REVIEW OF RESEARCH ON THE MYERS-BRIGGS TYPE INDICATOR

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Summary.—Research on the Myers-Briggs Type Indicator as a psychometric instrument and as a reflection of Jung's personality typology was reviewed. Its applications in education, business, the artistic world, and in decision-making processes of business have been extensive and well received.

The Myers-Briggs Type Indicator has become the most widely used personality instrument for nonpsychiatric populations (DeVito, 1985; Lynch, 1985). Companies like American Telephone and Telegraph, Exxon, General Electric, Honeywell, and Transamerica employ the Myers-Briggs indicator in their management development programs where the focus is on improving decision-making and building effective teamwork and appreciation of the different perspectives from which different members of the corporate team view their world and their decision making (McCrae & Costa, 1989; Moore, 1987). Approximately 300 studies of the Myers-Briggs Type Indicator are cited by Buros (1965, 1978) and over 1500 studies are included in the latest edition of the Myers-Briggs indicator manual (Myers & McCauley, 1985). The indicator is also available in a Spanish translation (Levy & Padilla, 1982). The research on the Myers-Briggs Type Indicator as a psychometric instrument and as an expression of Jung's typology was reviewed and some of its modern applications considered.

MYERS-BRIGGS TYPE INDICATOR AS A PSYCHOLOGICAL TEST OF JUNG'S TYPES


The authors intended the M-B Indicator to be an inventory of basic preferences rather than a measure of traits (Myers & McCaulley, 1985). The M-B Indicator is a forced-choice, self-report inventory, virtually self-administering, and designed for use with normal subjects (Thompson & Borrello, 1986). The M-B Indicator purports to generate preference scores that de-

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scribe interaction in four interlocking dimensions (Lyons, 1980; Mendelsohn, 1965; Moore, 1987; Sundberg, 1965). It may be particularly useful for those who are more test-aware and anticipatory of tests, especially those who have been referred for career counseling who have no personal involvement in the testing or the outcome (Pinkney, 1983).

The initial pool of questions was tested in a criterion group between 1942 to 1944. The earliest form, Form C, excluded any items that had high validity for more than one index of the M-B Indicator. Form D was developed between 1956 and 1958, starting with a pool of 200 new items, in preparation for a new edition of the manual under the guidance of Educational Testing Service (Stricker & Ross, 1964). Form F of the M-B Indicator has 166 items, generally well designed, of which 71 are "experimental," intended for research, and are not employed for individual or group differentiation (Cowan, 1989; Sipps, Alexander, & Friedt, 1985; Thompson & Borrello, 1986). Form G is shorter (126 items) than Form F; some of the unscored items were removed and ambiguous items rewritten; only 95 items of Form G need be answered to obtain a score (Tseng, Outcalt, Boxer, Ware, & Landis, 1984). Form AV (Abbreviated Version), or H, of the M-B Indicator contains only 50 items from Form G, has no research items, is self-scoring, and designed for group situations. It does not give preference and continuous scores comparable to those of Form F or G. Form G is now the standard form of the M-B Indicator. Form F has been rekeyed to give essentially the same results as Form G and is recommended for research (Myers & McCaulley, 1985). The work of Myers is being continued by the Center for Applications of Psychological Type in Gainesville, Florida (DeVito, 1985).

The M-B Indicator as a Test of Jung's Psychological Types

Jung's typology assumes a dynamically interactive model of personality manifested at two levels of conscious development. Jung (1971, pp. 4-6) believed that extraversion-introversion (E-I) was fundamental to personality and that only the relative predominance of one or other determined the type. Because the complicated conditions under which we live also often favored or hindered one or the other, Jung thought that there could never be a pure introversion or extraversion type in the sense that one possessed one attitude without the other (Thompson & Borrello, 1986).

In addition to grouping of people into two large groups, introversion and extraversion, Jung thought that closer examination of individuals indicated that they differed also according to basic psychological functions (Myers & McCaulley, 1985). Four psychic functions, thinking, feeling, sensation, and intuition, Jung believed, were different from all other functions. Jung described function as a particular form of psychic activity that remains the same in principle under varying conditions (Jung, 1971, pp. 436-467). Jung's
two psychic function polarities, either a preferred mode of judging, thinking, or feeling, or two preferred modes of perceiving, sensing, or intuiting, interacted with the attitudinal dimension (Ramaprasad & Mitroff, 1984). Since the expression of each function in Jung's theory depended on the attitude with which it is combined, there could be introverted thinking and feeling, and extraverted thinking and feeling, etc. (Coan, 1978).

