

The Earning Capacity Assessment Form-2: A Status Report

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Abstract. The Earning Capacity Assessment Form-2 (ECAF-2) (Shahnasarian, 2010c) is the only standardized, peer-reviewed instrument developed to facilitate vocational experts' assessments of claims of loss of earning capacity. During its first 30 months, practitioners on 5 continents purchased 4,500 ECAF-2s to facilitate their evaluations. This article describes the ECAF-2 and provides information about its use. Peer reviews including assessments of the instrument's admissibility are cited. The author discusses extensions of ECAF-2 applications through claimant education on the assessment of claims of loss of earning capacity as a means to further reduce variance in vocational experts' evaluations.

Introduced in 2001 (Shahnasarian, 2001), the Earning Capacity Assessment Form (ECAF) became commercially available in 2004 (Shahnasarian, 2004a) when Elliott & Fitzpatrick published it. After the publication of several further validation studies conducted over the course of approximately a decade, Psychological Assessment Resources (PAR) published the instrument's second edition, the Earning Capacity Assessment Form-2 (ECAF-2), in 2010 (Shahnasarian, 2010c). Vocational experts worldwide have since been using the ECAF-2 to facilitate analyses of claims of loss of earning capacity.

This article provides general information about the ECAF-2, including summaries of its theoretical foundations, development, applications, and psychometric properties. Peer reviews and data about practitioners' use of the instrument follow. The article concludes with a discussion of ongoing efforts to make ECAF-2 use more robust through claimant education.

The ECAF-2

The ECAF-2 is the only standardized, peer-reviewed instrument developed to facilitate vocational experts' ratings of claims of loss of earning capacity. A brief description of it follows.

ECAF-2 Description

A four-page document, the ECAF-2 includes 14 factors presented for a vocational evaluator to rate with respect to a pending claim of loss of earning capacity. Four statements arranged in a graduated, hierarchi-

cal sequence accompany each factor. Within a given cluster of statements, the first statement generally connotes either a high level of vocational functioning or an absence of an impediment to career development. Subsequent statements reflect progressively increasing levels of potential career-related problems that could affect future earning capacity. As an example, ratings from which an evaluator could choose on the cognition factor include:

- 0 Cognitively intact
- 1 Mild cognition problems, not anticipated to impact future career development
- 2 Cognitive deficits will adversely impact career development
- 3 Cognitive deficits preclude gainful work participation

The ECAF-2's graduated rating scheme allows for systematic analysis and assessment, and valuation of phenomena (i.e., factors influencing earning capacity) while also incorporating practitioners' clinical judgments. Shahnasarian and Leitten (2008c) emphasized the instrument is a resource to facilitate systematic analysis and appraisal rather than a self-standing outcome measure. The ECAF-2's 14 factors and their definitions appear in Figure 1, and Figure 2 summarizes the 10 postulates undergirding the instrument's use.

Users complete the ECAF-2 in three steps. First, they rate an examinee with respect to the 9 inhibitor factors and 5 driver factors. Second, they assess the examinee's ECAF-2 profile. Third, they apply interpretive guidelines to assign an overall impairment to

Stability of Career Development: consists of longevity of employment with previous employers, consistency between types of jobs performed and industries within which subjects has worked, eligibility for rehiring with prior employers, and continuity of employment.

Work Propensity: subject's historical level of work participation including proclivity to pursue overtime work and supplemental employment.

Demonstrated Earnings History: earnings levels a subject has demonstrated a capacity to attain.

Phase of Career Development: age, level of career maturity, and vocational accomplishments with respect to status within one of five progressive career development phases – growth, exploration, establishment, maintenance, and withdrawal.

Subject-Specific Issues: life and/or personal circumstances that may impact a subject's ability to pursue work-related activities.

Motivation: A personality trait affecting work tendencies and productivity. Indicators include record of career accomplishments and work participation, initiatives to enhance existing skill set, reasonableness of job search efforts, attempts to return to work after acquiring disabling problems, efforts to pursue rehabilitation services to overcome work-related obstacles, and subject's use of discretionary time to further career development.

