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Estimating Earning Capacity: A Historical Review

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Estimating the earning capacity of a person with an injury or disability is an essential part of a forensic rehabilitation consultant's role in litigated personal injury or compensation cases. Since the early 1980's, the literature has addressed various notions and methods regarding the estimation of earning capacity, including collateral issues such as work life expectancies, partial and total disabilities, and a variety of personal demographic variables of the person with an injury or disability. A review of various approaches is offered that have appeared in the vocational rehabilitation literature over the last three decades.

Keywords: earning capacity, wage loss, comparison of methods

Wage Loss and Earnings Capacity Analysis

Wage loss analysis refers to a procedure that addresses the amount of wages lost by a worker as a result of injury. For instance, if a worker was being paid $12,000 a year at a rate of $1,000 a month or approximately $250 per week, what would be the total amount of wages lost taking into account number of days, weeks, or months the worker was unable to return to his or her job as a result of the injury? If the injury were of such a nature that it prevented the worker from returning to work for a period of one year or more, a simple tabulation of all of the months and/or years of lost time would be added to determine the amount of lost wages as a result of the injury. The calculation of lost wages is a rather simple and straightforward process and really does not take into account many of the other factors related to the issue in question of lost earnings capacity.

Earnings capacity (Horner & Slesnick, 1999) is related to the notion of lost future earnings to be expected from the client's reasonable vocational potential. In some cases, the loss of earnings capacity is straightforward. For example, a man who was 55 years old and who had been driving a truck for a living since he was 19, was injured in a motor vehicle accident leaving him tetraplegic. His loss of earnings was based on the amount of money he was making at the time of injury and projected over his remaining work life expectancy. In this case the individual probably also had achieved his realistic earnings capacity.

In other cases, this may be less clear. For example, the man in the above case also had his 18-year-old nephew in the car with him. The boy suffered extensive head injuries, which rendered him incapable of gainful employment for the rest of his life. Since he had very little work history (paper boy), the task for estimating loss of future earnings or earnings capacity is more complicated.

One method is to opine about which specific jobs or job categories the individual might have been able to engage in (Deutsch & Sawyer, 1999). A second is based on the LPE method, which is an estimation of the life expectancy (L), work force participation (P), and probability of being employed (E) as supported by government statistics (Brookshire & Smith, 1990; Lees-Haley, 1987). Another is to estimate the educational level the person was capable of and turn to research data on the median income a person with the those traits could be expected to earn over his or her lifetime. For clarification, the loss of earnings would generally be based on past history whereas earnings capacity would be based in prognostication or estimation based on selected factors that are inherent in each approach or method.

The first method seems somewhat flawed in that the expert's opinion may be criticized as pure speculation depending on how the opinion was reached (Ryals v. Home Insurance Company, 1982). The second and third methods are not specific to the injured party and rely on global data for a just award. This has its own problems for both the plaintiff and defense attorneys (Field, Weed, & Grimes, 1986; Lees-Haley, 1987; Weed, 1987; Weed & Field, 1994). For example, an 18 year old was a high school graduate but his I.Q. was 85 (average is 100), and he graduated 988 in a class of 988. Clearly the defense attorney would argue that the government statistics would overestimate the earnings as they apply to the individual. On the other hand, say the 18 year old was class president, consid-

ered well above average in intelligence and graduated in the upper third of his class. In this case, even if the parties agreed that the plaintiff had not planned to continue with his education, the plaintiff's attorney would likely argue that the government data are too conservative.

In any event, most cases do not fit neatly into various categories. It is not unusual for a plaintiff to be in their late 20s with a lower level job history but active plans to complete college "starting the next term after the injury", or a 35 year old who had just started her own business last year but has sustained an injury so severe that she can not continue in the business venture but can work at some other job, or a housewife who has a college degree and was planning to return to work after the kids were old enough to take care of themselves. In yet other cases, a person may have been severely injured but able to return to a modified job with his old employer where he earned the same income; in this case, the worker clearly has lost the opportunity to work in the occupation of his choice and has lost access to a wide variety of occupations or been prevented from advancement within his chosen profession.

Everyone's earnings capacity is not achieved at the same life stage. One author offers an age-earning cycle concept, which indicates that the average individual may not hit their peak earnings until about the age of 40 (Dillman, 1989). For children, adolescents, and young adults, the accuracy of loss is dependent a number of individual factors and the ability of the rehabilitation expert to take these factors and translate them into defensible figures. Earnings capacity analysis, rather than reliance on earnings history, generally seems more defensible for persons under the age of forty, although independent professional judgment makes the final determination.

