Interpreting the Career Maturity Inventory Attitude Scale's Relationship to Measures of Mental Ability

Mark L. Savickas, Ph. D.

Northeastern Ohio Universities

College of Medicine

Running Head: CMI Validity

Prepared for presentation at the meeting of the American Psychological Association, Toronto, August, 1984.

Abstract

Westbrook (1983) challenged the validity of the construct "career maturity" because measures such as the Career Maturity Inventory Attitude Scale (Crites, 1973) correlate to measures of mental ability. Rather than interpreting this association as evincing lack of discriminant validity, the association should be interpreted as supporting the convergent validity of the Career Maturity Inventory Attitude Scale (CMI-AS) because career development theory postulates that career maturity should relate to other dimensions of general maturity, including mental maturity and intelligence (Super, 1955; Super, et. al., 1957). Some minimum level of intelligence is required for the development of career attitudes and competencies because intelligence is, presumably, directly related to the acquisition and application of domain-relevant behaviors. More importantly, a measure of a conative variable like attitudinal career maturity may relate to intelligence as long as it also relates to other variables which, in turn, are unrelated to intelligence. A key test to determine if the CMI-AS measures something other than intelligence is whether or not the CMI-AS correlates to measures of other dimensions of general maturity that do not correlate to intelligence. Studies showing the indirect or circumstantial validity of the CMI-AS are presented to support its construct validity as a measure of career maturity.

Interpreting the Career Maturity Inventory Attitude Scale's Relationship to Measures of Mental Ability

If a construct is taken seriously by a profession, then its validity is repeatedly challenged (Cronbach, 1971, p. 465). Serious challenges consist of counterhypotheses or alternative constructs to account for the behavior. A construct being challenged in vocational psychology is "career maturity." Westbrook (1982, 1983) asserted that career maturity instruments do not fit the trait name and that "the concept of career maturity is an endangered species." A key argument in this challenge is that career maturity should be relatively independent of mental ability, yet numerous studies report moderate correlations between measures of career maturity and measures of mental ability (Palmo & Lutz, 1983). In particular, Westbrook has challenged the construct validity of Crites' (1973) Career Maturity Inventory Attitude Scale (CMI-AS). Westbrook, Cutts, Madison, and Arcia (1980, p. 273) claimed that the CMI-AS does not conform to Campbell's (1960) standard for discriminant validity because it correlates to measures of mental ability. Moreover, they interpreted this correlation as showing that the CMI-AS actually measures ability or achievement rather than career maturity (Westbrook, et. al., 1980, p. 274).

The fact that an attitudinal career maturity measure correlates to mental ability need not lead to the conclusion that the measure is invalid nor that the construct is meaningless. On the contrary, the CMI-AS should correlate to mental ability because it measures a mental process (Ware, 1980) which mediates the development of career choice competencies and realistic

career decision-making. Both Crites (1965) and Super (1981) have described their respective attitude scales as conative in nature, that is, assessing an aspect of personality characterized as conscious, purposive, and willful (Wolman, 1973). Because the CMI-AS measures conative dispositions that are conscious, purposive, and verbal, it should relate to measures of mental ability. In addition, the CMI-AS should correlate to measures of mental or learning ability because individuals learn attitudes toward career choice as they adapt to their society. More intelligent individuals should be more likely to learn realistic attitudes toward career choice (Crites, 1971; Super, 1955; Super, Crites, Hummel, Moser, Overstreet & Warnath, 1957).

This does not mean that intelligence is synonymous with career maturity as Westbrook, et. al. (1980, p. 277) imply when they ask "Shouldn't it be possible for students of high intelligence to be career immature and students with low intelligence to be career mature?" The correlation of the CMI-AS to intelligence may be due to the covariation of both variables with a third variable such as parental attitudes. A composite relationship has not yet been studied but there is evidence that both mental ability (Bayley, 1970) and career maturity (Lee, 1984; McNair & Brown, 1983) relate to parental attitudes. Miller (1978) reported that high CMI-AS scores correlated to receiving positive reinforcement from both parents and having an open, positive relationship with one's father whereas low CMI-AS scores correlated to perceptions of one's parents as rejecting and as imposing parental goals on their children. He concluded that positive parental attitudes and behaviors facilitate career maturation whereas negative attitudes and behaviors impede career maturation. The same parental attitudes probably facilitate or thwart

children's mental development.

