Philosophy as the Missing Link Between Values and Behavior

Richard E. Boyatzis
Angela J. Murphy
Jane V. Wheeler

WP 97-3(3a)

Copyright
Department of Organizational Behavior
Weatherhead School of Management
Case Western Reserve University
Cleveland OH 44106-7235
e-mail: rmh2@po.cwru.edu
Philosophy as a Missing Link Between Values and Behavior

Richard E. Boyatzis, Angela J. Murphy, and Jane V. Wheeler
Department of Organizational Behavior Weatherhead School of Management Case Western Reserve University 10900 Euclid Avenue
Cleveland, OH 44106-7235

For correspondence, please contact the first author at the above address or TEL: 216-368-2055, FAX: 216-368-4785, Email:
reb2@po.cwru.edu
Summary

Despite the persistence of social scientists, evaluating the relationship between values and behavior has not yielded clear results. Here, a model is proposed to conceptualize and measure a person's operating philosophy. This assesses a different level of the value structure within personality from separate values or clusters of values; it is the evaluative structure within which a person's values exist. Building on major philosophies, such as utilitarianism or humanism, the model assumes that a person has a predominant Pragmatic, Intellectual, or Human Operating Philosophy. In a sample of 801 subjects, each of these operating philosophies was found to have significant associations with a variety of the expected behaviors demonstrated in work and graduate school situations, such as initiative and empathy, as well as learning styles, skills, and flexibility. Interpretation of the results is offered as a way to understand the relationship between a person's values or beliefs and their behavior and approach to learning.
Philosophy as a Missing Link Between Values and Behavior

Throughout this century, social scientists have sought to understand people's values as well as interpret the relationship between values and behavior (Allport, Vernon, & Lindzey, 1960; Argyris & Schon, 1982; Kahle, 1996; Kluckhohn, 1951; Kluckhohn & Strodtbeck, 1961; Rokeach, 1973; Schwartz, 1992). Although there has been some success, there is also frustration at the lack of insight (Hechter, 1993). Behavioral inconsistency with values has been so prevalent that everyone has likely heard parents tell their children, "Do as I say, not as I do!"

The inconclusive results may have resulted from problems in measurement or conceptual definitions. Lack of conscious awareness of one’s values may result from infrequent reflection about those values (Kolb, 1991). Social desirability may overwhelm the individual’s preference and contribute to inaccuracy in self-reported values (Merton, 1968).

The absence of realistic consequences in responding to multiple-choice or forced-choice questionnaires as to a person’s preferences or values may contribute to this elusive relationship. Differential exposure to conflicts between values may confuse a person’s evaluation of the strength of their attitudes, values, or preferences. For example, if you have not had to make mortgage payments you may not have experienced "family security" as a real issue. Elements of a specific self-image may inhibit the person’s ability to
realistically describe their values, especially when the values do not appear logically consistent with that self-image.

Conceptually, at the individual level, a value is a discrete belief about something or someone (Rokeach, 1973). A value can be an absolute dichotomous belief, as well as a conditional belief. Individual values can be described as being terminal (i.e., representing desirable end states) or instrumental (i.e., means to accomplishing a goal) (Rokeach, 1973). Values can be expressive (Hechter, 1993). An attitude is said to be a collection of values or beliefs bounded within a particular situation, or can be a value that transcends many situations (Rokeach, 1973).

Conceptual confusion in research on values and behavior may have resulted from differences in the level of analysis. For example, Rokeach (1973) studied individual values and how a person assesses each value with regard to others. Kahle’s List of Values built on this approach. It has shown substantial association with a variety of behavior (e.g., people who value warm relationships have many friends), in particular for sales people and consumer choices (Kahle, Beatty, & Homer, 1986). But many of the findings are associations with attitudes or prefer-ences. For example, Beatty, Kahle, & Homer (1991) established a link between elements in the List of Values and the expression of the desirability of gift-giving. It still leaves the question as to whether the respondents would actually give money.
Some researchers attempted to study the relationship of values and behavior by measuring clusters of associated values, such as values related to safety or health (Feather, 1995; Holland, 1985, 1996; Schwartz, 1992, 1996; Sagiv & Schwartz, 1995). Schwartz (1996) contended that research must examine clusters of values, not single ones, because the individual has personally integrated value systems. The Schwartz Value Survey organized sets of values around ten underlying motivational themes. While the "separate values" and the "value clusters" approach to the study of values have, on the whole, substantial association (Schwartz, 1992) with each other, they have not provided significant predictive power in accounting for behavioral differences.

In addition, by examining a value or cluster of related values, the belief of the individual may have been described with too much specificity. This amount of detailed assessment of one's values might not allow for alternate behavioral manifestations. That is, when someone finds themselves in various situations with divergent stimuli, the person may choose to enact their values with different behavior. The result might be an internal sense of consistency between one's values and behavior but an external lack of consistency apparent to others. Without the person's internal rationale or explanation for the variations, the nature of the relationship is lost. This suggests that the link between values and behavior may require a different level of analysis. Rokeach (1980), in reflecting on decades of research, said, "The
apparent inconsistency can be more persuasively dispelled by supplying the missing data that we typically neglect to elicit from respondents about all the relevant global attitudes that may be activated" (pg. 269).

