

Predicting Organization Development Consulting Competence from the Myers-Briggs Type Indicator and Stage of Ego Development*

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A 77-item Consulting Competence Survey was developed and tested for reliability and validity. During a six-month course designed to help members of a corporate quality staff develop organization development (OD) skills, 64 trainees were each assessed by two of their peers using this instrument. The trainees were also assessed by two trainers using a five-item trainer rating instrument. Two dependent measures—peer rating and trainer rating—were used to test hypotheses about the predictive validity of the eight Myers-Briggs Type Indicator (MBTI) scales and the Washington University Sentence Completion Test (SCT) of ego development. Only the intuition scale of the MBTI and the stage of ego development were found to predict consulting competence as rated by the subjects' peers and trainers. When these two measures were entered into the same structural equation, only stage of ego development was found to remain a significant, positive predictor. The study's implications for research and for selecting and training OD consultants are discussed.

INTRODUCTION

Although the profession of organization development (OD) has been around for more than 30 years, the nature, assessment, and prediction of OD consulting competence remain problematic and controversial. In its formative years, prerequisites for OD competence were often described in terms of personal characteristics and traits (e.g., Bennis, 1969; Lippitt, Watson, & Westley, 1958). In recent years it has become fashionable to describe OD competence as a matter of skills

and techniques (e.g., Varney, 1985). This shift has occurred because years of research into the effectiveness of people in any sort of role has rarely found that any personality or character trait consistently predicts competence in the role. One result has been the elaboration of sets of behaviors—rather than traits—as predictors of individual effectiveness. The more sophisticated “competency models” match behaviors

*The authors acknowledge Tom Pitman for his services as the “second consultant” on the project cited in this article, Jenna Hardy for her research assistance, and Clayton Alderfer for his helpful editing.

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The Journal of Applied Behavioral Science
Volume 26, Number 3, pages 337-357.
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ISSN: 0021-8863

with situations and offer contingency theories. Yet most of the scholars who have studied effectiveness have noted that some people seem to get better results than do others using the same behaviors. Spehn (1985) described how the U.S. Army tried to isolate the reasons for the effectiveness of successful organizational effectiveness consultants by having researchers follow some of these consultants and noting what they did. This effort failed to produce any useful findings. Spehn observed that "their success seemed to rely more on the kind of people they were than on the tasks they actually did. Consultants performing the same tasks produce vastly different results" (1985, pp. 404-405).

The complexities involved in describing the competent OD consultant result, in part, from the complexities of OD consulting itself. The role of the OD consultant is to coach, advise, facilitate, and help integrate a planned change process in a large system without having any formal authority in that system. To succeed, such consultants must be able to enter ambiguous and often anxiety-filled situations and avoid getting ensnared in the projections and transferences that others seek to place on them. This in turn requires consultants to not introject the clients' fears and hopes and to keep from projecting their own. Consultants must be able to make significant contact with others within short time periods and to develop trusting relations quickly. They must be concerned with tasks and productivity, but not take control from others. They need to see a larger vision of any change process and understand how immediate concerns and issues present opportunities for furthering that vision. They must be able to make fairly quick diagnoses on multiple levels and to intervene at different system levels in significant ways while maintaining entry in (i.e., not being asked to leave) the system.

To perform these tasks, OD consultants require more than a bag of tricks. Skills and techniques obviously determine a consultant's effectiveness, but to focus on them exclusively is to ignore decades of anecdotal evidence about

the role of personality in determining success. Indeed, most of the literature on OD consultants' competencies describes their personal characteristics. Few of these descriptions are based on empirical research, however; most are based on anecdotes and experience in the field. The major theme running through the literature is that OD consultants must have a high degree of self-awareness (e.g., Argyris, 1973; Bennis, 1969; Hunsaker, 1985; Huse, 1975; Lippitt et al., 1958; Neilsen, 1984). In addition, effective OD consultants are described as having the ability to analyze situations from multiple perspectives (Hunsaker, 1985; Neilsen, 1984; Varney, 1985), being open to learning from experience (Argyris, 1973; Chenault, 1986; Huse, 1975), having a high tolerance for ambiguity (Chenault, 1986; Dyer, 1986), operating from a personally generated set of values (Bennis, 1966; Margulies & Raia, 1978), having highly developed interpersonal skills, particularly empathy (Bennis, 1969; Margulies & Raia, 1978; Varney, 1985), and having the capacity for high-level moral reasoning (Dyer, 1986; Lippitt et al., 1958).

Despite the success of efforts to predict behavior through environmental determinism, studies based on interactional psychology show that individual traits also influence which behaviors are used and how they are used (Schneider, 1983; Wood & Bandura, 1989). Mandler (1982) has argued that models of individual characteristics that include how people think (cognitive schemata framing the situation and providing differential attention), how they view themselves (self-referent phenomena influencing perceptions of abilities), and/or the distribution of values within a motivational frame (which affect the choice of means and ends and influence the use of internal and external cues) are the models one should use to predict behavior in a range of situations.

This article reports a study using two complex models of individual characteristics based on Mandler's prescriptions as a means of predicting which change consultants would likely be successful. For this study we developed a peer

survey of behaviors indicative of effective change-oriented consulting practice. We believe this is the first rigorous, pen-and-paper instrument for assessing OD competence that is based on past empirical research and shows statistical reliability and validity. We tested the ability of the Myers-Briggs Type Indicator and the Washington University Sentence Completion Test of ego development to predict OD consulting competence. As discussed below, these measures are based on two different theories with strong conceptual links to the descriptions found in the literature of the character traits of effective OD consultants.

THE STUDY

Measuring OD Consulting Competence

Assessing the competence of individual OD consultants is no easy task. Simply asking whether a particular consultation has been successful is difficult, for we have no ready guidelines for determining success in a long-term change effort. Asking clients for their opinions is useful, but without extensive (and expensive) interviews one has difficulty determining whether good evaluations truly reflect good consulting or just friendly relations. Similarly, a consultant might be a very effective change agent yet create feelings of discomfort in members of the client system. Measures of success based on outcomes, while undoubtedly useful, are open to various distortions having little to do with the consultants' competence, especially in cases involving internal consultants who must manage a host of projects both self-generated and delegated to them. For example, the client's competence is probably the single best predictor of consultant's chances of success in a particular setting.

We sought to find a way to determine which OD consultants were most likely to be successful over time in a variety of settings. We decided that the best method would be to get the opinions of informed observers on behavioral indicators

that were derived by observing the behaviors of successful consultants. Our consulting competence survey was adapted from studies of internal consultant effectiveness done by McBer and Company for the U.S. Army's Organizational Effectiveness School. Using the McBer method of building models through behavioral event interviewing of high and low performers, 33 subclusters of behaviors of competent consultants were identified and grouped into 9 consulting competencies (Cullen, Kemp, & Rossini, 1981; Spehn, 1985). The nine competencies are defined as follows.

