultures, "self-respect" is associated with MATURITY/UNIVERSALISM (Schwartz & Bilsky, 1990) in most cultures, including the United States. Since MATURITY/UNIVERSALISM has shown a stronger association with entrepreneurship than with administratorship, Fagenson's (1993) finding concerning "self-respect" appears theoretically consistent. As for the two values empirically associated with administratorship (a spiritual life, true friendship), both of these were associated with PROSOCIAL/BENEVOLENCE in Schwartz and Bilsky's (1990) study for most cultures, including the United States. Israel and Hong Kong were the only exceptions, the former associating "true friendship" with MATURITY/UNIVERSALISM and the latter associating the same value with SECURITY. Nevertheless, since the three values discussed here cannot be assigned to a stable motivational domain across cultures, no hypothesis will be advanced associating these individual values to either entrepreneurship or administratorship.

In summary, three motivational domains are hypothesized to demonstrate a positive association with entrepreneurship (ACHIEVEMENT, STIMULATION, SELF-DIRECTION), and three are hypothesized to be associated with administratorship (HEDONISM, TRADITION, CONFORMITY). Although the goal of the present study is fundamentally to establish the groundwork for utilizing the Schwartz Value Survey to distinguish entrepreneurs from administrators across contexts, it is important to demonstrate at this early stage that there are indeed differences on many values between entrepreneurs and administrators. The approach taken in the foregoing discussion was to limit hypotheses to covering entire motivational domains rather than attempt to specify every value that may demonstrate a relationship with either managerial type. This was deemed consistent with Schwartz's (1992) theory of motivational domains, which suggests that most differences in values between subgroups should reflect those values' association with the other values in the same motivational domain rather than constitute an otherwise unstructured array. Nevertheless, it has been acknowledged that certain motivational domains may prove divided between entrepreneurs and administrators, consistent with the empirical evidence thus far available. Moreover, values lying outside any motivational domain according to the current state of the theory may indeed merit inclusion among the eventual array identified to distinguish between the two managerial styles. These facts notwithstanding, it is thought appropriate at this juncture to reserve judgment on those until the initial data have been generated. Table III-4 displays the results of the foregoing analysis, with all values shifted into their hypothesized domains.

Motivational Domain	Entrepreneurial Values	Uncategorized Values	Administrative Values
POWER		·authority ·preserving my public image ·social power ·wealth	
ACHIEVEMENT	·ambitious ·influential ·capable ·successful		
HEDONISM			·cheerful ·enjoying life ·pleasure ·self-indulgent
STIMULATION	·an exciting life ·a varied life ·daring		
SELF-DIRECTION	·choosing own goals ·creativity ·curious ·freedom ·independent		
UNIVERSALISM		·a world of beauty ·a world at peace ·broadminded ·equality ·protecting the environment ·social justice ·unity with nature ·wisdom	
BENEVOLENCE		·forgiving ·helpful ·honest ·loyal ·responsible	
TRADITION			·accepting my portion in life ·devout ·humble ·moderate ·respect for tradition
CONFORMITY			·honoring of parents and elders ·obedient ·politeness ·self-discipline
SECURITY		·clean ·family security ·national security ·reciprocation of favors ·social order	
(no stable domain)		·a spiritual life ·healthy ·inner harmony ·intelligent ·mature love ·meaning in life ·privacy ·self-respect ·sense of belonging ·social recognition ·true friendship	

Table III-4—Entrepreneurial and Administrative Values (Schwartz) in their Respective Motivational Domains after Categorizing Values Based on the Foregoing Hypotheses

The foregoing hypotheses, taken collectively and superimposed on the smallest-space diagram presented by Schwartz and Bilsky (1990), would seem to suggest irregular, but intelligible, entities corresponding to entrepreneurship and administratorship, respectively. Figure III-3 approximates the relative positions of the ten motivational domains in Schwartz's theory of universal human values as it is currently conceived. A general distinction between individualistic and collectivistic values, similar to Schwartz and Bilsky's (1987) early findings, is shown as well.

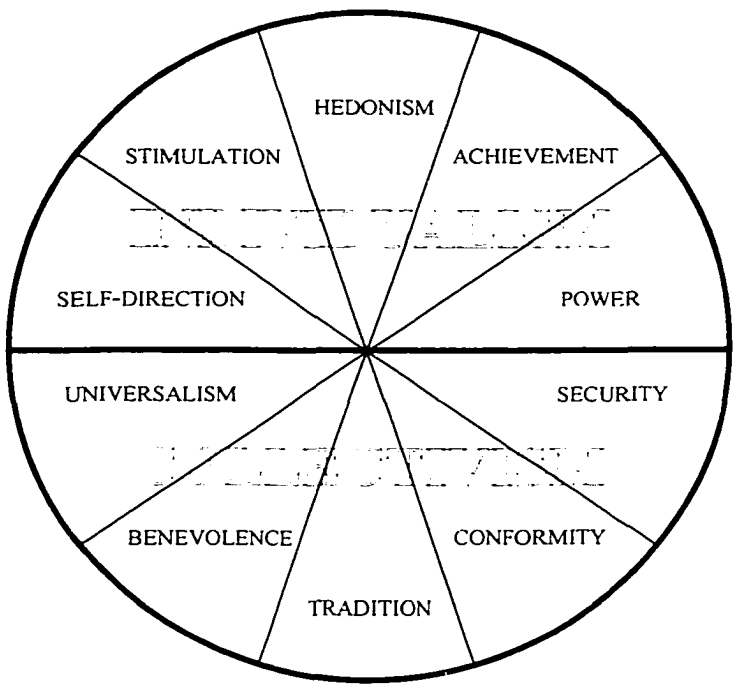


Figure III-3—Smallest-Space Depiction of Universal Values

Figure III-4 shows the areas that are theoretically covered by entrepreneurial and administrative values, respectively. The two cases of motivational domains that exhibited partial relationships with both entrepreneurship and administratorship are also represented here, as the curve is pulled into a portion of each (UNIVERSALISM and BENEVOLENCE). The irregular shape is in large measure the consequence of the fact that entrepreneurship and administratorship are not mutually exclusive, but rather share some of the motivational

domains while showing significant differences in only a few. For example, both managerial styles are believed to place POWER values in approximately the same high or low esteem. The natural consequence is that POWER is not apparently associated with either managerial style. As the illustration suggests, the difference between entrepreneurship and administratorship is a complex product of motivational domains. Neither managerial style forms a completely uninterrupted area in this representation of the Schwartz values. Nevertheless, there does seem to be some degree of contiguity in some areas. Meanwhile, when entrepreneurship and administratorship are viewed from the perspective of the theory of universal human values, they are only roughly in opposition and their differences do not together cover the entire array of human values within the human psyche.

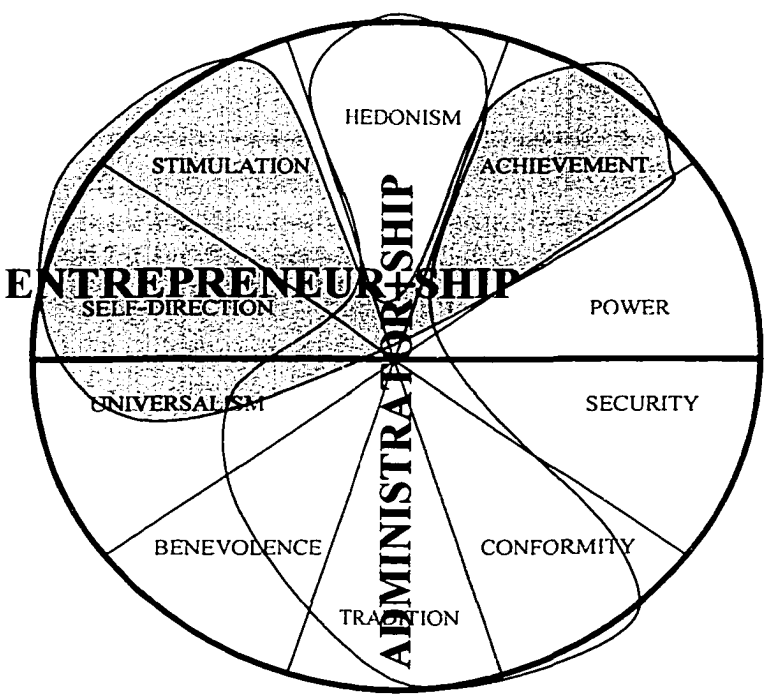


Figure III-4: Smallest-Space Depiction of Entrepreneurial and Administrative Values

To interpret the illustration, an entrepreneur is someone who gives noticeably greater priority to the values in those motivational domains shown to fall within the entrepreneurial motivational area, compared to an administrator, and noticeably less priority to those in the

administrative motivational area. However, both entrepreneurs and administrators may give similarly high or low priority to values in motivational domains lying outside either area. Areas covered by one of the managerial styles thus suggest human values that distinguish between entrepreneurs and administrators. Areas not covered by either managerial style may include some values held in very high or very low esteem as a managerial characteristic in general, but if so, they nevertheless do not serve to distinguish the managerial styles from one another specifically.

Other Antecedent Variables

Universal human values are advanced in this study as antecedents to such choices as starting or owning a business, or preferring to work within the constraints of a large organization. However, the application of universal human values to the study of the distinction between entrepreneurs and administrators is relatively new. Therefore, other antecedents are also included in this study to confirm the relative strength of predictive power afforded by values compared to more traditional measures, and to confirm that entrepreneurs and administrators have been adequately categorized using the approach taken in this study. The basic dimensions of distinction between entrepreneurship and administratorship elaborated in the literature on entrepreneurial orientation will form the basis for the hypotheses presented in this study. The specific behavioral orientations include risk propensity, innovativeness, and proactivity.

Risk propensity. As explained in the previous chapter, risk propensity is different from low risk aversion. The former is a behavioral construct that must be assessed on the basis of actual choice behavior. The latter is an attitudinal construct measurable on the basis of strength of affect. While researchers have not consistently made this distinction

clear, the failure to do so may lie behind studies that have generated inconclusive results (Sitkin & Pablo, 1992). As described in the previous chapter, risk propensity may involve incurring heavy debt, making large resource commitments to seize opportunities, or investing in high-risk projects with a chance of very high returns (Lumpkin & Dess, 1996; Slevin & Covin, 1990).

H7 Entrepreneurship will be positively associated with risk propensity.

Innovativeness. Innovativeness is a general behavioral pattern of response to challenges (Knight, 1997). It involves the generation and advancement of ideas that deviate significantly from existing models without sacrificing (on average) marketability. Although "innovativeness" and "innovation" are often used interchangeably in the literature, it is the former that refers to the behavioral pattern, while the latter refers to the process itself. Schumpeter (1934), focusing on physical products, included a wide range of product-related features and activities as falling under the label of innovation. Aside from the product's inherent novelty, innovation includes how it is produced or handled and its penetration into a new market. It also includes securing new sources of necessary materials and upsetting existing industry trade patterns. Innovativeness reflects a disposition toward novelty, experimentation, and creativity. Both innovativeness and creativity were shown to be uniquely ascribable to entrepreneurs in Timmons *et al.*'s (1977) content analysis of the perceptions of business students and managers. Imagination and creative talent were also associated with the "inventor" type of personality in that same study. Innovation is clearly considered central to the entrepreneurial process (Lumpkin & Dess, 1996; Miller, 1983), and innovativeness is thus considered an inherently entrepreneurial pattern of behavior.

H8 Entrepreneurship will be positively associated with innovativeness.

Proactivity. Anticipating and acting on projected needs is referred to as proactivity (Venkatraman, 1989). This involves seeking new opportunities, introducing new products ahead of competition, and eliminating mature or declining products. If innovation involves products that are developed or introduced outside of existing models, proactivity involves actions that are taken outside of existing models. That is, neither has any precedent in the relevant industry. Once introduced, other industry participants respond to them. Since inventiveness without a capacity to bring the invention to market affords a firm no advantage, proactivity is necessary to generate success from innovation and is thus crucial to entrepreneurship (Lumpkin & Dess, 1996).

H9 Entrepreneurship will be positively associated with proactivity.

Goal-setting. Goal-setting involves a motivation-driven process that operates at the juncture between values and self-efficacy (Locke, 1991; Locke & Latham, 1990). It is less central than the former and more central than the latter. Being less central within Locke's (1991) motivation sequence model than values, establishing the goal of founding a firm is certainly a better predictor of founder status than the array of values possessed by the founder. The importance an individual gives to establishing goals in business, on the other hand, may or may not be an adequate predictor. Thus, the predictability afforded by goal-setting depends entirely on the relationship between the act of setting goals and the activities contemplated within the sphere of that action (Locke & Latham, 1990). This leaves the question open as to whether one's simple propensity to set goals prior to taking action is a possible predictor of entrepreneurial *versus* administrative choice behavior. Since this propensity would be related to one's general motivation to undertake business-related

action, while being more specific in content than values to the task in question, one would expect it to be a stronger predictor than values of the difference between entrepreneurs and administrators unless it serves to motivate both activities equally. To explore this question, goal-setting as applied to planning and strategy will be included in the survey in the form of a short scale, referred to as the scale of mission-oriented goal-setting. Since only the most general speculations are capable of being entertained without greater theoretical backing, no hypotheses will be advanced concerning mission-oriented goal-setting.

Locke and Latham (1990) specified a context-dependent or experimental approach to studying goal-setting, so a context was sought within which to craft items that would be relevant to both entrepreneurs and administrators, while focusing on the task of running a business. The theoretical framework upon which this scale is premised is found in strategic management (Thompson & Strickland, 1999). The items attempt to focus on the full range of planning, from strategic to operational, and from the breadth of the vision statement to the specificity of measurable outcomes. A more detailed discussion of the items and their relevance to goal-setting within the context of strategic management is provided in the next chapter.

Generalized self-efficacy. As indicated above, self-efficacy finds a place in Locke's (1991) motivational sequence model closer to action (less central) than goal-setting (Bandura, 1993). As in the case of goal-setting, context specificity is important to predicting behavior on the basis of self-efficacy (Bandura, 1977). Consequently, one's perceived self-efficacy as an entrepreneur or as an administrator would be likely to predict one's intentions of undertaking entrepreneurial or administrative choice behavior, respectively. Generalized self-efficacy, by contrast, is the self-perception that one is capable of meeting challenges in

general successfully (Schwarzer & Jerusalem, 1995). An individual with high entrepreneurial self-efficacy and low administrative self-efficacy will choose an entrepreneurial career, but this leaves the question open of whether there is a difference in self-efficacy across contexts between entrepreneurs and administrators. If entrepreneurship is, in reality, the kind of behavior in which everyone would engage if everyone had the requisite confidence, then generalized self-efficacy should be expected to predict it. If, on the other hand, entrepreneurship and administratorship are simply alternative means of participating in the world of business, in each of which considerable skill is required and self-efficacy is equally an aid to confident performance, then one would expect generalized self-efficacy to fail to distinguish between the two managerial styles. To explore this question and possibly uncover a useful addition to our cumulative research base in entrepreneurship, generalized self-efficacy is included in the survey. As in the case of mission-oriented goal-setting, there is insufficient theoretical backing to inform us of what the relationship between generalized self-efficacy and entrepreneurship should be, so no specific hypotheses will be advanced.

Outcome Variables

As consequences of entrepreneurship and administratorship are not a central feature of the present study, outcome variables assume only a minor role and are generally exploratory in nature. The exception, of course, is the categories of entrepreneurship and administratorship, which are considered the outcomes of entrepreneurial orientation (risk propensity, innovativeness, and proactivity) and human values. However, aside from these, as well as some demographic items, only job satisfaction is included in this study as an outcome variable.

Job satisfaction. Given that some previous studies have suggested that a lack of congruity between personal values and the predominant values in an organization are a source of job dissatisfaction (*e.g.*, Balazs, 1990), job satisfaction is included among the outcome variables in the present study. It is expected that the level of job satisfaction will be significantly lower among people scoring high in entrepreneurial and administrative values but finding themselves in the opposing categories in terms of job situation.

H10 Respondents scoring high in values of one managerial style (entrepreneurship or administratorship) who are in job situations appropriate to the other managerial style will have lower job satisfaction than those who are in congruent job situations.

Within the context of the present study, the most direct approach to testing this hypothesis may be to include job satisfaction as a moderator. If the sample includes some entrepreneurially oriented individuals who find themselves in administrative positions, and *vice versa*, then the human values that are selected to distinguish between entrepreneurs and administrators will be affected by this fact. For example, if the value "ambitious" is associated with entrepreneurship, then entrepreneurs should rate it more highly than should administrators. However, if half of the actual entrepreneurs in the sample happen to be coded as administrators because they are in administrative positions, then the difference between how subjects coded as entrepreneurs and as administrators, respectively, rate this value will be weaker and possibly non-significant. Now, if such mismatched people also exhibit a lower than normal level of job satisfaction due to the very fact of their being mismatched, then including job satisfaction in the regression model should increase predictability and allow the coefficients representing each human value's independent contribution to the model to adjust to more natural proportions. Thus, if entrepreneurs in administrative positions, and *vice versa*, are indeed less satisfied than those in positions

suited to their managerial styles, then including job satisfaction in the model should increase its predictive power and thereby provide empirical support to the corresponding hypothesis.

Control Variables

The control variables used in this study are mainly dedicated to ensuring the integrity of the entrepreneurial and administrative samples, respectively. For the entrepreneurial sample, these will include self-report items intended to establish whether the business owner founded or purchased the organization at issue, or had ever founded or helped found a business organization in the past. In order to separate income-substituters from entrepreneurs, an item will be included to assess the main motivations for starting or purchasing the business, including the option "to maintain income."

Age, sex, education, and experience as a business owner or manager are included because they have been shown in previous studies to have some relationship with entrepreneurship and may help to confirm the integrity of the research design in the present study. Previous studies have shown positive correlations between entrepreneurship and age, education, and experience, as well as positive correlations between male gender and entrepreneurship.

Organizational size and experience at running an autonomous unit are also included for exploratory purposes. Regarding the former, the traditional understanding of entrepreneurship as a synonym for small business, reflected in much of the early entrepreneurship literature, contained more than an element of truth. Entrepreneurs have been depicted as more comfortable building their firms rather than running them, and moving on to build another firm once the first is thought to be running smoothly. High failure rates evidenced especially in the early literature also suggested that entrepreneurs

were more likely to own young companies, prior to their failure, than older ones. As younger companies also tend to be smaller, it is conceivable that we should observe a negative correlation between firm size and entrepreneurship. Running an autonomous unit, by comparison, may often be the product of being recognized for one's entrepreneurial management style (Brazeal, 1996), or alternatively may bear little relationship to entrepreneurship. Since Brazeal (1996) used this measure as a proxy for intrapreneurship in large organizations, it would be worthwhile in this study to confirm whether there is indeed a positive relationship between experience as manager of an autonomous unit and entrepreneurship.

Comparison of predictors. Once the appropriate statistical techniques are employed to quantify the entrepreneurial-administrative values hierarchy distinction, a comparison will be made between the predictive power of values and that of the three alternative measures (risk propensity, innovativeness, and proactivity). Since the latter measures, viewed as corollaries of motivational domains, reflect only small portions of the entire values array active within each individual, they are not likely to prove to be stronger predictors of the entrepreneurial-administrative distinction than values. Contrarily, if most of the distinction between entrepreneurs and administrators proves to be associated with precisely the values that most closely correspond to risk propensity, innovativeness, and proactivity, then the opposite outcome can be expected. Theoretically, this should not be the case. Consequently, three more hypotheses are included here:

H11 Values will be a stronger predictor of the entrepreneurship-administratorship distinction than risk propensity.

H12 Values will be a stronger predictor of the entrepreneurship-administratorship distinction than innovativeness.

H13 Values will be a stronger predictor of the entrepreneurship-administratorship distinction than proactivity.

Conclusion. The foregoing hypotheses were advanced to assess the differences between entrepreneurs and administrators based on differences in motivational makeup that are reflected in differences in the relative ratings of universal human values. The rationale behind this proposed association is a combination of: (1) the fact that values have been shown to be strongly associated with choice behavior of all types, which suggests that one's choice of career direction is likewise influenced by values; (2) the theoretical linkage between values and motivation, finally explicated by Schwartz (1992) and Locke (1991), which clearly sets forth a direct path from values to goals and actions; and (3) the fact that studies using the Rokeach Value Survey, predecessor of the Schwartz Value Survey, have demonstrated a consistent relationship between entrepreneurship and certain values. Since the theory of universal human values extends through the full range of human motivation, an assessment of what values lie beneath entrepreneurs' natural behavioral patterns and distinguish them from administrators may offer greater predictive power than previous attempts to capture the complex patterns of behavior known simply as entrepreneurship. It is acknowledged that a single, cross-sectional study is unlikely to generate the response volume necessary to identify all values that differentiate entrepreneurs from administrators with good estimates of their true weights. Consequently, although the ultimate goal of this project is to do precisely that, it will be enough at this juncture to demonstrate the value of values research and justify its continued pursuit.

CHAPTER IV

RESEARCH METHODOLOGY

The major objectives of this study are fourfold. First, the ability of individual human values to distinguish entrepreneurs from administrators will be assessed. Second, the specific values that distinguish entrepreneurs from administrators will be determined, along with their relative degrees of predictive power. Third, the predictive power of human values will be compared to that of the other measures of entrepreneurship investigated herein, *viz.*, risk propensity, innovativeness, and proactivity. Lastly, insofar as the first two objectives are met, a provisional algorithm will be devised, based on logistic-regression analysis, to reduce the breadth of the distinction between entrepreneurial and administrative values hierarchies to a single score as a suggested means of using the results presented herein for future research. This score will be capable of being refined through continued sampling.

For purposes of hypothesis testing, *t*-tests will be performed between each of the 57 values featured on the Schwartz Value Survey and the categorization of respondents as either entrepreneurs or administrators based on their business foundership and ownership status. Those values that show evidence of significant differences will be compared to those hypothesized to be different between entrepreneurs and administrators, within each of the ten motivational domains advanced by Schwartz and colleagues (*e.g.*, Schwartz, 1992).

Once it is established that there are significant differences in human values between entrepreneurs and administrators, each value's unique contribution to those differences, holding all other values constant, will be assessed. Logistic-regression analysis will be used for this purpose. The logistic-regression equation generated through this procedure will be used to create the entrepreneurial-values score, such that high scorers are considered

entrepreneurs, and low scorers administrators. This procedure follows the basic approach of Voss, Weaver, and Brazeal (1996) in converting universal human values to a unique score based on the Rokeach Value Survey. However, the use of logistic-regression analysis should provide for a more powerful equation that weights each critical variable (each human value showing a significant difference) according to the additional degree of predictability that it affords. In addition, the Schwartz Value Survey is expected to offer a greater degree of comprehensiveness in capturing the breadth of motivations relevant to the behavioral styles under study than would have been possible using the Rokeach Value Survey.

Other possible correlates of the difference between entrepreneurship and administratorship will likewise be tested in order to compare the overall predictive power of universal human values to more traditional measures. The primary correlates are risk propensity, innovativeness, and proactivity. Secondary correlates, which are included for exploratory purposes, are a variety of goal-setting suited to the business planning context, referred to as mission-oriented goal-setting, and generalized self-efficacy. In addition, job satisfaction is included in order to assess whether individuals that would qualify as entrepreneurs or administrators based on either the values score or other correlates are less satisfied with their work if they are currently in administrative or entrepreneurial job situations, respectively.

Lastly, control variables are included to confirm the extent to which any differences found to exist between entrepreneurship and administratorship in this study are generally consistent with those found in previous studies. These include managerial experience, organizational size and type, the respondent's function in the organization, and whether the respondent has run an autonomous unit in a business corporation, started a business, or

purchased a business. The respondent's basic motivation for starting or purchasing the business, if applicable, is also assessed in order to separate income-substituters from genuine entrepreneurs. Lastly, information on age, education, and sex is requested because these have been shown to correlate significantly with entrepreneurship in past studies.

The general research design is discussed in the first section. This is followed by a section devoted to instrumentation, in which the variables used in this study are operationalized, with discussions about reliability and validity. The data collection procedure is then presented, including sampling methodology and questionnaire design. Lastly, the approach that will be taken to analyze the results is presented.

Research Design

This study uses a cross-sectional research design because it seeks mainly to identify the correspondences among variables rather than establish causal direction (Campbell & Stanley, 1963). Causal direction is assumed on the basis of theory. The independent variables consist of each respondent's values, risk propensity, innovativeness, proactivity, generalized self-esteem, and mission-oriented goal-setting. All of the primary variables fall somewhere along the continuum of decreasing centrality represented by Locke's (1991) motivation sequence model. Control variables constituting demographic items are also included that would ordinarily be expected to predict entrepreneurial *versus* administrative behavior. These include age, education, sex, race, nationality, and managerial/ownership experience. Lastly, for those respondents who have founded or purchased business enterprises in the past, their essential motivation for doing so is requested in order to separate income-substituters from genuine entrepreneurs. This motivation, which theory would suggest to be strongly related to the respondent's

values profile, would operate as an independent variable predicting business start-up but not necessarily the managerial style of an entrepreneur.

The dependent variables consist of each respondent's evident choices of entrepreneurial or administrative types of jobs and activities. These include business ownership, managerial rank, founder history, and business purchase history. Job satisfaction is included as the projected consequence of values incongruity if a respondent who is characteristically entrepreneurial is serving in a capacity that is characteristically administrative, and *vice versa* (*cf.* Balazs, 1990). This variable can be entered as a control variable if it attenuates the observed relationship between the independent variables and business foundership or ownership status. Another control variable that would be expected to constitute an outcome is type of organization, the result of job choices that would be based ultimately on motivations reflected in one's values hierarchy. Socioeconomic status is also included for whatever insights it may afford.

Variables that may be expected to show a relationship with managerial style but that may constitute either dependent or independent variables, depending on the relevant perspective, include each respondent's experience managing an autonomous unit, organizational size, and industry. The positioning of these variables in this study is exploratory, and causal direction is neither assumed nor proposed.

In cross-sectional (nonexperimental) research, no variables may be manipulated, and random assignment to subgroups is not possible (Kerlinger, 1973). Instead, the researcher identifies subjects *a priori* as belonging to a subgroup and examines differences in some identifiable characteristic between them rather than applying an experimental treatment to induce a specific response. Subjects may be selected into an

outcome (criterion) subgroup rather than a predictor subgroup, as in the present study. The manipulation that would be present in an experimental design is thus supplanted by characteristics that subjects bring with themselves as they are selected into the criterion subgroup. The predictor is inferred from the differences observed, which are assumed to have led to the subjects' self-selection into the noted subgroups prior to the researcher's intrusion.

Cross-sectional research thus brings with it some limitations that must be acknowledged. The main limitation in studies in which the selected subgroups are considered differentiated as a consequence of the phenomenon under study is the difficulty in specifying the predictor. Theory is employed to determine the most plausible predictors, but it is always conceivable that other variables not incorporated into the research design are more valid predictors than those assessed by the researcher. Thus, a conclusion of causality can only be drawn on the basis of theory, and even then it can only be considered tentative within the constraints of the study. On the other hand, the cross-sectional research design affords certain benefits unavailable in experimental research. Certain types of research problems cannot be addressed adequately using experimental design because the hypothesized variables cannot be manipulated. In the case of research into universal human values or other components of Locke's (1991) motivation core, this is always the case. Consequently, causal conclusions must be the result of an inductive process over the course of an ongoing research agenda establishing consistency with respect to the association between outcome subgroups and the motivational dynamics advanced to explain their differences.

The research design used in the present study also constitutes survey research of the type that Emory (1985) described as a form of field research involving descriptive hypothesis-testing. This type of research relies on the collection of a certain type of artifact produced by the subjects and reflective of their ordinary behavior, in response to an intrusion by the researcher. Subjects are asked to record responses on a self-report questionnaire, which then constitutes a permanent artifact of behavior that can be studied methodically in a different setting. Given the researcher's inability to manipulate the variables under study, sample surveys are thus the optimal instrument for collected data reflective of many of the dynamics explained or explored within the domains of sociology, social psychology, and psychology, and particularly those that are advanced as possible antecedents to behavior.

This study focuses on psychological variables (human values) thought to motivate self-selection into subgroups defined as entrepreneurial or administrative on the basis of certain key conditions. The antecedents of those psychological variables are not at issue in the present study, although to some extent subgroup affiliation (*e.g.*, upbringing in certain types of environments, exposure to others who have been successful entrepreneurs or administrators, recent immigration within the family history), a sociological phenomenon, would figure among the variables that such research would pursue. Rather, the relationship between the noted psychological dynamic and an outcome that would fall within the domain of sociology are the focus of this research. Consequently, the task at hand is best suited to survey research (Kerlinger, 1973).

Instrumentation

The complete research instruments are included in Appendices A and B. Two research instruments were designed because of the threat to responsiveness that an excessively long instrument would raise. Specifically, the most essential scale in this study, *viz.*, the Schwartz Value Survey, includes fifty-seven items. Meanwhile, the three scale variables of comparative interest, *viz.*, risk propensity, innovativeness, and proactivity, total forty-eight items. Therefore, the core scales constituting a single instrument would total 95 items before including demographics or exploratory measures, rendering the risk to responsiveness too great for a study in which participation cannot feasibly be organized through a centralized structure such as a large, private organization. This threat is especially pronounced in research involving entrepreneurs, which is already characterized by very low response rates (*cf.* Greenberger & Sexton, 1988; *e.g.*, Chen, Greene, & Crick, 1998; *cf.* also Stewart & Roth, 1999, for examples of typical sample sizes in entrepreneurship studies). The common features in both instruments are the items used for defining the subgroups and the items used as control variables. In the first instrument, human values and job satisfaction are assessed. In the second, risk propensity, innovativeness, proactivity, generalized self-esteem, and mission-oriented goal-setting are included. Job satisfaction appears on that instrument as well because of its importance as a possible control variable.

The first instrument presents the Schwartz Value Survey first. This is a 57-item survey, so placing it up front is a way to minimize respondent fatigue. Given that the measurement of values is the central feature of this study, it is important to optimize the opportunity to generate precise results. After this, Brayfield and Rothe's (1951) job

satisfaction scale is presented, following by two demographic sections measuring mainly experience, background, and biodata items, described in detail below.

The second instrument begins with eight items devised anew for this study for their exploratory value, measuring the importance placed on various aspects of goal-setting within the context of business planning. The scale is referred to as mission-oriented goal-setting. This is followed by Brayfield and Rothe's (1951) job satisfaction scale, Schmitz and Schwarzer's (1999) proactivity scale, Schwarzer and Jerusalem's (1995) scale of generalized self-efficacy, and the randomly arranged items from the innovativeness and risk propensity subscales of Jackson's (1997) Jackson Personality Inventory-Revised. The two demographics sections, identical to those presented in the first instrument, follow this and are described in detail below.

Universal human values. The Schwartz Value Survey (Schwartz, 1999) will be used for measuring universal human values. This survey consists of 57 items in a 9-point Likert format (with a range of -1 to 7) featuring specific instructions intended to minimize end-piling (*cf.* Munson & McIntyre, 1979). This is accomplished by having respondents first select the value that is highest in importance. Then respondents are asked to select values that are "opposed" to their sensibilities. For this, the Schwartz Value Survey affords the number -1 (negative one). After this, values to which respondents are indifferent are assigned the number 0 (zero). Finally, respondents are asked to rate the remainder of values with the reminder that "typically" no more than two values are assigned a rating of 7.

Statistics measuring the relationships between values or motivational domains and other measures used in a survey are considered valid only after individual respondents' total scores (on all 57 values) are partialed out. This is a special methodological operation

necessary for validity at the individual level of analysis. It is intended to respect the "relative" nature of values. To exemplify, it is conceivable that two groups (*e.g.*, entrepreneurs and administrators) appear to be significantly different on certain motivational domains. However, if entrepreneurs give higher ratings to the values in general than administrators, a significant, negative correlation between the two groups may be an artifact of this difference, which might imply generally greater motivation on the part of entrepreneurs than among administrators, but not necessarily actual differences in the relative positions of the values. This would violate the theoretical underpinning of universal human values as a latently prioritized structure. It would be inaccurate to confound differences in degree of motivation with differences in values *per se*. Thus, by partialing out the total score before interpreting statistical relationships, the researcher focuses on qualitative distinctions rather than the relative strength of motivation of the various respondents (Schwartz, 2000, personal communication). Partialing may be effected as a step in correlation analysis, by including the sum being held constant in the regression equation, or by mathematically correcting the data in advance based on the relationship needing to be controlled. Partialing sums in particular may be achieved by norming the data prior to analysis.

