1. Title: Career Thoughts Inventory (CTI).

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3. Publisher: Psychological Assessment Resources, Inc. (PAR), P.O. Box 998, Odessa, FL 33556; 1-800-331-TEST.

4. Forms: groups to which applicable: There is one form of the CTI that is written at the 6th grade reading level and normed separately for high school students, college students, and adults.

5. Practical features: The CTI can be quickly administered (7-15 minutes) and hand scored (5-8 minutes) using a two layer answer sheet. Once the test booklet is torn apart and scored, there are profiles for high school students, college students and adults on the back of the scoring sheet. There is also a companion workbook, Improving Your Career Thoughts: A Workbook for the Career Thoughts Inventory (Sampson, Peterson, Lenz, Reardon, & Saunders, 1996b) that assists in interpretation and the career exploration process.

6. General type: The CTI is a measure of dysfunctional career thinking based on the cognitive information processing (CIP) theoretical approach described by Peterson, Sampson, and Reardon (1991), Peterson, Sampson, Reardon and Lenz (1996) and cognitive therapy.

7. Date of publication: 1996.

8. Cost, booklet, answer sheet: PAR offers an introductory kit consisting of the manual, 5 workbooks, and 25 test booklets for $85.00. The items can be purchased separately at $29.00 for the manual, $39.00 for a package of 25 test booklets, $59.00 for a package of 10 workbooks, and $7.50 for individual workbooks.

9. Scoring services available and cost: None needed or available.

10. Time required: The CTI can be quickly administered (7-15 minutes) and hand scored (5-8 minutes).

11. Purpose for which evaluated: While reviewing the CTI, I focused on working with college students and adults who may be experiencing some difficulty making a career choice OR changing and/or accommodating other life roles as adults.
12. Description of test, items, scoring: The CTI items and answer sheet are combined along with the profile into one test booklet. The 48 items are all worded negatively to represent dysfunctional career thoughts. Clients respond to the items using a 4-point Likert-type scale ranging from Strongly Disagree (SD) to Strongly Agree (SA). After completing the CTI, a practitioner or client separates the top answer sheet from the bottom scoring form and proceeds to score the inventory on the scoring form. The CTI is easily scored by first adding the numbers representing each of their responses to all 48 items down the columns corresponding to SD (1), D (2), A (3), and SA (4) to calculate the CTI Total Score. Clients are then instructed to transfer the number representing their answer to each of the 29 items into one of three scale scores: (a) Decision Making Confusion (DMC); (b) Commitment Anxiety (CA); or (c) External Conflict (EC) and add down each column to calculate each scale score. After scoring the inventory, clients are encouraged to record their four scores on the appropriate profile (high school, college, adult) on the back side of the scoring form.

13. Authors' purpose and basis for selecting items: Sampson et al. (1996a) identified four content domains representing the CIP theory and cognitive therapy in which to develop items: (a) self-knowledge; (b) occupational knowledge; (c) decision-making skills; and (d) executive processing. The decision making skills domain was further divided into five components: (a) communication; (b) analysis; (c) synthesis; (d) valuing; and (e) execution. The authors of the CTI originally developed 248 items in these domains and components based on their career counseling experience with clients. Another group of career counselors reviewed the items and helped Sampson et al. (1996a) reduce the pool to 195 items. That pool was submitted to a bias panel that reviewed the items for any bias related to ethnicity, gender, disability, or age. The pool of 195 items was then administered to 320 volunteer undergraduates at Florida State University (FSU) and reduced to 80 items based on their performance with that sample. The 80 item pool was further culled down to 48 items (six in each of the eight content areas) based on principal components analysis (PCA), MANOVA, and discriminant analysis with responses from another 196 volunteer undergraduates at FSU. The PCA yielded the three scales: DMC, CA, and EC. Norm groups were then developed for each of the three populations (high school, college, adult) using the 48 item form.

14. Adequacy of directions, training required to administer: The instructions printed on the cover of the test booklet are quite clear with an example provided for further clarification. PAR classified the CTI as a level B instrument.

15. Mental functions or traits represented in each score, whether or sources of invalidity: The CTI Total Score is based on all 48 items and represents an overall level of dysfunctional thinking related to career decision making. The three scales were derived using PCA with varimax rotation and thus represent three uncorrelated constructs. Sampson et al. (1996a) defined DMC as the inability to initiate or sustain the decision making process as a result of disabling emotions and/or lack of understanding about the decision making process itself " (p. 28). They identified CA as the inability to make a commitment to a specified career choice, accompanied by generalized anxiety about the outcome of the decision making process" (Sampson et al., 1996a, p. 28). Finally, Sampson et al. indicated that EC “reflects the inability to balance the importance of
one's own self-perceptions with the importance of input from significant others, resulting in a reluctance to assume responsibility for decision making" (p. 29).