Ability to Apply Prior Skills: based on transferability of skills – subject's ability to apply previously developed work skills and specialized knowledge to meet the requirements of jobs or occupations other than what subject has performed in the past. Factors such as vocational adjustment issues, physical and cognitive capacity for retraining, and available resources should be considered.

Future Career Development Prospects: a general awareness of what could impact subjects' future employability. Dependent upon factors such as industry trends, marketplace changes, and modification of management philosophy.

Cognition: subject's thought processing and mental functioning abilities. Deficits may be congenital, due to medication, or stem from events such as a head injury, cerebrovascular accident, dementia, or a mental disorder.

Prognosis: Expectancy of how disabling problems and vocational handicaps will impact the subject over the remainder of his/her work life, including future earning capacity.

Need and Capacity for Retraining: necessity for subject to undergo retraining in order to realize earning capacity; may involve consideration of subject's capacity for retraining.

Preexisting Vocational Handicaps: includes subject's premorbid medical and psychological history, and level of functioning. Unrealized disabling problems may synergize to yield a compounded disabling outcome.

Acquired Vocational Handicaps: factors that can adversely impact present and future career development, including diminished access to work opportunities, need for workplace accommodations, employer bias in hiring and advancement, and diminished work life expectancy.

Vocational Adjustment Issues: difficulties subject may realize when career transitioning due to vocationally related and subject-specific characteristics that may inhibit or facilitate positive vocational adjustment. A subject's capacity to make a positive vocational adjustment depends upon ability to recover from setbacks posed by newly acquired disabling problems.

Figure 1. The 14 ECAF-2 Factors with Definitions

earning capacity rating. Figure 3 shows the Impairment to Earning Capacity Rating Scale, the ultimate point of reference toward which ECAF-2 users work.

Some ECAF-2 users complete their factor ratings while examining a claimant and then clinically correlate case-specific data with their assessments. Others defer completing the instrument until the end of their evaluation, preferring to use it to culminate assessments of claims of loss of earning capacity.

Experienced users complete the ECAF-2 in 15 minutes or less. Of course, as users (a) enhance their familiarity and confidence with the ECAF-2's 14 factors, (b) gain skills and confidence in assigning factor ratings, and (c) become adept at interpreting ECAF-2 profiles and applying interpretive standards, they become more competent and proficient instrument users. A professional user's manual (Shahnasarian, 2010b) accompanies the ECAF-2 and includes instructions on the instrument's use, reports of validity and

Postulate #1: When evaluating loss of earning capacity claims, there are premorbid and postincident factors that could be facilitative (drivers) as well as detrimental (inhibitors) to a claimant's vocational rehabilitation. These factors merit analysis

Postulate #2: ECAF-2 factors that are drivers include low scores on measures of the following:

- Stability of Career Development
- Work Propensity
- Demonstrated Earnings History
- Career Motivation
- Cognition

Postulate #3: ECAF-2 factors that are inhibitors include high scores on measures of the following:

- Phase of Career Development
- Subject Specific Issues
- Ability to Apply Prior Skills
- Future Career Development Prospects
- Prognosis
- Need and Capacity for Retraining
- Preexisting Vocational Handicaps
- Acquired Vocational Handicaps
- Vocational Adjustment Issues

Postulate #4: Drivers and inhibitors can be quantitatively and qualitatively evaluated by qualified vocational rehabilitation evaluators.

Postulate #5: Drivers and inhibitors have an interactive effect on vocational rehabilitation potential, assuming an individual is motivated to pursue vocational rehabilitation.

Postulate #6: Positive drivers can help mitigate earning capacity damages, assuming an individual is motivated for this.

Postulate #7: The ECAF-2 can be used to generate a quantitative index of drivers.

Postulate #8: The ECAF-2 can be used to generate a quantitative index of inhibitors.

Postulate #9: Driver and inhibitor indices can be used to assess claims of loss of earning capacity with corresponding degrees of loss.

Postulate #10: At times, drivers can take on inhibitor qualities and inhibitors can take on driver qualities.

Figure 2. ECAF-2 Postulates

reliability studies, interpretive guidelines, and case study examples.