The Schwartz Value Survey (Schwartz, 1999) is not a standard, reflective scale for which internal-consistency reliability is an adequate reliability measure, although the fact that values cluster into motivational domains in smallest-space analysis does indeed suggest a certain degree of arguable applicability. Reliability is typically assessed on the basis of the degree to which values consistently cluster into the same motivational domains. Schwartz (2000, personal communication) explained that a value is considered "stable" if it falls into a

given motivational domain at least 75% of the time in smallest-space analysis, and if it falls into either the specified motivational domain or an adjacent one 85% of the time. Of the 57 values on the survey, 46 (*i.e.*, 80.7%) have been shown to be "stable" across cultures. Meanwhile, stability is higher within a culture than between cultures. Translating these percentages into reliability estimates, the most conservative approach would be to consider those 46 (80.7%) values that fall on precisely the domain that governs them 75% of the time. Multiplying these percentages together yields a product of 60.5%. The equivalent reliability value is thus the square root of this figure, or $\alpha = .778$. Assessed in this way, the Schwartz Value Survey has demonstrated sufficient reliability according to Nunnally's (1967) criterion. As the discussion in the next chapter will show, subjecting the Schwartz Value Survey to standard reliability analysis generates a Cronbach's alpha coefficient in the 90's, while subjecting each motivational domain to the same and getting a weighted average results in an alpha reliability close to the one presented above.

Risk propensity. Risk propensity is a behavioral construct that must be assessed on the basis of actual choice behavior (Lumpkin & Dess, 1996; Sitkin & Pablo, 1992; Slevin & Covin, 1990). Risk propensity will be measured using the corresponding subscale of the Jackson Personality Inventory-Revised (JPI-R, Jackson, 1997). This 20-item subscale is in true-false format and presents the respondent with predominantly behavioral items. Some examples that seem particularly well suited to the subject matter of the present study follow:

- When I want something, I'll sometimes go out on a limb to get it.
- If the possible reward were very high, I would not hesitate putting my money into a new business that could fail.
- I would enjoy the challenge of a project that could mean either a promotion or loss of a job.

- I would prefer a stable position with a moderate salary to one with a higher salary but less security.
- I would participate only in business undertakings that are relatively certain.
- I probably would not take the chance of borrowing money for a business deal even if it might be profitable.

The risk propensity subscale of the JPI-R has demonstrated admirable reliability in numerous studies (*e.g.*, $\alpha = .76$ in Stewart, Watson, Carland, & Carland, 1998). While this is undoubtedly due partially to the relatively large number of items it contains (*cf.* Pedhazur & Schmelkin, 1991), it nevertheless meets Nunnally's (1967) criterion of $\alpha = .70$ as suitable reliability for established instruments. Its potential disadvantage, compared to the values survey, is the fact that it uses twenty items to capture a relatively small, albeit highly important, facet of entrepreneurial motivation. Interestingly, some of the items featured on this scale correspond noticeably to those featured on Stevenson and Sahlman's (1986) semantic-differential scale of entrepreneurial and administrative behavioral orientations. In the light of this fact, the results from the JPI-R may incidentally offer some ideas for improving the Stevenson and Sahlman scale, which has not shown adequate reliability (*e.g.*, Brazeal, 1996).

Innovativeness. Innovativeness is a general behavioral pattern of response to challenges (Knight, 1997; Lumpkin & Dess, 1996; Miller, 1983; Timmons *et al.*, 1977). Innovativeness will be measured using the corresponding subscale of the JPI-R (Jackson, 1997). Like the risk propensity subscale described above, this is a 20-item subscale in true-false format that presents the respondent with predominantly behavioral items. Some examples follow:

- I prefer work that requires original thinking.
- I like to experiment with various ways of doing the same thing.

- I hope to develop a new technique in my field of work.
- I obtain more satisfaction from mastering a skill than coming up with a new idea.
- I don't usually contribute many new ideas to a project.
- I like a job that demands skill and practice rather than inventiveness.

Like the risk propensity subscale, the JPI-R's innovativeness subscale has demonstrated very good reliability in past studies (*e.g.*, $\alpha = .77$ in Stewart *et al.*, 1998). Compared to the values scale, the relatively large number of items on the JPI-R's risk propensity subscale poses the same potential disadvantage as that described above. By contrast to the risk propensity subscale, it bears less resemblance to the Stevenson and Sahlman (1986) scale, although it may nevertheless offer some insights relevant to it.

In accordance with Jackson's (1975, 1997) instructions, the risk propensity and innovativeness items will be randomly arranged and combined into a single, 40-item scale on the survey instrument. This step is taken because the published arrangement, featuring 20 positively keyed items followed by 20 negatively keyed items for each subscale, would be expected to be more vulnerable to respondent fatigue, as the temptation to assign all identically keyed items of a given subscale the same response when there are only two choices is very strong.

Proactivity. Proactivity is a general behavioral pattern characterized by a tendency to act on projected needs rather than await the emergence of actual needs to act (Lumpkin & Dess, 1996; Venkatraman, 1989). Schmitz and Schwarzer's (1999) proactivity scale will be used in the present study. This scale has its origins in the leadership education area of research but has been applied and validated in numerous studies across cultures and disciplines and enjoys a strong empirical history. The current version consists of

eight items in a 4-point Likert format with choices, "not at all true," "barely true," "moderately true," and "exactly true."

Schmitz and Schwarzer (1999) reported a reliability of $\alpha = .78$ for the original, 9-item version. Schwarzer (2000, personal communication) has noted that this scale is still being refined, despite its strong, established reliability.

Generalized self-efficacy. As part of the exploratory role of this study, self-efficacy is addressed in its generalized form. Schwarzer and Jerusalem's (1995) scale of generalized self-efficacy takes advantage of the perspective reflected in some of the self-efficacy literature that this construct need not necessarily be context-dependent (*cf.* Schwarzer & Born, 1997). In its generalized form, self-efficacy refers to a global variety of confidence in one's coping ability across a wide range of demanding or novel situations (Schwarzer & Born, 1997). The context-general nature of this scale concords closely with the context-general nature of universal human values.

Schwarzer and Jerusalem's (1995) scale of generalized self-efficacy has been tested across numerous national cultures and is now available and validated in 27 languages. It has shown both convergent and discriminant validity, correlating positively with self-esteem, optimism, and work satisfaction, and negatively with anxiety, stress, and burnout, among others. It currently demonstrates reliabilities mostly in the upper .80's, with a range of $\alpha = .76$-$.90$.

Mission-oriented goal-setting. Again as part of the exploratory role of this study, a cursory measure of goal-setting is introduced. Following Locke and Latham's (1990) theory of goal-setting, which specifies either a context-dependent or a experimental approach to studying this phenomenon, scales designed for the measurement of a

generalized version of goal-setting do not appear to exist. In the present study, an attempt to measure respondents' propensity to engage in goal-setting processes within the context of business planning seems to be appropriate. Drawing from strategic-management theory (Thompson & Strickland, 1999), eight items are created addressing aspects of the strategic planning process, from the broadest kind of planning (establishing a vision statement) to the most specific from the perspective of the business owner or manager (establishing measurable objectives). Following Locke and Latham's (1990) theory, goal specificity and difficulty are both incorporated into some of the item wording, in addition to a reference to "goal-setting" itself. Taken together, the items focus on the fundamentals of strategic decision-making and seek to capture a facet of the respondents' actual managerial behavior. They consist of the following, in answer to the cue, "What does it take to run a business?"

1. A carefully written mission statement.
2. A statement of the firm's vision for the future.
3. Challenging goals.
4. Specific, detailed objectives.
5. Measurable indicators of how well the business is doing.
6. A statement of the firm's values.
7. Contingency plans.
8. Joint goal-setting among the firm's managers.

The scale is referred to as mission-oriented goal-setting. Given that it is completely untested, its reliability will be assessed and items detracting from reliability excluded prior to computing any statistical relationships or ascertaining differences

between entrepreneurs and administrators. According to Nunnally's (1967) criterion, new scales in the early stages of development should exhibit a reliability of $\alpha = .50$ or above to be considered fully viable. Items whose exclusion would increase the scale's reliability should be deleted, and the scale should be unidimensional in order for its reliability coefficient to be meaningful.

Job satisfaction. Global job satisfaction will be measured using the Brayfield-Rothe job satisfaction scale (Brayfield & Rothe, 1951). This is a five-item scale in 5-point Likert format that allows respondents to rate their overall satisfaction with their jobs rather than give equal weight to specific subcomponents of job satisfaction as some other scales do.

Despite the short length of the Brayfield-Rothe scale, it has demonstrated very high reliabilities (*e.g.*, $\alpha = .88$ in Judge, Locke, Durham, & Kluger, 1998). The job satisfaction scale will be used in part to control for the confounding problem of job mismatch, since a prevalence of entrepreneurially oriented individuals in administrative positions and administratively oriented individuals in entrepreneurial jobs would be expected to attenuate the differences that the present study seeks to establish between entrepreneurs and administrators. It will also be used to address Hypothesis 10, which predicts that entrepreneurs in administrative positions and *vice versa* will be less satisfied with their jobs than those who are in job positions suited to their managerial style.

Determination of the classification variable. The intent of this study is to uncover a certain type of difference between entrepreneurs and administrators. It is thus necessary to establish the means by which entrepreneurs and administrators are to be classified. Previous studies have mostly used ownership of a small business as a proxy for

entrepreneurship, with a certain subset of candidates excluded on the basis of the process by which they came to own their businesses or their motivation for pursuing business ownership. Fagenson (1993), for example, used the category of business founders, after excluding from her sample all those small-business owners who had acquired their firms *via* modes other than actual founding. This is consistent with the well established view that an entrepreneur must be inclined to found a business, not merely own one, in order to be categorized properly as an entrepreneur, a view that actually dates back to Schumpeter (1936) and is asserted by both Dyer (1994) and Schein (1994).

Fagenson (1993) based her entire study on careful operationalization of two categories of managers, *viz.*, entrepreneurs and administrators (calling the latter "traditional managers"). Her first step was to identify "small businesses." To do this, she selected a database sample of businesses meeting the US Small Business Administration's definition of small businesses as used in most industries. This requires that there be fewer than 500 employees in an organization. Fagenson's survey was administered to each organization's owner rather than its manager. She then included an item on her survey to reveal whether the owner had founded or purchased the organization. She also attempted to balance the number of males and females in her study. Since gender has shown a modest but stable relationship with universal human values (Fagenson, 1993; Voss, Weaver, & Dickson, 1996), this measure probably increased the generalizability of her results.

In order to select a sample of administrators, Fagenson (1993) obtained a random sample of people in large organizations who were actively managing at least three subordinates. This criterion, however, may risk confounding to some degree organizational culture with human values. Schwartz (1994) makes it clear that the survey of human values

can be applied to individuals as well as to collectivities of individuals, the latter case requiring simply, in the manner introduced by Hofstede (1980), obtaining the mean ratings for the entire sample rather than observe the individual differences within it. This might imply a confounding of a measure of organizational culture with personal human values. The assumption made in studies that compare people in small businesses to people in large organizations is that responses on a survey of values are not significantly influenced by the culture of the organization within which the respondents are actively engaged in the process of completing it. To date, this assumption has not been tested. The present project seeks in part to avoid this confound and draw out, to the extent possible, only those distinctions between entrepreneurs and administrators that correspond to their differences in actual career choice behavior.

The administrators in Fagenson's (1993) sample were probably skewed heavily in the direction of the lower-level manager, given her operationalization. By contrast, the approach taken by Busenitz (1999) probably resulted in an administrative subsample that was heavily skewed in the direction of the upper-level manager. Specifically, Busenitz defined administrators (whom he called simply "managers") as "individuals with middle- to upper-level responsibilities with substantial oversight in large organizations" (p. 326). Furthermore, he required that they have responsibility for at least two functional areas. These are typically divisional or general managers. Busenitz approached three publicly traded organizations of over 10,000 employees for the study, to which two responded, affording him 95 usable surveys. The disadvantage to the approach taken by Busenitz was the narrowness of its representation of industries. Since human values are intimately associated with motivation, choice of industry for one's career may be as likely to reflect a

particular hierarchy of values as choice of self-employment. Fagenson (1993), by contrast, had attempted to sample a broad variety of industries in order to avoid this confound.

In the light of the observations addressed above, the approach taken in the present study will attempt to optimize the combined importance of four criteria. These are: (1) accurate definition of entrepreneurs as business founders, in addition to business owners; (2) exclusion of income-substituters from the entrepreneurial subsample; (3) a broad array of industries; and (4) drawing both entrepreneurs and administrators from the same population, as far as possible. In order to accomplish this, entrepreneurs will be operationalized primarily as business founders, with the category of business owners used as an alternative operationalization, partially for comparability *vis-à-vis* previous studies. Administrators will be defined primarily as people in managerial roles in business, with an attempt to draw out a full range of managerial levels. In order to optimize the representation of a variety of industries, membership in large organizations will not be used as the means by which to define administrators. In order to separate income-substituters from entrepreneurs, a single item ascertaining the respondent's motivation for founding a business will be included, with a clear choice of, "to maintain income."

As it often happens that classification variables, which are critical to the success of a research design, fall short of their expected utility for such reasons as poor reliability, when a scale is used (*e.g.*, Brazeal, 1996), or insufficient subgroup populations, when a dummy variable is used, some alternatives to the selected classification scheme should be established in advance. Failure to prepare for this contingency can undermine a research design by leading to a failure to place respondents into any meaningful subgroups at all.

In the present study, a selection of demographic items that may prove to support a better categorization scheme to meet the objectives of the study will be devised to complement the item used to distinguish entrepreneurs as business founders from administrators. These will include an item that ascertains not only whether respondents founded the businesses that they currently own, but also whether they have ever founded or helped to start a business in the past. The simple fact of current business ownership will also be assessed, in case the distinction between ownership *per se* and managerial status *per se* serves to add any information to the process of identifying the two managerial styles. Respondents will also be asked whether they have ever purchased a business, in case this activity also suggests anything respecting entrepreneurial orientation. Lastly, respondents will be asked whether they have ever managed an autonomous unit, strategic business unit, or similar operating group in a business organization. This last item is a slight adaptation of the item used in Brazeal's (1996) study, which proved necessary to serve as the means by which to distinguish intrapreneurs from administrators, and follows Hisrich and Peters' (1986) identification of entrepreneurial champions in corporations as managers who are often found heading new venture groups.

Control Variables. In addition to the foregoing scales and items, several items are included in the two demographics sections for their potential utility as control variables. The first section includes total experience as a business owner and/or manager (in years), organizational size (an estimate of the number of people employed), organizational type (business, nonprofit, government, church, volunteer, self-employed, and other), and title (owner, CEO, CFO, COO, CIO, president, vice-president "for...," plant or unit manager, shift supervisor, and other). All of these variables stand to provide some data that may be

necessary for sorting out specific outcomes that may otherwise lack clarity. The last item, in particular, can be converted into a measure of administrative rank, aside from distinguishing current business owners from non-owners.

The second section features mostly biodata items, including age, educational level, gender, national origin, ethnicity, and socioeconomic status. Age, education, and gender have all shown some relationships with entrepreneurship in past studies, and significant correspondences between any of these variables and values will warrant partialing out these factors in order to improve the generalizability of the results. National origin will only become important if a sufficient cohort of immigrants is included among the respondents. The strong associations demonstrated in past research between national culture and human values warrant its inclusion. Ethnicity may or may not be relevant, and much of this will again depend on the frequency of responses from specific ethnic groups, but this item is deemed important for reasons similar to those for which the national-origin item is included. Socioeconomic status may assist in establishing administrative rank or in differentiating between the growth-oriented entrepreneur and the traditional small-business owner who may nevertheless report income-substitution as something other than "to maintain income." The last item featured on the instrument is an open-ended item that asks for a very brief description of what the organization does. This is to ascertain the industry representation of the sample and, if necessary, subdivide it based on distinct industry environments (*e.g.*, fragmented *versus* volatile).

The sampling method, as described below, will consist at first of a stratified random sample, so two more items of potential import to the present study will also be available. These include region and city size. The former may prove relevant to the present study

because there may be regional cultural differences that influence the outcome. Although the stratified approach to random sampling intends to take geographical differences into account by adjusting the numerical representation of each subsample to correspond proportionally to the numerical representation of each region in the overall sample, cultural differences based on region may nevertheless influence certain outcomes. City size may also be important because the nature of entrepreneurship, such as the values associated with the activity, may partially be dependent on the concentration of wealth within the municipal area, or the urbanity of the region. Region will thus be taken into account in the analyses to verify whether it has an impact on the statistical outcomes. If region proves influential, then city size will also be assessed to verify whether the observed effect involves regional culture, urban culture, or an admixture of both.

In summary, instruments relating to the individual characteristics of entrepreneurs and administrators are selected based on theoretical and empirical justifications, including some instruments whose essential purpose is exploratory. All of the instruments will be presented in their original metrics for the sake of consistency with other research utilizing the same. In one case, *viz.*, goal-setting within the context of business planning (*i.e.*, mission-oriented goal-setting), no instrument was available for the exploratory purposes consistent with the intent of this study, so a cursory scale was assembled to test the relevance of the construct to the dynamics at issue here.

As explained at the start of this section, two separate instruments will be prepared in an effort to minimize the threat of nonresponse, which has often characterized research involving entrepreneurs. This threat is seen as particularly daunting in the present study because of the length and unusual metric of the value survey, for which the accurate

generation of data is most critical. Although this step prevents correlation analysis between the values instrument and the alternative differentiators between entrepreneurship and administratorship, the research design nevertheless permits the comparison of the explanatory power of those alternative differentiators. Since the computation of correlations between values and the alternative predictors is not an essential part of this study, the preparation of separate scales does not undermine the research design and should be effected if there is a chance that it will generate a greater response rate.

Reliability and Validity

This section will briefly discuss reliability and validity issues and how they will be confronted as the sample data are processed. Churchill (1979) defined reliability as the degree to which measures are free from error and yield consistent results (*cf.* also Peter, 1981). The reliability coefficient is equivalent to the square root of the percentage consistency with which repeated applications of the same instrument produce the same result. Nunnally (1967) recommended a reliability coefficient of .70 as sufficient for most research using established scales, which would correspond to a level of consistency of about 50%. Unrefined instruments can be considered valid for their purposes with coefficients of .50 or above, corresponding to a 25% level of consistency. It is often a complex matter to establish what constitutes "accuracy" with regard to repeated administrations of a given instrument. For example, if in archery two arrows hit a bulls-eye, but they are two centimeters apart, does this represent 100% reliability, or must we take into account the two centimeters? Computation of the reliability coefficient *via* correlation analysis simplifies the

assessment. Nevertheless, an alternative approach must be taken for cases involving nonparametric data or data not interpretable on the basis of mean ratings of disparate items.

Most reliability estimates are measures of internal consistency. Split-half reliability computes the correlation between two halves of a multi-item survey determined randomly. Since Cronbach's alpha is the equivalent of the mean of all possible split-half correlations, it is always preferred over the older split-half method (Churchill, 1979; Pedhazur & Schmelkin, 1991; Peter, 1979). Nevertheless, a truly randomized selection of items from a longer scale results in a high degree of correspondence between the results of split-half and Cronbach's alpha assessments of reliability. Lastly, there is test-retest reliability, which is ideal for surveys that do not have the requisite properties of statistical normality upon which the internal-consistency approaches rely. Test-retest reliability is simply the correlation between two iterations of the same instrument at two different points in time. The reliability of the Rokeach Value Survey was originally computed in this manner, with good results, although some later researchers proceeded to employ internal-consistency methods despite the survey's ranked format.

The reliability of the Schwartz Value Survey, featured in this study, has not usually been computed as a measure of internal consistency. Since internal-consistency reliability is only meaningful for unidimensional scales (Pedhazur & Schmelkin, 1991), Cronbach's alpha has not strictly been considered appropriate as a measure of reliability of the SVS. As explained above, values should not be confused with truly reflective measures of personality. Every value is different in content from every other value, notwithstanding the fact that they have been found to cluster with general regularity into identifiable motivational domains. Smallest-space analysis has usually been used to assess how values

on the SVS arrange themselves in relation to one another. This being the case, the regularity with which all values on the survey arrange themselves into a given structure can be used as the basis for inferring reliability. This is thus the approach taken below to establish the reliability of the Schwartz Value Survey in the present study.

The assessment of validity begins with an estimate of reliability because high reliability assures the researcher that the instrument does indeed measure some characteristic with great consistency across samples. However, that characteristic may not be what was theorized. In answer to this, Churchill (1979) explained, "[R]eliability is a necessary but not a sufficient condition for validity" (p. 65). Rather, validity itself depends on further substantiation. Validity is the extent to which the measurement instrument does indeed measure the theoretical construct of interest, rather than some other phenomenon.

Construct validity is established through an iterative, inductive process, rather than through straightforward statistical techniques (Cronbach & Meehl, 1955). By contrast, its starting point, which involves the establishment of convergent and discriminant validity, is quite mathematical. Convergent validity refers to the extent to which the measurement instrument at issue correlates with the results of an alternative measurement instrument or an objective measure that has previously been established to be valid. That is, the same construct should be reflected in more than one way; consequently, different types of measures should be intercorrelated (Peter, 1981). Discriminant validity is the degree to which the measurement instrument successfully distinguishes between two or more theoretical constructs. That is, different constructs should be reflected differently by the same instruments, insofar as each instrument (subscale) is designed to measure a single construct (Peter, 1981). In this study, convergent validity takes on the form of the extent to

which the various measures of entrepreneurship and administratorship correlate among themselves and with the three alternative approaches to quantifying the results of the Schwartz Value Survey. Discriminant validity will focus mainly on the extent to which entrepreneurship and administratorship are, in fact, shown to be distinct using the various measures applied herein.

Data Collection

This section describes the sample and sampling procedure, with a detailed description of the package sent to potential respondents. As mentioned above, data collection constitutes an intrusion of the researcher into the environment of the people under study specifically to induce a form of behavior, namely the completion and return of self-report survey instruments, a behavioral artifact resulting directly from the intrusion. This intrusion may affect the outcome of the study in ways that are unanticipated by the researcher. Consequently, utmost care must be taken to ensure that the reactions induced by the intrusion do not nullify the validity of the artifacts it produces.

The Sample

This study began with a stratified random sample of US firms that hold membership in chambers of commerce. Six states were first selected at random by using a spreadsheet randomizing function. The chambers of commerce within each selected state whose addresses were available on the master list of chambers of commerce published by the Seattle Chamber of Commerce were then listed and sorted at random in the same fashion. One chamber of commerce from each state was thus chosen at random and the corresponding mailing list assembled from the information provided by it. Next, a target sample size was assigned to each state based on its gross domestic product. The first mailing

was accomplished in traditional fashion, involving unsolicited contact by postal mail. Details of this and the smaller, subsequent mailings are given below.

Chambers of commerce were chosen as the appropriate sources of mailing lists to generate a relatively large proportion of entrepreneurs on the basis of advice from experts in the field. About 80% of firms holding membership in chambers of commerce constitute small businesses according to some sources (*e.g.*, the US Chamber of Commerce). Given that entrepreneurs represent a relatively small proportion of the population, it is appropriate to select a sample with a relatively large representation of entrepreneurs to ensure a sufficient sample size. Since there is also a substantial representation of administrators among firms that hold membership in chambers of commerce, albeit probably a smaller proportion than would be found on other types of mailing lists, it was expected that there would also be sufficient responses from administrators in order to make the necessary comparisons. Because both entrepreneurs and administrators would thus be selected from the same population, differences in entrepreneurship and administratorship in this study are expected to be quite conservative, as they should not be influenced by organizational or industry culture.

The Sampling Procedure

Three mailings were planned. First, one thousand surveys of each of the two types were mailed in the traditional fashion, with a cover letter on university letterhead, a survey, and a return envelope. A No. 10 windowed envelope, printed with the university seal and address and prepared for bulk rate postage, was used as the original envelope for mailing to the respondents. Cover letters were printed with the recipients' name and address showing through the window of the No. 10 envelope, using the Microsoft Word™ form letter merge

subapplication. A No. 9 windowed envelope was used as the return envelope to enable the printing of the surveys with a return address showing correctly through the window once the completed survey was placed inside it. In order to ensure anonymity and encourage response, the cover letter guaranteed anonymity, and individual surveys were not encoded to identify firms. This step made follow-up mailings using regular postal mail impractical. Respondents were offered an executive summary of the results of the research project as an inducement to participate. A sample cover letter is provided in Appendix B.

Approximately two weeks after the first mailing, listed firms for which e-mail addresses were available were contacted to remind them of the survey, request that it be completed if not already done so, and returned. These communications also offered to resend the survey if the firm had lost the first one or had not received it the first time.

The third sampling wave consisted of e-mail contact of the remaining firms in the same areas as the original sample to request their participation, with surveys sent to all those that agreed to participate. The third wave sought to generate more feedback using the same total data as the first and second waves to compare response rates, while simultaneously providing a basis for comparing the two approaches to data collection. Since this study is viewed as only the first step in a project of longer term, it was important to establish the most efficient means by which to collect data in the future. A benefit afforded by the method used in the third wave also permitted the application of a three-step approach analogous to the three waves often used in traditional mailouts, but without compromising the anonymity of the respondents. Once a potential respondent expressed approval to receive a survey, the survey was sent out as promised, with a modified cover letter and still with no method of linking actual responses to specific firms. Those who did not respond to the first e-mail

request were then sent a follow-up request, and subsequently a second follow-up if there was still no response. The e-mail approach also provided an opportunity to confirm mailing addresses and to generate some qualitative data on reasons for nonresponse.

The response rate using the e-mail approach was slightly better than using the traditional approach prior to the follow-ups. Specifically, the traditional mail-out generated a response rate of 10.9% overall, compared to 13.2% for the initial e-mail request for participation. The second figure, however, should be adjusted to compensate for the discrepancy between agreement to participate and actual participation. The ratio of actual participation to agreed participation during the e-mail request phase of the mail-outs was approximately 94.8%, which effectively reduces the latter figure to 12.5%. The weighted mean of these two figures is 11.44%, with a margin of error of ±2.01% based on a 95% confidence interval. The difference thus lies within the margin of error, and hence there was no significant difference between the two approaches.

The additional e-mail follow-ups subsequently proceeded to dislodge several more respondents from their lethargy to increase the overall response rate noticeably, to an overall average of 14.8%. Discounting surveys that were returned "N/A" or with bad addresses, a total of 1,923 individuals were contacted, mostly business owners and managers but including a significant contingent of nonprofit, religious, and government employees. A total of 284 usable surveys were obtained for analysis purposes.

Trend effects were sought by computing simple correlations between the date, recorded on the basis of the postal cancellation (only 1.4% of the envelopes were found missing a legible date), and all variables. Of the 57 human values on the SVS, three showed significant relationships with the date stamp at the $p = .05$ level of significance.

Using the binomial probability formula, the probability that this outcome should occur by chance is $p = .54751$, so there is no significant impact of response pattern on human values.[3] There were no significant correlations with any of the scale variables except job satisfaction on one of the surveys, at $p = .05$ (a positive correlation). Given that this did not manifest itself on the SVS survey or meet a stronger criterion of significance, it is probably a sampling anomaly. There were no significant correlations with any of the managerial categories on either survey, including business owners, business founders, income-substituters, and administrators. There was a mild, positive correlation with sex on both surveys (at $p = .05$), suggesting the tenuous possibility that female respondents are more likely to be late than men. It is more likely that a greater proportion of females in the service sector explains this, however, as there is also a significant, positive correlation between sex and SIC category 9 at the $p = .05$ level of analysis.

In all, 16 correlations were significant at the $p = .05$ level in the data from both surveys combined, out of 142 opportunities, corresponding to a probability of $p = .00207$. This was at least due in part to the fact that date was positively correlated, at $p = .01$, with certain regions, after all data were collected, reflecting the different databases used to contact the respondents. Specifically, the quality or availability of the e-mail addresses varied a great deal from database to database. Those databases with large numbers of up-to-date e-mail addresses naturally tended to result in much heavier response in the latter phase of data collection. This was truest about Colorado, which showed a positive correlation on the SVS survey but not on the scale survey. Meanwhile, the relative dearth of good e-mail addresses in the Connecticut and Georgia databases resulted in significant,

[3] The formula is unexpectedly 1-BINOMDIST([SUCCESSES]-1,[TRIALS],[PROBABILITY],1) in Microsoft Excel™ 2000. This will give an upper-tail probability.

negative correlations between the date stamp and these regions on the SVS survey, and with only Georgia on the scale survey.

The remaining trend effects may include a tendency for more surveys to be returned in the latter phase of data collection from the service sector (SIC category 9), which showed significance with the date stamp at $p = .01$ on one survey and $p = .05$ on the other. This reflects either a tendency for more service- than non-service-sector businesses to be equipped with e-mail, or at least a more strongly established habit of using e-mail among such businesses. It is not a consequence of database anomalies, since there is no significant correlation between this industry classification and any region. If there is a generalizable, positive correspondence between using e-mail lists to secure samples and a prevalence of service-sector businesses in the sample, this raises a threat that the conclusions drawn from a study using the traditional mail-out might be different from those drawn from one using an e-mail approach. To address this potential threat, both industry classification and region will be considered in the analyses in this dissertation, and steps will be taken to partial out any effects that could compromise the generalizability of the results.

Discounting the effects just discussed, the probability that the remaining cases of significance at $p = .05$ are meaningful, rather than the result of chance, no longer meets the $p = .05$ criterion, which suggests that all meaningful anomalies have already been discussed. No trend effects were detected to suggest that those who returned surveys were different in a way relevant to the study from those who did not. Not counting self-employed persons with no employees, 39.8% of the usable surveys reported being business owners, while 38.7% reported being business managers who were not also

owners. Of the 284 usable surveys, 16 lacked some type of data necessary to establish an unambiguous job position, although they were otherwise considered usable. Of those surveys for which a job position could be clearly established, business owners and non-owner business managers constituted 42.2% and 41.0% of the sample, respectively. Reasons for nonresponse consisted of busy schedules, which constituted most responses by far, followed by references to policy constraints, which accounted for the remainder. Respondents were also given the opportunity to note "N/A" if they believed the research was not relevant to them, and several did this as well.

Lastly, it would be appropriate to estimate the extent to which entrepreneurs versus administrators tend to respond affirmatively to a request to participate in a survey project such as this. To do this, a simple comparison can be made between the original proportion of entrepreneurs to administrators and the actual response patterns generated by the data collection process. On the basis of the mailing lists that were used in this project, the response ratio of entrepreneurs (operationalized as business owners, since foundership data were naturally not available in advance) to administrators was projected to be 53.5%, with a margin of error of 4.3%. The actual ratio turned out to be 50.7%, well within the margin of error.

Given the relatively low response rates characteristic of entrepreneurship research, the actual proportion of entrepreneurs responding would have been justifiably expected to be significantly lower than the proportion projected on the basis of the mailing lists, so this is a surprising outcome. However, members of chambers of commerce do tend to be heavily small-business. Thus, it would be reasonable to infer from this outcome that it is the small-business environment, and not the fact of being an

entrepreneur, that places such downward pressure on response rates. That is, whether one is an entrepreneur or an administrator in a small business, the same pressures to discard requests for survey participation prevail. Among the rationales given for declining to participate, the e-mail communications included an open-ended request to explain why the respondent could not participate. Relatively few who declined took the time to give a reason, but exactly half of those who did explained that they did not have time. The second most frequent response was "not interested," which constituted 28.6% of the sample. Lastly, policy constraints were cited 21.4% of the time.

Analysis

Hypothesis testing will begin by using *t*-tests to ascertain the extent to which values are associated with the two managerial styles as predicted. One-tailed tests of hypotheses will be employed for Hypotheses 1-6 because these advance a specific direction of association (Ott, 1993). As a part of this process, job satisfaction and certain demographic variables will be considered as well to assess their impact on the relationships between human values and categorization as entrepreneurs or administrator. Items that should be expected to correlate with values because they are theoretically antecedent to them (*e.g.*, education) will not be controlled for, but those that may be confounded with the subsamples (*e.g.*, there may be more male entrepreneurs than female entrepreneurs in the sample, causing "entrepreneurship" to risk being associated in part with masculine cultural values) will be. Managerial styles will be defined first by the distinction between business founders and non-founders, and then between business owners and non-owners for the sake of comparison. The entrepreneurship category in each case will be denoted as entrepreneur as founder and entrepreneur as owner, respectively, to clarify the parallel operationalizations.

The administrative subsample will consist of all non-founders or non-owners in managerial positions in business firms. In either case, the administratorship category will be denoted simply as administrator, as it will be understood that an "administrator" in opposition to an entrepreneur operationalized as a business founder is clearly a non-founder who is in a managerial position. Likewise, an "administrator" in opposition to a business owner is a non-owner in a managerial position.

After individual values are assessed, the stability of the hypothesized motivational domains will be assessed. This will be accomplished using smallest-space analysis and the method outlined by Schwartz (2000), as noted previously. This procedure will be compared to the results of factor analysis in order to demonstrate the comparison and exemplify the discussion about these distinct approaches to establishing reliability. Smallest-space analysis will essentially be a point of departure for hypothesis testing in this dissertation. It is a necessary step because it conforms to the approach that has predominated in research into universal human values from Schwartz and Bilsky's first study in 1987.