To be a meaningful and parsimonious construct, career maturity need not diverge from intelligence but it must converge with other indices of general maturity which are unrelated to intelligence. In arguing that the CMI-AS actually measures mental ability, Westbrook, et. al. (1980) and Palmo and Lutz (1983) rely for support on the direct correlation between the CMI-AS and measures of mental ability. However, a thorough test of the hypothesized identity of the CMI-AS and ability measures also requires indirect validation (Campbell, 1960). Cattell and Warburton (1967, p. 34) explained that "as a general principle and practice in applied psychology it would seem desirable always to supplement and check direct validity measures with indirect, circumstantial validity estimates, for we have here one of the truly independent approaches to the same validity values." If Westbrook's interpretation is right, then the CMI-AS should demonstrate indirect validity as a measure of mental ability, that is, the CMI-AS should correlate with a variety of variables in just the same way as ability measures relate to these variables.

The literature on the CMI-AS includes many studies that report career maturity relates to non-intellective variables associated with general maturity and adjustment which are not, in turn, related to intelligence. For example, identity, self-esteem, time perspective, and locus of control are unrelated to intelligence but are related to career maturity. Locus of control has not been found to correlate to intelligence (Rotter, 1966; Lefcourt, 1976), but it correlates (r = .20 to .35) to the CMI-AS (Gable, Thompson, & Glanstein, 1976; Khan & Alvi, 1983; Miller & Winder, 1976; Thomas & Carpenter, 1974).

Self-esteem has not been found to correlate to intelligence (Coopersmith, 1967; Geraty, 1983; Wylie, 1974), but it correlates (r = upper .30's) to the CMI-AS (Crook, Healy, & O'Shea, 1984; Dillard, 1976; Holland, 1981; Lawrence & Brown, 1976; Pound, 1978; Seaward, 1978). Sense of identity has not been found to correlate to intelligence (Marcia, 1980) but it correlates to the CMI-AS (Gasper & Omvig, 1976; Holland & Holland, 1977; Martin & Redmore, 1978; Munley, 1975).

Time perspective has not been found to correlate to intelligence (Dickstein, 1969; Doob, 1971), but it correlates to career maturity (Neely & Hanna, 1977; Savickas, Silling, & Shwartz, in press). Lopez-Baez (1981) reported that optimism about the future correlated (r = .51) to the CMI-AS and that sense of continuity between the present and future correlated (r = .40) to the CMI-AS. Furthermore, in examining the relationships of the CMI-AS subscales to the optimism and continuity measures, she found that the time perspective variables correlated highest to the orientation subscale (continuity r = .39; optimism r = .48) and lowest to the independence subscale (continuity r = -.04; optimism r = .19). This provided evidence for the convergent validity of the orientation subscale and divergent validity of the independence subscale. Time perspective should not relate to independence but it should relate to orientation which measures the extent to which an individual is familiar with and relating to the career decision-making process and not, as Westbrook (1983, p. 268) wrote, the "extent to which the individual is task- or pleasure-oriented in his or her attitudes toward work and the values he or she places upon work."

If Westbrook was right in arguing that career maturity instruments actually measure intelligence, then career maturity instruments should be unrelated to variables which are unrelated to intelligence. Clearly, the CMI is not a poor man's intelligence test. The Career Maturity Inventory-Attitude Scale relates, as it should, to measures of intellective and non-intellective dimensions of general maturity.

Although one can disagree with how Westbrook, et. al. (1980) and Palmo and Lutz (1983) interpreted the CMI-AS' correlation to intelligence, one cannot deny that they focus our attention on an important issue in understanding the construct of career maturity. The reported linear association between conative career maturity and intelligence has not been studied as it deserves to be. We need to plot carefully the relationship of career maturity to intelligence over the entire range of mental ability to check for threshold, deceleration, and curvilinear relationships. For example, consider that Westbrook, et. al (1980) and Palmo and Lutz (1983) reported moderate correlations ($\underline{r}$ = .49, .56, .51) between the CMI-AS and intelligence measures within heterogeneous groups of individuals (i.e., rural ninth graders, technical college students, C.E.T.A. clients) at the low average ability level whereas Carek (1965), Savickas (1976), and Williams (1967) reported low correlations ($\underline{r}$ = .17, .03, .20) between the CMI-AS and intelligence measures within homogeneous groups of individuals (i.e., university students) at the high average ability level. Considering these findings suggests that the relationship of attitudinal career maturity to intelligence probably does not conform to the simple linear association that has been criticized. Hopefully, future studies of attitudinal career maturity's relationship to intelligence will

examine the full range of ability levels; sample heterogeneous groups of subjects; check for threshold, decelerating, and curvilinear relationships; and use the multimethod-multitrait model of construct validation.

