

OBITUARY

## John Stanley Metcalfe – 20 March 1946 to 15 March 2025

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(Received 8 April 2025; accepted 8 April 2025; first published online 13 May 2025)

We are shocked and saddened by the sudden death of our dear friend, John Stanley (Stan) Metcalfe. Stan suffered a heart attack and passed away on 15 March 2025. He was a world-renowned scholar of innovation and competition studies, a sought-after advisor on technology policy, and a pioneer of modern evolutionary economics. He will be deeply missed by many across the globe.

At the time of his death, Stan was Emeritus Professor at the University of Manchester. Between 1995 and 2008, he was the Stanley Jevons Professor of Political Economy and Cobden Lecturer in the School of Social Sciences at Manchester, with terms as Dean for the Faculty of Social and Economic Sciences and Interim Dean for the Faculty of Medical and Human Sciences. He was also Founding Director of the ESRC Centre for Research on Innovation and Competition at Manchester.

Stan graduated from Liverpool Collegiate Secondary School before studying at the University of Manchester, where he received B.A. (Econ), with first-class honours, and M.Sc. degrees. He held junior academic appointments at Manchester from 1968 to 1973 before moving to the University of Liverpool from 1973 to 1980. He was appointed Professor of Economics at the University of Manchester in 1980 and held that position until his appointment to the Jevons chair in 1995.

Stan's M.Sc. thesis (Metcalfe 1968), *Diffusion of Innovation in the Lancashire Textile Industry*, provided an early indication of a keen interest in understanding the process of innovation and structural change in industry, an interest that became the primary focus of his work after early forays into diverse fields. Early publications included many co-authored with Ian Steedman that dealt with the theory of international trade and the Sraffa critique of neoclassical production theory. There were also several articles co-authored with David Peel on the dynamics of inflation and output growth.

From the 1980s onwards, Stan's research concentrated on studies of innovation systems and processes, the history of technology, and the growth of knowledge. These studies were both empirical, with cable television in the UK being an early case study, and theoretical, with increasing emphasis on the relationship between competition and innovation. They involved an ever-widening group of co-authors, with Michael Gibbons being an early favourite. Increasingly, the studies emphasised technology policy, especially in jointly authored publications with Luke Georghiou and Rod Coombs.

One of Stan's most significant contributions was to employ concepts and principles from evolutionary biology in analysing creative destruction as a selection process. Using the evolutionary concept of fitness, Stan turned Schumpeter's ill-defined notion – that creative destruction is the competition that counts in the long run – into a model of

differential firm growth across heterogeneous firms within an industry. Stan then adapted the principles of natural selection developed by English geneticist, R.A. Fisher, interpreting firms as sub-species within a population (the industry).

Stan's analysis was presented in the Graz Schumpeter Lectures in 1995 and subsequently published as Metcalfe (1998). Among a heterogeneous group in an industry, firms with lower production costs or whose products have more desirable characteristics, earn profits above average for the industry. They demonstrate their evolutionary fitness by using these higher profits to expand production capacity faster than industry average. Fisher's principles imply the average fitness of a population increases at a rate directly related to the variance in fitness across the population.

For an industry consisting of firms with varying unit costs for producing an identical product, Stan's analysis demonstrated that average unit cost for the industry declines over time as market share concentrates at lower-cost firms, even when the unit cost of each firm remains fixed. Average price also declines given the pricing assumptions in his model. Thus, Stan provided an evolutionary model of creative destruction as a structural adjustment process with implications for the time paths of industry average values of unit cost and price as well as the distribution of these variables across firms. He continued working on an evolutionary approach to the theory of the determination of prices, including two recent publications with one of us (Harry), Bloch and Metcalfe (2018) and Bloch and Metcalfe (2024).

Application of Fisher's principles by Stan showed creative destruction is a degenerative process. Increasing market share of the fittest firms reduces the variance of fitness. Variance asymptotically approaches zero, dissipating the adjustment process. Innovation is required to replenish the variety. Not surprisingly, Stan's research increasingly focused on the determinants of innovation activity, human imagination, problem-solving, university research, firm strategic behaviour, innovation systems, and technology policy.