Logistic-regression analysis will then be employed to determine each managerial style's characteristic values hierarchy, without regard to motivational domains, and to establish the appropriate regression equation. To be sure, discriminant analysis is an alternative to logistic-regression analysis that is ideally suited to the exploratory process. However, logistic-regression analysis can also be used in an exploratory capacity through an iterative process involving the multiplication of each value's logit coefficient by its standard deviation and sorting them by highest product to lowest (Press & Wilson, 1978), as long as all variables use the same metric. This process will not show immediately at which point the next lower variable in the list does not contribute significantly to predictability, but a

comparison of log likelihoods (multiplied by negative 2 for convenience, as is done in SPSS™) between models is sufficient to determine this. If this approach is feasible, it will be attempted. Discriminant analysis, meanwhile, may be advantageous as a preliminary step in this process because it is capable of sorting long lists of variables in order of their strength of association. A detailed explanation of the approach taken in this study will be given in the next chapter.

Logistic regression analysis does not allow for the identification of specific motivational domains, treated as factors, as a way to distinguish between entrepreneurs and administrators. In fact, some values that demonstrate significant differences between the two managerial styles in the *t*-tests may prove insignificant in logistic-regression analysis because two or more values may overlap in their predictive utility. Nevertheless, a comparison can be made between the results observed in the *t*-tests and those values that prove significant in logistic-regression analysis.

The assumptions underlying the logistic-regression procedure are more robust than those that underlie discriminant analysis (Press & Wilson, 1978), an obvious advantage when one is dealing with relatively small sample sizes. However, its use of maximum-likelihood estimation (MLE) rather than ordinary least squares (OLS) assumes large sample sizes. This issue is discussed below. In logistic-regression analysis, the relationships between independent and dependent variables may be nonlinear, and the dependent variable need not be normally distributed or exhibit equal variance for each level of the independent variable. Error terms may also be non-normal. Lastly, the independent variables need not be interval or unbounded. By comparison, discriminant analysis assumes statistical normality of distributions, equal variance, and equal costs of

misclassification, especially with small sample sizes. To be sure, discriminant analysis is highly robust to deviations from the established assumptions, and the threat to validity represented by such violations diminishes to a point of negligibility as subgroup sample sizes exceed approximately $N = 50$ (Johnson & Wickern, 1982). Nevertheless, logistic-regression analysis has the advantage of being more directly interpretable and even more robust methodologically than discriminant analysis.

In the present study, subgroup sample sizes for entrepreneurs and administrators in the sample of respondents completing the Schwartz Value Survey are $N = 48$ and 73, respectively, due to the strict definitions employed. Thus, discriminant analysis is an acceptable procedure according to Johnson and Wickern's (1982) criterion. However, given the normative nature of human values and the consequent tendency of responses to cluster near one end of the response continuum on several values, rendering their distributions highly skewed, it is preferable to employ an even more robust procedure if possible. Moreover, subgroup sizes of this order also tend to display several relatively flat distributions on a variable-by-variable basis, with the effect that kurtosis is strongly negative and standard deviations highly inflated. This can lead to a high incidence of Type II error (false negatives), which is critical to avoid in the exploratory stages of research. Despite the arguments in favor of the use of discriminant analysis, therefore, the superior properties and greater interpretability of logistic-regression analysis make the latter procedure more useful.

Logistic-regression analysis makes several assumptions that concord well with much of the kind of research that is performed today in the area of management. Regression models, for example, must include all relevant variables and exclude all

irrelevant variables. Failure to do so tends to inflate the error terms associated with individual variables. The error terms themselves are assumed independent, an assumption that is most likely to be violated in studies involving paired samples but not in a cross-sectional analysis incorporating only a single observation. As in regression involving ordinary least squares (OLS), interaction effects are only considered if they are explicitly included in the model as additional variables. Multicollinearity is also a threat, as in OLS regression. In the present study, these do not constitute methodological problems.

Lastly, logistic regression analysis uses maximum-likelihood estimates (MLE) rather than ordinary least squares to generate the relevant statistics. This establishes an assumption of relatively large sample sizes, an assumption that clearly does not hold in the present study. As subgroup sizes become smaller, the reliability of the estimates declines. This mainly affects the Wald statistic, which is used for determining whether an additional variable contributes enough additional predictive power to the model to include it. This effect is a direct product of the role of standard error in the computation of the Wald statistic (Menard, 1995). Specifically, the Wald statistic is a ratio of the logit coefficient and asymptotic standard error (ASE). Small sample sizes lead to large standard errors, which are exacerbated by deviations from normality (as described above), notwithstanding the fact that the logistic regression procedure itself is impervious to deviations from normality. Moreover, the standard error computed from the logit transformation of a variable becomes inflated as the logit coefficient becomes very great (Menard, 1995), which again results in a depressed Wald statistic. Depression of the Wald statistic results in a high incidence of Type II error. Thus, the Wald statistic itself will not be used as the only criterion by which to determine the relevance or excludability

of any variable. Other methods, such as the comparison of log likelihood ratios, will be employed as well to ensure valid results.

Logistic-regression analysis will again be employed to test the predictive power of each of the three alternative predictors of entrepreneurship (risk propensity, innovativeness, and proactivity). The logistic-regression technique is intended to examine the effects of independent variables, whether continuous, such as one's score on the proactivity scale, or dichotomous, such as the "sex" control variable, upon a categorical dependent variable (Hair, Anderson, & Tatham, 1987). Since universal human values are understood as being among the antecedents to self-selection into the entrepreneurial or administrative subgroups, subgroup categorization is the outcome variable, and logistic-regression analysis is appropriate. Each of the three alternative predictors (the three scales) will first be regressed separately against each of the categorical variables (business ownership and foundership) to assess their simple predictive power. The possibility of combining them for better predictability will then be entertained. Lastly, the demographic control variables will be included to assess whether superior predictive power is achievable when these effects are held constant.

The scale of mission-oriented goal-setting introduced in this study will be submitted to factor analysis to ascertain its dimensionality and confirm its reliability. If the scale proves viable, it will then be brought into the remaining statistical analyses relevant to this study, for its exploratory value.

Finally, a comparison will be made between the predictive power of the values algorithm (the logistic-regression equation) and each of the three alternative measures of entrepreneurial behavior. Other potential predictors will then be analyzed as well,

including generalized self-efficacy, mission-oriented goal-setting (if viable), and significant demographic items, largely for exploratory purposes.

In summary, the purpose of this chapter was to present systematically the methodology of this dissertation, including research design, instrumentation, data collection, and statistical analysis. The basic approaches to hypothesis testing necessary to undertake the present project are relatively simple and straightforward. The merits and limitations of both discriminant analysis and logistic-regression analysis were discussed, and the choice made to use the latter to test the hypotheses proposing predictive relationships. The results of the statistical analysis will be presented in Chapter V.

CHAPTER V

RESULTS AND ANALYSIS

Chapter V investigates the survey instrument, the results of the research hypotheses outlined in Chapter III, and a brief analysis of the findings. Chapter VI discusses the implications of the results and suggests some directions for future research. This chapter is divided into three sections: (1) examination of the survey instrument; (2) summary and descriptive statistics; and (3) results and analyses.

The Research Instrument

The survey instrument is analyzed to assess the evident utility of the scales and in one case (the mission-oriented goal-setting scale) the dimensionality as well, since it is new. Internal-consistency reliability is assessed for all reflective measures. This includes all multi-item scales except the Schwartz Value Survey, which is not a reflective measure because the relative arrangement of every value is essential to interpretability. Instead, a smallest-space analysis (bidimensional scaling) is conducted and motivational-domain sectors plotted to assess the proportion of values that fall within their associated or adjacent motivational domains (Schwartz & Bilsky, 1987).

Items on the survey instrument consist entirely of published scales, with the exception of the mission-oriented goal-setting scale that was included for its exploratory value. No scales were modified for this study. All scales used their original metrics as well. The published scales are the Schwartz Value Survey (Schwartz, 1999), the risk propensity and innovativeness subscales from the Jackson Personality Inventory-Revised (Jackson, 1997), Schwarzer and Jerusalem's (1999) scale of generalized self-efficacy, Schmitz and Schwarzer's (1997) proactivity scale, and Brayfield & Rothe's (1951) index of job

satisfaction. Cronbach's alpha is used to estimate the internal consistency of these scales, with the results displayed in Table V-1. Each of the published scales was treated as unidimensional, consistent with the corresponding theory and intent of the designers. Internal-consistency reliability analysis is justifiable only on unidimensional scales because the reliability coefficient in that case is a measure of the consistency with which the various items that constitute the scale reflect the same latent factor (Hair *et al.*, 1987).

Scale		Author	Items	Format	Metric	Reliability
Schwartz Value Survey		Schwartz (1999)	57	Likert	9-point [a]	.7711 [b]
Risk Propensity		Jackson (1997)	20	True-False	Binary	.8450
Innovativeness		Jackson (1997)	20	True-False	Binary	.8349
Proactivity		Schmitz & Schwarzer (1999)	8	Likert	4-point	.7581
Overall Job Satisfaction		Brayfield & Rothe (1951)	5	Likert	5-point	.8192
Generalized Self-Efficacy		Schwarzer & Jerusalem (1995)	10	Likert	4-point	.8350
Mission-Oriented Goal-Setting	Strategic	Original	3	Likert	5-point	.7773
	Operational		5	Likert	5-point	.6722

[a] Range is from -1 to 7, including zero.
[b] Reliability constitutes the proportion of values that fall into their associated or adjacent motivational domain in smallest-space analysis, multiplied by the ratio of stable to total values according to Schwartz (1992).

Table V-1—Scale Characteristics and Reliabilities

Also displayed in Table V-1 are the reliabilities corresponding to the two subscales that emerged in the eight-item mission-oriented goal-setting scale. These subscales are labeled "strategic goal-setting" and "operational goal-setting." The corresponding factor analysis is discussed below.

Mission-Oriented Goal-Setting

Factor analysis is a form of statistical analysis that enables the researcher to identify separate dimensions measured by the survey items. Each dimension consists of a generally coherent, stable collection of stimuli that tend to induce the same behavioral pattern in response. These stimuli take on the form of individual scale items in self-report survey instruments, in which case the induced response is typically a physical mark or some artifact of communication in an interpretable place on the instrument. As the particular response to each item in a factor analysis is thus considered the consequence of a specific stimulus, the

combined pattern of responses associated with a particular item assumes the role of a dependent variable that is a function of some set of latent factors (Hair *et al.*, 1979). Each of two or more similar scale items triggers, *i.e.*, raises to a level of conscious awareness, each latent factor. Because the scale items trigger the same cognitive dynamic, interpretable as the latent factor in question, the result is a similar response for each item. The symbolic content of the latent factor is taken as the cognitive mechanism that mediates the behavioral response to the stimulus items, *e.g.*, making an interpretable mark on a survey. This content can be inferred from the common character of the items themselves, or from an interaction between a prior behavior and the content of a subsequent item (as in the case of abrupt shifts in item keying that can influence the resulting factor structure).

The principle-components method is selected for the mission-oriented goal-setting scale because it specifically seeks to reduce a collection of items to discrete factors that are maximally different from one another (*i.e.*, mutually orthogonal). In this usage, a "factor" refers to the common statistical variance of a subset of scale items and is a proxy for a latent factor that may be proposed to exist as a *bona fide* cognitive dynamic on the basis of that common variance and the ability of the researcher to rationalize its theoretical coherence. The criterion of Eigenvalues greater than one is selected to determine whether to consider a factor viable. The Eigenvalue is a measure proportionally equivalent to the explanatory power of the average single item on a multi-item scale. A factor with an Eigenvalue less than one thus represents less variance than that of the average single item, so it should be discarded. A varimax rotation method is selected because it seeks specifically to maximize the differences among the factors. The factors are mathematically plotted in the equivalent

of multidimensional space along axes angled as far apart as possible while simultaneously seeking alignment with the most pronounced, discrete clusters of points present.

Item	*"What does it take to run a business?"*	Factor 1 Strategic	Factor 2 Operational	Communality
1	A carefully written mission statement.	**.916**	.072	.844
2	A statement about the firm's vision for the future.	**.887**	.120	.802
3	Challenging goals.	.130	**.701**	.509
4	Specific, detailed objectives.	.112	**.783**	.626
5	Measurable indicators of how well the business is doing.	.011	**.672**	.451
6	A statement of the firm's values.	**.584**	.339	.456
7	Contingency plans.	.299	**.544**	.385
8	Joint goal-setting among the firm's managers.	.261	**.453**	.273
	Eigenvalue after rotation	2.154	2.192	
	R^2 (total variance explained)	.269	.274	

Data are computed using SPSS®. Varimax rotation is employed. Item-factor loadings greater than .4 are in bold type.

Table V-2—Factor Analysis of the Mission-Oriented Goal-Setting Scale

Table V-2 presents the results of the factor analysis of the mission-oriented goal-setting scale. The factors that emerged were labeled "strategic goal-setting" (26.9% of the variance after rotation) and "operational goal-setting" (27.4%), for a total explained variance of 54.3%. The rationale for these labels is discussed below. Intercorrelations among all scale items are given in Table V-3.

	"What does it take to run a business?"	1	2	3	4	5	6	7	*mean*	*std. dev.*
1.	A carefully written mission statement.								3.753	1.117
2.	A statement about the firm's vision...	.776**							4.050	.974
3.	Challenging goals.	.228**	.280**						4.227	.693
4.	Specific, detailed objectives.	.203**	.238**	.548**					4.398	.678
5.	Measurable indicators...	.099	.144*	.264**	.369**				4.588	.585
6.	A statement of the firm's values.	.421**	.388**	.135	.291**	.269**			4.092	.797
7.	Contingency plans.	.247**	.239**	.269**	.299**	.235**	.346**		4.084	.680
8.	Joint goal-setting...	.211**	.195*	.212**	.200**	.204**	.274**	.339**	4.321	.763

N = 138. *p = .05; **p = .01. Pearson product-moment correlations. Significances are two-tailed.

Table V-3—Item Intercorrelations for the Mission-Oriented Goal-Setting Scale

The first subscale consists of three items addressing mission, vision, and values. These are the ideological drivers of organizational processes and often take on the form of relatively brief statements published by the organization among its members and revised and updated gradually over time, very often based on the judgment of the central authority but sometimes through feedback from the organizational constituents themselves. The mission

statement is a very carefully worded synopsis of the organization's *raison d'être*, which identifies the organization's customers, specifies the customer needs that the organization seeks to satisfy, and indicates how the organization satisfies those needs (Abell, 1980). The vision statement is usually shorter and establishes an idealized end-state of existence toward which the mission and an ongoing process of continuous improvement intend to move the organization over time (Thompson & Strickland, 1999). As an idealized end-state of existence, it is analogous to Rokeach's (1968) conceptualization of terminal values. The statement of values often consists largely of a list of idealized modes of conduct by which the organization seeks to portray itself. Thus, it is analogous to Rokeach's conceptualization of instrumental values. Of these three statements, the mission statement is the most common in organizations, followed by the vision statement, and finally the statement of values.

The second scale focuses on operational issues. It consists of items reflecting respondents' attitudes toward the importance of challenging goals, specific objectives, measurable indicators of business success, contingency plans, and joint goal-setting among the organization's managers. Locke and Latham's (1990) goal-setting theory focuses largely on these aspects of business planning as being among the strongest motivators of workplace performance. More precisely, Locke and Latham proposed that goals established in the business setting must be both specific and challenging. The former criterion is reflected in items 4 and 5 on the mission-oriented goal-setting scale. The latter is reflected in item 3. In addition, item 8 refers specifically to goal-setting itself, specifying a subtype involving the collaboration of more than one decision-maker. Lastly, item 7, which refers to contingency plans, applies to tactical rather than operational planning, but like the others, it is distinct from the strategic planning reflected in the items constituting the first factor.

There were no crossloadings, using an item-factor correlation coefficient of .40 as the cut-off. The first factor demonstrated a reliability suitable for refined scales, for which Nunnally (1967) recommended at least $\alpha = .70$. The second factor approached this figure. Both factors clearly meet Nunnally's criterion of $\alpha = .50$ for scales still in their exploratory stages. Item 6 ("a statement of the firm's values") detracted from reliability, which would be $\alpha = .87$ without it, but its content is too strongly related to that of the other two to warrant excluding it. Item wording should be improved somewhat in a subsequent version.

The mission-oriented goal-setting scale is interpreted as reflecting respondents' goal-setting propensities within the context of business strategy (*cf.* Thompson & Strickland, 1999). According to Locke and Latham's (1990) conceptualization, goal-setting should be defined in terms of a specific context when it is operationalized. The relevant context of the scale at issue in this study is business strategy, so the scale is called "mission-oriented goal-setting" and interpreted to reflect the strategic, tactical, and operational goal-setting practices most strongly advocated by the respondents. Presumably, a high score on such a scale would indicate that the respondent believes strongly in applying deliberate effort to the task of strategy-making rather than letting strategy emerge as an epiphenomenon of the firm's pursuit of purpose and profit, which involves the distinction between planned and emergent strategy as discussed by Thompson and Strickland (1999). Meanwhile, a high scorer on the scale of operational goal-setting who scores low on the scale of strategic goal-setting would be expected to have a bias for the intricacies of the planning process, while not putting a great deal of stock in the pay-off that could be derived from establishing strong mission, vision, or values statements. Given the characterization of entrepreneurs as being largely focused on the smaller details and day-to-day operation of the firm, in contrast to the

administrator's stronger exposure to the firm's mission and long-term considerations (*cf.* Sexton & Bowman-Upton, 1991, and Timmons *et al.*, 1977), it is conceivable that entrepreneurs and administrators may score differently on these subscales. Specifically, the entrepreneur may score higher on operational goal-setting, while the administrator may score higher on strategic goal-setting.

Reliability of the Schwartz Value Survey

The reliability of the Schwartz Value Survey cannot properly be assessed using measures of internal consistency because of the formative nature of the scale. That is, every value on the survey is a necessary component of the scale and cannot be eliminated. The reason for this lies in the original theory of human values as explicated by Rokeach (1968). Even in a rating format, it is the comparison among the values and not the absolute strength of affect associated with each value that is important. Values are inherently ipsative (Rokeach, 1973). If some are removed from the full array, this is presumed to affect the quantitative comparisons made among the remainder. In addition, Schwartz and Bilsky (1987, 1990) established that the totality of each person's complete array of values constitutes an emergent property of each person's complete array of unconscious needs. Since factor analysis assumes that each item is reflective of a common latent factor, all items are considered potential reflectors thereof (Pedhazur & Schmelkin, 1991). Those that do not reflect the factor adequately may be rejected in a scale undergoing refinement.

The boundaries among needs, and hence the values that correspond to them (*i.e.*, the analogous motivational domains), are not clear-cut in Schwartz's (1992) theory of universal human values. Thus, one motivational domain blends into the adjacent domains, the values comprising each serving to reinforce those comprising the others (Schwartz, 1992). The

further a motivational domain is from another, however, gradually the more distinct it becomes. There is a progressive shift in the facets of a person's needs served by the values in each subsequent motivational domain as one moves around the conceptual matrix (represented graphically in the form of a smallest-space plot). Consequently, values cannot be treated as entirely unidimensional either.

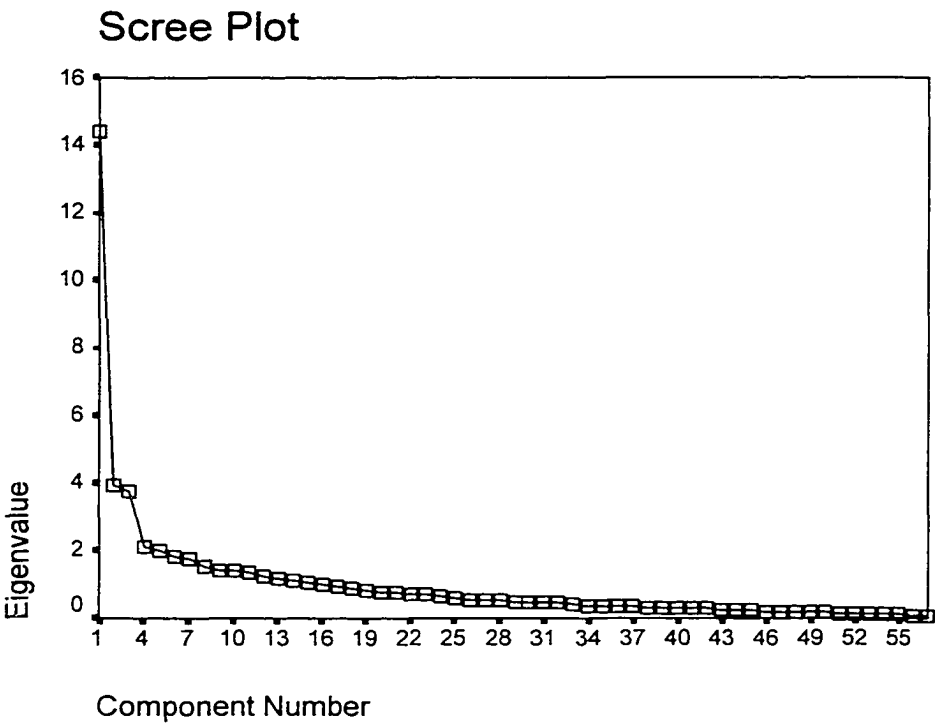


Figure V-1—Scree Plot of a Factor Analysis of the Schwartz Value Survey

If factor analysis is nevertheless applied to the Schwartz Value Survey, the result is a high alpha coefficient ($\alpha = .9398$ in this study). It should be noted that there is a positive correspondence between the number of scale items and the reliability coefficient (Pedhazur & Schmelkin, 1991), so it could be suspected that this figure is an artifact of that effect. Nevertheless, a reliability coefficient this high is unlikely to be artifactual. A truly multidimensional construct would exhibit a much lower reliability, benefiting from the large number of items without completely obscuring its multidimensionality (a Monte Carlo

analysis of a 10-dimensional construct with the same number and range of data yields a reliability coefficient in the 60's, not the 90's). A unidimensional construct also reveals relatively great disparities in explained variance among the Eigenvalues prior to rotation, with the first factor consuming a disproportionately large amount of it. This results in an unusually steep scree plot, with a relatively abrupt shift in slope after the first factor. By comparison, a scree plot on random data shows a gradual decline after no more than a very subtle drop from the first to the second factor. The scree plot corresponding to a factor analysis on the current data from the Schwartz Value Survey is depicted in Figure V-1. It clearly suggests one factor overarching all others, with no more than three factors possible in all based on the scree plot, while as many as fifteen factors would be suggested by the criterion of Eigenvalues greater than one. This discrepancy between the minimal number of factors suggested by the scree plot and the large number suggested by the Eigenvalue criterion is consistent with a unidimensional construct. The first factor in the present case consumes 25.3% of the variance, with only 6.9% and 6.6% ascribable to the second and third, respectively, and a very gradual decline (3.7%, 3.6%, 3.2%, 3.1%, 2.7%...) thereafter. If the number of factors suggested by the Eigenvalue criterion is significantly greater than the number of factors actually present in the data, a factor analysis with an attempted varimax rotation will usually fail to converge (in 25 iterations or fewer) unless a smaller number of factors is specified *a priori*. This is also true with the present data.

Individual motivational domains might be assessed as though they were unidimensional factors despite their overlap with other motivational domains. It is important to emphasize that this would not be a technically precise approach to establishing reliability because the element of discriminance would be missing. Nevertheless, reliability computed

on the values corresponding to each motivational domain would be as follows for the present data: universalism (α = .8410), conformity (.7951), hedonism (.7639), self-direction (.7349), achievement (.7357), benevolence (.6966), power (.6938), stimulation (.6622), security (.6508), and tradition (.5554). Thus, despite the small number of values associated with several domains (stimulation and hedonism have 3 values each; power, achievement, and conformity have 4 values each), half of them would pass Nunnally's (1967) criterion of α = .70 for established scales, and most of them would at least come very close to that. The average reliability among the ten motivational domains is α = .7170 (square root of the mean of all α_i^2). As explained previously, however, the reliability of the Schwartz Value Survey cannot be adequately assessed using measures of internal consistency because such measures require that the construct be: (1) reflective, not formative; (2) unidimensional; and (3) clearly distinct from the constructs most closely associated with it. Only the SVS as a whole could be argued to satisfy the second criterion, as demonstrated by the factor-analytic findings. The first criterion, meanwhile, is theoretically inaccurate because no value is disposable. Lastly, the third criterion is technically precise but not useful because the SVS viewed this way cannot be argued to convey much more than level of motivation in general, rather than a hierarchy of values in particular. Following is a discussion of the appropriate way to assess the reliability of the Schwartz Value Survey.

Smallest-space analysis (*i.e.*, multidimensional scaling in two dimensions, *cf.* Guttman, 1968) is used to plot an array of items onto a two-dimensional graph using Euclidean coordinates derived from the item intercorrelations. Strong positive intercorrelations result in items that are plotted close together, while strong negative intercorrelations result in items that are plotted on opposite ends of the graph. The

characteristic pattern is a distinctive doughnut shape of points spread more or less evenly about and very roughly equidistant from the origin. The same shape occurs whether data are completely random or highly unidimensional. With a multidimensional construct, by contrast, the doughnut shape is still present (*i.e.*, the same tendency to avoid the origin is exhibited) but the items tend to cluster within the doughnut pattern, often (but not always) with distinct gaps between clusters. Guttman (1968) introduced this approach to displaying data to accommodate the categorization of facets of a construct in those cases in which there was some compelling reason not to discard any items. Thus, it is designed for use with theoretically formative, not reflective, scales.

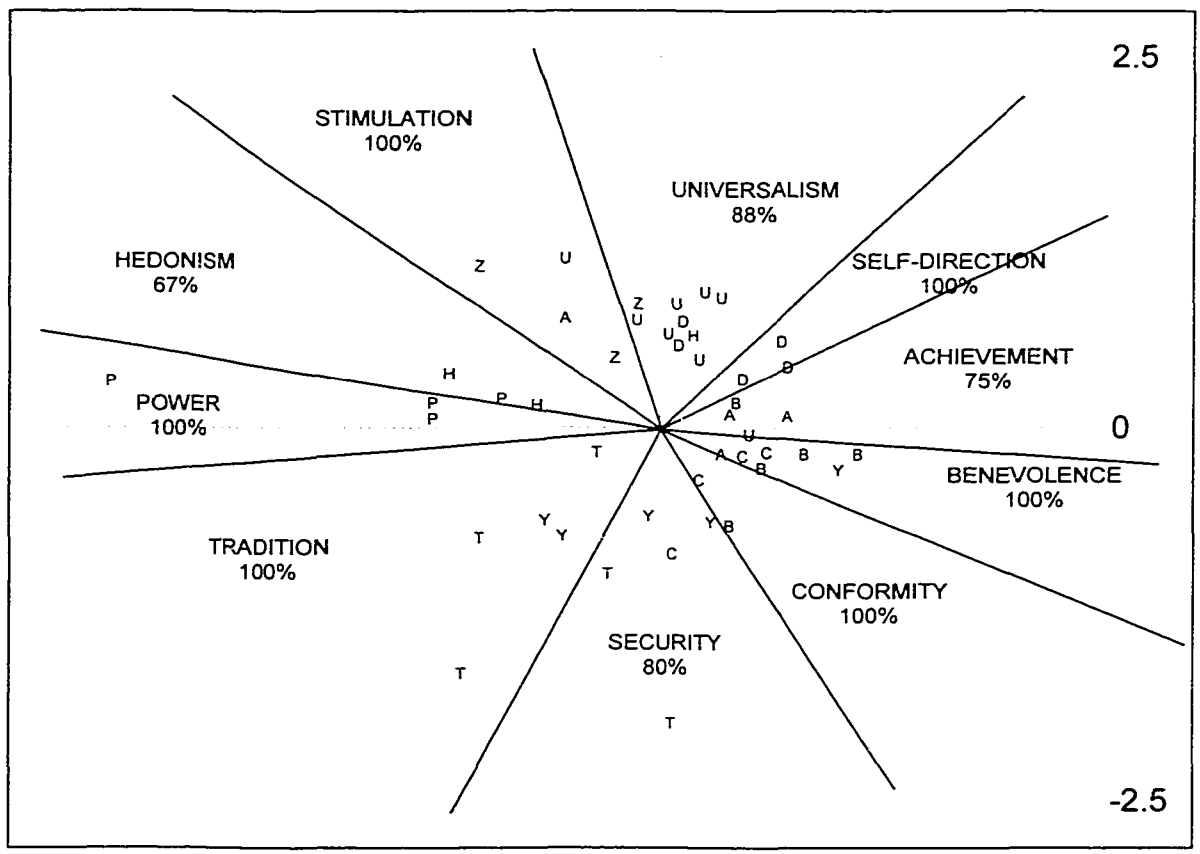
The researcher categorizes data in a smallest-space analysis by visually judging the array and separating out recognizable facets of the construct using line segments radiating out from the origin. Guttman (1968) conceded that it is reasonable to permit line segments to shift direction abruptly along the way out from the origin to accommodate the categorization of items that the researcher judges to lie within the domain adjacent to the one in which it would fall if the line is not angled. This is the approach taken by Schwartz and Bilsky (1987, 1990) in their cross-cultural studies. To be sure, this technique produces a less conservative outcome than restricting oneself to straight line segments. Even without permitting angled line segments, a considerable degree of judgment is necessary to determine precisely where to draw the straight line segments. With this in mind, in addition to the desire to choose the more conservative route, the smallest-space analysis conducted for the present study will restrict itself to straight line segments, and will be conducted as described below.

To reiterate the purpose of the smallest-space analysis at this point in this study, the normal approaches to establishing internal-consistency reliability for multi-item scales are

not appropriate for the SVS. In the absence of test-retest reliability, some other means is necessary to identify the consistency with which the noted measures (*i.e.*, human values) correspond to their associated factors (*i.e.*, motivational domains). The method used by Schwartz (*e.g.*, 1992, 1994) and Schwartz and Bilsky (1987, 1990) involves the smallest-space analysis. Consistency is estimated as the proportion of values that converge into their predicted motivational domains or those adjacent to them, *versus* those that do not. (The adjacency criterion reflects the mutually reinforcing nature of values; motivational domains are not clearly distinct in the smallest-space analysis because they do not constitute discrete factors, but rather mutually reinforcing facets of the values hierarchy as a whole.) As indicated previously, Schwartz (1994) reported that eleven of the currently accepted values on the Schwartz Value Survey do not consistently converge on any specific motivational domains across cultures. Many of these belonged to an earlier SPIRITUALITY motivational domain, but this domain did not emerge consistently enough across cultures for Schwartz to preserve it. Although these values appear to remain very important to the complete values hierarchy, until they are assigned definitively to a motivational domain, it is reasonable to observe that they contribute to a certain type of inconsistency, or lack of reliability, in the Schwartz Value Survey. This results in an initial reliability of 80.7%. A conservative approach to incorporating this figure into an overall reliability estimate would be to multiply it by the proportion of the remaining values that converge on their associated or adjacent motivational domains and derive our reliability estimate from the resulting product.

The smallest-space analysis is conducted using the Multidimensional Scaling routine in the SPSS® software application. Specifications in this procedure are: (1) create Euclidean distances between variables from the data and plot them in the form of a distance matrix; (2)

specify an "interval" model; (3) specify a 2 × 2 matrix; and (4) plot individual subjects. Young's S-stress formula 1 is used in the output. The data for this study converge in 4 iterations with a criterion to cease convergence once the incremental improvement in S-stress coefficient is less than .001. Kruskal's stress formula 1 is then used to provide a global fit measure, which is .17549 for these data. The R^2 value corresponding to this is extraordinarily high (R^2 = .92148), demonstrating that most of the variance in the data is captured by the two dimensions used in the smallest-space matrix. Thus, Schwartz's two-dimensional representation of the 57 values is accurate as demonstrated in the present data.



Key: C—Conformity; T—Tradition; B—Benevolence; U—Universalism; D—Self-Direction; Z—Stimulation; H—Hedonism; A—Achievement; P—Power; Y—Security.

Figure V-2—Smallest-Space Analysis of the Schwartz Value Survey

The smallest-space plot of the Schwartz Value Survey is depicted in Figure V-2. Clustering is generally evident as predicted, while a few values are somewhat out of place.

