

Ireland-Slesnick Responses

We have been asked to respond to three reviews of our paper from John F. Berg, David D. Jones, and Jaqueline A. Vega Valez. None of the reviews were strongly critical, so that we do not have extensive criticisms of what was said by the reviewers. Each review, however, opened up opportunities for us to offer further evaluation that may be beneficial to vocational experts.

John Berg's Review

The last point made by John Berg was that:

One important topic not discussed in the articles (cases) was how experts use the Markov tables to project remaining years of worklife. The use of "average" worklife expectancy is common in legal decisions. However, one can use modern Markov tables to determine "median" worklife, or 25th, 75th or 90th percentiles of probable work-life. The range is often plus or minus several years, which could overstate or understate loss calculations, based on what percentile is relied upon or justified in report details.

Berg was effectively referring to the Skoog, Ciecka, and Krueger tables (2011) that were published in the *Journal of Forensic Economics*. The statistical reporting of that study allows many ways to look at the reliability of central measures such as "median" and "mean" values that were not possible before that study. It is obvious that most individuals do not have "average" work-lives and that an "average," by its nature means that 50 percent of workers in a demographic category can be expected to have longer work-lives than that average and 50 percent of workers in that demographic category have shorter work-lives than that average. Percentiles provide a way to look at the variations around an average. In our own practices, we have not often seen the Skoog, Ciecka, and Krueger tables used in this way, but this is an important potential use of that set of tables. It is important to point out, however, that this potential did not exist in earlier versions of Markov tables. In that very important sense, the Skoog, Ciecka, and Krueger tables were a step beyond any work-life expectancy tables that existed before 2011.

John Berg also suggested that it would be desirable for IARP or some other organization for vocational experts to conduct a survey similar to the NAFE Survey to determine what are common practices for vocational experts. We regard that to be an excellent suggestion.

David Jones' Review

Three things about David Jones' review caught our attention. First, Jones discussed the nature of the disability questions in the ACS and CPS in greater detail than those questions were considered in the cases that we reviewed. Second, he discussed the important U.S. Supreme Court decision in *Toyota Motor Manufacturing v. Williams* (2002). Third, he called our attention to a paper by Richards and Solie in 1996 that attempted to provide "Worklife Estimates by Occupation" (Richards & Solie, 1996). We will deal with each of those items in turn.

Disability Questions in the ACS and CPS.

David Jones cited his own paper on disability questions (Jones, 2005) and explained that a determination of the severity of disability comes from Vocational Economics and not from the surveys themselves. This element of arbitrary determination by a testifying expert is inherently self-serving and has been an important issue in actual legal cases. Jones pointed out that employees of Vocational Economics, Inc. create their own definitions for "severe" and "non-severe" and treat those definitions as if they were generally accepted. (It is not mentioned in Jones' review, but vocational economics experts sometimes go further and state that a given plaintiff is halfway between non-disabled and not

severely disabled.) This type of characterization has no foundation and adds to the heterogeneity problem that inherently arises when experts go beyond what can be determined from the data itself. "Professional judgment" is often just another term for "speculation."

Toyota Motor Manufacturing v. Williams, 122 S.Ct. 681 (2002).

Jones also addressed the heterogeneity problem ("one size fits all") by referencing the 2002 U.S. Supreme Court decision in *Williams*. As Jones pointed out, this decision did not directly involve the Gamboa-Gibson tables, and did not even directly involve work-life expectancy, but it did involve the U.S. Supreme Court rejecting general categories in assessing disability. At issue was whether Ella Williams was entitled to special accommodations under the *Americans with Disabilities Act (ADA)* because of her carpal tunnel syndrome. Justice O'Connor concluded:

It is insufficient for individuals attempting to prove disability status under this test to merely submit evidence of a medical diagnosis of an impairment. Instead, the ADA requires them to offer evidence that the extent of the limitation caused by their impairment in terms of their own experience is substantial.

