



Denis Conniffe
1942–2011

Denis Conniffe – An Obituary

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On 20 January 2011, Ireland lost a great economist and statistician when Denis Conniffe passed away. As a former editor of the *The Economic and Social Review* and as one of the most prolific contributors to the journal, it is fitting that a note reflecting on Denis's life should appear here.

Denis was born in Dublin in 1942. He studied at University College Dublin (UCD) and at the University of Aberdeen and was awarded his Ph.D. by Trinity College Dublin in 1974. In 1964, he joined the Agricultural Research Institute (An Foras Talúntais (AFT), now Teagasc). In 1980, he moved to the Economic and Social Research Institute and worked there as Research Professor and as Deputy Director until 2004. In that year, he took up a post as Research Professor in the Department of Economics, Finance and Accounting at NUI Maynooth. In 2008, he moved to the Department of Economics in UCD. He worked there until his death.

The scope of Denis's research was unusually wide, with his research output appearing in top international journals in economics, econometrics, statistics and agricultural science. His deepest interest, however, was for mathematical statistics and his strong technical ability and keen intuition underlay his profound grasp of statistical theory and practice.

Although he worked within the Statistics Department of AFT for only six years, his publications arising from his interest in statistics in agriculture

span the decade 1967 to 1977. They include many theoretical and practical papers on research with plants and animals. His fascination with the relationship between structure and information (in the statistical sense) in data led to several papers on optimal experimental design in *Biometrika*, one of the leading statistical journals (Conniffe and Stone, 1974, 1975). He also published papers in the statistical journals *Biometrics*, *Technometrics* and *The Statistician* and in applications journals. He contributed strongly to the respect for quantification and rigorous experimentation that characterised An Foras Talúntais.

The wide range of statistical and econometric topics that he wrote about can be seen from his publications list below. They included, for example, missing values in variables, Seemingly Unrelated Variables and, later, small sample questions on order statistics of cumulative sums.

On missing values, Denis, in his 1978 *Economic and Social Review (ESR)* paper, looked at what happens in regression when simple substitution of sample means for missing x- or y-values is performed. His 1983 *ESR* paper considered substituting estimates for missing values of the independent x-values and then performing a weighted regression with the weights varying with the relative frequency of incomplete observations. His 1983 *Review of Economic Studies* paper investigated the case where the explanatory variables are in two groups, one with all values and one with missing values, but where all the missing values are in the same observations. Using Minimum Variance Unbiased arguments, unbiased estimates were derived, without preliminary estimation of missing values, and, under normality, exact small sample variance formulae found. Some sampling simulation was used to show that they can have lower MSE than the biased ML estimates in small samples.

In *Econometrica* (1982), on Seemingly Unrelated Regressions (SUR), Denis showed that, with small samples, the first step of a Telser residual generating iterative process may provide an estimator preferable to the full iterative value (which corresponds to the Zellner estimator). The estimator variances were compared under normality assumptions and the first step Telser estimator was summarised as preferable to Zellner's for small samples and low correlations between disturbances across equations. In *American Statistician* (1982), he showed the connections between standard covariance analysis and some cases of SUR and clarified the choice between different options for estimating the cross equation correlations. In his 1982 *Review of Economics and Statistics* paper, he cast doubt on the validity of some assumptions involved in Zellner's method, showed that this could matter in practice and suggested tests for the validity of the assumptions.

On the cumulative sums work, a key tool was a 1933 theorem of Geary which showed that under normality the expectation of a certain ratio of

sample moments was equal to the ratio of the expectations of the moments. Denis and John Spencer, in their 2000 *Journal of Statistical Planning and Inference* paper, showed that this theorem could be applied, under normality, to the scaled largest partial sum of deviations from the mean

$$\frac{M}{s} = \frac{1}{s} \left\{ \max_k \left[\sum_1^k (x_i - \bar{x}) \right] \right\}$$

where $1 \leq k \leq n$, $\bar{x} = \Sigma x/n$ and $s^2 = \Sigma (x - \bar{x})^2/n$, with the summations taken from 1 to n. This statistic is of importance in several fields including change point analysis, sequential analysis, long memory tests and reservoir design in hydrology. Thus, the first two moments of M/s could be found easily, since the moments of s and the first two moments of M are known. The first moment of M/s was already known, using advanced methods, but the authors were the first to derive the second moment and were able thereby to approximate the distribution in a normal sample, not necessarily large.

Denis's work in economics covered topics such as the theory of demand, equivalence scales and applied work in the areas of energy and alcohol demand. On the theory of demand, Denis noted in his 2006 *Canadian Journal of Economics* paper that the difficulty of specifying a set of consumer demand equations that could simultaneously display compatibility with rational economic behaviour (regularity) and had the capacity to represent a comprehensive spectrum of consumer behaviour (flexibility) was well known. A variety of approaches had been investigated in the literature but, according to Denis, scope for substantial improvement remained. The approach he took was to start from indirect utility functions producing globally regular, if inflexible, systems and to improve flexibility by adding parameters through a device termed indirect addilog translation.