Diagnostic Skills: Collecting and organizing information in different ways and helping clients understand its meaning.

Personal Influence: Using an appropriate influence style while maintaining sensitivity to interpersonal style and opportunities for high impact.

Professional Self-Image: Having a realistic sense of what a consultant can and cannot do, drawing on other resources, and working to develop others.

Problem Solving: Recognizing the root causes of problems and identifying the appropriate system level for intervention.

Results-Oriented Style: Conducting oneself in a way that helps achieve timely, measurable outcomes.

Tactical Flexibility: Recognizing and using alternative actions to achieve one's purposes.

Strong Self-Concept: Trusting oneself, having the ability to take action, and being able to put aside one's own needs and fears to objectively look at oneself and others.

Use of Theory: Knowing organizational and change theory, and demonstrating an ability to relate this theory to practice.

Development of Common Understanding: Seeking clarity among clients and oneself regarding the issues and expectations of all concerned.

The resulting Consulting Competence Survey is designed to measure how frequently a

consultant employs appropriate consulting behaviors. We examine the reliability and validity of this measure when discussing the study's results farther below. The following section addresses whether specific character traits of consultants are more likely to lead them to use these behaviors effectively in OD consultations, and presents eight hypotheses we developed.

The Myers-Briggs Type Indicator and Consulting Competence

Loosely based on Jung's theory of personality types (Jung, 1971), the Myers-Briggs Type Indicator (MBTI) (Myers, 1975, 1980) is one of the most popular personality assessment tools currently in use. Between 1942 and 1980, the MBTI was used in more than 500 studies (McCaulley, 1981), and this figure has probably more than doubled by now. It is also used extensively in team building and other OD interventions. Its popularity within OD and the widely held view that extraverted, intuitive thinking or feeling types make the best OD consultants motivated our interest in testing the relationship between the MBTI and consulting competence.

The MBTI assesses individual preferences along four continua that form the basis of one's psychological type:

- the "attitude" of extraversion versus introversion,
- the "function" of sensing versus intuition,
- the "function" of thinking versus feeling, and
- the "preference" for judging or perceiving.

Determinations of one's preferences along each continuum are combined into one overall type, resulting in the individual's being assigned to 1 of 16 type categories.

The MBTI has been used in two different ways to study character differences. One way involves all 16 different types, the other the eight different preferences. Unfortunately, the sample for our study was too small to make meaningful generalizations about the 16 types. Instead, we reviewed the research literature to

match the characteristics associated with each of the eight preferences with the characteristics of competent consultants we obtained from our review, and then generated hypotheses as to which functions could be associated with OD consulting competence.

The **extraversion-introversion** preference refers to one's general orientation toward life and focus of cognition. Although each day everyone exhibits some behaviors associated with extraversion and introversion, those with strong preferences for either of these attitudes habitually adopt that attitude and develop the characteristics associated with it. Extraverts attend to the external world of people and actions, gaining energy by and interacting with others in their environment. They are action oriented, want to act on their environments, and affirm or increase its importance. Introverts attend to the internal world of ideas, concepts, and experiences detached from occurrences. They gain energy by turning inward and are drained by social interaction in a way not experienced by extraverts (Keirsey & Bates, 1984).

Extraverts' comfort with the self and the environment (Myers & McCaulley, 1985), their desire to act on the environment (Thorne, 1987), and their comfort in interacting with people (Carlson & Levy, 1973) suggest that extraverts should be more effective OD consultants than should introverts. This notion is bolstered by introverts' tendency to stick with the familiar and mishandle the novel (Myers, 1980), their desire to work alone (Stricker & Ross, 1964), and their relatively higher levels of avoidance and deference to others (Myers & McCaulley, 1985). One study of change-oriented consultants, however, reported no relationship between a preference for extraversion and effective OD consulting (Hamilton, 1988).

Hypothesis 1a: Extraversion is positively related to change-oriented consulting competence.

Hypothesis 1b: Introversion is negatively related to change-oriented consulting

competence.

The **sensing-intuition** preference refers to fundamentally different ways of perception. Those with a preference for sensing focus more on direct perceptions received through their sense organs and approach matters in a factual, realistic way. Concrete aspects, literal details, and practicality thus are important to them (Myers & McCaulley, 1985). In contrast, those who prefer intuition rely less on sensory information and focus on the whole, the gestalt, and latent possibilities, meanings, and relationships.

Correlations have been found between intuition and enjoyment of the novel, positive attitudes toward change (Myers, 1975), and the ability to see beyond present concrete reality to possible futures (Myers & McCaulley, 1985). Those with a preference for intuition enjoy solving problems and paying attention to the overall context in which a problem lies (Steckroth, Slocum, & Sims, 1980). They tend to be open to the potential in people and situations, and to invest themselves enthusiastically in that potential (Carlson & Levy, 1973). This suggests that a preference for intuition should be associated with effective change consulting. Moreover, those with a preference for sensing have a high need for order and lack tolerance for ambiguous problems (Steckroth et al., 1980). Hamilton (1988) found a strong relationship between intuition and effective OD consulting.

Hypothesis 2a: Intuition is positively related to change-oriented consulting competence.

Hypothesis 2b: Sensing is negatively related to change-oriented consulting competence.

The **thinking-feeling** preference refers to one's preferred manner of organizing and judging experiences and making decisions. Those with a preference for thinking rely on cognitive processes to put their experiences into clarifying order. They link ideas according to abstract concepts and logic, and in making decisions they are more concerned with the general principles and precedents involved than with the

unique aspects of a specific situation. Those with a preference for feeling organize experience according to personal, subjective values. They attend more to internal promptings than to external data, and in making judgments are concerned with what is unique to each particular case.

Each preference has advantages and disadvantages for OD consultants. Feeling correlates with emotional empathy and good communication skills (Myers & McCaulley, 1985), which are obvious assets for effective consulting. But feeling also correlates with a tendency to avoid or accommodate conflict (Kilmann & Thomas, 1975), which is necessary in change consulting. The consultant with a preference for thinking has a broad vision (Myers, 1980) and can organize data and develop conceptual models and logical plans (Myers & McCaulley, 1985). But thinking correlates with a lack empathy and lack of awareness of the unique circumstances in decision-making situations. Thus, we expected to find no pattern indicating a relationship between a preference for thinking versus feeling and effective change consulting. Hamilton (1988) reported none in her study.