Later in the decision, Justice O'Connor provided much greater detail regarding what had to be established about carpal tunnel syndrome to determine whether Williams' disability qualified for special accommodations:

An individualized assessment of the effect of an impairment is particularly necessary when the impairment is one whose symptoms vary widely from person to person. Carpal tunnel syndrome, one of respondent's impairments, is just such a condition. While cases of severe carpal tunnel syndrome are characterized by muscle atrophy and extreme sensory deficits, mild cases generally do not have either of these effects and create only intermittent symptoms of numbness and tingling. Carniero, Carpal Tunnel Syndrome: The Cause Dictates the Treatment 66 *Cleveland Clinic J. Medicine* 159, 161-162 (1999). Studies have further shown that, even without surgical treatment, one quarter of carpal tunnel cases resolve in one month, but that in 22 percent of cases, symptoms last for eight years or longer. See DeStefano, Nordstrom, & Uierkant, Long-term Symptom Outcomes of Carpal Tunnel Syndrome and its Treatment, 22A *J. Hand Surgery* 200, 204-205 (1997). When pregnancy is the cause of carpal tunnel syndrome, in contrast, the symptoms normally resolve within two weeks of delivery. See Ouellette, Nerve Compression Syndromes of the Upper Extremity in Women, 17 *Journal of Musculoskeletal Medicine* 536 (2000). Given these large potential differences in the severity and duration of the effects of carpal tunnel syndrome, an individual's carpal tunnel syndrome diagnosis, on its own, does not indicate whether the individual has a disability within the meaning of the ADA.

The importance of this decision is that arbitrary groupings, even groupings as specific as "all persons with carpal tunnel syndrome," were determined by the U.S. Supreme Court to be insufficiently narrow enough to apply to a plaintiff who has a specific degree of that syndrome. As a practical matter, carpal tunnel syndrome may limit the occupations available to a plaintiff, but is not likely to significantly reduce work-life expectancy.

Occupational Work-life Expectancy.

David Jones' review also called our attention to a paper by Richardson and Solie (1996) on "Worklife Estimates by Occupation" and mentioned another paper by Skoog and Ciecka (2014) on "railroad work-life expectancies." We had said in our paper that occupation-specific work-life expectancy tables do not exist, so this requires explanation.

The Richards-Solie (1996) paper, sounds by its title as if the paper provided work-life expectancies by occupation, but is actually a paper that argues that workers who have occupations have longer work-life expectancies than workers who shift back and forth between occupations. The definitions and data used to show differences between these groupings is now dated, but the paper does not provide specific work-life expectancies by specific occupations. Jones referenced the paper as having ar-

gued that: "It is generally recognized that some jobs involve more wear and tear, and are associated with shorter WLE (for work-life expectancy)". Jones pointed out that this basic point is overlooked by most of the cases cited (discussed) in the Ireland-Slesnick paper. Jones is correct on that point, but it is important to understand that work-life expectancy tables for high school teachers or for plumbers or for mechanics or any other specific occupations do not exist.

It is not clear whether the term "occupation" refers to an industry or a craft that exists within many different industries. That is illustrated by the difference between "railroad work-life expectancies" and "work-life expectancies" in other contexts. Railroad work-life expectancies are specific to the railroad industry. Data that is compiled by the Railroad Retirement Board in its tri-annual "actuarial valuations" is intended to give the Railroad Retirement Board a projection of its obligations to provide disability and retirement pension under the Railroad Retirement Act. Data provided is not specific to the craft of railroad workers (such categories as "engineer," "conductor," "maintenance of way worker," or "yard worker"), but are specific as to the number of years a worker has already spent working in the railroad industry. Workers with larger numbers of credits (months worked) in the railroad industry have different "railroad work-life expectancies" than workers with fewer numbers of credits. Railroad workers can receive very attractive retirement pensions if they reach age 60 with 360 months of work-credits in the railroad industry. They have very strong incentives to work long enough to reach "30/60" status, but then have strong incentives to retire once they reach that status. This makes the work-life decisions of railroad workers very different from workers in other industries.

However, it also means that railroad work-life expectancies are different from true work-life expectancy tables in that they *only* measure expected years in the railroad industry and do not include expected years of work in most other industries. Experience in the military is taken into account, but not other types of work activity. Understanding the differences between true work-life expectancy tables and railroad work-life expectancy tables is critical for working on personal injury and wrongful death cases involving railroad workers.

