Mirosław Krzyśko[*]

PROFESSOR MAREK FISZ (1910–1963)
ON THE CENTENARY OF HIS BIRTH

Marek Fisz was born in Szydłowiec on 15 January 1910, into a Jewish family. His mother Sura *née* Rozenbaum and his father Kojfman Fisz lived in Ostrowiec Świętokrzyski. His father was a private clerk (among other posts, he worked as a writer in the local mill). Marek Fisz was originally given the name Mojżesz (Moses) – this was changed to Marek on 19 July 1950 by decision of the Presidium of the National Council for Warsaw West District. His childhood and youth are shrouded in mystery. It is known only that in May 1934 he obtained his school-leaving certificate as an external student. In the curriculum vitae accompanying his application for the right to pursue a doctoral degree, he wrote that he had begun his course of high-school studies at the age of 22. In the autumn of 1934 he began studying mathematics at the Faculty of Mathematics and Natural Science of Warsaw University. During the period of his studies, in 1936–39, he worked as a mathematics teacher in a school for adults run by a Tenants' Mutual Help Association at the Warsaw Housing Cooperative in the city's Żoliborz district. He wrote his master's dissertation, entitled "Conformal Transformations of Simply Connected and Biconnected Spaces", under the supervision of Professor Stanisław Saks. Passing his examination on 28 June 1939 with a good grade, he obtained the title of Master of Philosophy in Mathematics.

He spent the whole period of the Second World War in the Soviet Union. On 29 January 1944 he married Olga Gukov. Their only son, Alexander, was born on 24 September 1946.

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In 1946 Marek Fisz returned to Poland, and worked for a year as a tutor at a children's home in Otwock. From autumn 1947 until the end of September 1951 he worked as an "academic employee" at the Central Statistical Office in Warsaw. It should be noted that his first contact with academic work in mathematics came when he was over 37 years old. His duties there included directing the planning and execution of the first post-war national census, which aimed to reflect the state of affairs at midnight between 2 and 3 December 1950.

On 20 May 1950, Marek Fisz applied to the Council of the Faculty of Mathematics, Physics and Chemistry of Wrocław University and Polytechnic "to accept my paper 'Quality Control of Mass Production by Variables' as a doctoral thesis and, if found to be sufficient, to admit me to the examination for the degree of Doctor of Philosophy in Mathematics (additional subject: theoretical mechanics)." Marek Fisz passed his doctoral examination on 19 December 1950, in front of a committee chaired by Professor Jan Nikliborc and also composed of Professors Hugo Steinhaus, Edward Marczewski and Władysław Ślebodziński. The supervisor for his doctoral thesis 'Quality Control of Mass Production by Variables", published in the journal *Studia i Prace Statystyczne*, vol. 2 (1950), pp. 123–160, was Professor Hugo Steinhaus. He took his doctorate on 23 June 1951 in the Senate Hall of Wrocław University. Starting from June 1950 he collaborated with the Mathematical Statistics Department at the State Mathematical Institute in Warsaw, and in October 1951 he became an employee of that Institute. From the 1951/52 academic year he also began giving lectures and seminars for the Faculty of Mathematics, Physics and Chemistry at Warsaw University. On 1 April 1954 he became a permanent employee of that faculty, when the higher education minister appointed him head of its Mathematical Statistics Department. A resolution of the Central Qualifications Committee for Academic Employees dated 30 June 1954 awarded Dr Marek Fisz the academic title of *docent*. On 28 March 1957 another resolution of the same committee gave him the title of associate professor. At a meeting on 20 March 1957, the University Studies Section of the Central Higher Education Council appointed him to the Mathematical Experts Team. On 15 March 1958 he was appointed head of the Mathematical Statistics Department at the Mathematical Institute of the Polish Academy of Sciences (PAN) in Warsaw.

He attended the first Congress of Polish Science, held in Warsaw between 29 June and 2 July 1951, which brought together around 1800 academics from all over Poland, and at which the Polish Academy of Sciences was founded. From 1949 onwards he was a member of the Polish Mathematical Society, and in 1953–55 he served as treasurer to the Society's central management board. He attended an organizational meeting of the Biometrics Section of the Nicolas Copernicus Polish Natural Scientists' Society, which took place on 19–21 February 1959 at the PAN Mathematical Institute in Wrocław, also attended by

J. Czekanowski, B. Knaster, J. Łukaszewicz, W. Oktaba, M. Olekiewicz, J. Perkal, H. Steinhaus, S. Zubrzycki and others. At the start of 1961 that Section was transformed into the Polish Biometrical Society, whose first president was Julian Perkal.