Hypothesis 3: No significant relationship exists between a preference for thinking or feeling and change-oriented consulting competence.

The **judging-perceiving** preference relates to an individual's orientation toward dealing with the world. Those who prefer judging generally desire to make decisions and achieve completion, and those who prefer perception generally desire to avoid closure, keep their options open, and remain flexible (Keirseey & Bates, 1984). Those with a preference for judging believe that life should be willed and decided. They show great concern for making decisions, planning operations, and organizing activities. Those with a preference for perceiving regard life as something to be experienced and understood. They prefer to keep their plans and options as open as possible so that no valuable experience or opportunity for enlightenment will be missed

(Myers, 1980).

A preference for perceiving appears to have several advantages for change consulting. Research has found correlations between perceiving and flexibility, imagination, adaptability, curiosity and openness to new ideas, willingness to live in ambiguity and to remain open to possibilities (Myers & McCaulley, 1985). Judging correlates with a desire for quick completion and a failure to appreciate or take advantage of unplanned, unexpected, or incidental events (Myers, 1980), which can make significant change difficult to accomplish. Their bias for action, however, may make such individuals more successful "business consultants." This distinction between consultants who help solve managers' problems for them (business) and those who help managers solve their own problems (OD) has often been made in the OD literature (e.g., Burke, 1987). Hamilton (1988), however, reported no correlation between consulting effectiveness and the consultant's preference for judging versus perceiving.

Hypothesis 4a: A preference for perceiving is positively related to change-oriented consultant competence.

Hypothesis 4b: Judging is negatively related to change-oriented consulting competence.

Ego Development and Consulting Competence

The notion that individuals progress through a series of stages toward ever greater actualization of their human potential has existed in most cultures. Within psychoanalytic ego psychology and constructivist-developmental psychology various schemata of development have been proposed, although some degree of agreement exists as to what changes as a person develops. To explain briefly, as individuals develop their thinking moves from the simple and concrete to the complex and abstract (Harvey, Hunt, & Schroder, 1961), and at the same time becomes more specific and precise (Bartunek, Gordon, & Weathersby, 1983). They move from stereo-

typic and dogmatic views toward greater openness to experience (McCrae & Costa, 1980), from a desire for certainty to a toleration of ambiguity (Holt, 1980), from other-directed, externally generated standards to self-directed, self-generated standards (Perry, 1981), from an undifferentiated, contextually embedded sense of the self to a highly individuated perception of self and others (Kegan, 1982), from a polarization of conflicts to a toleration of paradox (Loevinger, 1976), and from low-level to high-level moral reasoning (Kohlberg, 1976). These descriptions of higher development can be compared to the character traits of effective OD consultants cited in the literature, including a high degree of self-awareness, an ability to analyze situations from multiple perspectives, an openness to learning from experience, high toleration of ambiguity, operating from a set of personally generated values, and a capacity for high-level moral reasoning. This correspondence motivated our interest in examining whether one's developmental level predicts one's consulting competence.

Jane Loevinger and her associates synthesized the work of Adler, Erickson, Fromm, Isaacs, Kohlberg, Maslow, Mead, Piaget, Rogers, and Sullivan to develop a measure for assessing development and, on the basis of empirical research, offer a testable model of "ego development," a model that closely corresponds to the dimensions described above (Loevinger, 1976; Loevinger & Wessler, 1970; Weathersby, 1981). Ego development was perhaps an unfortunate choice of words given the current meaning of the word "ego" among clinicians, especially those who view the ego as something that must "die" for further development to proceed. Loevinger (1985) herself has noted that most psychoanalysts and some psychologists would probably refer to her continuum as an attempt to assign stages to the "development of the self." Her conception of the ego or self is most closely aligned with Sullivan's (1953) concept of the "self-system"—that is, the framework within which people make meaning of their experi-

ences. Because research employing Loevinger's instrument is most readily identifiable under the rubric ego development, we employ this label in this article.

Loevinger's theoretical synthesis and empirical studies led her to posit 10 stages of ego development. Based on the notion that the search for coherent meaning in experience is the essence of ego functioning or the self, each stage represents a fairly stable system of cognition and affect that influences what individuals pay attention to and how they interpret their own and others' actions. Each stage represents a fundamental shift in how one views the world. Individuals at later stages retain the capabilities and perspectives developed at earlier stages. The stages occur in a definite sequence, and are irreversible in the sense that one does not lose the capabilities developed at any stage. Individuals can, however, cease to develop beyond any given stage.

For the purposes of our study we were particularly interested in the four stages most likely to be found among working adults operating at average or higher than average levels of development—what Loevinger calls the conscientious-conformist, conscientious, individualistic, and autonomous stages. The majority of adults studied using the Washington University Sentence Completion Test fall into the conscientious-conformist or conscientious stages (Loevinger, 1985; Redmore & Waldman, 1975; Torbert, 1987). These are, respectively, the sixth and seventh stages in Loevinger's developmental model.

Before the conscientious stage, one experiences little true conceptual complexity or self-awareness. The conscientious-conformist stage is a transition from the dogmatic and unreflective conformist stage. During this transitional stage people develop a capacity to see issues and events from multiple perspectives and become interested in developing technical know-how. It is only at the conscientious level, however, that individuals demonstrate a capacity for self-reflection and self-criticism lacking at previous

levels, and can begin developing an internalized morality. Interpersonal relations are perceived in terms of feelings and motives rather than actions. Achievement of self-generated standards and ideals becomes one's major preoccupation. Indeed, Torbert (1987) has called managers at this level "achievers." These managers are results oriented yet have long-term goals, strive for excellence, and appreciate complexity. They respect individual differences, welcome behavioral feedback, and seek mutuality in relationships, although they assess relations primarily in instrumental terms. They tend, however, to be blind to their own shadow sides and unable to see their own subjectivity behind what they believe to be objective perceptions.

Loevinger's individualistic stage, a transitional stage from what Kegan (1982) has called the "institutional self" to the "interindividual self," is marked by a greater valuing of interpersonal relations, in contrast to the cherishing of achievements, abilities, and ideals at the previous stage. At this level an individual begins to tolerate paradox rather than always reduce paradox to polar opposites. This is a first step toward acknowledging internal conflict rather than assuming that conflicting emotions arise out of tensions between one's needs and external pressures. The total force of intrapsychic conflict, however, is not experienced until the next stage.

The hallmark of Loevinger's autonomous stage is one's acknowledging and coping with inner conflict rather than repressing or projecting it, and thus being able to make choices and commitments while fully experiencing internal conflict and ambiguity. There is a genuine respect for others' autonomy within an appreciation of mutual interdependence. Individuality and uniqueness of the self and others are cherished. At this level, people are fully concerned with self-actualization. Spontaneity, genuineness, and intensity are characteristic, and feelings are vividly expressed.

