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Obituary: Yorick Wilks

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Yorick Wilks died peacefully on 14 April 2023 at home in Oxford. Although he had been in declining health for some time, he remained active in AI and computational linguistics right up until his death. A new book (on AI and religion) will be published shortly.

Yorick had been continuously active in the field since 1962, was a member of the International Committee for Computational Linguistics from the 1970s until his death, and was an ACL Lifetime Achievement Award winner (2008).

He made a huge range of contributions to the field, from early work on preference semantics and machine translation to later work on the use of machine readable dictionaries in computational linguistics, word sense disambiguation, frameworks for natural language processing (GATE), message understanding and information extraction, artificial companions, and much else besides. He had broader interests in artificial intelligence and the philosophy of language, especially Wittgenstein's later philosophy.

This breadth might make him seem like some sort of butterfly—not a bit of it. He has been described (accurately in our view) as a heavyweight hiding in lightweight's clothing.

He wrote prodigiously on many topics, sometimes under pseudonyms. He was a talented actor, who once considered pursuing acting as a profession rather than research and academia. He had an excellent voice and some still think he should have pursued opera or operetta as a career, and that he wasted his life on these utopian and, for so much of his life, practically unworkable subjects of artificial intelligence and computational linguistics. Recently, of course, the widespread interest in ChatGPT and other similar systems have vindicated his persistence.

Wilks was a formidable debater, contributing to discussions of politics, economics, and other areas of society with a sharp mind and broad knowledge. He could also be

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a charming and entertaining conversationalist with people from all walks of life. Born of working class parents from Edmonton, North London, just after the start of World War II, Yorick seized the opportunities present in post-war Britain, despite the shadow cast by the early death of his father. From Torquay Boys' Grammar School he obtained a scholarship to study at Pembroke College, Cambridge. He had gone up to Cambridge to study maths, but in his first year he discovered that what was exceptional maths ability at Torquay was merely average in Cambridge. He therefore swapped to Philosophy, where his tutor was Margaret Masterman, who introduced him to Wittgenstein's late philosophy of language.

Masterman ran a small private research lab called the Cambridge Language Research Unit (CLRU) slightly to the west of the main Cambridge Colleges. The CLRU existed from the 1950s to undertake work on machine translation and computational linguistics, mainly funded from military and intelligence sources, including from the United States.

Immediately after completing his undergraduate studies in 1962, Wilks was engaged by Masterman to work on one of these projects, and in parallel enrolled for a Ph.D. with the university.

The CLRU was an extraordinary place in that era: It started the careers of two other ACL Lifetime Achievement Award winners (Martin Kay and Karen Spärck Jones) as well as promoting and undertaking some of the very first work on machine learning, machine readable thesaurii and dictionaries, and much else besides.¹

However, the CLRU had poor access to even the puny computers available at the time. This problem led Wilks to obtain a position at the much better resourced System Development Corporation in California, which he took up in 1965. He obtained his Ph.D. for a thesis entitled "Argument and Proof" in 1968. He also began developing his preference semantics parser written in LISP, which occupied much of his time and energy for the next few years (Wilks 1972, 1975a, 1975b, 1978), in parallel with his work on machine translation (Wilks 1973a, b), which he viewed as the ideal testing ground for his approach to computational semantic analysis.

By the early 1970s he was working at Stanford, and then moved to Switzerland and then Edinburgh. This was all on soft research money, and, being then in his middle thirties, married, and with a young son, Yorick felt the need to obtain an established academic position. So when a Readership at the University of Essex came up, where his Stanford buddies Pat Hayes and Bruce Anderson were already established, he applied. It was in Linguistics, but so what. He obtained the position and took it up in the autumn of 1976.

On his first visit to Essex (presumably for his interview for the post in linguistics) he passed one of us (John Tait) and asked directions to the Department of Computer Science and Pat Hayes's office. That moment changed Tait's life. As a result of that chance meeting he obtained an unpublished paper of Yorick's which he cited in a final year AI essay (and which he still has). That became his Ph.D. topic, helped get him a place to undertake a Ph.D. at Cambridge under Karen Spärck Jones, and was the foundation of much of his career.

