John Burrows AM FAHA

1928-2019

Australian Academy of the Humanities archives

Professor John Burrows was the founder of computational stylistics and its doyen for many decades. He was elected to the Academy in 1989, as a member of the English Section. He was Chair of the Section from 1996 to 1998.

John Burrows was born in Armidale in New South Wales on 13 June 1928. His parents ran a clothing and haberdashery business. (His father had migrated from Manchester before the First World War.) The family moved to Taree when John was nine. He won a scholarship to The Scots College, Sydney and completed his high school education there.

He studied for a BA and DipEd at the New England University College in Armidale, NSW, before working as a secondary school teacher. He eventually became Day Housemaster at The Scots College. His future wife, Pam Biddle, had also completed a BA/DipEd in Armidale.

They married in 1954. They had three daughters, Catherine, a teacher and senior executive in the NSW Public Service, Alison, a diplomat, and Elizabeth, a lawyer. John followed the progress of his grandchildren—Samuel, William, Julian, James and Zoë — closely, and very much enjoyed his contact with them.

John was appointed as a Senior Tutor at the University of Sydney in 1960 and was promoted to Lecturer, Senior Lecturer, and Associate Professor at Sydney over the period up to 1975. He was Hunter Baillie Fellow of St Andrew's College, a residential college of the University, from 1963 to 1976, and offered tutorials to students of English in the College. He was a patient, highly interrogative tutor, allowing his pupils to discover insights and complexities as if by themselves. He is remembered also as a challenging and inspiring lecturer at Sydney to the very large classes common in the early 1970s, his soft voice fortunately relayed through a microphone and speaker to the thousand-plus students present.

During this time, he completed a MA (Honours) (1965), with a thesis on Patrick White, and spent two years at Birkbeck College, University of London, living with Pam and a young family, writing a thesis on Jane Austen. He received his PhD in 1967.

Behind the scenes John had been a protagonist in the dispute over the changes to the curriculum initiated by Sam Goldberg (1926–1991), aimed at investing literary study with the high moral seriousness of the

Leavisite movement, after Goldberg's appointment to the Challis chair at Sydney in 1963. John was a supporter of the views of Goldberg's leading opponent in the Department, Professor G. A. Wilkes, FAHA (1927–2020), who favoured traditional historically informed criticism, and John worked closely with Wilkes during and after his time on the staff at Sydney.

John Burrows was appointed to a chair at The University of Newcastle in 1976. His appointments at Newcastle included Professor of English, Head of the Department of English, Dean of the Faculty of Arts (1981–83, 1986–87), and he served as a member of the University's Council and Senate. In his first period as Dean he bought a Remington word processor for the Faculty. It seems strange now to remember how innovative a step this was, and it is also hard to believe, in the age of personal computers and desktop printers, how many challenges this machine presented! It needed its own room in the McMullin Building, and the wrong circuit board had been supplied, meaning many broken daisy wheels and much frustration for those who had committed articles and books to its care. But it was an early, practical sign of John's forward-thinking approach to technology in the Faculty.

John was a Commonwealth Fellow of St John's College, Cambridge in 1979–80 and became an MA at Cambridge in 1980. He was a Fellow of the Institute of Advanced Studies in the Humanities at the University of Edinburgh in 1988. He retired in 1989 and was appointed Emeritus Professor and Founding Director of the Centre for Literary and Linguistic Computing, an initiative of the then Vice-Chancellor, Keith Morgan, to support John's ground-breaking research beyond his retirement.

John was a keen tennis player and followed the Australian rugby union team, the Wallabies, closely, drawing on his experience as a coach at Scots. He liked to recall that one of his teams at Scots contained three future Wallabies. He kept contact with many of his former pupils throughout his career and some were regular visitors at the Willowood nursing home in Chatswood, Sydney, where he and Pam moved in 2017.

John remained mobile and entirely sound in memory to the end. He suffered from macular degeneration, but he rejoiced in improvements to treatment which meant he was able to read for much longer than expected. Once his sight failed he was a keen listener to audio books and was always able to recommend new and unfamiliar books to friends. He looked after Pam in the latter years when she was no longer able to move about freely. John survived Pam, but only by a few days.

John's earlier publications were mainly in the field of Australian literature, especially Patrick White and John Shaw Neilson. He published a book presenting a close reading of the characters and local interactions of *Emma* in 1968. His later work came to focus on the patterns of use of very common words in Austen and beyond.