The bulk of the research using Loevinger's model and instrument has been with adolescents. Recent research has shown a linkage

between managerial role performance and ego development (Merron, Fisher, & Torbert, 1987). Higher stages of ego development are associated with the capacities and characteristics one expects of a good OD consultant. These are conceptual complexity, the ability to use multiple frames of reference—and to reflect on the frames themselves—highly developed moral standards, the capacity to cope with inner conflict, and a growing appreciation of mutual interdependence.

Hypothesis 5: A positive relationship exists between one's level of ego development and change-oriented consulting competence.

METHOD

Setting

This study arose from the opportunity to work with a corporate quality staff that was changing its function and mission. As have many staff groups in large, mature North American manufacturing organizations, this department had to respond to years of downsizing, reorganizing, and decentralizing that placed more authority and control in local hands. The management philosophy of empowering employees and encouraging initiative combined with the sociotechnical design of factories required staff groups to move away from directive, technocratic styles of operation and toward consultative, facilitative styles. This corporate quality staff had the additional burden of needing to learn and help implement new quality management processes—such as statistical process control—having enormous cultural and political implications for American manufacturing organizations (Bushe, 1988). The senior author of this article and a second consultant, Tom Pitman, were hired to help the department's employees make the transition from being technical resource providers and organizational watchdogs to being organizational consultants and change agents. The change projects and

expectations they faced were as complex as those associated with any OD project with which we are familiar.

Subjects

The study sample consisted of employees in the corporate quality department of the largest manufacturing division of a Fortune 100 company. They were trainees in a 20-day professional consulting skills program composed of six workshops conducted over a six-month period. Two sets of workshops were run consecutively each month, with approximately 40 participants each. The program was intended to enable the trainees to develop OD skills and the structures and processes the department needed to successfully manage change consultants. A total of 78 trainees began the program, but because of transfers, promotions, early retirement, and too much missing data for 3 of the trainees, our final sample was reduced to 64 subjects.

The trainees ranged in age from 20 to 58 years, with the average age being 41 years. We found an expected low, significant relationship between age and ego development ($r = .29$). Eleven percent of the subjects were female, and the remainder male. The subjects came from a wide variety of backgrounds, although most had come up the ranks either in the quality function or in industrial engineering. Most had been with the corporation for their entire careers. Younger employees tended to be more educated. One had a doctorate, 15 had master's degrees, and 21 had earned at least bachelor's degrees. At the beginning of the program the trainees were asked to supply their undergraduate grade point averages (GPAs); for the 42 who did so, the average GPA was 3.25. GPA was found to have a marginally significant relationship with ego development (.25), but not with any other variable investigated in this study.

Instruments and Scoring

Effective Consulting Behavior

Peer ratings. During the first week of the program, each subject was asked to gather peer

assessments from two other trainees who had had the opportunity to observe that person at work. To ensure anonymity, the assessments were not returned to the trainees, but instead were mailed directly to the researchers at the university. At the end of the program, each subject was asked to get the same two people to rate that person again. Again, the assessments were mailed directly to the researchers. The trainees were told that the purpose of this questionnaire was to measure the effects of the program on the participants, and that results would be kept confidential. Those who so requested were later sent a private summary of their peer ratings.

The 77-item Consulting Skills Survey was developed using the behavioral indicators from the Army-McBer study described above. Each of the 33 subclusters includes several behavioral indicators. Hamilton (1988) derived her competence measure from this same model, although her instrument used only 1 question and a 5-point Likert-type scale for each of 9 clusters. We used 2 to 5 indicators from each of the 33 subclusters to develop questionnaire items focusing on behavior. Using the following scale, respondents were asked to indicate how often (or seldom) they had seen the person being evaluated display a particular behavior: "1 = seldom (0-20% of the time); 2 = sometimes (21-40% of the time); 3 = often (41-60% of the time); 4 = very often (61-80% of the time); 5 = usually (81-100% of the time)." Approximately one-third of the items were phrased negatively. The SPSS-X Reliability program was used to test the integrity of the scales. Fourteen items were deleted to produce the most statistically reliable measures. The alphas for each of the 9 scales ranged from .67 to .81.

Because much of the language on the peer assessment instrument was unfamiliar to the trainees at the beginning of the program, the quality of the initial peer ratings is suspect. By the end of the program, however, the meaning of the items was clear to the trainees, and they were more sensitized to seeing these behaviors in their colleagues. The data for the first adminis-

tration show that only 1 of the 9 peer rating scales correlated significantly with the trainer ratings (described below). The data for the second administration, however, show that all 9 peer rating scales were significantly related to the trainer ratings. Because of these considerations, we used only the later peer ratings in further statistical tests. These ratings represent observations peers made of one another's work as internal change consultants.

Trainer ratings. At the completion of the program, the two trainers independently rated each participant's performance of 8 observable behaviors assumed to be important indicators of effective change-oriented consulting. Each of these behaviors was rated according to a five-point scale (responses were "low," "med-low," "medium," "med-high," and "high"). Factor analysis revealed one stable factor for both trainers, which included the following 5 of the 8 items:

1. is able to learn quickly,
2. is able to "get to yes" with others,
3. maintains clarity under stress,
4. gains respect of peers,
5. enables others.

This single factor was interpreted as the ability to gain peer respect and informal influence, clearly an important facet of internal consulting effectiveness. The correlation between the two raters on this scale was .71. The two observations were averaged into a single trainer rating for each subject.

The Myers-Briggs Type Indicator

The MBTI is designed to ask seemingly inconsequential questions about everyday behaviors in a forced-choice format. This results in 8 raw scores, 1 for each of the 8 functions. Differences between competing modes of a function (e.g., extraversion versus introversion) are computed to uncover a person's "preference." This subtraction is transformed into a normalized score for that function. When used for personality assessment, an individual's preferences for each of the four functions are combined into a single

"type." In all, the MBTI assesses 16 types.

Despite early criticism of the MBTI on psychometric grounds (e.g., Stricker & Ross, 1964), the test has established an impressive record of reliability and validity when used in appropriate research contexts (Carlson, 1980; Myers & McCaulley, 1985; Thomas, 1984; Thompson & Borrello, 1986). Whether individual indices of the MBTI taken in combinations tend to modify one another and produce unique effects is not certain. Stricker, Schiffman, and Ross (1965) were better able to predict college performance by considering all 16 types than by using regression equations for only 4 continua. In general, however, research into interaction effects among the scales has shown inconsistent results (Carlyn, 1977), and a great deal of research (some of it reviewed above) has found strong correlations among separate continua and other psychological and behavioral measures.

