

Many happy returns, Jeffrey Joseph Hunter! Personal Glimpses for your 75th Birthday

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Jeffrey Joseph Hunter was born 75 years ago, 27 March 1941; Otahuhu, in a suburb of Auckland, New Zealand. His father was a local businessman (Hunter's Radio Ltd) and Jeff was given the opportunity to be educated at King's College over the years 1954–58. According to Wikipedia, Otahuhu was home to the country's first supermarket, and King's College is one of the largest boarding schools in New Zealand, being originally a boys-only school but now also admits girls in the sixth and seventh forms (years 12 and 13).

I first met Jeff in May 1985 in Auckland, and by then, Jeff was pretty fully-educated and after all the wild years was enjoying regular family life with his wife Hazel and children Michelle and Mark. The key to my first visit to New Zealand was my collaborator George P. H. Styan who was spending his sabbatical 1984–85 in Auckland. The University of Auckland organized the First Pacific Statistical Congress, 20–24 May 1985, *Proceedings* published in 1986. The Photograph 2 is taken at the reception of this conference. One evening during the conference time, Hazel and Jeff organized a cozy dinner party at their home in St Heliers, see Photograph 1. I still remember how heavy the rain (153 mm in one 24-hour interval) was that evening – when it rains in New Zealand it really rains.

The month of May 1985 was a starting point for my long-lasting delightful co-operation with the Kiwi friends: how could I have imagined that 25 years later on 20th of May 2010, my wife Soile and I would arrive at 6:55 AM by AY51 at the Beijing Capital Airport and meet 20 Kiwis arriving from Auckland at 7:20 AM by NZ87 and then hit the road for two weeks in China under the excellent leadership of Jeff! To Soile and me it all nicely resulted Honorary Citizenships of New Zealand.

Let me add one memorable thing: upon our arrival at Beijing, we had to kill some time before we could accommodate our exhausted bodies to our hotel and for that exercise Jeff had arranged us a visit to the Temple of Heaven. Believe me, it was a hot day. In the same scale hot as the lecture room in Ljubljana's International Workshops on Matrices and Statistics (IWMS) in June 2014 and the weather in Hainan Island in May 2015 – if you know what I mean ... and I'm not joking.

Returning back to George I would like to cite Jeff (2012) who in his article entitled "George P. H. Styan. A celebration of 75 years: A personal tribute" described his history with George as follows:



PHOTO 1. Margaret Scott, Ross Leadbetter, and Jeff at Château Hunter, St Heliers, Auckland, May 1985.



PHOTO 2. Jeff discussing with Ivor S. Francis; George P. H. Styan evaluating the wine, Chris Triggs pouring the wine, Terry Speed in the horizon; Auckland, May 1985.

“My association with George goes back to 1973 when I attended an Institute of Mathematical Statistics meeting at Ithaca College to hear George talk on some research on Markov chains that included reference to generalized inverses. This was of much interest to me as I had published a paper in 1969 identifying Kemeny and Snell’s fundamental matrix of Markov chains as a generalized inverse. Starting from that meeting our subsequent association has spanned the globe



PHOTO 3. St Heliers again, 17 April 2005. Clockwise: Hazel, Jarkko Isotalo (hardly visible), Alastair Scott, Soile P., Jeff, George P. H. Styan, Margaret Scott.

with George visiting the University of Auckland over the period July 1984 to June 1985 on a sabbatical leave to spend time primarily with George Seber and Alastair Scott. At that time I was a member of the Department of Mathematics and Statistics at the University of Auckland. I followed up his visit with me visiting McGill University for a month in May 1988 and again visiting McGill in June 2001 (when I was based at Massey University). Both of these latter visits occurred while I was on a sabbatical leave. George tried to discourage me from pursuing any further activity on generalised inverses but not all was known about their properties when associated with Markov chains so that I failed to take his advice!"