Such words had occasionally been counted before in authorship studies, but the laborious nature of counting instances of a word like the by hand restricted its statistical use to a few well-funded studies. Burrows was the first to see the potential of these words for literary analysis and to adopt the computer for counting them and subjecting the counts to statistical analysis. By the 1980s he was well advanced with studies based on writers' use of these words and his book, *Computation into Criticism: A Study of Jane Austen and an Experiment in Method* (1987) is a programmatic challenge to the orthodoxy about their role in literary meaning. He notes that linguists, concordance-makers, and lexicographers continue to hold that these words are used at stable rates and carry little

if any stylistic significance, despite forming up to half of any language sample in English. Against this he argues that:

> The neglected third, two-fifths, or half of our material has light of its own to shed on the meaning of one novel or another; on subtle relationships between narrative and dialogue, character and character; on less direct and less limited comparisons between novels and between novelists; and ultimately on the very processes of reading itself.

During his Fellowship year in Cambridge in 1979–80, Burrows had discussed his interest in these words with the Director of the University of Cambridge Computer Laboratory, Nicholas M. (Nick) Maclaren. Maclaren suggested using what he called 'eigen-analysis', or Principal Components Analysis (henceforth PCA), a technique for finding underlying patterns in a table of counts of multiple variables in multiple observations. The combination of PCA and very common words was the key method for what came to be known as computational stylistics. It proved useful also in separating authors. In a 1998 review of the field David I. Holmes described it as the 'standard first port-of-call' in quantitative authorship work.

At the Centre for Literary and Linguistic Computing at Newcastle John worked with several programmers to develop a mark-up format for machine-readable texts and a tool to count words in them. John Lambert was the mainstay of this effort after his retirement as Director of the Newcastle Computing Centre. In a talk given at Newcastle at the very end of his career John recalled the beginning of this association, John Burrows heedlessly smoking his pipe in Lambert's office in front of a prominent No Smoking sign. Alexis Antonia, a linguistics graduate who had been a student of John's at the University of Sydney, worked as research assistant from the earliest days of the Centre, and assisted John with the *Complete Works of Jane Austen* which was

published in the Oxford Electronic Texts Library in 1992.

John remained active in the Centre throughout the rest of his life. International visitors to digital humanities gatherings in Newcastle over these years often described meeting John and hearing him talk as the highlight of their visit. In 2010, he was recognised in the Queen's Birthday Honours List as Member of the Order of Australia. In 2011, the Centre convened an international symposium — Language Individuation — in his honour.

He had a particularly active and successful partnership with Professor Harold Love of Monash University, who had approached him to help with authorship problems in Restoration poetry and drama. Love puts quantitative approaches to authorship study in a wide historical and intellectual context in his *Attributing Authorship: An Introduction* (2002). Another long-standing partnership was with the present writer and led to a number of collaborative publications on early modern, Restoration and eighteenth-century plays.

In 2001, twelve years into retirement, John received the Busa Award from the Association for Literary and Linguistic Computing and the Association for Computers and the Humanities, a lifetime achievement award for work in humanities computing. The Busa awardee is invited to give a lecture at the joint annual conference of these associations (now formally conjoined in the Alliance of Digital Humanities Organisations). Rather than offer a retrospective view of his own contribution, John's lecture introduced a new method, Delta. Delta is a simple and powerful method for establishing the author among a group of authors whose style is 'least unlike' that of a target text. It has had a remarkable impact on authorship studies, has been intensively tested in different languages, at different sample text lengths, and with different word-variable sets, and a number of modified

versions have been proposed. It is entirely John's creation. Though he had no statistical training, he had an extraordinary facility for relating numerically-based systems to the play of frequency in language.

John's Delta, like his applications of PCA, focused on very common words as the input variables. In 2007 he presented another new method, Zeta, which drew on commoner words which are used regularly by one author and rarely by a second. The method elegantly and systematically excluded the commonest words and the rarest words and revealed mid-range frequency words as authorial markers. The presentation of this method was accompanied by a wide-ranging argument that authorial distinctiveness extended from the most common words to the least common. A separate new method, Iota, presented in the same article, addressed frequencies of very rare words. The counter-intuitive power of very common words, which had been the staple of John's contribution to methods and the mainstay of his attribution and stylistic work to that point, was thus put in the context of a comprehensive theory of language individuation.

In 2018, in his ninetieth year, John published an article in *Digital Scholarship in the Humanities* describing a further new method, Rho-grams. Most marker selection methods take one variable at a time and test its effectiveness in separating groups of observations, but Rho-grams draws on John's long-term fascination with the way words fluctuate in incidence in sympathy or antipathy to other words, and captures this aspect by building teams of markers which are correlated with each other.

John Burrows was gifted with an unusual combination of high abilities, unshakable confidence in the importance of his work and that of his collaborators, and a Stoic temperament. Over a long career he was able to make a major contribution to literary study and to what is now known as the digital humanities.

Hugh Craig FAHA