Following on from his pathbreaking contribution to our understanding of how competitive selection works in economic systems, Stan became increasingly interested in how the variety that selection feeds on is generated. It is often presumed in biology that variety is randomly generated but, to him, this did not seem to hold in economic systems. Although an invention might be randomly discovered by an individual, the process of innovation is always characterised by incremental innovations that are collaborative, with static and dynamic economies of scale and falling unit prices. So, in the late 1990s, Stan began researching with one of us (John) as to how a more complete representation of economic evolution could be discovered by integrating self-organisation and competitive selection. To this end, we created the 'Brisbane Club', which involved a series of international workshops from 1999 onwards at the University of Queensland, the University of Manchester, and other locations. This initiative exerted considerable influence on evolutionary economic thinking in the 2000s and on Stan's own perspective on economic growth, reflected, for example, in the much-cited Metcalfe, Foster and Ramlogan (2006) and Foster and Metcalfe (2012), and on the design of innovation policy in Dodgson, Hughes, Foster and Metcalfe (2011).

Stan was always keen to apply his evolutionary perspectives to competition and technology policy, and he had, for many years, been an expert in influencing actual policy design and implementation. During his career, he had extensive experience working in Whitehall. He was a member of the Advisory Council on Applied Research Development from 1984 to 1987, and of the Advisory Council for Science and Technology from 1987 to 1993. He was a member of the Monopolies and Mergers Commission for two terms from October 1991 to October 1997. He was also a member of the Expert Group on Knowledge for Growth (K4G), advising the European Commissioner for Research from January 2007 until its work was completed in 2009.

Stan's contributions and leadership did not go unnoticed by his colleagues and the wider community. He was President of the International Schumpeter Society (1998–2000), the Manchester Statistical Society (1992–1994), and of Section F (Economics) of the British Association for the Advancement of Science (2008). In addition to the Graz Schumpeter Lectures mentioned above, Stan delivered many distinguished lectures around the world, including the Momigliano lecture, (University of Rome 2004), the Colin Clark Lecture (University of Queensland 2005), the Presidential Address to Section F of the British Association for the Advancement of Science (2008), and the Haydn Williams Lecture (Curtin University 2008). In 2018, he was made an Honorary Doctor of the University of Gothenburg Business School. He was awarded a C.B.E. for services to science in 1993, was a Fellow of the Royal Society in 2000, and a Fellow of the Academy of Social Sciences in 2003, among many other honours.

Stan had a long and deep connection to Australia, starting with a visiting fellowship at the University of New England (UNE) for the 1980 academic year. Along with his family, he made friends for a lifetime, something Stan did wherever he spent time. He returned to UNE as a visiting fellow for the spring term in 1984. His next Australian visiting fellowship was at the University of Queensland for a few months in 1990, repeated in 1997 and then for many years through the 2000s. He was also a regular visitor to Perth, where his son had settled, and had multiple visiting appointments at Curtin during the 2000s, including the Haydn Williams Fellowship in 2008.

We both benefitted enormously from the opportunity provided by Stan's visits, gaining his wise counsel on our own research, collaborating in joint work, and enjoying his companionship. He also contributed substantially to the intellectual environment of our universities, providing seminars, mentoring junior colleagues, and providing university lectures (the Colin Clark Lecture at UQ in 2005 and the Haydn Williams Lecture at Curtin in 2008).

In recent years, despite his many other interests, he maintained his great enthusiasm for evolutionary economics. His focus became mainly the history of the development of economic thought. In addition to Joseph Schumpeter, he had always had a great interest in the writings of Alfred Marshall. Stan repeatedly maintained that most of the economics community had ignored the fact that Marshall had a strongly developed evolutionary perspective. He showed how Marshall's representative firm could be employed in the analysis of creative destruction (Metcalf 2007), and placed Marshall and Schumpeter directly in the line of the development of thought on complexity and emergence stretching from Smith to Hayek (Metcalf 2010). In his last keynote address, the 2022 Swedish Schumpeter Lecture in Gothenburg (Metcalf 2024, Metcalf, Broström and McKelvey 2025), he once again reminded us all how important and relevant these pioneers still are today.

Stan himself was also a pioneer and a rare one too. Unlike Schumpeter and Marshall, he had no marked eccentricities, except for being determined to build a small steam locomotive from scratch in his shed. He was both a brilliant economist and a delightful person. We will miss him very much, as will his many dear friends and colleagues across the globe.

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