Depending on the individual, one would expect the reliance of actual wage history for determining earnings capacity would increase as the age increased. After the peak earning years, previously suggested at about the age of 40, actual earnings would likely be the base from which the economist would project losses if the person were totally disabled (Dillman, 1987). If the individual were unable to return to work at their usual occupation, then the expert would compare actual pre-injury earnings with expected post-injury earnings. It is recommended that a similar approach, i.e., identify classes of jobs based on post-injury worker trait information rather than specific jobs, be used as the basis for the opinion. For adult clients, this can be supplemented by a labor market survey conducted in the local labor market about the availability of these suggested job titles and their wages. In many cases, the survey will fail to identify a job. On the other hand, this can be misleading since the vocational rehabilitation counselor can cultivate an occupation for most "motivated" clients with a physical disability.

At the other end of the spectrum, opinions about younger persons who have not yet settled into a career need to be approached somewhat differently, i.e., loss of earnings capacity, and a limited earnings history. For children, work and earnings capacity can rely on worker traits that can be identified from school records, standardized testing, work history to date, family background, including aunts, uncles, and grandparents, and other factors (Isom, 2001; Weed, 2000). Worker traits include the physical demands and working conditions of the job, general educational level, vocational preparation time generally required to learn the occupation, and the aptitudes, interests, and temperaments needed to perform the occupation.

For the forensic rehabilitation expert, the task of estimating earning capacity is sometimes both confusing and difficult. The work of the rehabilitation consultant may be clouded, controversial, and muddied, to say the least, especially when trying to understand the world of estimating capacity and providing a dollar value to individual cases involving injury and disability. In addition to the concept of earnings capacity, collateral issues also come into play (e.g., current and future earnings, estimating lost earnings, and estimating future lost earnings). What appears to be most confusing relates to the issue of methodology; namely, how does a professional go about making determinations on any of the issues related to earnings. In particular, what method or methods would meet the requirements as set forth by the Daubert (1993) and Kumho (1999) rulings of the U.S. Supreme court and also the expectations as identified by the Federal Rules of Evidence (2002, i.e., FRE 403 and 702; see also Field, 2011).

Legal and Program Definitions

This section reviews the legal definitions of many of the more critical constructs related to earning capacity. A review of the significant program areas, including civil settings, addresses the various program approaches for understanding the similarities and differences that exist relative to earning capacity.

A reasonable starting point in this discussion is to provide adequate definitions of the major constructs related to earning capacity. All of the following definitions are taken from *Black's Law Dictionary* (2000) and the U.S. Department of Labor *Occupational Employment Statistics* (2011).

> *Capacity: The role in which one performs an act (Black's, p. 163).*
>
> *Damages: Money claimed by, or ordered to be paid to, a person as compensation for loss or injury (Black's, p. 320).*

Diminution: The act or process of decreasing, lessening, or taking away (Black's, p. 369).

Earnings: Revenue gained from labor or services. (Black's, p. 414).

Earnings: Remuneration (pay, wages) of a worker or group of workers for services performed during a specific period of time. The term usually carries a defining word or phrase, such as straight-time average hourly earnings. Because a statistical concept is usually involved in the term and its variations, the producers and users of earnings data should define them clearly. In the absence of such definitions, the following may serve as rough guidelines:

Hourly, daily, weekly, annual: period of time to which earnings figures, as stated or computed, relate. The context in which annual earnings (sometimes weekly earnings) are used may indicate whether the reference includes earnings from one employer only or from all employment plus other sources of income.

Average: usually refers to the arithmetic mean; that is, total earnings (as defined) of a group of workers (as identified) divided by the number of workers in the group.

Gross: usually refers to total earnings, before any deductions (such as tax withholding) including, where applicable, overtime payments, shift differentials, production bonuses, cost-of-living allowances, commissions, etc.

Straight-time: usually refers to gross earnings excluding overtime payments and (with variations at this point) shift differentials and other monetary payments. (OES).

Future Damages: Money awarded to an injured party for an injury's residual or projected effects that reduce the person s ability to function (Black's, p. 321).

Lost earnings: Wages, salary, or other income that a person could have earned if he or she had not lost a job, suffered a disabling injury, or died. There can be past lost earnings and future lost earnings (Black's, p. 414).

Future Lost Earnings: See lost earnings (Black's, p. 414).

Income: The money or other form of payment that one receives, usually periodically, from employment, business, investments, royalties, gifts, and the like (Black's, p. 611).

Income: The receipt by an individual of any property or service which he can apply to meeting basic needs. (CFR 416.120).

Wage: Payment for labor or services, usually based on time worked or quantity produced (Black's, p. 1275).

Mean wage: An average wage; an occupational mean wage estimate is calculated by summing the wages of all the employees in a given occupation and then dividing the total wages by the number of employees. (OES).