This does not suggest that they should be excluded in some future application of the Schwartz Value Survey, but it does establish a basis upon which to compute a reliability coefficient that adequately characterizes the Schwartz Value Survey. Percentages refer to the proportion of values falling either within the associated motivational domain or in a motivational domain adjacent to it, consistent with Schwartz's (1994) approach. Values that occur precisely on the boundaries are included in the count of those values qualifying as falling within the boundaries. A composite proportion is computed by getting the weighted average of the proportions of correct associations (given that different motivational domains often have different numbers of associated values). This is then multiplied by 80.7%, which corresponds to the number of cross-culturally "stable" values divided by the number of total values. In the present analysis, the composite proportion of values falling into their assigned or adjacent motivational domains appears to be 73.68%. Combining this result with the 80.7% figure cited above results in $80.7\% \times 73.68\% = 59.46\%$. The corresponding reliability coefficient is the square root of the percentage accuracy, which comes to $\alpha = .7711$ for the present study and is reported in the table of reliabilities above.

To summarize, previously established scales used in this study were the Schwartz Value Survey (Schwartz, 1999), the risk propensity and innovativeness subscales from the Jackson Personality Inventory-Revised (Jackson, 1997), Schwarzer and Jerusalem's (1999) scale of generalized self-efficacy, Schmitz and Schwarzer's (1997) proactivity scale, and Brayfield & Rothe's (1951) index of job satisfaction. The exploratory scale of mission-oriented goal-setting was factor-analyzed, and scales were created for each of the two extracted factors, *viz.*, "strategic goal-setting" and "operational goal-setting." All scales demonstrated acceptable reliability for the present study. Cronbach's alpha reliability

coefficient was considered a sufficient measure of reliability for all scales except the Schwartz Value Survey. A discussion about the merits and fallacies of using Cronbach's alpha as opposed to a measure of reliability based on smallest-space analysis for the SVS proceeded to show that, despite the superior outcomes that could be generated using the former method, only the latter method is appropriate with this scale. The following section of this chapter addresses the descriptive statistics for the study.

Descriptive Statistics

The summary statistics for this study are presented as follows. For each type of variable presented, appropriate statistics are selected in order to communicate an accurate representation while acknowledging the differences in their statistical nature.

- Table V-4 series..... Survey of values
- Table V-5..... Composite variables (scales)
- Table V-6..... Descriptive statistics for continuous demographics
- Table V-7..... Frequency distributions of categorical demographics (personal)
- Table V-8..... Frequency distributions of categorical demographics (position)
- Table V-9..... Frequency distributions by region
- Table V-10..... Frequency distribution by industry
- Table V-11..... Frequency distribution by experiential category

Tables V-4a to V-4d display the results of the Schwartz Value Survey, divided into four separate tables to assist in the presentation: (a) hypothetically entrepreneurial domains; (b) hypothetically administrative domains; (c) hypothetically neutral domains; and (d) uncategorized values. The mean, standard deviation, and minimum and maximum scores for each value are included in the tables. An examination of the overall outcomes for the survey of values will provide general ideas about the culture of the sample, which was heavily small-business in its orientation. Among the values in the hypothetically entrepreneurial

motivational domains, most show relatively high averages, with the exception of "daring." This was rated very low by a large number of respondents, many of whom described it as "against my values." This value is written as "daring (seeking adventure, risk)" on the survey. While such a value might be expected to be held in high esteem among Americans, there seems to be some disdain for that description in this sample.

Motivational Domain	Value #	Description	Mean	Std. Dev.	Min.	Max.
Achievement	34	ambitious	4.856	1.443	0	7
	39	influential	3.726	1.840	-1	7
	43	capable	5.507	0.970	2	7
	55	successful	5.014	1.292	2	7
Stimulation	9	an exciting life	3.986	1.486	0	7
	25	a varied life	4.116	1.556	0	7
	37	daring	3.055	1.841	-1	7
Self-Direction	5	freedom	5.322	1.334	1	7
	16	creativity	4.411	1.570	0	7
	31	independent	5.274	1.352	0	7
	41	curious	5.041	1.275	1	7
	53	choosing own goals	4.462	1.567	0	7

N = 146.

Table V-4a—Descriptive Statistics, Schwartz Value Survey: Hypothetically Entrepreneurial Domains

Motivational Domain	Value #	Description	Mean	Std. Dev.	Min.	Max.
Hedonism	4	pleasure	3.442	1.466	-1	7
	50	enjoying life	4.596	1.538	0	7
	57	self-indulgent	3.007	1.877	-1	7
Tradition	18	respect for tradition	3.925	1.559	-1	7
	32	moderate	3.199	1.748	-1	7
	36	devout	3.966	1.650	-1	7
	44	humble	3.137	2.196	-1	7
	51	accepting my portion in life	4.202	2.270	-1	7
Conformity	11	politeness	5.069	1.178	2	7
	20	self-discipline	4.671	1.324	0	7
	40	honoring of parents and elders	5.226	1.307	1	7
	47	obedient	4.349	1.663	-1	7

N = 146.

Table V-4b—Descriptive Statistics, Schwartz Value Survey: Hypothetically Administrative Domains

Table V-4b displays the motivational domains hypothesized to be associated more with administratorship than with entrepreneurship. It is noteworthy that the present sample included ratings of "against my values" (-1) for most of the HEDONISM and TRADITION values. The values "moderate," "humble," and "self-indulgent" seem to be particularly distasteful to many people in the sample. These depressed numbers may reflect the heavy

influence of entrepreneurship in the sample, in which case they would make very good sense. Despite the low mean scores, there is enough variance in them to expect them to be able to differentiate among subgroups, including possibly entrepreneurs and administrators.

Tables V-4c presents the descriptive statistics relating to those motivational domains that have not been hypothesized to differentiate significantly between entrepreneurs and administrators. To be sure, several values in this array have shown to differentiate between the two groups in past studies, but none of the domains in its entirety can be characterized as clearly more appropriate to one group than to the other. Significant features in this array include both an unusually high rating given to a value in the BENEVOLENCE domain ("honest"), coupled with unusually low ratings given to two values in the POWER domain ("social power" and "authority"). The former case is consistent with past studies on business owners and managers, who most frequently place "honest" at the top of their values hierarchies when asked to rank them (as in the case of the Rokeach Value Survey). Entrepreneurs have historically rated "honest" higher than administrators, but the present results may simply reflect the propensity for both entrepreneurs and administrators to hold this value in very high esteem. Regarding the latter, the POWER domain has theoretically been associated with the propensity to seek out managerial positions and at least thought to be rated more highly among all people in positions of responsibility in business. However, it has not been hypothesized in this study to correspond distinctly to either group because the empirical evidence demonstrates that entrepreneurs and administrators tend to view it similarly. Contrary to what one might infer from most of the relevant literature, that similarity may be in their rating it low rather than high.

Motivational Domain	Value #	Description	Mean	Std. Dev.	Min.	Max.
Power	3	social power	0.575	1.879	-1	6
	12	wealth	3.390	1.564	-1	7
	27	authority	2.932	1.971	-1	7
	46	preserving my public image	3.096	2.035	-1	7
Universalism	1	a world at peace	4.627	1.692	0	7
	17	unity with nature	4.500	1.654	0	7
	24	protecting the environment	3.503	1.750	-1	7
	26	a world of beauty	4.959	1.338	-1	7
	29	social justice	4.236	1.615	-1	7
	30	broadminded	4.349	1.606	-1	7
	35	wisdom	4.575	1.553	-1	7
	38	equality	4.045	1.512	-1	7
Benevolence	33	loyal	5.212	1.199	1	7
	45	honest	5.986	0.917	3	7
	49	helpful	4.856	1.395	1	7
	52	forgiving	5.534	1.115	2	7
	54	responsible	4.753	1.479	-1	7
Security	8	social order	3.719	1.761	-1	7
	13	national security	4.767	1.572	0	7
	15	reciprocation of favors	3.637	1.761	-1	7
	22	clean	5.747	1.138	0	7
	56	family security	4.404	1.609	-1	7

N = 146.

Table V-4c—Descriptive Statistics, Schwartz Value Survey: Hypothetically Neutral Domains

Motivational Domain	Value #	Description	Mean	Std. Dev.	Min.	Max.
(no stable domain)	2	inner harmony	5.226	1.296	1	7
	6	a spiritual life	4.651	1.943	0	7
	7	sense of belonging	3.959	1.549	-1	7
	10	meaning in life	5.103	1.466	1	7
	14	self-respect	5.630	1.133	0	7
	19	mature love	4.788	1.519	0	7
	21	privacy	4.459	1.518	-1	7
	23	social recognition	3.644	1.721	-1	7
	28	true friendship	4.904	1.245	1	7
	42	healthy	5.637	1.156	2	7
	48	intelligent	5.178	1.207	0	7

N = 146.

Table V-4d—Descriptive Statistics, Schwartz Value Survey: Uncategorized Values

Table V-4d presents the remaining values. These have not shown stable relationships with any motivational domains across cultures. However, several of the values have been shown to be capable of helping to distinguish between entrepreneurs and administrators in past studies. These include "true friendship," "mature love," "self-respect," and variants of "a spiritual life" ("salvation") and "intelligent" ("logical"). Two of these ("self-respect" and "logical") have been associated with entrepreneurship, while the other two have been associated with administratorship. In this table, none of the means stands out

as particularly noteworthy. It is not yet clear how these values should be expected to fall in the effort to distinguish between entrepreneurs and administrators.

Table V-5 lists the composite variables and the mean score, standard deviation, minimum, and maximum for each unidimensional scale. Scale scores are computed as the mean of all scale items, equally weighted. The risk propensity and innovativeness scale scores are given as a value between one and two, wherein two equals "true" for an individual item on the scale. It is probably noteworthy that the innovativeness scale has a noticeably greater mean than the risk propensity scale, perhaps due to the difference in how American culture views the archetypal risk-taker as opposed to the innovator. Converted to the same metric, the proactivity scale mean would be even higher, *viz.*, 1.863. Overall job satisfaction tends to be relatively high among people employed in the small-business sector, as evidenced by the relatively high mean.

Scale		Mean	Std. Dev.	Min.	Max.
Risk Propensity		1.467	0.239	1.000	2.000
Innovativeness		1.732	0.201	1.100	2.000
Proactivity		3.452	0.367	2.130	4.000
Overall Job Satisfaction		4.288	0.677	1.000	5.100
Generalized Self-Efficacy		3.386	0.345	2.600	4.000
Mission-Oriented Goal-Setting	Strategic	4.016	0.798	1.000	5.000
	Operational	4.329	0.452	3.200	5.000

N = 138 for all except overall job satisfaction, which is N = 282.

Table V-5—Descriptive Statistics, Composite Variables

Table V-6 gives the descriptive statistics for continuous variables representing demographic characteristics. These include total managerial or ownership experience in business, organizational size, age in years, and educational level. Means, standard deviations, minima, and maxima are again given. In addition, median and skew are provided in order to show where a distribution deviates significantly from normality, as is often the case with continuous demographic variables. Size of organization is too strongly skewed to permit the use of parametric methods of assessing strength of correspondence, so alternative

methods will be employed if it must be considered. This variable is included in the present study because it tends to be related to entrepreneurship. However, it is likely that the relatively few large organizations included in the study are represented by administrators rather than entrepreneurs. The range in age is very great, and that of education is adequate for the present study. Both age and education have been shown in previous research to be associated with values. The former may require partialing out in order to assess differences in values accurately.

Variable	Mean	Std. Dev.	Skew[a]	Median	Min.	Max.	N
Total managerial/ownership experience (yrs.)	16.933	11.604	0.850	15	0	61	281
Size of organization (number of employees)	5967.989	49,572.730	10.106	10	1	555,000	281
Age (yrs.)	48.112	11.709	0.161	48	22	84	278
Education (16 = bachelor's)	16.022	2.406	-0.054	16	12	20	274

[a] Skew is computed here using the formula at the right. Organizational size is heavily skewed, so the median is a more accurate representation than the mean. The proximity of the mean and the median in the case of the other variables indicates adequately normal distributions.

$$\frac{n}{(n-1)(n-2)}\sum\left(\frac{x_i-\bar{x}}{s}\right)^3$$

Table V-6—Descriptive Statistics, Continuous Demographic Variables

Table V-7 completes the list of demographics by covering the categorical variables. These include sex, national origin, race/ethnicity, and personal income. The last variable is included among these because the response format was categorical rather than continuous. It is evident that personal income is skewed somewhat (its skew coefficient would be 1.171), so it may be necessary to consider this as well. However, socioeconomic status is an outcome variable that is not critical to this study, even though its relevance as a possible outcome variable, holding certain antecedents constant, may provide useful exploratory data later. It should also be noted that these variables are somewhat sensitive for many people, as several respondents left "race" and "personal income" blank, especially the former. It is also evident that the preliminary analyses will not be able to include race because the response rate is too low to consider seriously. However, contrary to many studies involving managers, there is a good representation of women among the respondents. Given that some

values are historically associated with gender, this distinction will be important as a control variable in the present study.

Variable		Frequency	%
Sex	Male	160	57.1
	Female	120	42.9
National origin	US	276	97.2
	foreign	8	2.8
Race/ethnicity (among US)	African-American	5	2.2
	Asian-American	1	0.4
	European-American	211	94.2
	Hispanic-American	3[a]	1.3
	Native-American	1[b]	0.4
	Other	3[c]	1.3
Personal income	less than $25,000/yr	18	6.5
	$25,000-50,000/yr	74	26.8
	$50,000-75,000/yr	76	27.5
	$75,000-100,000/yr	33	12.0
	$100,000-$125,000/yr	28	10.1
	$125,000-150,000/yr	11	4.0
	$150,000-$175,000/yr	10	3.6
	$175,000-200,000/yr	4	1.4
	greater than $200,000/yr	22	8.0

[a] One from Colorado crossed out "Latin American (Hispanic)" and wrote in "Chicana."

[b] From northwestern Georgia, wrote in comment, "I feel you should have included American Indian in choices above."

[c] Two specified "other" without indicating; one from northwestern Georgia wrote in "Christian Old-Line Baptist."

Table V-7—Frequency Distributions, Categorical Demographic Variables: Personal

Table V-8 provides a breakdown of occupational positions by business ownership and business managerial status, and non-business positions, with frequencies and subgroup percentages. It is clear that the representation of business owners compared to managers is perfect for a study that intends to compare the two. While Table V-11 below will show that the frequency of business founders, as opposed to business owners, is smaller, the distinction between business owners and managers is an important one for the sake of comparing the current results to those of previous studies. Meanwhile, a number of nonprofit organizations responded as well, a byproduct of the source of the mailing lists used. These data, in addition possibly to those associated with religious institutions, may be useful after more data are collected at a later date for the purpose of comparing

entrepreneurial values to those of founders of organizations, often nonprofit or religious in nature, based on a motivation to fill a social need.

	Variable	Frequency	%	%
Business owners	Owner (managerial status not indicated)	76	67.3	
	Owner and top manager[a]	29	25.7	42.2
	Owner and other than top manager[b]	8	7.1	
Business managers, not incl. business owners	Manager, level 4 (top)	48	43.6	
	Manager, level 3 (VP/regional)	28	25.5	41.0
	Manager, level 2 (major unit)	29	26.4	
	Manager, level 1 (minor unit/shift)	5	4.5	
Other business	Non-manager	14		5.2
	Self-employed[d]	19		7.1
Government	Managerial/supervisory	4	80.0	1.9
	Non-managerial	1	20.0	
Nonprofit, not incl. churches	Executive director or equivalent	11	64.7	
	Other managerial	4	23.5	6.3
	Non-managerial	2	11.8	
Churches	Pastor	1	25.0	
	Other managerial[e]	2	50.0	1.5
	Non-managerial	1	25.0	

[a] Mostly "president" (N = 20); others include "president & CEO" (N = 5), "CEO" (N = 1), and "manager or "general manager" (N = 3).

[b] Titles include "vice-president" (N = 3, with one indicating "VP for administration"), "independent contractors" (N = 1), "treasurer" (N = 1), "CFO" (N = 2), and "designated broker" (N = 1).

[c] Some owners of very small businesses described themselves as "self-employed" in addition to "business owners," while some self-employed persons described themselves as "business owners." For purpose of this study, respondents were considered business owners if they owned a business and employed at least one other person. Meanwhile, those who reported being business owners but did not report having any employees were designated self-employed.

[d] One director of missions, and one director of lay ministry.

Table V-8—Frequency Distributions, Categorical Demographic Variables: Position

Table V-9 shows the frequency distribution and percentage representation by region, defined on the basis of the US state in which each sample was solicited. A stratified random sample was taken by first arranging the fifty US states and District of Columbia in an Excel™ spreadsheet and then assigning a randomizing function by which to sort the list. Then the first six states were selected, as listed below. The first mailing sought to balance the number of recipients by each state's respective GDP (which is very highly correlated with population at $r = .9922$ according to 1996 data), so that states with lower GDPs (*e.g.*, the District of Columbia) were sent fewer surveys accordingly. The current response frequencies correlate with state GDP's at $r = .3984$, a consequence of the unequal

availability of current e-mail addresses in the mailing lists, which were used in the second and third waves of the mail-out. This correlation suggests that regional effects are not already controlled for adequately through the distribution alone of surveys by region. Thus, regional effects must be investigated in the current study and partialed out statistically if any are discovered.

State	Frequency	%
Arizona	65	23.6
Colorado	87	31.5
Connecticut	25	9.1
District of Columbia	7	2.5
Georgia	46	16.7
Louisiana	46	16.7

Table V-9—Frequency Distributions by Region

Table V-10 provides the industry breakdown based on the ten Standard Industry Classification (SIC) categories. The strongest representation is clearly in the service sector, followed by the financial and retail sectors, although manufacturing and construction are also represented sufficiently from which to draw some conclusions. Industry effects are possible in the data because people may self-select into specific industries on the basis of their values. However, it is also reasonable to note that certain industries represent better entrepreneurial opportunities than others, and the different industry categories are not equally represented in the US economy, which is, in fact, dominated by the service sector. Nevertheless, given the possibility of confounding the effects of industry with those of the distinction between entrepreneurship and administratorship, and noting the fact that the differences in values between entrepreneurs and administrators should prevail regardless of industry, any industry effects detected will be partialed out in the present study.

	Variable	Frequency	%	%
1.	1-Agriculture, forestry, and fishing	1	0.4	
2.	2-Mining	0	0.0	
3.	3-Construction	14	5.6	
4.	4-Manufacturing	18	7.2	
5.	5-Transportation and public utilities	8	3.2	90.6
6.	6-Wholesale trade	2	0.8	
7.	7-Retail trade	36	14.4	
8.	8-Finance, insurance, and real estate	39	15.6	
9.	9-Services	132	52.8	
10.	Government (public services)	5	19.2	
	Nonprofit	17	65.4	9.4
	Church	4	15.4	

Industries are designated by Standard Industry Classification (SIC) category. Respondents were asked to describe what their respective organizations do, and their responses were interpreted by the researcher to fit into one of the SIC categories into the nonprofit or religious sector.

Table V-10—Frequency Distributions by Industry

Finally, Table V-11 provides the breakdown of business ownership and foundership experience, and motivations for starting or purchasing business enterprises or franchises. This is certainly the most interesting of the descriptive data presented in this dissertation, as it provides a rich tableau of the American entrepreneur. The motivations for starting or purchasing businesses are highly varied, and often expressed without any reference to specific goals, but rather to ideals that are sometimes difficult to define. The survey provided three choices, primarily targeted at separating income-substituters from genuine entrepreneurs. Thus, the first choice among motivations was "to maintain income." Subsequent choices were "for the challenge" and "to be my own boss." However, the consistency among some of the other motivations written onto the survey provides ample room for improving the capacity of future surveys to capture more distinctions among motivations. Regarding the categories of foundership, the survey did not adequately specify to check both "yes, this one" and "yes, but not this one"; consequently, there are probably several instances of people who had both founded a previous organization and founded the current one but only noted the latter. Some people checked both anyway, and it may turn out that the most dedicated entrepreneurs are precisely those people, given that their previous

foundership experience is more likely part of a pattern than a one-time occurrence that may possibly have caused some regret.

Variable			Frequency	%
Experience running an autonomous unit in a business corporation			114	40.1
Founded or helped found a business organization	Yes, the current one		115	40.0
	Yes, but not the current one		61	21.5
	Yes, the current and a previous one		10	3.5
Purchased a business or franchise			67	23.6
Motivations for founding or purchasing an organization (may overlap)	Maintain income		39	19.9
	For the challenge		81	41.3
	To be my own boss		88	44.9
	Other[a]	increase income, invest	10	5.1
		to fill a purpose or unmet need	6	3.1
		sense of accomplishment	5	2.6
		saw an opportunity	4	2.0
		keep from relocating	4	2.0
		control my destiny	3	1.5
		help out friend/family member	3	1.5
		dream, goal, or compulsion	2	1.0
		enjoy the work or industry	2	1.0
		added security	1	0.5
		to innovate	1	0.5

% of sample

% of firms started/purchased

[a] Specific reasons are categorized based on respondent comments.

One motivation was "bought out co-shareholder," which in fact was not a motivation at all, but rather its product.

Table V-11—Frequency Distributions, Experiential Categories

Results and Analysis

This final section of Chapter V presents the results of the research hypotheses and preliminary analysis of the findings. Prior to assessing the hypotheses, a discussion of the proper significance level to ensure the correct balance between inadvertently corroborating a relationship that does not exist, and inadvertently rejecting one that does exist, would be appropriate. In general, a significance level of $\alpha = .05$ will be applied to the analyses to follow.

The selection of an appropriate level of significance always involves a compromise between Type I and Type II errors. When the consequences of a Type I error (rejecting the null hypothesis when it is true) are perceived to be costly, it is generally considered safer to select an extremely low level of significance, such as $\alpha = .001$, which is commonly used in

the medical disciplines, or $\alpha = .0013$, which corresponds to the "six-sigma" standard in quality control. Conversely, when the relationships among the variables in the study are complex, not thoroughly researched (*i.e.*, in their exploratory stages), or not adequately understood, the risk of a Type II error becomes a greater concern because it may result in the rejection of a promising lead (Myers, 1975). Consequently, the inefficiency, or cost, in such a case is the necessity for other researchers to chance upon the same lead without any empirical guidance.

In the present study, it is desirable to guard against Type II error, but it is also desirable to demonstrate the validity of a measure and a facet of theory that is currently underexploited in the management literature. There is some risk inherent in declaring confirmations of hypotheses at a relaxed alpha level such as $\alpha = .10$, which may result in embracing some results (as many as one in ten) that are the product of random chance. There is a contrary risk of rejecting hypotheses that may be valid at the level of $\alpha = .05$, which is a more common criterion in the behavioral sciences during the initial phases of research. Given the large number of values present on the SVS and the need to assess them individually in the primary analyses, there is a genuine risk that some values will show significant correlations with entrepreneurship or administratorship as a result of random chance alone. Meanwhile, part of the purpose of the present study is to introduce the SVS as a valid means by which to pursue research into the relatively more central, complex patterns of behavior such as entrepreneurship and administratorship. Therefore, the more conservative criterion of $\alpha = .05$ is selected for the majority of the present study, with the exception of those portions that are purely exploratory, in which case the criterion of $\alpha = .10$ will be employed. The case involving logistic-regression analysis, however, is more

complex and discussed in detail below. Basically, although the procedure of identifying an array of values to distinguish between entrepreneurship and administratorship is exploratory by definition, application of the $\alpha = .10$ or even the $\alpha = .05$ criterion to assess whether to retain individual predictors (human values) in the model is insufficient and results in an array that is too large to expect to generalize effectively to other contexts.

It should be noted that the necessity to distinguish rigorously, not between entrepreneurs and non-entrepreneurs *per se*, but between the former and administrators, strictly defined, will reduce the sample size throughout most of the analyses to follow and thereby reduce the chance to discover significant relationships. Income-substituters, for example, must be excluded from a rigorous definition of the distinction between entrepreneurs and administrators. Consistent with technically correct practice, the distinction between one- and two-tailed tests of significance will be recognized, and a one-tailed test used only in those cases in which a hypothesis predicting a specific direction of outcome has been advanced (*cf.* Ott, 1993). In other cases, when the choice is available but it is necessary to maintain conservatism, the test will be two-tailed.

This dissertation proposes relatively few hypotheses, reflecting a simple purpose. If entrepreneurs and administrators prove differentiable using the Schwartz Value Survey along generally predictable lines, this will justify a continuation of this line of inquiry, including the cumulation of more data, in order to refine the quantitative distinctions revealed herein. The study design is consistent with a highly conservative approach to this issue. Greater differences in values would likely result from a comparison between owners of small, dynamic businesses and managers in large, bureaucratic organizations. However, the distinction between entrepreneurs and administrators should be treated with greater

subtlety if we are to generate truly generalizable results. Schumpeter's (1936) specification of the entrepreneur as one who builds economically relevant relationships as a matter of personality has yet to be captured fully in this line of research. Consequently, most of the businesses in this study are small, and the distinction between business ownership or foundership on the one hand and managerial status on the other is all that will determine the findings revealed, if any, in the present study.

The results and analyses are covered according to the organization of the hypotheses presented in Chapter III. Part I addresses Hypotheses 1 through 6, which examine the extent to which there are differences in values between entrepreneurs and administrators that correspond generally to six motivational domains that previous research has suggested should distinguish between them. Part II covers Hypotheses 7 through 10, which examine the relationships between the scale variables and the distinction between entrepreneurship and administratorship. The corresponding analyses are intended to lay the groundwork for a comparison between the predictability of the scale variables and that of universal human values regarding the distinction between entrepreneurship and administratorship. Part II will also entertain some of the exploratory aspects of the present study, primarily relating to the relevance of two of the scale variables (mission-oriented goal-setting and generalized self-efficacy), which have not been investigated in the past. The issue of overall job satisfaction is also addressed in Part II after the distinctions between entrepreneurial and administrative values are confirmed and it is possible to enter overall job satisfaction into a logistic regression equation as a moderator to test its effects. Lastly, Part III covers Hypotheses 11 through 13, wherein the aforementioned question of relative predictability is at last addressed and a tentative entrepreneurship algorithm introduced.

Part I: Entrepreneurial *versus* Administrative Values

The first set of hypotheses tests whether the Schwartz Value Survey shows evidence that it is capturing the same differences between entrepreneurs and administrators as in previous studies and consistent with the prevailing literature. This phase of the analysis begins with simple *t*-tests to compare the means for entrepreneurs and administrators of each of the 57 values on the SVS. As explained in Chapter III, two proxies for entrepreneurship are considered, *viz.*, business ownership and business foundership. For purposes of this research, business ownership is defined as one's status, at the time of the survey, as the owner of a business firm that employs at least one other person, as long as the business owner's motivation for founding or purchasing the business firm was not to maintain income. This latter measure is taken to exclude income-substituters. Among those who received the Schwartz Value Survey, there were 45 current business owners who did not report a motivation to maintain income, while 15 additional business owners did and were consequently excluded from that pool. Business foundership, meanwhile, is defined as one's status as an actual founder of a business, currently or in the past, again excluding income-substituters. Among those who received the Schwartz Value Survey, 72 had founded a business, with an additional 17 who had done so with the intent to maintain income.

The proxy for administratorship in this study is one's current status in a managerial position in a business organization, excluding current owners who also hold managerial positions. Using this proxy, a contrasting variable is created based on either the ownership or the foundership proxy. In the case of the ownership-administratorship contrasting variable ("entrepreneur as owner"), a value of one indicates a current business owner (entrepreneur), and a value of zero indicates a current business manager (administrator). Current owner-

managers are considered owners for this purpose, as their status as owners supersedes their status as administrators. Cases that fail to satisfy either condition are excluded. The founder-administrator contrasting variable ("entrepreneur as founder") likewise uses a value of one to indicate a business founder (entrepreneur) and a value of zero for a business manager who has not also founded an organization in the past (administrator). For those cases in which a current administrator is also a business founder (in the present or the past), foundership status prevails, as in the case of business ownership described above. Again, all other cases are ignored for those analyses in which these two managerial styles are being compared.

The results of the *t*-tests between entrepreneurs and administrators for the 57 values are presented in Tables V-12a and V-12b (with entrepreneur operationalized as owner and founder, respectively, in each table). In accordance with the prescribed method for analyzing the results of the Schwartz Value Survey, the sum of scores for all values combined must be partialed out in order to control for general motivational level, as distinct from the relative prioritization of values. To accomplish this, ratings on the SVS will be adjusted prior to the analysis. (The sums were 243.78, 250.37, and 253.75 for business owners, founders, and administrators, respectively, with a mean of 250.14 for the entire sample.) This adjustment will be performed through norming. Specifically, the means and variances for all cases will be tallied, and each score will be converted to a *z*-statistic by subtracting the case mean and dividing the result by the case standard deviation. Lastly, the *z*-statistic will be multiplied by the square root of the average variance of all cases in the sample and added to the average mean score of all cases in the sample. As a result, all cases will show the same mean score and variance, so any evidence of differences in subgroup means can only be attributable to differences in prioritization of the values between the subgroups, not differences in general

motivation. It should be noted that this procedure only works if missing values have been remedied in the data beforehand.

Although age and sex should be partialed out as well because they customarily correlate with human values, it is neither feasible nor desirable to take this action as part of the *t*-tests themselves. Since part of the purpose of the initial hypotheses in this dissertation is to establish a degree of similarity with previous studies with respect to how entrepreneurs are distinct from administrators, it would be appropriate to pursue this comparison under similar statistical conditions. Of note in this regard is the fact that previous studies did not partial out these demographic variables in presenting their findings and drawing their conclusions. To be sure, Fagenson (1993) was careful to list males and females separately to address this issue, but sex was not controlled statistically. Thus, the *t*-tests presented in the following tables only control for the sums of scores (through norming), as described above.

Previous studies routinely used analysis of variance to compare the mean rankings of values entrepreneurs and administrators (using the RVS). The outcomes are identical to those resulting from *t*-tests when only two groups are being compared, as in the present case. However, *t*-tests more readily permit the straightforward distinction between one- and two-tailed hypothesis tests without the need for an *a posteriori* conversion of *F*-statistics or *p*-values. For the sake of comparison, analysis of variance is described first, as follows.

Analysis of variance is an approach to comparing the means of two or more groups drawn from the same population but differentiated somehow, *e.g.*, by demographic category (Ott, 1992). The researcher seeks to know whether the groups are systematically different on the mean characteristic in question. The procedure compares a weighted average of group variances ("within-group") with the variance across groups ("between-group"). If the former

exceeds the latter sufficiently, the means are considered distinct. This is reflected in the ratio $s^2_{between\ groups}$:$s^2_{within\ groups}$, or simply s^2_B:s^2_W. The set of all possible ratios follows a positively skewed *F*-distribution that resembles the χ^2-distribution, 95% of whose area is covered when the ratio reaches a value of $F = 2.61$.

The *t*-test is a simple comparison of group means. As mean of interest is compared between two groups drawn from the same population but differing on some characteristic. The *t*-tests used herein assume the variance of the characteristic in question (human values) to be the same for both groups. This same assumption holds in the *F*-tests described above. The *t*-test procedure expresses the difference in means in terms of the estimated population standard deviation, *i.e.*, the square root of the s^2_W-statistic described above. Since the standard deviation is readily convertible to a probability estimate, the *t*-test offers a simple way to compute the probability of observing the noted difference by chance. Meanwhile, the direct relationship between the standard deviation and the area under the normal curve allows both one- and two-tailed tests of significance. By comparison, *F*-tests are treated as two-tailed, since logically the only conclusion that can be drawn from evidence of a large s^2_B:s^2_W ratio reflecting more than two means is the fact that they are different, not the direction of that difference. If there are only two groups in each comparison, however, the *F*-statistic is the square of the corresponding *t*-statistic comparing independent samples under the assumption of equal sample variance. Thus, the use of *t*-tests permits both a comparison between these results and those of previous studies, and the proper use of one-tailed tests of significance.

In each of the *t*-tests that follow, entrepreneurship is first operationalized as business ownership, managerial status notwithstanding, and administratorship is operationalized as managerial status unaccompanied by business ownership. Immediately below, the analysis

is repeated with entrepreneurship operationalized as business foundership, managerial status notwithstanding. Administratorship is thus slightly different, operationalized as managerial status unaccompanied by any history of business foundership.

Entrepreneur as Owner on ACHIEVEMENT	*t*	*sig.*	Entrepreneurs *mean*	Entrepreneurs *std. dev.*	Administrators *mean*	Administrators *std. dev.*
ambitious	**1.716**	**0.045**	**5.062**	**1.129**	4.625	1.318
influential	-2.239	0.986	3.422	1.311	4.077	1.495
capable	-0.071	0.528	5.523	0.654	5.535	0.901
successful	0.784	0.218	5.120	1.105	4.961	0.832
Entrepreneur as Founder on ACHIEVEMENT	*t*	*sig.*	Entrepreneurs *mean*	Entrepreneurs *std. dev.*	Administrators *mean*	Administrators *std. dev.*
ambitious	**2.218**	**0.014**	**4.923**	**1.163**	4.280	1.400
influential	0.170	0.433	3.835	1.429	3.778	1.325
capable	0.122	0.452	5.498	0.773	5.475	0.920
successful	1.559	0.061	5.142	0.910	4.812	0.827

Bold indicates significance at $p = .05$ (one-tailed). Results contrary to the direction of the hypotheses are shown with negative *t*-statistics. Consistently, their corresponding *p*-values are computed based on the positive tail of the area under the normal curve. SVS scores are normed to control for general motivational level.

