Georg Rasch

(1901–1980)

Georg Rasch was born in 1901 and died in 1980, 79 years old. He was professor of statistics at the University of Copenhagen from 1962 to 1972.

Rasch received a degree in mathematics from the University of Copenhagen and worked as a mathematician at the University until he became a doctor of science, only 29 years old, in 1930 on a dissertation concerned with matrix calculations and their applications in differential and difference equation theory. At the time he was considered to be one of the most talented of a new generation of mathematicians. But as no satisfactory position was created for him as a mathematician, he chose to work as a consultant in applied mathematics, primarily data-analysis and statistics. Statistical analysis based on mathematical theory was not an entirely new thing in Denmark in 1931, but within the fields of medicine and biology, and later psychology and sociology, he initiated a whole new look in the analysis of data in Denmark.

In 1935–36 he visited University College in London, primarily to work with R. A. Fisher. He was greatly impressed by Fisher's ideas on the foundation of mathematical statistics and introduced them in Denmark. In the following years he worked primarily at the Danish National Serum Laboratory, where he founded the Bio-Statistical Department and was its Director from 1940 to 1956. In this capacity he made many contributions to new scientific developments in biology and medicine, but had a more lasting influence on the development of statistics, both in the theoretical and applied sense, through the fact that most, if not all, of the next generation of Danish statisticians worked as his assistants at the Serum Laboratory. Among his assistants was A. Hald who in 1947 became professor of statistics at the University of Copenhagen.

Not until 1961, when he was almost 60 years old did he himself seek, and was appointed to, a chair in statistics at the University of Copenhagen.

It may seem surprising, but is nevertheless a fact, that he did not work with applications in education and psychology until the mid fifties, when he was well into his own fifties. But it was these disciplines that occupied most of his thoughts and work in the sixties and seventies and it was here he made his most original contributions.

As a consultant to the Ministry of Social Affairs, to the Office of Military Psychology, and to the Danish Educational Research Institute he was faced with the task of extracting information on individuals from intelligence and ability tests. He rejected the traditional statistical methods, primarily based on various factor analytic techniques, and developed new and more exact methods based on latent trait models as we know them today. The most simple and elegant of these models was fully developed by Rasch in 1960 and now bears his name: The Rasch model. The model was not invented as a new theoretical development, but was established through a careful study of the empirical data he worked with. He realized on the other hand that the model required a new statistical methodology based on the use of conditional probabilities. He was thus in his famous 1960 book, and an important paper read at the Berkeley Symposium on Probability and Statistics the same year, able to present both a new revolutionary model and a fascinating new statistical methodology. The model was further developed in the following years, and

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he showed many important applications of it, but to a remarkably degree the theory was developed within a span of three to four years.

In the late sixties followed a few papers where he tried to extend his 1960 discoveries to a more general theory of measurement primarily directed towards the social sciences. It was these ideas which occupied his thinking for the rest of his life.

Georg Rasch was in a very concrete sense of the word a true scientist. His whole life was dedicated to his scientific work. He always worked at new ideas and even in his last years, when illness hit him very hard and he could only work a few hours a day, one could find him bowed over a pad of paper trying to prove a new theorem on the nature of scientific measurement.

He was also throughout his life a true mathematician. He believed in mathematics as our best tool to make ideas exact and to formulate precise descriptions of observed social and biological phenomenon.

At the same time Rasch was a very empirically oriented scientist. He refused to accept a mathematical description of observed data before he, often by use of hundreds of simple tables and diagrams, had convinced himself that the model really fit the data.

There is much evidence that Rasch was a difficult person to work with. But for those who accepted his special manner and worked very closely with him, he was in his own way a very open, a very generous and a very loyal person.

Rasch was married to Nille Rasch in a very devoted marriage for 52 years. The last 5 years they lived at the isolated island of Læsø.

Georg Rasch was the Nestor of Danish mathematical statistics for many years and the most honored member of the Danish Statistical Society. We are many who miss his sharp and open mind as an inspiration for our daily work.

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