Median days away from work (Safety and Health Statistics): The measure used to summarize the varying lengths of absences from work among the cases with days away from work. The median is the point at which half of the cases involved more days away from work and half involved fewer days away from work. (OES)

Median wage: An occupational median wage estimate is the boundary between the highest paid 50 percent and the lowest paid 50 percent of workers in that occupation. Half of the workers in a given occupation earn more than the median wage, and half the workers earn less than the median wage. (OES)

Wages and salaries: Hourly straight-time wage rate or, for workers not paid on an hourly basis, straight-time earnings divided by the corresponding hours. Straight-time wage and salary rates are total earnings before payroll deductions, excluding premium pay for overtime and for work on weekends and holidays, shift differentials, and nonproduction bonuses such as lump-sum payments provided in lieu of wage increases. (OES)

Worklife estimates: Estimates of the number of years individuals would spend in the labor force based on mortality conditions, labor force entry and exit rates, and demographic characteristics. BLS has not produced worklife estimates since February 1986. Last publication: Worklife Estimates: Effects of Race and Education PDF 1.32 MB

Methods for Evaluating Lost Earning Capacity

There are several different approaches or methods of estimating the loss of earning capacity in cases of partial but permanent disability. The following methods are often referenced by practitioners, but are not all-inclusive regarding methods that might be used. These methods have all had an impact on the development and progression of methods used today by most professionals. While each of the methods discussed emphasizes the use of data and information, each method requires a significant degree of clinical judgment and decision-making on the part of the professional (see Choppa et al., 2004, for a discussion of the efficacy on professional clinical judgment; for a discussion of opinion development and validity, see Barros-Bailey & Neulicht, 2005).

Labor Market Access/Wage Loss

The LMA approach emphasizes the necessity to analyze lost wages with respect to labor market conditions. The advantage of the labor market approach developed by Field and colleagues during the 1980s (Field & Field 1999; Field, 1987, 1993; Field, Choppa, & Shafer, 1984; Field & Weed, 1988; Vander Vegt, Summit, & Field, 1981; Weed, 1986, 1987, 1988) is that it establishes a "reasonable approximation" of a beginning wage base at the time of the injury, which then can be compared with estimated earning based upon a reduced level of functioning post-injury. The alternative to this approach is to use the actual wages that were earned by the worker at the time of injury, and then to estimate what the worker might be able to do in particular jobs post-injury. The LMA approach has the added advantage of taking into account the issue and question of lost opportunity to be employed post-injury by comparing an individual's pre and post-injury level of functioning to a particular labor market. In this sense, the LMA approach takes into account specifically the questions of geography and labor market conditions within geographical areas. The other aspect of the LMA approach is that it provides approximations of potential wages for an injured worker, pre- and post-injury, which can be provided to the economist who then can make projections of lost earnings or lost future earnings. However, as with any computerized approach, the professional must understand the data that is generated as well as how the computer processes the data with an explanation to the satisfaction of the court (*Perez v. IBP, Inc., 1991, & Hughes v. Inland Container Corp.*, 1990).

The approach of assigning a percentage to a loss has been a long-standing method to the determination of a disability. In some cases, it has been utilized as a guide in determining lost earnings or wages and future lost earnings as a direct relationship to the percentage losses identified by the appropriate category. For instance, a loss of an arm will result in x% loss of functioning for the person (in the insurance industry this is referred to as "scheduling"). This has oftentimes been translated to a similar percent loss of employment opportunity for that worker for the remaining years of his or her work life. This is an erroneous assumption since it cannot be assumed that the loss of a bodily function by percentage is directly related to the loss of employment opportunities and/or functioning in the worker's future. Assume for a moment that a business executive, due to some accident, had to have several of his toes amputated from his left foot. According to the *AMA Guide to the Evaluation of Permanent impairment* (2000), this would result in a 15% loss of bodily functioning for this particular injury. However, the loss of three toes on the left foot has no direct bearing on the types and kinds of work that the business executive was performing either before this injury or following the injury. Although it can be argued that there is a percentage loss of bodily functioning due to the loss of the toes, it also true there is not necessarily a direct relationship to the loss of functioning on the job. Sometimes the loss of a body part, or a reduction in functioning, are not relevant to the skill set of a worker.

On the other hand, for example, a person who is employed as a dancer, whose job requires a great deal of balance and agility, might purport that there is a direct relationship between the loss of functioning in the left foot and potential loss of functioning on the job. The injury will probably result in a loss of job opportunities for the dancer. In other words, a determination has to be made of the level of functioning both pre- and post-injury as it relates to jobs and future jobs of the worker. It is not adequate, nor satisfactory, to argue that a percentage loss of bodily function is a direct correlation to the loss of vocational functioning. The LMA approach emphasizes the necessity of both pre- and post-injury functional capacity assessment.