Individual values can be combined to form a value system. A value system can be said to be "an enduring organization of beliefs concerning preferable modes of conduct or end-states of existence along a continuum of relative importance" (Rokeach, 1973, p. 5). Value orientations have been defined as a value system applied to common human problems, or situations, with a directive component (Kluckhohn, 1951). In this way, value orientations can shape the way in which people decide upon goals and how to pursue them, how they evaluate their progress, and what they consider to be appropriate behavior. They may provide the "global attitudes" which Rokeach (1980) indicated were needed to understand the apparent inconsistencies in findings about values and behavior.

Kluckhohn (1951) developed this concept of a value orientation as a thematic cluster of beliefs to characterize cultures as being hierarchical, collectivist, or individualistic. Early research focused on cultural variations in dealing with similar dilemmas in understanding human nature, man-nature interactions, time orientation, and relational conflicts (Kluckhohn & Strodtebeck, 1961). It helped to explain how a person might act in a social context. Hofstede (1980) extended this conceptual definition into the
study of organizations across cultural boundaries. Unfortunately, while this level of analysis yielded findings at the cultural and organizational levels, it did not carry the same comparative benefits in the study of individual differences. It did not probe beneath the cultural assumptions and allow for individual variations.

Holland’s typology (1985, 1996) of Realistic, Investigative, Artistic, Social, Enterprising, and Conventional “expressed aspirations and interests” described personality types. Although not necessarily intended to assess value orientations, these could be thought to describe thematically organized value preferences in the way that Schwartz’s (1996) ten clusters of values organized around motivational themes also do. The themes were constructed from factor analysis of individuals’ preferences from attitude statements. The clusters of related behaviors were organized around personality variables, not belief or a value system.

Although the concept of value orientation seemed to result in better predictions to behavior, the frameworks either focused on what was valued (e.g., through value clusters such as Holland’s or Schwartz’s) or did not appear to capture appropriate organizing principles to understand individual behavior (e.g., Kluckhohn’s and Hofstede’s). To discover a closer link between a person’s values, beliefs and their behavior, examining a person’s philosophy or at least their operating philosophy might be needed. A person’s
operating philosophy assesses how you value or determine value.

The field of philosophy has not attempted to measure philosophical beliefs at the individual level. Several psychologists have examined the development of moral reasoning (Gilligan, 1982; Kohlberg, 1981), but these efforts focused on developmental progress. Since a person's philosophy transcends any specific social context, it seems important in understanding, explaining, or predicting a person's behavior as it relates to their values and beliefs. Based on a philosophical and theoretical framework, constructing variations of operating philosophy could address questions such as, "How does a person act across various social settings? What does a person do or how does she think about establishing the value of things, activities, and others?"

Three Primary Operating Philosophies

Classical and current philosophy suggests three major clusters of philosophical systems. These philosophies appear likely to affect people's behavior, thoughts, and feelings in different and distinctive ways. They describe the extent to which a person would be: Pragmatic; Intellectual; or Humanistic.

The Pragmatic Operating Philosophy was theoretically constructed to reflect an integration of the philosophies of "pragmatism" (Dewey, 1917; James, 1978; Peirce, 1931; Rorty,
1991), "consequentialism" (Johnson, 1991; Pettit, 1993), "instrumentalism" (Dewey, 1917), and "utilitarianism" (Bentham, 1843; Mill, 1991). Philosophers have claimed both major and subtle distinctions among these philosophical concepts. Yet, their central theme appears to be a belief that determination of utility provides a measure of worth of an idea, effort, person, or organization. The judgment as to the relative output, or consequence, in the context of the input or invested effort is the key to the perceived value, with the desire to maximize output given the input.

Growing from this philosophy is an interest in measuring things to determine relative output to input ratios. The interest results in a tendency to use concepts easily quantified as measures. A person with a dominant Pragmatic Operating Philosophy will gravitate toward financial measures not because money is the center of her life. But rather, people will gravitate toward financial measures because they are easily applied to many aspects of life and work.

The philosophical frameworks contributing to the Pragmatic Operating Philosophy tend to emphasize the individual and her self-determination in social action. Free will, or in James' (1978) terms conscious volition, discarded determinism and claimed that the individual was in charge of her life. Since people determine the utility of things and events, this philosophy assumes that they choose actions to maximize benefit. They are, therefore, responsible for the events of their lives.
The emphasis on the individual (i.e., individualism) as linked to financial well-being may appear to be an artifact of the 1950's or 1980's. One can contend it grew from the dominant popular definition of the "good life" during the 1950's. The reliance on materialistic evidence comes from the underlying need to compare input and output. If easily attainable measures of non-financial aspects of life were available and widely used, we would observe different behavioral preoccupations of these people. We can predict that for those with a Pragmatic Operating Philosophy, availability of measurement devices for blood pressure, pulse, and percentage of body fat should be incorporated into a focus on health because of the ease in calculating utility.