References

Bayley, N. (1970). Development of mental abilities. In P. H. Mussen (Ed.), Carmichaels manual of child psychology (pp. 1163-1210). New York: Wiley & Sons.

Campbell, D. T. (1960). Recommendations for APA test standards regarding construct, trait, or discriminant validity. American Psychologist, 15, 546-553.

Carek, R. (1965). The interrelations between social desirability, vocational maturity, vocational realism, and vocational decision. (Master's Thesis, University of Iowa).

Cattell, R. B., & Warburton, F. W. (1967). Objective personality and motivation tests. Urbana, IL: University of Illinois.

Coopersmith, S. (1967). The antecedents of self-esteem. San Francisco, CA: W. H. Freeman.

Crites, J. O. (1965). Measurement of vocational maturity in adolescence. Psychological Monographs, 79(2), Whole No. 595.

Crites, J. O. (1969). Vocational psychology. New York: McGraw-Hill.

Crites, J. O. (1971). The maturity of vocational attitudes in adolescence. Washington, DC: American Personnel and Guidance Association.

Crites, J. O. (1973). Career maturity inventory. Monterey, CA: CTB/McGraw-Hill.

Cronbach, L. J. (1971). Test validation. In R. L. Thorndike (Ed.), Educational measurement (2nd ed.) (pp. 443-507). Washington, DC: American Council on Education.

Crook, R. H., Healy, C. C., & O'Shea, D. W. (1984). The linkage of work achievement to self-esteem, career maturity, and college achievement. Journal of Vocational Behavior, 25, 70-79.

Dickstein, L. S. (1969). Prospective span as a cognitive ability. Journal of Consulting and Clinical Psychology, 33, 757-760.

Dillard, J. M. (1976). Relationship between career maturity and self-concepts of suburban and urban middle- and urban lower-class preadolescent black males. Journal of Vocational Behavior, 9, 311-320.

Doob, L. W. (1971). Patterning of time. New Haven, CT: Yale University Press.

Gable, R. K., Thompson, D. L., & Glanstein, P. J. (1976). Perceptions of personal control and conformity of vocational choice as correlates of vocational development. Journal of Vocational Behavior, 8, 259-267.

Gasper, T. H., & Omvig, C. P. (1976). The relationship between career maturity and occupational plans of high school juniors. Journal of Vocational Behavior, 9, 367-375.

Geraty, R. (1983). Education and self-esteem. In J. E. Mach and S. L. Ablon (Eds.), The development and sustenance of self-esteem in childhood (pp. 255-269). New York: International Universities Press.

Holland, J. L., & Holland, J. E. (1977). Vocational indecision: More evidence and speculation. Journal of Counseling Psychology, 24, 404-414.

Holland, M. (1981). Relationships between vocational development and self-concept in sixth grade students. Journal of Vocational Behavior, 18, 228-236.

Khan, S. B., & Alvi, S. A. (1983). Educational, social, and psychological correlates of vocational maturity. Journal of Vocational Behavior, 22, 357-364.

Lawrence, W., & Brown, D. (1976). An investigation of intelligence, self-concept, socioeconomic status, race, and sex as predictors of career maturity. Journal of Vocational Behavior, 9, 43-52.

Lee, C. C. (1984). Predicting the career choice attitudes of rural black, white, and native American high school students. Vocational Guidance Quarterly, 32, 177-184.

Lefcourt, H. M. (1976). Locus of control: Current trends in theory and research. New York: Laurence Erlbaum.

Lopez-Baez, S. I. (1981). A study of career consciousness: Temporal experience and career maturity. (Doctoral dissertation, Kent State University, 1980). Dissertation Abstracts International, 41(8), 3427A.