The then European Community had become interested in machine translation, and significant funding was available for relevant R&D, mainly under the EUROTRA

1 Yorick was very loyal to Masterman, a figure who clearly influenced him immensely and whom he viewed as insufficiently recognized. He wrote several papers about her work (Wilks 1988, 2000) and tasked himself with preserving her legacy, a duty he discharged by publishing a collection of her papers (Masterman 2005).

program. Yorick built up a significant MT group at Essex which continued until recently. He also owned a wonderful 17th-century house in Clacton, a seaside resort not too far from the University, at which many legendary parties were held. However, for a variety of reasons Yorick decided to return to the United States and, in 1985, took up a position at New Mexico State University (NMSU) in Las Cruces as leader of the newly created Computing Research Laboratory.

In New Mexico, Yorick built a world leading lab and provided the foundation of the careers of many leading figures in computational linguistics and related fields. Maybury (2007) contains many colorful details about this period of Yorick's life. Much significant work was done by Yorick and his colleagues at this time. This included work on machine readable dictionaries (Wilks et al. 1990; Wilks, Slator, and Guthrie 1996) (seen at that time as a potential way of overcoming the scaling problems of earlier CL systems), belief systems (Ballim and Wilks 1991a, 1991b), machine translation (Farwell and Wilks 1991), and much else besides. A recurrent theme of accounts of his time in New Mexico was his tolerance and encouragement of able people with whose views he disagreed, which of course is not the case in many labs.

In 1993, partly for personal reasons, and partly because the financial support to continue the lab in NMSU at its then level of activity was not forthcoming, Yorick decided to move back to the UK; a suitable professorial position came up at the University of Sheffield. Awarded a lectureship position to fill in order to support his appointment, Wilks chose another one of us (Robert Gaizauskas), inspiring Gaizauskas in just one meeting with his wit, breadth of knowledge, and passion for NLP and AI to move to Sheffield and take up an academic position, a position which led over the coming exciting and productive years of collaboration with Yorick to a full professorship and successful independent research career.

Once again Yorick built up a world leading NLP research lab, this time in a department with an undistinguished computer science research history and few if any special opportunities for funding. His lab became a vibrant environment for numerous research assistants and Ph.D. students. This included one of us (Kalina Bontcheva) whom he supported in leading projects as a postdoc and then mentored and inspired to win a prestigious EPSRC fellowship² and become a successful female professor.

Notable work at Sheffield included proposing and building the widely used GATE toolkit for natural language processing (Gaizauskas et al. 1996), as well as pioneering research in information extraction, question answering and summarization (Gaizauskas and Wilks 1998), and on the related topic of the semantic web (Ciravegna et al. 2004; Brewster et al. 2004; Wilks 2008), particularly the derivation of its content and structure (i.e., ontologies) from text. Sheffield continues to be a world leading center for relevant work on these topics to this day. Another focus of interest at this time, reflecting Yorick's long-standing interest in word meaning and context, was word sense disambiguation (Stevenson and Wilks 2001, 2005).

In the early 2000s Yorick began to bring together earlier interests in chatbots and agents to propose the construction of artificial "Companions" to provide technological assistance for the elderly and lonely especially (Wilks 2005). This drew together several themes from earlier stages of Wilks' career, especially agents (Ballim and Wilks 1991a), and his interest in PARRY (Colby 1975), one of the reasons he had gone to work at

2 "Persistency is under-rated in academia," he told Bontcheva, after her first failed attempt at the fellowship, which she then won on her third attempt, following the birth of her daughter.

Stanford decades earlier, and was to absorb a large part of his creative energy at this time (Wilks 2010).

In 2002, on stepping down as Head of Department in Sheffield, Yorick took a sabbatical in Oxford at the Oxford Internet Institute. He then began a slow transition from Sheffield to Oxford, retiring in stages, while living in Oxford.

In 2008 he received the Association of Computational Linguistics Lifetime Achievement Award. Extraordinarily, this meant that three of the first seven winners of the Award began their careers in the CLRU.

In 2009 he was awarded the British Computer Society's Lovelace Medal, for outstanding contributions to the understanding or advancement of computing. It is the top award for computing in the UK, and it was especially sweet to get this recognition from the UK Computing establishment that had for so long regarded natural language processing and artificial intelligence as peripheral and suspect.

Rather than moving into a quiet retirement in Oxford, in 2010, on finally completing the process of retirement from the University of Sheffield, Yorick took up a new position at the Institute for Human and Machine Cognition in Ocala, Florida, spending much of his time in Florida, while maintaining the family home in Oxford. He continued this way until COVID struck, upon which he began to work remotely which he continued until his death.