The Intellectual Operating Philosophy emerged from "rationalism" (Descartes, 1955; Leibniz, 1989; Spinoza, 1985), and the various philosophers claiming rationalism as their etiological root, such as Hegel (1974) and Habermas (1971), as well as the philosophical structuralists (Levi-Strauss, 1967; Piaget, 1960), and postmodernists (Nietzsche, 1968). According to these philosophers, reality in its highest form is perception of a model that explains it. There is an attempt to make sense of the world by constructing an image of it and how it works. This also provides some emotional security or certainty in establishing the basis for predictions about the future. Often referred to as "rights-based rationalists," proponents of the Intellectual Operating Philosophy may assess the worth of an activity, person, or effort in terms of its
consistency with a set of guidelines. Whether these are moral statements, like the Ten Commandments, ethical codes of conduct such as the Hippocratic Oath, or the tenets of the scientific method found in empirical positivism, the underlying philosophical orientation stresses reason and intellectual mastery.

Striving for intellectual independence, people with a predominant Intellectual Operating Philosophy rely on logic in making decisions. These people typically believe that truths may be apprehended through the intellect primarily in either of two forms, modernist or postmodernist. One is a belief that what is known is universal and objective, that we can know things by means of reason, not the senses. Hence, laws, principles, facts, and information take on an importance greater than either outcomes or relationships. The other is a belief that what is known to an individual is a personal, contextually relative, social construction. Although the person's affect is cited as important, understanding the individual's creation of her own laws, facts, and theories are viewed as the source of insight about her.

The Human Operating Philosophy emerged from philosophical theories such as "communitarianism" (Brundage, 1996), "hermeneutics" (Gadamer, 1977), "humanism" (Petrarch, 1969; Sellars, 1933), and "collectivism" (Burlingame, 1940; Chamberlin, 1937). The premise of these philosophies is that close, personal relationships are the context for meaning in life. An importance placed on people-in-general is often
associated with an Intel-lectual Operating Philosophy; people-in-general are an abstract conceptualization of earth’s inhabitants. People with a pre-dominant Human Operating Philosophy are assumed to be committed to human values, particularly those that stress the affirmation of the individual and relationships as the highest “good.”

Often characterized in western thought as a Mediterranean or Latin cultural perspective, the family and close friends are seen as more important than other relationships. The value of an activity is assessed in terms of its impact on a person’s close relations. Similarly, loyalty and consistency in these relationships are valued traits -- more valued than mastery of a job outside of these relationships.

The sacrifice of the few for the many is often rooted in pragmatic arguments. From the perspective of the Human Operating Philosophy, each person’s life and her relationships are considered important. The feelings and actions of a person in a relationship is considered more important than the relative utility or adherence to a rule or code of ethics which might evaluate or judge an activity or event.

Hypotheses were developed predicting how people with each of these operating philosophies would approach new situations, learning, and act. Hypothesis I: People with a dominant Pragmatic Operating Philosophy would approach learning from an active, experimental perspective and demonstrate behavior from the Goal and Action Management, such as taking initiative, planning, and seeking efficiency. Hypothesis II: People with a
dominant Intellectual Operating Philosophy would approach learning from an abstract and reflective perspective and demonstrate behavior from the Analytic Reasoning cluster, such as developing causal maps, identifying themes or patterns in seemingly unrelated data or information. Hypothesis III: People with a dominant Human Operating Philosophy would approach learning from a concrete, interpersonally grounded perspective and demonstrate behavior from the People Management cluster, such as being sensitive to others, building networks of relationships, and developing others. The specific behaviors in each cluster are described later in this paper (Boyatzis, 1982; Boyatzis, Goleman, & Rhee, in press).

METHODS

The research reported here is the compilation of several studies. In each case, subjects' responses on a questionnaire assessing their operating philosophy was collected along with demographic information, their performance on various tests assessing their approach to learning, questionnaires, and behavioral assessments.

The Instruments

Subjects completed the Philosophical Orientation Questionnaire, described later in this paper. To assess the relationship between operating philosophy and approach to learning, subsamples of the subjects also completed: the Learning Style Inventory, the Learning Skills Profile, and the
Adaptive Style Inventory. To assess the relationship between operating philosophy and behavior, subsamples of the subjects also completed: the Critical Incident Interview, the Group Discussion Exercise, and the Self Assessment Questionnaire.

The Learning Style Inventory measures a person's preferred way of learning (Kolb, 1984). Based on experiential learning theory, a person describes herself in terms of four learning styles: Concrete Experience, Reflective Observation, Abstract Conceptualization, and Active Experimentation. Reliability and validity information on each of the scales in the instruments used in this study is available in the references cited.

