

## Series 5: Assessments

**ABSTRACT:** *In the following Series of articles, you will learn: [1] that the primary function of a vocational evaluation professional is to identify an individual's vocational potential through the utilization of a systematic assessment process; [2] what vocational experts need to offer opinions to the court; [3] the potential of functional capacity evaluation to be an invaluable tool for the vocational expert; and [4] the components of the multi-dimensional process of vocational assessment and evaluation of an individual's earning power following the onset of injury and/or illness.*

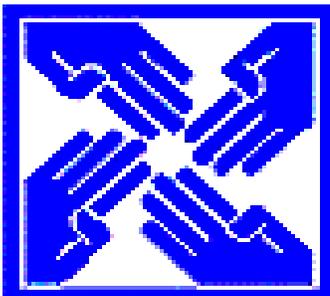
### A Biopsychosocial Model of Forensic Vocational/Disability Assessment

Jasen Walker, Ed.D., CRC, CCM; Amanda Sizemore, M.S., IPEC; Elizabeth McLaughlin, B.A.; and Dina McAfee, M.B.A.

In this continuing education program, we will present a model of vocational/disability examination, a method of appraisal that is optimally used in forensic occupational disability evaluation and earning power assessment. We offer the biopsychosocial paradigm as framework for a detailed and accurate evaluation of an individual's occupational disability, residual employability, and wage capacity.

The model described here is on the basis of assiduous review of the literature regarding medical impairment and occupational disability, as well as the distinction between these important concepts. After more than 40 years of experience in evaluating the work dysfunctions, occupational limitations, and vocational potentials that individuals present in a variety of mental health and rehabilitation settings, we are confident that the reader will find this material illuminating. By no means is this model foolproof. However, we believe that it represents the most accurate and comprehensive paradigm of vocational/disability assessment.

We begin with reflection on our efforts to assist organizations with the concept of disability management over 30 years ago. After the Americans with Disabilities Act (ADA) of 1990 became the law of the land, organizations sought assistance from rehabilitation professionals who understood occupational injury, lost time, return to work, and job accommodation. Most progressive work places realized that they would be required to account for interviewing, hiring, and accommodating individuals with real or perceived disabilities, people who had been vocationally discriminated against on the basis of their health histories. Slowly, organizations became aware that they could combine their operations, risk management, human resource protocols, and Return-to-Work (RTW) programs while saving money in workers' compensation and long-term disability (LTD) expenditures.



Corporate Education Consultation (CEC) Associates established this logo in 1983. For most people, the CEC logo represented two people (four hands) coming together in cooperation to solve problems. The logo became a symbol of our organization in its efforts to help individuals and their employers resolve conflict, communicate more effectively, and properly manage human risk as well as assist through Employee Assistance and Transition-to-Work (TTW) programs. As work organizations moved from learning how to construct essential function job descriptions to more complex matters of returning individuals to modified work, so-called "light duty," many companies began to understand that complying with the ADA was potentially a viable means by which they could reduce workers' compensation costs and integrate the Family Medical Leave Act into their human resource policies.

According to a 1993 Social Security Bulletin (Fall: 56 [3] 68-74), in 1991, about \$16.8 billion in medical benefits and \$25.3 billion in wage loss compensation was paid in settlement for claims of disabled or deceased workers. Individual employers found their self-insured accounts burdensome and workers' compensation premiums unaffordable. Like most things in America, this private-sector, employer-embrace of the ADA was purely economic.

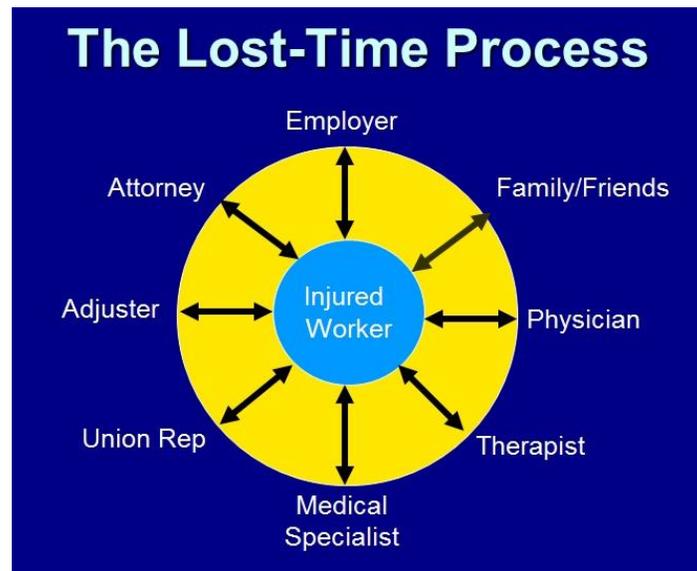
However, even dollars and cents and the loss of business capital are not always sufficient to change behavior. Certainly, we found many client employers willing to take the time and make the effort to change their selection, employment, safety and RTW programs, but others resisted. While many organizations found merit in the CEC logo symbolizing communication and cooperation, other workplaces actually remained recalcitrant and unwilling to shed past biases and dogma. We recall members of one transportation organization, notorious for labor conflict and frequent occupational injuries, sitting down at the table with us. Their initial interest in disability management quickly gave way to old, counter-productive leadership behaviors – away from embracing the benefits of ADA compliance and pursuing the cost saving benefits of RTW programming and toward constructing ways to keep "difficult" employees from returning to work! As consultants to these particular organizations, we quickly realized that our logo, four hands coming together in a spirit of cooperation, was equally representative of company decision-makers (distrustful of anyone claiming occupational injury) "cooperating" to do nearly anything to keep injured employees from transitioning to modified or alternative employment.

Years of mistrust between management and labor would serve to sabotage the potential benefits of civil rights legislation and the return-to-work potentials it could spawn.

At that point, we began recognizing that the two people (four hands) coming together paradigm could also symbolize organizational collaboration to keep perceived “troublemakers” from reentering the organization after lost time injury or illness. We saw in real time what Ken Mitchell, Ph.D., had described years previously in the concept of “co-malingering.” Dr. Mitchell, a brilliant theoretician of RTW programs and a nationally recognized disability management consultant, defines “co-malingering” as “the invisible bond between worker and employer or an agent of either party.” Mitchell goes on to describe interparty manipulation, influence with a hidden or alternative agenda, potentially sabotaging a return to work. According to Mitchell, the manipulation can be intentional or involuntary, passive or active, worker-centered or employer-centered, and limited to a single event or habitual. Typically, co-malingering is initiated and maintained by a system of beliefs, learned behaviors, and/or intentions that are applied to specific situations in the workplace, but fail to create an effective, mutually satisfying outcome for the employer and the employee.

Co-malingering can be a function of self-interest conflicts, labor-relation failures, and disability management system gaps. Mitchell found, for example, that only 10% of compensable lost time is due solely to medically imposed restrictions. All other reasons for lost time are due to employer-employee-controlled impediments for return to work, such as: 1) inflexible supervisory decisions; 2) poor injury management practices; 3) breakdown in communications; and/or 3) employer failures to make reasonable work accommodations.

As we considered the efficacy and potential application of the co-malingering concept, we began seeing the possibility of co-malingering in other places, not just in the employer-employee relationship. In the lost-time process chart below, we see the interaction of other parties with the injured worker who is at the center of this constellation.



As one moves clockwise around the diagram, among the potentially active “players” in the lost-time process are family and friends. Family members have something to risk when a significant other is injured and faced with a decision to return to work, particularly if work has not been a central theme or reward source in the employee’s life. Accidents often involve trauma, which can lead to stress and significant others being protective of the injured worker. On many occasions, we have evaluated an injured worker who comes to the office at the request of her employer and she is accompanied by a hovering spouse or a protective sibling who may be training as a nurse. Those significant others quickly assume the role of “case manager.”

Primary care or “family” physicians can unknowingly become co-malingers. For example, it is not uncommon for personal stress buildup to preface an accident and injury. In pre-accident office visits, the patient has regularly expressed unhappiness with work and conflict with supervisors. This patient’s emotional well-being seems changed when discussing work-related stressors before an accident, and following the work event, the concerned primary care physician may lose the objective perspective of if and how the physical injury has limited his patient (the injured worker) when the possibility of a return to modified employment is discussed and potentially perceived as threatening to his patient. The family physician becomes the patient’s advocate and guardian. The physician is now conflicted and may prevent a return to work of his/her patient.

Physical therapists can co-maligner. You have perhaps heard the old joke in query form, “How many physical therapists does it take to screw in a lightbulb?” Answer: “Only one therapist, just 15 visits.” In reality, therapists of all kinds make their livings by treating, and the more musculoskeletal treatments, perhaps the more money. There are healthcare providers in the rehabilitation system that “gild the lily” and “over treat” at the risk of keeping people out of work longer than necessary.

Many people, especially “blue-collar” workers, consider medical specialists (i.e., orthopedic surgeons, neurosurgeons, pain management practitioners) to be all-knowing, omniscient, perhaps representative of the “high priests” of our society. Most individuals defer to medical specialists, and some medical specialists truly believe that they are offering cures. However, as a case manager and rehabilitation professional, I have seen so many individuals with low back pain frustrated, disappointed, and depressed by the failure of spinal injections and pain management interventions. Most of the people I have evaluated would quickly acquiesce to a specialist’s recommendation of a series of epidural steroid injections rather than seek a second opinion. The overuse of opioids to “treat” pain has been a societal problem not only created by people abusing narcotics, but by physicians who overly prescribe these chemicals to gullible patients. Opioid dependency has become an alarming iatrogenic disability and a national “healthcare” crisis.

Union representatives are there to protect the rights and investments of their members. Rather than investing time and energy into company-union RTW programs, union representatives may invite workers’ compensation lawyers to the workplace to provide seminars on how injured employees can be protected from self-serving employers and “unscrupulous” workers’ compensation claims representatives.

Adjusters are human beings with the same character strengths and flaws as injured workers and rehabilitation professionals. Adjusters can become jaded and mistrustful just as work supervisors might. Workers’ compensation adjusters learn to question the injured worker’s motives and have the potential to worsen the often “toxic” relationship between insured employer and injured worker.

A lawyer representing a workers’ compensation claimant is indeed an advocate. Injured persons and their lawyers want to argue and prove that they have been damaged economically. This pursuit of monetary reward following accident and/or injury is fertile ground for lawyers and their clients to co-maligner. Research has repeatedly shown that 30% of personal injury litigants, many of whom have been injured at work, are actually found malingering on psychometric measures during forensic evaluations. In short, although lawyers certainly protect their clients’ rights, they too often create a bond, knowingly or unknowingly, that encourages claimant/plaintiff behaviors that lead to avoidance or postponement of responsible post-injury vocational recovery.

What is more, when we looked more closely at the cause of lost time following injury and/or illness, we began recognizing that disability (lost time after injury or illness) could be produced or induced and maintained as a result of multiple factors, including biological, psychological, and social factors. Indeed, disability itself can be caused by or at least associated with a number of biological, psychological, and social factors.



Employees experience a variety of psychological issues, both antecedent to and as a consequence of work injury or trauma. Injured workers can be “at-risk” before a work-related event. Family and personal stress, substance abuse, conflict with their supervisors and co-workers, to name a few, are reasons employees are vulnerable to reasons for lost time. After injury or illness, they fear the unknown. They become more generally anxious, and they frankly do not know what to say to members of their families who obviously have a stake in their well-being and financial productivity.

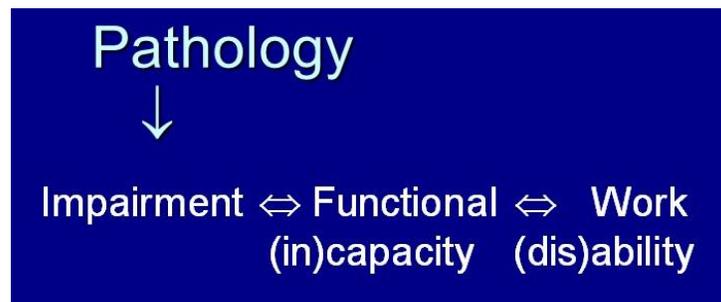
There is no doubt that the healthcare system for many following occupational injury can be daunting and intimidating. It is not unusual to experience psychological adjustments following work-related accidents and injuries. Sometimes, however, those adjustments are complicated by a variety of factors, including the worsening relationship with the employer, the uncertainty of post-accident benefits, and the somatic repercussions that often follow trauma. On occasion, after the physical and/or biological injury has resolved, symptoms persist because of somatization and generalized anxiety. Significant physical trauma seldom occurs without psychological consequences. Psychological consequences or social emotional predispositions can often exacerbate or prolong physical complaints.

Litogenic, or litigation-induced, disability is the creation and/or exacerbation of functional limitations and/or complaints following an accident. Litigation fueled claims of vocational incapacity satisfy the expectation of damage claims made in association with a legal matter. When an individual following occupational injury makes a claim to the Social Security Administration (SSA) that he or she is unable to perform any form of substantial gainful activity, that individual may be influenced by the legal challenge that they must overcome in order to qualify for benefits. This is not to say that individuals who are pursuing litigation following accident and injury are motivated purely by anticipation of gain through the court system, but it does mean that a person must meet a burden of proof that requires a level of claimed dysfunction that can be independent of biological or psychological damage, or for that matter, the injured person's residual functional capacity.

Related to litogenic induction of disability is the idea that societal and agency contributions can increase lost time and complicate recovery from injury. Referenced above is the notion that Social Security Disability Insurance (SSDI) benefits are awarded generally to people who "prove" they cannot perform "substantial gainful activity." In some work organizations, injured or ill people can become the recipients of LTD benefits, whether the injury occurred at work or outside of employment. LTD insurance carriers generally have created group policies in which the LTD recipient must make application for SSDI benefits following a period of time, and if awarded, the LTD benefits are terminated. Therefore, often individuals receiving LTD benefits must "prove" that they cannot work, and this process alone creates a disability benefit bureaucracy that compels individuals to remain unemployed while pursuing their "rightful" benefits. These organizational and societal contributions to permanent lost time or disability serve to crystallize one's claim of total and permanent disability.

Moreover, before the ADA/ADAAA penetrated and influenced private sector work organization behaviors, risk management, human resource, and claims personnel would often not return people to work unless they were "100%" capable of performing their pre-injury jobs. In other words, returning to modified or reengineered employment was essentially nonexistent. Cashiers in grocery stores could not use bench stools to sit and work because for some store manager that would mean everyone working as a cashier would have the right to sit. This dogma was rejected by California courts, circa 2011, when it required employers to provide "suitable seating" to its employees.

Vocational disability, perhaps best recognized as lost time following the onset of injury or illness, is sometimes "apostolic" in origin. That is, even though physicians have not been trained to assess the vocational capabilities of their patients, we often kowtow to the declarations of medical personnel, as if they were apostles, when they declare that the individual they have treated and/or examined is "unable to work" or totally disabled. In fact, the American Medical Association (AMA) has made it clear to its physician members that there is a difference between medical impairment and vocational disability and that physicians are not trained to assess occupational capability or disability, but to determine the nature and severity of impairment and its potential effects on functionality. In its *Guides to the Evaluation of Permanent Impairment*, the AMA asserts, "Impairment is a significant deviation, loss, or loss of use of any body structure or body function in an individual with a health condition, disorder or disease." Disability may be defined as activity limitations and/or participation restrictions in an individual with a health condition, disorder or disease.



We argue that the vocational/disability evaluation involves a completely different process than medical determination of impairment and/or activity limitations, and this procedure requires careful assessment of work behaviors based on document review, a detailed personal history, job description review, psychometric test results, consideration of workplace

accommodation, and an otherwise complete *vocational* assessment performed by professionals generally trained outside of medicine. Rehabilitation Counselors are ideally suited for vocational analysis and disability assessment.

We also present reasons for the conceptualization of disability as not being a biological-medical determination, but an appraisal of what an individual can do occupationally in the context of biological, psychological, and social variables. In short, we believe disability is biopsychosocial in nature, and for that matter, so is the capacity to carry out and maintain gainful, competitive employment.