While we are now in old good times, let's go back a bit further. Ingram Olkin, the famous Stanford Professor, was coming, as a Keynote Speaker, to the IWMS meeting in Ljubljana, June 2014. While communicating with Ingram, Jeff was refreshing his memories from the University of North Carolina at Chapel Hill, where also Ingram had completed his dissertation (in 1951). Jeff cc'ed his email to me on 17 April 2014, and (with his kind permission) I copy some interesting reminiscences here:

"[writing to Ingram Olkin: ...] I did enjoy reading your comments about the North Carolina statisticians as I also received my PhD from UNC-Chapel Hill. I remember Hotelling (and in fact was given his personal copies of the Kendall and Stuart volumes at the time of his death when I was revisiting UNC in 1973 on a sabbatical leave). I also remember Alfred Brauer – he was a quiet charming man. R. C. Bose was still in the Department – I was at Chapel Hill 1964-68 – and I have a copy of the mimeographed notes that Bose prepared (they were used by Indra Chakravarti) where he introduced 'conditional



PHOTO 4. Excursion to Waiheke Island, Auckland, 30 March 2005.



PHOTO 5. Jeff and C. R. Rao; Auckland, 31 March 2005. (Eugene Seneta with a camera.) Ph: Harold V. Henderson.



PHOTO 6. Bhargavi and C. R. Rao, George P. H. Styan, Hans Joachim Werner, Shayle R. Searle; Auckland, 1 April 2005. Ph: Jeffrey J. Hunter.

inverses' in solving systems of linear equations before considering linear estimation with fixed effects and tests of linear hypotheses. It was in the course on 'Analysis of Variance with Applications to Experimental Design'. I also had a course from Wassily Hoeffding and I learnt my Statistical Theory in two demanding courses from Norman Lloyd Johnson. It was a great Department to study and work in. After my degree I stayed on for nine months as a Research Associate



PHOTO 7. Jeff celebrating the winning of the beer tasting competition in the IWMS, Dortmund, July 2003.



PHOTO 8. Jeff enjoying lobsters, conference banquet, SSC Meeting in St. John's, Newfoundland, Canada, June 2007.

and started applying my knowledge on what was then called ‘generalised inverses’ to problems in Markov chained and Markov renewal processes. I am still using those techniques today!”

As I mentioned earlier, in May 1985 I was hosted at the Château Hunter in St Heliers by Jeff and Hazel, but it’s fair to mention that 20 years later, 17 April 2005, the same happened around the Auckland’s IWMS meeting. Then I was happy not only to have Soile with me but also my PhD student Jarkko Isotalo. I still wonder if Jeff ever realized my utmost (though hopeless) eagerness to get the light flashing between Michelle and Jarkko: what a wonderful excuse to visit New Zealand (to check Jarkko’s research progress) if something everlasting would have started . . .

Jeff is an NBL, a natural-born-leader. I have had a pleasure to experience this not only when touring with him, for example, in China and South India, but also following closely his chairing the organizing committees of the IWMS in

- Auckland, 29 March–1 April 2005, *www*, Report in *Image* (2005),
- Shanghai, 5–8 June 2010, *www*, Report in *Image* (2010),
- Haikou City, Hainan Island, China, 25–28 May 2015, *www*, *Souvenir Booklet* (2015c), Report in *Image* (2015b),

and being an active member of the organizing committees of several other IWMSs, like the second IWMS held 4–5 December 1992 in Auckland, It was following Jeff’s visit with George P. H. Styan in Montreal in 2001 that he was persuaded to chair the Local Organizing Committee of the 14th IWMS

in Auckland in spring 2005. Jeff was able to get Professor C. Radhakrishna Rao to New Zealand not only as a Keynote Speaker and the Nokia Lecturer for the IWMS but also as a New Zealand Statistical Association Visiting Lecturer. As a result Professor Rao was touring and performing, like the Rolling Stones, in six universities throughout New Zealand in 14–23 March.



PHOTO 9. Conference banquet: Shenfang Zheng, Hazel, Jeff, Guiqing Wang; IWMS-Shanghai, 6 June 2010.



PHOTO 10. Hans Joachim Werner, Kai-Tai Fang, Yonghui Liu, Jeff, Shenfang Zheng, SP, Tingmui Li; IWMS-Shanghai, 6 June 2010.
Photo: Soile P.

