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Obituary

ERLING B. ANDERSEN (20 October 1939–18 September 2004)

Erling B. Andersen died in September 2004, a few months before retiring as professor of statistics at the University of Copenhagen and shortly before he was to be appointed honorary member of the Danish Society of Theoretical Statistics.

Erling B. Andersen will be remembered by the readers of *Psychometrika* for his seminal work on the Rasch model. To Danish statisticians he was much more than that. He graduated in 1963 as the first Danish graduate with a formal degree in mathematical statistics. He received a gold medal from the University of Copenhagen in 1965 for his work on the Rasch model and wrote and defended his doctoral thesis on conditional inference in 1973. He became full professor of statistics at the Royal Veterinary and Agricultural University of Denmark in 1971 and later took over Rasch's chair as professor of statistics at the Department of Statistics of the University of Copenhagen in 1974. He was chairman of the Danish Social Science Research Council in the late 1970s and dean of the Faculty of Social Sciences at the University of Copenhagen in the 1980s. As chairman of the research council he was one of the main players in the formation of the "Statistical Research Unit" which later developed into the Department of Biostatistics at the University of Copenhagen. Finally, in the early 1990s he was the driving force behind the reorganization and reopening of the Department of Sociology and responsible for the fact that the education of sociology today has a strong quantitative methodological component.

Erling B. Andersen was one of the founding fathers and the first chairman of the Danish Society of Theoretical Statistics and a coeditor of the *Scandinavian Journal of Statistics* from 1974–1986. It is very sad that he died before he was made an honorary member of the society, something that I know meant a lot to him, but, fortunately, he had been informed that it was going to happen later in 2004.

Erling B. Andersen will also be remembered as a teacher. He was an excellent lecturer and wrote several text books, of which the book on *Discrete Statistical Models with Social Science Applications* from 1980 is well worth reading. It was not an easy task taking over Rasch's chair in 1974, partly because Rasch had very strong ideas about what his successor should be doing, and partly because Rasch himself had neglected many statistical topics of importance in a department with strong relationships to economics. Erling B. Andersen nevertheless managed to develop the courses in statistics for students of economics and political science into courses that the student found both interesting and relevant.

Erling B. Andersen's most important work was in the area of item response and Rasch models. He was at some point the most cited Danish statistician and one just has to look at the author index and the references in Fischer and Molenaar (1995). There are 39 references in 16 out of 21 chapters. In fact, if we disregard the cases where an author is referring to some of his own papers, Erling B. Andersen is the person with the largest number of citations.

Erling B. Andersen was always very loyal toward Rasch and was always the first to point out that most of the ideas of conditional inference came from Rasch. While this in some sense may be true, it is nevertheless also obvious when looking back at the papers of Rasch and Andersen, that the *theory* of conditional inference in Rasch models was the work of Erling B. Andersen. It is in his papers that you may find the first proof that the Rasch models are characterized by

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sufficiency, the property that to some of us is the fundamental property of the Rasch model. It was Erling B. Andersen who proved that conditional maximum likelihood estimates are consistent, whereas joint estimates are inconsistent. It was Andersen who developed the theory of conditional maximum likelihood estimates. And Andersen was the first to combine latent structure analyses with Rasch models.

The notion of conditional inference came from Rasch, of course, but Rasch's interests were shifting from statistics toward philosophy of science and the theory of objective measurement at the same time as Erling was developing the statistical foundation of conditional inference. Because of this work it is obvious that the practice of item analysis by Rasch models as we know it today owes much more to Erling B. Andersen than it does to Rasch. Erling B. Andersen saw the model first of all as a statistical model and second as an item response theory (IRT) model. He never subscribed to the idea that the Rasch model should be regarded as a special "measurement" model apart from other IRT models, and he never—not even once—referred to the concept of specific objectivity in any of his papers. It is obvious that it was regarded as controversial both by Rasch and by some Rasch circles that Rasch's first and most important student distanced himself explicitly from what was to become the cornerstone of Rasch's own understanding of his ideas. Erling B. Andersen often talked about how unhappy he was that Rasch never regarded him as a worthy successor in his chair at the Department of Statistics. Whether Rasch ever expressed such sentiments is an open question. I never heard him say anything that could be interpreted in that way, but Erling was, of course, closer to Rasch than any other Danish statistician. And the fact remains that Erling explicitly rejected the idea of specific objectivity. He threw the first stone, so to speak, and the possibility exists of course, that Rasch—who was never known for his diplomatic skills—did not respond in the most kindly way. Whether or not Rasch appreciated the work of Erling B. Andersen is, however, beside the point to the rest of us. We, the mainstream statisticians and psychometricians, are very much indebted to Erling B. Andersen. It is to a large degree due to him that Rasch models remain a subject of interest to statisticians in Denmark and many other countries.

Erling B. Andersen's final years were not happy. His health was deteriorating, and he felt that he was unappreciated by his institute, by the faculty of social sciences, and by the Danish statistical community. Whether what he experienced had much to do with reality and who was to blame is very hard to say. In his obituary on Rasch in *Psychometrika*, Erling Andersen described Rasch as a person who was very difficult to work with. It is not unfair to say that many people had the impression that Andersen was trying to continue also this part of the Rasch tradition. It is, on the other hand, also a fact that he was treated in a totally unfair and unfriendly way by at least one of the departments of the Faculty of Social Science that he had done a lot for during the reorganization of the department and where he until that happened thought that he had friends. Whether or not he was able to acknowledge it, the fact remains that he had several friends among statisticians in Denmark and abroad and his work continues to be highly influential in the worldwide statistics and psychometrics communities. He was not unappreciated, and it is a great shame that he was not able to look back on what he had accomplished with satisfaction and pride. As a primary developer of the theory of conditional inference and a full statistical theory for the Rasch model, he definitely deserved that.

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Reference

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