The Learning Skills Profile (Boyatzis & Kolb, 1991 and 1995) assesses a person's skills related to occupational performance organized in terms of experiential learning theory, as assessed in the Learning Style and Adaptive Style Inventories. The person sorts seventy-two cards, each describing an activity or task, into one of seven piles indicative of different degrees of skill mastery. There are twelve skill scales: Leadership, Relationship, and Help which are related to Concrete Experience; Sense Making, Information Gathering, and Information Analysis which are related to Reflective Observation; Theory, Quantitative, and Technology which are related to Abstract Conceptualization; and Goal Setting, Action, and Initiative which are related to Active Experimentation.
The Adaptive Style Inventory is the third part of a system of tests assessing learning dispositions and skills (Mainemelis, Boyatzis, & Kolb, 1999). It assesses the degree to which a person is able to respond with flexibility or adapt to the stimuli available in specific types of situations. In this sense, it assesses one's learning adaptability. A person shows scores in Concrete Experience Flexibility, Reflective Observation Flexibility, Abstract Conceptualization Flexibility, and Active Experimentation Flexibility.

The Critical Incident Interview (Boyatzis, 1982 and 1998; Flanagan, 1954; McClelland, 1998; Spencer & Spencer, 1993) is an audiotaped interview where the respondent is asked to describe, in detail, three or four episodes when she felt either effective or ineffective at work. The audiotapes are coded by advanced doctoral students or faculty specifically trained to meet an interrater reliability of 80% or better on seventeen abilities, or competencies, related to effectiveness in managerial and professional occupations. The Goal and Action Management Cluster (Boyatzis, Goleman, & Rhee in press) consists of Efficiency Orientation, Planning, Initiative, Persuasiveness, Self-confidence, Flexibility. The People Management Cluster consists of Empathy, Networking, Negotiating, Group Management, Developing Others, and Social Objectivity. The Analytic Reasoning Cluster consists of Systems Thinking, Pattern Recognition, and Quantitative Analysis. Each ability is coded as present or absent in each episode and summed for the entire interview. Self-Confidence
is coded once for the entire interview. The "codebook" used for this analysis and method of coding is shown in Boyatzis (1995 and 1998).

The Group Discussion Exercise is a forty-five minute videotaped exercise in which five to eight people attempt to solve three management problems facing a hypothetical company of which they are a part. As with the interview, coders examine each tape for the presence or absence of the fifteen behaviors mentioned above for each of the three problems. The scores for each ability are summed. Again, Self-Confidence is coded once for the entire videotaped session.

The Self-Assessment Questionnaire is a questionnaire in which the respondent is asked to describe the frequency of her behavioral demonstration of the fifteen behaviors (Boyatzis, 1995; Boyatzis, Goleman, & Rhee, in press).

**Development of the Personal Orientation Questionnaire**

To reflect each of the three groups of philosophical thought, the first author developed lists of beliefs, attitudes, descriptive statements, and behavioral choices of people in work and social situations. These were sorted into those that appeared more likely to come from people expressing Pragmatic, Intellectual, or Human Operating Philosophies as theoretically constructed. Alternative ways to complete a thought or preference were selected as items to reflect each of the three operating philosophies. With some of the sentence stems, it was observed that a person with a dominant operating
philosophy might give different but related answers. In these situations, several closely related variations were identified and offered as alternate expressions of the same response.

For example, one of the questions in the Philosophical Orientation Questionnaire is: "I think of my value, or worth, in terms of: (a) My relationships (e.g., family, friends); OR (b) My ideas or ability to invent new concepts or ability to analyze things; OR (c) My financial net worth or income."

Choice (a) reflects the Human Operating Philosophy; it focuses on a person's close, personal relationships. Choice (b) reflects the Intellectual Operating Philosophy; it focuses on intellectual processes. Choice (c) reflects the Pragmatic Operating Philosophy; it focuses on an easily measurable description of my "worth."

An assumption was made that each individual may have some values and attitudes characteristic of each of these three operating philosophies, but they would vary in relative dominance within the individual. It was decided to make the sentence completion choices as ordinal properties of a person's response. Ratings would have allowed full equivalence of all three choices, or full denial of all three (Lewin & Zwany, 1976). Mere selection of one "best" response would not capture the relative weight the person may assign to each response.

The respondent is asked to rank order each of the three available choices. The ranks of the items reflecting each
value orientation were summed and then subtracted from the maximum possible score of 60 to yield positive scales. In early development of the instrument, clinical trials and pilot testing resulted in elimination of items and responses, as well as reformulation. Early pilot testing on a sample of several hundred respondents led to further editing. Copies of the Philosophical Orientation Questionnaire and scoring are available for researchers on request from the first author.

The Sample

The sample of 801 people in this study came from four sub-samples. The largest group was 678 students entering an MBA program from 1992 through 1994 who took the Philosophical Orientation Questionnaire as part of a required course called Managerial Assessment and Development (Boyatzis, 1994), and granted permission to the authors to use their data in research. Another group was 48 Executive MBA students, and advanced professionals (e.g., lawyers and physicians) enrolled in an advanced management program. A third subsample was 31 human resource professionals and executives working for multinational corporations in Italy. The fourth subsample was 44 advanced professionals and partners of a major consulting firm.