During the first day of the training program, the trainees were given time to complete the MBTI. The results were given to them two days later during team-building sessions. The distribution of preferences among the trainees was as follows:

- extraverts: 61%,
- introverts: 39%,
- sensing: 61%
- intuitive: 39%,
- thinking: 83%,
- feeling: 17%,
- judging: 77%,
- perceiving: 23%.

Given that the sample was predominantly male, one should not be surprised that it had a somewhat higher representation of introverted, intuitive, thinking, and judging preferences than would likely be obtained with a national sample (Myers & McCaulley, 1985).

Ego Development

Ego development was measured using the Washington University Sentence Completion Test (SCT) Form 11/68 (Loevinger & Wessler, 1970). The SCT is a projective test consisting of

36 incomplete sentences, which subjects are asked to complete "as fully as you need to express your views." Exhaustive manuals for rating stems and total protocols (Loevinger, Wessler, & Redmore, 1970; Redmore, Loevinger, & Tamashiro, 1981) and a well-designed method for the self-training of raters make the SCT an exemplary projective test, one allowing replicable research by others (Broughton & Zahaykevich, 1977; Hauser, 1976; Holt, 1980; Loevinger, 1979a, 1979b, 1985).

The trainees were each given the SCT at the beginning of the first week of training and asked to complete and return it in three days. They were told that the instrument measured "how people look at the world" and that its purpose was to test some hypotheses we had about the relationship between being effective consultants and people's world views. They were also told that neither they nor the trainers would know the results of the SCT during the training program. The trainees were asked to complete the SCT again at the end of the six-month program. One of the trainees chose not to complete the SCT either time, and 11 others chose not to complete it the second time.

The first author of this article and two students rigorously followed the method for the self-training of raters (Loevinger & Wessler, 1970). Responses to each stem were separately rated by two persons. We did two things to help eliminate potential rater bias. First, the responses for both times the trainees completed the SCT were combined with responses from a sample that included 29 professional OD consultants and the 2 trainers from the program, giving us a total of 161 protocols. Second, administrative assistants prepared separate, typed lists of the 161 responses for each of the sentence stems, making sure to jumble the order of the subjects on each list so that the raters would have no idea which response came from whom. The inclusion of responses from professional OD consultants and the randomization procedure practically eliminated rater bias.

Inter-rater agreement averaged 65% for the

men's sample and 67% for the women's sample. This average was considerably deflated because many disagreements occurred over blocks of similar responses to a few items. The raters met and went through each list, coming to agreement on ratings for each item. Stems were then recombined into the 161 total protocols (again, without subject identification) and total subject ratings were developed. The automatic ogive rules (Loevinger & Wessler, 1970, p. 129) were used for deriving total protocol ratings, except in three cases that were "borderline." Using the ogive rules for these cases and a reading of the total protocols indicated a higher rating was called for (one case was moved up to a rating of conscientious-conformist, and two cases to conscientious).

We found no significant change in the ego development of the group as a whole between the beginning and end of the program. Of those who completed the SCT twice, 6 showed an increase in ego development and 14 showed a decrease. Decreases found in retests have been observed in other studies (Redmore and Waldman, 1975). This occurs when people have little investment in the results of the study, and thus give more banal, brief, and clichéd responses. The trainers did observe a decrease in motivation, which probably explains the results we obtained. Only the results for the first administration of the SCT, given when the respondents were clearly motivated to complete the forms to the best of their abilities, were used in the results reported in this article. The distribution of trainees were as follows:

- conformist: 3.1%,
- conscientious-conformist: 35.9%,
- conscientious: 43.7%,
- individualistic: 15.6%,
- autonomous: 1.6%.

This distribution closely matches that reported for a national sample of 804 adults by Loevinger (1985).

RESULTS

The statistical analysis presented below relied on fairly sophisticated procedures, both because the results address the question of convergent and discriminant validity for the consulting competency measure and because the predictors of consulting competence used (ego development and the MBTI preferences) are significantly and highly correlated with each other. We resolved the intercorrelation among predictors by using LISREL to conduct what is essentially a regression analysis with a multicollinearity problem.

Validity of the Consulting Competence Survey

Campbell and Fiske (1959) emphasized that any assessment of the validity of a test designed to measure a construct should be made on the basis of two criteria. First, tests designed to measure a specific construct should correlate highly among themselves—that is, they should demonstrate convergent validity. Second, tests designed to measure a specific construct should also not correlate with tests designed to measure a second construct considered to be unrelated to or independent of the first—that is, they should demonstrate discriminant validity. Campbell and Fiske's multitrait/multimethod matrix requires that three traits be measured by each of three methods. The correlation matrix can then be broken down into three types of analysis.

- **Type 1:** heterotrait/monomethod (correlations between different constructs measured by the same method).
- **Type 2:** heterotrait/heteromethod (correlations between different constructs measured by different methods).
- **Type 3:** monotrait/heteromethod (correlations between similar constructs measured by different methods).

Our study was not intended to reproduce the work of Campbell and Fiske, but we used their logic to examine some of the issues in the convergent and discriminant validity of the peer

consulting competence assessments.

Table 1 reports the correlations among the peer measures and the trainer measures. The values shown along the diagonal in Table 1 are the reliabilities of the different scales. The single items in the trainer ratings did not have reliabilities associated with them.

Table 2 reports the correlations between the competence measures, ego development, and the eight raw scores from the MBTI. The individual scales of the Consulting Competence Survey were treated as items in a summary "peer rating." The reliability of this summary measure was .94. The individual observations of the trainers were also combined into one "trainer rating"; the reliability of this measure was .89. These tables were used in our assessment of the validity of the Consulting Competence Survey.

Evidence for convergent validity was found in the correlations among similar traits using different methods (type 3 analysis). These correlations, or validity diagonals, must be positive and significantly different from zero. As shown

in Table 1, the correlations among the Consulting Competence Survey scales, the summary peer rating, and the summary trainer rating varied from .45 to .64, and were all significant at $p < .01$. Because the peer measures were assessed by using a questionnaire and the trainer measures were obtained through ratings by expert observers, the criterion for convergent validity is satisfied.