Shahnasarian (2010b) noted the ECAF-2 can be particularly useful in cases in which the assessment of latent or future loss of earning capacity is intuitively evident but difficult to quantify, such as in cases involving:

- Pediatric patients with permanent injuries
- Young adults and others early in their career development who, like pediatric patients, have yet to demonstrate an adequate baseline of career achievements or historical earnings representative of preinjury earning capacity
- Individuals who return to work in either their preinjury job or an alternate job, and are anticipated to experience degenerative problems and/or other vocational handicaps

- Cases in which an individual's earning capacity had not been realized at the time career development was interrupted (e.g., a college-educated individual who was actively raising children and not pursuing career development)
- Small business owners and other self-employed individuals who become compromised in ability to pursue career development but continue to pursue entrepreneurial activities
- Individuals who lack a demonstrated earnings record

ECAF-2 Psychometric Properties

Shahnasarian (2004b) reported the ECAF's initial validation study, which involved 78 vocational rehabilitation counselors employed by the State of Florida. Subjects were randomly assigned to either a control

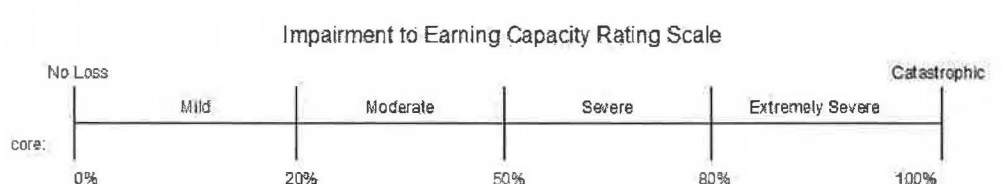


Figure 3. The Impairment to Earning Capacity Rating Scale. Reproduced by special permission of the Publisher, Psychological Assessment Resources, Inc., 16204 North Florida Avenue, Lutz, Florida 33549, from the Earning Capacity Assessment Form (2nd ed.) by Michael Shahnasarian, Ph.D., Copyright 2010 by PAR, Inc. Further reproduction is prohibited without permission of PAR, Inc.

group or one of two experimental groups that used the ECAF to help evaluate claims of loss of earning capacity presented in three fact patterns. In all cases, variances within experimental group assessments were significantly less than variances among control group subjects. Further, subjects' ECAF use reduced within-group variance in loss of earning capacity estimates.

A number of studies have since been undertaken to establish the ECAF-2's validity and reliability. Briefly, research investigating the ECAF-2's construct validity found vocational rehabilitation experts agreed or strongly agreed the instrument facilitated analyses of loss of earning capacity claims in 74.5% of 70 cases they evaluated (Shahnasarian & Leitten, 2008b, 2008c). Two driver factors (Career Motivation and Cognition) were most often identified as important in assessing potential loss of earning capacity; this finding was supported in a longitudinal study in which claimants were reevaluated from 5 to 7 years after having undergone an initial evaluation (Shahnasarian & Leitten, 2008a).

Shahnasarian & Leitten (2008b, 2008c) and Shahnasarian (2010b) reported studies of assessments of the ECAF-2s internal structure. Given the interdependence of inhibitor factors and driver factors, hypotheses that most items would be positively correlated with each other have generally proven to be true. Inhibitor items tend to have stronger positive correlations with other inhibitor items than with driver items; likewise, driver items tend to have stronger positive correlations with other driver items than with inhibitor items (Shahnasarian & Leitten, 2008b).

Regarding the ECAF-2's internal consistency, data from a 2009 study found a coefficient alpha of .82 for the 14 items (Shahnasarian, 2009, 2010b), and interrater agreements among experienced evaluators ranged between 57% to 100%, with rater agreement on 10 items at or above 70%. Shahnasarian and Leitten (2008b) reported results of the ECAF-2's test-retest reliability. The study included 25 graduate students who rated case studies over a 2-week interval. Results showed the ECAF-2 inhibitor items had

test-reliabilities ranging from .74 to .96, driver items had reliabilities ranging from .70 to .80, and Impairment to Earning Capacity Scale ratings had reliabilities ranging from .85 to .90.