The overall sample averaged 29 years old (SD=6.43), with a median of 27 and range of 20-57 years old. Females were 32% of the sample, and males were 68%. Of the sample, 12% were non-native English speakers. All of the instruments were not
used in every course or workshop. Available data varied for each of the instruments as follows: the videotaped Group Discussion Exercise, n=487, from the 1992 and 1993 MBA subsample; the audiotaped Critical Incident Interview, n=497, from the MBA, Executive MBA, and Professional Fellows Program subsamples; the Learning Style Inventory, n=715, the Learning Skills Profile, n=724, and the Adaptive Style Inventory, n=482, were from all subsamples; the Self-Assessment of Abilities, n=454 from the MBA subsample.

Results

Scale Characteristics

Each of the three scales of the Philosophical Orientation Questionnaire were normally distributed, as shown in Table 1, with acceptable internal scale reliability as indicated by Cronbach's alpha's of: .750 for Pragmatic Operating Philosophy; .700 for Intellectual Operating Philosophy; and .788 for Human Operating Philosophy.

-------------
insert Table 1 about here
-------------

Relationship to Learning Style, Flexibility, and Skills

Correlations with the Learning Style Inventory, Adaptive Style Inventory, and Learning Skills Profile are shown in Table 2. Many correlations were calculated to examine the pattern of association with each operating philosophy. Mere statistical significance of a correlation is not a sufficient
criteria. All associations reported in Tables 2 and 3 have statistical significance with a "p" value of less than .001 with two-tailed tests, unless otherwise stated. In addition, power analysis results are presented using an alpha=.01, one-tailed (Cohen, 1988; Kraemer & Thiemann, 1987) appropriate to the hypothesized effects predicted and sample sizes.

Pragmatic Operating Philosophy was positively correlated with Active Experimentation from the Learning Style Inventory (75% power). It was positively correlated with Active Experimentation Flexibility (95% power) and negatively with Reflective Observation Flexibility from the Adaptive Style Inventory. Regarding Learning Skills, Pragmatic Operating Philosophy was positively correlated with Action Skills (85% power) and negatively with Relationship and Helping Skills.

Intellectual Operating Philosophy was positively correlated with Abstract Conceptualization (99% power) and negatively with Active Experimentation from the Learning Style Inventory. It was positively correlated with Abstract Conceptualization Flexibility (99% power) and Reflective Observation Flexibility (90% power), and negatively correlated with Concrete Experience Flexibility from the Adaptive Style Inventory. Regarding Learning Skills, Intellectual Operating Philosophy was positively correlated with Sense-Making, Information Analysis, Theory Building, and Use of Technology Skills (all at 99% power), and Quantitative Analysis (90% power), and negatively correlated with Relationship Skills.
Human Operating Philosophy was positively correlated with Concrete Experience (99% power) and negatively with Abstract Conceptualization from the Learning Style Inventory. It was positively correlated with Concrete Experience Flexibility (95% power) and negatively with Abstract Conceptualization Flexibility from the Adaptive Style Inventory. Regarding Learning Skills, Human Operating Philosophy was positively correlated with Relationship and Helping Skills (99% power), and negatively with Information Analysis, Theory Building, Quantitative Analysis, and Use of Technology Skills.

------------------

insert Table 2 about here

------------------

**Relationship to Behavioral Abilities**

Even though the learning Skills Profile assesses learning skills which have been validated as measuring corresponding behavior (Boyatzis & Kolb, 1991, 1995), three additional instruments were used to assess behavioral abilities: the coded, audiotaped Critical Incident Interview and videotaped Group Discussion Exercise, and the Self Assessment Questionnaire.

Pragmatic Operating Philosophy showed a positive correlation with Efficiency Orientation on the Self-Assessment Questionnaire ($r = .14$, $n=448$, $p < .001$, 75% power), the Group Discussion Exercise and Critical Incident Interview ($r = .11$, $n=482$, $p < .02$ and $r = .11$, $n=497$, $p < .01$, both with 55% power). As noted earlier, the power analysis were conducted using $a = .01$
for a one-tailed test to assess the power of the associations in the hypothesized direction; the correlations were computed as two-tailed tests to emphasize reasonable effect size.

Pragmatic Operating Philosophy correlated positively with Planning from the Group Discussion Exercise ($r = .19$, $n=482$, $p<.001$, 95% power). It also correlated positively with Persuasiveness from the Critical Incident Interview ($r = .11$, $n=497$, $p<.02$, 55% power) and Self-confidence from the Self-Assessment Questionnaire ($r = .13$, $n=448$, $p<.01$, 65% power). It correlated negatively with Empathy and Social Objectivity from the Self-Assessment Questionnaire ($r = -.21$ and $r = -.27$, respectively, $n=448$, $p<.001$).