The first discriminant validity criterion is modest, requiring only that the validity diagonals (the correlations among the Consulting Competence Survey scales and the correlation between the peer ratings and trainer ratings) exceed the agreement between dissimilar traits measured different ways (type 2 analysis). As one can see, the correlation between the peer ratings and trainer ratings exceeds the correlations of any of the independent variables with these competence measures. The second discriminant validity criterion requires that the convergent validity of each trait exceed the correlations between that trait and other traits

Table 1
Pearson Correlations and Reliabilities for All Competence Measures^a

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
<i>Peer Ratings</i>																
1. Common Understanding	.81															
2. Diagnostic Skill	.78	.73														
3. Personal Influence	.79	.72	.73													
4. Problem-Solving Skill	.70	.72	.67	.70												
5. Professional Self-Image	.86	.72	.79	.68	.76											
6. Results Oriented	.66	.66	.66	.51	.55	.71										
7. Strong Self-Concept	.79	.67	.77	.65	.79	.63	.67									
8. Tactical Flexibility	.74	.71	.70	.61	.74	.58	.73	.73								
9. Uses Theory	.56	.56	.59	.46	.62	.46	.61	.59	.76							
10. Summary Peer Rating	.90	.87	.88	.79	.89	.76	.87	.85	.74	.94						
<i>Trainer Ratings</i>																
11. Clarity Under Stress	.35	.46	.41	.46	.38	.46	.39	.41	.45	.51	—					
12. Enables Others	.25	.32	.35	.23	.28	.28	.34	.40	.47	.40	.60	—				
13. Gains Peer Respect	.32	.46	.42	.31	.37	.38	.42	.53	.45	.49	.67	.69	—			
14. Able to Get to Yes	.24	.35	.40	ns	ns	.36	.37	.39	.44	.39	.51	.72	.79	—		
15. Learns Quickly	.21	ns	.31	.38	.30	.27	.37	.37	.39	.38	.57	.59	.52	.45	—	
16. Summary Trainer Rating	.50	.50	.56	.45	.49	.56	.58	.53	.59	.64	.72	.81	.81	.77	.71	.89

^a $N = 57-64$ (pairwise deletion), all correlations $p < .02$, numbers across the top correspond to numbers assigned to variables, figures in diagonals are alphas for each scale.

Table 2
Pearson Correlation Matrix for All Measures Used in the Regression Equations^a

	2	3	4	5	6	7	8	9	10	11
1. Peer Rating	.68***	.43***	.13	-.11	-.09	.10	.21*	-.16	.33**	-.31**
2. Trainer Rating		.49***	-.19	.17	-.07	.15	.28*	-.29*	.17	-.14
3. Ego Development			.07	-.05	-.26*	.28*	-.09	.08	.10	-.09
4. Extravert				-.97***	-.11	.04	-.03	.06	.13	-.12
5. Introvert					.16	-.10	.01	-.03	-.08	.09
6. Sensing						-.87***	.14	.02	.39***	-.36***
7. Intuition							-.16	.03	-.45***	.41***
8. Thinking								-.83***	.03	-.02
9. Feeling									.05	-.08
10. Judging										-.97***
11. Perceiving										

^a*N* = 57- 62 (pairwise deletion), numbers across the top correspond to numbers assigned to variables.

**p* ≤ .05

***p* ≤ .01

****p* ≤ .001

measured with the same method. This is typically a more stringent criterion, as it requires that common trait variance exceed common method variance (Campbell & Fiske, 1959; Gillet & Schwab, 1975; Kalleberg & Kluegel, 1975). This involves a type 1 analysis. As one can see, the validity diagonals exceed the correlation between the consulting competence survey and personality measures. This provides some evidence for discriminant validity.

The final discriminant validity criterion states that the pattern of the trait intercorrelations should be replicated within all heterotrait/monomethod and heterotrait/heteromethod triangles. Such agreement could not be assessed in this study because only one trait (competence) was measured by more than one method.

In sum, the analysis provides direct evidence of convergent validity, and some evidence of the discriminant validity of the Consulting Competence Survey. Because the MBTI scales and ego development were not assessed by different measures, further analysis of the effects of common method variance is not possible. In the analyses discussed below, the summary peer ratings and trainer ratings were addressed as separate dependent measures.

MBTI Scales and Consulting Competence

Hypotheses 1a through 4b were assessed using LISREL, as the multicollinearity among the eight MBTI variables did not allow us to use simple least-squares regression. We developed separate structural equations for two models to test hypotheses 1a through 4b. In one model, the MBTI traits predict peer ratings, and in the other model the MBTI traits predict training ratings. These full models are reported in Figures 1 and 2. The structural equations include paths for the correlations among extraversion and introversion, sensing and intuition, thinking and feeling, and judging and perceiving. These structural equation models thus include tests of the correlations between traits that are polar opposites, as well as paths between individual traits and peer or trainer ratings. The results report the standardized regression weights for the paths between correlated predictors and for the paths between the predictors and the peer or training ratings.

Figure 1 shows that none of the MBTI traits significantly predicted the subjects' peer ratings. The *R*² for the model is .36, the goodness of fit index is .879 (*X*² (41) = 45.93, *p* < .275), Rho = .99.¹ For the trainers' ratings of the subjects,

however, intuition was a significant predictor of the average trainer rating. The R^2 for the model is .364. The goodness of fit index is .885 ($X^2(32) = 35.58, p < .303$) and $Rho = .99$. The full models indicate that the polarized MBTI traits are highly and negatively correlated, and that the only MBTI trait to act as a significant predictor of consulting competence is intuition. The lack of significance for the paths between thinking and feeling and either the peer ratings or trainer ratings provides support for Hypothesis 3.

The hypotheses about the MBTI and consulting competence specify both positive and negative effects for all MBTI traits except thinking and feeling, yet the full models include paths from thinking and feeling to the consulting competence measures. If the paths between thinking and feeling and the consulting competence measures are dropped from the full models, the resulting set of structural equations provide a nested model by which to fully test Hypothesis 3. The improvement in prediction of a nested model can be assessed by examining the change in X^2 between the full and nested model. The change in X^2 between the full and nested model for peer ratings was 2.37 with five degrees of

freedom. This is not significant. The change in X^2 between the full and nested models for the trainer ratings was 6.90 with five degrees of freedom. This also is not significant. This analysis indicates that the nested models are more parsimonious and not significantly different from the full models, and further supports Hypothesis 3.

The values for Rho indicate that the structural equations represent the data quite well. This analysis partly supports Hypothesis 2a, as a preference for intuition was found to be a significant predictor of the average trainer ratings only. Hypothesis 3 is supported in that a nested model that drops preferences for thinking and feeling is not significantly different from a model in which thinking and feeling preferences predict trainer and peer ratings. Moreover, preferences for thinking and feeling are not significant predictors in the full model. No support was found for Hypotheses 1a, 1b, 2b, 4a, or 4b.

