

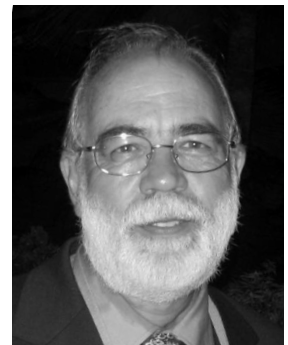
Dedication of this Issue

To Theodor John Stewart, a pioneer of operations research in South Africa, on the occasion of his 70th birthday

“I believe that there is an important, even critical, role for decision analysis and operations research in addressing many planning and development problems in South Africa, but we lack the people to do it.” — Theodor J Stewart (2005)

1 Biography

Theodor John Stewart was born in Cape Town on 16th September 1943. He obtained a bachelor’s degree in chemical engineering from the *University of Cape Town* (UCT) in December 1963. After embarking on a career as chemical engineer in 1964 he continued his tertiary education on a part-time basis, obtaining an honours degree in *operations research* (OR) from the University of South Africa in May 1972 and a master’s degree in OR from the same institution in April 1973 on a dissertation entitled *A production scheduling algorithm for the multi-product, multi-facility situation with capacity constraints*. In May 1976 he obtained his PhD in mathematical statistics, also from the University of South Africa, on a thesis entitled *Bayes optimal experimental design for determination of a response surface maximum*.



After joining the *National Research Institute for Mathematical Sciences* (NRIMS) at the *Council for Scientific and Industrial Research* (CSIR) in 1971 he moved to Cape Town in 1984, taking up a position as Professor of Statistical Sciences at UCT where he has spent the majority of his working life. He is currently Emeritus Professor and Senior Research Scholar in the Department of Statistical Sciences at UCT as well as part-time Professor at Manchester Business School in the United Kingdom. He is a Fellow and Honorary Life Member of the *Operations Research Society of South Africa* (ORSSA), a Fellow of the *South African Statistical Association* (SASA), a Member of The Southern African Institute for Industrial Engineers, a member of the *Institute for Operations Research and the Management Sciences* (INFORMS), a Member of the American Statistical Association and a Member of the (British) Operational Research Society. In addition he is also a retired Professional Engineer (South Africa).

Theo is married to Sheena (née Grant, also from Cape Town) and has four children, as well as six grand children.

2 Early career and work at the CSIR

Theo Stewart started his career as chemical engineer in the mineral processing plants and laboratories of Corner House Group in Johannesburg in 1964. In 1967 he moved to the

Sentrachem Group, also in Johannesburg, where he advanced to Plant Superintendent: Formulations at Klipfontein Organic Products in Chloorkop. In 1971 he joined the influential NRIMS group at the CSIR in Pretoria. Most of the NRIMS staff who were involved in OR during the 1960s had moved on to careers in industry and at universities. One of Theo's first tasks was to rebuild the OR group to an efficient unit. He stayed with the group for thirteen years, rising to the position of Director and Head of OR and Statistics.

3 Academic affiliations

During the twenty-five year period 1984–2008 Theo held a position as Professor of Statistical Sciences at UCT, twice serving as Head of Department (in 1989 and again during 1994–1999). In addition to his current position since 2009 as Emeritus Professor at UCT he also holds a 20% part-time position as Professor in the Business School of Manchester University in the United Kingdom during the period 2007–2014.

Theo has also held a number of visiting professor positions, including Visiting Professor in the School of Computer Studies at the University of Leeds in the United Kingdom during the period July–December 1993, Visiting Professor in the Faculty of Information Technology and Systems at the Technical University Delft in the Netherlands during the period September–December 1997, Visiting Professor in the Institute for Environmental Studies, Free University of Amsterdam in the Netherlands during the period April–June 2002, and Visiting Professor in the Business School of Leeds University in the United Kingdom during the period July–October 2002.

4 Academic scholarship

He established himself as a reputable scholar and international expert in the following research areas:

- *Multiple criteria decision analysis* (MCDA) and its applications in energy, fisheries, water, natural resources and land use planning,
- Integration of MCDA with scenario planning and data envelopment analysis, and
- Decision theory and Bayesian statistics.