The Deutsch/Sawyer Model

Deutsch and Sawyer (1986) have suggested that pre-injury earnings and post-injury earnings really do not reflect an accurate picture of the person's ability to earn money. More importantly, "the client's post-accident earning capacity, or the potential to earn" (p. 8-2) is really the target of an assessment of diminished earnings. An assessment of earnings capacity would include

1. Whether the client has a relatively well-established work identity or vocational goal;
2. The degree to which the client is established in this vocational goal;
3. To what degree the individual has developed the necessary skills and abilities required to show proficiency in the chosen vocational goal;
4. The number of years of experience the individual has in the vocational goal; and
5. The degree to which a difference exists between the individual's earned wages and the average earnings for most workers in the chosen vocational goal (p. 8-3).

In addition to the obvious emphasis on a career goal, the model suggests that "pre-accident earnings do not accurately and consistently reflect the actual capacity to earn or develop earnings in cases involving individuals under the age of 30" (p. 8-3). This emphasis on vocational goals and age is somewhat of a departure from the LMA model, which emphasizes the pre- and post-injury functional capacity evaluations, and suggests a relationship between functional capacity and selected jobs and wages. The Deutsch and Sawyer model does include other factors for earning capacity

assessment including education, intellectual development, academic development, work history, and transferable skills. In establishing a wage earning capacity it is also necessary to choose a representative sample of jobs that reflect an individual's maximum capacity for developing vocational and earning potential (p. 8-5).

The model then proceeds to suggest that a referral to an economist is appropriate to calculate an estimate of the diminution of lifetime earnings. This model, while suggesting a number of variables to consider, does not provide any guidelines on procedurally what to do; a great deal of judgment and experience is required in the decision-making process for capacity assessment.

L-P-E and The New Worklife Tables

Brookshire and Cobb (1983), Brookshire, Cobb, and Gamboa (1987), and Brookshire and Smith (1990) proposed an innovative approach in assessing damages following an injury. Relying upon federal government data (Bureau of Labor Statistics), The L-P-E method (Life-Participation-Employment) This approach essentially is designed to provide an estimate of a person's worklife and earnings by age. Earnings are adjusted by calculating the joint probabilities of Living (L) through the various ages, Participating (P) in the labor force, and being Employed (E).

Gamboa (1987) introduced the notion of assessing earnings capacity, disability, and future earnings by utilizing US government statistics to estimate the impact of sex and level of education for persons who were identified (globally) as either disabled or not disabled.. A "global" estimate usually involves the use of large data sets that are not specific to the individual. In subsequent research and writings, Gamboa and his colleagues have continued to develop the approach of using government to evaluate the capacity to work and earn money by persons who have been disabled (Gamboa, 2006; Gamboa & Gibson, 2006; Gamboa, Holland, Tierny, & Gibson, 2006; Gamboa et al., 2009; Gibson, 2000).

While these approaches justifiably take into account such factors as age, education, gender, living and employment participation, including the level of disability (if any), there are two distinct disadvantages of utilizing government statistics. First, the Gamboa approach is often cited for using global estimates of the present and level of a disability. "Global" estimates of the presence of a disability with a worker can be somewhat inaccurate and certainly is not worker specific in terms of the worker's specific functional capacities and potential for working and earning money. Secondly, the reliance on government data is generally not current as government employment data and demographic statistics are often times dated by one to three years.

Compensation Programs

Workers' compensation, both federal and state programs, include objectives for returning injured workers to their same job, a similar job, or a new job (following training and work adjustment) and are generally referred to as "return-to-work" programs. Given the wide ranging efforts at both the state and federal levels, there are many times considerable differences in both the objectives of the programs and how these programs manage financials issues such as loss of wages, disability ratings, earnings capacity, and future earnings. Over the last three decades, state programs have often reduced or eliminated funding for rehabilitation programs as a means to improve the probability that injured workers would return to work. Oftentimes, state legislatures have viewed these programs as too costly for the state budget. Prior to the 1980's, most state workers' compensation program included a section of their law "mandating" rehabilitation services for injured workers. The mandatory rehabilitation law was a major area of support for private sector rehabilitation programs as insurance companies with hire rehabilitation consultants to address this requirement for rehabilitation services. In the late 1980s, state governments began to cut or eliminate the mandatory requirement as a cost saving measure. While rehabilitation programming has taken on several forms, such as a lump sum payment for the injury, or severe restrictions on services offered, states continue to search for ways to address issues of compensation for injured workers while maintaining the central focus of returning injured workers employment.