The 22nd IWMS was held in Toronto, at the Fields Institute for Mathematical Research, 12–15 August 2013. The highlight of the event was the Memorial Session and Reception to Honor Shayle Robert Searle (1928–2013) with speakers: David A. Harville, Jeffrey J. Hunter, Jon N.K. Rao, Robert Rodriguez, Susan Searle, and Heather Selvaggio. The participants in particular appreciated the wonderful personal reminiscences of Susan Searle and Heather Selvaggio, the two daughters of Shayle Searle. This Special Session was arranged and chaired by Jeff as well as summarised by him in the *Australian & New Zealand Journal of Statistics* (2015a): Shayle was Jeff's close personal friend, having met first time in 1968 they had a long-standing association over the years both in New Zealand and in Ithaca (Cornell University). Shayle also attended several IWMS meetings. In Tampere, in August 1999, we had a banquet in the Viikinsaari Island and part of the pre-dinner program was a penalty kick competition. When it was Shayle's turn, he took his walking stick, put it upside down and hit the ball. I was the referee and of course, I accepted the goal with pleasure. – Before leaving Shayle Searle, let me mention that the session in which I gave my talk in the First Pacific Statistical Congress, 20–24 May 1985, was chaired by Shayle. He was not a sleepy chair and did not give any extra minutes.



PHOTO 11. Speakers at the Memorial Session in Honour of Shayle R. Searle, Fields Institute, Toronto, 14 August 2013. Jeffrey J. Hunter, Robert Rodriguez, Susan Searle (daughter, South Carolina), David A. Harville, Heather Selvaggio (daughter, Florida), Jon N. K. Rao.

Ph: Joanna Modlawska.

On 25–28 May 2015 we had our IWMS meeting in Haikou, in Hainan Island, in South China. Jeff was the Chair of the International Organizing Committee and I can tell you (because I happen to know) that Jeff did an awful lot of work for the meeting! The success of the event was no doubt very much



PHOTO 12. George Styan, Evelyn Styan, Hazel, Jeff, Mrs Andrews, Eileen Wild, David F. Andrews, Chris Wild, Soile P., Hans Joachim Werner, Magdala Werner; Annual Meeting of the Statistical Society of Canada (SSC), St. John's, Newfoundland, June 2007.

due to Jeff's devotion and tireless efforts. So impressive to follow closely his determined actions – believe me!

In addition to his impressive list of academic administrative tasks, Jeff is the author of numerous refereed articles in top-journals, author of books, editor of special issues of journals, and a teacher of statistics, probability and operations research. Jeff's research has been in applied probability, focusing on Markov and semi-Markov processes, generalized matrix inverses, queueing theory and two-dimensional renewal theory. He was the President of the New Zealand Statistical Association during 1995–97 (eventually serving on its Executive for 13 years, gaining honorary lifetime membership). All in all, he's a thoroughly experienced University Professor, familiar with all spices the academic life can offer.

In 2007 George P. H. Styan and Götz Trenkler interestingly and colourfully characterized Jeff's research topics in their paper "A philatelic excursion with Jeff Hunter in probability and matrix theory" in the Special Issue of the *Journal of Applied Mathematics and Decision Sciences*. Here is their abstract:

"We present an excursion with Jeff Hunter, visiting some of his research topics. Specifically, we will present some facts about certain people whose work seems to have influenced Jeff in his scientific career; we illustrate our presentation with postage stamps that have been issued in honour of these people. Our main guide is Hunter's two-volume book (1983a; 1983b) entitled *Mathematical Techniques of Applied Probability* (Academic Press)."



PHOTO 13. Hazel and Jeff in the night of Shanghai, 24 May 2010.



PHOTO 14. Enjoying the IWMS banquet, Shanghai, 6 June 2010.

In April 2005, Jeff graduated with his Doctor of Science degree in Applied Probability from Massey University; his thesis (2005b) was a compilation of his research papers spanning his career. In 2006 Jeff received the Campbell Award, the highest award of the New Zealand Statistical Association, to recognise his contributions to statistical research and education, and his services to the profession of Statistics. In 2007 Jeff was appointed Professor Emeritus of Statistics, at Massey University. Since then he's been working at the Auckland University of Technology, School of Computing

and Mathematical Sciences, where he is now currently Head of Research in the Department of Mathematical Sciences, having been Head of Mathematical Sciences, in the School of Computer and Mathematical Sciences, now a separate department in the renamed School of Engineering, Computer & Mathematical Sciences.