16. Comments regarding test design: The CTI is theoretically based, empirically tested, and well designed. A review of the items by any career counselor would suggest a high degree of face validity. The CTI is also easy to administer and score and, especially with the addition of the workbook, is also easy to interpret meaningfully. The CTI can be used in a variety of ways to work with clients (screening, needs assessment, counseling) and also in research.

17. Validation against criteria: As the primary purpose of the CTI is to identify dysfunctional thinking related to career decision making, criterion-related validity was tested by comparing the results of client versus nonclient populations. The MANOVA performed on data collected at FSU and Ohio State University between students enrolled in career planning courses and those enrolled in other classes revealed significant differences between the client and nonclient populations.

18. Other empirical evidence indicating what the test measures: As evidence of construct validity, Sampson et al. (1996a) looked at the factor structure of the CTI using PCA with varimax rotation. Three factors were produced that were supported by the theory: DMC, CA and EC. In general, Sampson et al. concluded that there is a general confusion factor associated with career decision making (DMC) and, among some clients, more specific concerns with commitment (CA) or involvement with significant others in the decision making process (EC).

19. Comments regarding fairness: Items for the CTI were written to be as free from bias as possible. In addition, the 195 item pool was submitted to a bias panel for editing related to gender, race, disability, and age bias. Follow-up multiple regression analysis revealed a very small proportion of the variance related to gender or race. Thus, the CTI was designed for fairness and clearly achieved that goal.

20. Comments regarding validity for particular purposes: Sampson et al. (1996a) also reported good convergent validity between the CTI Total Score, scale scores and scores on the My Vocational Situation (MVS; Holland, Daiger, & Power, 1980), Career Decision Scale (CDS; Osipow, Carney, Winer, Yanico, & Koschier, 1987), Career Decision Profile (CDP; Jones, 1988), and NEO Personality Inventory (NEO; Costa & McCrae, 1992). All Pearson product moment correlation coefficients were in the expected directions. Sampson et al. also met their goals for utility by developing an instrument with the advantages of quick administration, rapid scoring, easy interpretation, clear applications in counseling, and relatively low cost.

21. Generalizability (procedure, cases, results): Studies reported in the manual indicate that the CTI is generalizable across high school, college and adult populations although Sampson et al. (1996a) recommended establishing local norms.

22. Reliability: Sampson et al. (1996a) performed and reported both measures of internal consistency and stability. The internal consistency estimates were good for the
CTI Total Score (.93-.97) and DMC (.90-.94) and adequate for CA (.79-.91) and EC (.74-.81) across the norm groups. Once again, CA and EC each contained fewer items. Four week test-retest stability estimates for the CTI Total Score and three scale scores ranged from r = .74-.86 for college students and r = .52-.72 for high school students which Sampson et al. indicated were adequate. Once again, the correlations were lower for those scales with fewer items (CA & EC).

23. Norms (type of scale, selection of sample): The norm group included more than 1500 people distributed as follows: 571 adults, 595 college students, and 396 high school students. All groups were well distributed geographically around the U.S. and generally representative of their respective populations according to gender and race. Most of the adult norm group were working or seeking employment and not receiving career counseling while both the college and high school norms were approximately equally divided between those receiving and not receiving career assistance. Norms were also reported for a client group of 376 people.

24. Comments regarding adequacy of above for particular purpose: The norms are generally representative of the three populations although each could be larger which might yield higher reliability estimates. Sampson et al. (1996a) recommended establishing local norms for client groups.

25. Aids to the user: The CTI Professional Manual (Sampson et al., 1996a) is well written, nicely organized, and informative. The manual includes a thorough review of the CIP theory for those who are not familiar with it. It also provides a section describing the use of the workbook. Finally, Sampson et al. offered a good section on interpretation of the CTI with several case studies included.

26. Comments of reviewers: Since the CTI is a relatively new instrument, no reviews were found in either the Mental Measurements Yearbook or Tests in Print.

27. General evaluation: The CTI is a well designed, theoretically based, reliable and valid measure of dysfunctional career thoughts. The design of the test booklet that includes the items and answer sheet along with a scoring form and profiles is very helpful for ease of administration and interpretation. This facilitates the career counseling process by eliminating the need to interrupt the process for assessment. The counseling process is further facilitated by the addition of a workbook so that, in one session, counselor and client can move from identifying the need for assessment through administering the CTI and on into counseling using the CTI. My initial concern about all of the items being negatively worded and creating a response set was ameliorated by further study of the manual. I agree with Sampson et al. (1996a) that the wording is appropriate for the task. A second concern about the theoretical base of the CTI was quickly relieved by a review of the test booklet and the thorough presentation in the professional manual. Any career counselor with an understanding of cognitive or cognitive behavioral theories related to career counseling can comfortably use the CTI. A final concern that remains is that Sampson et al. need to continue to work on the psychometric properties of the CTI, in particularly the reliability and validity of the EC scale. However, that is a concern with
many new instruments and should not deter career counselors who have read the manual from using the CTI with their clients.

References


