A Conversation with Z. William Birnbaum

Albert W. Marshall

Abstract. Z. William Birnbaum was born the son of Isaac and Lina Birnbaum on October 18, 1903 in Lwów (also called Lemberg in German), Austria-Hungary. He received a Master of Law degree in 1925 and a Ph.D. in mathematics in 1929 from the University of Lwów, Poland (Lwów, pronounced "Lvoov," became part of Poland after World War I, and then part of Soviet Ukraine after World War II). After two years in Göttingen, Germany, where he did postdoctoral research and obtained an Actuarial Certificate, he became first an actuary for the Phoenix Life Insurance Company in Vienna, and then chief actuary for the Feniks Life Insurance company in Lwów. He emigrated to the United States in 1937 and became a Research Assistant in Biometrics at New York University. In 1939 he was appointed an Assistant Professor of Mathematics at the University of Washington. Apart from visiting professorships at Stanford University, University of Rome, Hebrew University of Jerusalem, and at the University of Paris, he remained at the University of Washington until his retirement as Professor Emeritus of Statistics and Mathematics in 1974. He served as Editor of *The Annals of Mathematical Statistics* from 1967 to 1970, and as President of the Institute of Mathematical Statistics in 1963–64. In 1983, he was awarded the Wilks Medal by the American Statistical Association.

The following conversation took place in Seattle on December 2, 1989.

STUDYING IN POLAND

Marshall: Bill, how did you first become interested in mathematics and the applications of mathematics?

Birnbaum: There is a widely spread opinion that some people are very gifted for mathematics, some are totally nongifted, and ôf course everything in between. I am thoroughly convinced from experience that many people who are considered nongifted for mathematics are rather the results of nongifted or possibly unqualified teachers of mathematics. Each of us has had experience with children who came home from school and complained bitterly about how they were taught mathematics and we have little doubt it was very poor teaching, that the teacher himself disliked mathematics and conveyed his dislike to his pupils and that was the result. And that may also go back to the way teachers are being prepared for their profession. They

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quite often are required to take a very minimal amount of courses in the subject matter and simply don't know enough to become interested in the subject, in this case, mathematics, and very often don't know enough to be qualified to teach.

I was very fortunate to have in the last two years at the gymnasium a mathematics teacher who was very enthusiastic. He was, if I remember correctly, a doctoral candidate in mathematics and he deviated from the conventional curriculum to a considerable extent. In addition to the usual program in analytic geometry and trigonometry which he taught very well, he included reports on set theory and topology—fields which were in their beginning at that time. That time was about 1920 and it should be noted that set theory started only in the very early 1900s. The concept of the Lebesgue measure was, I think, the order of magnitude 1904. So those are fields that were very young, and that young mathematics teacher in the gymnasium was all intoxicated by the romantic quality of set theory and topology. The daily drill in using logarithm tables to solve problems in trigonometry was carried out quite well, but it didn't have any of the flavor, any of the adventure, any of the colorful perspectives that that man, that teacher, was able to show us by telling those fairy tales about the different kinds of infinity, about a geometry in which the objects could be bent