Intellectual Operating Philosophy correlated positively with Pattern Recognition form the Self-Assessment Questionnaire ($r = .20$, $n=448$, $p<.001$, 98% power). It also correlated negatively with Networking from the Self-Assessment Questionnaire ($r = -.14$, $n=448$, $p<.001$).

Human Operating Philosophy correlated positively with Empathy and Social Objectivity from the Self-Assessment Questionnaire ($r = .23$, $n=448$, $p<.001$, 99% power and $r = .19$, $n=448$, $p<.001$, 95% power, respectively). It correlated positively with Group Management from the Critical Incident Interview ($r = .11$, $n=497$, $p<.02$, 55% power). It correlated negatively with Efficiency Orientation on the Critical Incident Interview and Self-Assessment Questionnaire ($r = -.16$, $n=497$, $p<.001$ and $r = -.13$, $n=448$, $p<.001$, respectively) and Self-confidence, Systems Thinking, and Pattern Recognition
from the Self-Assessment Questionnaire ($r = -.15$, $r = -.15$, $r = -.21$, respectively, $n = 448$, $p < .001$). Human Operating Philosophy correlated positively with Initiative from the Critical Incident Interview ($r = .11$, $n = 497$, $p < .01$). All other correlations were below the desired significance level or effect size.

**Regression Analyses**

Multiple regressions were calculated with each operating philosophy as dependent variables to further examine the patterns shown through correlation analysis. Although the sample sizes were sufficient for the analyses, only the Learning Skills Profile, Self-Assessment Questionnaire, Learning Style Inventory, and Adaptive Style Inventory variables were normally distributed. The Critical incident Interview and Group Discussion exercise coded behaviors are interval scores of frequency, but have distributions suggesting that they statistically are more similar to ordinal variables than interval ones. Nonetheless, all 65 of the variables were entered into three stepwise regressions with pairwise deletion of missing data. The results, as shown in Table 3, yielded multiple $R$'s of $.42$, $.52$, and $.54$, respectively for Pragmatic, Intellectual, and Human Operating Philosophy.

-------------

insert Table 3 about here

-------------
Initiative and Action Skills from the Learning Skills Profile, and Planning from the Group Discussion Exercise positively predicted shared variance in Pragmatic Operating Philosophy. Helping Skills from the Learning Skills Profile and Social Objectivity from the Self-Assessment Questionnaire negatively predicted shared variance in Pragmatic Operating Philosophy.

Abstract Conceptualization from the Learning Style Inventory, Theory Building Skills from the Learning Skills Profile, Planning from the Critical Incident Interview, Pattern Recognition and Developing Others from the Self-Assessment Questionnaire positively predicted shared variance in Intellectual Operating Philosophy. Relationship and Quantitative Skills from the Learning Skills Profile, Networking from the Critical Incident Interview, and Planning from the Group Discussion Exercise and Self-Assessment Questionnaire negatively predicted shared variance in Intellectual Operating Philosophy.

Helping and Relationship Skills from the Learning Skills Profile, Group Management and Negotiating from the Critical Incident Interview, and Social Objectivity from the Self-Assessment Questionnaire positively predicted shared variance in Human Operating Philosophy. Abstract Conceptualization from the Learning Style Inventory, Initiative, Information Analysis, and Technology Skills from the Learning Skills Profile, Efficiency Orientation from the Critical Incident Interview, and Negotiating from the Self-Assessment
Questionnaire negatively predicted shared variance in Human Operating Philosophy.

**Demographic and Criterion Variables**

Total and Quantitative scores on the Graduate Management Admissions Test were positively correlated with Intellectual Operating Philosophy (r=.140 and r=.129, n=670, p<.001, respectively). Males were significantly higher on Pragmatic Operating Philosophy and lower on Human Operating Philosophy than females, (t=-3.90, p<.001, and t=5.17, P<.001, respectively). Analysis of the changes in scores from entering to graduating from a two-year MBA program of 115 MBAs showed no significant change on any of the three operating philosophies.

**Discussion**

To summarize, Pragmatic Operating Philosophy was positively correlated with three of the five of the active learning style, flexibility, and skills hypothesized. It showed some association with four of the six other behavioral abilities in the Goal and Action Management cluster. Intellectual Operating Philosophy was positively correlated with eight of the ten abstract and reflective learning style, flexibility, and skills variables hypothesized. It showed some association with one of the three other behavioral abilities in the Analytic Reasoning cluster. Human Operating Philosophy was positively correlated with four of the five concrete
learning style, flexibility, and skills variables hypothesized. It showed some association with three of the six other behavioral abilities in the People Management cluster. Even the negative correlations to each operating philosophy were theoretically and methodologically consistent with the hypotheses and the association of variables expected with ranking instruments. The results showed partial support for each of the three hypotheses. Although the separate correlations were often small, the pattern of association was, overall, in the predicted direction.