In Jung's theory all components interact, and the difference primarily is the extent to which they are under conscious or unconscious control. The ideal assessment procedure for Jung's typology would take the pattern of each component into account rather than simply the component which is preferred (Coan, 1978). Questionnaire measures of E-I often focus on observable behavior, social extraversion-introversion, a dimension of gregariousness in contrast with shyness and withdrawal (Palmiere, 1972). Assessments of only external behavior probably cannot be sensitive enough to measure the complicated Jungian personality schema and will sacrifice some of the theoretical richness of Jungian insights (Carlson, 1980; Coan, 1978; Cowan, 1989; McCrae & Costa, 1989; Steele & Kelly, 1976).

Jung understood that the extraversive type focused attention on external objects and was concerned with relations to other people. The extraversive type depended for his self-concept on the view that others had of him and received energy from the outside world. The introversive type was more concerned with inner psychological processes, was relatively unconcerned with others' evaluations and opinions of him, and received energy through solitary activities. Two-thirds of 903 subjects preferred introversion, contrary to the popular impression in the United States (Lyons, 1980).

Jung's dichotomy of Sensation-Intuition (S-N) reflects two different modes of perceiving. The Sensation type prefers perception of the observable directly through the senses. The Intuitive type prefers to go beyond the information given by the senses and look for meanings and potentialities. Creative and artistic groups have shown preference for the Intuition dimension (Sundberg, 1965). Brainstorming uses intuition in Jung's sense because it encourages inspirations without constraint of criticism or evaluation. The Sensation dimension is reflected in practical and realistic characteristics whereas the Intuition dimension is the preference of creative and imaginative professions (Carlson, 1980; Lyons, 1980).

The Thinking-Feeling (T-F) dichotomy reflects two different ways of judging. The Thinking type prefers to arrive at judgment by logical or impersonal methods in contrast to the Feeling types who arrange contents of consciousness according to the contents' relevance to needs for affiliation, warmth, and harmony (Thompson & Borrello, 1986). Those who prefer the Feeling dimension tend to be more subjective and base their preferences on personal values. About 80% of the general population prefers the Thinking
Jungian types. Jung included particularly California Myers-Briggs Indicator (Stricker Psychometric reliabilities for DeVito, 1985). But, later studies have been challenged major coefficients for Mendelsohn, and Feimer and J-P, unlike the other dimensions measured by the M-B Indicator, was implied but never explicitly defined by Jung as an independent function (Carlyn, 1977; Myers & McCaulley, 1985). Jung’s theory referring to dominant and auxiliary also was not well developed and M-B Indicator’s use of it has been challenged (Coan, 1978; DeVito, 1985).

Mendelsohn, Weiss, and Feimer (1982) questioned whether any typology in personality research was more than a simplifying way of talking about complex, continuous data, while approving the M-B Indicator authors’ efforts to provide an empirical support for their assignments of respondents to Jungian types. Block and Ozer (1982) argued that too much that was good was being rejected by Mendelsohn, Weiss, and Feimer and that the terminology of types was a convenient way of communicating personality differences. But, Weiss, Mendelsohn, and Feimer (1982) continued to be convinced that typology did not reflect real personality differences.

Psychometric Aspects of the Myers-Briggs Indicator

The reliability of the M-B Indicator has been improved in recent years, particularly by improving the internal consistency indices (Levy & Padilla, 1982; Myers & McCaulley, 1985). Studies reviewed by Carlyn (1977) as well as later studies have shown generally satisfactory split-half and test-retest reliabilities for the F and G Forms of the M-B Indicator (Carlson, 1985; DeVito, 1985). The indices of internal consistency of the early form of the M-B Indicator were consistent with test-retest reliability findings for California Personality Inventory, Guilford-Zimmerman Temperament Survey, Cattell’s 16 PF, and the MMPI, all of which are longer scales than the Myers-Briggs Indicator (Stricker & Ross, 1963). Test-retest reliability coefficients for college students over two months indicated stability on the four major dimensions of the M-B Indicator (Levy, Murphy, & Carlson, 1972).
M-B Indicator preferences of 64 ministerial students remained the same over three years of training (Nauss, 1972).

