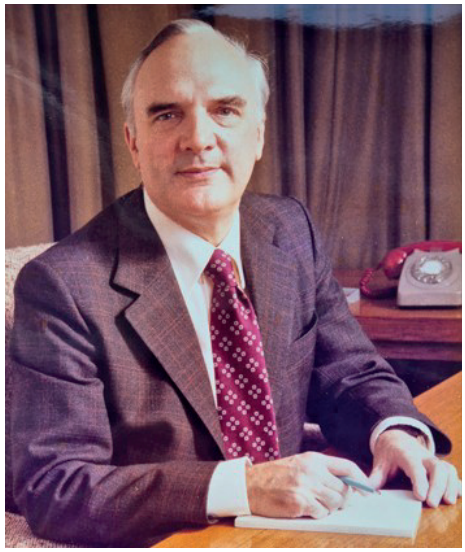


Alexander Gammerman is professor of computer science at the Centre for Reliable Machine Learning, Royal Holloway, University of London, UK.

The unofficial professor
Roger Thatcher



Alexander Gammerman reflects on the life and achievements of "universal researcher" Roger Thatcher (1926–2010), statistician-demographer and Registrar General for England and Wales, on the 100th anniversary of his birth

One hundred years after his birth, we honour the life and extraordinary legacy of Roger Thatcher – a man who, although he never held a university post, lived the life of a scholar more intensely than most who did.

Roger belonged to that rare, almost vanished species: the universal researcher. Statistics, demography, number theory, machine learning, general relativity and cosmology, quantum mechanics, inventory control, archaeology – he published across all of them in high-quality journals. Research delighted and challenged him and he liked challenges. Like his heroes from antiquity – Diophantus, Euclid, Aristotle – he was a man of many sciences, and he published in all of them. What a horizon one must possess to write papers in such different fields. References to his papers continue to appear in textbooks and research articles across disciplines. Brilliance, he proved, does not require a professorship.

Einstein once said of Max Planck that if scientists stopped being paid, the Temple of Science would empty and eventually collapse – except for the true devotees, who would remain inside and support the Temple. Roger was one of those.

A few examples show the range of his mind:

- His work on Laplace's rule of succession illuminated the long-standing debate between Bayesian and frequentist probability.[1] In this particular problem, he showed that under certain assumptions, the difference between the confidence limits produced by the frequentist approach and those produced by the Bayesian approach is no greater than the effect of making just one additional observation. The result was recognised in Kendall and Stuart's *Advanced Theory of Statistics*.[2]
- Following in the footsteps of Bernoulli, de Moivre, and Huygens, he presented an elegant solution to the classical duration of play problem – the gambler's ruin in its more intricate form.[3]
- And in a characteristic Diophantine flourish, he found five integers such that every pair sums to a perfect square – because, as he put it, he thought it would be fun.[4]

All of this while holding demanding full-time posts in the UK Civil Service. It is hard not to marvel at the scale of his intellectual life.

Roger's work as Registrar General for England and Wales during the 1981 Census was another achievement. The census he oversaw was cheap (£1 per person), short (just 20 questions), and astonishingly accurate (only 0.45% missed). It remains a record that will be difficult to surpass.

And then came his late-life adventure: research on human longevity. With two professors and a UN demographer, Roger helped build the largest database of validated deaths at ages 80+ ever assembled: 32 million records. Today, the Kannisto–Thatcher Database is used by demographers worldwide. It will outlive all of us.

Yet, as fate would have it, the work that made him famous outside the research community arose from a deceptively simple question: how many people have ever lived on Earth? Roger presented his answer at the International Statistical Institute in 1983: 60 billion people, over seven times the world's population today. The result has since appeared in several books and popular science publications. (Today's estimate is substantially different; it gives 117 billion people. The two figures differ because they use different starting dates, different assumptions about early population size, and different birth-rate models.)

After retiring, Roger joined the U3A (University of the Third Age – a network of local groups providing educational activities for retired people) in Kingston, England, and founded a science and philosophy group. His talks – "Do Animals Think?", "Evolution and Morality", "How Does the Brain Make Decisions?", "Chance and Necessity" and "Free Will" – drew on a lifetime of intellectual breadth. He had a rare gift: the ability to explain complex ideas in clear, elegant English, always with a twinkle in his eye.

And that humour – it was part of his signature. He ended one of his talks with this story: "A centenarian, bright as a button, was asked on local radio what made her so happy. She replied, 'I've just managed to get my daughter into an old folk's home.'" That was his style: sharp, warm, mischievous.

Roger loved his long, rich, fascinating life. He embraced it fully, joyfully, and with a sense of wonder that never dimmed. ■

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