In 2019–20 he took up a position at Gresham College in London to deliver a series of lectures on broader topics in artificial intelligence. These were always intended to be recorded, but delivery became primarily via video with the advent of COVID. The lectures are well worth watching, being as one would expect entertaining and thought provoking, but also prescient seen with the eyes of 2023.³ A similar reflective preoccupation with what AI is and where it may be going can be seen in his 2019 popular science book *Artificial Intelligence: Modern Magic or Dangerous Future?* (Wilks 2019).

He never really retired: In 2022 he obtained a new grant (with a former Archbishop of Canterbury, Rowan Williams, among others) to work on Spiritual Intelligence. One theme of this was related to Margaret Masterman's work on religious language.⁴ The project also gave rise to Yorick's final book, close to publication at the time of writing, on AI and God.

A recurrent theme of Wilks' perhaps under-represented in the chronological presentation here is his interest in the pervasiveness of metaphor and metaphorical usage in language (Fass and Wilks 1983; Ballim, Wilks, and Barnden 1991). A second theme that is worth drawing out is the connection he drew between recent developments in artificial intelligence and long-standing strands of philosophy. He decried the all-too-pervasive habits of poor scholarship in computer science and computational linguistics, which often lead to missed opportunities for today's practitioners to stand on the shoulders of giants.

It is fitting that he should die during one of the periodic AI summers, when the popular media are full of overblown assessments of the limits of AI's capabilities, even though its capabilities are massively beyond what they were in the past. One hopes

³ See: <https://www.gresham.ac.uk/speakers/yorick-wilks>.

⁴ In the early 1950s, Masterman played a foundational role in the creation of the Epiphany Philosophers (<http://epiphanyphilosophers.org>), a loose affiliation of Cambridge academics interested in the relation between science and religion. Yorick became a member of this group during his time at Cambridge and remained one until his death.

that, as a result, Yorick will get the recognition he deserves for his vision and his sustained contribution to the field's advances over such a long period.

Yorick is survived by his wife Roberta Catizone (also a well-known computational linguist), son Seth, daughters Claire, Octavia, and Zoe, and two grandchildren.

The world has lost a good deal of its color with his passing.

References

- Ahmad, Khurshid, Christopher Brewster, and Mark Stevenson, editors. 2007a. *Words and Intelligence I: Selected Papers by Yorick Wilks*. Springer Netherlands, Dordrecht. <https://doi.org/10.1109/TAI.1996.560401>
- Ahmad, Khurshid, Christopher Brewster, and Mark Stevenson, editors. 2007b. *Words and Intelligence II: Essays in Honor of Yorick Wilks*. Springer Netherlands, Dordrecht.
- Ballim, Afzal and Yorick Wilks. 1991a. *Artificial Believers: The Ascription of Belief*. L. Erlbaum Associates Inc., Hillsdale, NJ.
- Ballim, Afzal and Yorick Wilks. 1991b. Beliefs, stereotypes and dynamic agent modeling. *User Modeling and User-Adapted Interaction*, 1:33–65. <https://doi.org/10.1007/BF00158951>
- Ballim, Afzal, Yorick Wilks, and John Barnden. 1991. Belief ascription, metaphor, and intensional identification. *Cognitive Science*, 15(1):133–171. Reprinted in Ahmad, Brewster, and Stevenson (2007a), pages 217–253. https://doi.org/10.1207/s15516709cog1501_4
- Brewster, Christopher, Harith Alani, Srinandan Dasmahapatra, and Yorick Wilks. 2004. Data driven ontology evaluation. In *International Conference on Language Resources and Evaluation*.
- Ciravegna, Fabio, Sam Chapman, Alexiei Dingli, and Yorick Wilks. 2004. Learning to harvest information for the semantic web. In *The Semantic Web: Research and Applications*, pages 312–326, Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-540-25956-5_22
- Colby, K. M. 1975. Simulation of belief systems. In R. C. Schank and K. M. Colby, editors, *Computer Models of Thought and Language*, Freeman and Co., San Francisco, pages 251–286.
- Farwell, David and Yorick Wilks. 1991. ULTRA: A multi-lingual machine translator. In *Proceedings of Machine Translation Summit III: Papers*, pages 19–24.
- Fass, Dan and Yorick Wilks. 1983. Preference semantics, ill-formedness, and metaphor. *American Journal of Computational Linguistics*, 9(3–4):178–187.
- Gaizauskas, R., H. Cunningham, Y. Wilks, P. Rodgers, and K. Humphreys. 1996. GATE: An environment to support research and development in natural language engineering. In *Proceedings of the Eighth IEEE International Conference on Tools with Artificial Intelligence*, pages 58–66. <https://doi.org/10.1109/TAI.1996.560401>
- Gaizauskas, Robert and Yorick Wilks. 1998. Information extraction: Beyond document retrieval. *Journal of Documentation*, 54(1):70–105. <https://doi.org/10.1108/EUM0000000007162>
- Masterman, Margaret. 2005. *Language, Cohesion and Form*. Studies in Natural Language Processing, Cambridge University Press. <https://doi.org/10.1017/CB09780511486609>
- Maybury, Mark. 2007. Yorick Alexander Wilks: A meaningful journey. In Khurshid Ahmad, Christopher Brewster, and Mark Stevenson, editors, *Words and Intelligence II: Essays in Honor of Yorick Wilks*. Springer Netherlands, Dordrecht, pages 1–37. https://doi.org/10.1007/1-4020-5833-0_1
- Stevenson, Mark and Yorick Wilks. 2001. The interaction of knowledge sources in word sense disambiguation. *Computational Linguistics*, 27(3):321–349. <https://doi.org/10.1162/089120101317066104>
- Stevenson, Mark and Yorick Wilks. 2005. Word-sense disambiguation. In *The Oxford Handbook of Computational Linguistics*. Oxford University Press.
- Wilks, Yorick. 1972. *Grammar, Meaning and Machine Analysis of Language*. Routledge and Kegan Paul, London.
- Wilks, Yorick. 1973a. An artificial intelligence approach to machine translation. In Roger Schank and Kenneth Colby, editors, *Computer Models of Thought and Language*. Freeman, San Francisco.
- Wilks, Yorick. 1973b. The Stanford machine translation and understanding project. R. Rustin, editor, *Natural Language Processing*. Algorithmics Press, New York. Reprinted in Ahmad, Brewster, and Stevenson (2007a), pages 83–102.
- Wilks, Yorick. 1975a. An intelligent analyzer and understander of English. *Communications of the ACM*, 18(5):264–274. <https://doi.org/10.1145/360762.360770>