Table V-12a—Results of *t*-Tests: Entrepreneurship on Achievement

Entrepreneur as Owner on STIMULATION	*t*	*sig.*	Entrepreneurs *mean*	Entrepreneurs *std. dev.*	Administrators *mean*	Administrators *std. dev.*
an exciting life	-0.219	0.587	4.016	1.295	4.076	1.310
a varied life	-1.882	0.969	3.937	1.460	4.473	1.286
daring	-0.310	0.621	3.060	1.503	3.159	1.581
Entrepreneur as Founder on STIMULATION	*t*	*sig.*	Entrepreneurs *mean*	Entrepreneurs *std. dev.*	Administrators *mean*	Administrators *std. dev.*
an exciting life	-0.971	0.833	3.935	1.246	4.222	1.235
a varied life	-0.063	0.526	4.220	1.339	4.240	1.238
daring	-0.826	0.795	2.862	1.541	3.176	1.780

Bold indicates significance at $p = .05$ (one-tailed). Results contrary to the direction of the hypotheses are shown with negative *t*-statistics. Consistently, their corresponding *p*-values are computed based on the positive tail of the area under the normal curve. SVS scores are normed to control for general motivational level.

Table V-12b—Results of *t*-Tests: Entrepreneurship on Stimulation

Entrepreneur as Owner on SELF-DIRECTION	*t*	*sig.*	Entrepreneurs *mean*	Entrepreneurs *std. dev.*	Administrators *mean*	Administrators *std. dev.*
freedom	**2.040**	**0.022**	**5.593**	**1.161**	5.043	1.415
creativity	-0.606	0.727	4.269	1.413	4.434	1.208
independent	0.249	0.402	5.357	1.315	5.290	1.273
curious	**2.850**	**0.003**	**5.446**	**1.134**	4.844	0.897
choosing own goals	-1.012	0.843	4.372	1.292	4.623	1.090
Entrepreneur as Founder on SELF-DIRECTION	*t*	*sig.*	Entrepreneurs *mean*	Entrepreneurs *std. dev.*	Administrators *mean*	Administrators *std. dev.*
freedom	**1.698**	**0.046**	**5.496**	**1.288**	4.950	1.554
creativity	1.146	0.127	4.439	1.285	4.094	1.201
independent	0.141	0.443	5.283	1.233	5.239	1.448
curious	**1.712**	**0.045**	**5.182**	**1.049**	4.768	0.894
choosing own goals	-0.636	0.737	4.473	1.227	4.655	1.136

Bold indicates significance at $p = .05$ (one-tailed). Results contrary to the direction of the hypotheses are shown with negative *t*-statistics. Consistently, their corresponding *p*-values are computed based on the positive tail of the area under the normal curve. SVS scores are normed to control for general motivational level.

Table V-12c—Results of *t*-Tests: Entrepreneurship on Self-Direction

Based on the findings displayed above, Hypothesis 1 is confirmed. "Ambitious" is clearly associated with entrepreneurship, with no contradictory outcomes in this domain. The ACHIEVEMENT motivational domain is thus linked to entrepreneurship *via* this marker value. The results are the same under either operationalization (*i.e.*, "entrepreneur as owner" or "entrepreneur as founder"). Hypothesis 2, by contrast, is rejected. There is no apparent correspondence between the STIMULATION motivational domain and entrepreneurship. Hypothesis 3, which involves the SELF-DIRECTION motivational domain, is confirmed as well *via* the marker values "freedom" and "curious," associated with entrepreneurship under both operationalizations. Hypotheses 4-6 advance relationships between administratorship and each of hedonism, tradition, and conformity.

Entrepreneur as Owner			Entrepreneurs		Administrators	
on HEDONISM	*t*	*sig.*	*mean*	*std. dev.*	*mean*	*std. dev.*
pleasure	-1.007	0.158	3.308	1.259	3.596	1.482
enjoying life	-0.883	0.190	4.525	1.278	4.769	1.380
self-indulgent	-0.859	0.196	2.975	1.368	3.231	1.494
Entrepreneur as Founder			Entrepreneurs		Administrators	
on HEDONISM	*t*	*sig.*	*mean*	*std. dev.*	*mean*	*std. dev.*
pleasure	**-2.774**	**0.003**	3.125	1.242	**3.977**	**1.456**
enjoying life	-0.927	0.178	4.589	1.237	4.876	1.503
self-indulgent	-0.849	0.199	2.948	1.522	3.254	1.506

Bold indicates significance at $p = .05$ (one-tailed). Because administratorship = 0 in the contrasting variable, Results contrary to the direction of the hypotheses are shown with positive *t*-statistics. Consistently, their corresponding *p*-values are computed based on the negative tail of the area under the normal curve. SVS scores are normed to control for general motivational level.

Table V-12d—Results of *t*-Tests: Entrepreneurship on Hedonism

Entrepreneur as Owner			Entrepreneurs		Administrators	
on TRADITION	*t*	*sig.*	*mean*	*std. dev.*	*mean*	*std. dev.*
respect for tradition	0.931	0.823	4.142	1.213	3.904	1.257
moderate	0.544	0.706	3.375	1.762	3.179	1.712
devout	-0.825	0.206	3.753	1.607	4.002	1.301
humble	0.448	0.672	3.123	1.836	2.917	2.525
accepting my portion in life	-0.369	0.356	4.088	2.231	4.240	1.727
Entrepreneur as Founder			Entrepreneurs		Administrators	
on TRADITION	*t*	*sig.*	*mean*	*std. dev.*	*mean*	*std. dev.*
respect for tradition	2.271	0.987	4.098	1.215	3.470	0.961
moderate	0.110	0.543	3.225	1.740	3.180	1.766
devout	-0.927	0.179	3.825	1.456	4.135	1.229
humble	0.293	0.615	3.052	2.023	2.898	2.776
accepting my portion in life	0.843	0.799	4.324	1.990	3.927	1.946

Bold indicates significance at $p = .05$ (one-tailed). Because administratorship = 0 in the contrasting variable, Results contrary to the direction of the hypotheses are shown with positive *t*-statistics. Consistently, their corresponding *p*-values are computed based on the negative tail of the area under the normal curve. SVS scores are normed to control for general motivational level.

Table V-12e—Results of *t*-Tests: Entrepreneurship on Tradition

Entrepreneur as Owner on CONFORMITY	*t*	*sig.*	Entrepreneurs *mean*	Entrepreneurs *std. dev.*	Administrators *mean*	Administrators *std. dev.*
politeness	0.401	0.655	5.054	0.893	4.980	0.890
self-discipline	0.652	0.742	4.712	1.144	4.572	0.924
honoring of parents and elders	2.676	0.996	5.570	1.091	4.992	0.991
obedient	0.779	0.781	4.468	1.438	4.256	1.175
Entrepreneur as Founder on CONFORMITY	*t*	*sig.*	Entrepreneurs *mean*	Entrepreneurs *std. dev.*	Administrators *mean*	Administrators *std. dev.*
politeness	0.382	0.648	5.085	0.861	5.007	0.843
self-discipline	-0.045	0.484	4.703	1.096	4.713	0.800
honoring of parents and elders	1.321	0.905	5.268	1.036	4.947	0.968
obedient	0.670	0.748	4.384	1.350	4.170	1.330

Bold indicates significance at $p = .05$ (one-tailed). Because administratorship = 0 in the contrasting variable, Results contrary to the direction of the hypotheses are shown with positive *t*-statistics. Consistently, their corresponding *p*-values are computed based on the negative tail of the area under the normal curve. SVS scores are normed to control for general motivational level.

Table V-12f—Results of *t*-Tests: Entrepreneurship on Conformity

Hypothesis 4 is partially supported *via* the marker value "pleasure" for the HEDONISM motivational domain under one operationalization ("entrepreneur as founder"), although this does not replicate under the other operationalization. Hypothesis 5 is rejected: TRADITION was hypothesized to be an administrative motivational domain, but most of the signs of the *t*-statistics are positive, suggesting that this domain may be more closely related to entrepreneurship. Hypothesis 6 is likewise rejected: the CONFORMITY motivational domain was hypothesized to be associated with administratorship, but all of the signs of the *t*-statistics, save one, are positive. So far, there are no instances of conflicts between values showing significant associations with one or the other managerial style here, and findings from previous studies. The remaining motivational domains are presented below for their exploratory value, followed by a discussion of their results.

Entrepreneur as Owner on POWER	*t*	*sig.*	Entrepreneurs *mean*	Entrepreneurs *std. dev.*	Administrators *mean*	Administrators *std. dev.*
social power	**1.657**	**0.050**	**0.927**	**1.915**	0.221	2.172
wealth	1.077	0.142	3.681	1.518	3.335	1.572
authority	0.908	0.183	3.085	1.672	2.774	1.631
preserving my public image	0.539	0.295	3.152	1.743	2.963	1.635
Entrepreneur as Founder on POWER	*t*	*sig.*	Entrepreneurs *mean*	Entrepreneurs *std. dev.*	Administrators *mean*	Administrators *std. dev.*
social power	0.200	0.841	0.275	1.977	0.180	1.999
wealth	0.351	0.726	3.365	1.367	3.238	1.962
authority	1.432	0.155	3.069	1.582	2.538	1.477
preserving my public image	1.602	0.112	3.030	1.792	2.380	1.383

Bold indicates significance at $p = .05$ (two-tailed). SVS scores are normed to control for general motivational level.

Table V-13a—Results of *t*-Tests: Entrepreneurship on Power

Entrepreneur as Owner on UNIVERSALISM	*t*	*sig.*	Entrepreneurs *mean*	Entrepreneurs *std. dev.*	Administrators *mean*	Administrators *std. dev.*
a world at peace	-0.241	0.405	4.366	1.387	4.449	1.888
unity with nature	0.285	0.388	4.472	1.531	4.386	1.377
protecting the environment	-0.207	0.418	3.450	1.627	3.516	1.479
a world of beauty	-0.266	0.395	4.937	1.357	5.005	1.100
social justice	-0.820	0.207	4.080	1.202	4.308	1.458
broadminded	-0.798	0.213	4.174	1.353	4.394	1.312
wisdom	**-2.490**	**0.007**	4.150	1.507	**4.882**	**1.326**
equality	-0.651	0.258	3.891	1.618	4.083	1.193
Entrepreneur as Founder on UNIVERSALISM	*t*	*sig.*	Entrepreneurs *mean*	Entrepreneurs *std. dev.*	Administrators *mean*	Administrators *std. dev.*
a world at peace	-0.266	0.791	4.636	1.564	4.736	1.643
unity with nature	-1.074	0.286	4.378	1.401	4.724	1.187
protecting the environment	-1.413	0.161	3.372	1.582	3.885	1.330
a world of beauty	0.869	0.387	5.073	1.122	4.837	1.204
social justice	-0.000	0.986	4.276	1.300	4.281	1.439
broadminded	-1.232	0.221	4.302	1.324	4.692	1.353
wisdom	**-2.160**	**0.033**	4.396	1.542	**5.140**	**1.075**
equality	-0.611	0.543	3.953	1.442	4.156	1.224

Bold indicates significance at $p = .05$ (two-tailed). SVS scores are normed to control for general motivational level.

Table V-13b—Results of *t*-Tests: Entrepreneurship on Universalism

Entrepreneur as Owner on BENEVOLENCE	*t*	*sig.*	Entrepreneurs *mean*	Entrepreneurs *std. dev.*	Administrators *mean*	Administrators *std. dev.*
loyal	0.032	0.486	5.294	1.022	5.287	0.843
honest	1.325	0.094	6.070	0.800	5.838	0.887
helpful	-1.446	0.076	4.625	1.278	4.964	0.971
forgiving	-0.434	0.333	5.483	1.036	5.577	1.057
responsible	0.032	0.491	4.667	1.294	4.661	1.367
Entrepreneur as Founder on BENEVOLENCE	*t*	*sig.*	Entrepreneurs *mean*	Entrepreneurs *std. dev.*	Administrators *mean*	Administrators *std. dev.*
loyal	-0.354	0.724	5.188	0.939	5.267	0.947
honest	0.586	0.560	5.995	0.892	5.874	0.809
helpful	-1.091	0.278	4.817	1.105	5.103	1.101
forgiving	0.307	0.760	5.505	0.903	5.435	1.127
responsible	-0.095	0.926	4.686	1.209	4.715	1.547

Bold indicates significance at $p = .05$ (two-tailed). SVS scores are normed to control for general motivational level.

Table V-13c—Results of *t*-Tests: Entrepreneurship on Benevolence

Entrepreneur as Owner on SECURITY	*t*	*sig.*	Entrepreneurs *mean*	Entrepreneurs *std. dev.*	Administrators *mean*	Administrators *std. dev.*
social order	**1.806**	**0.037**	**4.070**	**1.534**	3.516	1.426
national security	1.274	0.103	4.922	1.247	4.559	1.477
reciprocation of favors	0.210	0.417	3.680	1.535	3.608	1.756
clean	0.434	0.333	5.956	1.063	5.854	1.189
family security	0.940	0.175	4.624	1.158	4.370	1.424
Entrepreneur as Founder on SECURITY	*t*	*sig.*	Entrepreneurs *mean*	Entrepreneurs *std. dev.*	Administrators *mean*	Administrators *std. dev.*
social order	0.878	0.382	3.968	1.409	3.674	1.407
national security	0.811	0.419	4.764	1.319	4.498	1.570
reciprocation of favors	-1.191	0.237	3.423	1.792	3.903	1.316
clean	0.382	0.703	5.847	1.042	5.753	1.019
family security	0.752	0.454	4.474	1.127	4.253	1.560

Bold indicates significance at $p = .05$ (two-tailed). SVS scores are normed to control for general motivational level.

Table V-13d—Results of *t*-Tests: Entrepreneurship on Security

Entrepreneur as Owner on Remaining Values	*t*	*sig.*	Entrepreneurs *mean*	Entrepreneurs *std. dev.*	Administrators *mean*	Administrators *std. dev.*
inner harmony	-0.045	0.483	5.119	1.294	5.131	1.261
a spiritual life	0.349	0.364	4.705	1.944	4.579	1.512
sense of belonging	**-1.868**	**0.033**	3.667	1.498	**4.211**	**1.312**
meaning in life	-1.391	0.084	4.842	1.336	5.214	1.239
self-respect	-1.285	0.101	5.606	1.036	5.843	0.724
mature love	**-1.748**	**0.042**	4.546	1.326	**5.048**	**1.435**
privacy	0.777	0.219	4.561	1.232	4.358	1.288
social recognition	-0.032	0.486	3.710	1.377	3.720	1.448
true friendship	**-1.948**	**0.027**	4.571	1.243	**5.010**	**0.919**
healthy	1.265	0.105	5.751	1.137	5.454	1.129
intelligent	-1.081	0.141	5.034	1.124	5.257	0.853
Entrepreneur as Founder on Remaining Values	*t*	*sig.*	Entrepreneurs *mean*	Entrepreneurs *std. dev.*	Administrators *mean*	Administrators *std. dev.*
inner harmony	-0.045	0.961	5.266	1.181	5.280	1.337
a spiritual life	0.552	0.582	4.793	1.625	4.580	1.623
sense of belonging	**-2.524**	**0.013**	3.837	1.388	**4.623**	**1.001**
meaning in life	-1.397	0.165	5.041	1.211	5.438	1.138
self-respect	0.224	0.824	5.786	0.849	5.743	0.745
mature love	-0.660	0.511	4.821	1.226	5.017	1.356
privacy	-0.619	0.537	4.378	1.253	4.559	1.150
social recognition	0.898	0.371	3.835	1.264	3.558	1.410
true friendship	-0.822	0.413	4.882	1.059	5.087	1.022
healthy	0.319	0.750	5.636	1.089	5.554	1.059
intelligent	-0.226	0.822	5.163	1.147	5.220	0.671

Bold indicates significance at $p = .05$ (one-tailed). Results contrary to hypotheses are evaluated based on the two-tailed criterion, so they are marked significant only if they show $p = .025$ or less. SVS scores are normed to control for general motivational level.

Table V-13e—Results of *t*-Tests: Entrepreneurship on Remaining Values

The purpose of Hypotheses 1 through 6 was to determine whether the SVS would produce largely the same outcomes as previous measures of universal human values, which used the Rokeach Value Survey. Using motivational domains as the vehicle by which to advance the corresponding hypotheses, three hypotheses found some support, while the other three did not. In order to complete this portion of the analysis, therefore, it would be helpful to assess the degree of conflict or correspondence between the results of the *t*-tests on all 57 values and the results reported in previous studies. Tables V-13a through V-13c display the current findings covering the remaining motivational domains and those values that fall outside a cross-culturally stable domain (referred to as "remaining values"). To summarize these tables, BENEVOLENCE is the only motivational domain that does not show a significant relationship with entrepreneurship or administratorship under either

operationalization. Of the remainder, POWER and SECURITY may be related to entrepreneurship operationalized as business ownership, but the strengths of association are not very great, and these relationships do not carry over into business foundership. The relevant values are "social order" and "social power," respectively, the latter of which is by far the most despised of all 57 values, with a mean of only 0.221 among administrators when contrasted with business owners, or 0.180 when contrasted with business founders. Lastly, among the cross-culturally unstable values, administratorship is found to be significantly associated with "mature love" and "true friendship" when entrepreneurship is operationalized as business ownership, but not when it is operationalized as business foundership. The remaining values showing differences between the managerial styles are consistent under both operationalizations of the entrepreneur and include one UNIVERSALISM value, "wisdom," and one cross-culturally unstable value, "sense of belonging." Both of these are associated with administratorship.

Thus, with the data collected so far, eleven values show significant differences between entrepreneurs and administrators. Under the operationalization of "entrepreneur as owner" only, nine of these show significant differences. The entrepreneur apparently rates the values "freedom," "curious," and "ambitious" more highly than does the administrator, with the dubious possibilities of "social order" and "social power." The administrator, by contrast, rates "wisdom," "sense of belonging," "mature love," and "true friendship" more highly than the entrepreneur. A mild contrast emerges if entrepreneurship is operationalized as business foundership, with six values showing significant differences. The values "social order" and "social power" no longer show a significant relationship with entrepreneurship, and "pleasure" joins administrative values while "mature love" and "true friendship" leave

the fold. Operationalized this way, the entrepreneur apparently rates "freedom," "curious," and "ambitious" more highly than does the administrator, while the administrator prefers "pleasure," "wisdom," and "sense of belonging."

A cursory examination of the signs of the *t*-statistics reported in the above tables, under the assumption that motivational domains should correspond wholly to one managerial style or the other, suggests the following. The binomial probability formula is applied to assess the degree of consistency in terms of *p*-values. Disregarding hypotheses supported above, entrepreneurship may additionally be related to POWER ($p = .00391$), and somewhat surprisingly, SECURITY ($p = .01074$), and CONFORMITY ($p = .03516$). By contrast, administratorship may be related to UNIVERSALISM ($p = .00209$) and STIMULATION ($p = .01563$). The findings related to CONFORMITY and STIMULATION are both contrary to the hypotheses advanced herein and may warrant further scrutiny. It is noteworthy, however, that no value featured in previous studies (*i.e.*, no value on the RVS) shows a contrary relationship in this study.

Recalling that the basic goal of this portion of the analysis is to verify whether there are any real differences between entrepreneurs and administrators, the binomial probability formula can be used to check whether the tabulated results are completely accidental rather than meaningful. If two-tailed tests are applied throughout the array of 57 values, consistent with an exploratory study, 12 values differentiate between entrepreneurs and administrators. Assuming a probability of $p = .05$ of accidentally identifying a value as associated with one managerial style or the other, when in reality it is not (Type II error), the probability that 12 of 57 values should show such differences is $p = .00021$. (Up to 6 values can be expected to correspond to one of the managerial styles by chance alone under odds of one in twenty or

greater.) It is clear that there are real differences in the values hierarchies of entrepreneurs and administrators that cannot be ascribed to capitalization on chance.

The specific relationship between motivational domains and managerial style remains somewhat in question, although a rough pattern is visible, as explored above. It appears likely that the array of values that distinguishes entrepreneurs from administrators does not fall neatly into motivational domains but rather is simply unique and stable as a structural epiphenomenon in its own right. On the other hand, the consistency with which values are associated with the distinction between entrepreneurs and administrators, whether using the SVS or the RVS, is quite clear. This warrants the development of an algorithm to create an entrepreneurship score from a respondent's results on the SVS. This operation is covered in Part III below. The present analysis will now shift to Part II and the tests of Hypotheses 7 through 10.

Part II: Risk Propensity, Innovativeness, and Proactivity

The analysis now proceeds to examining Hypotheses 7 through 10, which test the relationships between the scale variables and the entrepreneurship-administratorship distinction, by way of the same contrasting variables ("entrepreneur as owner" *versus* administrator, and "entrepreneur as founder" *versus* administrator) as introduced and applied in the preceding section. These analyses are intended as the next step in laying the groundwork for a comparison between the predictability of the scale variables and that of universal human values regarding the distinction between entrepreneurship and administratorship.

Risk propensity and innovativeness are measured using the Jackson Personality Inventory-Revised (Jackson, 1975, 1997). Proactivity is measured using the Schmitz and Schwarzer (1999) scale. Scale scores consist of the mean rating of all items on each scale.

As applied in the present study, the risk propensity and innovativeness scale scores fall between one and two, and the proactivity scale scores fall between one and four. Results of logistic-regression analysis to test the ability of each of the three scales to distinguish between entrepreneurs and administrators under either of the prevailing operationalizations used in this study are given in Tables V-14a to V-14e. These results were achieved by selecting the Binary Logistic function in SPSS® 9.0, entering the classification variable as the dependent variable, entering the explanatory variables, and establishing a prior probability (cut-off value) corresponding to the proportion of the coded sample categorized as "1." The classification variable consisted of a binary variable wherein 1 = entrepreneur and 0 = administrator for each of the two operationalizations, *viz.*, "entrepreneur as owner" and "entrepreneur as founder." For the sake of comparison, each scale variable was first tested alone, then in combination, and finally in combination with age and sex included as controls. As presented herein, the control variables are included in the same step as the explanatory variables because SPSS® did not produce complete results when more than one step was specified in the logistic-regression procedure.

Dependent Variable: Entrepreneur as Owner[1]	B	s.e.	Wald	df	sig.	R	e^B
Risk Propensity	-.2904	.8343	.1211	1	.7278	.0000	.7480
Constant	.0338	1.2311	.0008	1	.9781		
Model Statistics	-2LL 140.18		Cox & Snell R^2 .001			χ^2 = 00.121$_{01df}$	
	GFI 104.01		Nagelkerke R^2 .002			c = 52.88%	

Dependent Variable: Entrepreneur as Founder[2]	B	s.e.	Wald	df	sig.	R	e^B
Risk Propensity	.8789	1.0903	.6498	1	.4202	.0000	2.4082
Constant	.1718	1.5744	.0119	1	.9131		
Model Statistics	-2LL 96.16		Cox & Snell R^2 .007			χ^2 = 00.664$_{01df}$	
	GFI 98.30		Nagelkerke R^2 .011			c = 50.51%	

[1]N = 104 (=62$_{administrators}$ + 42$_{entrepreneurs}$). [2]N = 99 (=19$_{administrators}$ + 80$_{entrepreneurs}$). Key: B (logit coefficient), s.e. (standard error), sig. (significance of Wald statistic), R (partial R—independent contribution of variable), e^B (odds ratio), -2LL (-2 · log likelihood), GFI (Hosmer & Lemeshow's goodness-of-fit index, a.k.a. ĉ or "c-hat"), χ^2 (chi-square coefficient, a.k.a. GM, Hosmer & Lemeshow's G, or -2LL$_{difference}$), c (c-statistic—percentage of sample correctly categorized: 50% is consistent with random chance). If the logit coefficient is positive, then a unit increase in an explanatory variable results in an increase of e^B - 1 in the odds of correctly predicting an entrepreneur. If it is negative, then a unit increase in the explanatory variable brings about an increase of 1 - e^B in the odds of correctly predicting an administrator.

Table V-14a—Entrepreneurship Predicted by Risk Propensity

Dependent Variable: Entrepreneur as Owner[1]	B	s.e.	Wald	df	sig.	R	e^B
Innovativeness	.2504	.9564	.0685	1	.7935	.0000	1.2845
Constant	-.8182	1.6510	.2456	1	.6202		

Model Statistics				
	-2LL	140.24	Cox & Snell R^2	.001
	GFI	104.00	Nagelkerke R^2	.001

$\chi^2 = 00.069_{01df}$
c = 47.12%

Dependent Variable: Entrepreneur as Founder[2]	B	s.e.	Wald	df	sig.	R	e^B
Innovativeness	-.2548	1.2320	.0428	1	.8362	.0000	.7751
Constant	1.8733	2.1268	.7759	1	.3784		

Model Statistics				
	-2LL	96.78	Cox & Snell R^2	.000
	GFI	99.03	Nagelkerke R^2	.001

$\chi^2 = 00.043_{01df}$
c = 44.44%

[1]N = 104 (=$62_{administrators}$ + $42_{entrepreneurs}$). [2]N = 99 (=$19_{administrators}$ + $80_{entrepreneurs}$). Key: B (logit coefficient), s.e. (standard error), sig. (significance of Wald statistic), R (partial R—independent contribution of variable), e^B (odds ratio), -2LL (-2 · log likelihood), GFI (Hosmer & Lemeshow's goodness-of-fit index, a.k.a. ĉ or "c-hat"), χ^2 (chi-square coefficient, a.k.a. GM, Hosmer & Lemeshow's G, or $-2LL_{difference}$), c (c-statistic—percentage of sample correctly categorized: 50% is consistent with random chance). If the logit coefficient is positive, then a unit increase in an explanatory variable results in an increase of e^B - 1 in the odds of correctly predicting an entrepreneur. If it is negative, then a unit increase in the explanatory variable brings about an increase of 1 - e^B in the odds of correctly predicting an administrator.

Table V-14b—Entrepreneurship Predicted by Innovativeness

Dependent Variable: Entrepreneur as Owner[1]	B	s.e.	Wald	df	sig.	R	e^B
Proactivity	-.2258	.5217	.1872	1	.6652	.0000	.7979
Constant	.3858	1.8016	.0459	1	.8304		

Model Statistics				
	-2LL	140.12	Cox & Snell R^2	.002
	GFI	104.01	Nagelkerke R^2	.002

$\chi^2 = 00.187_{01df}$
c = 50.96%

Dependent Variable: Entrepreneur as Founder[2]	B	s.e.	Wald	df	sig.	R	e^B
Proactivity	.1679	.6812	.0607	1	.8053	.0000	1.1828
Constant	.8597	2.3539	.1334	1	.7149		

Model Statistics				
	-2LL	96.76	Cox & Snell R^2	.001
	GFI	99.00	Nagelkerke R^2	.001

$\chi^2 = 00.060_{01df}$
c = 46.46%

[1]N = 104 (=$62_{administrators}$ + $42_{entrepreneurs}$). [2]N = 99 (=$19_{administrators}$ + $80_{entrepreneurs}$). Key: B (logit coefficient), s.e. (standard error), sig. (significance of Wald statistic), R (partial R—independent contribution of variable), e^B (odds ratio), -2LL (-2 · log likelihood), GFI (Hosmer & Lemeshow's goodness-of-fit index, a.k.a. ĉ or "c-hat"), χ^2 (chi-square coefficient, a.k.a. GM, Hosmer & Lemeshow's G, or $-2LL_{difference}$), c (c-statistic—percentage of sample correctly categorized: 50% is consistent with random chance). If the logit coefficient is positive, then a unit increase in an explanatory variable results in an increase of e^B - 1 in the odds of correctly predicting an entrepreneur. If it is negative, then a unit increase in the explanatory variable brings about an increase of 1 - e^B in the odds of correctly predicting an administrator.

Table V-14c—Entrepreneurship Predicted by Proactivity

Tables V-14a to V-14c show no evidence of any significant relationships between entrepreneurship and any of the primary scale variables of interest taken individually. This may be due to the small sample size, in which case the cumulation of more data after the conclusion of this project may produce some significant outcomes. In all cases, the accuracy of prediction (the *c*-statistic) is consistent with random chance. Tables V-14d and V-14e explore the predictive power of combining all three scale variables into the same model.

Dependent Variable: Entrepreneur as Owner[1]	B	s.e.	Wald	df	sig.	R	e^B
Risk Propensity	-.3525	.9182	.1473	1	.7011	.0000	.7030
Innovativeness	.4919	1.0438	.2221	1	.6374	.0000	1.6354
Proactivity	-.2269	.5472	.1719	1	.6784	.0000	.7970
Constant	.0612	2.2404	.0007	1	.9782		

Model Statistics				
	-2LL	139.83	Cox & Snell R^2	.005
	GFI	103.98	Nagelkerke R^2	.006

$\chi^2 = 00.470_{03df}$
c = 53.85%

Dependent Variable: Entrepreneur as Founder[2]	B	s.e.	Wald	df	sig.	R	e^B
Risk Propensity	1.1239	1.2292	.8360	1	.3605	.0000	3.0767
Innovativeness	-.7939	1.3924	.3251	1	.5686	.0000	.4521
Proactivity	.0530	.7272	.0053	1	.9419	.0000	1.0544
Constant	.9943	2.9092	.1168	1	.7325		

Model Statistics				
	-2LL	95.82	Cox & Snell R^2	.010
	GFI	98.84	Nagelkerke R^2	.016

$\chi^2 = 01.001_{03df}$
c = 52.53%

[1]N = 104 (=$62_{administrators}$ + $42_{entrepreneurs}$). [2]N = 99 (=$19_{administrators}$ + $80_{entrepreneurs}$). Key: B (logit coefficient), s.e. (standard error), sig. (significance of Wald statistic), R (partial R—independent contribution of variable), e^B (odds ratio), -2LL (-2 · log likelihood), GFI (Hosmer & Lemeshow's goodness-of-fit index, a.k.a. ĉ or "c-hat"), χ^2 (chi-square coefficient, a.k.a. GM, Hosmer & Lemeshow's G, or $-2LL_{difference}$), c (c-statistic—percentage of sample correctly categorized: 50% is consistent with random chance). If the logit coefficient is positive, then a unit increase in an explanatory variable results in an increase of e^B - 1 in the odds of correctly predicting an entrepreneur. If it is negative, then a unit increase in the explanatory variable brings about an increase of 1 - e^B in the odds of correctly predicting an administrator.

Table V-14d—Entrepreneurship Predicted by All Scale Variables Combined

Dependent Variable: Entrepreneur as Owner[1]	B	s.e.	Wald	df	sig.	R	e^B
Entrepreneurial Orientation*	4.1115	6.0683	.4590	1	.4981	.0000	61.0366
Constant	-2.0514	2.4635	.6934	1	.4050		

Model Statistics				
	-2LL	139.84	Cox & Snell R^2	.004
	GFI	103.98	Nagelkerke R^2	.006

$\chi^2 = 00.461_{01df}$
c = 54.81%

Entrepreneurial Orientation*	4.9551	6.2287	.6329	1	.4263	.0000	141.8928
Age	-.0010	.0156	.0044	1	.9470	.0000	.9990
Sex	-.1450	.4195	.1195	1	.7296	.0000	.8650
Constant	-2.1207	2.5261	.7048	1	.4012		

Model Statistics				
	-2LL	138.58	Cox & Snell R^2	.007
	GFI	102.97	Nagelkerke R^2	.009

$\chi^2 = 00.686_{03df}$
c = 56.31%

Dependent Variable: Entrepreneur as Founder[2]	B	s.e.	Wald	df	sig.	R	e^B
Entrepreneurial Orientation*	6.2096	6.4422	.9291	1	.3351	.0000	497.5031
Constant	-3.5619	5.1742	.4739	1	.4912		

Model Statistics				
	-2LL	95.89	Cox & Snell R^2	.009
	GFI	98.74	Nagelkerke R^2	.015

$\chi^2 = 00.933_{01df}$
c = 54.55%

Entrepreneurial Orientation*	8.5809	6.6750	1.6526	1	.1986	.0000	5328.931
Age	.0233	.0222	1.1010	1	.2941	.0000	1.0236
Sex	.4899	.5483	.7982	1	.3716	.0000	1.6321
Constant	-7.2600	5.8173	1.5575	1	.2120		

Model Statistics				
	-2LL	93.58	Cox & Snell R^2	.028
	GFI	96.32	Nagelkerke R^2	.045

$\chi^2 = 02.815_{03df}$
c = 64.29%

*Odds ratio algorithm using results from Table V-14d (see p. 187 for formula). [1]N = 103 (=$61_{administrators}$ + $42_{entrepreneurs}$). [2]N = 98 (=$19_{administrators}$ + $79_{entrepreneurs}$). The conversion of the logit coefficients into a single score usually result in similar, but not necessarily identical, c-statistics. Whether this results in an improvement or degradation of the measured predictability is a product of random chance. See Table V-14d above for additional notes.