The biopsychosocial model of health and illness was first conceptualized by George Engel, an internist and psychiatrist in Rochester, New York, who realized the inadequacy of the prevailing biomedical model in explaining health and illness. For decades the rather simplistic biomedical paradigm dominated medicine and the industrialized societies as a general theory of disease and healing. Engel criticized the dualistic nature of the biomedical model, essentially that pathology led to illness or disability, and chose to offer a more humanistic and holistic approach to understanding how psychosocial variables contribute to the susceptibility, severity, and course of disease and disability.

Engel argued that a biomedical alteration does not translate directly into illness; the presence of a biological derangement does not shed light on the meaning of the symptoms to the patient; psychosocial variables are more important determinants of susceptibility, severity, and the course of illness; adoption of a sick role is not necessarily associated with the presence of biological derangement; the success of most biological forms of treatment is influenced by psychosocial factors; the patient-clinician relationship influences medical outcomes; and unlike inanimate subjects of scientific scrutiny, patients are profoundly influenced by the way they are studied and treated (*Annals of Family Medicine*, volume 2, number 6 - November/December 2004).

Engel criticized the dualistic nature of the biomedical model and its separation of body and mind. His research in psychosomatics lead to a more integrative view of illness, offering that fear, rage, neglect, and attachment had physiologic and developmental effects on the whole organism.

Engel's paradigm has not been without its critics, but at the risk of jumping ahead in this narrative, it is noteworthy that in *Towards a Common Language for Functioning, Disability and Health* the ICF of World Health Organization adopted the biopsychosocial model in 2002 as a framework for the measurement of disability and functioning.

As a precursor to Engel's 1977 model presented in the journal *Science*, the "illness process," was articulated by Behan and Hirschfeld, two occupational medicine physicians working in Detroit, Michigan and formulated on what they had first observed in the early 1960s as the "accident process." Behan and Hirschfeld attempted to understand the problem of post-accident lost-time chronicity through the assumption that a life of disability or invalidism, with its evident constrictions of lifestyle and independence, would only be chosen and maintained if it resolved some extremely powerful and disturbing psychosocial conflicts. How can the biomedical model of above-the-knee amputation explain total dependency in one individual (remaining home and in bed) and contrasting recovery and freedom in another (participating in triathlons) with similar or the same biological characteristics in the same medical impairment.

In 1978, Milton R. Weinstein, in the journal, *Psychosomatics*, utilized the Behan and Hirschfeld observations and outline the stages of the "disability process." Weinstein argued that after a period of crisis buildup, a vulnerable worker, experiencing increased job tension from demotion, promotion, failure, reduced seniority or status, or other tensions external to work, might have a job-related injury or illness. That vulnerable or susceptible worker might very well assert that the job-related injury or illness was an "explanatory event" for continuing lost time. Unfortunately, the lost time from employment would be spent with medical personnel in an attempt to diagnose and treat the cause of work separation following the onset of injury or illness.

Medical confusion of "impaired" with "disabled" leads to further lost time and increased dependency on other systems while at the same time, perhaps inadvertently, decreases the shame and guilt associated with reduced responsibility. In the Weinstein perspective on the "disability process," employers often keep the employee out of work unless the worker could return to his or her job at "100%," further inducing occupational disability rather than resolving it.

With what Weinstein describes as "crystallization of disability," the "injured" worker endeavors with legal help in further supporting his or her claim through pursuit of disability benefits and with the hope that the "system" will work for them. In a matter of months, crystallization of disability becomes chronic incompetence and that stage of the lost-time process leads the injured worker to being "honorably disabled." After all, if the federal government "certifies" one with the classification of total disability, who could argue that there is need or obligation to work. In fact, it would be counterproductive to do so.

*None of this is to say that people experiencing injury or illness are not injured or ill.* Instead, we wish to make it clear that it is simply insufficient to consider only an explanatory event or a purely biological impairment or a medical declaration of “total disability” as the absolute or singular reason for lost time following an accident. When assessing occupational disability, residual employability, and a person’s capacities to earn money through work, the evaluator must consider the individual’s medical history in its entirety, social/familial background (including whether childhood trauma is part of the examinee’s history), and the person’s educational experiences (not simply grades and academic achievement, but their adjustment to structured settings including their attendance). Obviously, it is critical to evaluate work histories and the acquisition of skills, which are potentially transferable, but also to analyze psychometric data that will illuminate an individual’s linguistic capabilities, vocational aptitudes, personality/temperament, occupational interests, and other factors that could be utilized in an assessment that considers alternative employment.

It is our opinion that too many competent vocational evaluators performing forensic assessments that speak to damages following personal injury, attempt to outline future economic losses generally considered the purview of CPAs, economists, and/or actuaries. Providing a place for plaintiff lawyers to perhaps do “one-stop shopping,” these vocational experts, many of whom are certified rehabilitation counselors, betray their actual training and skill base by ignoring the importance of psychometrics relevant to vocational assessment.

Instead the “vocational expert” attempts to serve as a “vocational economist” and leaps to outlining his or her opinions of future lost wages and other associated damages without fully considering an individual’s pre-accident health history, their capacities to learn other forms of work gleaned from psychometric evaluation, and whether pre-accident health issues would factor into the examinee’s pre-injury work capacities, occupational disability, and future employability.

Therefore, the primary function of a forensic vocational evaluation is to identify an individual’s occupational potentials through the utilization of a systematic assessment process, one that has a biopsychosocial framework. Through that framework, the vocational professional is able to measure, observe, document, and determine an individual’s potentials to work both before and after a particular event or trauma from which the examinee is claiming medical impairment and associated vocational disability.

## **The Function of Testing in the Vocational Evaluation Process**

As mentioned above, the primary function of a vocational evaluation professional is to identify an individual’s vocational potential through the utilization of a systematic assessment process. Through that process, the vocational professional is able to measure, observe, document, and determine an individual’s potential to successfully perform particular forms of work.

In many instances, vocational assessments are used to determine whether an injured (or ill) employee is able to return to work, and if so, to what kind of employment. If return to work is indicated, the outcome of the evaluation will address the critical issues of returning to employment.

The intended outcome of the assessment is to explore vocational options that will be the basis for a viable work re-entry plan. A return to work is the optimal outcome; however, in a few cases, the outcome may indicate that work at any level may not be practical. In these instances, treatments or other interventions need to be considered. In all other cases, the objective is a return to work, with or without accommodation.

Much, if not most, of the work done in vocational evaluation is based on documentation. In addition, vocational rehabilitation professionals must rely on the recommendations of physicians in respect to an individual’s physical (or mental) capacities for work. However, a frequent issue affecting the vocational evaluation process is the basic difference between the concept of “impairment” and “disability.” Defining an impairment is, of course, within the scope of the physician’s expertise, whereas, defining disability is not. In terms of a work disability, the person making the decision needs to understand the physical and mental requirements of the specific work task to decide whether the impairment will, with or without a work accommodation, impact the injured worker’s ability to carry out that employment. This expertise on occupational capacity belongs to the qualified vocational professional.

The process used by vocational rehabilitation professionals to accomplish this task is to assess or evaluate the injured worker, with a focus of determining occupational fit. Good vocational assessment can be accomplished by utilizing the following methods:

- reviewing various documentation, including medical, employment, wage data, etc.;
- direct observation;
- obtaining physician input regarding residual functional capabilities;
- conducting a structured interview;
- administering standardized testing; and most importantly,
- inventorying and appraising worker characteristics and potentials.

However, despite the importance of testing in accurately assessing an individual's characteristics and abilities, one of the most frequently asked questions regarding vocational evaluations is, "What is the purpose of vocational testing?" At times, those requesting a vocational assessment question the efficacy of administering a battery of tests. In general, it is assumed that a person's ability to perform a job can be determined solely by examining what type of work that individual had performed in the past, and therefore, any documentation beyond that is considered superfluous. In fact, to the well-trained vocational evaluation professional, work experience plays only a part in assessing a person's ability to function effectively in a particular job. Most people fail to understand that occupational success is less dependent on an individual's work history than is generally believed.

Because of the wide variations in job descriptions and job demands, the work history alone does not ensure that the individual being evaluated has acquired specific skills. Moreover, it has been the experience of well-trained vocational evaluators that individuals with particular work histories can possess dramatically different skill sets and worker characteristics. One could simply perform a "transferability of skills" analysis on the basis of a person's work history. However, not all longshoremen are *merely* longshoremen. Some longshoremen, by virtue of their work experience, may neither read nor write, and to assume from their work experience alone that they *cannot* process information requiring reading and writing could be a major assessment error. To further assume that the longshoreman is simply interested in objects and things because he has manually and mechanically unloaded ships and done nothing more in his employment, could also be fraught with miscalculation. In the late 1960s and early '70s, a Seattle, Washington Longshoreman, Harvey Jackins, wrote approximately 10 books and made a seminal contribution to a new form of psychotherapy called Re-evaluation Counseling.

Vocational testing is an essential part of the evaluation process. An individual having previously performed a specific job does not yield all information about the person's vocational potentials, and testing is an essential part of expanding our knowledge of that person's alternative work capacities. Testing is designed to determine an individual's appropriateness for select forms of work by assessing actual abilities, preferences, and suitability for various occupations. As such, test appraisals can be used for a variety of purposes that would include assisting young adults in choosing a career path, helping individuals looking for alternative work, and, as is the case with vocational rehabilitation professionals, aiding a person in returning to work after a disabling injury. The vocational rehabilitation professional is able to accurately carry out test administration by applying knowledge acquired through formal and on-the-job training.

Through thoughtfully structured testing, a complete picture of an individual's actual abilities and work potentials can be obtained. More importantly, without comprehensive test data, determining an appropriate occupational match for an individual would be somewhat speculative. That is, relying on previously acquired skills and/or employment history alone would not allow for a vocational rehabilitation professional to accurately prognosticate an individual's potential to achieve success in a particular job, because such information would lack critical components to worker success, such as whether the individual possessed the language skills and/or interest to perform that work.

So, what is a test? A **test** is a standardized procedure for sampling behavior and describing it with categories or scores. Standardization is achieved if the procedures for administering the test are uniform from one examiner and setting to another. Testing yields quantitative data, allowing the examiner to compare the test takers performance with the measured behaviors of others in a normative sample or larger number of individuals with similar characteristics (i.e., age, education, gender, etc.). Testing has the potential to provide qualitative data, which is the information about how individuals behave when confronted with particular, generally novel tasks. Do they become nervous? Are they able to sustain a particular effort? Do they ask appropriate or inappropriate questions regarding the nature of the test administered, (i.e., will this identify my arithmetic potential, versus will this test help me get a job as a rocket scientist)? Does the test-taker seem interested or indifferent to the process? Does the test-taker make a genuine effort, or do they sabotage the testing process?

There are several factors that should be considered when developing criteria for vocational testing. Those components would include academic achievement levels, aptitudes, personality characteristics, and occupational interests. Through gathering data in each of these areas, along with understanding the history of the injured worker, one would be better equipped to successfully match a person to a particular job than relying upon work history alone.

Academic testing measures an individual's abilities to read, spell, and arithmetically calculate. In general, these abilities are acquired through the course of formalized schooling. However, reliance on educational attainment without supplemental academic testing is not recommended because rarely does educational level equate perfectly with actual ability. Therefore, achievement testing is essential in determining decisively the injured worker's basic linguistic and mathematical abilities.

Aptitudes are an individual's natural capacity for learning, and aptitude testing is designed to predict an individual's ability to learn certain skills. Such skills can include solving problems visually, understanding mechanical principles, perceiving differences in tabulated data rapidly and accurately, and comprehending written information. The work that a person is most likely to be successful in involves aptitudinal strengths they possess.

Personality testing is designed to determine an individual's specific characterological traits and can be used to decide what a person's temperament might be for a particular type of work. That is, although a person's ability to perform a particular type of work is important in job placement, for that individual to have the right temperament to effectively carry out the work on a daily basis is also critical to job success.

Interest measures will delineate preferences for types of work for a particular individual. By determining likes and dislikes, work for which a person would most likely find enjoyment can be more specifically described. Obviously, individuals who enjoy what they do each day will have greater motivation to continue their work and will have a better chance to be successful in performing it.

Along with the actual assessment of an individual's academic achievement, aptitudes, personality, and interests, vocational evaluation also requires making certain that the data obtained are an accurate reflection of the individual being tested. In determining the validity of test data, one must examine three components that include standard performance level, consistency of performance, and response rate. Additionally, motivation to perform can be assessed through observation of test-taking behavior. These three factors, along with perceived level of motivation, can be used to assess whether test results gathered are a valid representation of the tests-taker's actual potentials.

The concept of standard performance level would suggest that examinees should perform at a level fairly consistent with their educational background or same age peers and should perform better on tasks that are more closely aligned with their academic and employment histories. That is, one would expect that an architect would demonstrate good mathematical and visual problem solving abilities, while an author should possess good language skills. Standard performance level would also suggest that there should be a correlation between an individual's intellectual ability and acquired skills.

Performance consistency suggests that examinees should demonstrate a similar ability level on tests measuring comparable skills (e.g., vocabulary or reading comprehension). That is, individuals should perform in a like manner on measures assessing similar skills. In addition, test data gathered should not show significant variance during the course of test administration occurring at one particular time. Examinees should demonstrate minimal fluctuation within or between tests assessing similar skills that are administered at one sitting.

Response rate assumes that examinees should be able to respond to questions on timed (speed) tests at a rate that would place them within a performance range equal to their general ability as long as direct physical limitations are not a factor. Additionally, examinees should be able to complete untimed measures within the time frame identified in the test manual.

Along with these three factors, trained vocational evaluators can assess motivational levels through observational information gathered during testing. Although motivation is generally considered an internal dynamic, how examinees behave while taking tests can provide a significant amount of information about how invested the individual is in performing at a maximal level.

Obviously, motivation to perform optimally should also be questioned when individuals make statements about their disinterest in the test-taking process or in their performance while working. Additionally, injured workers invested in their performance should be observed taking time available to check their responses for accuracy. For example, on a test of spelling ability, an examinee should not comment about believing a response is incorrect without making any effort to change the response. Moreover, motivation should be questioned in individuals that engage in superficial conversation while working or succumb to possible distractions in the environment, skip or ignore test instructions or example problems, or work in an overly rapid and non-thoughtful manner. To identify manipulation of test results, some tests, particularly personality measures, are equipped with their own validity scales.

Vocational rehabilitation evaluations culminate in a comprehensive report (to the employer or referral source) detailing a viable course of action for the employee and/or providing information regarding an individual's potential to perform particular forms of work. These reports can be critical in use as the basis for decision making by the employer or as the *prima facie* evidence in litigation.

In conclusion, vocational testing is an integral and critical aspect of the vocational evaluation process. As described above, comprehensive understanding regarding an individual's occupational potentials involves a careful examination of variables beyond simple physical capacities to work. Therefore, in order to be effective, vocational assessment must include collection and interpretation of information in the realm of abilities, interests, and personality characteristics. With the availability of such data, used in combination with an appropriate understanding of essential job functions, work ability decisions can be made with greater reliability and validity.

For the vocational rehabilitation professional, it is essential that a vocational assessment be carried out in a manner that utilizes direct observation, review of documentation, physician input, interview data, and standardized testing. Again, to assume that occupational potential can be accurately ascertained without gathering data that includes academic achievement levels, vocational aptitudes, personality characteristics, and occupational interests, could result in a less than accurate assessment of an individual's actual capacities to work. In addition, by relying on limited information, the vocational rehabilitation professional would be increasing the risk of returning an injured worker to an unsuitable position, thus resulting in additional lost time from work as the individual is more likely to fail in adhering to the demands of a particular job.

