Curriculum Vitae: Peter John Brown

Born: July 30th, 1939 at Beckenham, Kent, England.
Nationality: British
Status: Married
Web page: http://www.dcs.ex.ac.uk/academics/˜pjbrown/ *e-mail*: P.J.Brown@ex.ac.uk

Qualifications

B.A.	(1st Class Honours, Mathematics, Cambridge University, 1961)
M.A.	(Mathematics with Computing, University of North Carolina, 1963)
Ph.D.	(Computer Science, Cambridge University, 1968)
F.B.C.S.	(1970)
F.R.S.A.	(1986)
C. Eng.	(1990)

Positions held

1961-1963	Research Analyst (part-time) at University of North Carolina Computation Center; worked on Algol compiler under direction of P. Naur; taught programming courses.
1963-1965	Graduate programmer at IBM (UK) Laboratories; worked on assembler and PL/I compiler.
1968-1999	Lecturer, Senior Lecturer (1970), Reader in Computer Science (1973), Professor of Computer Science (1976) at University of Kent at Canterbury.
1980(Aug.-Dec.)	Took up invitation to be Visiting Professor, Stanford University.
1987	Erskine Fellow, University of Canterbury, New Zealand.
1992-1993	Visiting Scientist, Rank Xerox EuroPARC, Cambridge.
1996-1997	Visiting Scientist, Xerox European Research Centre (formerly EuroPARC), Cambridge.
1999	Made Emeritus Professor at University of Kent at Canterbury.
1999-2002	Visiting Professor, University of Southampton.
2000-2001	Professorial Research Fellow (2 days per week), University of Exeter.

Research grants, outside activities

1969-1971	SERC Research Grant to develop ML/I macro processor.
1968-1973	Directed design and implementation of Kent On-line System, which was later supported by the Computer Board.
1971, 1972, 1977	Visiting lecturer, Gulbenkian Foundation, Lisbon, partly sponsored by the British Council.
1974-1975	(with 3 others) Conducted Anglo-French study of software portability on behalf of CNRS/SERC.
1975	SERC Visiting Research Fellowship to U.S.A.
1976	(with E. B. Spratt) Technical director of EEC CREST advanced course on Software Portability; editor of proceedings.
1976-1988	Created and, with others, developed a competition for schools, subsequently sponsored nationally as the *Kent/Barclays Computer Applications Competition*.

1976-1979	SERC Research Grant to investigate throw-away compiling.
1976-1981	(with S. E. Binns and H. Brown) Production of BASIC compiler for ICL2900 Range, under a contract between ICL and the University; compiler successfully completed and released on time.
1977	Chairman, conference on *Future Programming*, Copenhagen (Infotech).
1978-present	Member of advisory editorial board for *Software—Practice and Experience*.
1979	Visiting scientist, UFRJ, Rio de Janeiro.
1980-1984	(with P. H. Welch) SERC Research Grant to investigate compiler servers on a Cambridge Ring.
1981	Judge of BCS technical awards.
1981	Invited lecturer at CREST course on program construction, Nice.
1983-1986	Helped set up, for the EASE programme, a national Software Tools Centre at University of Kent, and obtained SERC Research Contract to support this (with R. P. A. Collinson).
1983-1988	SERC Special Replacement Fellowship.
1983	Awarded *Hartree Premium* by IEE for joint paper with M. D. Roberts on VLSI.
1983-1986	(with D. J. Barnes) SERC Research Grant to cover equipment and travel in connection with software tools work.
1984	Panel member at SIGGRAPH 84, Minneapolis.
1984	Local organizer of IFIP WG 2.4 Conference.
1984	Chairman BCS Conference on Education and Training in Software Engineering.
1985-1988	(with H. Brown) Alvey grant as a member of a consortium researching into documentation aids for software engineers. Under the grant, the University employed four research fellows. The grant led to a spin-off project with BT (not involving me directly).
1986-1991	(with J. D. Bovey and T. R. Hopkins) SERC contract for a national Software Tools Centre extended.
1986	Chairman of the joint BCS/IEE conference: *Software Engineering 86*.
1986	Set up contract between the University and Office Workstations Ltd. for marketing the GUIDE software developed by me.
1986-1989	(with D. J. Barnes) SERC grant for research in inter-communication of graphical software.
1986	(with R. P. Bird) DTI 'Industry Year' grant for exhibiting fruits of the schools computing competition mentioned above.
1987	Awarded Regional Commendation, Industry Year 86.
1987	Principal investigator of research contract between University of Kent and DEC.
1988	Chairman of IEE colloquium: 'The role of MMI in software engineering environments'.
1988	(with Office Workstations Ltd.) *BCS award for the best technical achievement of 1988*.
1988-present	Leading various, mostly small, collaborative research/development projects between the University and industry (NatWest Bank, ICL, etc.).
1989	Keynote speaker, *Hypertext II* conference, York.
1990	Chairman of SERC working party on X toolkits.
1990	Introductory keynote speaker at first European hypertext conference.