Table V-14e—Entrepreneurship Predicted by All Scale Variables Combined, Showing the Impact of Controlling for Age and Sex

As Tables V-14d and V-14e demonstrate, there is a minimal degree of predictability when the three scale variables are combined. This predictability rises substantially when age and sex are controlled for under the foundership operationalization, but this effect is barely noticeable under the ownership operationalization. Thus, Hypotheses 7 through 9 are rejected. Meanwhile, it would be helpful to test the effects of the remaining scales on the contrasting variables. Tables V-15a and V-15b extend the results presented above to include the exploratory scale variables as well, namely, generalized self-efficacy and the two dimensions of mission-oriented goal-setting.

Dependent Variable: Entrepreneur as Owner[1]	B	s.e.	Wald	df	sig.	R	e^B
Risk Propensity	-.6364	.9554	.4437	1	.5054	.0000	.5292
Innovativeness	.8142	1.0866	.5615	1	.4536	.0000	2.2574
Proactivity	-.0607	.6816	.0079	1	.9290	.0000	.9411
Goal-Setting (Strategic)	-.0355	.2824	.0158	1	.8999	.0000	.9651
Goal-Setting (Operational)	.9376	.5631	2.7726	1	.0959	.0742	2.5538
Self-Efficacy	-1.1850	.7744	2.3417	1	.1260	-.0493	.3058
Constant	-.5707	2.9389	.0377	1	.8460		
Model Statistics	-2LL 135.369		Cox & Snell R^2 .046			$\chi^2 = 04.936_{06df}$	
	GFI 103.905		Nagelkerke R^2 .063			c= 63.46%	
Dependent Variable: Entrepreneur as Founder[2]	B	s.e.	Wald	df	sig.	R	e^B
Risk Propensity	.8863	1.2841	.4763	1	.4901	.0000	2.4261
Innovativeness	-.6365	1.4034	.2057	1	.6502	.0000	.5291
Proactivity	.0834	.8204	.0103	1	.9190	.0000	1.0870
Goal-Setting (Strategic)	.4361	.3354	1.6906	1	.1935	.0000	1.5466
Goal-Setting (Operational)	-.8589	.6899	1.5498	1	.2132	.0000	.4236
Self-Efficacy	-.0301	.9265	.0011	1	.9741	.0000	.9703
Constant	3.0684	3.8082	.6492	1	.4204		
Model Statistics	-2LL 93.118		Cox & Snell R^2 .037			$\chi^2 = 03.703_{06df}$	
	GFI 99.494		Nagelkerke R^2 .059			c= 56.57%	

[1]N = 104 (=$62_{administrators}$ + $42_{entrepreneurs}$). [2]N = 99 (=$19_{administrators}$ + $80_{entrepreneurs}$). Key: B (logit coefficient), s.e. (standard error), sig. (significance of Wald statistic), R (partial R—independent contribution of variable), e^B (odds ratio), -2LL (-2 · log likelihood), GFI (Hosmer & Lemeshow's goodness-of-fit index, a.k.a. ĉ or "c-hat"), χ^2 (chi-square coefficient, a.k.a. GM, Hosmer & Lemeshow's G, or $-2LL_{difference}$), c (c-statistic—percentage of sample correctly categorized: 50% is consistent with random chance). If the logit coefficient is positive, then a unit increase in an explanatory variable results in an increase of e^B - 1 in the odds of correctly predicting an entrepreneur. If it is negative, then a unit increase in the explanatory variable brings about an increase of 1 - e^B in the odds of correctly predicting an administrator.

Table V-15a—Entrepreneurship Predicted by All Scale Variables Combined, with Exploratory Scale Variables Included

The results displayed in Table V-15a seem to suggest that the additional scale variables are important supplemental predictors, although their independent effect is still not significant as computed from the Wald statistic. One exception is operational goal-setting,

which meets the $\alpha = .10$ criterion appropriate for purely exploratory analyses. The predictive power of the model under the operationalization of entrepreneur as owner, moreover, seems quite substantial at this point, while that under entrepreneur as founder is less so. Still, if we were to take these results as valid and apply them to an actual selection process, a *c*-statistic of 63.46% suggests that we could only identify about one-quarter of all subjects correctly as being either entrepreneurs or administrators ([.6346 - .5] · 2 = .2692), the remainder being assigned to a category, in effect, at random. Table V-15b below assesses the impact of controlling for age and sex.

Dependent Variable: Entrepreneur as Owner[1]	B	s.e.	Wald	df	sig.	R	e^B
Entrep. Orientation-Augmented*	4.2550	1.9857	4.5915	1	.0321	.1359	70.4545
Constant	-2.1237	.8401	6.3907	1	.0115		
Model Statistics	-2LL 135.428		Cox & Snell R^2 .046			$\chi^2 = 04.876_{01df}$	
	GFI 103.845		Nagelkerke R^2 .062			c = 64.42%	
Entrep. Orientation-Augmented*	4.6867	2.0733	5.1100	1	.0238	.1494	108.4966
Age	-.0021	.0160	.0166	1	.8974	.0000	.9979
Sex	-.3408	.4397	.6008	1	.4383	.0000	.7112
Constant	-1.7041	1.2157	1.9647	1	.1610		
Model Statistics	-2LL 133.719		Cox & Snell R^2 .052			$\chi^2 = 05.544_{03df}$	
	GFI 103.087		Nagelkerke R^2 .071			c = 58.25%	
Dependent Variable: Entrepreneur as Founder[2]	B	s.e.	Wald	df	sig.	R	e^B
Entrep. Orientation-Augmented*	5.9065	2.9609	3.9793	1	.0461	.1430	367.4096
Constant	-3.2721	2.3482	1.9417	1	.1635		
Model Statistics	-2LL 92.887		Cox & Snell R^2 .039			$\chi^2 = 03.934_{01df}$	
	GFI 99.601		Nagelkerke R^2 .062			c = 63.64%	
Entrep. Orientation-Augmented*	6.4482	3.0138	4.5779	1	.0324	.1635	631.5926
Age	.0218	.0227	.9248	1	.3362	.0000	1.0221
Sex	.5076	.5540	.8394	1	.3596	.0000	1.6613
Constant	-5.4425	2.8952	3.5338	1	.0601		
Model Statistics	-2LL 90.730		Cox & Snell R^2 .056			$\chi^2 = 05.662_{03df}$	
	GFI 97.478		Nagelkerke R^2 .090			c = 66.33%	

*Odds ratio algorithm using results from Table V-15a (see p. 187 for formula). [1]N = 104 (=$62_{administrators}$ + $42_{entrepreneurs}$). [2]N = 98 (=$19_{administrators}$ + $79_{entrepreneurs}$). The conversion of the logit coefficients into a single score usually result in similar, but not necessarily identical, *c*-statistics. Whether this results in an improvement or degradation of the measured predictability is a product of random chance. Key: B (logit coefficient), s.e. (standard error), sig. (significance of Wald statistic), R (partial R—independent contribution of variable), e^B (odds ratio), -2LL (-2 · log likelihood), GFI (Hosmer & Lemeshow's goodness-of-fit index, a.k.a. ĉ or "c-hat"), χ^2 (chi-square coefficient, a.k.a. GM, Hosmer & Lemeshow's G, or $-2LL_{difference}$), c (c-statistic—percentage of sample correctly categorized: 50% is consistent with random chance). If the logit coefficient is positive, then a unit increase in an explanatory variable results in an increase of $e^B - 1$ in the odds of correctly predicting an entrepreneur. If it is negative, then a unit increase in the explanatory variable brings about an increase of $1 - e^B$ in the odds of correctly predicting an administrator.

Table V-15b—Entrepreneurship Predicted by All Scale Variables Combined, with Exploratory Scale Variables Included and Controlling for Age and Sex

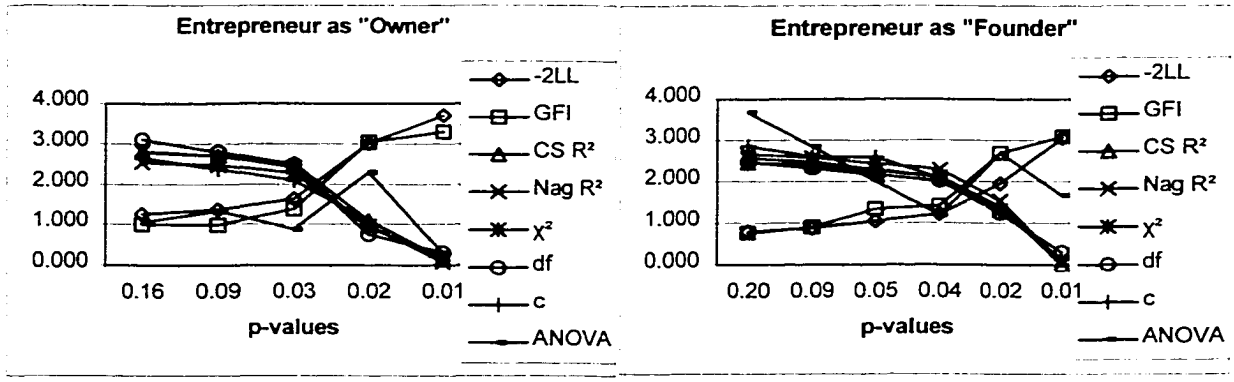
The results displayed in Table V-15b above seem either contradictory or simply evidence that controlling for age and sex in the present sample does not have any impact on the predictive power of the model. Under the first operationalization, there seems to be an outright degradation of predictive power, from $c = 64.42\%$ to $c = 58.25\%$. Under the second, there is a trace improvement, from $c = 63.64\%$ to $c = 66.33\%$. The conflicting directions of the change in predictive power are probably a product of the fact that the initial model, before controlling for these demographics, is not very powerful. Nevertheless, it is clear that the conversion of the augmented model incorporating the scale variables (referred to here as "Entrepreneurial Orientation-Augmented") is a valid predictor of entrepreneurship despite its relatively low power. Specifically, the independent contribution of the augmented model (not including the constant) meets the criterion of $\alpha = .05$ according to the significance level associated with the Wald statistic. This is also reflected in the *R*-value. Also known as "partial R," this is a very conservative measure based in part on the Wald statistic, that refers to the partial contribution of the variable in question. As the preceding tables demonstrate, a lack of sufficient significance results in a partial R of zero. Thus, although this augmented model was not included among the hypotheses linking scale variables with entrepreneurship, evidently there is some degree of predictive power in the additional variables included therein.

Hypothesis 10 predicts that entrepreneurially oriented individuals in administrative job positions will be less satisfied with their jobs than those who are administratively oriented, and *vice versa*. In order to test this hypothesis, the logistic-regression procedure must first be performed on the results of the Schwartz Value Survey. Then job satisfaction will be entered into the model to verify whether its inclusion increases its predictive power.

The exploratory logistic-regression procedure. The logistic-regression procedure in SPSS® 9.0 showed some serious limitations as an exploratory tool in the present study. Consequently, a method was developed through trial and error to accomplish this task. It is described here. First, the stepwise function in the procedure proved unreliable, resulting in most instances in a "model" consisting of the constant (y-intercept) alone and a classification plot either predicting all cases to be "entrepreneurs," or predicting all to be "administrators." This suggested approaching the selection of relevant predictors manually, by removing from successive models the least significant predictor until all predictors met a desired cut-off such as $p = .05$. However, the logistic-regression model failed to converge in the attempt to enter all 57 human values simultaneously, which prevented the generation of a list of all predictors with the corresponding significance levels of their independent contributions. Discriminant analysis was therefore employed to create the initial list of predictors. The stepwise method was chosen, with very generous variable entry and removal criteria ($p = .4$ and .8, respectively), to generate a list of predictors arranged from strongest to weakest. The list generated in the discriminant-analysis procedure was entered into the logistic-regression model in precisely the same order, up to the last predictor prior to the first removal, for the sake of simplicity. It was desirable that the resulting model initially failed to converge in the logistic-regression procedure, so that subsequent models could be entered by removing the last predictor in the list until a viable model was produced. Then the process continued by removing the weakest predictor shown in the logistic-regression model, until all predictors met the desired significance level, with the exception of the constant (retained regardless).

Selection of the appropriate cut-off level was not a simple matter. Based on the literature on the conservative nature of the Wald statistic, a level of $p = .10$ was utilized at

first. However, the resulting array of human values seemed unreasonably long. Moreover, the odds ratios (e^B-values) seemed far too disparate to constitute an appropriate reflection of the relative importance of the individual human values in the array. Next, a level of $p = .05$ was selected, but the resulting array, while shorter and more reasonable, still seemed a bit too long, and the disparities in odds ratios seemed occasionally to recur in some models, suggesting a less than adequate selection. Given the desire to produce generalizable results, particularly in the form of a preliminary algorithm that could be applied to other settings, it was decided that more stringent selection criteria might be in order, despite the exploratory nature of the present phase of this research and the superior fit statistics generated at more liberal cut-off levels. A more methodical approach was thus pursued, described as follows.



All statistics represented above were normed prior to graphing and a constant added (+1.81) to render all values positive, in order to facilitate comparison and interpretation. Values on the *y*-axis are thus *z*-scores with the constant 1.81 added.

"P-values" refer to the significance level of the Wald statistic that each predictor must meet to be kept in the model (except the constant, which is retained regardless). In the first instance, a cut-off of $p = .20$ was sought, but once it was achieved, all predictors in the model showed $p < .16$, so this is the first p-value shown in the graph at left. The next cut-off sought was thus $p = .15$, and once achieved all predictors showed $p < .09$. This procedure continued until $p = .01$ was achieved.

Key: -2LL and χ^2 are self-explanatory (df refers to the χ^2 statistic). GFI is Hosmer & Lemeshow's goodness-of-fit index. CS R^2 is Cox & Snell's R^2 coefficient. Nag R^2 is Nagelkerke's R^2 coefficient, which attempts to correct the preceding so that the maximum theoretical value is 1. The *c*-statistic is the percentage correct hits in the sample. "ANOVA" here refers to the similarity between the results of the *t*-tests and logistic-regression analysis. It is the number of identical, significant predictors that emerge under both methods, divided by the total number of significant predictors from both methods combined.

Figure V-3—Pattern of Fit Statistics as the Logistic-Regression Model is Progressively Reduced

The process described above, starting with the use of stepwise discriminant analysis and moving to logistic-regression analysis upon identification of an initial array organized approximately from strongest to weakest predictor, was undertaken anew starting with the

$p = .20$ level and successively reducing the target p-value by $p = .01$ with each subsequent model. This time, the fit statistics were recorded as each new model was achieved. Finally, the process was halted upon attainment of a model in which all predictors met the $p = .01$ level of significance. The fit statistics were normed to accommodate simultaneous plotting on a graph, and the changing pattern scrutinized. These are displayed in Figure V-3 above.

A striking shift is evident in the relationships among the fit statistics as the transition is made to the $p = .02$ level of significance. The χ^2 statistic, its associated degrees of freedom (interpretable as the number of predictors in the model), and the two R^2 statistics abruptly drop at this point. The -2LL and GFI coefficients jump just as abruptly. There is also a sharp rise in the match between the results of the t-tests in this study and the results of the logistic-regression model, represented in the graphs by the "ANOVA" line. There should be limited similarity between a logistic-regression model and the results of a comparison of means, but the results of the two methods should nevertheless not be completely distinct. The fact that the noted transition corresponds under both operationalizations to the point at which the similarity between the two models abruptly increases suggests that this is precisely the point at which the most viable, generalizable model is generated.

In the light of the foregoing, the model that emerges at $p = .02$ is selected for purposes of hypothesis-testing. To be sure, the consequence of this choice is a far more conservative model than that which would result from a higher p-value. This parsimonious model, in turn, will increase the possibility of Type II error, making it more difficult to find support for the remaining hypotheses. Nevertheless, this seems to be the most generalizable of the alternatives, and it probably represents the approach that should continue to be taken henceforth to forestall the possibility of highly "predictive," but unrepresentative, models.

Logistic-regression results with universal human values as predictors. The final models resulting from the approach to logistic-regression analysis described above are given in Table V-16. Under the operationalization of "entrepreneur as owner," the total number of predictors kept in the model is only 5, compared to the 9 that resulted from the *t*-tests above. Under the operationalization of "entrepreneur as founder," the number of predictors barely changed (7 from *t*-tests; 8 from logistic regression).

Dependent Variable: Entrepreneur as Owner[1]	B	s.e.	Wald	df	sig.	R	e^B
curious	1.2453	.3568	12.1791	1	.0005	.2811	3.4740
wisdom	-.5359	.2021	7.0301	1	.0080	-.1976	.5851
mature love	-.5380	.2148	6.2762	1	.0122	-.1822	.5839
a varied life	-.5556	.2210	6.3193	1	.0119	-.1831	.5738
influential	-.6431	.2136	9.0633	1	.0026	-.2342	.5257
Constant	3.2718	1.9793	2.7325	1	.0983		
Model Statistics	-2LL 90.967		Cox & Snell R^2 .334			$\chi^2 = 37.861_{05df}$	
	GFI 93.953		Nagelkerke R^2 .446			c = 78.49%	

Dependent Variable: Entrepreneur as Founder[2]	B	s.e.	Wald	df	sig.	R	e^B
respect for tradition	1.0930	.3500	9.7528	1	.0018	.2681	2.9834
freedom	.7511	.3151	5.6830	1	.0171	.1848	2.1193
daring	-.6070	.2385	6.4773	1	.0109	-.2037	.5450
protecting the environment	-.6528	.2691	5.8874	1	.0152	-.1898	.5206
unity with nature	-.7142	.2884	6.1321	1	.0133	-.1957	.4896
reciprocation of favors	-.8059	.2895	7.7474	1	.0054	-.2308	.4467
sense of belonging	-.8692	.3024	8.2605	1	.0041	-.2409	.4193
pleasure	-1.2339	.3540	12.1487	1	.0005	-.3067	.2911
Constant	11.7584	3.7315	9.9297	1	.0016		
Model Statistics	-2LL 59.035		Cox & Snell R^2 .386			$\chi^2 = 48.820_{08df}$	
	GFI 83.902		Nagelkerke R^2 .585			c = 80.00%	

[1]N = 93 (= $48_{administrators}$ + $45_{entrepreneurs}$). [2]N = 100 (=$23_{administrators}$ + $77_{entrepreneurs}$). Data are normed to control for sum of values scores. Key: B (logit coefficient), s.e. (standard error), sig. (significance of Wald statistic), R (partial R—independent contribution of variable), e^B (odds ratio), -2LL (-2 · log likelihood), GFI (Hosmer & Lemeshow's goodness-of-fit index, a.k.a. ĉ or "c-hat"), χ^2 (chi-square coefficient, a.k.a. GM, Hosmer & Lemeshow's G, or $-2LL_{difference}$), *c* (c-statistic—percentage of sample correctly categorized: 50% is consistent with random chance). If the logit coefficient is positive, then a unit increase in an explanatory variable results in an increase of e^B - 1 in the odds of correctly predicting an entrepreneur. If it is negative, then a unit increase in the explanatory variable brings about an increase of 1 - e^B in the odds of correctly predicting an administrator.

Table V-16—Entrepreneurship Predicted by Human Values

A cursory look at the two models given above reveals seemingly great differences. This topic is explored in Chapter VI, but suffice it to note that it is mainly due to the logistic-regression procedure itself, coupled with the parsimonious model development described above. Subtle differences between owners and founders *per se* may also come into play.

The two models offer 78.49% and 80.00% predictability, respectively. Comparisons between these and scale-based models to predict entrepreneurship will be discussed in Part III below. Hypothesis 10 proposes that entrepreneurially oriented people in administrative job positions, and *vice versa*, will be less satisfied than those working under congruent job conditions. To test this, the models displayed above are reduced to individual scores using the odds ratio algorithm appropriate to logistic-regression analysis (explained in the summary below). This conversion permits scrutiny of the significance level of the entire entrepreneurship measure, besides simplifying the tables. Then job satisfaction is entered into each model to assess its additional contribution, if any.

Dependent Variable: Entrepreneur as Owner	B	s.e.	Wald	df	sig.	R	e^B
Entrepreneurial Values*	5.3897	1.0855	24.6531	1	.0000	.4193	219.1331
Constant	-2.6856	.5868	20.9471	1	.0000		
Model Statistics	-2LL 90.888		Cox & Snell R^2 .335			$\chi^2 = 37.941_{01df}$	
	GFI 91.942		Nagelkerke R^2 .447			c = 78.49%	
Entrepreneurial Values*	5.3259	1.1089	23.0661	1	.0000	.4088	205.5838
Job Satisfaction	-.0690	.3137	.0484	1	.8258	.0000	.9333
Constant	-2.3450	1.3942	2.8292	1	.0926		
Model Statistics	-2LL 90.131		Cox & Snell R^2 .326			$\chi^2 = 35.923_{02df}$	
	GFI 89.885		Nagelkerke R^2 .435			c = 78.02%	

*Odds ratio algorithm using results from Table V-16 (see p. 187 for formula). N = 91 (=$47_{administrators}$ + $44_{entrepreneurs}$). Data are normed to control for sum of values scores. Key: B (logit coefficient), s.e. (standard error), sig. (significance of Wald statistic), R (partial R—independent contribution of variable), e^B (odds ratio), -2LL (-2 · log likelihood), GFI (Hosmer & Lemeshow's goodness-of-fit index, a.k.a. ĉ or "c-hat"), χ^2 (chi-square coefficient, a.k.a. GM, Hosmer & Lemeshow's G, or -$2LL_{difference}$), c (c-statistic—percentage of sample correctly categorized: 50% is consistent with random chance). If the logit coefficient is positive, then a unit increase in an explanatory variable results in an increase of e^B - 1 in the odds of correctly predicting an entrepreneur. If it is negative, then a unit increase in the explanatory variable brings about an increase of 1 - e^B in the odds of correctly predicting an administrator.

Table V-17a—Entrepreneur as Owner Predicted by Human Values, with Job Satisfaction Included

The results show no significant impact from the inclusion of job satisfaction in the model under the operationalization of "entrepreneur as owner." Here, predictability changes minutely from 78.49% to 78.02%. No independent effect is ascribed to job satisfaction at all according to the partial *R*-value. Under "entrepreneur as founder," job satisfaction does not add to predictability, but approaches significance based on the Wald statistic. The *c*-statistic changes from 85.00% to 86.73%, representing only trace improvement. The job satisfaction

hypothesis finds partial support with the present data. This may be a consequence of the high average job satisfaction scores revealed in this sample and noted previously, or the fact that job satisfaction has always been a capricious phenomenon that emerges with disquieting inconsistency where theoretically expected (*cf.* Fuller, Hester, Dickson, Allison, & Birdseye, 1996, for a detailed discussion and meta-analysis; *cf.* also Bagozzi, 1986, for more insight).

Dependent Variable: Entrepreneur as Founder	B	s.e.	Wald	df	sig.	R	e^B
Entrepreneurial Values*	6.5860	1.2890	26.1074	1	.0000	.4728	724.9033
Constant	-3.3010	.9130	13.0720	1	.0003		
Model Statistics	-2LL 59.713		Cox & Snell R^2 .382			$\chi^2 = 48.143_{01df}$	
	GFI 97.003		Nagelkerke R^2 .579			c = 85.00%	
Entrepreneurial Values*	7.6189	1.5425	24.3967	1	.0000	.4632	2036.323
Job Satisfaction	.7535	.3873	3.7854	1	.0517	.1308	2.1244
Constant	-7.0937	2.2188	10.2215	1	.0014		
Model Statistics	-2LL 49.666		Cox & Snell R^2 .428			$\chi^2 = 54.710_{02df}$	
	GFI 71.192		Nagelkerke R^2 .653			c = 86.73%	

*Odds ratio algorithm using results from Table V-16 (see p. 187 for formula). N = 98 (=$22_{administrators}$ + $76_{entrepreneurs}$). Data are normed to control for sum of values scores. Key: B (logit coefficient), s.e. (standard error), sig. (significance of Wald statistic), R (partial R—independent contribution of variable), e^B (odds ratio), -2LL (-2 · log likelihood), GFI (Hosmer & Lemeshow's goodness-of-fit index, a.k.a. ĉ or "c-hat"), χ^2 (chi-square coefficient, a.k.a. GM, Hosmer & Lemeshow's G, or -$2LL_{difference}$), c (c-statistic—percentage of sample correctly categorized: 50% is consistent with random chance). If the logit coefficient is positive, then a unit increase in an explanatory variable results in an increase of e^B - 1 in the odds of correctly predicting an entrepreneur. If it is negative, then a unit increase in the explanatory variable brings about an increase of 1 - e^B in the odds of correctly predicting an administrator.

Table V-17b—Entrepreneur as Founder Predicted by Human Values, with Job Satisfaction Included

Part III: Comparison of Predictors

Part III of this section compares the predictability of universal human values against that of the scales that have been applied in this study, using logistic-regression analysis. The predictive power of both of these has already been assessed and displayed in the foregoing tables. These results show human values to be collectively a far stronger predictor than the scale variables. Under the operationalization of "entrepreneur as owner," 78.49% of subjects are correctly identified as entrepreneurs or administrators by their values hierarchies, against only 53.85% using the scale variables and 63.46% with the exploratory variables (mission-oriented goal-setting and generalized self-efficacy) included. The difference is even more pronounced when entrepreneur is operationalized as founder. Values hierarchies correctly

predict 80.00% of entrepreneurs *versus* administrators, compared to only 52.53% using the scale variables, or 56.57% with exploratory variables included. These differences are even more striking considering the conservative approach to identifying the logistic-regression model in this study. The independent contribution of each scale variable has been shown to be highly insignificant in these models, in contrast to the models advancing universal human values as predictors, wherein each predictor meets the $p = .02$ criterion. To complete this analysis, the scale variables and human values will be compared with age, sex, and job satisfaction controlled for. Although these control variables demonstrated mixed results in the analyses above, they have not yet been combined into the same model, and they remain theoretically influential. The scale variables ("entrepreneurial orientation") are compared to human values as predictors of entrepreneurship with these controls in place, as follows.

Dependent Variable: Entrepreneur as Owner	B	s.e.	Wald	df	sig.	R	e^B
Entrepreneurial Orientation*	2.5089	6.6202	.1436	1	.7047	.0000	12.2912
Age	-.0003	.0158	.0003	1	.9856	.0000	.9997
Sex (positive = female)	-.0120	.4379	.0008	1	.9781	.0000	.9881
Job Satisfaction	-.3994	.3612	1.2228	1	.2688	.0000	.6707
Constant	.3620	3.3647	.0116	1	.9143		
Model Statistics	-2LL 137.308		Cox & Snell R^2 .019			$\chi^2 = 01.955_{04df}$	
	GFI 102.907		Nagelkerke R^2 .025			c = 53.40%	
Entrepreneurial Values**	5.3893	1.1554	21.7555	1	.0000	.4003	219.0550
Age	.0294	.0208	2.0080	1	.1565	.0081	1.0298
Sex (positive = female)	-.1867	.5172	.1303	1	.7182	.0000	.8297
Job Satisfaction	-.1449	.3342	.1880	1	.6646	.0000	.8651
Constant	-3.1411	1.8574	2.8600	1	.0908		
Model Statistics	-2LL 86.832		Cox & Snell R^2 .336			$\chi^2 = 36.447_{04df}$	
	GFI 90.588		Nagelkerke R^2 .448			c = 79.78%	

*Odds ratio algorithm using results from Table V-14d (see p. 187 for formula). N = 104 (=$62_{administrators}$ + $42_{entrepreneurs}$). **Odds ratio algorithm using results from Table V-16a. N = 89 (=$46_{administrators}$ + $43_{entrepreneurs}$). Data are normed to control for sum of values scores. Key: B (logit coefficient), s.e. (standard error), sig. (significance of Wald statistic), R (partial R—independent contribution of variable), e^B (odds ratio), -2LL (-2 · log likelihood), GFI (Hosmer & Lemeshow's goodness-of-fit index, a.k.a. ĉ or "c-hat"), χ^2 (chi-square coefficient, a.k.a. GM, Hosmer & Lemeshow's G, or $-2LL_{difference}$), c (c-statistic—percentage of sample correctly categorized: 50% is consistent with random chance). If the logit coefficient is positive, then a unit increase in an explanatory variable results in an increase of $e^B - 1$ in the odds of correctly predicting an entrepreneur. If it is negative, then a unit increase in the explanatory variable brings about an increase of $1 - e^B$ in the odds of correctly predicting an administrator.

Table V-18a—Entrepreneur as Owner Predicted by Scale Variables and Human Values, Controlling for Age, Sex, and Job Satisfaction

Dependent Variable: Entrepreneur as Founder	B	s.e.	Wald	df	sig.	R	e^B
Entrepreneurial Orientation*	9.7106	6.8289	2.0220	1	.1550	.0151	16491.35
Age	.0239	.0226	1.1172	1	.2905	.0000	1.0241
Sex (positive = female)	.6064	.5613	1.1671	1	.2800	.0000	1.8338
Job Satisfaction	-.4038	.4640	.7570	1	.3843	.0000	.6678
Constant	-6.6064	5.9278	1.2420	1	.2651		
Model Statistics	-2LL 92.723		Cox & Snell R^2 .037			$\chi^2 = 03.669_{04df}$	
	GFI 94.259		Nagelkerke R^2 .059			c = 60.20%	
Entrepreneurial Values**	8.3953	2.5802	19.6625	1	.0000	.4185	4426.355
Age	-.0064	.0279	.0534	1	.8172	.0000	.9936
Sex (positive = female)	-1.8261	.9962	3.3602	1	.0668	-.1161	.1610
Job Satisfaction	1.0126	.4841	4.3754	1	.0365	.1535	2.7529
Constant	-5.3302	2.5802	4.2677	1	.0388		
Model Statistics	-2LL 39.913		Cox & Snell R^2 .470			$\chi^2 = 60.949_{04df}$	
	GFI 54.656		Nagelkerke R^2 .723			c = 88.54%	

*Odds ratio algorithm using results from Table V-14d (see p. 187 for formula). N = 98 (=$19_{administrators}$ + $79_{entrepreneurs}$). **Odds ratio algorithm using results from Table V-16b. N = 96 (=$21_{administrators}$ + $75_{entrepreneurs}$). Data are normed to control for sum of values scores. Key: B (logit coefficient), s.e. (standard error), sig. (significance of Wald statistic), R (partial R—independent contribution of variable), e^B (odds ratio), -2LL (-2 · log likelihood), GFI (Hosmer & Lemeshow's goodness-of-fit index, a.k.a. $\hat{c}$ or "c-hat"), χ^2 (chi-square coefficient, a.k.a. GM, Hosmer & Lemeshow's G, or $-2LL_{difference}$), c (c-statistic—percentage of sample correctly categorized: 50% is consistent with random chance). If the logit coefficient is positive, then a unit increase in an explanatory variable results in an increase of $e^B - 1$ in the odds of correctly predicting an entrepreneur. If it is negative, then a unit increase in the explanatory variable brings about an increase of $1 - e^B$ in the odds of correctly predicting an administrator.

Table V-18b—Entrepreneur as Founder Predicted by Scale Variables and Human Values, Controlling for Age, Sex, and Job Satisfaction

Consistent with the findings presented previously, universal human values again show far greater predictive power than the scale variables. Human values correctly predict almost 80% of actual entrepreneurs *versus* administrators when entrepreneurship is operationalized as business ownership and age, sex, and job satisfaction are controlled for. Human values predict almost 90% when entrepreneurship is operationalized as business foundership with these controls in place. By comparison, the scale variables demonstrate no predictive power at all under the "entrepreneur as owner" operationalization, controlling for age, sex, and job satisfaction, and show only modest predictability (60.20%) when entrepreneurship is operationalized as business foundership and these controls are in place. The scale variables do not appear to add any significant contribution under the first operationalization, as evidenced by the partial *R*-value of zero, but their contribution does become noticeably significant under the second.

Overall, the results suggest that the scale variables are highly inadequate as viable predictors of entrepreneurship. Hypotheses 11 through 13, which constitute the essence of this project, enjoy the strongest confirmation of any hypotheses presented in this study. Human values are very powerful as predictors of entrepreneurship and administratorship.