Marcia, J. E. (1980). Identity in adolescence. In J. Adelson (Ed.), Handbook of adolescent psychology (pp. 159-187). New York: Wiley & Sons.

Martin, J., & Redmore, C. (1978). A longitudinal study of ego development. Developmental Psychology, 14, 189-190.

McNair, D., & Brown, D. (1983). Predicting the occupational aspirations, occupational expectations, and career maturity of black and white male and female 10th graders. Vocational Guidance Quarterly, 32, 29-36.

Miller, M. F. (1978). Childhood experience antecedents of career maturity attitudes. Vocational Guidance Quarterly, 27, 137-143.

Miller, M. F., & Winder, P. A. (1976). Relationship of vocational maturity to locus of control of reinforcement. New York State Personnel and Guidance Worker, 11, 18-20.

Munley, P. H. (1975). Erik Erikson's theory of psychosocial development and vocational behavior. Journal of Counseling Psychology, 22, 314-319.

Neely, M. A., & Hanna, G. S. (1977). A study of the concurrent validity of the career maturity inventory. Educational and Psychological Measurement, 37, 1087-1090.

Palmo, A. J., & Lutz, J. G. (1983). The relationship of performance on the CMI to intelligence with disadvantaged youngsters. Measurement and Evaluation in Guidance, 16, 139-148.

Pound, R. E. (1978). Using self-concept subscales in predicting career maturity for race, and sex subgroups. Vocational Guidance Quarterly, 27, 61-70.

Rotter, J. B. (1966). Generalized expectancies for internal versus external control of reinforcement. Psychological Monographs, 80(1), Whole No. 609.

Savickas, M. L. (1976). Consistency of expressed interests as an indicator of vocational maturity in college freshman. (Doctoral dissertation, Kent State University, 1975). Dissertation Abstracts International, 36(9), 5838A.

Savickas, M. L., Silling, M. S., & Schwartz, S. (in press). Time perspective in vocational maturity and career decision-making. Journal of Vocational Behavior.

Seaward, M. R. (1978, March). A comparison of the career maturity, self-concept, and academic achievement of female cooperative vocational office training students, intensive business training students, and regular business education students in selected high schools in Mississippi. Paper presented at the meeting of the American Educational Research Association, Toronto.

Super, D. E. (1955). The dimensions and measurement of vocational maturity. Teachers College Record, 57, 151-163.

Super, D. E., Crites, J. O., Hummel, R. C., Moser, H. P., Overstreet, P. L., & Warnath, C. F. (1957). Vocational development: A framework for research. New York: Teachers College Press.

Super, D. E., Thompson, A. S., Lindeman, R. H., Jordaan, J. P., & Myers, R. A. (1981). The career development inventory. Palo Alto, CA: Consulting Psychologists Press.

Thomas, H. B., & Carpenter, J. (1976, April). A developmental study of the mediating effects of locus of control on career maturity. Paper presented at the meeting of the National Council on Measurement in Education, San Francisco, CA.

Ware, M. E. (1980). Antecedents of educational/career preferences and choices. Journal of Vocational Behavior, 16, 312-319.

Westbrook, B. W. (1982). Construct validation of career maturity measures. In J. D. Krumboltz and D. A. Hamel (Eds.), Assessing career development (pp. 66-112). Palo Alto, CA: Mayfield.

Westbrook, B. W. (1983). Career maturity: The concept, the instrument, and the research. In W. B. Walsh and S. H. Osipow (Eds.), Handbook of Vocational Psychology: Volume 1 (pp. 263-304). Hillsdale, NJ: Erlbaum.

Westbrook, B. W., Cutts, C. C., Madison, S. S., & Arcia, M. A. (1980). The validity of Crites' model of career maturity. Journal of Vocational Behavior, 16, 249-281.

Williams, R. H. (1967). The relationship between the vocational development and scholastic achievement of male college students. (Doctoral dissertation, New York University, 1967). Dissertation Abstracts International, 28(4), 1314A.

Wolman, B. B. (1973). Dictionary of behavioral science. New York: Van Nostrand Reinhold.

Wylie, R. (1974). The self-concept: A review of methodological considerations and measuring instruments, (rev. ed.). Lincoln, NE: University of Nebraska Press.