Ego Development and Consulting Competence

Ego development as a predictor of consulting competence was tested using simple least-squares regression. The strictest test of Hypoth-

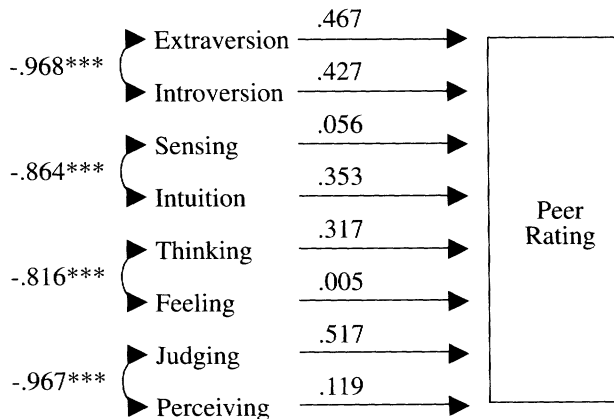


Figure 1. Structural Equations for the Myers-Briggs Type Indicator and Peer Ratings
*** $p \leq .001$

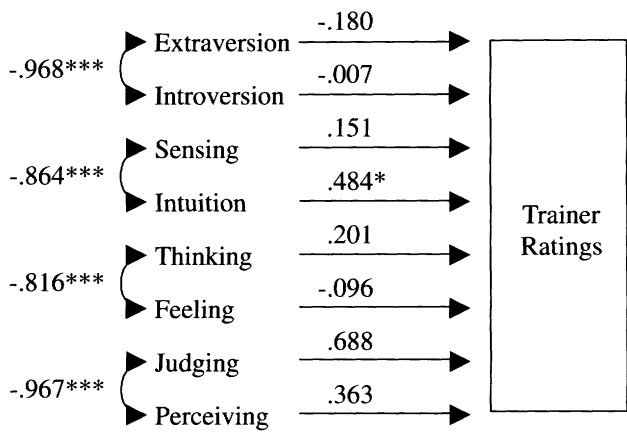


Figure 2. Structural Equations for the Myers-Briggs Type Indicator and Trainer Ratings
* $p \leq .05$
*** $p \leq .001$

esis 5 included intelligence as a counterhypothesis. We used GPA as a surrogate for intelligence in a regression analysis that included ego development and GPA as predictors of the two types of consulting ratings. The regression results are reported in Table 3. The equation for trainer ratings was significant ($F(2,34) = 6.73, p < .003$) and the equation for the peer rating was also significant ($F(2,39) = 4.32, p < .018$). GPA was not found to be a significant predictor in either equation, whereas ego development was found to be significant in both equations. The simple b coefficients for ego development were .479 (s.d. = .143, $t = 3.35, p < .008$) in predicting trainer ratings and .219 (s.d. = .078, $t = 2.80, p < .008$) in predicting peer ratings.

Ego Development and the MBTI

Assessing the relative impact of ego development and the traits measured by the MBTI requires that they all be entered into a LISREL analysis because the MBTI traits are highly intercorrelated. The structural equations for the peer and trainer ratings are reported in Figures 3 and 4. The R^2 for the peer rating model is .376. The goodness of fit index for the model is .879 and Rho is .99. The R^2 for the trainer model is

.446. The goodness of fit for this model is .879 and Rho was .98. Figures 3 and 4 show that ego development was the sole significant predictor of both peer and trainer ratings.

In the analysis of the MBTI preferences, intuition was found to be a positive predictor of the trainer ratings. Intuition also had a significant, positive correlation with ego development ($r = .28$). This correlation was included in the trainer rating model, which was compared to the model presented in Figure 4. The path between ego development and intuition was significant and positive, but the path between intuition and the average trainer rating was not. The addition of these paths did not improve the model when the

Table 3
Regression of Ego Development on Competence Measures Controlling for Grade Point Average (GPA)

1. Peer Rating	
.219 Ego Development + .0004 GPA = $F(2,39) = 4.32, p < .018$	
(.078)	(.002)
$p \leq .007$	$p \leq .794$
2. Trainer Rating	
.479 Ego Development + .0002 GPA = $F(2,34) = 6.73, p < .003$	
(.142)	(.003)
$p \leq .002$	$p \leq .967$

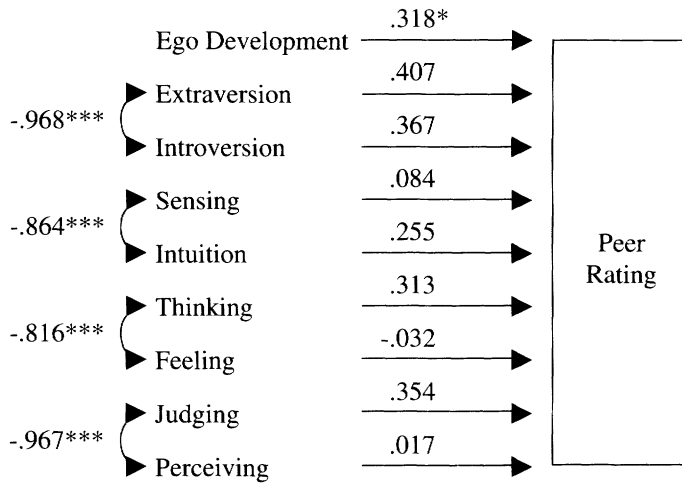


Figure 3. Structural Equations for All Predictors of Peer Rating

* $p \leq .05$

*** $p \leq .001$

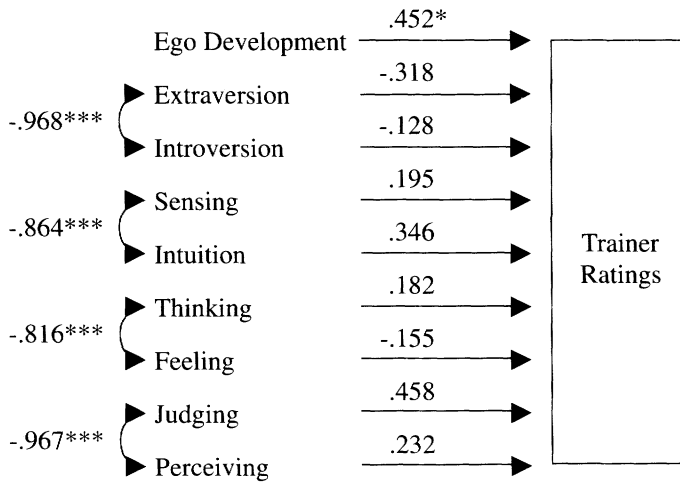


Figure 4. Structural Equations for All Predictors of Trainer Ratings

* $p \leq .01$

*** $p \leq .001$

change in X^2 was used as a test of improvement. The results of these analyses clearly show that whatever information is carried by intuition as a predictor of the trainer rating is also captured by ego development, and that ego development is a better predictor of consulting competence.

