José Tiago de Oliveira

José Tiago da Fonseca Oliveira was an eminent statistician and university professor. His name is already registered in the history of the 20th century Statistics due to his important contributions to the development of the theory of extreme values. As a Portuguese scientist his name will remain forever associated to the recognition of Statistics as a science in Portugal.

Tiago de Oliveira was born in Lourenço Marques, Mozambique, on the 22th of December 1928. A very interesting account of his times in Mozambique, where he lived until 1945, is given by Eugénio Lisboa, one of his friends from childhood, in *Tiago de Oliveira, O Homem e a Obra*, 1993, eds. Colibri.

Tiago de Oliveira finished his high school education in 1945. Because of his outstanding performance he was awarded, that year, the prize for the best student of Liceu Lourenço Marques. He also received a grant from Caixa Económica Postal which helped him to leave Mozambique and pursue his studies in Porto. His intention was to study Naval Engineering at the University of Porto. However, during his trip back to the Continent he stopped in Lobito, Angola. A visit to a local bookshop led him to buy a book on Statistics, written in Spanish. It was then, according to his son José Carlos Tiago de Oliveira (in *Tiago de Oliveira, O Homem e a Obra*, 1993, eds. Colibri), that he found is vocation. Instead of Naval Engineering he studied Mathematics and finished his degree in 1949. In 1950 he got a degree in Geographic Engineering, and in 1951 he received the Rotary Club Prize for the best student of the Faculty of Sciences.

Tiago de Oliveira's political views against Salazar's regime were well known. As a consequence it was not easy for him to get a job despite his achievements as a student. Twice he was invited for the place of assistant at the Faculty of Sciences in Porto, but twice he saw his appointment denied for political reasons. He moved to Lisbon in 1951 and got a job at the Institute of Marine Biology as a research assistant in biometry and biostatistics. By the time he left the Institute in 1953 to become an assistant lecturer at the Faculty of Sciences at the University of Lisbon, he had already published seven papers in Statistics. This was only the beginning of an extraordinary career in the area of probability and statistics.

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He entered the Faculty of Sciences as an assistant, thanks to the influence of Prof. António Almeida e Costa, a true scientist and a person with vision, who knew how to separate science from politics. Tiago de Oliveira studied under his supervision and in 1957 he finished his doctoral thesis in the area of Algebra with a dissertation entitled "Residuais de Sistemas e Radicais de Anéis". However, his interest in Statistics had not died out and it was with a thesis on "Estatística de Densidades; resultados Assintóticos" that he applied in 1965 for the position of Professor Extraordinário. He studied probability and statistics as an autodidact. His "bible", as he used to call it, was the work of Kendall and Stuart. In 1967, when he became a full professor, he had already 63 publications, some of them in well-known periodicals such as *Annals of Mathematical Statistics* and *Bulletin of the International Statistical Institute*, among others.

It is not clear how Tiago de Oliveira got interested in the theory of extreme values, his main area of research. His first publication in this area, "Extremal Distributions", dates back to 1959. In 1960 he went for the first time to Columbia University, as Senior Research Assistant, and there he had the opportunity to work

with the most prominent scientist in the area, E. J. Gumbel. This collaboration marked the beginning of a very fruitful research career for Tiago de Oliveira. In 1961 he published some extensions of Gumbel's results in the theory of univariate extremes, to the bivariate and multivariate cases. His pioneer work was followed by many other important contributions and new developments in the area of multivariate extremes. He also developed several methods for the estimation of the parameters of Gumbel, Fréchet and Weibull models and for the estimation of high quantiles. Together with S. B. Littauer he worked on prediction of extremal models. He also had important contributions in statistical decision problems related to the Weibull distribution, and in the study of univariate extremes in dependent sequences. Another pioneer work of Tiago de Oliveira was on the statistical choice of univariate extremal models. In a paper published in *Statistical Distributions in Scientific Work*, vol. 6, in 1981, he developed locally most powerful (LMP) tests for discrimination between extremal models. This problem was approached from a computational point of view in a joint paper with A. Frasen, and with M. I. Gomes he studied exact and asymptotic behaviour of alternative statistical tests to the same problem.

Although Tiago de Oliveira is well known due to his work in Extreme Value Theory, his research went well beyond this particular area. He had important contributions in many other themes such as Demography, Quality Control, Outliers, Mixtures, Non-parametric Statistics, Risk Theory, Actuarial Mathematics, just to mention a few.

