

## DISCUSSION

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Wayne Vroman's paper is a modest preliminary report, which is derived from an ongoing research project concerned with permanent partial disabilities and workers' compensation. The larger project will develop and implement methods for projecting postinjury earnings losses, compare actual compensation measures to these projected losses, and draw conclusions as to the adequacy and equity of workers' compensation benefits. One cannot question the usefulness of the larger project and the profession should be indebted to Vroman and his collaborators for undertaking it.

One should stress, however, that the key to the success of the project will lie in their ability to project postinjury earnings losses, which for younger workers may persist 35 or 40 years into the future. Vroman states, "This raises issues of control group methodology which lie considerably beyond the scope of this paper." If I was writing the paper, I would have focused on this issue and deemphasized the "progress report" aspects of the paper. Since this issue is the key to the ultimate success of the project, I strongly urge Vroman et al. to present their methodology to the profession for comments and evaluation *prior* to the preparation of their final report.

The current paper is based upon aggregative data from California for workers aged 20 to 59 who became disabled in 1968 and presents simple two-way tabulations in order to answer the following questions:

- (1) What are the distributions of the disabled by age and disability rating and by type of disability and rating (Table 1)?
- (2) How does the proportion of disabled workers with earnings vary with the disability rating and the number of years since the disability occurred (Table 2)?
- (3) How does the ratio of mean earnings after disability relative to mean earnings prior to disability vary with the disability rating (Table 2)?
- (4) How does the proportion of the disabled who receive social security disability insurance benefits in 1976 vary across age classes and with disability rating (Table 3)?

The tabulations are straightforward, are discussed in detail in the paper, and consequently, there is little which I, as a discussant, can add. My main concern is that because of the simplistic type of implicit

"quasi-experimental" design used in the paper, the validity of some of Vroman's conclusions may not be totally established.<sup>1</sup> For example, the methodology used by Vroman in Table 2 is a set of simple "before-after comparisons." In Panel A, we implicitly are asked to project the proportion of the disabled who would have had earnings after 1968 (in the absence of their disability), on the basis of the group's experience prior to 1968. No consideration is given to the possibility that changing labor market conditions may have, *ceteris paribus*, reduced this proportion during the 1970s. Furthermore, no consideration is given to the possibility that the aging of the cohort might influence these probabilities. That is, the methodology used suffers from what Campbell and Stanley call the threats to internal validity of history and maturation.<sup>2</sup> Focusing on comparisons with nondisabled individuals and including controls for age effects could easily have been accomplished with the social security data and would have removed this problem.<sup>3</sup> Indeed, given the observed correlation between age and severity of illness (Table 1), it would seem that controls for age should be introduced into all of Vroman's analyses.

This technical point aside, I want to again emphasize the useful nature of the larger project. Social policy is often made in the presence of imperfect information, and no one will dispute the fact that our information is probably most imperfect in the workers' compensation area. If Vroman et al. succeed in developing and implementing a method to project postinjury earnings losses, the ultimate contribution of the project may be quite large indeed.

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<sup>1</sup>For a discussion of quasi-experimental designs, see the now classic Donald T. Campbell and Julian Stanley, *Experimental and Quasi-Experimental Designs for Research* (Chicago: Rand McNally, 1966).

<sup>2</sup>Campbell and Stanley, p. 5.

<sup>3</sup>Two other technical comments warrant being briefly mentioned. First, Vroman might make some reference to the statistical significance of his numbers. For example, he reports that from 1969 to 1974, the proportion of the disabled with earnings in the 1-5 percent disability rating class fell 14 percent, while the comparable decline in the over 50 percent class was 8 percent. Are these numbers (8 and 14 percent) significantly different from each other in a statistical sense? Second, the comparison Vroman makes in Panel B of Table 2 may be inappropriate. He compares there the mean earnings of disabled workers in 1966 and 1973 by disability rating. The data for each year are restricted to those workers who had some earnings in that year. A better comparison might include in the 1973 sample all workers who had earnings in 1966, as this would more accurately reflect the impact of disability on earnings.