1990-present	Editorial board of *The New Review of Hypermedia and Multimedia*.
1991-1997	(with Prof. J. B. Slater) ITTI grant to use hypertext techniques for UNIX documentation, with a view to national adoption.
1991	Panel member, *Hypertext '91*, San Antonio, Texas.
1992	Participant in DTI presentations on the future of the document.
1992-3	Programme committee member, ECHT '92, Milan and *Hypertext '93*, Seattle.
1993	Participant in Frost & Sullivan seminar of *The Help Desk*.
1994	Presenter, with V. Quint and H. Brown, of the *Troisième Cycle* research programme to the French-speaking Swiss universities.
1994	Associate programme chair and co-chair for technical briefings, ECHT '94, Edinburgh.
1993-1996	Work helped the University of Kent to get a HEFCE TLTP grant for a *Hypertext campus* project.
1995-1998	(with J. D. Bovey, and with support from Rank Xerox) EPSRC grant for research into using mobile computers to aid human memory.
1995	Keynote speaker, *Hypertext at Work*.
1995	Selected to exhibit at the Royal Society in the INTERLINKS exhibition, which shows research ideas that have become successful products.
1996-present	Member of the Editorial Board of The British Computer Society Journal of Digital Information.
1996-7	Member of organising committee and panels chair for HCI '97.
1996-8	Member of Board for new Software Engineering degree at Mid-Kent College.
1996-8	(with N. S. Ryan and D. R. Morse) JTAP grant for investigating applications of stick-e notes.
1998	Lecturer at Finnish Universities Summer School, Lappeenranta.
1998-9	Member of programme committee for workshop: HCI for Mobile Devices; Edinburgh.
1999	Member of programme committee for Handheld and Ubiquitous Computing '99, Karlsruhe, Germany.
1999-2001	Leverhulme Emeritus Fellowship of £15820 for work entitled 'Context-aware information in real and virtual worlds'.
1999	Work on context-aware mobile applications (with J. Pascoe and N.S. Ryan) nominated by Kent BCS for BCS Technical Award (see http://www.cs.ukc.ac.uk/people/staff/pjb/forms/awards.htm).
1999	Referee for European Commission *Information Society Technologies* programme.
1999	Selected as a member of Baron's 500 Leaders for the New Century (wife says this is either a mistake or a con).

Consultant, at various times, to numerous companies.

Examining, committees, etc. while at Univ. of Kent

Member SERC Computer Facilities Technical Advisory Group.

External B.A. or B.Sc. or taught Masters examiner for Birmingham, Cambridge, East Anglia, London (Imperial), Reading, Sussex and York Universities.

External Ph.D. or M. Phil examiner for Belfast, Birmingham, Brighton, Brunel, Cambridge, Keele, Leeds, Liverpool, London (Imperial), Manchester, Newcastle, Open, Queensland, Reading, St. Andrews, Sheffield, Southampton and Warwick Universities.

Committee member of BCS Advanced Group for Software Engineering. Judge of BCS Schools competition.

Chairman of Darwin College senior common room committee.

Referee and reviewer for numerous journals and research bodies.

