JOHN M. TRURAN (IN MEMORIAM)[1]

We recently received the sad news about John Truran, who had a major stroke on Monday 10th December but despite outstanding medical care and support died at 9 a.m. on Sunday 16th.

In his recent thesis, John describes his personal experience as a student, a teacher and a researcher. He was born in December 10th, 1940. His primary schooling was at Westbourne Park Primary School, a government school near his home, in Adelaide, where he was advised to study mathematics. From 1959 to 1962 he studied Pure and Applied Mathematics and Education at the University of Adelaide. He graduated as a Bachelor of Arts (Pure & Applied Mathematics) and became interested in education on the influence of L. F. Neal and Z. P. Dienes. John completed at the University of Adelaide his Diploma in Education.

From 1963 to 1964 he taught junior mathematics and many other subjects at Unley High School, a prestigious school in Adelaide. In early 1965 he was appointed to teach mathematics at Edmonton County Grammar School, North London, and after two terms he taught from 1965 to 1968 at Abingdon School, Berkshier, a pilot school in the School Mathematics Projects. He was invited to become an author in the project and was involved in the writing and trailing of the books. At Abingdom he taught several courses on statistics with special emphasis on biological application, one of his fields of interest.

From 1969 to 1973 he taught senior mathematics classes at Melbourne Church of England Grammar School a school, which put great emphasis in professional development for teachers. The way in which probability was taught worried him and his revised ideas on the topic formed later the basis for his Master's dissertations. From 1974 he worked mainly in Adelaide as a freelance teacher and tutor of mathematics, in different schools and Universities, He also taught mathematics education in the Schools and Departments of three Universities. In the period 1988–2000 he was Part-time lecturer in Travel, Workers' Educational Association of South Australia.

In 1993 he received a Master's degree for his thesis *The development of children's understanding of probability*, which contained a mathematical analysis of some aspects of probability, a summary of current research and an investigation on children's understanding of probabilistic ideas. He argued that much current pedagogic practice was often not in harmony with either mathematical precision or research findings. After this he worked for about nine years to produce his Doctoral thesis, which was recently finished (we are reproducing the summary below). As John's states in the first chapter, this thesis is really the second volume of a single piece of work. This thesis was conceived with two main objectives. The first was to analyse the teaching of probability within a wide theoretical framework, within the specific context of South Australian schools. The second was to use this analysis to propose and test effective ways of improving the teaching and assessment of the topic.

Over 30 years John and his wife Kath, who became his main collaborator, have actively been engaged in mathematics and stochastic education, in particular in the teaching and understanding of probability in primary school levels. John was also interested in the inference, independence, correlation, variance, history of statistics education, mathematics, cultural factors and curricular development and in a number of topics in mathematics, science, history and other topics. He attended and presented refereed and invited papers in many statistics and mathematics education conferences, including PME (Psychology of Mathematics Education), ICME (International Congress on Mathematics Education) MERGA (Mathematics Education Research Group of Australasia), Australian Association of Mathematics Teachers, Mathematical Association of Victoria, ICOTS (International Conferences on the Teaching Statistics), and AusICOTS.

He produced a huge number of papers in stochastics, including his Master's thesis and his PhD thesis, which is an impressive and careful work, where his wide experience and culture are reflected. Another main contribution is his help in organising different events, such as several sessions at MERGA conferences, the Stochastic Working Group at PME and the Session 8.1 Cultural/Historical factors at ICOTS 5, Singapore, 1998.

John was conscious of the current limitations in our understanding of statistics education and of the need for further research. A particular problem for him was the diversity in the field, which causes that research results are widely spread in different journals and conference proceedings and many of them have not had adequate diffusion. This lead him to actively engage in the promotion and diffusion of statistics education research in different fora: In 1996 he re-started the PME Stochastic Working Group that had been created in 1994 by

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International Association for Statistical Education

Katherine Hart and had being discontinued after 1994. This group was transformed into the PME Stochastics Working Group in 1997 with the specific aim to link researchers in statistical education coming from diverse areas such as Psychology, Education and Statistics. He has continued leading this group until his death and has maintained an informal network between PME Conferences by means of an electronically distributed newsletter. A main concern of John was to bring together interested people from all language groups, as he was very sensible to linguistic difficulties. Being able to understand French, Spanish and German, he did his best to provide translation facilities at the PME stochastic working group as appropriate. A total of 28 newsletters, which also helped to diffuse IASE works and in general statistics education conferences and paper are located at the PME web server at ujaen.es/huesped/stochastics/. Last newsletter was produced in May 2001.