Pragmatic Operating Philosophy is associated with an active experimentation approach to learning. It is associated with an active behavioral style organizing one's actions and efforts to make a difference and have an impact on the world around her, with relatively less regard for the interpersonal domain of the world around her. Intellectual Operating Philosophy is associated with an abstract and reflective approach to learning. It is positively associated with analytic reasoning, or cognitive abilities and negatively associated with interpersonal and implementation abilities. Human Operating Philosophy is associated with an interpersonal approach to learning. It is positively associated with interpersonal abilities and negatively associated with analytic reasoning and implementation abilities.

These results provide a substantial pattern of association among operating philosophy and learning and behaviors in terms of first-order correlations and the
regression analyses. The pattern appears more compelling than most attempts at relating specific values or value clusters to behavior. As Rokeach (1980) suggested, basing the framework on underlying philosophy may be the larger context needed. These operating philosophies are rooted in philosophical thought, not merely empirically discovered clusters of values. The organizing principle of a person's belief system should provide meaning, easier interpretation, and more consistent predictability than other frameworks. Additional research is needed to explore these claims.

The framework presented offers an alternative to the value orientations reported by Kluckhohn (1951), Kluckhohn and Strodtbeck (1961), and Hofstede (1980), which pursue value themes at the cultural and organizational levels. At the individual level, in addition to Rokeach's (1973, 1980) work, the Allport, Vernon, Lindzey (1960) Study of Values, Kahle's (1996) List of Values, Schwartz's (1992) ten motivational themes, and Holland's (1985, 1996) occupational and personality interest themes are the best examples of value themes in the literature.

When the three operating philosophies presented in this article are compared to the value clusters in the Allport, Vernon, Lindzey (1960) Study of Values, their Theoretical cluster and possibly their Religious cluster seems related to Intellectual Operating Philosophy. Their Economic value cluster appears related to the Pragmatic Operating Philosophy. Their Social value cluster has a resemblance to the Human
Operating Philosophy, but also appears to incorporate a larger theme of social meaning not consistent with this operating philosophy. While this amount of conceptual overlap suggests high construct validity between the two frameworks and corresponding measures, Allport et. al. (1960) postulate that the value clusters should organize around two triads which implies further differentiation from the operating philosophies in this article.

Each of Holland's (1985, 1996) themes is "a person's expressed aspirations and inventoried interests...[when] viewed as reliable and valid assessments...can be organized to yield efficient predictions of subsequent choices, and choices are in turn related to actual occupational entry" (1996, pg. 400). Holland's Realistic and Enterprising themes appear related to Pragmatic Operating Philosophy, the Investigative theme appears related to Intellectual Operating Philosophy, and the Social theme appears related to Human Operating Philosophy. This suggests that his conceptualization of personality types and interest themes have a close to the operating philosophies presented here. It is expected that a person's interests, occupational preferences and choices would be related to their values and value systems. The conceptual framework of operating philosophy may provide a more fundamental structure within the personality than these earlier constructs.

A person's operating philosophy should not change easily nor within relatively brief periods, if at all. Lubinski,
Schmidt, and Benbow (1996) found a high degree of stability over twenty years in dominant and highly related clusters of values using the Allport, Vernon, Lindzey (1960) Study of Values. The operating philosophies appeared stable over two years by the lack of change in one of the subsamples during a graduate program.
References


Dewey, J. (Ed.). (1917) *Creative intelligence: essays in the*


Olson & M.P. Zanna, M.P. (eds.). *The psychology of values: The Ontario symposium, vol. 8*. Mahwah, NJ: Lawrence


Table 1. Descriptive Data and Intercorrelation of Operating Philosophies

<table>
<thead>
<tr>
<th></th>
<th>Pragmatic Operating Philosophy</th>
<th>Intellectual Operating Philosophy</th>
<th>Human Operating Philosophy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pragmatic Philosophy</td>
<td></td>
<td>-.40*</td>
<td>-.59*</td>
</tr>
<tr>
<td>Intellectual Philosophy</td>
<td></td>
<td></td>
<td>-.50*</td>
</tr>
<tr>
<td>Cronbach’s alpha</td>
<td>.750</td>
<td>.700</td>
<td>.788</td>
</tr>
<tr>
<td>Mean Score</td>
<td>16.1</td>
<td>19.2</td>
<td>24.8</td>
</tr>
<tr>
<td>Standard Deviation</td>
<td>6.18</td>
<td>5.79</td>
<td>6.56</td>
</tr>
<tr>
<td>Median Score</td>
<td>16</td>
<td>19</td>
<td>25</td>
</tr>
<tr>
<td>Range</td>
<td>1-34</td>
<td>2-37</td>
<td>6-40</td>
</tr>
<tr>
<td>Skew</td>
<td>.386</td>
<td>-.047</td>
<td>-.400</td>
</tr>
<tr>
<td>Kurtosis</td>
<td>-.297</td>
<td>-.145</td>
<td>-.202</td>
</tr>
</tbody>
</table>

Note: n=801 for intercorrelations and description of the distribution of scores; n=790 for Cronbach’s alpha, 11 subjects did not have item scores reported, merely scale totals.