For more information about the ECAF-2's construction and psychometric properties, please refer to the *Professional Manual for the Earning Capacity Assessment Form – 2* (Shahnasarian, 2010b). Shahnasarian (2010a) elaborated about the ECAF-2s theoretical bases and research support.

ECAF-2 Use

Since its release in November 2010 and through May 2013, practitioners from five continents purchased 4,500 copies of the ECAF-2 (personal communication, May 15, 2013). Most ECAF-2 consumers (81%) practice in the United States; vocational experts from 35 states have purchased it during the 30 months since its publication, and the country's most populous states (New York, California, Florida, and Pennsylvania) have accounted for the most sales. Outside the United States, practitioners from Canada and Australia, respectively, have been the most prominent ECAF-2 consumers.

The majority of ECAF-2 users (80.9%) have been private practitioners; the next most frequent users have been from hospitals, clinics, and nonprofit organizations; and college/university settings. When considering the instrument's sales, it should be noted that its publisher (PAR) deemed the ECAF-2 to be a Qualification Level B instrument, which requires consumers to possess qualifications as follows:

A degree from an accredited 4-year college or university in psychology, counseling, speech-language pathology, or a closely related field plus satisfactory completion of coursework in test interpretation, psychometrics and measurement theory, educational statistics, or a closely related area; or license or certification from an agency that requires appropriate training and experience in the ethical and competent use of psychological tests.

Most trial lawyers, adjusters, and others with an interest in assessing claims of loss of earning capacity do not meet the requirements necessary to purchase the ECAF-2. Published in English only, the instrument's distribution is further limited and likely contributes to the fact that the majority of ECAF-2 users practice in places where English is the first language.

ECAF-2 Peer Reviews and Admissibility

Numerous publications have featured the ECAF-2 and its methodological bases, comparing it to other methodologies formulated to conduct assessments of claims of loss of earning capacity. Field (2008, 2012a) reviewed mainstream methodologies that vocational experts have been applying during the past 50 years and described the ECAF-2 as a practical approach; he noted the instrument helps vocational experts organize and synthesize information central to conducting an assessment of earning capacity.

Robinson, Young, and Pomeranz (2009) highlighted the 14 ECAF/ECAF-2 inhibitor and driver factors as means to standardize vocational rehabilitation evaluations, and the California Chapter of the International Association for Rehabilitation Professionals (CA-IARP) Diminished Future Earnings Capacity (DFEC) work group referenced the ECAF/ECAF-2 as a guide to recommend standards for vocational experts in California (Austin, Barzegarian, Ciddio, Cottle, Diaz, Fera, & Winn-Boaitey, 2009).

Reliance on scientifically derived, peer-reviewed methods facilitates vocational rehabilitation experts' efforts to stave off admissibility challenges. In his review of the ECAF-2, while commenting on the admissibility of expert testimony, Field (2012b) concluded the instrument meets the reliability and relevance requirements set forth in the Daubert trilogy (*Daubert v. Merrill Dow Pharmaceutical*, *Carmichael v. Kumho Tire*, and *General Electric v. Joiner*), as well as challenges inherent to admissibility in federal and state courts. Field went on to cite empirical support for the instrument and noted it has been peer-reviewed in multiple forums since 2001.

Robinson and Pomeranz (2011) noted the focus of the ECAF-2 model "appears to be aimed at satisfying the evidentiary requirements set forth in the Federal Rules of Evidence, Rule 702" (U.S. House of Representatives, 2009). They characterized the model as robust in its focus on examinee-specific factors. Barros-Bailey and Robinson (2012) reviewed labor market information models propounded in earning capacity models during the past 30 or more years and concluded the ECAF-2 model incorporates labor-market search components.

In her review of *Assessment of Earning Capacity*, 3rd Edition, including commentary on the ECAF-2, Neulicht's (2011) appraisals were similar to those

Field (2012b) voiced. She concluded: "One of the jewels is Shahnasarian's ability to provide a complete review of his research and the earning capacity assessment form he developed, which has been discussed in prior editions of the book (*Assessment of Earning Capacity*) and presented/published in multiple peer-reviewed journal articles."