John became Associated Editor of the *Newsletter of the International Study Group for Research on Learning Probability and Statistics* in 1998 and continued this work until we transformed this newsletter in the *Statistics Education Research Newsletter*, where he still was Associated Editor for 2000 and 2001. In this role he helped to prepare the editorial notes, provided many reports for the two newsletters, including conference reports, notes about the work of some colleagues, and summaries of publications. A main contribution was the edition of the various specific bibliographies that were published in these newsletters, as well as translating or improving English in documents sent by non-English speakers.

Other positions of educational and community leadership included Secretary of the Environmental Studies Association of Victoria (1972-73), Member of the Committee of Adelaide Consortium for Mathematics Education and editor of its Newsletter (1990-97), Australian College of Education Treasurer (1995–1997), Member of the Editorial Panel, *Australian Mathematics Teacher (1991-97),* St Mark's College Foundation, University of Adelaide Board Member (1994–1998), Post-Graduate Students' Representative on the Board of Graduate Studies, University of Adelaide (1995-96), Representative of the South Australian Ornithological Association on the Exotic Birds Advisory Committee of the Animal and Plant Control Commission of the South Australian Government (1995-99), and co-editor, *Proceedings of Conference of Mathematics Education Research Group of Australasia, Adelaide,* July, 1999. He also acted as a referee for a number of education journals, books and conferences.

John was consultant on mathematics education issues to the Minister for Education, New South Wales in 1997, received a research grant from Faculty of Economics, University of Adelaide to examine students' understanding of statistical ideas and ways of improving the teaching of first year statistics (with Anne Arnold) in 1997-98, was research assistant to Peter Brinkworth, Flinders University of South Australia, to investigate secondary students' views of mathematics in 1997 and to Professor Kath Hart, University of Nottingham in 2001.

At the moment he died John was helping as an Associate Editor in the planning of the *Statistics Education Research Journal*, which we are now starting and this issue still includes some of his reports. The editors and the IASE Executive Committee are indebted to John for all his work and will try to continue his labour on behalf statistics education research.

It is difficult to summarise in just a few paragraphs John's contribution to statistics education. We are writing these lines as a modest homage to the colleague that, in spite of the physical distance has closely and continuously worked with us in the past years. Throughout this time we were able to perceive his passion for work, his brilliant ideas, critical attitude, vast culture and knowledge.

At a personal level, we shared scarce, but valuable moments that we will remember for life, in which we knew of his sense of humour, kindness, interest toward other people's life and work. Many IASE members sent us their words of condolence; all of us are going to miss the colleague and the friend.

THE TEACHING AND LEARNING OF PROBABILITY, WITH SPECIAL REFERENCE TO SOUTH AUSTRALIAN SCHOOLS FROM 1959-1994

JOHN M. TRURAN (2001).
PhD. Thesis: University of Adelaide, South Australia.
Supervisors: Dr Paul Scott and Miriam Brice.

The teaching of probability in schools provides a good opportunity for examining how a new topic is integrated into a school curriculum. Furthermore, because probabilistic thinking is quite different from the deterministic thinking traditionally found in mathematics classrooms, such an examination is particularly able to highlight significant forces operating within educational practice.

After six chapters which describe relevant aspects of the philosophical, cultural, and intellectual environment within which probability has been taught, a "Broad-Spectrum Ecological Model" is developed to examine the forces which operate on a school system. The Model sees school systems and their various participants as operating according to general ecological principles, and interprets actions as responses to situations in ways which minimise energy expenditure and maximise chances of survival. The Model posits three principal forces-Physical, Social and Intellectual-as providing an adequate structure.

The value of the Model as an interpretative framework is then assessed by examining three separate aspects of the teaching of probability. The first is a general survey of the history of the teaching of the topic from 1959 to 1994, paying particular attention to South Australia, but making some comparisons with other countries and other states of Australia. The second examines in detail attempts which have been made throughout the world to assess the understanding of probabilistic ideas. The third addresses the influence on classroom practice of research into the teaching and learning of probabilistic ideas.

In all three situations the Model is shown to be a helpful way of interpreting the data, but to need some refinements. This involves the uniting of the Social and Physical forces, the division of the Intellectual force into Mathematics and Mathematics Education forces, and the addition of Pedagogical and Charismatic forces. A diagrammatic form of the Model is constructed which provides a way of indicating the relative strengths of these forces.

The initial form is used throughout the thesis for interpreting the events described. The revised form is then defined and assessed, particularly against alternative explanations of the events described, and also used for drawing some comparisons with medical education. The Model appears to be effective in highlighting uneven forces and in predicting outcomes which are likely to arise from such asymmetries, and this potential predictive power is assessed for one small case study. All Models have limitations, but this one seems to explain far more than the other models used for mathematics curriculum development in Australia which have tended to see our practice as an imitation of that in other countries.

JOHN M. TRURAN. SELECTED REFERENCES

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