DISCUSSION

Summary

In the study reported in this article we created a pencil-and-paper test of consulting competence

based on peer observations. The findings of our initial test of reliability and validity are encouraging, and those interested in the developing such an instrument may want to build on this model. Further exploration is needed to improve the reliabilities of the scales for each dimension measured. More important, further research is required to assess the validity of such a measure. Such research is especially needed into what constitutes effective OD consulting in general, and the behaviors associated with effective consulting.

The findings support the only other empirical study of the character traits of OD consultants we are aware of (Hamilton, 1988) in that the preference for intuition as measured by the MBTI was found to be significantly associated with trainer ratings of consulting competence. When used alone, one's score for the sensing-intuition scale of the MBTI may be a predictor of OD consulting competence. But as our study showed, the information contained in this measure is also contained in measures of ego development. Indeed, one's stage ego development turned out to be a much better predictor of consulting competence, for this was found to predict both trainer and peer ratings, and was found to be the only significant predictor when both the MBTI and ego development measures were tested together.

Implications

When we view the theory of ego development against decades of anecdotal reports on the characteristics of competent OD consultants, we find it makes sense that higher levels of ego development would be associated with more effective consulting. In another study (Bushe & Gibbs, 1989), we found that only when they occupied the conscientious level of ego development did internal consultants adopt consulting styles consistent with an OD approach. According to ego development theory, it is only at the conscientious stage that people develop an interest in achievement and personal effectiveness. At that stage feedback is used to aid

achievement; prior to the conscientious stage feedback is used to "fit in." Prior to the conscientious stage people have jobs; at that stage they have careers (Torbert, 1987). It may be that those who truly are successful at moving large systems without formal power have the attributes theoretically assigned to the individualistic and autonomous stages (e.g., high tolerance for ambiguity, a sense of timing and historical flow, a low degree of projection of internal conflict, and the desire to be involved in transforming work).

Of course, the notion of development implied by ego development may be wrong. As are all developmental frameworks, the model is unitary and progressive—that is, each stage seems somehow better than the preceding one. This may be false, or at least a reflection of hope, for we do not really know how humans develop in adult life and whether other moderating variables more strongly affect behavior. Other models, such as Carol Pearson's (1986) archetypal framework, contain many of the same distinctions as developmental models without assuming a linear developmental path. An overendorsement of the implied direction—"higher is better"—may not be beneficial to those involved, or to the systems they are in.

Yet there is a definite sense of reasonableness in the notion that complex abilities are built on a base of simpler abilities, and that certain cognitive and emotional capacities must be activated before other capacities can be activated. If we are willing to take this sort of developmental view—which is as much an ideological stance as a scientific one—then the theory of ego development may be fruitful for exploring other hypotheses relating individual growth to consulting behaviors, or, more important, relating personal development to organization development effectiveness. For example, one could relatively easily match different forms of organizing to characteristics of different stages of ego development, and ask whether an individual at a particular stage of development is able (and willing) to work in an organization with characteristics that match a different stage of develop-

ment, and what the effects of matches and mismatches may be.

If our study's results are correct, those who train OD consultants need to consider how people make the transitions between stages of ego development and design their programs with this in mind. The bulk of developmental research to date has studied children and adolescents. We need more research on adults. We have only glimpses of how adults develop, and we do not know whether everyone has the capacity to develop to higher stages. Whether a training program can possibly effect developmental movement in adults is a contentious issue, one open to empirical study. A discussion of how one might nudge development along is beyond the scope of this article, but much has been suggested in therapeutic, spiritual, and educational literature.

One implication of this point of view is that the Washington University Sentence Completion Test may be a valuable instrument for assessing the effects of OD training programs. Several aspects of it raise problems, however, one of which is the time and training required to score it. In our sample, six subjects had increased their SCT scores at the end of the program, but 14 had lowered them. Lower posttest scores resulting from subjects' putting less thought into their answers after a project has plagued SCT research. During the second administration of the test, we did observe that several subjects seemed interested only in "just getting the damn thing done." Moreover, we have no way of knowing whether those whose SCT scores remained the same may have actually increased in ego development, but obtained lower scores than they should have because they felt indifferent to the test the second time. Clearly, subjects must truly want to complete an instrument for its results to be valid. As Weathersby, Bartunek, and Gordon (1982) note, we probably need more sensitive measures of developmental movement if we are to learn what helps move development along.

With respect to using the SCT to select potential consultants, we are guardedly optimistic. We want to substantiate the link between ego development and consulting competence before making this recommendation. We do suspect, however, that any ambiguous organizational role requiring those occupying it to exercise personal initiative and mutuality in relationships will require individuals beyond a threshold level of ego development.

Finally, we warn that one reason against using the SCT for this purpose is the possibility of its reflecting unknown cultural biases that may contaminate the scoring system. Obviously, a written projective test will be affected by the command of the language of those completing it, and we would not trust the results obtained for someone lacking a good command of the English language. More difficult to assess are the effects of different national or subnational cultures on the validity of the SCT.

CONCLUSION

Although the separate scales of the MBTI were found to have little utility in predicting OD consulting competence, two studies have now found significant positive correlations between a preference for intuition and effective consulting behaviors. The perceptual style associated with intuition (e.g., seeing beyond the concrete present to future possibilities, having a sense of the whole in complex, multivariate processes) may be required in large-system, OD consulting situations. Further research involving the MBTI could investigate whether different "types" are more likely to succeed as OD consultants. We found, however, that the predictive utility of the preference for intuition is subsumed within the more powerful predictive utility of ego development.

The findings of this study further support a small but growing trend in applied behavioral science toward seriously considering the notion of adult development when trying to understand

and plan for training and development interventions into human systems. We conclude that a certain level of ego development is necessary to use OD behaviors and techniques competently. Our research points to the literature on ego development, which we believe could be useful for thinking about stages of training and areas for personal growth in a consultant's career. Finally, we encourage the use of pretest and posttest measures of ego development with control groups to test the success of educational programs aimed at training change-oriented consultants.

NOTE

1. The usual way to assess a structural equation model is to compare the substantive model to the worst possible fit. The worst possible fit is obtained with a series of structural equations with no paths among the variables. To compare models, the X^2 square of each model is divided by the appropriate degrees of freedom. Rho is then calculated as the difference between the null and substantive model divided by the difference between the null and a perfect fit. A model with a perfect fit would have a X^2 divided by degrees of freedom equal to one. Values of Rho that exceed .90 are considered acceptable.

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