Tiago de Oliveira was also a man of broad interests, both scientific and cultural. He had a deep understanding of history and Portuguese political culture. He wrote several historical, philosophical and didactical articles. Particularly interesting are his views on the development of mathematics in Portugal from the XVI to the XIX centuries (in *Collected Works of J. Tiago de Oliveira*, vol. II). Overall, he published around 160 scientific papers, 9 books, 22 historical and philosophical papers, 18 didactic and expository articles, and 21 other papers on miscellaneous subjects. At the time of his death, on the 23th of June 1992, he had six papers and four more books in preparation. His book *Statistical Analysis of Extremes* was posthumously published due to the efforts of his son, José Carlos Tiago de Oliveira, who also compiled all his works in a six-volume series entitled *Collected Works of J. Tiago de Oliveira* and published by Pendor.

Tiago de Oliveira was not just a great scientist. He was a man with strong views and strong convictions who would fight for his own ideals. He fought for the autonomy of the area of Applied Mathematics in the Faculty of Sciences at the University of Lisbon, and later for the autonomy of Statistics and Operations Research, founding in 1981 a Department of Statistics, Operations Research and Computation, today the Department of Statistics and Operations Research of the FCUL. He was also a founder of the Center of Statistics and Applications of the University of Lisbon and the Portuguese Statistical Society. Due to his trust in the younger generations and constant encouragement he brought, in the late seventies and early eighties, many people to the areas of Statistics, Operations Research and Computation. The "Portuguese Statistical School of Extremes", which today is internationally respected, owes its existence to him. Later, when in 1987 he left the University of Lisbon and went to the Faculty of Sciences and Technology of the New University of Lisbon, he again put all his efforts in bringing up a new group of people working in his areas of choice. In that Faculty he founded the Laboratory of Statistics and Actuarial Mathematics. He also served the scientific community as Secretary of State for scientific research from 1976 to 1978.

Tiago de Oliveira had been a Fellow of the Royal Statistical Society since 1952. However, in 1987, in recognition of his merit and important contributions to the area of Statistics, he was awarded the title of Honorary Fellow of the Royal Statistical Society. He was also a member of the International Statistical Institute, a member of the Bernoulli Society for Mathematical Statistics, a Fellow of the Institute of Mathematical Statistics, a full member of the Academia das Ciências de Lisboa, a corresponding member of the Real Academia de las Ciencias Exactas, Físicas y Naturales de Madrid, among many other scientific associations.

During his life he was awarded three prizes in recognition of his outstanding scientific work. The A. Malheiros Prize for Mathematical Sciences of the Academy of Sciences of Lisbon, in 1969; the Calouste Gulbenkian Foundation Prize for Sciences and Technology in 1984; the Science Prize of the Oriente Foundation in 1992.

The sphere of activity of Tiago de Oliveira was not limited to the academic level. He was deeply interested and involved in the problems of society in general and of the Portuguese society in particular. As such he was a founding member of the Socialist party, a member of the Union of Teachers of Greater Lisbon (Sindicato dos Professores da Grande Lisboa), a member of the Association of Statisticians for Human Rights, a member of the Portuguese Association of Human Rights, and a member of the Portuguese Section of the International Amnesty.

For the outstanding scientific legacy Tiago de Oliveira left behind, he deserves a very special place among the

Great Portuguese Mathematicians of the 20th Century.

[To write this short sketch I based myself on the following documents:

- *J. Tiago de Oliveira: O Homem e a Obra*, edições Colibri, 1993 - a book organized by José Carlos Tiago de Oliveira, and published to commemorate the first aniversary of Tiago de Oliveira´s death.
- Special edition of the *Boletim Informativo da Sociedade Portuguesa de Estatística* in honour of Tiago de Oliveira, 22 December 1998. This edition was specially organized to commemorate the day of his 70th anniversary. It contains testimonies of his children (José Carlos and Luisa), many of his friends, colleagues and former students.
- The text "José Tiago de Oliveira - Um estatístico eminente" by Margarida Mendes Leal contained in the book *Memórias de Professores Cientistas*, published in 2001 to commemorate the 90th anniversary of the Faculty of Sciences of Lisbon.
- *Collected Works of J. Tiago de Oliveira*, vol II, 1995; compiled by José Carlos Tiago de Oliveira, edições Pendor.]

Maria Antónia Amaral Turkman

Errata

Na versão impressa do boletim 13 de Dezembro de 2002, o artigo *Warp Drive with Zero Expansion* de José Natário, continha erros em várias expressões. A razão desses erros é técnica (de transferência de ficheiros) da responsabilidade dos editores do boletim. A versão electrónica (disponível em http://www.cim.pt/cim.www/cimE/boletim.html) encontra-se corrigida. Pelo facto pedimos desculpa ao autor e aos leitores.

Os editores

Editors: Jorge Buescu (jbuescu@math.ist.utl.pt)
F. Miguel Dionísio (fmd@math.ist.utl.pt)
João Filipe Queiró (jfqueiro@mat.uc.pt).

Address: Departamento de Matemática, Universidade de Coimbra, 3000 Coimbra, Portugal.

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