Only by completing a thorough assessment of an individual that includes administration of vocational testing can appropriate occupational potentials be determined. In doing so, the vocational rehabilitation professional can make more accurate decisions regarding an individual's ability to perform certain types of work and can better prognosticate that individual's chance of being successful in doing so. By understanding what an injured worker can do physically, intellectually, and temperamentally, a vocational rehabilitation professional can promote a successful return to work.

Since the primary function of a vocational rehabilitation professional is to identify an individual's vocational possibilities, it is essential that a thorough and comprehensive assessment occur. Only through such an assessment can accurate and complete information regarding an injured worker's capacity for work be obtained. Anything less can only make a difficult situation more problematic.

### **Understanding Vocational Testing in the Forensic Vocational/Disability Evaluation Process**

Vocational/disability evaluation in personal injury matters is an effort to explain how medical impairment following personal injury interferes with work functions. In order to understand how personal injury potentially affects a plaintiff's capacity to work, one must first appreciate the difference between impairment and disability. As mentioned previously, according to the AMA's *Guides to the Evaluation of Permanent Impairment* (Third Edition-Revised), impairment means "an alteration of an individual's health status that is assessed by medical means," and disability, "an alteration of an individual's capacity to meet personal, social or occupational demands," is assessed by nonmedical means.

Medical experts are retained to describe how injury and/or illness alter an individual's health status. Vocational experts are assigned with the responsibility of determining how the "alteration" of an individual's health status impacts his/her employment and occupational potentials. Economic experts assess the long-term financial impact of an individual's disability. Vocational/disability evaluation is the keystone in the tripartite (medical-vocational-economic) analysis of loss associated with personal injury and is enhanced through the utilization of available methods for measuring an individual's capacities to learn and work following a change in health status.

Vocational/disability evaluation is best carried out by certified and/or licensed evaluators who possess training and experience in career assessment, evaluation of individuals with medical impairment, job placement of individuals with occupationally significant medical histories, job analysis, and vocational rehabilitation. Vocational experts are uniquely qualified to assess the occupational significance of medical impairment and resultant functional limitations. Few, if any, medical experts are trained in these disciplines, and the physician should not be placed in a position to determine industrial loss of use, economic loss, or any other type of loss arising from vocational disability (AMA).

Evaluation of occupational loss in personal injury cases is generally conducted by individuals who are Certified Rehabilitation Counselors, Certified Vocational Evaluators, Disability Management Specialists, and/or Clinical Associates or Diplomates of the American Board of Vocational Experts (ABVE). In Pennsylvania (as well as other jurisdictions), competent vocational evaluators generally are licensed as professional counselors and/or serve as vocational experts for the Office of Hearings and Appeals of the SSA.

Vocational evaluation in matters of occupational disability is an evolving discipline. As in any profession, not all vocational experts pursue their discipline with equal rigor or intensity. Vocational evaluation to determine the impact of medical impairment upon an individual's employability and wage potentials is an endeavor that requires not only education/training, experience, and proper credentials, but a *genuine* effort to investigate (with a variety of tools) the examinee's capacities to learn, work, and earn money through gainful activity.

Ideally, vocational/disability evaluation involves a careful review of any and all relevant medical information regarding the person to be evaluated. The evaluatee should participate in a clinical interview – a structured question-answer session – with the evaluator, who would make inquiries and observations regarding the person's medical background, social history, educational experiences, occupational endeavors, and interview behaviors (i.e., speech articulation, appearance, and ability to comprehend questions). Generally speaking, this type of interview can last between one and two hours.

However, vocational/disability evaluation also includes administration of a standardized battery of tests, preferably designed to generate information regarding an examinee's abilities to read, calculate arithmetically, reason in a number of ways, solve novel problems, use language properly, and employ cognitive abilities that could be utilized in work settings. The test investigation could likely involve administration of occupational interest inventories, work personality questionnaires, and at times, measures of upper extremity capabilities, both gross motor and fine fingertip. The vast majority of individuals who have been injured musculoskeletally will be medically limited in terms of their exertional capabilities, and the effort in these types of cases is frequently to determine how well the person can function in relation to data, people, and inanimate objects. Moreover, one becomes invested in understanding how well the examinee can process information. Such an effort requires far more than taking a history (vocational interviewing) and so-called "transferability of skills" analysis. Standardized vocational testing can be, and generally speaking is, an essential component of disability evaluation and residual employability assessment.

### **Vocational Testing**

As stated previously, a test is a standardized procedure for sampling behavior and describing it with categories or scores. Vocational testing is the administration of standardized tests that provide information regarding particular worker characteristics and behaviors. Vocational testing facilitates decision-making in occupational selection and classification of personnel and assists professionals and those being tested in making a career choice.

Vocational testing with standardized measures has its roots in psychological and mental assessment of "feeble minded" citizenry, including early 20th-century immigrants and World War I army recruits. Without question, vocational testing has evolved substantially and of course, is not without controversy. Questions regarding test reliability, cultural and racial bias, the effect of other individual differences, test norms, predictive validity, and proper utilization of test results have challenged psychologists, test manufacturers, and test administrators for decades. These pressures have continued to shape the field of testing. Professional, moral, ethical, and social issues have influenced and will continue to influence the development and use of standardized testing.

One of the single most prolific vocational test administrators remains the Department of Defense with its employment of the Armed Services Vocational Aptitude Battery (ASVAB). The ASVAB is the most widely used paper-and-pencil test in existence. It is used by the Armed Services to screen potential recruits and to assign personnel to different jobs and training programs. More than two million examinees take the ASVAB each year.

Simply stated, one can more effectively and accurately predict the proper vocational placement of a person when that individual's personal history is supplemented by standardized test data. An effective battery of vocational tests generally includes measurements of interests, abilities, and personality. This tripartite appraisal allows one to predict if the person will potentially be satisfied with work, possess the abilities or aptitudes to learn and/or perform the work, and manifest personal characteristics to properly "fit" with the job functions required. Vocational test batteries often investigate other worker characteristics as well. Nonetheless, investigation of these three areas – interests, abilities, and personality (temperament) – is generally critical.

### **Vocational Testing in Matters of Personal Injury**

Vocational testing in personal injury lawsuits provides the forensic examiner with additional data sets that detailed review of documentation and careful history taking cannot provide. Vocational testing provides information regarding an examinee's worker characteristics compared to others that might compete for a job or particular type of employment. Careful and tactful questioning and a clearly identified work history cannot provide comparable information to the type of investigation that is also supplemented by standardized testing. Occupational "match" or "fitness" can be enhanced substantially by employing vocational testing as an adjunct to detailed interviewing and observation.

Vocational testing permits the test administrator to formulate a more certain projection of an individual's capacity to meet the demands of a job description. Critical requirements of jobs can be matched with an examinee's performances and results in standardized tests of abilities, interests, and personality. Moreover, vocational testing can provide predictive information regarding an individual's capacities to learn and develop new occupational capabilities through on-the-job training or classroom retraining.

### **Customary Tests Utilized**

Ability, achievement, intelligence, and aptitude testing employed in vocational/disability evaluation are generally designed to measure various behaviors that have application to an individual's capacities to work effectively with data primarily, objects and things secondarily, and people to some extent. A measured ability is a determination that the worker characteristic measured and possessed is sufficient to learn and perform a particular task. According to *Webster*, an ability is the quality or state of being able; competence in doing; and natural talent or acquired proficiency. Achievement may be thought of as the present level of an individual's learning and her/his ability to apply what has been learned. Intelligence is one's potential to profit from experience and the capacity to understand or comprehend. An aptitude is the capacity for learning a given discipline or subject matter. The value of vocational testing in these areas is self-evident when there is a chance that an individual displaced from an occupation can return to the labor force in a similar or different job.

Occupational interest testing allows the vocational test administrator to determine what type of work tasks will engage the individual, not necessarily what the individual is able to learn or do. Discovering what type of jobs this individual will find satisfying is the goal of interest testing. Without some degree of vocational interest or potential job satisfaction, the examinee will probably not be motivated to maintain a particular type of work or necessarily manifest sufficient effort, particularly in a job that she/he actively dislikes.

Personality testing in vocational assessment is designed to measure that all-important aspect of occupational fitness, namely, personal characteristics that signal behavioral, social, emotional, and intellectual tendencies distinguishing one individual from another. Vocational evaluation has long relied upon personality types to create an occupational match based on temperament – a person's constitution, complexion, or makeup. Personality traits of special occupational groups have been studied by vocational developmental theorists since the late 1930s. Every individual inherits a tendency to expend her/his energies in some particular way, and that innate predisposition toward the manner of expending psychic energy, combined with various childhood experiences, molds the general style of a person, which directly influences the pursuit and maintenance of a particular form of work. It is clear that most Tractor-Trailer Truck Drivers' temperaments have common characteristics and School Teachers have different temperaments, but ones in common with other teachers. Indeed, there are certain personality traits that are more conducive to elementary school teaching than secondary school teaching.

### **Basic Statistical (and Practical) Considerations for Standardized Testing**

The employment of standardized testing involves three basic considerations: Validity, Reliability, and Usability. Validity is the most important consideration. Validity of the test concerns *what* the test measures and *how well* it does so. No test can be said to have "high" or "low" validity in the abstract. Its validity must be determined with reference to the particular use for which the test is being considered. Content validity involves essentially the systematic examination of the test content to determine whether it covers a representative sample of the behavior domain to be measured. Content validity is obviously important in achievement and aptitude tests. Construct validity is probably the most important type of psychological theory. With construct validity, there is a prediction of the results that should be obtained if the test is truly valid. Criterion-related (or predictive) validity indicates the effectiveness of the test in predicting an individual's behavior in a specified situation. Based on the predictive validity of the test, one can make inferences from test scores to specific situations (e.g., a high score in Mechanical Reasoning will predict the potential to learn mechanical work).

However, attempting to define the validity of the test will be a futile effort if the test is not reliable. Reliability of standardized tests refers to the consistency of scores obtained by the same individuals when re-examined with the same test on different occasions, with different sets of equivalent items, or under other variable examining conditions. The concept of reliability underlies the computation of the error of measurement (error variance) of a single score, whereby one can predict the range of fluctuation likely to occur in any single individual's score as a result of irrelevant, chance factors. Stated simply, by test reliability, one refers to the *reproducibility* of a set of test results. A test with high reliability is one that will yield very much the same relative magnitude of scores for a group of people under differing conditions or situations. Reliability estimates are presented in a numerical coefficient. A perfect reliability (correlation) coefficient of +1.00 is statistically impossible to obtain with any test, but essentially means that there is a one-to-one (absolute)

correlation between scores obtained today with those that would be expected with the same instrument (or different sets of equivalent items) tomorrow.

Classical test-score theory assumes that each person has a true score that would be obtained if there were no errors in measurement. However, because measuring instruments are imperfect, the score observed for each person may differ from the person's ability or characteristic. The difference between the true score and the observed score results from measurement error. Measurement error can be a function of various dynamics and sources and is not always a function of test reliability. Anything that affects scores differently increases the amount of error variance and lowers the reliability and the validity (indirectly) of an instrument. Examinee motivation, time influence, situation-induced factors (e.g., secondary gain), distortion (cheating or faking), and cultural differences are among the numerous sources of error variance.

An experienced test interpreter will be able to account for the numerous factors that potentially cause measurement error. One method of accounting for measurement error is to administer more than one instrument measuring the same behavior, such as arithmetic ability. Another method is, of course, to review test data gathered by different sources, perhaps at different times, to make comparisons with information from a current assessment.

In review, validity is the extent to which a test does the job desired of it; the evidence may be either empirical or logical. Validity is established to a statistical comparison of scores with values on some outside variable. Reliability is the reproducibility of a set of scores under differing conditions (i.e., consistency or stability of a measuring instrument necessary for, but not sufficient for, validity).

Usability is consideration of the many practical factors that are going into the decision to use a particular test. A longer test may be more reliable, even more valid; however, if there is only a limited time for testing, one may have to compromise with that particular ideal. Similarly, whether the preferred test is too expensive or unavailable can determine the selection of one test over another.

The Commission on Rehabilitation Counselor Certification (CRCC) [Code of Professional Ethics](#) for Rehabilitation Counselors requires certificants to consider all of the above-mentioned factors in assessing the appropriateness of tests (G.5.a): *Appropriateness of Instruments. Rehabilitation Counselors carefully consider the validity, reliability, psychometric limitations, and appropriateness of instruments when selecting tests for use in given situations or with particular clients.*

### **Vocational Evaluation Test Selection**

Vocational evaluation should endeavor to integrate standardized test data from measures of ability, personality, and interest. The most frequently employed ability measured in occupational assessment is the Vocational Aptitude Battery. There are several vocational aptitude batteries on the market as well as some that are not readily available to the private practitioner but are nonetheless frequently referenced in military, educational, and employment records.

***Bennett Mechanical Comprehension Test*** – Designed to measure the ability to understand and perceive the relationship of physical forces and mechanical elements in practical situations, the Bennett Mechanical Comprehension Test (BMCT) is considered a valid instrument for what it purports to measure and rates relatively high in terms of simplicity of instructions and responses required. In many trades and occupations, the understanding of mechanical principles is a prerequisite to successful performance. Automotive mechanics, plumbers, mechanical engineers, trade school applicants, and persons in many other “hands-on” vocations need to comprehend the basic mechanical principles in order to succeed in their fields. This test consists of pictures about which the examinee must answer straightforward questions. The situations depicted emphasize basic mechanical principles that might be encountered in everyday life. In spite of its psychometric excellence, the BMCT is in need of modernization.

***Career Ability Placement Survey*** – Designed to predict an individual's potential to learn and/or perform occupations in 14 vocational fields, the Career Ability Placement Survey (CAPS) provides information regarding the test-taker's Mechanical Reasoning, Spatial Relations, Verbal Reasoning, Numerical Ability, Language Usage, Word Knowledge, Perceptual (clerical) Speed and Accuracy, and dominant-hand Manual Speed and Dexterity. Highly formulated on the Employee Aptitude Survey and the General Aptitude Test Battery (GATB), the CAPS can be administered individually or in a group. It is easily and rapidly scored. It has a very high predictive value with a predictive validity coefficient of 0.97%, according to the test makers. The CAPS also has the advantage of being constructed with the COPS System Interest Inventory, providing compatibility between aptitude and interest testing.

***Differential Aptitude Test*** – The Differential Aptitude Test (DAT) was first issued in 1947 to provide a basis for educational and vocational guidance of students in grades 7 through 12. Subsequently, examiners have found the DAT

useful in vocational counseling of young adults out of school and the selection of employees. The DAT consists of eight independent tests: Verbal Reasoning, Numerical Reasoning, Abstract Reasoning, Perceptual Speed and Accuracy, Mechanical Reasoning, Space Relations, Spelling, and Language Usage. The reliability of the DAT is generally quite high. The test manual presents extensive data demonstrating that the validity data predict the DAT to be a good indicator of school grades and performances on other aptitude tests.

***The Wonderlic Personnel Test*** – Even though it is described as a personnel test, the Wonderlic Personnel Test (WPT) is really a group test of general mental ability. What makes this instrument somewhat of an institution in personnel testing is its format (50 multiple-choice items), its brevity (a 12-minute time limit), and its numerous parallel forms (16 at last count). The reliability of the WPT is quite impressive, especially considering the length of the instrument. Internal consistency reliabilities typically reach .90, while alternative-form reliabilities usually exceed .90. Regarding validity, if the WPT is considered a brief test of general mental ability, the findings are also quite positive. For example, one investigator reports a correlation of .91 between scores on the WPT and scores on the Wechsler Adult Intelligence Scale, generally considered the gold standard in assessing adult mental ability.