Note: Statistical significance: *, p<.001
<table>
<thead>
<tr>
<th>Instrument</th>
<th>Variable</th>
<th>Pragmatic</th>
<th>Intell.</th>
<th>Human</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning</td>
<td>Concrete Experience</td>
<td>-.11</td>
<td>-.11</td>
<td>.20</td>
</tr>
<tr>
<td>Style</td>
<td>Reflective Observation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Inventory</td>
<td>Abstract Conceptualization</td>
<td>.29</td>
<td>-.29</td>
<td></td>
</tr>
<tr>
<td>(n=715)</td>
<td>Active Experimentation</td>
<td>.11</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>.17</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adaptive</td>
<td>Concrete Exp. Flexibility</td>
<td>-.21</td>
<td>.17</td>
<td></td>
</tr>
<tr>
<td>Style</td>
<td>Reflective Obs. Flexibility</td>
<td>-.19</td>
<td>.16</td>
<td></td>
</tr>
<tr>
<td>Inventory</td>
<td>Abstract Conc. Flexibility</td>
<td>.22</td>
<td>-.17</td>
<td></td>
</tr>
<tr>
<td>(n=482)</td>
<td>Active Exp. Flexibility</td>
<td>.18</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning</td>
<td>Leadership Skills</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Skills</td>
<td>Relationship Skills</td>
<td>-.18</td>
<td>-.13</td>
<td>.28</td>
</tr>
<tr>
<td>Profile</td>
<td>Helping Skills</td>
<td>-.21</td>
<td></td>
<td>.26</td>
</tr>
<tr>
<td>(n=724)</td>
<td>Sense Making Skills</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Information Gathering Skills</td>
<td>-.11</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Information Analysis Skills</td>
<td></td>
<td>.19</td>
<td>-.20</td>
</tr>
<tr>
<td></td>
<td>Theory Building Skills</td>
<td></td>
<td>.31</td>
<td>-.25</td>
</tr>
<tr>
<td></td>
<td>Quantitative Analysis Skills</td>
<td></td>
<td>.14</td>
<td>-.21</td>
</tr>
<tr>
<td></td>
<td>Technology Skills</td>
<td></td>
<td>.19</td>
<td>-.18</td>
</tr>
<tr>
<td></td>
<td>Goal Setting Skills</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Action Skills</td>
<td></td>
<td>.13</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Initiative Skills</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Statistical significance p<.001
<table>
<thead>
<tr>
<th>Variable</th>
<th>Pragmatic</th>
<th></th>
<th></th>
<th>Intellectual</th>
<th></th>
<th></th>
<th></th>
<th>Human</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning Style Inventory:</td>
<td>Beta</td>
<td>T</td>
<td>Sig.</td>
<td>Beta</td>
<td>T</td>
<td>Sig.</td>
<td>Beta</td>
<td>T</td>
<td>Sig.</td>
<td></td>
</tr>
<tr>
<td>Abstract Conceptualization</td>
<td>.28</td>
<td>5.77</td>
<td>.00</td>
<td>-.18</td>
<td>-3.88</td>
<td>.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Learning Skills Profile:</td>
<td>Action</td>
<td>.15</td>
<td>2.95</td>
<td>.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helping</td>
<td>-.21</td>
<td>-4.20</td>
<td>.00</td>
<td>.13</td>
<td>2.36</td>
<td>.02</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initiative</td>
<td>.15</td>
<td>2.81</td>
<td>.01</td>
<td>-.18</td>
<td>-3.73</td>
<td>.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relationships</td>
<td>-.12</td>
<td>-2.76</td>
<td>.01</td>
<td>.18</td>
<td>3.39</td>
<td>.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Theory</td>
<td>.28</td>
<td>4.61</td>
<td>.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quantitative</td>
<td>-.23</td>
<td>-4.00</td>
<td>.00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Info Analysis</td>
<td>-.10</td>
<td>-1.95</td>
<td>.05</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Planning
Self-Assessment Questionnaire
Negotiating

<table>
<thead>
<tr>
<th></th>
<th>-10</th>
<th>-2.29</th>
<th>.02</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-17</td>
<td>-3.66</td>
<td>.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Metric</th>
<th>Planning</th>
<th>Negotiating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiple R, R²</td>
<td>.423, .18</td>
<td>.52, .27</td>
</tr>
<tr>
<td>Adj. R²</td>
<td>.17</td>
<td>.25</td>
</tr>
<tr>
<td>Standard Error</td>
<td>5.35</td>
<td>4.90</td>
</tr>
<tr>
<td>ANOVA df</td>
<td>5, 404</td>
<td>10, 399</td>
</tr>
<tr>
<td>F (p)</td>
<td>17.57 (.00)</td>
<td>14.45 (.00)</td>
</tr>
</tbody>
</table>