Group differences and correlations are broadly supportive of the construct validity of the M-B Indicator scales, indicating that the four scales measure important dimensions of personality that approximate those of Jung's typology theories (Coan, 1978; Geer, Ridley, & Roberts, 1984; Levy & Padilla, 1982; Sipps, Alexander, & Friedt, 1985; Steele & Kelly, 1976; Thompson & Borrello, 1986; Tzeng, Outcalt, Boxer, Ware, & Landis, 1984; Wiggins, 1989). From the work of Carskadon (1977) and Carlyn (1977), who reviewed available studies of the content and predictive validities, the M-B Indicator appeared to be a reasonably valid instrument which was potentially useful in a number of different situations (Carlson, 1985). Carlyn's (1977) review indicated that the scales of the M-B Indicator were relatively independent of each other and that the personality dimensions seemed to be similar to those postulated by Jung. Carlson (1985) argued that Jung's concepts were not well defined and that the Myers-Briggs Indicator, although it often omitted conceptual steps, appeared to be reasonably valid. In Hicks's (1984) opinion the inventory might serve as a practical assessment device simply by virtue of its presently established construct validity.

Relations between the M-B Indicator and other tests have generally supported the validity of the M-B Indicator's constructs (Carlson, 1985, 1989; Goldsmith, 1985). The M-B Indicator and Embedded Figures Test were administered to 103 college students, mostly male. On none of the four M-B Indicator scales were scores significantly different for the college students who were divided into high and low scorers on the Embedded Figures Test. Correlations suggested no meaningful associations between scores on the two tests, indicating that the M-B Indicator and the Embedded Figures Test tapped different cognitive dimensions (Lusk & Wright, 1983). Another investigation of relations between the M-B Indicator and the Group Embedded Figures Test, on the basis of test scores of 210 college students, indicated that cognitive styles and field-dependence and -independence appeared to share some commonality with Jungian personality theory (Schmidt & McCutcheon, 1988). Corman and Platt's (1988) study with 226 business school students supported the earlier reports of the correlations between scores on the M-B Indicator and the Embedded Figures Test and suggested that field-independent types were more likely to score as Intuitive rather than Sensation types on the Myers-Briggs Indicator.

Factor analysis of the test scores of 359 college students who answered the M-B Indicator supported the construct validity of four factors of the test (Thompson & Borrello, 1986). Sipps and DiCaudo (1988) administered the M-B Indicator, an Impulsiveness Scale, and other scales of emotionality, activity, and sociability to 185 college psychology students, two-thirds of
whom were women. In their factor analysis of the intercorrelations among scores, using orthogonal rotation, the E-I scale of the M-B Indicator appeared to be a measure of sociability and the J-P scale a measure of impulsiveness. Their results supported the convergent and divergent validity of the M-B Indicator scales, although the constructs differed from the descriptions in the earlier M-B Indicator manual. In an earlier factor analysis of the M-B Indicator, the Eysenck Personality Inventory, and three measures of Extraversion, a Sociability component, an Impulsivity or Nonplanning component, and a Liveliness/Risk taking/Jocularity component, the E-I and J-P scales appeared to be factorially valid measures of extraversion in the impulsivity/nonplanning sense (Sipps & Alexander, 1987).

The extraversion-introversion dimension has been included in many personality theories and tests. Whereas research generally has supported the existence of this dimension of personality, questionnaires often have measured behavioral correlates of E-I rather than Jung's dynamic component within a psychological type (Cooper & Scalise, 1974; Palmiere, 1972; Wiggins, 1989). Many personality tests have focused on social introversion and extraversion, a dimension of shyness in contrast to gregariousness (Coan, 1978). The multidimensionality of the M-B Indicator E-I scale fits the findings of Sipps and Alexander (1987), who administered both the Myers-Briggs Indicator and Eysenck Personality Questionnaire, both of which purport to measure the E-I dimension of personality. Whereas the Myers-Briggs was derived from Jungian type theory, Eysenck was openly critical of Jungian typology (Steele & Kelly, 1976). Both tests were administered to 93 paid volunteers, two-thirds of whom were women, and readministered one week later. The two E-I scale scores correlated 0.94 providing support for convergent validity for the E-I dimension of the Myers-Briggs, although the E-I scales of the two tests were derived from very different theoretical positions.