- Wilks, Yorick. 1975b. A preferential, pattern-seeking, semantics for natural language inference. *Artificial Intelligence*, 6(1):53–74. Reprinted in Ahmad, Brewster, and Stevenson (2007a), pages 83–102. [https://doi.org/10.1016/0004-3702\(75\)90016-8](https://doi.org/10.1016/0004-3702(75)90016-8)
- Wilks, Yorick. 1978. Making preferences more active. *Artificial Intelligence*, 11(3):197–223. [https://doi.org/10.1016/0004-3702\(78\)90001-2](https://doi.org/10.1016/0004-3702(78)90001-2)
- Wilks, Yorick. 1988. Themes in the work of Margaret Masterman. In *Proceedings of Translating and the Computer 10: The Translation Environment 10 Years On*.
- Wilks, Yorick. 2000. Margaret Masterman, J. Hutchchins, editor, *Early Years in Machine Translation: Memoirs and Biographies of Pioneers*, volume 97 of *Studies in the History of the Language Sciences*. John Benjamins, Amsterdam. <https://doi.org/10.1075/sihols.97.25wil>
- Wilks, Yorick. 2005. Artificial companions. In *Machine Learning for Multimodal Interaction*, pages 36–45, Springer, Berlin, Heidelberg. https://doi.org/10.1007/978-3-540-30568-2_4
- Wilks, Yorick. 2008. The semantic web: Apotheosis of annotation, but what are its semantics? *IEEE Intelligent Systems*, 23(3):41–49. <https://doi.org/10.1109/MIS.2008.53>
- Wilks, Yorick, editor. 2010. *Close Engagements with Artificial Companions: Key Social, Psychological, Ethical and Design Issues*. John Benjamins. <https://doi.org/10.1075/nlp.8>
- Wilks, Yorick. 2019. *Artificial Intelligence: Modern Magic or Dangerous Future?* Icon Books.
- Wilks, Yorick, Dan Fass, Cheng-ming Guo, James E. McDonald, Tony Plate, and Brian M. Slator. 1990. Providing machine tractable dictionary tools. *Machine Translation*, 5(2):99–154. Reprinted in Ahmad, Brewster, and Stevenson (2007a), pages 167–216. <https://doi.org/10.1007/BF00393758>
- Wilks, Yorick A., Brian M. Slator, and Louise M. Guthrie. 1996. *Electric Words: Dictionaries, Computers, and Meanings*. MIT Press, Cambridge, MA. <https://doi.org/10.7551/mitpress/2663.001.0001>