***The Minnesota Clerical Test*** – The Minnesota Clerical Test (MCT) purports to measure perceptual speed and accuracy relevant to clerical work. The MCT is divided into two subtests: Number Comparison and Name Comparison. Each subtest consists of 100 identical and 100 dissimilar pairs of digit or letter combinations. The examinee is required to check only the identical pairs, which are randomly intermixed with dissimilar pairs. The score depends predominantly upon speed, although the examinee is penalized for incorrect items. The reliability of the MCT is acceptable, with reported stability coefficients in the range of .81 to .87. The MCT manual reports studies that are correlated with measures of job performance, measures of training outcome, and scores from related tests. The job performance of directory assistants, clerks, clerk-typists, and bank tellers was correlated significantly but not robustly with scores on the MCT. The MCT is also highly correlated with other tests of clerical ability.

### **Achievement and Intelligence Testing**

In particular situations, the vocational/disability evaluator will use measures of achievement and intelligence. These types of instruments are used to investigate an individual's capacities to learn and profit from additional education. Achievement testing, particularly reading achievement, can also provide a preliminary determination as to whether the examinee can indeed read well enough to qualify for additional paper-and-pencil testing. Intelligence testing can provide information on not only learning potential, but learning style as well. Not every vocational evaluator is trained or qualified to administer particular intelligence tests. For example, the Wechsler Adult Intelligence Scale, now in its third edition, is beyond the training and qualifications of most master's level evaluators.

***Wide Range Achievement Test-5*** – The Wide Range Achievement Test-5 (WRAT-5) is an individually administered achievement test that was designed as an adjunct to tests of behavioral adjustment, intelligence, and aptitude. Basically, this instrument is used to measure the achievement level or presence of a sensory-motor skills level in learning to read, spell, write, and arithmetically calculate.

***Peabody Picture Vocabulary Test-Fifth Edition*** – The Peabody Picture Vocabulary Test-Fifth Edition (PPVT-5) measures hearing or perceptive vocabulary, presumably providing a rough estimate of verbal intelligence, and one can use it as a screening instrument or as a supplement to other measures in evaluating learning problems and potentials. The advantage of the PPVT-5 is that it can be administered to a wide range of individuals, ranging from 2.5 years to adult.

***Peabody Individual Achievement Test-Revised (Normative Update)*** – The Peabody Individual Achievement Test-Revised (Normative Update) (PIAT-R NU) is designed to measure school achievement in the areas of mathematics, reading, spelling, general information, and written expression. The PIAT-R NU covers a wide range of achievement levels from preschool to post-high school.

***Wechsler Adult Intelligence Scale-Fourth Edition*** – David Wechsler defined intelligence as the capacity to act purposefully and to adapt to the environment. Intelligence is, he stated, “the aggregate or global capacity of the individual to act purposefully, to think rationally and to deal effectively with his environment.” The Wechsler Adult Intelligence Scale-Fourth Edition (WAIS-IV) contains verbal and performance subtests and yields three IQs (Verbal Scale IQ, Performance Scale IQ, and Full Scale IQ). The WAIS-IV also provides index scores for Verbal Comprehension, Perceptual Organization, Working Memory, and Processing Speed. The WAIS-IV is considered the premier standardized test of adult intellectual capacity. Administration requires considerable training and experience, preferably in earlier versions of the Wechsler tests.

**Kaufman Brief Intelligence Test-Second Edition** – The Kaufman Brief Intelligence Test-Second Edition (KBIT-2) is a “screening” instrument measuring verbal and nonverbal intelligence, which consists of two subtests. The Vocabulary subtest measures verbal, school-related skills (“crystallized thinking”) by assessing an individual’s word knowledge and verbal concept formation. The Matrices subtest measures nonverbal and problem-solving skills (“fluid thinking”) by assessing an individual’s ability to perceive relationships and complete analogies. The KBIT-2’s standard scores are normed to permit direct comparisons with global scores earned by an individual on the Wechsler (1974, 1981, 1989) series of scales, the Kaufman intelligence scales, and achievement batteries (such as the WRAT-5). The KBIT-2 is normed for subjects ages 4 to 90, and one of its advantages is that it can be administered in approximately 20 minutes. Reliability findings for the KBIT-2 are exceptionally strong. The KBIT-2 manual reports highly supportive validity data from 20 correlational studies. Although the KBIT-2 yields standard scores having the same mean and standard deviation as the Wechsler and Kaufman scales, the KBIT-2 should not be used as a substitute for a comprehensive measure of the intelligence of a child or adult.

**General Ability Measure for Adults** – The General Ability Measure for Adults (GAMA) provides an estimate of an individual’s nonverbal intelligence using abstract designs. Nonverbal abstract figures (rather than verbal content) are used to minimize the effects of knowledge, verbal expression, and verbal comprehension on test scores. This approach offers the advantage of providing an instrument that is accessible to a wide variety of people with different communication skills and diverse linguistic, cultural, and educational backgrounds.

**Beta-4** – This instrument is the fourth edition of the Beta Examination, a rough measure of general intelligence of persons who have difficulty reading or speaking English. It is designed for use with individuals in the general population ranging in age from 16 to adult, or with individuals who are non-English speakers, are relatively illiterate, or have language difficulties. The Beta-4 consists of five subtests: Coding, Picture Completion, Clerical Checking, Picture Absurdities, and Matrix Reasoning. The final score is displayed as a nonverbal IQ. Validity studies report that the Beta-4 is highly correlated with the WAIS-IV.

**Slosson Intelligence Test-Revised Third Edition** – Designed as a screening instrument of intelligence, the Slosson Intelligence Test-Revised Third Edition (SIT-R3) is orally administered to eliminate reading by the test-taker. The six verbal cognitive domains tested in the SIT-R3 include: General Information, Comprehension, Quantitative, Similarities and Differences, Vocabulary, and Auditory Memory. Although the SIT-R3 can be administered to illiterate individuals or other clients who may be disadvantaged because of cultural or social status, it should be considered a screening instrument only.

### **Structured Personality Tests**

An examinee might have the aptitude, intelligence, and abilities to execute a particular type of work, but if she/he does not possess the temperament or “normal” personality variables (e.g., achievement, motivation, dominance, introversion/extroversion) suitable to the work expected, the occupational match will be inadequate, and the prospective worker will cause herself/himself or others problems in the workplace. As a result, personality assessment is a key component to vocational/disability evaluation.

Objective personality measures are those that are structured in questionnaire form so the test administrator is not part of the psychometric process and the “structure” of the test is designed to eliminate ambiguity. A clear and definite stimulus is provided, and the requirements of the subject are evident and specific. An example of a structured personality test item is, “Respond ‘yes’ or ‘no’ to the statement: ‘I am happy.’” In contrast, a subjective (or projective) test item may provide a picture or inkblot and ask, “What might this be?” In a projective personality test, the stimulus is ambiguous and the subject has few guidelines about what type of response is required.

The foremost structured personality test in the world is the Minnesota Multiphasic Personality Inventory-2. However, other personality questionnaires, including the California Psychological Inventory and the 16 Personality Factor Questionnaire, have been used frequently in career-oriented assessments and vocational/disability evaluations.

**Minnesota Multiphasic Personality Inventory-2** – In 1940, a number of articles detailing the development of a new paper-and-pencil personality test, the Minnesota Multiphasic Personality Inventory-2 (MMPI-2), were published. Since that time, the MMPI-2 has become the most widely researched and validated structured personality instrument in the world. The MMPI-2 is a true-false self-report questionnaire designed to assist in distinguishing normal personalities from abnormal groups. Specifically, the test was designed to aid in the diagnosis or assessment of major psychiatric or psychological disorders. Beginning in 1992, a major effort was made to date and re-standardize the original MMPI, and the result was a measure that is used primarily to determine disabling psychological abnormalities, and its utility as a vocational assessment tool is limited.

**The 16 Personality Factor Questionnaire-Fifth Edition** – Now in its fifth edition, the 16 Personality Factor (16PF) Questionnaire assesses 16 of the most important dimensions of personality. Not only is a personality profile developed from the 16 factors, but observations are also available regarding clinical aspects of behavior, vocational implications, further vocational patterns, and occupational fitness projections. Data regarding an examinee's occupational fitness for 24 different occupational groups are yielded by 16PF items. It is considered less threatening than the MMPI-2. The test is developed with a factor-analytic strategy that identifies only those traits about which questions are asked. Short-term test-retest correlation coefficients for the 16 source traits are impressive; however, long-term test-retest coefficients are not so impressive. The 16 source traits gleaned by testing result in five second-order factors, for which one can obtain scores and further predict vocational compatibility.

**The Myers-Briggs Type Indicator** – The Myers-Briggs Type Indicator is a theoretically constructed measure based on Carl Jung's theory of psychological types. Jung theorized that there are four main ways in which we experience or come to know the world: *sensing*, knowing via the sensory systems of sight, hearing, touch, and so on; *intuition*, guessing what underlies sensory inputs; *feeling*, focusing on the emotional aspect of experience; and *thinking*, reasoning or thinking abstractly. The purpose of the Myers-Briggs test is to determine what four modes the examinee relies upon and where that individual falls on an introversion-extroversion dimension. The Myers-Briggs, like other personality measures, helps in predicting vocational preference when used in conjunction with ability and interest tests.

### **Occupational Interest Measures**

An implicit theme in vocational/disability evaluation is that people with medical impairments are more apt to be satisfied, to remain in their jobs, and to be productive employees if they possess an interest in what they are doing occupationally. In addition to having the ability and possessing the necessary temperament for occupational *fit*, one would hopefully also possess sufficient interest in the task at hand. There are a number of vocational interest tests utilized by the vocational evaluator.

**Career Assessment Inventory** – To assess an individual's likes and dislikes, the Career Assessment Inventory (CAI) was patterned after the Strong Vocational Interest Blank and the Strong Vocational Interest Inventory. But in contrast, the CAI is used for individuals seeking immediate career entry and for people wanting jobs requiring some post-secondary education, such as technical training. The CAI has both *Vocational* and *Enhanced* versions, dispelling some early criticism regarding the original measure not always being appropriate for college-bound individuals.

**Career Occupational Preference System Interest Inventory** – The Career Occupational Preference System (COPS) Interest Inventory was designed to determine an individual's likes and dislikes for 126 vocational activities and as an interest measure compatible with the CAPS. The COPS is published in two versions, the vocational measure and one more appropriate for professional occupations, the latter of which is only available digitally. In addition to an examinee's responses to individual vocational activities, the data are available for the individual's work preferences in relation to 14 vocational families, the same categories surveyed by the CAPS.

**The Strong-Campbell Interest Inventory** – In 1974, David Campbell published a new version of the Strong Vocational Interest Blank, which he called the Strong-Campbell Interest Inventory (SCII). The SCII incorporates J.L. Holland's theory of vocational choice. After many years of study, Holland postulated that interests express personality and that people can be classified into one or more of six categories according to their interests: Realistic, Investigative, Artistic, Social, Enterprising, and Conventional. The SCII in its current form is divided into seven parts and has 325 items to which a test-taker responds "like," "dislike," or "indifferent." Some criticize the SCII because it emphasizes professions that require college and professional training.

**The Reading-Free Vocational Interest Inventory:2** – Most interest questionnaires are normed on a particular reading level, generally from five grades of education and higher, but the Reading-Free Vocational Interest Inventory:2 (R-FVII:2) can be administered to adults who are illiterate or non-English speaking. The R-FVII:2 provides an examinee's expressed interests in 11 vocational groups. The R-FVII:2 interest patterns furnish information for individuals engaged in a wide range of occupations and job tasks at unskilled, semi-skilled, and skilled levels, and are not limited to entry-level positions. The non-reading feature of the inventory requires no verbal symbols or written statements for interpretation by examinees. The pictorial illustrations with occupational significance are presented in a "forced-choice" technique. Presenting pictorial activities of individuals engaged in clearly illustrated, artist-drawn job tasks circumvents the decoding and reading comprehension barrier for those individuals with limited verbal or reading ability.

These represent a few of the many standardized instruments that are available to the vocational/disability expert who is charged with the responsibility of answering questions regarding an individual's capacities to work and earn money following the onset of what might be considered occupationally significant medical impairment. However, tests are

imperfect, and clinical impressions are limited. When test results do not make sense in the context of clinical impressions, they may be wrong or our “impressions” may be faulty. Neither is comprehensive in its illumination. The important issue is that the forensic expert attempt to employ as complete a set of investigative tools as possible. In the realm of vocational testing, coverage of the examinee’s interests, abilities (and/or aptitudes), and personality is probably essential. Ideally, post-injury test data in these areas can be compared to pre-accident information contained in documentation regarding the test-taker’s capacities and traits in these areas. In this regard, nothing is more informative than school and employment records regarding the plaintiff’s achievement and pattern of performance before the accident in question.

### **Premorbid Test Data and Pre-accident Achievement**

Most injured people have undergone standardized testing earlier in their lives, sometimes at work, frequently if they have had military experience, and almost always during their formal educational years. School records of relatively young individuals (i.e., children and youth to middle-aged adults) can be helpful to the forensic examiner in assessing the plaintiff’s premorbid learning potentials and achievement motivation. Beginning in second grade, public school students are generally tested every two years with a battery of achievement tests. Private schools have generally followed suit with this testing policy. Complete school records, not simply report cards or academic transcripts, can include substantial information, including screening for school readiness and assessment of learning disabilities and related disorders.

Individual achievement tests, including measures that might be repeated during forensic assessment, may be used for direct comparison. One should keep in mind that direct comparisons must be made carefully with frequently, numerous intervening variables in mind. However, premorbid *patterns* of learning and achievement can be highly valuable to the forensic examiner charged with the responsibility of assessing educational, vocational, and behavioral change that might otherwise be attributed to accident and injury. School records, military documentation, and employment information, when discovered, can be valuable sources of data regarding the evaluatee’s pre-accident achievement and potential.

### **Other Important Issues**

Psychology and the legal system have had a long and uneasy alliance characterized by mistrust on both sides. Within the legal system, lawyers and judges maintain antipathy toward the testimony of nonmedical experts because of concern that their opinions are based on “junk science” or perhaps no science at all. Also, expert witnesses are somehow perceived as individuals hired to profess almost any viewpoint that serves the interests of the party paying them. Vocational experts generally find the adversarial system and courtroom proceedings offensive, particularly when the expectation of yes-no answers to cross-examination questions is maintained. Psychological and vocational experts have been trained to see the gray areas of psychological and vocational development and genuinely consider those areas when assessing an individual’s psycho-vocational development.

To be imposed upon with black-and-white constructs from individuals who do not fully understand the discipline is too often disconcerting to the expert. Expert witnesses of all types generally endeavor to make their profession “a life’s work,” and most experts take their obligations to the justice system seriously, including the role of assisting a judge or jury in determining the truth of the matter being litigated. For better or worse, nonmedical experts, including vocational experts, do testify in court cases, and the focus of the testimony often assists decision makers in understanding vocational capacity, loss, and how medical impairment might cause disability and diminution of earning power.

However, the legal system’s ignorance of nonmedical evaluations is exemplified in the *Pennsylvania Rules of Civil Procedure* (which were reformulated in 1998). The pertinent rule added: “...when the earning capacity of a party, or of a person in the custody and control of a party, is in controversy, the court in which the action is pending may order the party to submit to an evaluation by a suitably licensed or certified evaluator.”

This reformulated rule is significant because it authorizes courts to permit vocational examinations and further specifies that the examinations are to be conducted by a “suitably licensed or certified evaluator.” This rule (4010.1) also recognizes the importance of vocational examination. This is not to say that the rule establishes an absolute right to a vocational examination. While courts, especially Pennsylvania courts, arguably have the discretion to deny such an examination, no criteria were established indicating when, if ever, it would be permissible to compel a vocational examination. At a minimum, it should be considered an abuse of discretion for a court to refuse a vocational examination when an injured plaintiff has retained his/her own vocational expert for an assessment.

The discretionary component of the reformulated rule is troubling and may prevent the creation of a uniform approach to vocational examinations in Pennsylvania’s courts. It is disturbing because it creates several restrictions on vocational

examinations that may adversely affect the vocational expert's capacity to perform his/her job. The critical restrictions are:

- the rule allows plaintiffs to have their attorney (or other representative) present during vocational examination, and
- it gives plaintiffs the right to have the vocational examination transcribed.