In another study the Myers-Briggs and Eysenck Personality Inventory were administered to 146 subjects, mostly undergraduate women, whose accounts of their dreams were measured by the Dreaming Questionnaire. Jungian Introverts on the M-B Indicator recalled more everyday dreams which they had recorded during an average of 23 days. Jungian theory would expect both Introverts and Intuitive types to be closer to unconscious material such as dreams. Intuitive types in this study recalled more archetypal but not everyday dreams than Sensation types (Cann & Donderi, 1986).

Snyder's Self-monitoring Scale and Myers-Briggs Indicator were the personality tests employed, and the Inferred Meaning Test was given to measure the ability of 36 graduate counseling students, mostly women, to decode correctly vocal cues in 20 recorded sentences (Mill, 1984). Tapes of their dyadic interactions were rated for verbal expression, genuineness, and empathy.
Students high on the Self-monitoring Scale tended to score high on the M-B Indicator Extraversion dimension. Self-monitoring types tended to direct their interest and attention to the external world and not to their own inner experiences.

Stricker and Ross (1963) administered the Myers-Briggs Indicator to about 1000 12th grade students and almost 500 college students about equally distributed in sex. Scores on the J-P scale were significantly related to those on the S-N scale for all the groups and to scores on the T-F scale for most of the groups. The Sensation, Intuition, Thinking, and Feeling scales may reflect restricted aspects of the Jungian dimensions they were supposed to represent (Stricker & Ross, 1964). Sundberg (1965) noted the high intercorrelations between J-P and S-N scores in contrast to low intercorrelations among the other M-B Indicator scales, as did Carlyon (1977) from her survey of correlational studies of the Myers-Briggs Indicator. Thomas’ (1984) regression analysis of the scores of 188 collegians on Form G of the Myers-Briggs Indicator indicated that the J-P dimension was related to both the S-N and T-F dimensions.

Responses to 95 items of the M-B Indicator of 1291 college students, one third of whom were men, when factor analyzed, yielded six factors (Sipps, Alexander, & Friedt, 1985). Factors 2 through 5 corresponded to the Myers-Briggs Indicator scales, J-P, T-F, E-I, and S-N, supporting the item validity of the inventory. Although the items tended to cluster in a way consistent with the M-B Indicator structure, many items, especially from the T-F and S-N scales, did not yield loadings on the factors for these scales raising the question of whether these items should be considered as measures of the two dimensions. The overlap between J-P and S-N also raises a doubt about the separate scores for the four components of these two scales (Coan, 1978). College men and women did not differ on the TF dimension in the study by Sipps, Alexander, and Friedt (1985) of 1250 students nor did sex differences appear to be a distinctive factor in the studies of Steele and Kelly (1976) or of Tzeng, Outcalt, Boxer, Ware, and Landis (1984), raising the question about the need for separate T-F stencils and norms. McCrae and Costa’s (1989) analysis of the responses of 468 men and women on Form G supported four relatively independent dimensions on the M-B Indicator but questioned the independence of the J-P dimension. The T-F dimension was relatively unstable for men in the studies of both Stricker and Ross (1964) and Carskadon (1977).

In addition to questioning the value of separate stencils for men and women on the Thinking and Feeling scales, research has looked at the two methods of scoring Forms F and G of the Myers-Briggs Indicator (Myers & McCaulley, 1985). In the first method, five stencils convert the test responses into points for four dimensions, E-I, S-N, T-F for male, T-F for
female, and J-P. The difference between the sum of points in the two scales determines the preference and the number of points indicates the strength of preference. For example, E 17 and I 9 indicates extraversive attitude. Four preferences are assumed to interact in complex nonlinear ways to produce 16 psychological types (e.g., INFJ). A few items are weighted and receive two points. The second method, continuous scores, is a linear transformation of preference scores. Computer-scoring services are provided for the Myers-Briggs protocols, and software is available for personal computers. The manual (Myers & McCaulley, 1985) provides a conversion table for preference and continuous scores. The scoring of the two components of each pair of the four scales rests on the assumption that each pair represents a true dichotomy, empirical support for which is not strong.