Jacqueline Vega Valez Review

Three things in the review of Jacqueline Vega Valez caught our attention. First, she discussed the decision of Judge Richard Posner in *O'Shea v. Riverway Towing Company* (1982), which has sometimes been used to argue that the Gamboa-Gibson tables are only doing what Judge Posner said should be done to calculate loss of work-life expectancy. Second, she argued that:

[W]hen dealing with cases of partial disability, the decision [about how to deal with the disability] should be left to the individual with the expertise to make that judgment. In most, if not all cases, that would be a vocational professional, not an economist.]

We will address that argument. Third, she included an extended discussion of the 2012 NAFE Survey, for which one of us (Slesnick) was one of the lead authors. We will deal with those items in turn.

O'Shea v. Riverway Towing Company, 677 F.2d 1194 (7th Cir. 1982)

Margaret O'Shea was a cook on a tugboat plying the Mississippi River operated by Riverway Towing in a tort case covered under federal admiralty jurisdiction. This was an appeal of a district court decision that was affirmed by the 7th Circuit, but with a requirement that the lower court indicate the steps by which it had arrived at its damage award for O'Shea's lost earnings. At the time of her injury O'Shea was a 57 years of age and was a five foot, seven inch tall woman at age 57 weighing 200 pounds. Her injury was a broken leg that resulted in her inability to return to being a cook on a tugboat. Judge Posner indicated that she was totally disabled from any future employment so that the question was the value of her total loss of earning capacity. There were various arguments between the parties regarding her rate of compensation, but the issue that has caused experts from Vocational Economics to bring up this decision was the portion of Judge Posner's ruling that related to work-life expectancy. After discussing the growth and discount rates used by the plaintiff's economist (who,

while unnamed, was Leroy Grossman of St. Louis), Judge Posner discussed the work-life expectancy issue as follows:

If conservative in one sense, the economist was most liberal in another. He made no allowance for the fact that Mrs. O'Shea, whose health history quite apart from the accident is not outstanding, might very well not have survived-let alone survived and been working as a boat's cook or in an equivalent job-until the age of 70. The damage award is a sum certain, but the lost future wages to which that award is equated by means of the discount rate are mere probabilities. If the probability of her being employed as a boat's cook full time in 1990 was only 75 percent, for example, then her estimated wages in that year should have been multiplied by .75 to determine the value of the expectation that she lost as a result of the accident; and so with each of the other future years. []. The economist did not do this, and by failing to do this he overstated the loss due to the accident.

This decision did not involve a reduction in post-injury work-life expectancy. Judge Posner was pointing out that the plaintiff's economist was overly liberal in projecting that Margaret O'Shea would have worked to age 70 with no reduction for negative work-life contingencies. Judge Posner was apparently unfamiliar at that time with work-life expectancy tables that had begun being developed by the Bureau of Labor Statistics, but suggested that Ms. O'Shea had pre-existing health problems such that she might not even have lived to age 70 and might well not have worked to that age. To deal with the lack of certainty that Ms. O'Shea could have worked to age 70, Judge Posner suggested that the calculated award might be multiplied by 0.75 to account for the lack of certainty that she would have worked to age 70.

In a modern context, Judge Posner's suggestion was unsophisticated. Today, an economic expert could determine from standard work-life expectancy tables what an average work-life expectancy would be for an "active" female participant in the labor market with Margaret O'Shea's education and point out that poor health might have reduced her work-life expectancy ever further. To be sure, the Gamboa-Gibson work-life expectancy tables could be used for that purpose and would result in a reduction in work-life expectancy for Ms. O'Shea. However, there is no reason to think that doing so would be as accurate as using a Markov process-based statistic for a woman who was "active" in the labor market.

Expertise in Dealing with Disability.