These allowances have the potential to create a deposition-like atmosphere during the vocational examination and can promote an adversarial relationship that inhibits the plaintiff from participating in the examination with candor. Vocational testing is standardized and normed on populations without the use or presence of a representative and/or tape recorder. Such changed testing conditions can have a negative effect on the test-taker's performance and compromise the normative data comparison(s) required in test interpretation.

In fact, CRCC evaluators are ethically bound by the [Code of Professional Ethics](#) for Rehabilitation Counselors to protect test material and maintain its standardization for testing to be considered valid (G.6.a.): *Administration Conditions. Rehabilitation counselors administer assessments under the same conditions that were established in the standardized development of the instrument. When assessments are not administered under standard conditions, as may be necessary to accommodate individuals with disabilities, or when unusual behavior or irregularities occur during the administration, those conditions are noted in interpretation, and the results may be designated as invalid or of questionable validity.*

### **Expert Testimony in Light of the *Daubert* and *Kumho* Cases**

While there are other cases that impact the issue of "expert testimony," two seminal cases are *Daubert* and *Kumho*. In federal cases, *Daubert* (*Daubert v. Merrell Dow Pharmaceuticals, Inc.*) places the responsibility on the trial judge to determine whether expert testimony is scientifically valid and can be applied properly to the facts of a case. There are five primary issues:

- whether the theory or technique in question can be (and has been) tested;
- whether it has been subjected to peer review and publication;
- its known or potential error rate;
- the existence and maintenance of standards controlling its operation; and
- whether it has attracted widespread acceptance within a relevant scientific community.

*Kumho* (*Kumho Tire Company, Ltd. v. Carmichael*) further refined *Daubert* to include any expert testimony, whether "scientific" or "non-scientific." *Kumho* decided that the Court had defined *Daubert* in terms of "scientific testimony" because the testimony relevant to the *Daubert* case was in fact of a scientific nature and that *Daubert* applies not only to scientific expert testimony, but to all expert testimony offered in federal courts. The reliability test for whether the expert testimony is admissible is the word *knowledge* (i.e., the expert's knowledge) and not any word that modifies that knowledge, like *scientific*.

Moreover, in accordance with the appropriate jurisdiction, vocational experts who are certified disability management specialists, for example, are also ethically bound by the Certification of Disability Management Specialists Commission (CDMSC) [Code of Professional Conduct](#) to produce objective findings based on reliable data (RPC 3.01): *When providing forensic evaluations for an individual or organization, the primary obligation of certificants shall be to produce objective findings and opinions that can be substantiated based on information and techniques appropriate to the evaluation, and as required by applicable case law within the appropriate jurisdiction, which may include assessment of the individual and/or review of records. Certificants shall define the limits of their reports or testimony, especially when an assessment of the individual has not been conducted.*

Case managers may advocate for their client when attending forensic assessments. Within the Commission for Case Manager Certification (CCMC) [Code of Professional Conduct](#) (S10) client relationships standards are described as: *Board-Certified Case Managers (CCMs) will maintain objectivity in their professional relationships, will not impose their values on their clients, and will not enter into a relationship with a client (business, personal, or otherwise) that interferes with that objectivity.*

Pressure on the legal system to both understand and consider the ramifications of *Daubert*, *Kumho*, and other cases dealing with expert testimony remain unfinished business and a continuing controversy for both the expert and the legal professional retaining an expert for testimony. The issue of expert testimony in the federal courts is extremely complex and should not serve here to detract from the primary concern for testing as a critical aspect of vocational evaluation. Bad

jokes and mistrust regarding both the legal professionals and experts from various disciplines will undoubtedly continue indefinitely.

Certainly not without its faults, our legal system is considered the best in the world by many, and those who hold themselves out as experts and expert witnesses generally endeavor to maintain the integrity of that system. When the expert witness does not honor the importance of the legal system with professional behavior, the system itself generally takes care of the problem. Forensic experts, nonetheless, should endeavor to better appreciate the system that they serve, and of course, lawyers hiring experts will continue to learn more about the sciences that those experts represent.

## **Summary**

Vocational/disability evaluation in legal matters of personal injury is a critical component of arguing economic damages following the onset of vocational disability. The concomitant evolution of personal injury law and disability evaluation have brought the lawyer and vocational expert together with greater appreciation of the difference between medical impairment and occupational disability. Vocational/disability evaluation involves more than reviewing the plaintiff's records and conducting a question-answer interview. Thorough assessment of an injured person's employability and capacity to earn money, both before and after the accident in question, requires an analysis of all potentially available data affecting work options. Standardized testing can clearly augment an analysis of the plaintiff's potentials and how those potentials may have changed as a result of personal injury and associated medical impairment.

Various standardized tests have been refined over the years to provide valid and reliable data regarding worker characteristics and behaviors that affect and predict occupational outcomes. Following a medical determination that an individual's health circumstances have potentially compromised physical and/or mental functioning, there may very well be a legal argument that a change in a person's functioning has compromised earning power. Vocational/disability evaluation is the keystone in the tripartite analysis of how personal injury might alter an individual's vocational and economic potentials. Vocational testing is an important tool among the vocational expert's methodologies of assessing occupational disability and residual employability.

Other issues related to vocational testing in personal injury cases include the long and uneasy alliance between psychology and the legal system. Vocational experts, like other psychologically trained professionals, have had difficulty accepting the black-and-white constructs typified by the "yes and no" expectations of courtroom proceedings. Rule 4010.1 of the *Pennsylvania Rules of Civil Procedure* recognizes the importance of vocational examination but provides the plaintiff with allowances that potentially interfere with the examination process. Concomitantly, federal cases, such as *Daubert* and *Kumho*, place greater demands on the vocational expert to offer "scientific" testimony. By fully appreciating both the value and shortcomings of standardized testing, vocational experts and legal professionals alike can assist the personal injury adjudicator to make wise decisions concerning losses associated with occupationally significant medical impairment.

## **Why Vocational Assessments are Essential to the Rehabilitation Process and Why the Qualifications of the Evaluator are Critical to the Outcome**

A primary function of qualified vocational rehabilitation professionals is to assist employers (or their insurance carriers) to return employees who were injured (or ill) to work.

The process used by vocational rehabilitation professionals to accomplish this charge is to assess or evaluate the employee. As noted, this evaluation aspect of the comprehensive process is accomplished by:

- direct observation,
- medical records,
- caregiver input,
- structured interview,
- standardized assessment testing, and
- assessment and inventory of worker characteristics and potentials.

The evaluator (tester) carries out this activity by applying the knowledge he/she has acquired through formal (and certified) education in an accredited program. The vocational professional works in collaboration with physicians, psychologists, social workers, therapists, health care providers, and other vocational professionals.

The intended outcome of the assessment is to explore vocational options that will support a viable work re-entry plan. A return to work is the optimal outcome; in rare (catastrophic) cases, the outcome may indicate that work at any level may not be practical. In these rare instances, treatments or other interventions need to be considered. In all other cases, the objective is a return to work, with or without accommodation (as proscribed by the ADA/ADAAA).

Basically, vocational evaluations are designed to determine preferences (individual interests) and suitability (individual aptitudes and achievement levels). These factors can be determined through the application of formal psychometric methods/materials, such as occupational interest inventories, and with vocational aptitude tests.

Vocational assessments are used to determine whether an injured (or ill) employee is able to return to work, and if so, to what kind of work. If return to work is indicated, the outcome of the evaluation will address the critical issues of competitive employment. Diagnostic vocational testing or functional evaluations may include:

- an interest inventory,
- a personality inventory,
- an aptitude measure,
- an academic achievement level determination,
- a transferable skills analysis, and in some instances,
- a psycho-vocational assessment.

Comprehensively, all vocational evaluations focus on cognitive, educational, and emotional issues. Testing is done to develop baseline data on which an employment plan may be structured. As mentioned earlier, there are numerous test instruments available, depending on the test administrator's qualifications. A sampling of frequently used instruments could include:

- WAIS-IV with very special training required
- WRAT-5 for academic achievement
- 16PF to assess work temperament
- CAPS or DAT for aptitudinal assessment
- COPS to measure occupational interests

Vocational rehabilitation evaluations culminate in a comprehensive report (to the employer or insurance carrier) detailing a viable course of action for the employee. These reports are critical as the basis for decision making by the employer. In addition, the evaluation reports can be, and frequently are, the *prima facie* evidence in litigation.

### **Why the Qualifications of the Evaluator are Critical**

Much, if not most, of the work done in vocational rehabilitation is based on documentation. For example, when the records indicate that the person has a high school diploma (or even a GED diploma), that fact is assumed to equate to a certain level of academic achievement. In reality, an assumption of achievement level and that level as determined by objective testing are purely coincidental.

The recommendation of physicians in respect to a specific patient's physical capacities to work is also frequently unreliable regarding actual employment potential. At issue here is, once again, the basic difference between "impairment" and "disability." Defining an impairment is, of course, within the scope of the physician's expertise, whereas, providing statements of vocational disability are not the doctor's purview. In terms of a work disability, the designated decision maker needs to understand the physical and mental requirements of the specific work task to decide whether the impairment will, with or without a job accommodation, become a disability for the employee. This expertise on occupational capacity is the qualified vocational professional. In addition to the issue of the ADA/ADAAA definition of accommodation, "with or without" a job modification for example, physicians are generally not in a position to know the specific physical (i.e., standing time, pounds to be lifted, etc.) or mental requirements of a job. Qualified vocational evaluators are educated and experienced in the issues of job analysis, disability assessment, and evaluation of an employee's ability to perform at a specific level of accomplishment.

Still another important issue in terms of qualified evaluators as opposed to unqualified but practicing vocational professionals is the important issue of the qualifications to testify in litigations. As noted, this issue was addressed by the 9<sup>th</sup> Circuit Court in 1993 in the *Daubert* case, which says: "Expert opinion based on scientific technique is *inadmissible* unless the technique is generally accepted as reliable in the relevant scientific community."

The ruling requires that trial judges must make a preliminary assessment of whether the testimony's underlying reasoning and methodology is scientifically valid and can be properly applied to the facts at issue. Considerations include whether:

- the theory or technique can be (or has been) tested,
- it has been subjected to peer review and publication,
- its known and potential rate,
- the existence and maintenance of standards controlling its operation, and
- whether it has attracted wide spread acceptance.

Meeting the threshold requirements of *Daubert* in litigation is daunting even for qualified, certified, and richly experienced vocational experts. Engaging vocational evaluators without the minimum qualifications to do professional evaluation, including testing, is likely to be unproductive.

## **Conducting Compelling Vocational/Disability Evaluations: Three Required/Critical Understandings for the Evaluator**

### **Part I – The Need for Thorough Histories and Sufficient Documentation**

Vocational assessment and occupational disability evaluation in personal injury matters challenges the vocational expert to be precise and certain in rendering conclusions, more often than not, after only one examination of the injured person. Vocational experts offering opinions to the court therefore must “attempt to obtain all appropriate reports, evaluations, and other such data which the expert deems essential for determining vocational capacity” (Code of Ethics, Rules of Professional Conduct, R3.5, ABVE). In reality, the justice system, relying on forensic expert testimony to facilitate the court's decision-making, is compelled to expect thoroughness and the highest level of precision possible from the expert.

It has been well-established in medical, psychological, and social research literature that a thorough history is critical in establishing the source and extent of a presented problem or chief complaint. Moreover, the subject to be studied or evaluated has a story that certainly predates his or her examination, and that story is always multifaceted. History from the subject alone can be forgotten, unconsciously distorted, deliberately changed, and provided only from one perspective, that of the person being examined, an individual who is naturally defensive and sometimes distraught. Reliability of histories is always an issue, and even though the examiner can endeavor to be extremely thorough in history taking, the documented past (i.e., school records, medical records, employment records, and sworn statements from the informant and others) can be essential in providing a more complete picture as the vocational examiner attempts to arrive at a professionally certain opinion on the issue(s) to be addressed in the evaluation.

For vocational experts, career development theory and vocational psychology have offered the person-environment model of occupational fitness and job compatibility. John L. Holland (1997) has provided both direction and leadership to the field of career development as he studied and described the importance of personality in occupational choice and match. Donald Super (1984) worked to understand and improve the notion that a person's familial values and personal beliefs are fundamental to an individual's vocational identity. Super also found and explained that career development and lifespan benchmarks coincide in a meaningful way. Recognizing that many adolescents and adults experience a wide range of problems when making a career decision and adjusting to the world of work, Osipow and others (1996) developed a taxonomy of career decision making difficulties that result in occupational indecision. [Vocational/disability assessment and psychotherapy is explained in greater detail in Part II.]

In addition to foundations of vocational development theory, experts dealing with the problem of workplace disability have benefited from the insights of astute occupational medicine physicians, including Drs. Behan and Hirschfeld (1966). Behan and Hirschfeld offered their analyses of hundreds of case studies, which described occupational disability as a “process” in response to stressful life situations coupled with an “explanatory” accident rather than simply a static result of occupational illness or workplace injury. Borrowing from the work of Behan and Hirschfeld, Weinstein (1978) aptly portrayed “disability as a process,” with identifiable stages that could be retrospectively identified and described by observers with sufficient information from troubled workers' histories and pre-accident employment patterns.

More recently, Lowman (1993) has provided an informed and systematic analysis of “work dysfunctions,” the result of a complex interaction of characteristics of the person in the work environment. Work dysfunctions are a demonstrated impairment of job capability absent physical or mental disease per se. Work dysfunctions, most often in the form of

employee psychological characteristics, are often the predictors of occupational disability that more frequently than not are viewed retrospectively through careful histories and thorough documentation.

Forensic vocational/disability experts must take into account the contributions of vocational/career development theorists, occupational medicine professionals, and psychologists when examining the impact of personal injury on a plaintiff's occupational and economic potentials. The primary obligation of the vocational expert is to present a fair and reasonable assessment of an individual's capacity to work, which is a function of the individual examinee's numerous personal, social, educational, occupational, financial, and medical circumstances both before and after the onset of an occupationally significant injury or illness. Taking thorough histories in each of these domains and gathering all available information through historical documentation pertinent to these areas of the examinee's life are essential functions of the competent vocational/disability evaluation.

For example, a thorough understanding of an individual's past psychological adjustment can be critical in understanding that person's potentials for work. According to Power (1991) "clients come for assessment with a wide assortment of distinctive vocational assets and problems, including certain emotional difficulties that represent barriers to productivity. Recognizing all of these factors is important in identifying what vocational evaluation approaches should be used for a particular client." An accountant with a history of bipolar disorder may have less potential for future work than an accountant without this form of depressive illness despite the fact that they have the very same cervical spine impairment.

A physically injured adult who has adjusted psychosocially to classroom settings while in high school may very likely have a different response to injury and be more inclined toward future work than an individual who has had a long history of educational absenteeism and failed achievement. When the history of absenteeism is also evident in attendance records from work, the pre-accident statement of motivation to return to work may be even more profound.

Many members of the legal profession have familiarity with the concept of malingering. Few lawyers and judges, however, understand the dynamics of co-malingering (Mitchell, 1992). Co-malingering is a social phenomenon in which members of an injured person's network of family members, friends, and/or acquaintances, and sometimes professionals (e.g., a family physician) consciously or unconsciously influence the injured person to avoid productivity. Co-malingering is often found (and sometimes observed and recorded) in those social relationships that are well-meaning, but contrary to or ignorant of the primary axiom of vocational rehabilitation, that is, work is therapeutic. Co-malingers have their individual agendas, and frequently cannot be identified as members of the injured worker's social constellation without documentation (i.e., work records, medical documentation, or sworn notes of testimonies). [Co-malingering is explained in more detail in Part III.]