But what happened before?

Did I already mention what a wonderful swimmer Jeff has been (no doubt still is)? Well, I skip this for the time being and jump directly to the years of 1960s.

After receiving his Master's degree, with First Class Honours in Mathematics at the University of Auckland in 1963, Jeff stayed the years 1964–68 in the University of North Carolina at Chapel Hill, USA, receiving his Ph.D. in



PHOTO 15. Jeff running a guided tour, Xian, China, May 2010.



PHOTO 16. Seating order in the IWMS banquet, Shanghai, 6 June 2010.

Statistics in June 1968, with the thesis “On the Renewal Density Matrix of a Semi-Markov Process” (adviser Walter L. Smith). In 1969–90, Jeff worked at the University of Auckland, and in 1990–2007 at the Massey University, working at the Institute of Information and Mathematical Sciences (IIMS), Albany Campus, in 1998–2007.

It is interesting to cite here the Newsletter of the IIMS (2005b) where Jeff describes his research philosophy as follows:

“Over the years I have kept a notebook sectionalized into various topics with a list of key papers that referred to that problem. This went with me wherever I went! In many instances as the result of my reading (and thinking!) new ideas started to emerge. This was the precursor to the next stage in my ‘research process’. This entailed putting the background material away and putting my own ideas to paper. Stored in one’s brain are concepts and approaches that others have taken but the important next stage is to really flesh out your own approach. Nothing is better than putting pen (or pencil!) to paper in a quiet environment and seeing what evolves! You are often surprised and once you have the problem ‘tiger by its tail’ it is difficult to put it aside. It often preoccupies your thoughts for many a day – the thought process is often ongoing – and the urge to continue grappling with the problem insatiable. Your partner often detects that you appear to be in a trance and non-communicative. The pleasure at solving the problem is however very satisfying.”



PHOTO 17. Hazel and Jeff in Skokloster Castle, Sweden, June 2006.

Jeff and Hazel are great travellers. However, as I now understand the situation (writing this in March 2016), Hazel unfortunately may not make it this time (June 2016) to Madeira. Anyways, I'm convinced that we'll have many opportunities to meet in the future, take care, Hazel!

I wish you all the very best for the many years to come, Jeff!

Acknowledgements

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More Photographs



PHOTO 18. In the banquet podium with Yonghui Liu, IWMS-Shanghai, 6 June 2010.



PHOTO 19. Opening ceremonies of the IWMS-Haikou, 25 May 2015. Photo by Soile P.



PHOTO 20. Steve Haslett, Jeff, Peter Taylor, Shanghai, June 2010. Photo by Yonghui Liu.



PHOTO 21. Ranganathittu Bird Sanctuary, Karnataka, India, 9 January 2012. Excursion arranged when attending the International Workshop & Conference on Combinatorial Matrix Theory and Generalized Inverses of Matrices, Manipal University, Manipal, India, www.mv.uap.ac.in.



PHOTO 22. Jeff checking his camera in Manipal banquet, 10 January 2012; Jeff, Hazel, SP, Augustyn Markiewicz, Tonu Kõllo, Steve Kirkland.



PHOTO 23. Jeff zooming in a peninsula, Pyhäjärvi Lake, Tampere, near Pyynikki Park, 24 June 2011.



PHOTO 24. Jeff omitting an opportunity to buy a photograph of him with/without birds: only RMB 5! Li River Cruise Guilin–Yangshuo in China, 28 May 2010.



PHOTO 25. Jeff and George having fun in the IWMS-banquet, Ljubljana, June 2014.



PHOTO 26. Soile, Hazel and Jeff exploring Tomar, Portugal, 11 July 2011.



PHOTO 27. Jeff and Hazel with Tingmui Li and Kai-Tai Fang, IWMS-Haikou, 25 May 2015.



PHOTO 28. IWMS-2015, Haikou, 25 May 2015. Ph: Hainan Normal University.