In terms of assessing disability and evaluating work capacity have relied on basic approaches to address the issue. Several state programs have relied upon a "schedule of impairments" that assign a disability rating by body part; for example, a loss of a thumb and four fingers might be rated as a nine percent loss of total body functioning. The percentage loss would become the basis for a percentage loss of earnings for future work and income. Related to this approach is the use of the *AMA Guides to the Evaluation of Permanent Impairment* (2000) for evaluating injury. California, as a result of the *Ogilvie* (2009a; 2009b) rulings, is attempting to draft a workable "formula" approach to address the issue of earnings capacity (see the following articles for a review of *Ogilvie* ruling and the response to *Ogilvie*. As a result of the flux with the California Workers' Compensation Board on how to best determine "diminished earning capacity," Van de Bittner (2003, 2006) proposes a methodology and approach involving pre and post functional capacity assessment and evaluating related socioeconomic factors before calculating future earnings. Van de Bittner also discussed in detail over 50 factors than might have some bearing in determining diminished earning capacity for the injured worker.

The RAPEL Method

The RAPEL method (Weed, 1995, 2000;) is a comprehensive approach which includes all elements needed to determine loss of access (incorporating the LMA information), loss of earnings capacity, future medical care, worklife expectancy, rehabilitation plan, as well as placeability and employability factors. The word RAPEL is a mnemonic designed to assist the rehabilitation expert with collecting the data for a jury, lawyer, judge, economist and others in order to arrive at damages. It may not be evident, but many of the articles on loss of earnings are written by economists. Generally the economist will rely on the numbers provided to him or her by the rehabilitation expert. It is very important for the economist to receive the "right" information so a "bottom line" figure can be determined.

In litigation, the rehabilitation expert retained by the defense may not have access to the evaluee. Although a personal interview is preferred, the expert may utilize other information/data to offer a reliable opinion with regard to each of the below categories. Examples include, but are not limited to:

1. When not permitted access to the evaluee, the expert may help the attorney develop deposition or interrogatory questions that mimic the interview process.
2. Request all related depositions (regarding the evaluee, family members and healthcare providers.
3. Obtain all available related work history/employment records.
4. Obtain tax records.
5. Comprehensively review records (including medical) that might address any of the topics below.
6. With regard to the rehabilitation plan, the rehabilitation consultant may work with other defense retained experts (such as physicians and neuropsychologists) to develop opinions about future care.
7. Review Day-in-the-Life video if available.

The authors suggest that an organized report summarizing the opinions be attached as a separate document to the narrative. This facilitates the economist's role, offers a well organized easy to read document, and is ready to be made into a trial exhibit.

R = Rehabilitation Plan. The client's vocational and functional limitations, strengths, emotional functioning, and cognitive capabilities are assessed utilizing information gathered from the professionals listed earlier in this chapter. This may include additional future testing, counseling, training fees, rehabilitation technology, job analysis, job coaching, placement, and other needs for improving the client's potential for employment. If there is a Life Care Plan (usually for catastrophic injuries and complex healthcare needs), it should be noted in this section and refer the reader to that document for future medical and related care.

A = Access to Labor Market (Employability). In many of these cases, an individual may very well be able to return to a job that is custom-designed around their disability or with an employer who is interested in helping an employee with mild to moderate cognitive deficits. However, the client/evaluee may not have access to the same level of vocational choices as he or she did prior to the injury. In essence, it may be that the person would appear to have no particular loss of earnings capacity but at the same time be at high risk for losing a job and then having a significant problem locating suitable employment. The access to labor market can be determined through a variety of means. One option is to utilize a computer program like Skill*TRAN*™ to assess the effects of the disability on the person's access to the labor market (LMA) (Field & Field, 1999), based on worker traits, and the client's ability to choose in the labor market. For example, one client/evaluee may have a 50% personal loss of access to the labor market and another individual may have a personal loss of access to 95% of the labor market. Obviously, an individual who has access to 5% of the labor market should be employable or placeable, however, the difficulty factor for obtaining suitable employment has increased significantly. By placing a loss of access percentage to labor market, one can sensitize the reader to the potential difficulty for placement. Generally, this is described in a particular percentage loss of access to the client's personal labor market rather than to the national labor market. Few unimpaired people have access to 100% of the total labor market.

P = Placeability. This represents the likelihood that the client will be successfully placed in a job with or without rehabilitation or rehabilitation consultant assistance. One may need to conduct labor market surveys, job analyses, or, in pediatric cases, rely upon statistical data to opine about ultimate placeability (Weed, 2000). In some situations, the economic condition of the community may also be a factor. It is important that the rehabilitation consultant recognize that the client's personality, cognitive limitations, and other factors certainly influence the ultimate outcome. For adults, it is generally useful to include an opinion about jobs that are available (actual openings) in addition to jobs that exist but are not currently available to the client.