Recently the claim for true dichotomies on the scales of the Myers-Briggs Indicator has been challenged (Cowan, 1989; Healy, 1989; McCrae & Costa, 1989). The descriptions of bipolar preference lead to the expectation that the two poles of the four variables would relate in categorically different ways to four arrays on external variables (Mendelsohn, 1965). Sharp discontinuities should occur at the midpoint of each scale, but empirical evidence of bimodality in score distribution is sparse and very few studies have checked for midpoint discontinuity in the scales. Various interactions among the four scales are expected to embellish the 16 personality types with unique characteristics but the evidence for such interactions is scant (Wiggins, 1989). The manual (Myers & McCaulley, 1985) described the struggle with the dichotomy controversy but evidence for discontinuity and cut-off points is weak. More evidence for the discontinuous empirical relationships is needed before one can be justified in alluding to 16 possible score patterns as identifying people with characteristic personality types (Hicks, 1984). Whether inferences on Myers-Briggs Indicator scores reflect true dichotomies or continuous dimensions is important for the degree of certainty attached to a description of a person who has extremely strong preference for E in contrast to one with only slight preference for E and for the many combinations of preferences proposed for the inventory (DeVito, 1985).

Responses, especially those on the E-I and S-I scale scores may change with the time of day (Westman & Canter, 1979, 1984). When inventory scores and diurnal changes were measured on two consecutive work days, the most consistent changes for the 20 subjects were in E-I and S-I and the least consistent were the scores on the T-F and J-P scales. The E-I scores tended to be higher in the afternoon testings. Only a small number of subjects and no control subjects were included in these studies of the relationship between circadian behavior patterns and M-B Indicator scores but the findings warn that assigned typology may differ when measured at different times in the day.
Reliability and validity of the inventory have been estimated and generally have been acceptable. Four scales have won approval but the test structure, test evidence, and scoring system do not support 16 different types. The scales probably do not measure adequately what Jung intended but the four dimensions have reasonable validity. Jungian type theory is probably too complicated to be captured on an objective personality test but the Myers-Briggs Indicator has been praised as a practical assessment instrument whose constructs have been clarified by extensive research.

Recent Applications of the Myers-Briggs Type Indicator

The Myers-Briggs Type Indicator has become a popular personality inventory in many business organizations as well as in schools and religious communities (DeVito, 1985). Some of the modern applications have been cited here as an indication of the variety of its uses. Applications have been broad although not systematic (Carlson, 1985). A substantial number of studies have estimated the correlations between the Myers-Briggs Indicator scores and creativity and esthetic preferences (Buchanan & Taylor, 1986; Coan, 1978; Ireland & Kernan-Schloss, 1983; O’Haire & Marcia, 1980; Palmiere, 1972). In the academic world the Myers-Briggs Indicator has been employed as a predictor of choice of major study (Brooks & Johnson, 1979; Miller, 1988) and understanding of differences in teaching and learning style (Mill, 1984; Pinkney, 1983). Although the inventory does not measure interest, it has been effective in predicting or describing characteristics of different occupations (Kreienkamp & Luessenheide, 1985).

Goldschmid (1967) reported a regression analysis of the scores on 15 tests including the Myers-Briggs Indicator, MMPI, California Psychological Inventory, and the Strong Vocational Interest Blank. Relations of test responses of 100 freshmen college students from three campuses in the United States to their choices of physical science or humanities as major areas of study were analyzed. Test results did not permit comparisons of predictive power among the different tests. The characteristics that most accurately identified each group of students seemed to fall into broad categories such as orientation to life, interest patterns, and behavior in social contexts rather than fitting into the dimensions of the Myers-Briggs Type Indicator.

Robyak and Patton (1977) investigated the connections between Myers-Briggs' types and the effectiveness of study-skills courses that differed in the amount of structure. Forty college students, almost equally divided between men and women, who were Judging on the Myers-Briggs Indicator, improved in grade point average (GPA) after taking the study-skills course more than did the Perceivers but the amount of course structure was not related to GPA or to use of the study-skills course. College students who chose foreign language studies were identified on the Myers-Briggs Indicator as different from students who preferred a science curriculum (Moody, 1988).
A broad range of cognitive style and skills may be understood in terms of Jungian typological patterns. In one study of 33 college students, mostly women, those with high scores on the Thinking scale differed from those with high scores on the Feeling scale in their emphasis on clarity of thought in contrast to their vividness of feelings. In another study of 32 college students, who differed in Sensation and Intuition scores also differed in memory and social perception (Carlson, 1980). Reynolds and Hope (1970) reported that high school students with high Intuition scores surpassed their peers with high Sensation scores in GPA as well as in science achievement. In a study of 201 college students those who scored higher in Intuition type showed interest in a wider scope of activities than those with preference for Sensation items. The students high on the Sensation scale were likely to concentrate more on the immediate details of academic planning (Crockett & Crawford, 1989). Evidence from studies with the Myers-Briggs suggested that TV and audiovisual aids were more likely to be appreciated by those with preference for the Sensation dimension, whereas students with high Intuition scores appeared to prefer self-paced learning and courses that permitted them to study on their own initiative. The high Thinking scorers may prefer structured courses with clear goals and lectures by the teacher and those with high Feeling scores reported preferences for working on group projects and in human relations. Those students whose preference is for the Perception function were more likely to start assignments at the last minute (Myers & McCaulley, 1985).