Among the meetings at which Professor Marek Fisz gave papers were:
- All-Poland Mathematicians' Congress, 1953
- Probability conference in Berlin, 1954
- Conference on stochastic processes in Wrocław, 1954
- Probability Conference in Leningrad, 1955
- Fourth Berkeley Symposium, 1960
- Annual Meeting of the Institute of Mathematical Statistics in Seattle, 1961

In 1955 Marek Fisz spent three months at Moscow University, and in spring 1957 he lectured at the University of Beijing.

He made continual attempts to be allowed to settle in Israel, but failed to gain the required permission from the Polish authorities.

In 1960 he left on a one-year academic visit to the United States, after which he never returned to Poland. He held posts at the University of Washington in Seattle, Stanford University, Columbia University and New York University.

Marek Fisz died on 4 November 1963 at the Metropolitan Hospital of New York City, at just over 53 years of age. It is notable that no Polish academic journal printed even a single sentence recording his death.

In his short 16-year career Marek Fisz obtained many significant results. His first works, including his doctoral thesis [4], concerned sampling methods and production quality control ([1], [2], [3], [5], [6], [14], [18]). A further set of works relate to distributions of limiting functions of discrete random variables, with particular focus on the Poisson and multinomial distributions ([7], [8], [9], [11], [17], [19], [20], [20], [21]). The modern nature of his research was evident in a series of his papers published in 1957–58 ([25], [26], [27], [32]) relating to limiting distributions of non-parametric statistics of Kolmogorov-Smirnov type. In these papers he made use of a 1956 result of Prokhorov on weak convergence of measures to multinomial empirical processes. Even today these results are fully applicable in mathematical statistics. These papers were written during his visits to Moscow and Beijing. Marek Fisz also devoted a significant amount of attention to researching the properties of sampling functions of stochastic processes. In his paper [22] he gave conditions expressed in terms of absolute probabilities at which almost all process sampling functions are jump functions with a finite expected number of discontinuities. He significant generalized these results in his paper [39], which he presented at the Fourth Berkeley Symposium in 1960. On 16 June 1961 in Seattle, Washington, Professor Marek Fisz gave a special invited paper [40] at the Annual Meeting of the Institute of Mathematical Statistics. He spoke on infinitely divisible distributions, a subject to which he

remained devoted until his death (e.g. [42], [43], [44], [45]). Pyke (1967) wrote: "This excellent expository address [40], together with its extensive bibliography of 104 references, will continue to be very useful for many years to come."

The best known contribution of Professor Marek Fisz to the theory of probability and mathematical statistics is his textbook *Rachunek prawdopodobieństwa i statystyka matematyczna* (Probability Theory and Mathematical Statistics), whose first edition, of 374 pages, was published in 1954. He had begun working on the book in 1950, before he had obtained his doctorate. The textbook proved extremely popular, all copies selling out within a few months. In 1958 a second edition was published by the State Academic Publishing House (PWN), corrected and expanded to 530 pages, as Volume 18 of the Mathematical Library series. For many years Fisz's book set the standards for the teaching of probability and mathematical statistics. Its third edition, in English, was published by Wiley in 1963. It was translated from Polish by Professor Robert Bartoszyński. (It should be mentioned in passing that Robert Bartoszyński's supervisor for his doctoral thesis "On Weak Convergence of Measures", defended on 23 January 1960 at the PAN Institute of Mathematics in Warsaw, was Professor Marek Fisz. In turn Bartoszyński was one of the reviewers of the habilitation and professorship theses of the present author.) The third edition of Marek Fisz's textbook in Polish, published by PWN, did not appear until 1967, after the author's death. The delay was a result of the turbulent events of Fisz's life. This edition contained 694 pages. Pyke (1967) wrote of the book: "This text was written for either senior undergraduate or first-year graduate students. It covers both probability theory and statistical inference, and includes introductions to stochastic processes and sequential analysis in addition to the more usual topics. There is a large collection of 317 problems and complements in the book, which, together with its considerable historical and bibliographical information, make it an excellent reference book as well as a textbook." Apart from four editions in Polish, the book has appeared in three editions in English (one in India and two in the US) and 11 editions in German.

In his comparatively short career Professor Marek Fisz contributed a great deal to the development and teaching both of probability theory and of mathematical statistics.

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