

# BORIS VLADIMIROVITCH GNEDENKO (1912–1995)

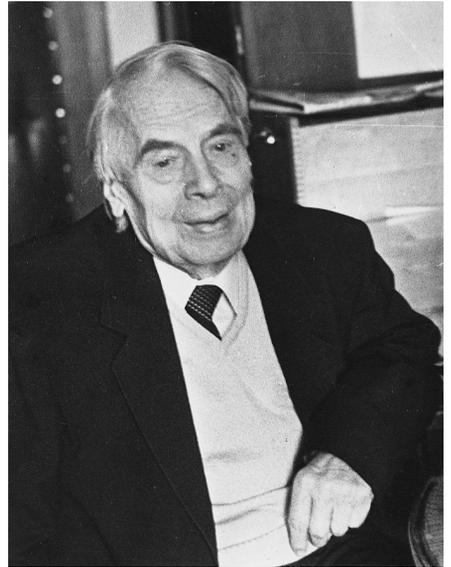
Boris Gnedenko, the world-famous probabilist, died in Moscow on 27 December 1995. He had been a student of A. Ya. Khinchine, and was later a contemporary and colleague of A.N. Kolmogorov, Yu. V. Linnik and N.V. Smirnov. His death marks the end of a dazzling and fruitful era that permanently transformed probability theory and greatly enlarged its scope and the number of its applications.

The impact of this group of mathematicians could justly be compared with that of G.H. Hardy, J.E. Littlewood, S. Ramanujan and E.C. Titchmarsh in analysis and number theory.

Gnedenko's early work lay in the classical area of probability limit theorems for sums of independent random variables, while in his later work he threw himself into the applied problems of mathematical statistics – distribution-free tests, queuing, reliability theory and the study of complex systems. Thus his influence ranged from the most sophisticated branches of probability theory to a wide spectrum of practical problems. His influence on his contemporaries and younger colleagues has been immense.

Under Gnedenko's leadership a large and successful school was created aiming to tackle a wide range of problems in applied probability and with strong connections to industry, including the Soviet space industry. This was one of the first examples of a close collaboration between engineers and academics working in probability theory, a subtle and powerful branch of mathematics. As a result many engineers moved to applied probability and became prominent specialists themselves in this field. His textbook, *A Course in Probability*, was immensely popular among not only probabilists and statisticians but also physicists, engineers, biologists, economists and social scientists.

Gnedenko had a particular gift for selecting young talented scholars and encouraging them at the start of their academic careers. Notable examples are the groups of Ukrainian and former East German probabilists 'spotted' by him while lecturing to student audiences in Kiev and in Berlin. The first probabilist members of the Ukrainian Academy of Sciences



included I. Gikhman, V. Korolyuk, A. Skorohod, A. Mikhalevich, I. Kovalenko and E. Yadrenko.

In East Germany Gnedenko is thought of as a godfather to the post-war probability school that included J. Kerstan, K. Matthes, K. Navrotzki, D. König, D. Stoyan and P. Franken. Some of these were members of the former Academy of Sciences of the GDR; others held important university chairs throughout the country.

From 1962 until his last days Gnedenko was Head of the Department of Probability Theory in the Faculty of Mechanics and Mathematics at the Moscow State University, succeeding Kolmogorov in that capacity. This was one of the most important positions in Soviet and later Russian probability theory. Gnedenko's great tact and diplomacy helped to maintain a high quality of research and a friendly atmosphere among this group of internationally famous specialists. Such a task became more difficult with time as many prominent mathematicians left the University and the country.

Gnedenko, like Kolmogorov, was a great popularizer of mathematics and of science in general. He took a deep interest in school education, as was traditional among Russian scientists. For a long time he was one of the editors of the journal, *Mathematics in School*, which played an important role in propagating advanced methods of teaching mathematics.

Indeed, a lifetime of shared professional objectives linked him with Kolmogorov. They also loyally supported one another (and their pupils), often in hazardous circumstances.

During the 1930s Gnedenko was arrested and imprisoned, after a secret report of his 'liberal' attitudes towards so-called 'class enemies' had been filed in a local Interior Ministry office by one of his fellow confidants. (The Interior Ministry was at this time the successor to the infamous Cheka. Later on the Ministry of State Security developed from it, ultimately becoming the notorious Committee of State Security – also known as the KGB). It was a bold intervention by Kolmogorov and his own stubborn refusal to name any persons implicated in the alleged 'plot' that helped in freeing Gnedenko. Despite this experience he maintained great kindness and warmth towards the people around him throughout his whole life.

Gnedenko's only visit to the UK took place in 1958 when attending the International Congress of Mathematicians held in that year in Edinburgh.

Probabilists and statisticians visiting Moscow from the UK were always welcomed and warmly entertained by the Gnedenko family (and by his enormous and bear-like dog) in their flat at the very top of the tower of the University.

Gnedenko's passing marks the end of an era. The future of probability belongs to the young, but the contributions by Kolmogorov, Gnedenko and their pupils will live for ever.

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