Introverts and Intuitives, as defined by their answers to the Myers-Briggs Indicator, were more prone to accept misleading information which rendered them inaccurate on a memory-recall task than Extravert and Sensation types of college women and men but also more likely to be consistent in their responses when given information after the initial presentation. The authors reasoned that Extraverts' greater interest in the external would aid them in noticing details so that they would be less likely to be misled by misleading information (Ward & Loftus, 1985).

The relationship of personality variables of 1900 college students to Scholastic Aptitude Test (SAT) scores was investigated by Schurr, Ruble, and Henriksen (1988). The personality variables studied were Myers-Briggs Indicator scores, students' self-ratings of their skills in responses to the Student Description Questionnaire, and self-reported problems as measured by Study Behaviors Inventory. High school and college class averages together with the personality variables scores were included in a multiple regression analysis. Personality variables accounted for 21% of the variance for SAT Verbal scores. The Intuitive dimension of the Myers-Briggs Indicator in comparison with the Sensation dimension emerged as a predictor of SAT scores. The Myers-Briggs Intuitive-Feeling types tend to increase dur-
ing the years of schooling and to become overrepresented in college and graduate school (Dilley, 1987). The Myers-Briggs Indicator, open-ended questions concerning marriage relations, and self-ratings of marital happiness, were employed in an investigation of marital satisfaction of 20 couples (Carlson & Williams, 1984). As expected by Jungian theory, opposites in terms of the E-I dimension were likely to attract but married couples were more similar on functions, S-N and T-F especially, than on E-I scores.

In a teacher-training program 70 male teacher candidates in contrast to 365 college women were identifiable through scores on the E-I and T-F scales of the Myers-Briggs Indicator (Richek, 1969). The Myers-Briggs Indicator was less effective in differentiating among 104 rural school employees (Hicks, 1984). In a study of nurse practitioners and physician assistant students the Myers-Briggs scores and IQs of the women correlated significantly but an Extraversion-Introversion Scale, Locus of Control, and Intolerance of Ambiguity Scale, was not as effective as predictors of the students' GPAs or National Board scores (Bruhn, Bunce, & Greaser, 1978). In a study conducted at Howard University the Myers-Briggs Indicator differentiated more clearly between male than female black and white collegians. The Myers-Briggs-type classifications were generally stable during the interval between testings (Carlson & Levy, 1973; Levy, Murphy, & Carlson, 1972).

One of the recent uses of the Myers-Briggs Indicator in the business world is assessment of decision-making behavior. People of different personality types may have difficulty in working together because they perceive the world and make decisions in different ways (Moore, 1987). Experienced administrators in hospitals and corporate firms were presented hypothetical problems involving capital expansion at two levels of risk (Henderson & Nutt, 1980). The Jungian typology, as operationalized on the Myers-Briggs Indicator, was chosen to estimate decision style of executives. The Sensitive-Feeling executives tended to seek consensus from the group in forming their decisions. They were more tolerant of risk and more likely to adopt a project. Sensitive-Thinking types preferred hard data and logical analysis in reaching decisions. They perceived more risk and were more reluctant to adopt a project. The Intuitive-Thinking types preferred logic and to test several premises before coming to a decision. Intuitive-Feeling types believe that decisions could not be made without considering the context of the problems.

The manual (Myers & McCaulley, 1985) contains several chapters which describe extensive data for different amounts of education, eighth grade through college, bright versus not so bright students; different occupations, artists, physicians, and business men in several countries and in various kinds of work. Studies of differences in Myers-Briggs patterns of experimental and clinical psychologists were included. Differences between employees
who were more likely to remain and those more likely to become part of the job turnover were cited. Data on Myers-Briggs types describe over 3000 students from eight liberal arts colleges. The research on law school students cited in the manual is old and might be brought up to date. The data on seminary and medical school students included in the manual were more current.