It is likely that the client will have worker traits which match to various job titles. Matching to a job title does not suggest that the person can indeed be placed in a particular occupation. Other factors, such as location, experience, education, personality, etc. can adversely impact placement. Also, many jobs

which may be appropriate for the client/evaluee are difficult to obtain. The vocational opportunity may be highly competitive or there may be very few positions available.

For example, one administrative law judge (ALJ) for a Social Security hearing was frustrated with the consistent opinion by the vocational expert that an injured employee, particularly in the poultry industry, could return to work as a "chick sexer." The ALJ was heard to tell a vocational expert that "if you ever provide me with another opinion that a person can return to work as a chick sexer, you will no longer work as a vocational expert"!

E = Earnings Capacity. Based on the rehabilitation plan, access to the labor market, and placeability factors, the client may or may not be employable in the labor market. If employment is likely, an estimate of the earnings potential is important. It is assumed that the reader is familiar with the difference between wage loss and earnings capacity analysis; however, if not, refer to topic earlier in this chapter. In general, the earnings capacity for an individual is that which they can reasonably attain and hold. For example, consider a 17-year-old who delivers papers for an income when he is catastrophically impaired and is never able to work again. Certainly, the earnings history from the paper delivery does not represent the individual's capacity. On the other hand, a 55-year-old union truck driver may exhibit earnings history that is consistent with his capacity. The considerations include whether the individual is a child or an adult and, if an adult, the industry for which they are best suited. For an example, a drywall hanger of marginal intelligence may have very well reached their earnings potential by the time they reach their 20's or early 30's. On the other hand, an attorney may not reach their potential until very late in their career.

L = Labor Force Participation. This category represents an opinion about the client's expected length of time expected to be in the labor force (also known as work life expectancy). Usually an individual who has a reduced life expectancy will also be expected to have a reduced work life expectancy. At the other end of the spectrum, the client's participation in the labor force may be unchanged. An individual may also be expected to work six hours per day rather than eight hours per day, which represents a 25% loss of normal work life expectancy. Some clients have demonstrated consistent extra income by working overtime hours and this situation can be considered in this arena as well. Generally speaking the counselor will express the opinion of loss by percentage or perhaps a number of years. Generally the economist will make the actual projections. This particular area is quite complicated and most vocational counselors are not prepared to address the subtleties and the complexities of economic projections. However, the counselor can review work life estimates in the aging Worklife Estimates: Effects of Race and Education (Bulletin # 2254, USDOL, 1986). Author's note: Although some more currently privately produced worklife data are available, the data may or may not be valid. Until more peer review is available on these data, government publications are recommended.

Computer Programs

Following the early development of the Labor Market Access program (Field, J. & Field, T., 1985-1999), other vocational estimating programs were developed and have contributed significantly to the assessment of work capacity, earnings capacity, and employment opportunities. The programs all suffer from the obsolete occupational data base of the *Dictionary of Occupation Titles* (1991) and related data sets, although developers of each of the programs have attempted to adjust the data to accommodate this deficiency as much as possible. The programs that are currently available to the forensic rehabilitation community are the *Skilltran* program (Jeff Truthan), *OASYS* (*Occupational Analysis System*, now of Skilltran, formerly by Gale Gibson), *SEER* (Software for Employment, Education and Rehabilitation by Robert Hall), and the *MVQS* (McCroskey Vocational Quotient System by Billy McCroskey). Additional information can be obtained by reviewing each program's respective website.

SkillTran	www.skilltran.com
Oasys	www.vertekinc.com
SEER	www.seersoftware.net
MVQS	www.vocationalogy.com

While these programs can be very useful in obtaining employment and earnings information that matches to a specific client, consultants should always consider computer generated output as tentative conclusions for any client analysis, and should be further tempered by clinical judgment (Choppa et al., 2004) in reaching final estimates of employment and earnings (The same holds of the L-P-E and New Worklife Tables).

The Court or Jury Decides (Summary Judgment)

Summary judgment: This procedural device allows the speedy disposition of a controversy without the need for a trial. (Black's, 2000).

Jury Instruction: A direction or guideline that a judge gives a jury concerning the law of the case. (Black's, 2000).