He is a prolific author in the research areas mentioned above, as is evident from his extensive bibliography (which may be found at the end of this dedication). He has published in all the major international journals on OR. The many papers of which he is the sole author demonstrate the extent of his innovative ideas. He has also enjoyed collaboration with colleagues and past students, as shown by the wide variety of the papers of which he is a co-author. In addition to his publications Theo has also served on the editorial boards of many journals over the years. These editorial duties include:

- Editor-in-Chief of the Journal of Multi-Criteria Decision Analysis (published by Wiley) since 2009,
- Member of the Editorial Board of International Transactions in Operational Research (published by Pergamon) in the capacities of African Editor and of Special

Guest Editor for papers emanating from the 15th Triennial Conference of the *International Federation of Operational Research Societies* (IFORS) held in Beijing, China in August 1999,

- (Founding) Editor (1985–1989) and subsequently Associate Editor (since 1990) of the journal ORiON (published by ORSSA),
- Member of the International Advisory Board of the Journal of the Operational Research Society (published by Macmillan),
- Member of the Editorial Board of The Journal of Financial Decision Making (published in Greece),
- Member of the Editorial Board of Operational Research — An International Journal (published by Springer),
- Member of the Editorial Advisory Board of the International Journal of Strategic Decision Sciences, and
- until 2009 Associate Editor of Omega: The International Journal of Management Science (published by Pergamon).

5 Post-graduate student supervision

Over the years Theo has supervised many post-graduate students at UCT and at the University of the Witwatersrand, some of whom have gone on to play significant roles in ORSSA and elsewhere in the South African OR landscape. His past post-graduate students include a large number of honours and masters students, as well as the following doctoral students:

1. JP STRUMPFER (1982): *Searching for an object which reacts to search*
2. KC JORDI (1985): *Interactive multiple objective linear programming*
3. PMQ LAY(1986): *Stratifying and ranking the information systems development portfolio*
4. J MILLER (1989): *The effectiveness of computer-based information systems: Definition and measurement*
5. R VAN DEN HONERT (1995): *Game-theoretic models for mergers and acquisitions*
6. DINGFEI LIU (2001): *An object-oriented approach to structuring multi-criteria decision support in natural resource management problems*
7. AR JOUBERT (2003): *Multi-attribute value measurement and economic paradigms in environmental decision making*
8. IN DURBACH (2011): *Simplified models for multi-criteria decision analysis under uncertainty*
9. R TUYIRAGIZE (2011): *Multi-objective optimization techniques in electricity generation planning*

6 Professional activities

Theo has served on the Executive of IFORS in various capacities, including as Vice-President (2004-2006), as Chair of the Developing Countries Committee (since 2004) and

as Chairman of the International Programme Committee for the 14th Triennial IFORS Conference held in Vancouver, Canada in July 1996. He was coordinator of the *European Special Interest Group on Multicriteria Analysis* (ESIGMA) from 1996 to 2005, and has been a Board Member (2012–2014) in the MCDA Section of INFORMS. He has also served on the management team of the International Society on Multiple Criteria Decision Making in the capacities of President (2004–2008) and of Chairman of the Organizing Committee for the 13th International Conference on Multiple Criteria Decision Making, held in Cape Town, South Africa in January 1997. Theo was a Member of the Peer Review College of the Engineering and Physical Sciences Research Council of the United Kingdom from 2006 to 2009 and was President of SASA during the year 1988/89.

7 Involvement with ORSSA

Theo Stewart is a long-standing member and stalwart of ORSSA. He was elected Fellow of the Society in 2005 and elevated to honorary life member of ORSSA in 2012 — an honour bestowed on only seven individuals since the founding of the Society in 1969. He has served ORSSA in a variety of capacities since the late 1970s, including as Chairperson of its Pretoria and Western Cape Chapters, as Founding Editor of the Society's flagship publication and peer-reviewed journal, ORiON, as President of the Society in 1978 and now as EURO Representative on the Executive Committee of ORSSA.

8 Other accolades

In addition to being an A-rated researcher (a rating received by the South African National Research Foundation), Theo has won the prestigious Tom Rozwadowski Medal for the best peer-reviewed publication by a member of ORSSA on a record five occasions: in 1978 (with HW Ittmann), in 1981, in 1984, in 1995 and in 1996 (with L Scott). He has been elected Member of the Academy of Science of South Africa, Fellow of the Royal Society of South Africa, Fellow of UCT, and Fellow and Honorary Member of SASA. He also received the prestigious Gold Medal of the International Society on Multiple Criteria Decision Making in 2008 and a Category I Recognition Award from ORSSA (for outstanding contributions to the Society specifically and to the profession of OR in general) in 2012.

9 Dedication

It is indeed a pleasure and an honour to dedicate this issue of ORiON to Theodor John Stewart on the occasion of his 70th birthday in celebration of a lifetime of influential scholarship, true dedication, pursuit of excellence and fundamental contributions to the research fields of decision science and OR.

May you have a blessed, happy birthday, Theo, and may there be many more!

Gerhard Geldenhuys and Jan van Vuuren
June 2013

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