In his 1992 *Review of Income and Wealth* paper, Denis addressed the following issue. Comparisons of households of differing composition are usually achieved through the use of equivalence scales but it is well known that the choice of scales can have considerable impact on the conclusions drawn from studies of welfare and poverty. In this paper, Denis focused on the relation of scale to income, by applying theoretical analysis to some simple household types. His conclusion was that scales are not constant and that practice should have been changed.

In addition to this work, Denis also undertook biographical work on two of his heroes. He wrote about Francis Edgeworth, who was possibly Ireland's greatest ever economist, in his *History Ireland* article of 2010. He also wrote about Roy Geary, probably Ireland's greatest ever statistician, in his 1997 book and chapter 7 therein.

He was formally recognised by his peers in a number of ways, such as his election to the Royal Irish Academy and his presidencies of both the Irish Economics Association and the Irish Statistical Association.

While Denis made a huge contribution to the subjects of statistics and economics through his own published work, he also made a huge contribution through teaching and through supervising Ph.D. students. He also provided advice and guidance to many of his colleagues. Denis had an incredible ability to explain complex methods in a way that made complete sense. Even more remarkable was the way in which he could take that “dryness” away and really enliven his subject. And above all else, he was patient with peoples’ questions. It was through this role in offering support and guidance to students and to colleagues that Denis showed one of his most appealing qualities – immense professional generosity. He was willing to spend endless time explaining concepts and answering questions.

Academic brilliance was not Denis’s only talent – he had sporting skills as well. He was a judo black belt and represented Ireland. He was also a chess champion.

Anyone who met Denis will almost certainly have been treated to stories of local Irish history. It never ceased to amaze us how he managed to acquire his encyclopaedic knowledge of local history and how he managed to maintain it. He also loved telling about ancient Celtic rituals. A drive somewhere around the country with Denis would turn into a great adventure when he took detours to show you some point of interest. Napoleonic battle sites were yet another favourite and, again, his knowledge was simply amazing.

There were simpler pleasures in Denis’ life also. He was an enthusiastic hillwalker. One of the great features of economics conferences in Ireland was the Saturday afternoon walk with Denis. You were guaranteed exercise and a lesson in local history. His garden was another source of pleasure. And of course there were the strolls down to the Mount Merrion House and a couple of drinks with friends.

Denis was married to Jean for over forty years and she was the love of his life. They had three sons – Derek, John and Brian – and Denis took great pride in each of them. In more recent years, his grandchildren – Harvey, Jasper, Zoe and Len – became sources of great joy.

Denis’s passing has been a source of great sadness for his family and for his many colleagues and friends. He has left a huge legacy in terms of his research and in terms of the inspiration which he provided to colleagues and students. We will miss him deeply.

CURRICULUM VITAE – PROFESSOR DENIS CONNIFFE, PhD., MRIA

Degrees:

B.Sc. Math. Sc. National University of Ireland, 1962;

M.Sc. Maths & Stats. National University of Ireland, 1963;

Ph.D. Stats. Trinity College Dublin, 1974.

Professional Qualifications:

Fellow of the Institute of Statisticians 1968, subsequently Chartered Statistician, Royal Statistical Society.

Employment:

Research Professor, School of Economics, UCD, 2008-2011.

Research Professor, Department of Economics, Finance and Accounting, NUI Maynooth, 2004-2008.

Research Professor, Economic and Social Research Institute, 1980- 2004, including a ten-year term as Deputy Director.

Statistician, Agricultural Research Institute (now Teagasc), eventually becoming Assistant Director, 1964-1980.

During the late 1960s and the 1970s Denis also taught statistics and econometrics in TCD. Over the years, he held visiting professorships in Queen's University Belfast, NUI Maynooth and Edinburgh University.

Membership of Academic Bodies and Associations:

Denis was a member of many associations and societies, international and Irish, concerned with economics, econometrics or statistics. Some were honorary positions, for example, Senior Fellow of UCD Statistics Department. He was a member of the Royal Irish Academy and President of the Irish Economics Association and of the Irish Statistical Association.

Other Academic Activities:

He acted as referee or reviewer for many international journals and for Irish journals. He was a former editor of the *The Economic and Social Review* and a member of its Editorial Board. He occasionally acted as book reader for some publishers. He served as external examiner to Irish and foreign universities.

Boards, Working Parties, etc:

He chaired or served on numerous Public or Third Sector Boards and Working Parties. These included being on the Board of the Irish Farm Accounts Co-op in the 1970s, chairing the Irish Statistical Council for Official Statistics and the Working Party on Energy Interconnection in the 1980s, and representing Ireland on the Social Sciences section of COST at Brussels meetings in the 1990s.

Refereed Papers in Academic Journals

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Other Articles in Journals or Periodicals

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