

Professor Valentine Joseph

Born 27 January 1929, Penang, Malaysia

Died 15th March 2017, Colombo, Sri Lanka

Valentine Joseph led an extraordinary life. He was born in Penang, Malaysia, on 27th January 1929, the eldest of five children, with four younger sisters, to Sri Lankan Tamil parents, Anthonypillai Joseph Vendargon, a surveyor, and his wife, Jane. His extended family were devout Catholics - his cousin, Dominic Vendargon, became the first Archbishop of Kuala Lumpur. Valentine himself, remained a devout Catholic throughout his life.

Valentine started school at St Xavier's Institution in Penang in 1935. However, his education was interrupted following the Japanese occupation of Malaysia at the start of the Second World War. During this period, his family suffered great hardships - their diet during the war years consisted mainly of porridge and his youngest sister, weakened by malnutrition, died of measles. In order to help the family obtain additional rations, Valentine worked for the Japanese navy from the age of around 13 as a telephone operator. Before starting work, he was given a six month course in Japanese, a language in which he quickly became fluent. He was able to sing word-perfect Japanese nursery rhymes more than half a century later to the great amusement of his children and grandchildren.

During his time with the Japanese navy, Valentine witnessed some historically important events. He was stationed in the port of Penang, which was used to service Japanese submarines. On one notable occasion, he witnessed the arrival of a German U-Boat, which he observed was far better technically than the Japanese submarines. Out from it stepped the Indian nationalist leader Subhash Chandra Bose, who had arrived from Germany to form the anti-British Indian National Army (INA). Valentine observed that the Japanese did not believe the INA would ever achieve anything significant, although they were happy to support Bose's initiative. The Japanese soldiers, he recalled, also took delight in parodying the Germans by goose stepping and making Nazi salutes. Valentine witnessed the effectiveness of Bose in generating support for the INA from the local Indian population. Bose was an eloquent speaker whom Valentine was amazed to see persuading Indian ladies to donate their jewellery to finance the creation of the INA. He also remembered being taken by the Japanese to the cinema to watch Japanese propaganda films showing the Japanese navy and air force sinking the British warship, The Prince of Wales, which had been sent to defend Singapore. The Japanese had filmed the entire battle and used the footage as a means of demonstrating their superiority over the British former colonial power to the local population.

At the end of the war, with Malaysia facing its own troubles, Valentine returned to Jaffna with his mother and siblings. His father stayed behind in Malaysia for a few years to continue earning a living to support his family in Jaffna. Valentine arrived in Sri Lanka at the age of 17 having had little formal education. His family lived in a small house with mud walls, a thatched roof and a cemented floor. His grandmother, who had a deep influence on him, lived next door. She not only read the Bible daily, but lived a life of selfless service which proved to be a source of inspiration for Valentine and his family.

Valentine prepared for the University Entrance Examination as a science student studying pure mathematics, applied mathematics, physics and geography at Patrick's College, Jaffna and his experiences there were to shape much of the rest of his life. The small library adjoining the Rector's office had a good collection of quality books. One day he happened to come across a physics book on one of the shelves by the renowned physicist James Clerk Maxwell entitled "Treatise on Electricity and Magnetism". He read the page where it said that a circuit containing a charged capacitor and an induction coil behaved like an oscillating pendulum. This was not taught or

mentioned by his teacher, but it served as a turning point in his career and set him thinking for a lifetime.

In 1949, Valentine entered Colombo University to study for a four year mathematics degree and obtained a first class degree in just three years. He spent a long vacation in the University Library eager to learn more of the world he lived in, having felt the war years had left him ill-educated. During this break, a lecturer presented him with a copy of Nobel Prize winner Albert Einstein's book "Meaning of Relativity". The book had much to do with the electromagnetic waves he had read about in the library at St Patrick's College. It proved to be the second turning point in his intellectual life, as Valentine became completely captivated by the simplicity and sincerity of the great physicist. Einstein had connected space, time, mass and energy in his famous equation $E = mc^2$. Thereafter, Valentine set out to educate himself and soon realised the importance of literature, philosophy, history and religion, besides mathematics and science, for a better understanding of our place in the universe.

Valentine joined the University of Colombo as an assistant lecturer in 1952 where he stayed for the next 42 years. As one of the leading mathematicians in Sri Lanka, he represented the country at many international gatherings and organisations such as the International Centre for Theoretical Physics in Trieste, Italy. He was sent by the University to King's College London in 1956 to undertake a doctorate in mathematical physics, joining a renowned group of Albert Einstein's ex-students, to work on developing Einstein's famous Theory of General Relativity. Einstein remained his inspiration throughout his life and Valentine's linguistic skills enabled him to explore the life and work of Einstein in English, German, Russian and Mandarin Chinese. In addition, he was fluent in Tamil, Sinhalese and Japanese. The command of such a wide range of both Western and Eastern languages enabled him to pursue his interests in the sociology of science and culture, and the interplay and contrasts between Western and Eastern philosophies and religions. His prolific output of articles and lectures covering these themes spanned a period of over 60 years from 1955 to 2016.

Valentine Joseph's greatest strength was as an exceptional teacher to generations of science and mathematics students. As a lecturer and then professor, he faithfully served his students at Colombo University for over forty years, irrespective of race or creed. During his career, he lived through many troubled years that led to the University itself being closed at times, but he refused to ever go on strike, arguing that the education of his students should not be harmed. As well as his university duties, Valentine was the Chief Examiner for the GCE Advanced level examinations in mathematics for over twenty years, with his exam questions renowned for their creativity. He wrote an A level mathematics text book in Sinhala entitled *Gathikaya* in 1994. He kept his interest in teaching throughout his later retirement and at the age of 87, in 2016, he published an updated edition in English of his earlier book entitled: "Dynamics: Newtonian Relativity".