The sum and substance of this section is essentially that forensic vocational experts, like any other thorough social science investigator, must work toward gathering as much information as possible in order to answer the legal questions of occupational disability, residual employability, and earning power. These questions are answered only after thorough histories and sufficient documentation are gathered and studied. Vocational pathways and occupational disability are complex phenomena with numerous antecedents and consequences. The forensic vocational/disability expert's obligation to the court system is to obtain from the referral source all appropriate reports, evaluations and other such data, that the expert deems necessary for determining earning capacity both before and after the onset of disabling injury or illness.

## **Part II – The Role of Vocational Evaluation in Providing Psychotherapy to Individuals with Acquired Disabilities**

When a clinician encounters an individual who seeks help for mental health problems associated with acquired disability, a thorough vocational/disability evaluation can provide a framework for effective intervention in terms of diagnosis and treatment planning. Vocational/disability assessment is an effort to explain how mental and/or physical impairment interferes with work functions. Certified Rehabilitation Counselors, Vocational Psychologists, and members of the ABVE can assist the clinician and the psychotherapy client in identifying vocational impediments and occupational alternatives through timely assessment as an adjunct to psychotherapeutic intervention.

Vocational/disability evaluation ideally involves a careful review of relevant medical and psychological information regarding the person to be evaluated. The expert invites the person to participate in a structured clinical interview and vocational testing designed to clarify the individual's mental abilities, vocational aptitudes, occupational interests, and work temperament. According to the CRCC [\*Code of Professional Ethics\*](#) for Rehabilitation Counselors, certificants are to choose appropriate testing instruments (G.5.a): *Rehabilitation counselors carefully consider the validity, reliability, psychometric limitations, and appropriateness of instruments when selecting tests for use in given situations or with particular clients.*

[The CDMS Code of Professional Conduct](#) calls on disability management specialists to accurately report the results of those testing instruments (RPC 1.09): *Certificants shall be accurate, honest, unbiased, and timely in reporting the results of their professional activities to appropriate third parties.*

Case managers involved in the process must uphold standards regarding maintenance, storage and disposal, of any records obtained in the course of their case management for a client. According to the CCMC *Code of Professional Conduct* (S17), *Board-Certified Case Managers (CCMs) will maintain the security of records necessary for rendering professional services to their clients and as required by applicable laws, regulations, or agency/institution procedures, (including but not limited to secured or locked files, data encryption, etc.). Subsequent to file closure, records will be maintained for the number of years consistent with jurisdictional requirements or for a longer period during which maintenance of such records is necessary or helpful to provide reasonably anticipated future services to the client. After that time, records will be destroyed in a manner assuring preservation of confidentiality, such as by shredding or other appropriate means of destruction.*

Although functionality is determined by the healthcare professional, occupational capability or disability is described through the vocational evaluation process. This process considers, among other issues, the person's "residual functional capacity." Therefore, the vocational/disability evaluation may be timed to take place both before and after psychotherapeutic intervention. If the underlying problem is identified early in the treatment process, vocational assessment might be performed at that time, and again, perhaps to a lesser extent, following what might be considered a successful intervention. Successful intervention on an affective disorder, for example, can increase a sense of well being and improve an individual's employability.

Among the challenges for both the clinician and the vocational expert is the ongoing effort to distinguish among impairment, functionality, and disability. Mental or physical impairment is a change in one's normal health, sometimes as the result of altered physiology and/or anatomy. Changes in functionality can be described as how so-called normal or premorbid capabilities (e.g., thinking and problem-solving) might be compromised with the onset of identifiable impairment (e.g., brain injury). Disability is measured by vocational experts who fully appreciate how mental and/or physical impairment prevent an individual from carrying out specific types of work.

The clinician will want to remain vigilant as to what aspects of the individual's attitudes and behaviors constitute actual occupational disability and those that may signal "work dysfunctions." Lowman (1993) refers to work dysfunctions as "psychological conditions in which there is a significant impairment in the capacity to work caused either by characteristics of the person or by an interaction between personal characteristics and working conditions." Some individuals who are relatively intact and integrated are nonetheless unable to deal with a particular work environment or with a dysfunctional supervisor. Vocational/disability evaluation may become the foundation for an otherwise healthy exit strategy the person may employ in order to leave a "toxic" workplace. On the other hand, vocational evaluation can identify worker characteristics and capabilities that may be incompatible with particular job demands regardless of the "health" of the work environment.

Physical or mental impairment may constitute a vocational disability in one occupation that would not necessarily be a disability in another. For example, the loss of binocular vision may prevent a truck driver from continuing in his work, but a thorough vocational/disability evaluation may find that the truck driver can still read at premorbid levels and possesses the necessary information processing skills and requisite temperament to function effectively as a motor vehicle dispatcher. Without thorough vocational/disability evaluation, however, alternative career assessment following visual loss becomes more or less speculation.

Clinicians requesting assistance from a vocational/disability expert should also expect the evaluator to provide recommendations regarding the examinee's vocational potentials through the application of alternative strategies, including, for example, a continuation of psychotherapeutic support while undergoing career change. Recommendations might also address ways a particular job or occupation might be modified to accommodate an individual with mental and/or physical impairment. Vocational/disability experts generally understand the concepts of workplace modification, job accommodation, and the vocational needs of individuals with different types of impairments. Sometimes, appropriate job-reengineering, consistent with the ADA of 1990, can result in a return to work, thereby increasing both the employer's and the employee's job satisfaction.

In some cases, individuals with impairments cannot work because the impairment is so severe or permanent that it totally erodes the person's employability. In these cases, the psychologist may be advocating that the individual receive disability benefits, for example, SSDI. Vocational/disability evaluation can serve as a basis for arguing total disability if indeed it exists. Therefore, vocational/disability experts with forensic experience may serve as good consultants to the clinicians and their clients as they attempt to secure financial support without which mental health concerns worsen.

However, the therapeutic value of work has been well established, and logic would dictate that when an individual is successfully employed commensurate with his or her capabilities, mental health will be enhanced. Therefore, when appropriate, the clinician would do well to seek an independent and sound vocational/disability assessment to help determine strategies to increase the person's potentials to establish/re-establish health and happiness through a return to work.

To locate a qualified vocational expert, visit the website of the ABVE, [www.abve.net](http://www.abve.net). On the home page, click on "Member Directory" to find an expert in your area.

### **Part III – The Need to Understand and Avoid Co-Malingering**

Employers and workers' compensation claims administrators have encountered the term "malingering" and too frequently think of an injured worker as a malingerer. Malingering is the intentional production of false or exaggerated symptoms motivated by external incentives, such as avoiding military duty, evading criminal prosecution, obtaining medication or compensation, or leaving and avoiding work. Employees who malingering are often manipulating the disability insurance systems to gain compensation and avoid work. It is generally thought in the medical community that malingering is rare. A more common manipulation of the private or public disability systems is co-malingering, a more or less cooperative venture in which the so-called malingerer finds one or more partners in the subversion of the employer's disability system safety net.

In an unpublished paper, Mitchell, a nationally recognized disability management consultant, defines co-malingering as the "invisible bond between worker and employer or an agent of either party." The manipulation can be intentional or involuntary, passive or active, worker-centered or employer-centered, and limited to a single event or habitual. Typically, co-malingering is initiated and maintained by a system of beliefs, learned behaviors, and/or intentions that are applied to specific situations in the workplace, but fail to create an effective, mutually satisfying outcome for the employer and the employee. Co-malingering can be a function of conflicting self-interests, labor relations, and gaps in the disability management system. Mitchell has found, for example, that only 10% of compensable lost time is due solely to medically imposed restrictions. This fact derives from a research study conducted by National Rehabilitation Planners, Inc. (NRP). In the study, Mitchell states that all other reasons for lost time are due to employer- and employee-controlled impediments for return to work, such as:

- inflexible supervisory decisions,
- poor injury management practices,
- breakdown in communications, and/or
- employer failures to make reasonable work accommodations.

Mitchell concludes: "Co-malingering, while not always the result of an intentional act on the part of either the worker or the employer, is quite often supported and encouraged by the very system it seeks to deceive."

Any party within the compensation system working with the employee can potentially partner, consciously or unconsciously, with the injured worker to deceive the system. Rehabilitation personnel, physicians, family members, claims personnel, lawyers, and even supervisors can co-malinger. Very often a supervisor, for example, expresses relief that an injured worker who has historically been a "troublemaker" remains out of work and will not be allowed to return to work until they are "100%" recovered from their injuries. The supervisor convinces herself that morale will be better without the troublemaker at work.

Less overtly, perhaps not realizing it, management and the employee all too frequently agree on contractual language that results in co-malingering, such as "no light duty," or "light duty" that continues indefinitely, or "one cannot work in this organization unless they are fully able, 100%." Lawyers representing injured workers have an obvious incentive to keep them out of work, and too often, physicians adopting vocational language inappropriate for the medical profession, such as "the patient is totally disabled," mislead decision-makers (i.e., employers and/or adjudicators) in the RTW and compensation systems.

Although not a medical concept, co-malingering is a significant sociological dynamic of the political landscape of every work organization including the disability compensation system originally designed to assist injured or ill employees "to make them whole." The sociological dynamics of co-malingering are much more frequently at play than the individual behaviors associated with malingering. Only when employers choose to focus on the lost-time system rather than the single individual who has begun losing time can employers truly reduce the unnecessary costs of absenteeism following injury or illness.

Effective disability management requires that rehabilitation specialists determine from the first contact whether the case has co-malingering aspects. If it does, the successful resolution of the case will have to address the co-malingering factors before assigning any other causal attribute.

To prevent co-malingering and its effects, employers are encouraged to ask critical questions, including:

1. Does this organization have a pro-active comprehensive system to encourage employee wellness and prevent lost time associated with injury and/or illness?
2. Has this organization made a concerted effort to combine risk-management, claims administration, health and medical, human resources, and operations, policies, and procedures to prevent lost time through disability?
3. Similarly, do representatives from each of these departments meet on a regular basis to review company procedures to keep employees on the job and productive?
4. Are front-line supervisors properly trained in communicating with workers who may be at risk for lost time (disability)?
5. Does this organization have designated internal case managers who take regular responsibility for effectively communicating with outside personnel regarding claims administration and medical issues related to employees that have lost time?
6. Does the company have an effective TTW program that trumps the antiquated "light-duty" concepts?
7. Does the company have essential function job descriptions that include the physical and mental requirements of each position so that physicians are asked to address whether a person can perform essential functions as opposed to "can this employee return to work"?
8. (Perhaps the toughest question of all) Are the leaders of this organization truly committed to assuming responsibility for maintaining worker productivity rather than abdicating that responsibility of disability management to outside vendors such as third-party claims administrators, case managers, physicians, and lawyers?

### **References:**

- American Board of Vocational Experts. Vocational Expert Code of Ethics: Section R3.5.
- Holland, J. L. (1997). Making vocational choices: A theory of vocational personalities and work environments (third edition). Odessa, FL: Psychological Assessment Resources.
- Super, Donald E. (1984). Career and Life Development. In D. Brown, L. Brooks, & Associates (Eds.), Career choice and development: Applying contemporary theories to practice. San Francisco: Jossey-Bass.
- Osipow, S.H. & Fitzgerald, L.F. (1996). Theories of Career Development (fourth edition). Needham Heights, MA: Allyn & Bacon.
- Behan, R. and Hirschfeld, A.H. (1966). Disability without Disease or Accident. Archives of Environmental Health: Vol. 12.
- Weinstein, M.R. (1978). The Concept of the Disability Process. Psychosomatics. 1978, 19, pp. 94-97.
- Lowman, R. (1993). Counseling and Psychotherapy of Work Dysfunctions. American Psychological Association Press.
- Power, Paul W. (1991). A Guide to Vocational Assessment (second edition). Austin, Texas: Pro-Ed.
- Mitchell, Ken (1992). Co-malingering.

## **Application of the FCE by Vocational Experts**

Vocational experts are those rehabilitation professionals who testify in court matters regarding an individual's capacities to perform competitive employment following the onset of injury or illness. They inform the court as to how an injury or disease causes changes in a person's occupational potentials and earning capacity. A rehabilitation professional serving as a vocational expert is generally trained as a counselor or psychologist, is skilled in vocational assessment and/or job analysis and placement, and is customarily certified by one or more relevant professional associations, (1) such as the ABVE. Vocational experts are the only rehabilitation professionals who are specifically trained to evaluate an injured person's post-accident occupational disability and employability.

Forensic vocational/disability evaluation does not involve a helping relationship between the vocational expert and the injured party. It consists of the vocational expert executing an independent review of pertinent medical information (including an appreciation of the impaired individual's functionality), a clinical interview, preferably vocational testing (i.e., aptitudes and interests), and a resultant assessment of the injured person's transferable skills and residual employability.

The confines of forensic evaluation are defined in [The CDMS Code of Professional Conduct](#) (RPC 3.01): *When providing forensic evaluations for an individual or organization, the primary obligation of certificants shall be to produce objective findings and opinions that can be substantiated based on information and techniques appropriate to the evaluations, and as required by applicable case law within the appropriate jurisdiction, which may include assessment of the individual*

and/or review of records. *Certificants shall define the limits of their reports or testimony, especially when an assessment of the individual has not been conducted.*

The CRCC also binds its certificants to ethical codes regarding forensic and indirect services. Section F.1.d. (similar to CDMSC RPC 3.02) of the CRCC [Code of Professional Ethics](#) for Rehabilitation Counselors states: *Rehabilitation counselors who are employed by third parties as case consultants or expert witnesses, and who engage in communication with clients or evaluatees, fully disclose to individuals (and/or their designees) the role of the rehabilitation counselor and limits to the relationship. Communication involves all forms of written or oral interactions. When there is no intent to provide rehabilitation counseling services directly to clients or evaluatees and when there is no in-person meeting or other communication, disclosure by rehabilitation counselors is not required.*

Forensic work within professional disciplines may have the involvement of a case manager. According to the CCMC *Code of Professional Conduct*, interdisciplinary is defined as: *Collaboration occurs among different disciplines that address inter-connected aspects of the client's defined health problem or needs. The members of the team bring their own theories and frameworks to bear on the problem and connections are sought among the disciplines to improve client outcomes.*

In formulating an analysis of residual employability, the vocational expert relies upon medical documentation regarding the injured person's impairment(s) and residual functional capacity (RFC), or what the impaired person is able to do physically and/or mentally despite the medically-defined impairment(s). In vocational/disability evaluation, the RFC report bridges the gap between the existence of medical impairment and the assessment of occupational disability/residual employability. The RFC for those individuals who have physical or exertional impairment(s) has customarily been established by healthcare providers and is an evolving methodology.

For many years, members of the legal system and employers relied upon a physician to make statements as to whether an injured individual could work. Concerned parties would actually ask physicians whether an injured employee, for example, could work without considering issues of what the person might be qualified to do or what the demands of the job might be. All too frequently, exclusive of laboratory methods, the physician responded to items on a checklist and provided only a "guesstimate," or best clinical judgment, in terms of the patient's physical abilities to perform work-related tasks. Unfortunately, this fairly subjective process of delineating RFC continues in some instances.

Talmage and Melhorn edited a text that instructs physicians to assess, negotiate, and promote a patient's return to work by considering multiple factors in the patient's history, including functional capacity evaluations (FCEs). (2) Talmage and Melhorn write, however, "The term *functional capacity evaluation* is a misnomer in that it tells the physician whether or not, on the day of testing, the patient was or was not willing to demonstrate the 'current ability' to do a job or job tasks." (3) By making FCEs the focus of its entire December 2004 *Journal of Forensic Vocational Analysis*, the ABVE, too, has recognized the need to improve state-of-the-art functional testing for a variety of reasons. (4-8)

Rehabilitation professionals have long known that vocational disability is a "relational outcome, reflecting the individual's capacity to perform a specific task or activity, contingent upon the environmental conditions in which they are to be performed," as presented by the Institute of Medicine Report in 1997 and cited by Cocchiarella and Andersson. (9)

In its *Guides to the Evaluation of Permanent Impairment* (10), the AMA speaks to the difference between impairment and disability. According to the *Guides*, impairment is defined as "a loss, loss of use, or derangement of any body part, organ system or organ function." On the other hand, disability is "an alteration of an individual's capacity to meet personal, social, or occupational demands," which is best evaluated by nonmedical means. Still, vestiges of expecting or charging medical personnel with determining vocational disability remain in the healthcare, legal, and disability systems. Time and experience have shown that confusion of medical impairment with vocational disability has been waning.