Ms. Vega Valez argued that vocational experts are better prepared to deal with disability and implied that we (and other economists) argue that disability cannot cause a reduction in work-life. No economic expert that either of us is aware of argues that disability cannot cause a reduction in work-life expectancy. Economic experts regularly rely upon vocational experts to determine the types of employment that may remain to a worker after an injury. Economic expertise gives economic experts no special ability to make such determinations. However, our experience has been that vocation and rehabilitation experts do not claim to have the ability to determine when work-life expectancy has been shorted by an injury. Only employees of Vocational Economics, Inc. and vocational experts relying upon the Gamboa-Gibson work-life disability tables make such claims. Some disabilities shorten work-life expectancy and others do not. The relevant issue is to determine what is likely to happen to the specific injured person involved in a legal action for recovery. If that worker is not able to continue in a job previously held before the injury, we recognize that the worker will at least potentially have a loss of earnings that we are not equipped to determine without the assistance of a qualified vocational/rehabilitation expert. What we do not accept is data about broad groups of disabled workers who have conditions significantly different from each other, are in professions that may be affected differently from each other, and may have different consequences on individual capabilities in the future. Some disabling conditions are likely to create greater problems in the future with aging, while others do not.

All studies of pre-injury work-life expectancy other than the Gamboa-Gibson tables has been done by economists with significant research skills in the area of work-life expectancy. Those studies are ei-

ther published by the Bureau of Labor Statistics or in journals that require peer review by persons who have had similar research experience. It is our opinion that expertise in determining residual earning capacity after injury should be left to vocational/rehabilitation experts, but the determination of what represents quality work in determining an individual's work-life expectancy before and after an injury should rely upon research by economists or medical experts qualified to make such determinations, and not by vocational experts who produce proprietary tables that are not open to full peer review and that are not specific to injuries that plaintiffs have suffered.

NAFE Survey Discussion.

The review by Ms. Valez contained an extended discussion of the 2012 survey of members of the National Association of Forensic Economics (NAFE). One of us (Frank Slesnick) was one of the authors of that survey (Slesnick, Luthy, & Brookshire, 2012). However, the discussion of that survey was accurate. We do not know how many of the 158 responses that were deemed to be usable were from persons who had backgrounds in forensic economics, how many were from persons with backgrounds in finance or accounting, or how many had backgrounds in vocational/rehabilitation training. We also do not know whether the responses of the 158 persons accurately reflected the views of the 583 members of NAFE who were eligible to take the survey. However, there is also no good reason to expect bias with respect to this question. The same survey contains Question #41, which asks participants to indicate the percentages of their work for plaintiffs and for defendants. Respondents indicated that 61.06% of their work was for plaintiffs and 38.12% of their work was for defendants. Any use of the disability work-life expectancy reductions found exclusively in the Gamboa-Gibson work-life expectancy tables would favor plaintiffs by increasing damages to include future lost post-injury work-life years. Thus, it seems unlikely that there is any defense bias in the survey that would result in overstating the general lack of acceptance of the Gamboa-Gibson tables.

References

- O'Shea v. Riverway Towing Company*, 677 F.2d 1194 (7th Cir. 1982)
- Jones, D. D. (2005). Problems with using government measures of disability to estimate potential earnings loss. *Journal of Forensic Economics*, 18(2&3), 155–170.
- Richards, H., & Solie, R. J. (1996). Worklife estimates by occupation. *Journal of Forensic Economics*, 9(2), 145–167.
- Skoog, G. R., Ciecka, J. E., & Krueger, K. (2011). The Markov Process Model of Labor Force Activity: Extended Tables of Central Tendency, Shape, Percentile Points, and Bootstrap Standard Errors. *Journal of Forensic Economics*, 22(2), 165–229.
- Skoog, G. R., & Ciecka, J. E. (2014). Worklife expectancy of railroad workers based on the Twenty-Fifth Actuarial Valuation using both competing Risks/Multiple Decrement Theory and the Markov Railroad Model. *Journal of Forensic Economics*, 25(2), 109–127.
- Slesnick, F. L., Luthy, M. R., & Brookshire, M. L. (2012). A 2012 survey of forensic economists: Their methods, estimates, and perspectives. *Journal of Forensic Economics*, 24(1), 67–99.
- Toyota Motor Manufacturing v. Williams*, 122 S.Ct. 681 (2002).