It is not uncommon for state and federal courts to present all relative information through presentations (attorneys and experts) and then to charge the jury to decide the outcome on damages, including fu-

ture lost earnings. This approach requires that the jury receive adequate information to presumably make an informed decision regarding damages. In cases involving a summary judgment, the same necessary information is needed by the court. Under the Virginia Model Jury Instructions (9.000), this instruction outlines the categories for damages that the jury can consider:

> *If you find for the plaintiff, then in determining the damages to which he is entitled, you may consider any of the following which you believe by the greater weight of the evidence was caused by the negligence of the defendant:*
>
> *any bodily injuries he sustained and their effect on his health according to their degree and probable duration;*
>
> *any physical pain and mental anguish he suffered in the past and any that he may be reasonably expected to suffer in the future;*
>
> *any disfigurement or deformity and any associated humiliation or embarrassment;*
>
> *any inconvenience caused in the past and any that probably will be caused in the future;*
>
> *any medical expenses incurred in the past and any that may be reasonably expected to occur in the future;*
>
> *(1) any earnings he lost because he was unable to work at his calling;*
>
> *(2) any loss of earnings and lessening of earning capacity, or either, that he may reasonably be expected to sustain in the future; any property damage he sustained.*
>
> *Your verdict should be for such sum as will fully and fairly compensate the plaintiff for the damages sustained as a result of the defendant's negligence.*

In *Aivaliotis v. S.S. Atlantic Glory* (1963), Aivaliotis, the plaintiff, was ordered to remove water from below deck of an ocean-going transport vessel. Initially, the plaintiff was hauling buckets of water from below and then dumping the water overboard while two workers below filled the buckets. After a period of time, the plaintiff switched jobs with one of the workers below, and while moving to a forward position, fell through an open hatch, fractured his left leg, and suffered a compound fracture of his right ankle, with multiple contusions over his body. Nearly a year later, after seven surgeries and infections and extensive pain, the left leg was amputated. A physician's report (over two years later) indicated the he had reached maximum improvement medically and could be discharged. The physician stated that "I do not feel that he is fit for work as a seaman aboard a ship, but I do feel that he is fit for sedentary or light work, or work that does not involve climbing ladders, lifting or stooping." Plaintiff received a rating of "permanent-partial disability."

The court concluded that plaintiff would not "sustain any actual loss of future earnings by reason of his impairment when his previous station in life is considered." The court learned that during the long period of hospitalization, the plaintiff married an American citizen, gradually learned to speak English, improved upon his educational level, and the potential to earn more in the United States than he could if he had continued on the vessel. The court observed that ""there can be little doubt as to the impairment of his earning capacity." The court reached the final conclusion:

> *Taking into consideration the many elements of damage which must be weighed in an effort to reasonably compensate [plaintiff] for his pain, suffering, mental anguish, embarrassment, actual loss of wages to the point of attaining maximum improvement, impairment of future earning capacity, the expense of maintenance and replacement of the prosthesis in futuro, and considering life expectancy, discounted to the present value of one dollar where appropriate, the court is of the opinion that [plaintiff] is entitled to a decree against the vessel....in the sum of $115,000.00."*

Table 1
Methods of Earning Capacity Assessment Compared on Selected Factors

Factors	LMA+	Deutsch	LPE	Computer	RAPEL	Court/Jury	Practical
Func Assessment	Y	Y	N	Y	Y	M	Y
Career Goal	N	Y	N	M	Y	M	Y
Job Matching	Y	N	N	Y	Y	M	Y
Survey Data	Y	Y	Y	Y	Y	M	Y
Worklife Tables	N	N	Y	N	Y	M	Y
Future Earnings	N	N	Y	Y	Y	M	Y

Note. Y=Yes; N=No; M=Maybe.

In terms of how the court decided the settlement amount is not clear since all elements were considered together and under the single category of damages.

In the case of *Exxon Corp. v. Fulgham* (1982), the plaintiff was involved in an automobile accident, which caused injury to his left hand and wrist, knee, neck, and back. Following surgery and treatment (arm was in cast for six months), the physician opined that the plaintiff "has approximately a 50 percent loss of use of his wrist and hand as a result of the accident. . . and would be restricted in his working ability because of restriction of motion in his wrist." The court, in instructing the jury, is required to be supported by the evidence. In this case, the jury was instructed to consider a loss of earning capacity that was supported by the opinion of the physician who indicated that there was a loss of 50 percent of functioning in the wrist. Exxon objected to the jury charge of a lessened earning capacity based on the fact that the plaintiff was earning $1000 per month after the injury versus only $700 per month prior to the injury. Relying on the previous case of *Aivaliotis v. Steamship Atlantic Glory*, the court ruled in the case that "one of the measures of his damage is based upon his earning capacity and not merely the amount actually earning." Consequently, the appeals court ruled that the evidence presented by the physician (50% loss of functioning, pain, loss of motion) "was sufficient for the jury to have found that by reason of the injury to the wrist, the plaintiff has sustained a lessening of earning capacity in the future." The finding was summarized:

> *The plaintiff is a man of limited education and earns his livelihood by physical effort and manual labor, specifically with the use of his arms and hands. At the time of the trial, he was an office-machine repairman. Although not a certified cabinetmaker, plaintiff is adept and skilled in the area of woodworking. There is credible evidence from which the jury could have concluded that because of his background, education, skills, and the work he performs, the type and character of the injury sustained by the plaintiff to his left wrist is such as will lessen his earning capacity and could diminish his opportunity to secure employment in the future. We find no error in the action of the trial court in permitting the jury to consider any lessening of plaintiff's future earnings capacity or his expectation of life in determining damages.*