As disability determinations, particularly within the SSA, have become more refined, a growing awareness has emerged that physicians are not formally trained to define an individual's occupational capabilities and therefore, are unable to accurately declare an individual as totally disabled from working or conversely, capable of gainful employment. For many practitioners, a patient's RFC is most accurately assessed with a formal FCE. In determining the vocational impact of medically-determined physical impairment, the vocational expert relies upon functional capacity data detailing the impaired individual's safe physical capabilities in terms of lifting, carrying, reaching, handling, bending, and other exertional work-like behaviors. The FCE is regarded by many as the state-of-the-art method of determining an individual's exertional capabilities within the work classifications of sedentary, light, medium, etc. Vocational experts determine an individual's employability from measured functional capacities.

Vocational experts are required by ethical standards and case law to provide opinions regarding an individual's employability on the basis of reliable methodologies. In an editorial to the ABVE newsletter, the Ethics Committee Chairperson wrote, "...our opinions must be based upon reliable and defensible data and it is our responsibility to investigate whether those assessment tools fit that description. Given that condition and the body of research questioning the validity, reliability, and efficacy of functional capacity evaluations (FCE), is there sufficient evidence to support their use in their current state as a foundation upon which to base one's opinions regarding sustained functional capacity and, therefore, employability and labor market access?" (11)

Vocational experts have expressed concern regarding the validity and reliability of FCEs as well as their application in both forensic matters and RTW programs. Refinement of FCEs may be dependent on developing a meaningful dialogue between those measuring RFC and those charged with the responsibilities of defining residual employability and helping patients return to work.

Rehabilitation counselors and psychologists with expertise in vocational matters may be asked to provide RTW assistance and thereby, have an ongoing therapeutic relationship with an individual including days and weeks of observation. Vocational experts rendering independent opinions in court matters, however, are typically divorced from the provision of vocational rehabilitation services to the individual being examined. As a result, forensic vocational experts generally do not have the opportunity to observe the injured person's work behavior over an extended period of time and therefore, are unable to document what an individual can physically do in a work setting, either by trial and error or through work adjustment processes. Therefore, vocational experts must rely on data gathered from other sources, including FCEs, regarding the individual's physical capacities.

Dakos (4) states, "The role of the [vocational expert] in considering the findings of a functional capacity evaluation is that of interpreter/translator." With reliable information regarding an individual's RFCs, the vocational expert can predict with professional certainty the examinee's specific employment options and occupational potentials with or without job accommodation.

Vocational experts, as well as other forensic experts, are required to present "scientific evidence" that helps a judge or jury determine if occupational disability and economic damages follow personal injury. This requirement is codified in the Federal Rules of Evidence. (12) The Rules help to define what evidence is admissible. Rule 702 specifically states:

*"If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise..."*

All forensic experts are further challenged by court rulings, such as *Daubert*, *Joiner*, and *Kumho*, (13) demanding greater relevance and reliability in their assessment methods. Increasingly, all forensic experts are being compelled to establish with the court that their evaluation methods are valid and reliable and most significantly, are based on "scientific" and "reproducible methodologies."

As the interpreter/translator, the vocational expert relies on others, including those who carry out well-designed FCEs, for accurate data. The importance of FCEs is increasing as both vocational and medical experts realize the inadequacy of medical personnel reporting functional limitations based on office examinations, an injured worker's self-reports, and other subjective means. The continuing refinement of how an impaired individual's physical capacities for competitive employment are defined includes the advancement of the FCE.

As stated, however, the development of valid and reliable tools for measuring the impaired individual's physical capacity remains a concern for vocational experts. The December 2004 issue of *The Journal of Forensic Vocational Analysis* focuses exclusively on the use of FCEs in vocational forensics. According to contributors to that particular issue of *The Journal*, troublesome issues in state-of-the-art FCEs include:

- validity and reliability, (5)
- generalizing performance from a four-hour assessment to an entire workday, (6,7)
- sincerity of effort, (6,4) and
- whether FCEs meet legal standards of relevance and reliability. (8)

No effort is being made here to revisit the concepts of test validity and reliability in any detail, as those concepts are more than adequately covered elsewhere. However, qualified vocational experts are cognizant of the basic concepts of validity

and reliability and are ethically bound to consider these factors as well as test standardization or uniformity of testing procedures in formulating their forensic findings and opinions.

If a test of an individual's performances are to yield data that allow for comparisons with others or predictions of the same individual's behaviors in different settings or on different occasions, the testing should be administered in a uniform fashion. That is, the test problems, conditions for test administration, scoring procedures, and interpretations need to be consistent and carried out in a standardized manner. (14) The CRCC [Code of Professional Ethics](#) for Rehabilitation Counselors instructs those certificants who administer tests to consider these administration conditions (Section G.6.a.): *Rehabilitation Counselors administer assessments under the same conditions that were established in the standardized development of the instrument. When assessments are not administered under standard conditions, as may be necessary to accommodate clients with disabilities, or when unusual behavior or irregularities occur during the administration, those conditions are noted in interpretation, and the results may be designated as invalid or of questionable validity.*

In research, validity and reliability are essential aspects of an experiment that has merit. Validity is the ability of the experiment or test to accurately reflect what it purports to measure and ecological validity is a subset of test validity. (15)

FCEs must be capable of accurately providing a foundation from which to infer appropriate, meaningful, and useful behavior regarding physical functioning in the workplace. That is, FCEs must be ecologically valid or capable of reflecting the examinee's real-world performance.

Every vocational expert knows that the value of a standardized measure is determined by its reliability as well as its validity. The assessment of reliability invariably boils down to a simple summary statistic, the reliability coefficient, but practically speaking, reliability speaks to consistency. If FCEs are to be of value to vocational experts, injured people, the court system, physicians, and employers, they must be consistent not only from test to re-test, but also when administered by two or more different examiners and in between parts of an assessment. As King (5) states, "To the clinician, reliability means that changes in a client's performance can be attributed to real change in function rather than to measurement error."

FCE data are often interpreted in an accompanying narrative report authored by the expert. The language contained in FCE reports can be difficult to interpret as suggested by the following: "Results obtained indicate this client performed with determined, consistent effort and demonstrated appropriate pain behaviors." It is difficult to appreciate the meaning of these words exactly in terms of what the FCE measures or what it purports to measure (i.e., the individual's physical capacities), and whether, if re-tested at another time or by another examiner, this language would appear again in the narrative report. However, the primary concern must be whether the functional capacity examinee's measured behaviors have application to the workplace.

Some proprietary FCEs present inconsistent information regarding standard physical classifications of strenuousness defined by the U.S. Department of Labor. (16) Those classifications are sedentary, light, medium, heavy, and very heavy. Some FCE reports combine these definitions (as in sedentary-light) and by doing so, confuse the issue of whether the examinee is capable of one exertional level or both levels. This could represent a substantial difference in RFC, resultant employability, and ultimately earning power.

Vocational experts rely heavily upon this terminology to make accurate and reliable assessments of an individual's residual employability. FCE report language such as, "Based on results obtained, the client is able to perform Sedentary-Light PDC (physical demand component) work with occasional lifting below waist height to 25 pounds, and the client lifted 35 pounds to shoulder and 20 pounds overhead," potentially confuses the vocational expert's assessment. By definition, the capacity to lift 25 and 35 pounds places the individual above the light work domain and into the medium category of work as defined by the U.S. Department of Labor. (16) In offering quantitative data regarding lifting and then mislabeling that data with the incorrect physical work classification, the FCE report can lead to a potentially inaccurate vocational evaluation and/or an incorrect forensic conclusion.

A standardization of language must be basic to the FCE and congruent with accepted definitions of physical strenuousness. Efforts to consistently employ the federal definitions of work in FCEs would prove helpful to the subsequent process of conducting accurate vocational assessments. Otherwise, it should be left to the vocational expert to match the examinee's measured physical capabilities with the Department of Labor definitions or a specific known job description. Uniformity of language regarding physical strenuousness would improve the interpretation of FCE outcomes.

Among the different FCEs utilized in determining how an individual's exertional impairments translate into RFC, one of the more significant variables is whether the FCE relates to a full day and/or a full week of work. The vocational expert may

consider this distinction as the difference between part-time and full-time employment. Vocational experts generally remain at a loss as to how FCEs can predict part- or full-time employment or endurance in general.

As an actual example, an FCE report contained this language: "In a valid representation of physical capabilities based upon consistencies and inconsistencies when interfacing grip dynamometer graphing, resistance dynamometer graphing, pulse variations, weights achieved, and selectivity of pain reports and pain behaviors," the individual manifested a "sitting tolerance of 23 minutes demonstrated during keyboard activity and history review." In this case, the functional capacity assessment specialist "recommended" a workday "tolerance" of only two hours. Within weeks of these FCE findings, when examined for vocational evaluation, the same individual was able to remain seated for more than two hours without interruption while completing paper-and-pencil vocational tests. More discrepancies between FCE "recommendations" and actual vocational assessment behaviors were observed.

In still another FCE utilizing a different protocol than that referenced above, the document reporting the FCE data contained a "functional capacity summary" that described the examinee's sitting job demands as frequent (34-66% of the time). However, additional comments read, "It is recommended that he take short standing/stretch breaks during periods of prolonged sitting (e.g., greater than one hour)." No reason was given for this added comment, but the vocational ramifications are potentially significant. The examinee was a tractor-trailer truck driver, and even though he could perform medium work with frequent sitting, it was "recommended" that he not sit for greater than one hour without taking a "short" standing/stretching break, undoubtedly incompatible with his job demands and not at all explained in the FCE report.

Sincerity of effort remains one of the most controversial and unresolved issues associated with the efficacy of FCEs, according to Lechner (6) and others. (17, 4) According to Lechner, (6) "The standardization, reliability, and validity of some of the methods used to determine sincerity of effort are questionable." As an example, Lechner notes that Waddell's non-organic signs are frequently used in FCEs. Scoring positively on the Waddell's should not allow one to conclude that the person is withholding full effort, and conversely, demonstrating less than the necessary 3 out of 8 positive scores on the Waddell's is not necessarily indicative of "appropriate pain behavior," by which one could conclude that sincere effort has taken place.

Dakos (4) speaks of multiple factors that should be considered in assessing genuine performance or effort and recommends that skilled functional capacity evaluators observe and report, but not analyze, performance-limiting behaviors. Analyzing performance-limiting data avoids the potential error in logic that an individual who has conceivably set forth "genuine effort" during an FCE is necessarily a sincere and reliable examinee under all circumstances, including when returned to work, where conditions might be quite different than the controlled atmosphere of an FCE.

With respect to pain-related deficits, the results of FCEs are frequently described in reports with rather confusing language. Too frequently, the evaluation can be affected by a subjective complaint and in some cases, less than maximal effort by the examinee. In cases involving litigation, the injured worker's effort in testing is often an issue, particularly if the person being evaluated anticipates financial gain by demonstrating weakness and/or dysfunction.

FCEs are also limited in their potential to discern between the results produced by pre-existing impairment (e.g., osteoarthritis and degenerative joint disease) and traumatically-induced, accident-related impairment. Vocational experts may be charged with the responsibility of determining residual employability and earning power following the accident, but based on the medical history, the individual may have had a pre-existing exertional impairment affecting strength and of course, FCE outcomes.

Consider, for example, a 56-year-old truck driver with a history of spinal complaints and radiographically documented severe spondylosis and degenerative disc disease. Nonetheless, he was working as a truck driver prior to a work-related accident in which he sustained a shoulder injury lifting. After undergoing physical therapy, he is examined with an FCE and found capable of lifting no more than 20 pounds, and therefore, restricted to light work as defined by the U.S. Department of Labor. (16) The government classification of his job is medium work, which is more demanding than his measured capacity for light work. However, the question is: "Which impairment limits his measured functional capacity?" Is it his accident-related shoulder pathology or his pre-existing spinal disease? FCEs have yet to reach a level of sophistication to answer this question.

Still, the question of discerning in this particular case which impairment caused exertional limitations could have particular importance to a vocational-legal argument that the examinee could have worked and earned money indefinitely as a truck driver, for example, had the accident-related shoulder injury not occurred. Alternatively, the FCE might be used in a setting that concerned itself with apportionment. All too often individuals come to FCEs with strength-limiting comorbidities, perhaps only one of which is related to trauma resulting in a lawsuit. Future FCE research and design might focus on these issues of differentiation and apportionment.

Functional testing has become an increasingly important aspect of the vocational expert's analysis of residual employability, but it is not beyond challenge. With the fabled U.S. Supreme Court decision in *Daubert*, (13) the American court system has increased the standards and refined its definition of what constitutes relevance and reliability for expert testimony. According to Dominick, (8) with the standards of expert testimony increasing, vocational experts should be prepared to deal with cross examination regarding measurement theories, reliability, validity, test selection, testing methods, outside entity standards, and FCE vulnerability.

Standardized FCEs would seem to hold substantial promise in providing accurate and reliable data regarding an individual's physical capacities for work. This is particularly true when compared to the conjecture of a healthcare professional who has been asked to simply fill out a checklist or provide a generic statement (e.g., "light duty") of what he/she thinks or feels a patient might be able to do in the workplace. In this respect, FCE standardization seems far off. Lechner (6) identifies ten different FCE protocols, all proprietary, and noted an apparent lack of research supporting the validity and reliability of the methodologies. King (5) encourages and challenges FCE developers to conduct research and improve their assessments to levels of reliability and validity that are scientifically sound and legally defensible.

Although FCEs hold the potential to be an invaluable tool for the vocational expert, there is a need to continue to refine the process and especially the precision and standardization of the report language. Vocational experts remain concerned regarding the efficacy of FCEs. When the purpose of the FCE is to provide the vocational expert with the basis for case testimony, FCE validity, reliability, and language are critical. Functional capacity evaluators and vocational experts will, for the foreseeable future, need to continue a refinement dialogue.

### **References:**

- Weed RO, Field TF. *Rehabilitation Consultant's Handbook*. Revised Edition. Athens, GA: Elliott & Fitzpatrick, Inc.; 2001:31-32.
- Talmage, JB, Melhorn, JM. (Eds.). *A Physician's Guide to Return to Work*. American Medical Association; 2005.
- Talmage, JB, Melhorn, JM. *How to think about work ability and work restrictions: Risk, capacity, and tolerance*. In *A Physician's Guide to Return to Work*. American Medical Association; 2005:10.
- Dakos MS. The application of functional capacity evaluations in the provision of vocational expert services. *The Journal of Forensic Vocational Analysis*. 2004;7:105-117.
- King PM. Analysis of the reliability and validity supporting functional capacity evaluations. *The Journal of Forensic Vocational Analysis*. 2004;7:75-82.
- Lechner DE. The well-designed functional capacity evaluation: application in forensic vocational analysis. *The Journal of Forensic Vocational Analysis*. 2004;7:83-96.
- McDaniel RS, Tilton J, & Philadelphia, A. Use of the functional capacities evaluation in the vocational expert practice: help or hindrance. *The Journal of Forensic Vocational Analysis*. 2004;7:97-104.
- Dominick BK. Daubert & ADA decisions: will functional capacity evaluations hold up in court? *The Journal of Forensic Vocational Analysis*. 2004;7:119-126.
- Brandt EN Jr, Pope AM. *Enabling America: Assessing the Role of Rehabilitation Science and Engineering*. In: *Guides to the Evaluation of Permanent Impairment*. 5<sup>th</sup> Ed. AMA Press; 2005:8.
- Cocchiarella, L, Andersson, G. *Guides to the Evaluation of Permanent Impairment*. 5<sup>th</sup> Ed. AMA Press; 2005:2-3.
- Hale, BL. From the Editor's Laptop [editorial]. *The Vocational Expert*. 2007:3.
- Federal Rules of Evidence*. No. 8, Washington: U.S. Government Printing Office; 2004.
- Field TF, Choppa T, Dillman EG, et al. *A Resource for the Rehabilitation Consultant on the Daubert and Kumho Rulings*. Athens, GA: Elliott & Fitzpatrick, Inc.; 2000:61-104.
- Anastasi, A. *Psychological Testing*. 7<sup>th</sup> Ed. Prentice Hall; 1997.
- Hammond, KR. Ecological validity: Then and now. Available at: <http://www.brunswik.org/notes/essay2.html>. Accessed October 1, 2007.
- Dictionary of Occupational Titles, Revised*. Fourth edition. U.S. Department of Labor; 1991:1013.
- Geisser ME, Robinson M, Miller Q, & Bade S. Psychosocial factors and functional capacity evaluation among persons with chronic pain. *The Journal of Occupational Rehabilitation*.