Pinkney (1983) noted the employment of the inventory in predicting or describing occupational membership. Information-gathering tends toward either sensing of facts and data or intuiting possibilities and guesses. Involvement with information is oriented toward either thinking with logical analysis or with personal involvement. Some prefer to move toward decision-making while others prefer to be aware of potentialities. Excessive job turnover in sales jobs has been noted among Thinking types and sales forces tend over time to become mostly Extraversive types (Sundberg, 1965).

Kilmann and Herden (1976) expected that Jungian typology might enhance evaluations of organizational effectiveness. Evaluators tend to process information in a way congruent with the perceptual component of their personalities (Kreienkamp & Luessenheide, 1985; Mendelsohn, 1966). The inventory appeared to tap important aspects of Jungian theory which could be applied to facilitate linkage among individuals whose psychological dynamics differed (Kilmann & Taylor, 1972). Thomas and Kilmann’s research led to developing a Thomas-Kilmann Conflict Mode, a forced-choice 30-item questionnaire, which assessed conflict-handling styles in organizational situations. The Conflict Mode and the Myers-Briggs Indicator were administered to 199 management personnel. High Myers-Briggs Indicator Feeling scores correlated significantly with the cooperativeness dimension of the Conflict Mode test and high scores on the Myers-Briggs Indicator Extraversion and Thinking scales related significantly to the assertiveness dimension of the Conflict Mode test (Mills, Robey, & Smith, 1985).

Jamison and McGlothlin (1973) employed a shortened form of the Myers-Briggs Indicator in assessing safe drivers in California. Driving records of 164 people, mostly men, for three years when checked against their scores on the inventory, indicated that drivers whose records showed them to be safer drivers, preferred a more orderly arrangement of their lives and were less spontaneous in their decision-making than those whose records reflected a higher rate of violation.

The Myers-Briggs Indicator has been introduced into many phases of education, business, and professions and its contributions to understanding effective teamwork and the various preferences involved in decision-making have been welcomed.

DISCUSSION

The Myers-Briggs Indicator reflecting patterns of Jungian psychological
types relies on choices between extraversive or introersive attitudes, sensation or intuition, feeling or perceiving functions, to describe and differentiate categories of people according to the way they prefer to use their minds. The Myers-Briggs Indicator does not measure personality traits but only registers preferences.

Its indices of reliability and validity have been extensively investigated and have been judged acceptable. The constructs underlying the Myers-Briggs Indicator have been supported by correlations with other tests of personality, Extraversion-Introversion, and Emotionality as well as with behavioral correlates of the four scales in many professions and business organizations. The Intuition dimension of the M-B Indicator particularly was related in several studies to academic achievement, artistic interests, and even to the kinds of dreams recalled.

The two different scoring systems have been criticized as promising more differentiation than the test structure can support. Four dimensions of the Myers-Briggs Indicator rather than 16 are well supported, although even these four may not reflect Jung's typological theory as accurately as the test authors hoped or claimed. Jung expected extraversion and introversion to operate at both the conscious and unconscious levels, which is probably asking too much from an objective personality test format. Although bipolar oppositions are features of other psychological assessments as well as the Myers-Briggs Indicator, some authors question whether categories like Jung's or those of the Myers-Briggs Indicator are more than convenient simplified labels for surface behavior.

The authors have accumulated in the manual (1985) an impressive amount of research on students in a wide variety of professions, medicine, law, business, and seminarians, and norms on students in many liberal arts schools. The computer service offered by the test authors has allowed them to college scores on thousands of students at different levels of education and in different academic areas. Included in the manual is a chapter on interactive test patterns, the expansion of the four basic dimensions into the 16 psychological types which needs further research to confirm. Since a large amount of reported research has been conducted with college and academic subjects, more published studies of research done outside the world of university would strengthen the value of the Myers-Briggs Indicator. Perhaps the next edition of the Myers-Briggs Indicator manual will include results of its extensive use in business organizations.

The inventory has served as a practical assessment instrument by virtue of its known construct validity. Jung's theory and the Myers-Briggs Indicator provide interesting and provocative patterns that illuminate observations of individual differences in styles of gathering information and reaching decisions. The inventory was designed to describe preferences in thinking and
feeling, deciding and evaluating, and assist those who work in individual counseling and those working with groups. It has been extensively investigated and has met successfully most challenges to its rationale, test procedures, and test results.

REFERENCES


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