Summary

The purpose of the summary is to describe briefly some of the differences brought out in the foregoing analyses, their implications for operationalizing entrepreneurship and administratorship, and the possibilities raised for employing universal human values in future entrepreneurship research. The summary is intended to facilitate other researchers in their work to build upon the findings presented herein. A summary of the foregoing hypothesis test is presented in Table V-19 below.

	hypothesis	*finding*	*association*
H. 1	Entrepreneurship ↔ achievement	supported	entrep[a]
H. 2	Entrepreneurship ↔ stimulation	n.s.	admin*
H. 3	Entrepreneurship ↔ self-direction	supported	entrep[a]
H. 4	Administratorship ↔ hedonism	partially supported	admin*
H. 5	Administratorship ↔ tradition	n.s.	—
H. 6	Administratorship ↔ conformity	n.s.	entrep*
	power		entrep**
	universalism		admin**
	benevolence		—
	security		entrep*
H. 7	Risk propensity can distinguish	n.s.	
H. 8	Innovativeness can distinguish	n.s.	
H. 9	Proactivity can distinguish	n.s.	
H. 10	Job fit ↔ job satisfaction	partially supported	
H. 11	Human values superior to risk propensity	supported	
H. 12	Human values superior to innovativeness	supported	
H. 13	Human values superior to proactivity	supported	

[a]Supported by at least one marker value under both operationalizations, with no contradictions. *Evidenced in the binomial probability tests (*cf.* page 180) at $p < .05$. **Evidenced in the binomial probability tests at $p < .01$.

Table V-19—Summary of Hypothesis Tests and Evident Associations by Motivational Domain

The distinction between entrepreneurs and administrators is subtle. Few devices seem capable of capturing it well. However, it has now been shown that the differences in specific values may provide strong predictability where reflective measures fall short in

the investigation of broad, stable patterns of behavior. Entrepreneurial and administrative behaviors involve a degree of long-term consistency in the way decisions and choices are made. Values have long been shown to correlate strongly with choice behavior. They are more stable than attitudes and more comprehensive than the personality characteristics tested herein. To be sure, risk propensity, innovativeness, and proactivity are considered among the strongest predictors of entrepreneurial behavior. However, high scorers on these scales are also often likely to be administrators, strictly defined, leading to inconsistencies in outcomes. These seem to have been revealed in this study.

The data collected in this study are not yet sufficient to draw out the rich detail necessary for thorough treatment of this subject matter over the longer term. They are sufficient to demonstrate the validity of this line of research and the differential powers of prediction of the alternative measures introduced, but much detail has yet to be extracted from the differences that have so far been tapped only superficially regarding managerial style. The next item on the research agenda should thus be to continue data collection. The application of the Schwartz Value Survey and the key demographic items make it possible to cumulate the research over time without prejudicing the timeliness of the results. Eventually, it will be necessary to consider the remaining values that did not show significance in this study, and determine whether their explanatory power is simply assumed by others, thereby nullifying their unique contribution in the logistic-regression equation. If so, then a short version of the SVS suited specifically to the entrepreneurial-administrative distinction may be worth considering. Previous studies demonstrating differences in values between entrepreneurs and administrators did not partial out the

overlapping explanatory power of each value in succession. Some of those that showed significance in previous studies may not turn out to be relevant to the final algorithm.

The specific reasons for the association of certain values with entrepreneurship or administratorship in the final model come in two basic forms. First, certain values serve as broad ideals to which those who hold them constantly aspire. This might describe the value "freedom" that occurs regularly in association with entrepreneurship. Regardless of how much freedom the entrepreneur has, there is relentless drive to pursue it. Second, certain values are held in high esteem because of a relative sense of deprivation. African Americans in Rokeach's (1973) study ranked "equality" very highly. Awarded the desired social equality, those who held the value in such high esteem may not be likely, generation after generation, to continue to pursue it. This may explain some of the specific values that have shown prominence in association with either managerial style in this project as well, such as the association between "a varied life" and administratorship.

It was expected *a priori* that both a certain combination of values and each of the three behavioral scales would be capable of differentiating between entrepreneurs and administrators. In the end, it was shown that, with a rigorous criterion by which to distinguish entrepreneurs from administrators, only the values were capable of drawing out the expected difference. Future research should attempt to refine the behavioral scales, perhaps by running logistic-regression analyses on their individual items rather than the scales as a whole, if the quest for their predictability under rigorous research conditions is desirable. While this is not an ordinary course of action recommended for unidimensional scales, it has been shown here that the differences between entrepreneurs and administrators are subtler than we have often believed. This need for a more sensitive

behavioral instrument may warrant scales that are more specialized. In the meantime, however, the three constructs of risk propensity, innovativeness, and proactivity are theoretically subsets of the motivational domains covered by universal human values, so the outcomes observed in this study are wholly consistent with theory. The Schwartz Value Survey continues to be refined and improved over time through the work of Shalom Schwartz and his colleagues. Nevertheless, as it stands, it may be the most comprehensive tool currently available for capturing the breadth of traits, needs, and other personality characteristics that earlier scales had attempted to capture only in isolation, *e.g.*, risk propensity, innovativeness, and proactivity individually rather than as part of a comprehensive personality structure.

From the perspective of methodology, future research should aim to refine the algorithms presented here to distinguish between business owners and administrators, and between business founders and administrators. As more data are collected, distinctions should also be made between entrepreneurs and income-substituters, entrepreneurs and intrapreneurs, and other subsets of the entrepreneurial and administrative portfolio of behavioral patterns. Thus far, the Schwartz Value Survey is far from exhausting its utility in these areas.

$$P(entrep_{owner}) = \frac{e^{3.2718+1.2453SD4-0.5359UN7-0.6431AT2-0.5380V19-0.5556ST2}}{1+e^{3.2718+1.2453SD4-0.5359UN7-0.6431AT2-0.5380V19-0.5556ST2}}$$

$$P(entrep_{founder}) = \frac{e^{11.7584-1.2339HD1-0.8692V07+1.0930TR1+0.7511SD1-0.6070ST3-0.8059SC3-0.7142UN2-0.6528UN3}}{1+e^{11.7584-1.2339HD1-0.8692V07+1.0930TR1+0.7511SD1-0.6070ST3-0.8059SC3-0.7142UN2-0.6528UN3}}$$

Key: P(entrep) is the probability of correctly identifying a respondent as an entrepreneur, as opposed to an administrator. Both operationalizations are given, the first being that of the business owner *versus* administrator, and the second being that of the business founder *versus* administrator. In the equations, specific universal human values are identified as follows: AT2 (influential), HD1 (pleasure), SC3 (reciprocation of favors), SD1 (freedom), SD4 (curious), ST2 (a varied life), ST3 (daring), TR1 (respect for tradition), UN2 (unity with nature), UN3 (protecting the environment), UN7 (wisdom), V07 (sense of belonging), V19 (mature love).

Figure V-4—Tentative Values Algorithms for Predicting Entrepreneurship

To complete this summary, the algorithms corresponding to the two final values hierarchies (entrepreneurship operationalized as ownership and foundership, respectively) are presented in Figure V-4. These attempt to quantify in the form of a single score the distinction between entrepreneurs and administrators. Table V-20 presents a correlation analysis incorporating the resulting scores, for its exploratory value.

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. Entrepreneurship(O)													
2. Entrepreneurship(F)	.112												
3. Income Substituter	-.018	-.114											
4. Job Satisfaction	.017	-.002	-.051										
5. Managerial Exp.	-.098	.016	.132	.035									
6. Organizational Size	-.023	.031	-.041	-.047	-.028								
7. Self-Employed	-.024	.100	-.058	.061	.051	-.015**							
8. Auton. Unit Exp.	.075	.178*	.113	.004	.157†	.121	.076						
9. Purchased a Firm	.097	.181*	.232**	.051	.169*	-.059	.028	.010					
10. Age	.016	.023	.086	.189*	.499**	.152†	-.008	-.025	.160†				
11. Education	-.081	-.044	-.045	-.059	.148†	.039	-.061	.092	-.022	.062			
12. Sex (female is +)	-.206*	-.207*	-.129	.146†	-.291**	.080	.073	-.098	-.158†	-.165*	-.097		
13. SES	.136	.124	.009	.055	.371**	-.074	.141†	.137	.212*	.289**	.136	-.296**	
14. Agriculture, Forestry	-.011	-.124	-.034	-.031	.049	-.009	-.012	-.071	-.049	-.023	.007	-.068	
15. Construction	.184*	.080	-.011	-.054	.003	-.025	-.036	.044	.067	-.045	-.063	-.198*	.151†
16. Manufacturing	-.014	-.003	.034	-.031	.065	-.030	-.043	.026	.012	.036	-.074	-.096	.039
17. Transp., Pub. Util.	.123	.047	.123	-.059	.015	-.011	-.018	.143†	.067	-.038	-.031	.022	-.021
18. Wholesale Trade	-.169*	-.008	.123	-.045	.101	-.012	-.018	-.100	-.070	.063	-.072	-.097	.060
19. Retail Trade	-.027	.036	-.007	.003	-.042	.027	-.050	-.055	.009	-.012	-.135	-.005	-.158†
20. Fin., Ins., Real Est.	.025	.093	.002	.035	-.079	-.043	.215**	.096	.182*	-.003	-.073	-.061	.183*
21. Services	-.073	-.060	-.041	.003	.069	.074	-.035	-.038	-.044	.073	.184*	.140†	.040
22. Govt., Public Admin.	.051	-.123	-.059	.064	.231**	-.015	-.022	-.123	-.086	.034	-.021	.174*	-.103
23. Non-Profit	-.069	-.081	.023	.016	-.179*	-.030	-.045	.003	-.120	-.104	.070	.056	-.212*
24. Religious Sector	.109	.099	-.059	.052	-.044	-.015	-.022	.022	-.086	-.052	.046	-.022	-.101

†p < .1, *p < .05, **p < .01 (two-tailed). Entrepreneurship(O) is a score derived from the logit coefficients corresponding to human values strongly associated with entrepreneurship under the business owner operationalization. Entrepreneurship(F) is the analogous score corresponding to business foundership. "Auton. Unit Exp." is one if the respondent had ever been in charge of an autonomous unit in a business corporation, and zero if not. "Purchased a Firm" is one if the respondent had ever purchased a business firm. "SES" is socioeconomic status, *i.e.*, the respondent's individual income. Items 14-24 are industry sector indicators. Thus, there is a predominance of business owners in the construction industry, for example.

Organizational size is heavily skewed, so parametric tests cannot be performed. Ordinary correlations are shown here for the sake of consistency, but significances are indicated according to the Wilcoxon rank sum test (Mann-Whitney *U*-test). This can be performed in SPSS® 9.0 if one variable is dichotomous; otherwise, it must be performed manually.

Table V-20—Correlation Matrix Featuring the Entrepreneurship Scores

Table V-20 above displays the simple correlations between the entrepreneurship scores, operationalized as business ownership ("Entrepreneurship(O)") and business foundership ("Entrepreneurship(F)"). This correlation matrix is offered as an example of

how the entrepreneurial-values algorithm can be applied in future research as a proxy for entrepreneurship. At present, the strength of its ability to serve as such a proxy is limited by the relatively small sample size so far achieved, coupled with the highly conservative specification of the distinction between entrepreneurs and administrators. Consistent with established theory, the distinction between business founders and administrators appears to be a more valid proxy of entrepreneurship than that between business owners and administrators. The correlation matrix also demonstrates that the two measures are quite distinct when generated through logistic-regression analysis. Among the observations that can be made, there is a positive correlation between business foundership and experience running an autonomous unit, which validates Brazeal's (1996) use of this variable as a proxy for intrapreneurship in large organizations. There is also a positive correlation between business foundership and one's having purchased an organization in the past. Neither of these relationships is visible with entrepreneurship operationalized as business ownership, again attesting to the theoretically sounder definition of entrepreneurship that is reflected in business foundership. Next, consistent with past studies in which female respondents tend to be lower in hierarchy than male respondents, the negative correlation between being female and being an entrepreneur is visible. In this case, the prevalence of entrepreneurs in the construction industry, which is predominantly male, probably plays a role. Lastly, positive relationships shown in previous literature between entrepreneurship and education are obscured in this correlation matrix, as are some other relationships that might be expected to manifest themselves once the algorithm is refined further.

Chapter VI presents a summary of this dissertation, following by a discussion of the implications of its findings. Suggestions for pursuing this line of inquiry in the future

will not be covered in as much technical detail therein because they have already been discussed thoroughly in the present chapter. The data used in this study are provided in Appendix D.

CHAPTER VI

SUMMARY AND IMPLICATIONS

Chapter VI presents a summary of this study and implications of the results for research, application in large organizations, and professional development or career counseling. Suggested directions for future research in the study of entrepreneurship and administratorship are offered in the section dealing with implications for research. Limitations are explored at the end.

This study has demonstrated the power of universal human values to differentiate between groups of people based on their motivational makeup, reflected in a measurable consistency of choice behavior over the course of time. This consistency is observable in the form of relatively stable behavioral patterns that persist across a variety of different contexts. Entrepreneurship and administratorship fall squarely into this domain of analysis, as broad behavioral patterns observable over long periods of time by their intelligible consistency. Entrepreneurship and administratorship are thus readily distinguishable by reference to values. By contrast, values would not likely afford sharp distinguishability between groups defined by context-dependent behaviors, such as the difference between people who are immediately likely to leave an organization and those who are not. Overall, the essential utility of universal human values as a point of reference in research lies in the relatively enduring nature of their arrangements within each person's motivational framework. It is worthy of note that this utility would be absent were it not for the fact that values are also very comprehensible to the people from whom a request is made to describe them. This capacity to capture in such terse symbolism complex patterns whose specific character remains unknown until quickened by an identifiable context is peculiarly human.

Summary of the Dissertation

This dissertation extends the work pursued by previous researchers in two domains: (1) values; and (2) entrepreneurship. First, it establishes that universal human values are capable of being used as a strong proxy for contrasting behavioral styles. Second, it demonstrates that the distinction between entrepreneurship and administratorship figures among the behavioral styles to which the use of universal human values as a discriminator is suited. These findings hold identifiable implications for research, organizational competitiveness, and careers. The findings presented herein also suggest a great amount of utility in the use of universal human values as a proxy for other behavioral patterns of similar centrality and breadth. These would include intrapreneurship (*e.g.*, Brazeal, 1996; Pinchot, 1985), the general behavioral style associated with choice of career domain (*e.g.*, profit *versus* non-profit, religious, charitable, government), the ascetic personality (Jones, 1995), and potentially certain conceptualizations of leadership (*e.g.*, Conger & Kanungo, 1987). Overall, the findings presented herein primarily suggest the manner in which specific proxies can be defined and applied, although the proper definition of each relevant subgroup, and the necessity to identify contrasting subgroups, is a task with which each subsequent researcher will nevertheless be confronted.

The central objective of this study was to make a contribution to the entrepreneurship knowledge base that could help future researchers more readily study entrepreneurship in various contexts, particularly in large organizations, in which this line of research has been particularly problematic. Attempts to identify personality characteristics unique to the entrepreneur abound in the literature; yet for most studies for

which a positive correspondence between a given trait or propensity and entrepreneurship has been identified, another study has thrown that identification into question. A common source of confusion has been the tendency for some researchers to compare entrepreneurship to non-entrepreneurship rather than to administratorship. When this has been the case, entrepreneurship has indeed been concluded to correlate positively with such traits as internal locus of control, achievement orientation, and tolerance for ambiguity. Null findings have subsequently been produced when entrepreneurs have been compared to administrators who were more narrowly defined. Exceptions, in which entrepreneurs have indeed been shown to differ regularly from administrators, have mostly involved risk propensity, innovativeness, and proactivity. Thus, the present study sought to define the distinction between entrepreneurs and administrators rigorously and to use risk propensity, innovativeness, and proactivity against which to compare the predictive power of universal human values.

Another source of confusion in the literature has been the linkage that is often made in the identification of entrepreneurs and administrators to very different organizational contexts. A rather common approach to studying the differences between entrepreneurs and administrators is to select a sample of the former from small businesses and a sample of the latter from large organizations. While this approach is not inherently flawed, particularly given the limited sample base of the entrepreneurship researcher, it risks confounding organizational culture with the behavioral propensity under study. Thus, while Fagenson's (1993) sample included correctly operationalized entrepreneurs from a small-business database and administrators from a database of employees in large organizations, there was no way to distinguish between the effects of basic differences in

organizational culture and those of personal differences in values. The approach taken by Busenitz (1999) was similar, with similar potential consequences. The present study has at last assessed the differences in values between entrepreneurs and administrators purely based on their choice behavior, with the focus on respondents' history of founding business organizations. All respondents were selected from the same population, with obvious implications for the generalizability of the findings.

The value of a measure capable of distinguishing accurately between entrepreneurs and administrators cannot be overstated. Large organizations have long sought a measure by which to identify intrapreneurs, or in-house entrepreneurs capable of achieving the innovations necessary to keep an organization competitive. Franchises could benefit from a tool with which to assess the likelihood of a prospective franchisee's success, in addition to innovative contributions that entrepreneurial franchisees often make to the larger organization. University career counselors and private job placement firms could encourage entrepreneurially oriented people to found new businesses, while assisting administratively oriented people in identifying and refining the strengths that they could apply to successful careers in large organizations. Business schools might be able to find ways to train and develop students of entrepreneurship in the direction of entrepreneurial values in addition to entrepreneurial skills, given the demonstrated impact in previous studies of education on values.

The objectives of this study were consequently very straightforward, *viz.*, identifying the actual differences in values hierarchies between entrepreneurs and administrators, and then demonstrating their ability to predict business ownership and foundership. In line with current theory, business foundership was demonstrated to be

more characteristic of the entrepreneurial behavioral style than merely business ownership, even when controlling for income-substitution. This finding concurred with Schumpeter's (1936) original observations that entrepreneurship is fundamentally a creative predisposition, and not merely the fact of small-business ownership. It is also consistent with the view of Dyer (1994) and Schein (1994) that entrepreneurs are defined by their actually founding a business organization.

The working assumptions in this study include the view that entrepreneurs and administrators differ in many of their motivations related to business management and careers, and that this will be reflected in differences in the relative priority assigned to specific values. Subjects were thus categorized as entrepreneurs or administrators based on their actually owning or having founded (or helped found) a business organization, in contrast to holding a managerial position in a business organization. Nonprofit, religious, and public organizations were excluded for purposes of analysis, under the expectation that a different set of motivations might influence those career choices. Lastly, income-substitution, which constitutes a set of motivations that are theoretically distinct from genuine entrepreneurship, was assumed to be reflected in the choice "to maintain income" as the basic motivation for starting or purchasing a business. These assumptions, which were very closely linked to the relevant literature, proved to hold with considerable consistency in this study. The theoretical linkage between motivations and values remains technically untested, but the observation that actual career choice is related to values is empirically solid, as demonstrated in this and previous studies. Thus, the present study contributes to the inductive database that supports Locke's (1991) conceptualization of the position of values in the motivation sequence model.

The ultimate goal of the project presented in this dissertation was to generate a reliable algorithm for quantifying the values distinction between entrepreneurs and administrators using logistic-regression analysis. This was accomplished in a relatively conservative manner so as to maximize the generalizability of the findings. As more data are collected and added to the current database, that algorithm will become more refined because the degree of random error affecting it will decrease. As it stands, the algorithm presented in this dissertation should be considered a rough and very conservative reflection of the distinction between entrepreneurs and administrators sought in this project.

The statistical methods used in this dissertation were generally the least complex that could be supported by the objectives, in line with the principle that simplicity of procedure minimizes the risk of drawing erroneous inferences. Consistently, the objectives in this study were successfully achieved through the selective usage of *t*-tests and logistic-regression analysis. The analyses systematically narrowed the focus of the study in order to justify drawing generalizable inferences. First, initial hypotheses were investigated simply to ascertain that the general pattern of association between entrepreneurship and general categories of values (motivational domains) is consistent with theory and previous literature. Then the relationship between entrepreneurship and the scale variables was investigated. Next, those values were empirically identified that together could most readily distinguish entrepreneurs from administrators. Lastly, the predictive power of both the selected values and the scale variables was compared in order to confirm whether values should be used in the future for similar purposes, as opposed to continued use of the scale variables for purposes of identifying entrepreneurs.

ENTREPRENEURIAL VALUES	ADMINISTRATIVE VALUES
ambitious	mature love
curious	pleasure
freedom	true friendship
social order	sense of belonging
social power	wisdom

Table VI-1—Entrepreneurial and Administrative Values based on *t*-Tests

ENTREPRENEURIAL VALUES	ADMINISTRATIVE VALUES
curious	a varied life
freedom	daring
respect for tradition	influential
	mature love
	pleasure
	protecting the environment
	reciprocation of favors
	sense of belonging
	unity with nature
	wisdom

Table VI-2—Entrepreneurial and Administrative Values based on Logistic-Regression Analysis

The *t*-tests suggested that entrepreneurs rate the values displayed in Table VI-1 differently from administrators, combining the results from business founders and business owners. For comparison, Table VI-2 lists the analogous results from the logistic-regression procedure. The differences between the two procedures are partially the consequence of the fact that the *t*-tests do not hold other values constant, so it is conceivable that two or more values will show strong relationships with one of the managerial styles even though they are effectively redundant. Two values are common to entrepreneurship between the two procedures, namely "curious" and "freedom." Four values are common to administratorship between the two procedures, namely, "mature love," "pleasure," "sense of belonging," and "wisdom." A subset of five of the thirteen values generated in the logistic-regression procedure predicts 78% of business owners, and a subset of eight predicts 80% of business founders. Both of these figures clearly exceed the 54% and 53% afforded by all three scale variables combined.

In this manner, several findings with both research and organizational implications have been generated from this project. Most closely relevant to the core

objectives of this project are the fact that entrepreneurs and administrators do clearly differ in terms of their values, but not in a manner that is completely in accordance with motivational domains. That is, instead of differing consistently by whole motivational domain, the contrast between these two managerial styles is evidently marked by a scattered assortment of values, some within the predicted motivational domains but several others emerging in less anticipated fashion. The consistency shown by the array of values that differentiates entrepreneurs from administrators is generally reasonable based on its collective content and previous research, however, so the conclusions drawn from them remain valid.

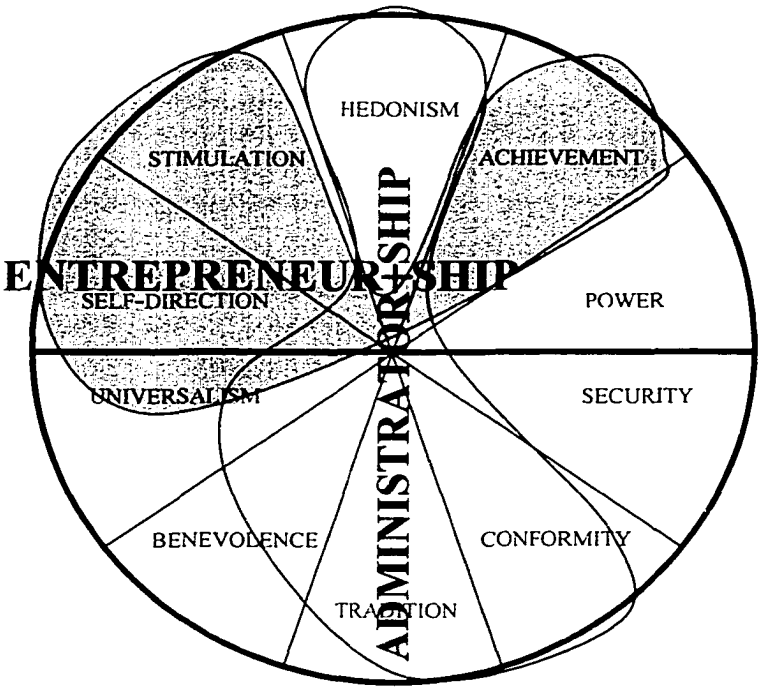


Figure VI-1: Hypothesized Depiction of Entrepreneurial and Administrative Values

Figure VI-1 gives the previous small-space depiction of entrepreneurial and administrative values. Recalling the logic behind that illustration, entrepreneurship and administratorship were proposed to occupy recognizable but not necessarily simple areas. The contiguity expected of each area is a product of the relatively cohesive nature of the

underlying needs that it represents. It was assumed that managerial style could be more or less cogently defined in terms of distinct emphases on underlying needs.

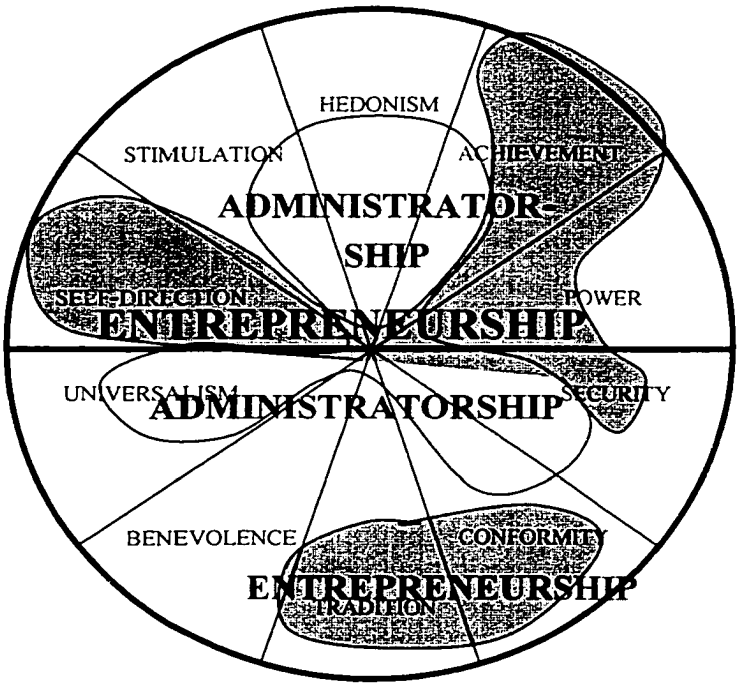


Figure VI-2: Corrected Depiction of Entrepreneurial and Administrative Values

Figure VI-2 provides a new illustration of entrepreneurial and administrative values based on the findings presented in this study. This illustration depicts areas that are even less neatly contiguous than the previous one. In fact, the assumption reflected in the illustration that each area should ideally consist of a single closed curve seems very difficult to maintain. Most motivational domains share elements of both entrepreneurial and administrative values, rather than just one of the two types. Nevertheless, as in the previous illustration, entrepreneurship still appears possibly more closely related to individualism (the top half of the illustration) than administratorship. This suggests that there is at least a loose distinction between the two managerial styles that is related to the structure of universal human values as theorized by Schwartz (1992).

The superior ability of values to differentiate between entrepreneurs and administrators, when compared to that of the three most important correlates of entrepreneurship in the current literature, namely, risk propensity, innovativeness, and proactivity, was evidenced in far more striking a fashion than was expected. The accumulation of additional cases to add to the current database will assuredly sharpen the ability of the scale measures to perform this function, so introducing universal human values into the literature does not obviate their relevance. Nevertheless, the evidence demonstrated herein regarding the power of values to discriminate between entrepreneurship and administratorship as predicted is incontrovertible.

Are Business Owners and Business Founders Equally Entrepreneurs?

Operationalization: Entrepreneur as Owner			*Operationalization: Entrepreneur as Founder*	
"The Entrepreneur"	B		"The Entrepreneur"	B
curious ..... SD	1.2453	⇔	freedom ..... SD	.7511
			respect for tradition ..... TR	1.0930
"The Administrator"	B		"The Administrator"	B
a varied life ..... ST	-.5556	⇔	daring ..... ST	-.6070
wisdom ..... UN	-.5359	⇔	unity with nature ..... UN	-.7142
			protecting the environment .. UN	-.6528
influential ..... AT	-.6431		pleasure ..... HD	-1.2339
mature love ..... -0-	-.5380		reciprocation of favors ..... SC	-.8059
			sense of belonging ..... -0-	-.8692

Results of logistic-regression procedure described in Chapter V. Digraphs indicate motivational domains: SD = SELF-DIRECTION; TR = TRADITION; ST = STIMULATION; UN = UNIVERSALISM; AT = ACHIEVEMENT; SC = SECURITY; HD = HEDONISM; -0- = no stable domain. The notation B refers to the logit coefficient associated with each listed value within the complete model. Two-headed arrows highlight motivational domains in common between the two operationalizations.

Table VI-3—Comparison between Business Owners and Business Founders

It has been stated often in this dissertation that operationalizing entrepreneurs as business founders is theoretically more accurate than operationalizing them as business owners. This is consistent with Schumpeter's (1936) original description, in addition to the informed opinion of several recent theorists, notably Dyer (1994) and Schein (1994). It should therefore not be dismissed as coincidence that the distinction between business

founders and administrators is both stronger and richer than that between business owners and administrators. By "stronger" is meant the relative degree of predictive power, while "richer" refers to the total number of values retained in the final model. The latter difference is readily visible in the arrays of human values given in Table VI-3.

However, Table VI-3 paints another picture of this difference. Specifically, it will be noted that no value occurs in the models corresponding to both operationalizations. Rather, each list appears to be unique. On the surface, it might be suspected that business owners and business founders are very different, and indeed it would be true to assert that they are not quite the same in all respects. Upon closer inspection, however, it becomes apparent that the differences between these two varieties of entrepreneurs are less striking than it might at first have appeared, and more in line with basic associations with characteristic motivational domains. Values that are attributed to motivational domains in common between the two operationalizations are boxed and indicated by two-headed arrows, with their associated motivational domains indicated by a digraph, in order to highlight these similarities. To be sure, there remain some differences, which should be expected given the fact that the two operationalizations are not simple substitutes for one another, theoretically or practically, but the similarities are also salient when viewed from this perspective.

Why are the values selected (statistically) to represent the respective motivational domains so different? The answer lies in the nature of logistic-regression analysis and in the approach taken in this dissertation to determine the respective models. As explained before, logistic-regression analysis lists variables in terms of their partial contributions to the model. This is similar to OLS regression analysis. However, logistic-regression analysis attributes significance to each variable only insofar as it contributes significantly more to the model's

total predictive power. Unlike in OLS regression analysis, wherein the unique contribution of each variable is assessed simply in terms of holding all other variables constant, the MLE approach will in essence declare a variable utterly insignificant if its addition does not give the whole model measurably greater predictive power. Thus, two variables of almost equal explanatory power in an OLS model will both be rendered somewhat less influential by one another's presence, but their similar strength will be reflected in similar partial correlations. By contrast, if two variables have similar impact on an MLE model, the minutely stronger one will be declared to contribute significantly to the whole model's predictive power, but this will reduce the other one to the status of a useless appendage, with no acknowledgement of any significant contribution.

Utilizing the exploratory logistic-regression approach presented in this dissertation, which uses the stringent $p = .02$ cutoff to declare a variable worthy of retention, the level of redundancy in the resulting model is effectively zero. Two values with similar contributions to the total model consequently stand exceedingly little chance of both being retained. A less stringent model would, contrarily, often retain both, resulting in some obvious similarities between the models corresponding to the two operationalizations. Meanwhile, rather subtle differences between two values with a similar impact on the model will naturally result, as chance would have it, in one value's being retained in one model, while the other value is retained in the other. This evidently occurred in the present study.

Implications for Research, Business Policy, and Professional Development

The issues to be addressed within the domain of research implications are: (1) whether universal human values can be used as a valid proxy for entrepreneurship and administratorship in research; and (2) what other managerial styles could be researched

using universal human values. The issues to be addressed of relevance to business policy are: (1) how universal human values can be used in the recruitment and selection of entrepreneurially oriented managers; and (2) how universal human values can be used for tracking entrepreneurially oriented managers within the business environment. Lastly, an issue of relevance to professional development and counseling is how universal human values can be used to assist individuals in identifying whether they should seek administrative positions in large organizations or found their own business firms.

Research Implications

The foremost contribution of this research is the evidence demonstrating that the theory of universal human values offers a valid means of identifying contrasting groups in order to study them outside the contexts in which they are mathematically defined. For example, people who are entrepreneurially oriented can be identified whether they have already founded business enterprises or not, whether they are employed in large firms or not, and whether they are currently performing duties to their liking or not. This potential of universal human values to function across contexts was the essence of the title and substance of this dissertation. Research into correlates of entrepreneurial orientation in various contexts will benefit tremendously from the new tool generated in the present research. Such research might explore whether entrepreneurially oriented individuals are satisfied in a given type of working environment, or whether they are indeed generally in charge of new ventures or autonomous units as is often the intent of top management. Large firms may now track the career progress of their entrepreneurially oriented managers, verifying, for example, when and where in the organization they are emerging, and if and when they are leaving the organization in large numbers. The correlates of

entrepreneurship across industry, regional, and even national boundaries may be relevant as well. The validity of other proxies, *e.g.*, the assumption that autonomous-unit managers are intrapreneurs, can now be tested directly for future application.

Other managerial styles that may be researched using universal human values include, first and foremost, intrapreneurship, treated above under the label "entrepreneurially oriented." The specific array of values corresponding to intrapreneurs is expected to be some at variance with that which defines entrepreneurs. It may thus be feasible to identify the values makeup of intrapreneurs by first identifying those individuals in an organization that tend to score high in entrepreneurial values. Such individuals could then be coded and subsequently compared to a preexisting sample of entrepreneurs using procedures similar to those employed herein, which should reveal the more subtle differences in values between entrepreneurs and intrapreneurs. This effort can go a long way toward sharpening our understanding of precisely what motivates intrapreneurs and how similar to entrepreneurs and administrators they actually are.