Van de Bittner, Wallace, Cottle, and Simon (2012) applied guidelines from the CA-IARP DFEC work group to evaluate peer-reviewed methodologies published in professional journals and texts during the past 15 years. They determined that the ECAF-2 methodology addresses central components of an evaluation of employability and earning capacity comparable to other methodologies.

A presentation at the April 2013 annual meeting of the American Board of Vocational Experts (ABVE) illustrates the ECAF-2's growing interest among vocational experts internationally. At the meeting, James Athansou, Ph.D., presented a program titled "The Use of the Earning Capacity Assessment Form-2 in a Medico-legal Setting: An Australian Experience." His presentation described research with the ECAF-2 in Australia.

Recent ECAF-2 Extensions: Claimant Education on Pursuing Loss of Earning Capacity Claims

Shahnasarian (2010a; 2011) elaborated on theoretical bases underlying the ECAF-2. Like other models developed to assess claims of loss of earning capacity, the instrument and its underlying theoretical framework focus on evaluator methods and analytical evaluation processes. A major source of variance in assessments of earning capacity, however, can arise from an external source: claimants' participation in the evaluation process.

Unlike expert witnesses—and of course judges, lawyers, adjusters, and others trained and regularly involved in assessing damages claims—most claimants have little or no experience or understanding of the nuances underlying their claims' valuation. Their mindsets entering presentations and formal assessments of their claims of loss of earning capacity include a range of perspectives: naiveté, suspicion, conscious or unconscious desires to aggrandize or suppress damages, and disdain for those opposing their claims, to name a few. Correspondingly, these mindsets can spawn attitudes and behaviors—such as nonchalance, pandering, less than full compliance, and myriad types of inappropriate examination conduct—that can confound an expert's attempts to objectively assess a pending claim and interject variance that increases margins of error inherent in any undertaking that involves human judgment.

As an example, consider a case involving contested loss of earning capacity in which, during the course of a clinical interview, a claimant alleging inability to work and severe financial distress retrieves from her purse several scratch-off lottery tickets and begins to play them (i.e., scratch off the tickets). While discounting her marginal work history, she references an upcoming mediation and flippantly declares, "My case is worth millions of dollars." This type of examination behavior could lead some vocational experts, consciously or unconsciously, to infer attributions about claimants that affect their assessments, regardless of the pending claim's merits.

Effective claimant education on how vocational experts assess damages promotes a major ECAF-2 objective: eliminating between-rater variance and objectifying assessments of claims of loss of earning capacity. The American Bar Association published *A Claimant's Guide to Understanding and Presenting Injury Damages: A Damages Expert's Perspective* (Shahnasarian, 2012) to facilitate claimants' understanding of the dynamics, processes, objectives, and strategies (plaintiff vs. defense counsel) involved in pursuing an injury damages claim. As its title implies, the book provides a damages expert's perspective.

Injury Damages explains how those involved in valuing claims scrutinize a myriad of factors including many ECAF-2 factors. The book also encourages claimants' compliance and truthfulness with the valuation process, and aspires to educate them on the adversarial processes to which their claims will be subjected.

Educating claimants on pivotal vocational assessment factors such as ECAF-2 Inhibitors and Drivers can promote awareness of a claim's value, both monetarily and nonmonetarily. *Injury Damages* discourages examination behaviors such as attempting to outwit the examiner, "beat the system," and provide flippant, misleading, or half-true information.

Summary

In his summary of the ECAF-2, Field (2012a) concluded the instrument "is well-founded in rationale, research, and related literature that are both easy to understand and use." The ECAF-2 and its empirically derived methodology have become respected, generally accepted applications practitioners worldwide use to conduct their analyses.

Early efforts to develop the ECAF and ECAF-2 were partly rooted in findings that lawyers believed approaches to assessing claims of loss of earning capacity were neither consistent nor objective (Shahnasarian & Lassiter, 2002). Additional use and research of the ECAF-2 is imperative to affirm it can promote objectives the judicial system hallows:

namely, the application of appropriate methodologies to help derive the truth.

Future ECAF-2 research initiatives should focus on populations and types of cases in which the instrument is most effective. As its global use continues to grow, additional cross-cultural research will be necessary. Of course, as the instrument evolves, practitioners and others involved in its use will need to be kept abreast of its appropriate use and limitations.

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