Valentine was always an idealist when it came to the role of education and its relationship with society at large. As an undergraduate he was fascinated by the intellectual adventure he had begun and frustrated that few others shared his fervour. In later life, he recalled telling a staff member when he was still an undergraduate, that subjects such as Relativity and Quantum Mechanics should be included in the course of studies as they had educational value. He was surprised and disappointed to receive the answer that it did not matter as most of the graduates would be going on to join the civil service. Valentine's view was that creativity in science was hardly possible in that environment. Moreover, he said, what was worse, knowledge had no liberating influence on the spirit of man. Valentine was convinced that since science is a universal phenomenon, scientific creativity may be quite possible in other cultures outside the European. In his own lectures, he strove, as one former student described¹ in a newspaper tribute, to introduce his students to a

¹ Dr Kirthi Premadasa, The Island newspaper, 29th March 2017, see http://www.island.lk/index.php?page_cat=article-details&page=article-details&code_title=162698

brand new universe filled with beauty and flux. He guided them slowly through that universe, showing how equations and theorems formed its fabric, whilst teaching them to also question everything, including the very foundations of the known universe. As the article explains, the mathematics journey that he started with them reached its climax in the final year of the Mathematics Special Degree when he explored the beauties of the Minkowski Spacetime which is closely associated with the Theory of Relativity. As his student says: "They watched in sheer wonder as he manipulated and connected so many different branches of mathematics together like a child who creates a beautiful picture out of a box of scattered jigsaw pieces".

For Valentine, there was no apology required when it came to his obsession with Einstein's Theory of General Relativity. For him, Relativity was not just a theory. He described it as "the very heart of Perception, which is another word for Being." He saw it as "the remarkable realisation of an ancient dream that mathematical language, created by mathematicians in the abstract, permeates the physical world". Valentine's passion was to try and delve ever deeper into the meaning and implications of Einstein's General Relativity, which encompassed far more than just mathematical physics. When he went to the UK for post graduate studies during the 1950s, General Relativity was being revived after the Second World War. He felt that whilst he had then a fairly clear idea of the new physical concepts of his subject, his knowledge of mathematical concepts was far from adequate. It can be hard for students of today in the internet age to appreciate the efforts required to keep abreast of information produced only in print format. What came as a surprise to Valentine was that his supervisors and research colleagues in the UK were familiar with the trend of mathematical thought in Continental Europe. He described a galaxy of European mathematicians whose work he had not read – the French School, the German School and the Russian School. When he looked back on the papers he had published as a research student, he wished that he had had a better mathematical education that had included the humanities. As a result, he was keen that the young mathematician should be quickly initiated into the history and philosophy of mathematics and the humanities.

As well as his professional achievements, Valentine also derived much satisfaction and joy from his family life. He married Antonia Arulanandam in 1965 and they had two children, a girl and a boy. Whilst Valentine allowed his children to find their own path in life, never pressurising them to follow his own wishes, he took his responsibilities as a father very seriously.

The ethnic riots of 1983 caused great turmoil to Valentine and his family. At the beginning of the riots, a mob invaded his house in Borella and when asked by them before they ransacked his house whether he was a Tamil or a Sinhalese, he replied in Sinhala: "I am a human being". Nevertheless, he was badly beaten up and his wedding ring forcibly removed. After fleeing from their family home, his two children subsequently left the country to study in the UK. Valentine left for a short period to ensure his children were settled in the UK with relatives, before returning with his wife to resume his duties teaching mathematics to the students at Colombo University. His opening thoughts at his first lecture after returning from England, as a former student described, were to proclaim words to the effect that "the horror in the country happened because of us – teachers. We have not taught well."

Valentine himself was a humble man, who always cycled to work, refusing to use the car. Nevertheless, underneath his quiet exterior there was both courage and determination. When an intruder attacked his wife in their home in the 1990s, he fought the assailant. In the process, he sustained a serious stab wound and had to be rushed to intensive care.

Valentine had four grandchildren and took great pleasure in his interactions with them during his retirement. He enjoyed playing board games, acting out their favourite film scenes, taking them to the swimming pool to watch them swim and to Independence Square in Colombo to roller blade and cycle. He, of course, could not resist the temptation to teach them: when his elder grand-daughters were still in primary school in England and came over to Colombo for the holidays, he used to give lessons in arithmetic at "Pata's School", which they attended wearing fairy wings. As the years passed, he engaged in philosophical discussions with his older grand-daughter, discussed astronomy and physics with his grandson and often joked with his younger grandchildren whilst feeding butter cake to the lizards that scurried around the house.

Intellectually, whilst his natural home was analysing and discussing the output of mankind's intellectual giants, such as Albert Einstein, Gottfried Leibniz and Immanuel Kant, he also liked to discuss the wisdom, humour and insights contained in the cartoon strip Calvin and Hobbes. On his retirement in the mid-nineties he refused to have a portrait produced of himself as customary, instead agreed to a painting of a tiny Earth bathed in a sea of planets with a label coming out of the planet Earth that simply said, "Albert Einstein Lived Here". His reasoning, as he himself explained, was that "science as we know it is the pursuit of objective knowledge of the external world independent of human beings or observers. So let no man be idolized." For Valentine, Albert Einstein represented the whole movement of thought seeking to find greater understanding in an unbiased fashion – that 'Albert Einstein lived here' was a statement not of worship of one man, but a tribute to the pursuit of truth.

Whilst he is known to generations of students as their Professor, and to others as a brother, brother-in-law, father-in-law or uncle, perhaps his greatest pleasure in his later years, was his role as Grandfather. His grandchildren simply knew him as "Pata" - a figure of reverence and love with a unique sense of humour whom they and the rest of their family adored greatly.