Beyond intrapreneurship, other behavioral patterns that may be worth investigating for the sake of drawing out their subtle comparisons include income-substitution, foundership of nonprofit organizations, foundership of religious institutions, government administratorship, and perhaps some of the more common motivations associated with business firm foundership as revealed in the present study. The difference between business founders whose motivations for founding are "unmet need" and "investment," respectively, for example, may constitute subdimensions or subtypes of entrepreneurship. In those cases in which the differences between subtypes are so subtle that they are probably not distinct, logistic-regression analysis can be used to determine

the significance of the difference. Thus, it may be possible to develop profiles of various types of organizational founders, which could be of value in career counseling, as explored below.

The validity of the motivational domains in Schwartz's (1996) theory of universal human values should be explored in future research as well. The connection between values and needs is well established theoretically, but the failure of the present data to reveal relationships between certain motivational domains in their entirety and either entrepreneurship or administratorship seems to contradict intuition. A few specific values did appear to serve as markers for certain motivational domains sufficiently well to confirm half of the initial hypotheses, but it is unclear how to interpret the fact, and somewhat unsettling to observe, that most values in a motivational domain showed no significant relationship at all. It is possible that this is an artifact of Schwartz and Bilsky's (1990) approach involving the rating format instead of Rokeach's earlier (1973) ranking format. The rating format may permit valid differences to appear utterly nonsignificant simply because the respondents are not asked to distinguish among the values very much. The question of whether to norm the SVS prior to all analyses, or merely to undertake this procedure as necessary as was the case prior to the *t*-tests, should also be addressed. Among the present data, for example, there are several identifiable deviations from the instructions for filling out the surveys, such as a few surveys filled mostly with 6's and 7's, which can skew the results considerably. Norming may be necessary as a matter of routine, since the underlying structure of human values is, strictly speaking, their mutual prioritization, not the absolute strength of affect some respondents believe they hold for them.

Business Policy Implications

Universal human values may offer some potential for use in the recruitment and selection of entrepreneurially oriented managers. To be sure, selection tools can be difficult to incorporate into human-resource policy, and good practice suggests a combination of selection methods at work simultaneously. Meanwhile, there is the risk that even a values scale could be compromised by giving it an excessively important role to play in selection. Applicants who are aware that the scale is being used need do little more than research it to discover what the appropriate responses are. By contrast, young applicants for managerial positions may be a more viable target if the intent is to train them along a path leading to new-venture management and it can be assumed that young applicants have very little prior exposure to the selection device being used. An advantage afforded by the approach to creating a values-based selection device is that it can be made to resist race and gender effects by controlling for these subgroups in the development of the necessary weights. A disadvantage would be as already specified, if use of the instrument and its nature becomes common knowledge. Meanwhile, it is probably not difficult to identify response patterns that deviate in such bizarre fashion from expectations as to invalidate their results, such as would be the case with a respondent who knowingly assigns "7" to every "entrepreneurial" value and "-1" to every "administrative value. A simple statistical test based on actual, cumulative results could detect such an anomaly quite easily. Lastly, specific experiences and elements of education may take on greater importance in management recruitment if the research comes to show that such experiences or education impact entrepreneurial values in a positive way. This could have powerful implications for improving the quality of

business school graduates, as curricula are updated, perhaps with serious consideration given to specific courses outside the business school with the expectation that they will foment the appropriate values priorities within the students.

In contrast to their potential use as a selection tool, universal human values could more readily be used for tracking the status and movement of entrepreneurially oriented managers within the business environment. For example, large organizations could occasionally administer the Schwartz Value Survey or a variation thereof to its managerial workforce. The results would clearly reveal where entrepreneurially oriented managers tend to be located in the organization, or the general level of entrepreneurial orientation within the business enterprise as opposed to the average figures published in the literature. Likewise, they would demonstrate whether entrepreneurially oriented managers are leaving the firm after the first several years of employment instead of staying and contributing, and whether entrepreneurial orientation is being factored into the recruitment and selection process, whether for positions at the head of autonomous units or new-venture groups, or in the initial recruitment and selection process for entry-level managers. Thus, as a diagnostic device, a values-based instrument for measuring entrepreneurial orientation would make a substantive contribution to the organization. This would be analogous to the procedure used by Voss, Weaver, and Brazeal (1996) in the assessment of entrepreneurially oriented managers in Fortune 500 firms. The present findings would generally support the conclusions drawn from that analysis, which suggested, among other findings, that entrepreneurially oriented individuals tend to leave very large organizations after the first five or six years, at least within the time frame covered by that study (the late 1980's).

Implications for Professional Development

Universal human values can probably most readily be used for the purposes of assisting individuals in identifying whether they should seek to serve as administrators in large firms or found their own business enterprises. Further research is likely to uncover other possible avenues of employment as well, such as specific industries or nonbusiness sectors (*e.g.*, government or nonprofit). Career counselors, both in university settings and in private practice, could use the Schwartz Value Survey or suitable variations thereof to offer helpful guidance to individuals who are not yet sure of their best career course. For the past two decades, entrepreneurship has been glorified amply, such that many people now want to go into business for themselves. Many new entrants into college, for example, believe that by taking the prescribed array of coursework the task of founding a new business enterprise will become simple enough to manage, regardless of one's predispositions. Such people may do well to find out first whether they are inclined, on the basis of the composite of their previous experience, education, and training, to do well in the entrepreneur's environment. Other entrepreneurs may, contrarily, be completely unaware of their potential to start and run their own businesses. They may be very unhappy in their current work situations without ever considering what other possibilities might exist as alternatives, because of the stories they have heard or the images with which they have been confronted in the past. Such people may do well to discover whether they might, in fact, be happy as business owners or founders.

There is another facet to professional development that will be important to explore. This involves the issue of the mutability of values. Human values are known to change over time more slowly than attitudes, goals, intentions, and the other aspects of

personality that could fall within the same domains of Locke's (1991) motivation sequence model. One force that assuredly has an impact on values is education. Specifically, Voss, Weaver, and Brazeal (1996) showed that entrepreneurial values are associated with education. This raises a delicate point, namely, whether it would be feasible to craft an educational program with the intention of inducing a change in values in a specific direction. Even if research is conducted that verifies the specific impact of certain types of coursework on values that are important to entrepreneurship, it seems just as possible to change a person's values in the desired direction as it does to traumatize the person by attempting to do just that. Rokeach (1968) reported findings relating to the process of values modification, which essentially involves a specific procedure through which an individual is confronted with explicit knowledge of how his or her values deviate from those of a group with which he or she desires to be associated. Thus, values modification is feasible. Attempting to change values over the course of one's four-year college career, however, is a more difficult issue because we do not yet know what is safe, or which values can safely be targeted and which should be left alone. This completely unexplored domain of research may be critical to business schools and programs that seek to optimize their ability to produce successful entrepreneurs.

The study of universal human values has not enjoyed a favorable history in the mainstream of the management and marketing research community. We are told that values are little more than rationalizations to justify decision-making, which suggests that any of an infinite variety of alternative rationalizations could serve the same purpose. This raises one of the most fundamental research issues involving the study of universal human values. Specifically, human values are a qualitative appraisal of a certain variety

of consistency in human behavior. That is, there is much in human behavior that is not visibly consistent except on the basis of some abstract ideal. The literature exploring human values has yet to embrace fully this principle of behavioral consistency. To be sure, behavioral consistency is a long-standing assumption in the literature into human values, but its theoretical relationship with values has yet to be elaborated. The mechanism by which fluid behavioral patterns can be grasped so accurately by the human mind is a mystery as yet.

Limitations

The limitations that apply to the present study are of two types, *viz.*, those that may limit generalizability to a larger population and those that may limit the sensitivity of the model. The particular type of research presented in this dissertation demands a clear distinction between these. To be fair, it is important to acknowledge that the particular approach taken in this project to examining the phenomena under study mounts some notable resistance to these limitations. As discussed below, limitations to generalizability essentially involve null findings and are a consequence of the narrow specification of the sample. Limitations to sensitivity involve the completeness of the predictive model itself and are a consequence of the relatively small sample size.

Limitations to generalizability involve inferences we can draw from null findings. The lack of significant differences of a certain type between very similar groups cannot be taken to suggest that more disparate groups will likewise fail to evidence detectable differences. In fact, significant findings in a narrowly defined sample must be taken as conservative estimates of the findings that would emerge within a broader sample. The main limitation against generalizability is thus the narrow range of the sample, which was

heavily biased toward small business. It is therefore logical to expect the results to apply most directly to this sector. Failure of the scale variables (risk propensity, innovativeness, proactivity) to afford any appreciable distinguishing power is probably a consequence of the great similarities that exist among most people in the small-business sector. These similarities cannot be readily extended to large organizations. Studies that have reported differences on these measures between small-business entrepreneurs and administrators in large organizations are not called into question by the results of the present study.

Findings suggesting only a weak impact of job fit on job satisfaction may likewise be a product of strong similarities among respondents, perhaps revealed in the unusually high mean job satisfaction scores presented among the descriptive statistics. There may be relatively good job fit in the small-business sector for this to be an issue. Alternatively, the working relationships among managers and owners in the small-business sector may be much closer than in large organizations. If so, this could provide entrepreneurially oriented people in administrative positions plenty of opportunity to bring their creative dispositions to bear on the business, leaving them more satisfied on the whole.

Regarding limitations to sensitivity, a conservative approach was taken herein to avoid incorporating too many human values into the logistic-regression models intended to distinguish between entrepreneurs and administrators. The model was rendered as minimally sensitive as was thought justifiable (*cf.* the section in Chapter V on exploratory logistic-regression analysis). This approach was taken in order to avoid inadvertently presenting an exaggerated depiction of the predictive power of universal human values that would not prove adequately generalizable to other settings. Differences in human values are similar to most measures in that they are most salient with large sample sizes.

However, unlike reflective measures, they are not intelligible as an undifferentiated aggregate; rather, weights must be assigned to them based on their individual potency as discriminators between groups. Weights must be determined based on the strength of each value's contribution to a discriminant model, so the sheer number of values on a survey (the RVS has 36, the SVS 57) produces substantial risk of spurious findings. (The odds of observing one finding "significant" at $p = .01$ by chance in the list of 57 values is actually about one in 9.) In order to minimize the possibility of including spurious values in the logistic-regression models, a strict criterion of $p = .02$ was adopted by which to retain values. This reduced the sensitivity of the models by at least 10%, but the result was judged to offer the best possible generalizability. A more naïve approach, involving perhaps the retention of values superficially meeting a cutoff of $p = .05$ in the logistic-regression model, would have resulted in considerably greater apparent predictive power at the expense of real generalizability. Therefore, the only way to increase the sensitivity of the model is through the cumulation of more primary data.

The model's sensitivity may also be augmented by pursuing a certain degree of regional diversity in the cumulation of more data. For example, in a region in which entrepreneurship is ingrained in the local culture, some valid differences between entrepreneurs and administrators may be completely obscured. Subsequent applications of the resulting algorithm in another region, in which the entrepreneurial ethic is not ingrained in the local culture, may fail to detect some entrepreneurial predisposition that is nevertheless relevant. Thus, partialing out regional effects would appropriately eliminate confusion over whether the rating assigned a given value is the product of culture or entrepreneurial predisposition, but it would not necessarily reveal an additional

value associated with entrepreneurship if the cultures represented in the sample are not sufficiently differentiated on it.

Finally, behind the relatively small sample size lies an approach to maximizing response rate that created an impediment to comparing directly or combining the SVS and the scale variables, possibly to enhance predictability even further. As explained in Chapter 4, the sum of the number of items on the SVS, JPI-R subscales, the proactivity scale, the job satisfaction scale, and the exploratory scales (mission-oriented goal-setting and generalized self-efficacy) was 128 prior to including the page of demographic items. Given the paltry response rate typical of the entrepreneurship research, coupled with the fact that the research objective of this study was not to determine the direct statistical relationship between the SVS and scale variables, but rather to compare their ability to distinguish entrepreneurs from administrators, the initial sample was divided completely at random. Half of the sample received the SVS, while the other half received the scale variables. This approach may have optimized the response rate, but it also rendered the sample sizes relatively small. Moreover, as it often happens in statistical analyses, there may occasionally have been a reason to compare the SVS and scale variables directly, or even combine them into the same logistic-regression model for its exploratory value, but their being featured on separate surveys prevented this.

To reiterate in summary, limitations to generalizability involve null findings and are a consequence of the narrow specification of the sample. Limitations to sensitivity involve the completeness of the predictive model and are a consequence of the relatively small sample size. The foregoing discussion explained that null findings in the present study should not be extended with confidence to comparisons between entrepreneurs and

administrators defined by grosser criteria than those used herein because the present study sought a narrower delineation than most studies. Meanwhile, the sensitivity of the model presented herein was limited by the relatively small sample size and conservative approach to constructing it. These limitations offer some benefits, however. Since the principal intent of this project was to introduce an "entrepreneurship score" (the inverse of an "administratorship score"), it was important to maximize the generalizability of the model. Reasonably minimizing the model's sensitivity was undertaken with this in mind. Achieving approximately 80% predictive power under the stringent conditions applied in this study to generate the model assures a substantial degree of predictive power if this model is extended to other settings. Reinforcing the generalizability of the model is the narrowness itself of the sample. If 80% predictive power is possible using a highly conservative model and based on two groups whose only salient difference lies in one's ownership of a business firm or foundership history but who otherwise are drawn from the same population, then extending the model to other settings can be expected with confidence to afford substantial predictive power as well. Thus, the limitations balance one another out enough to prove beneficial to the generalizability of the entrepreneurship score.

It has been suggested in some circles that the intimate observation of ant colonies might constitute the essence of a thorough understanding of human, not just formic, nature. Ants, after all, do not have values. Upon careful reflection, it is the contention of the present author that they do indeed. It is revealed in the astonishing consistency with which they function. Ants do indeed have values, and they are administrators (except for the queen). They simply do not know it.

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MANAGERIAL AND PROFESSIONAL METHODS AND MOTIVATIONS

A Survey to Improve Managerial and Professional Assessment

PART I. FIRST OF TWO LISTS OF VALUES

Step 1. Scan the thirty values in this list (*this page only*). Find the one that is *most* important to you. Mark "6" in the space provided if it is *very important*, or "7" if it is *of supreme importance*, to you personally.

Step 2. Scan for values that are *opposed* to your personal values. If you find any, mark them "–1." If you do not find any, then just go on to the next step.

Step 3. Give each remaining value a score (from "0" to "6") to show its importance to you personally.

KEY	AS A **GUIDING PRINCIPLE** IN MY LIFE, this value is:								
	OPPOSED TO MY VALUES	not important			important			very important	OF *SUPREME* IMPORTANCE
	–1	0	1	2	3	4	5	6	7

1. ____ EQUALITY
(equal opportunity for all)
2. ____ INNER HARMONY
(at peace with myself)
3. ____ SOCIAL POWER
(control over others, dominance)
4. ____ PLEASURE
(gratification of desires)
5. ____ FREEDOM
(freedom of action and thought)
6. ____ A SPIRITUAL LIFE
(emphasis on spiritual not material matters)
7. ____ SENSE OF BELONGING
(feeling that others care about me)
8. ____ SOCIAL ORDER
(stability of society)
9. ____ AN EXCITING LIFE
(stimulating experiences)
10. ____ MEANING IN LIFE
(a purpose in life)
11. ____ POLITENESS
(courtesy, good manners)
12. ____ WEALTH
(material possessions, money)
13. ____ NATIONAL SECURITY
(protection of my nation from enemies)
14. ____ SELF RESPECT
(belief in one's own worth)
15. ____ RECIPROCATION OF FAVORS
(avoidance of indebtedness)
16. ____ CREATIVITY
(uniqueness, imagination)
17. ____ A WORLD AT PEACE
(free of war and conflict)
18. ____ RESPECT FOR TRADITION
(preservation of time-honored customs)
19. ____ MATURE LOVE
(deep emotional & spiritual intimacy)
20. ____ SELF-DISCIPLINE
(self-restraint, resistance to temptation)
21. ____ PRIVACY
(the right to have a private sphere)
22. ____ FAMILY SECURITY
(safety for loved ones)
23. ____ SOCIAL RECOGNITION
(respect, approval by others)
24. ____ UNITY WITH NATURE
(fitting into nature)
25. ____ A VARIED LIFE
(filled with challenge, novelty and change)
26. ____ WISDOM
(a mature understanding of life)
27. ____ AUTHORITY
(the right to lead or command)
28. ____ TRUE FRIENDSHIP
(close, supportive friends)
29. ____ A WORLD OF BEAUTY
(beauty of nature and the arts)
30. ____ SOCIAL JUSTICE
(correcting injustice, care for the weak)

PART II. SECOND LIST OF VALUES

Instructions. Same approach as before (*this page only*). First choose the *most important* value ("6"or "7"), then find any that are *opposed* to your personal values ("–1"), finally rate the remaining values ("0" to "6").

KEY	AS A GUIDING PRINCIPLE IN MY LIFE, this value is:								
	OPPOSED TO MY VALUES	not important			important			very important	OF SUPREME IMPORTANCE
	–1	0	1	2	3	4	5	6	7

1. ____ INDEPENDENT (self-reliant, self-sufficient)
2. ____ MODERATE (avoiding extremes of feeling & action)
3. ____ LOYAL (faithful to my friends, group)
4. ____ AMBITIOUS (hard-working, aspiring)
5. ____ BROADMINDED (tolerant of different ideas and beliefs)
6. ____ HUMBLE (modest, self-effacing)
7. ____ DARING (seeking adventure, risk)
8. ____ PROTECTING THE ENVIRONMENT (preserving nature)
9. ____ INFLUENTIAL (having an impact on people and events)
10. ____ HONORING OF PARENTS AND ELDERS (showing respect)
11. ____ CHOOSING OWN GOALS (selecting own purposes)
12. ____ HEALTHY (not being sick physically or mentally)
13. ____ CAPABLE (competent, effective, efficient)
14. ____ ACCEPTING MY PORTION IN LIFE (submitting to life's circumstances)
15. ____ HONEST (genuine, sincere)
16. ____ PRESERVING MY PUBLIC IMAGE (protecting my "face")
17. ____ OBEDIENT (dutiful, meeting obligations)
18. ____ INTELLIGENT (logical, thinking)
19. ____ HELPFUL (working for the welfare of others)
20. ____ ENJOYING LIFE (enjoying food, sex, leisure, etc.)
21. ____ DEVOUT (holding to religious faith & belief)
22. ____ RESPONSIBLE (dependable, reliable)
23. ____ CURIOUS (interested in everything, exploring)
24. ____ FORGIVING (willing to pardon others)
25. ____ SUCCESSFUL (achieving goals)
26. ____ CLEAN (neat, tidy)
27. ____ SELF-INDULGENT (doing pleasant things)

Note: ***Even if you are working in a non-business organization or working alone, your responses to the following items about your experience in business are important to this project.***

PART III. SATISFACTION

Instructions. Clearly mark the best number.

HOW YOU FEEL ABOUT YOUR JOB	strongly *dis*agree		neither agree nor disagree		strongly agree
1. I feel fairly well satisfied with my present job.	①	②	③	④	⑤
2. Most days I am enthusiastic about my work	①	②	③	④	⑤
3. Each day of work seems like it will never end.	①	②	③	④	⑤
4. I find real enjoyment in my work.	①	②	③	④	⑤
5. I consider my job rather unpleasant.	①	②	③	④	⑤

PART IV. YOUR EXPERIENCE

Reminder: ***Even if you are working in a non-business organization or working alone, your responses to the following items about your experience in business are important to this project.***

Instructions. Fill in the blank or check the appropriate box.

1. *Your* total number of years as a manager or business owner—*anywhere you've worked.* ....._____
   —INCLUDE SELF-EMPLOYMENT ONLY IF SOMEONE WORKED FOR YOU DURING THAT TIME—
2. How large is your organization or agency? *(Number of employees—rough estimate.)* ..... _____
3. What kind of organization is it? ..... ☐ business ☐ non-profit ☐ government ☐ church ☐ volunteer
   ☐ self-employed ☐ other _____
4. What is your title or function? ..... ☐ Owner ☐ CEO ☐ CFO ☐ COO ☐ CIO
   ☐ President ☐ Vice President (for _____)
   ☐ Plant or Unit Manager ☐ Unit or Shift Supervisor
   ☐ Other _____
5. Are you currently, or have you in the past, been manager of an *autonomous unit, strategic business unit*, or similar operating group in a business corporation? ..... ☐ no ☐ yes
6. Have you ever *started or helped to found* a business organization? ..... ☐ no ☐ yes, this one
   ☐ yes, but *not this one*
7. Have you ever purchased a business or franchise? ..... ☐ no ☐ yes
8. If you answered "yes" to either 6 or 7, please tell us why you made that decision:
   ☐ to maintain income ☐ for the challenge ☐ to be my own boss ☐ other_____

PART V. A FEW DEMOGRAPHIC ITEMS

1. Your *age* (in years)..... _____
2. The highest *educational level* you have completed (high school, B.A., M.S., etc.): ..... _____
3. Your *gender*..... ☐ male ☐ female
4. Please let us know where you are from.
   ☐ United States (if so, please indicate ethnicity at right):
   ☐ Other country:_____
   ☐ African American ("Black")
   ☐ Asian American ("Oriental")
   ☐ European American ("Caucasian"/"White")
   ☐ Latin American (Hispanic)
   ☐ other _____
5. Approximately what was your individual income last year? (Please check one.)

☐	☐	☐	☐	☐	☐	☐	☐	☐
less than $25,000	$25,000 to $49,999	$50,000 to $74,999	$75,000 to $99,999	$100,000 to $124,999	$125,000 to $149,999	$150,000 to $174,999	$175,000 to $199,999	$200,000 or greater

6. Briefly, what does your organization do? _____
   (If self-employed, what do you do?)

Thank you for completing this survey.

Please fold this survey as it was originally folded, place in the stamped envelope so my address shows through the window, seal, and mail.

MANAGERIAL AND PROFESSIONAL METHODS AND MOTIVATIONS

A Survey to Improve Managerial and Professional Assessment

PART I. GETTING STARTED, AND HOW YOU SEE YOURSELF

*Note: **Even if you are working in a non-business organization or working alone, your responses to the following items about your experience in business are important to this project.***

Instructions. Clearly mark the best number.

WHAT DOES IT TAKE TO RUN A BUSINESS?	*not* important at all		neither important nor unimportant		extremely important
1. A carefully written mission statement.	①	②	③	④	⑤
2. A statement of the firm's vision for the future.	①	②	③	④	⑤
3. Challenging goals.	①	②	③	④	⑤
4. Specific, detailed objectives.	①	②	③	④	⑤
5. Measurable indicators of how well the business is doing.	①	②	③	④	⑤
6. A statement of the firm's values.	①	②	③	④	⑤
7. Contingency plans.	①	②	③	④	⑤
8. Joint goal-setting among the firm's managers.	①	②	③	④	⑤

HOW YOU FEEL ABOUT YOUR JOB	strongly *dis*agree		neither agree nor disagree		strongly agree
1. I feel fairly well satisfied with my present job.	①	②	③	④	⑤
2. Most days I am enthusiastic about my work.	①	②	③	④	⑤
3. Each day of work seems like it will never end.	①	②	③	④	⑤
4. I find real enjoyment in my work.	①	②	③	④	⑤
5. I consider my job rather unpleasant.	①	②	③	④	⑤

TAKING ACTION	*not at all* true	barely true	moderately true	exactly true
1. I spend time identifying long-range goals for myself.	①	②	③	④
2. I feel in charge of making things happen.	①	②	③	④
3. I feel responsible for my own life.	①	②	③	④
4. I feel driven by my personal values.	①	②	③	④
5. I am driven by a sense of purpose.	①	②	③	④
6. I am able to choose my own actions.	①	②	③	④
7. I focus my efforts on things that I can control.	①	②	③	④
8. There are abundant opportunities that await me.	①	②	③	④

SOLVING PROBLEMS	*not at all* true	barely true	moderately true	exactly true
1. I can always manage to solve difficult problems if I try hard enough.	①	②	③	④
2. If someone opposes me, I can find the ways and means to get what I want.	①	②	③	④
3. It is easy for me to stick to my aims and accomplish my goals.	①	②	③	④
4. I am confident that I could deal efficiently with unexpected events.	①	②	③	④
5. Thanks to my resourcefulness, I know how to handle unforeseen situations.	①	②	③	④
6. I can solve most problems if I invest the necessary effort.	①	②	③	④
7. I can remain calm when facing difficulties by relying on my coping abilities.	①	②	③	④
8. When I am confronted with a problem, I can usually find several solutions.	①	②	③	④
9. If I am in trouble, I can usually think of a solution.	①	②	③	④
10. I can usually handle whatever comes my way.	①	②	③	④

PART II. NEGOTIATING CHALLENGES

Instructions. Circle either "FALSE" or "TRUE." *Please be sure to complete both columns.*

1.	I hope to develop a new technique in my field of work.	FALSE TRUE	21.	People often ask me for help in creative activities.	FALSE TRUE
2.	I prefer work that requires original thinking.	FALSE TRUE	22.	Original ideas have occurred to me at almost any time of the day or night.	FALSE TRUE
3.	The thought of investing in stocks excites me.	FALSE TRUE	23.	I like to experiment with various ways of doing the same thing.	FALSE TRUE
4.	In games I usually "go for broke" rather than playing it safe.	FALSE TRUE	24.	I wouldn't know where to begin if I had to design a boat.	FALSE TRUE
5.	I try to avoid situations that have uncertain outcomes.	FALSE TRUE	25.	I seldom bother to think of original ways of doing a task.	FALSE TRUE
6.	I often surprise people with my novel ideas.	FALSE TRUE	26.	I would dislike having to think of new toys and games for children.	FALSE TRUE
7.	I would participate only in business undertakings that are relatively certain.	FALSE TRUE	27.	I like a job that demands skill and practice rather than inventiveness.	FALSE TRUE
8.	I don't usually contribute many new ideas to a project.	FALSE TRUE	28.	I often try to invent new uses for everyday objects.	FALSE TRUE
9.	I would prefer a stable position with a moderate salary to one with a higher salary but less security.	FALSE TRUE	29.	I enjoy taking risks.	FALSE TRUE
10.	I enjoy thinking of original plans on which to work.	FALSE TRUE	30.	I usually continue doing a new job in exactly the way it was taught to me.	FALSE TRUE
11.	If the possible reward were very high, I would not hesitate putting my money into a new business that could fail.	FALSE TRUE	31.	I am always seeking new ways to look at things.	FALSE TRUE
12.	I do not have an especially vivid imagination.	FALSE TRUE	32.	I rarely make even small bets.	FALSE TRUE
13.	I would enjoy bluffing my way into an exclusive club or private party.	FALSE TRUE	33.	I think I would enjoy almost any type of gambling.	FALSE TRUE
14.	I consider security an important element in every aspect of my life.	FALSE TRUE	34.	I might be at a loss if I had to design a new book cover.	FALSE TRUE
15.	Taking risks does not bother me if the gains involved are high.	FALSE TRUE	35.	I don't really think of myself as a creative person.	FALSE TRUE
16.	If I invested any money in stocks, it would probably only be in safe stocks from large, well-known companies.	FALSE TRUE	36.	I probably would not take the chance of borrowing money for a business deal even if it might be profitable.	FALSE TRUE
17.	I would enjoy the chance to make up plots for television programs.	FALSE TRUE	37.	When I want something, I'll sometimes go out on a limb to get it.	FALSE TRUE
18.	I rarely, if ever, take risks when there is another alternative.	FALSE TRUE	38.	I obtain more satisfaction from mastering a skill than coming up with a new idea.	FALSE TRUE
19.	People have told me that I seem to enjoy taking chances.	FALSE TRUE	39.	I would enjoy the challenge of a project that could mean either a promotion or loss of a job.	FALSE TRUE
20.	Skin diving in the ocean would be much too dangerous for me.	FALSE TRUE	40.	When in school, I rarely took the chance of bluffing my way through an assignment.	FALSE TRUE

PART IV. YOUR EXPERIENCE

Reminder: ***Even if you are working in a non-business organization or working alone, your responses to the following items about your experience in business are important to this project.***

Instructions. Fill in the blank or check the appropriate box.

1. *Your* total number of years as a manager or business owner—*anywhere you've worked.* ....._____
   —INCLUDE SELF-EMPLOYMENT ONLY IF SOMEONE WORKED FOR YOU DURING THAT TIME—
2. How large is your organization or agency? *(Number of employees—rough estimate.)* ..... _____
3. What kind of organization is it? ..... ☐ business ☐ non-profit ☐ government ☐ church ☐ volunteer
   ☐ self-employed ☐ other _____
4. What is your title or function? ..... ☐ Owner ☐ CEO ☐ CFO ☐ COO ☐ CIO
   ☐ President ☐ Vice President (for _____)
   ☐ Plant or Unit Manager ☐ Unit or Shift Supervisor
   ☐ Other _____
5. Are you currently, or have you in the past, been manager of an *autonomous unit, strategic business unit*, or similar operating group in a business corporation? ..... ☐ no ☐ yes
6. Have you ever *started or helped to found* a business organization? ..... ☐ no ☐ yes, this one
   ☐ yes, but *not this one*
7. Have you ever purchased a business or franchise? ..... ☐ no ☐ yes
8. If you answered "yes" to either 6 or 7, please tell us why you made that decision:
   ☐ to maintain income ☐ for the challenge ☐ to be my own boss ☐ other_____

PART V. A FEW DEMOGRAPHIC ITEMS

1. Your *age* (in years)..... _____
2. The highest *educational level* you have completed (high school, B.A., M.S., etc.): ..... _____
3. Your *gender*..... ☐ male ☐ female
4. Please let us know where you are from.
   ☐ United States (if so, please indicate ethnicity at right):
   ☐ Other country:_____
   ☐ African American ("Black")
   ☐ Asian American ("Oriental")
   ☐ European American ("Caucasian"/"White")
   ☐ Latin American (Hispanic)
   ☐ other _____
5. Approximately what was your individual income last year? (Please check one.)

☐	☐	☐	☐	☐	☐	☐	☐	☐
less than $25,000	$25,000 to $49,999	$50,000 to $74,999	$75,000 to $99,999	$100,000 to $124,999	$125,000 to $149,999	$150,000 to $174,999	$175,000 to $199,999	$200,000 or greater

6. Briefly, what does your organization do? _____
   (If self-employed, what do you do?)

Thank you for completing this survey.

Please fold this survey as it was originally folded, place in the stamped envelope so my address shows through the window, seal, and mail.

Appendix C—Sample Cover Letter

February 9, 2001

«Name»
«Firm»
«Street»
«City» «Zip»

Dear «Title»:

As a management researcher and former Army officer, I am greatly interested in ways to help people in responsible positions in business and the public sector get their jobs done more efficiently. I am presently conducting a nationwide study of business owners, managers, and professionals to identify differences in their motivations and approaches to working. I would greatly appreciate your assistance in this regard.

Through your insights, opinions, and experiences, as well as those of others like you, I hope to determine how leaders *choose* to do what they do and, more essentially, how they *discover* the best fit between what they do and who they are. Just as importantly, my objective is to identify how to help *all organizations* find the right people for the most critical challenges that need to be met.

Having had to command and coordinate a million things at once in my Army units, I know how valuable your time is, but please take about 10-15 minutes to complete the enclosed survey. I unfortunately can only afford to send out a limited number of surveys. So your response counts—it is *critical* to my study.

Your name appeared in a random sample of firms in your area. However, please do not put your name on the survey. **Your anonymity is guaranteed.** Neither your survey nor your envelope is distinguishable from others. All responses will be aggregated, and only composite results will be produced. To make the process convenient, I have enclosed a postage-paid reply envelope.

As a token of my sincere thanks for completing the survey, I will send you an Executive Summary of the results, along with a remarkable new career questionnaire that can help people choose whether to pursue jobs in large firms or go it alone as entrepreneurs. You should find both very interesting, informative, and helpful to your practice. Just enclose your business card with your survey or, to preserve your anonymity, you may drop your card in a separate envelope (or e-mail me: richard-voss@webtv.net).

I hope that you can take a few minutes from your busy schedule, complete the survey, and return it to me. Again, your cooperation is *vital* to my study. If you have any questions about the survey, please feel free to contact me at (870) 575-8596. Thank you in advance for your assistance—it is greatly appreciated.

Respectfully,

Richard S. Voss
Professor, Management

P.S. If you feel that the survey does not apply to you, *please* let me know by writing "N/A" on the survey and sending it back. I am doing this research at my own expense, so *every* survey counts. Thanks again!