## **The Importance of Testing in Forensic Vocational/Disability Assessments**

The forensic vocational/disability evaluation has received considerable attention since vocational rehabilitation professionals, initially subcontracted by the SSA as vocational experts, began to provide testimony in workers' compensation matters and personal injury lawsuits. Field and Sink published the first of its kind monograph on the subject, "The Vocational Expert," in 1981. At approximately the same time, the ABVE was established to "preserve the integrity, standards, ethics, and uniqueness of vocational experts."

The vocational assessment and evaluation of an individual's earning power following the onset of injury and/or illness is generally considered a multi-dimensional process of reviewing pertinent medical information, gathering relevant data through interviewing, and determining an individual's worker traits and job skills that have the potential for transferability to the examinee's so-called RFC. As previously mentioned, in forensic matters of vocational disability and earning power assessment, the vocational expert is challenged with making a comprehensive and complete assessment, usually after one encounter with the litigant.

Notwithstanding the challenge of a forensic disability assessment, it has been our experience over more than 30 years that many vocational experts rely heavily, and often exclusively, upon one of several methods of Transferable Skills Analysis (TSA), procedures that tap into databases of vocational traits, especially the [Dictionary of Occupational Titles](#) (DOT), developed by the U.S. Department of Labor. TSA procedures became employed increasingly after Field and Weed published the Vocational Diagnosis and Assessment of Residual Employability (VDARE) in 1989. Some vocational experts do not customarily employ standardized testing or measurement in their forensic vocational assessments, and in our opinion, that may be a methodological error in many forensic vocational assessments.

Havranek, Field and Grimes (2001) detailed the VDARE process in *Vocational Assessment: Evaluating Employment Potential*. The authors wrote that "Vocational Assessment is a multi-dimensional process of observing and judging a person in action. Valid and reliable testing instruments should be used to assist the professional evaluator in gathering appropriate data for the decision-making process." (page 60)

The proposition here is certainly not a criticism of the VDARE methodology of TSA, or for that matter, any other TSA product (most are proprietary). On the contrary, the VDARE model is sound. But as a method of evaluating a person's future employability, like all other TSAs, it is limited. What is often overlooked in the VDARE model is the fact that the original called for the use of "documented references," including standardized tests and work samples to "clarify" aptitudes, interests, and temperaments, among other characteristics in the Residual Employability Profile.

Vocational tests and other psychometric procedures, including work samples, are commonly viewed as the primary tools of assessment in career counseling and vocational rehabilitation. Why vocational tests and measures are not more frequently employed by vocational experts in forensic matters is subject to speculation. However, utilizing TSA only, even after having met with a workers' compensation claimant or personal injury plaintiff, for example, may be an adopted methodology (even if limited) from the vocational experts' experiences in SSDI matters. In SSA adjudications, the court-appointed vocational expert does not have access to the claimant but must come to court, review evidence, listen to testimony, and from those data make a determination of what the individual claimant's TSA might be in response to Administrative Law Judge queries or "hypotheticals." That tradition is, of course, less efficient than when the assessment specialist has access to the injured claimant/plaintiff and can employ other assessment tools.

Walker and Petersen (2009) noted that many disability evaluators have traditionally relied almost exclusively on TSAs. Yet, despite its broad acceptance in the field of vocational/disability evaluation, the TSA is not comprehensive enough to adequately assess disability and residual employability. As a method of assessment, TSA has several inherent flaws that argue strongly against its use as an exclusive approach. A major criticism of the TSA is its rigidity and potential for error, which often leads forensic evaluators to overlook a range of alternative occupations available to a person simply because the alternatives fall outside the TSA description of the person's prior employment. This approach is sometimes known as the unadjusted vocational profile (UVP). In the VDARE method of TSA, the UVP is achieved by collapsing the work history profiles into a single profile, representing the examinee's demonstrative pre-impairment worker characteristics or traits.

Walker and Peterson argue, however, that TSAs capture the essential functions of job descriptions that the person reportedly carried out in the past and are not necessarily representative of the evaluatee's worker traits and characteristics. Job descriptions are certainly not universal as presumed by the U.S. Department of Labor in the DOT and the O\*Net. For example, it would be absurd to think that all workers who are called "Office Managers" perform the same duties, and it would be equally preposterous to conclude that all Office Managers, by virtue of having the same job title, also have the same level of linguistic capabilities, hold the same interests, function with the same temperament, and possess the same potentials to learn alternative work skills. Yet TSA models extract worker trait data from job descriptions, not necessarily the person being evaluated.

Dunn and Cain (2001) reported that TSAs may be more effective for persons with certain trait capacities with relatively limited physical effects from injury or illness. For those who have greater physical effects from their impairments, TSA may not be as sensitive in identifying vocational alternatives. Dunn and Cain concluded, "More traditional vocational assessment methods (such as psychometric testing and work sampling) may be more sensitive in identifying appropriate vocational goals or vocational potential."

We have had the privilege of evaluating individuals from all occupational walks of life; from longshoremen with limited educations who are quite introverted to college graduates with advanced degrees who enjoy working with others. In some cases, comprehensive vocational assessments employing standardized testing have revealed evidence that TSAs could not. For example, some longshoremen have demonstrated through standardized testing that they possess high linguistic capabilities, vocational aptitudes, and personality styles, revealing they can perform favorably in nonphysical employment requiring complex interactions with data and people and not simply handling objects and things as their job titles alone might predict.

Measuring an individual's mental and psychological competencies has merit. Mental measurements have been employed since the beginning of the 20<sup>th</sup> century. Entrance testing for college, law school, medical school, and the military has become the standard because it has predictive value. Before the federal government stopped publishing the GATB, most state agencies assigned the responsibility of the vocational rehabilitation of impaired and so-called "handicapped" people (the generally named Departments of Vocational Rehabilitation) utilized the measure. The most frequently employed aptitude test in America is the ASVAB, which, as previously mentioned, is used to determine a person's skills and aptitudes in a variety of subjects. The results enable the military to place the applicants and recruits in the best possible slot for a person with that particular skill set.

Standardized test procedures that measure abilities, personality, and vocational interests are, in our opinion, essential elements of comprehensive vocational/disability assessment. This is so whether the results will be used for the purpose of occupational rehabilitation planning or for forensic assessment. In the latter case, measurements as an important component of the evaluation may be crucial since the examiner may have limited access to the examinee.

Meyer et al. (2001) pointed out the many benefits of using standardized testing as an indispensable tool in assessment and even demonstrated that many published standardized tests are as reliable as medical tests like x-rays and CT scans. The use of standardized testing provides unique information in that it can measure a person's aptitude for retraining in an appropriate (new) vocation. This information can lead to considerations that are not generally discernable from a traditional TSA.

As noted, employing TSA without having any testing results may be a tradition (however misinformed) that derived from experience in SSDI matters where the court-appointed vocational expert does not meet the claimant pre-court appearance. When the assessment specialist has access to the injured claimant/plaintiff prior to the court appearance; however, the vocational testimony can be significantly more accurate and useful to a jury or judge in understanding the litigant's occupational limitations and potentials especially if standardized testing is utilized.

### **Vocational Tests:**

Ideally, a forensic vocational test battery would include measures of academic achievement levels, aptitudes, personality characteristics, and occupational interests. By gathering data in each of these domains, the vocational expert is better equipped to assess and determine an occupational match. The identification of potential occupations that may be viable for the claimant adds a critical dimension not found in the TSA alone. The results of the vocational tests, when coupled with an employment history of the injured worker, provide the litigation with significantly more information on which to base a court ruling. According to the CRCC [Code of Professional Ethics](#) for Rehabilitation Counselors, "Rehabilitation counselors carefully consider the validity, reliability, psychometric limitations, and appropriateness of instruments when selecting tests for use in given situations or with particular clients" (G.5.a.).

Academic testing measures an individual's abilities to read, spell, and arithmetically calculate. In general, these abilities are acquired through the course of formalized schooling. However, reliance on statements of educational attainment alone without contemporary academic testing is not recommended because rarely do educational levels equate perfectly with actual ability. On the contrary, it is unfortunate, but we have tested high school graduates who are functionally illiterate. Therefore, achievement testing is essential in determining decisively the injured worker's basic linguistic and mathematical abilities.

Aptitudes represent an individual's capacity for learning, and aptitude testing, therefore, is designed to predict an individual's ability to learn certain skills when given the opportunity. Such skills can include solving problems visually, understanding mechanical principles, perceiving differences in tabulated data rapidly and accurately, and comprehending written information. The work that a person is most likely to be successful in is work that involves aptitudinal strengths.

Personality testing is designed to determine an individual's specific characterological traits and can be used to assess whether an individual's temperament fits a particular type of work. That is, although a person's ability to perform specific

work is critical in job placement, for that individual to have the right temperament to effectively carry out the work on a daily and sustained basis may be equally important for job success.

Measures of an individual's interests are equally useful. An interest assessment delineates the examinee's preferences for different forms of work. By determining likes and dislikes, work for which a person would most likely find enjoyment can be more specifically described. As described earlier, individuals who enjoy what they do each day will obviously have greater motivation to continue their work and will have a better chance to be successful in performing that work.

The use of these various tests is also applicable to forensic evaluation. As previously quoted, per [The CDMS Code of Professional Conduct](#) (RPC 3.01): *When providing forensic evaluations for an individual or organization, the primary obligation of certificants shall be to produce objective findings and opinions that can be substantiated based on information and techniques appropriate to the evaluation, and as required by applicable case law within the appropriate jurisdiction, which may include assessment of the individual and/or review of records. Certificants shall define the limits of their reports or testimony, especially when an assessment of the individual has not been conducted.*

Any material that is shared among different disciplines requires record maintenance, including storage and disposal. According to the CCMC Code of Professional Conduct (S17), *Board-Certified Case Managers (CCMs) will maintain the security of records necessary for rendering professional services to their clients and as required by applicable laws, regulations, or agency/institution procedures, (including but not limited to secured or locked files, data encryption, etc.). Subsequent to file closure, records will be maintained for the number of years consistent with jurisdictional requirements or for a longer period during which maintenance of such records is necessary or helpful to provide reasonably anticipated future services to the client. After that time, records will be destroyed in a manner assuring preservation of confidentiality, such as by shredding or other appropriate means of destruction.*

### **Assessment Validity:**

Along with the actual assessment of an individual's academic achievement, aptitudes, personality, and interests, vocational evaluation also requires making certain that the data obtained are an accurate reflection of the individual being tested. In determining the validity of test data, one would be well advised to examine three specific components of the process that include: standard performance level, consistency of performance, and response rate. Additionally, motivation to perform can be assessed through observation of test-taking behavior. These three factors, along with observed level of motivation, can be used to assess whether test results gathered are a valid representation of a test-takers' actual potentials.

Notwithstanding the surprise of sometimes discovering through testing that a high school graduate is illiterate, the concept of standard performance level would suggest that an examinee should perform at a level fairly consistent with his or her educational background or same age peers, and he/she should perform better on tasks that are more closely aligned with his/her academic and employment histories. That is, one would expect that an architect would demonstrate good mathematical and visual problem solving abilities, while an author would possess good language skills. A standard performance level would also suggest that there should be a correlation between an individual's intellectual ability (verbal and nonverbal) and acquired skills in verbal and nonverbal areas.

Performance consistency suggests that examinees should demonstrate a similar ability level on tests measuring similar skills (e.g., vocabulary, reading comprehension). Individuals should perform in a like manner on measures assessing like skills. In addition, test data gathered should not show significant variance during the course of test administration occurring at one particular time. Examinees should demonstrate minimal fluctuation within or between tests assessing similar skills that are administered at one sitting.

Response rate assumes that examinees should be able to respond to questions on timed (speed) tests at a rate that would place them within a performance range equal to their general ability as long as physical and/or mental impairments are not a factor in their test-taking speed. Additionally, examinees should be able to complete untimed measures within the time frame identified in the test manual.

Along with these three factors, trained vocational experts can assess motivational levels through observational data gathered during testing. Although motivation is generally considered an internal dynamic, how examinees behave while taking tests can provide a significant amount of information about how invested the individual is in performing at a maximal level.

Obviously, motivation to perform optimally should also be questioned when individuals make statements about their disinterest in the test-taking process or in their performance while working. Additionally, one would hope that the test-

taker who is truly invested in his/her performance would be observed taking time available to check responses for accuracy. Further, motivation should be questioned in individuals who engage in superficial conversation while working, succumb to possible distractions in the environment, skip or ignore test instructions or example problems, or work in an overly rapid and non-thoughtful manner. Thus, standardized testing not only yields quantitative data but also permits the examiner to gather qualitative and subjective data regarding the examinee's approach to work-like tasks.

To identify subject manipulation of test results, some tests, particularly personality measures, are equipped with their own validity scales. Other published tests, such as the Validity Indicator Profile, will yield data informing the examiner as to whether the test-taker set forth valid and consistent effort on verbal and nonverbal measures of ability given concurrently.

### **Summary:**

It has been our experience as vocational/disability evaluators over many years that too few vocational experts employ more than a TSA in arriving at conclusions regarding an individual's residual employability and earning power. Nonetheless, assessment of occupational disability, post-injury employability, and earning power is a comprehensive process with increased predictive validity and reliability when the examiner uses multiple methods, including standardized testing.

TSA alone is not always an adequate means by which to determine an individual's post-injury job potentials. Vocational testing has substantial merit and increases the value of the one-time assessment. Employing a TSA only may be a vestige of methodology used historically in Social Security cases where the vocational expert has no pre-trial access to the claimant. Whatever its origin, vocational assessment with TSA alone is often inadequate, and vocational evaluation with both testing and TSA enhances the evaluator's capacities to accurately predict residual employability and earning power.

To expect the courts to rely solely on a determination of the vocational skills that an examinee has had, or claims to have had, in deciding on the future course for that individual would be to provide the court with less than the comprehensive information needed. Both the court and the individual litigant deserve more information and a more thorough analysis of what is possible going forward. The issue is not that more information is the goal. The issue is that deciding a case on limited methodology is likely inadequate.

### **References:**

- Meyer, G. J., Finn, S.E., Eyde, L.D., et al (2001). "Psychological testing and psychological assessment," *American Psychologist*, 56 (2), 128-165.
- Havranek, J. Field, T. & Grimes, J.W. (2001). *Vocational Assessment: Evaluating Employment Potential*. Athens, Georgia: Elliott & Fitzpatrick
- Field, T. F. & Sink, J. M. (1981). *The Vocational Expert*. Athens, Georgia: VSB, Inc.
- Field, T. F. & Weed, R.O. (1989). *Transferable Work Skills*. Athens, Georgia: Elliott & Fitzpatrick.
- Dunn, P. & Cain, H. (2001). *Journal of Forensic Analysis*. Volume 4,(1) 13-20.
- Walker, J. & Petersen, S. (2009) *Assessing Occupational Disability following Trauma and Impairment in Assessing Impairment: From Theory to Practice*. New York: Springer Publishing Co.