Note that the court relied upon the client factors of the injury and its restrictions, background, education, skills, and the work performed as evidence presented to the jury. In *Scott v. Mid-Atlantic Cable* (2006), the determination of damages was addressed by consideration for a summary judgment consistent with Rule 56 of the Federal Rules of Civil Procedure as summarized in this court case:

> *Summary judgment is appropriate when the moving party can show affidavits, depositions, admissions, answers to interrogatories, pleadings, or other evidence, that has no genuine issue as to any material fact and that the moving party is entitled to a judgment as a matter of law.*

Scott, following an accident resulting in injuries, filed a claim seeking damages for "medical care expenses, pain and suffering, mental anguish, lost earning capacity, and the lost future retirement benefits." The defendants filed a motion for partial summary judgment (lost earning capacity and lost future retirement benefits). As noted in the *Exxon* case, "Virginia law permits a claim for lost earning capacity where the plaintiff established that the type and character of the injury" will reduce one's earning capacity and the opportunity to be employed. Further, a consideration of earning capacity includes such factors as background, education, skills, and experience. The court denied the motion for a partial summary judgment based on the fact that there was a material fact (estimating lost earning capacity of the plaintiff) did not rely on speculation or conjecture, and the issue could be adjudicated.

In all three cases noted above, a court (via summary judgment) or a jury could determine a proper conclusion (damages) on the issue of estimating lost earning capacity and/or future employment when the relevant facts of the case are presented in a sufficient manner. The relevant elements of such a determination would include background, the nature of the injury, education, skills, and experience.

A "Practical" Approach

The estimation of earnings capacity would seem to be a very complicated task given all the information that is available. Much of the confusion for forensic rehabilitation professionals results from the various approaches that have been discussed, including the pros and cons of computer programs, various occupational databases, and the identification of the most critical and salient variables necessary in the analysis. In fact, Shahnasarian (2001, 2004) has emphasized the necessity of organizing and synthesizing all relevant information in the development of a case, including the use of a worksheet that has been developed for such purposes.

This proposed basic and practical approach (Weed & Field, 2012) is perhaps a synthesis of the more useful (and least controversial) concepts that have evolved over the years. Personal preference for alternative resources and/or approaches is certainly within the realm of possibility. However, what is suggested below can serve as a "benchmark" for professionals to consider and then incorporate personal preferences and experiences into an individual and preferred model.

The following steps are suggested:

Following a review of the case records, develop a pre-injury assessment of earning capacity.

1. Identify a pre-injury base wage (not necessarily wage at time of injury) by identifying jobs and wages that best represent the claimant's functional capacity.
2. Identify a post-injury base wage by identifying jobs and wages that best represent the claimant's residual functional capacity.
3. Estimate the difference between the pre-injury earnings capacity and the post-injury earnings capacity.
4. Estimate the remaining work life of the claimant.
5. Calculate a range of economic loss by multiplying the difference from pre-to-post-earnings capacity by the work life remaining.
6. If not qualified, refer to an economist for adjustment to present value. The economist's general method can serve as a guide and blueprint for the rehabilitation professional. Resources to be used might include the following:
   - A computerized job matching program to expedite the job identification process.
   - Either the DOT or the O*NET for describing occupations.
   - The on-line CareerInfo.NET database for wages and numbers of jobs in a local economy, or the CPS data generated by the Bureau of Labor Statistics (BLS).
   - The BLS Worklife Tables (1986)
   - The New Worklife Tables (Gamboa, 2006)

The various methods cited above serve as guidelines for the professional to follow in the development of a case. Of course, there will be variations for each of the methods and much of the variation will depends upon the facts of a case. Table 1 displays some of these differences in how a case can be developed. The RAPEL method appears to be the most comprehensive of all the methods, although this method draws upon resources and strategies from a variety of sources. The LMA method, of course, is a computerized approach developed during 1980s and 1990s, and the results may be used for a portion of the RAPEL report. The original program is no longer available, although the rationale is one to consider (see website listing at the end of the chapter for three computer programs which are currently available and may be used in earnings capacity assessment). As noted earlier, the Deutsch/Sawyer model is rather global and non-specific, while the Court/Jury model is interesting and may be employed in some states. The Practical method is just that: a rather straightforward and common-sense method quite similar to the RAPEL. In terms of which method to use, the choice is really the prerogative of the practicing professional. All have been published in peer-reviewed literature, and all are generally accepted by the professional community.

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