Advisor/assessor for Professorial appointments: Association of Commonwealth Universities, University of Wales, University of East Anglia, University of Utah, University of Essex, Brighton University.

Consultant for Computer Science Syllabus for University of Singapore; member of review panel for Brunel University. External examiner: University of West Indies.

Governor of South Bank Polytechnic/University.

Member of numerous University committees including, at the University of Kent, Research Committee, Staff Development Committee, Promotions Committee, and Industrial Liaison Committee; Chairman of the Board of Studies for Computer Science for the first five years from its inception, and again chair of the extended board for the last two years; Head of Research until 1996.

Head of Computer Science department; Chair of Board for Computing degrees.

Engineering Council Neighbourhood Engineer.

'External expert' for new course on *The Internet* at Anglia Polytechnic University.

Products in the marketplace

Several of my research ideas have led to successful commercial products, which have produced income for the University. The ML/I macro processor (late sixties, early seventies) was issued as a product by several British computer manufacturers, including GEC and CTL. We still get orders for it. A BASIC compiler (mid seventies) was designed and developed with two colleagues at Kent, and was issued as a product by ICL; it pioneered a new approach to compiling — now used by Java and called *JIT*. The *Guide* system, designed by me and subsequently enhanced and turned into a product by OWL Ltd., remains a successful hypertext product. The Guide work also won the BCS Technical award for 1988, and was the subject of an exhibit at the Royal Society INTERLINKS exhibition in 1995. We are now in discussion with two potential partners for exploitation of our mobile computing research.

Books

Macro processors and techniques for portable software, Wiley, 1974. Also translated into Russian, Polish and Japanese.

Editor of *Software Portability*, Cambridge University Press, 1977. Also translated into Russian.

Writing interactive compilers and interpreters, Wiley, 1979.

Pascal from BASIC, Addison-Wesley, 1982. Also translated into Japanese, Spanish, Finnish, Taiwanese and Russian.

Starting with UNIX, Addison-Wesley, 1984. Also translated into Dutch, Japanese and Russian.

(with P. Szilard and S. Weeks) *Introduction to PC/IX and PC XENIX*, Addison-Wesley, 1985.

(with J. D. Barnes) Editor of *Software Engineering 86*, Peter Peregrinus, 1986.

Contributions to books

'A survey of macro processors', *Annual Review in Automatic Programming*, Vol. 6, 1970, Pergammon, pp. 37-87.

'Macros and their uses', *The Fourth Generation*, Infotech, 1971, pp. 407-419.

'Designing portable software', *Incompatibility*, Infotech, 1972, pp. 217-232.

(with S. E. Binns, H. Brown, M. J. Garside) 'Principles of the Kent On-line System', *Proceedings of the Software 71 Conference*, Transcripta Books, pp. 77-87.

'Extending high-level languages by macros — a practical case examined', *Proceedings of the Software 72 Conference*, Transcripta Books, pp. 95-99.

‘Design of the ML/I macro processor’, *Proceedings of a Symposium on Software Engineering*, HMSO, 1971, pp. 48-54.

(with R. C. Saunders) ‘A comparison between implementations of an identical program on several different computers’, *Proceedings of a BCS Conference on Computer Performance*, 1972, pp. 53-58.

Contributions to *Encyclopedia of Computer Science*, (A. Ralston, E.D. Reilly, & D. Hemmerdinger Eds.), Grove Dictionaries, New York, 1975, 1982, 1993 pp. 1066-8, 1633-5. (ISBN 156159248X)

‘Portable software using a high-level macro language’, *IFIP WG 2.4 Conference Proceedings,* La Grande Motte, 1974.

‘Throw-away compiling: a middle path between interpretation and compiling’, *Program Optimization*, Infotech, 1976, pp. 147-160.

‘The impact of portable software’, *Future Programming*, Infotech, 1978, Vol. 2, pp. 43-53.

‘Planning for portability’, *Long-life Software*, Infotech, 1980.

Foreword to *Portable Programming*, by P. J. L. Wallis, MacMillan, 1982.

‘Tools for amateurs’ and ‘Designing a VLSI chip’, in *Tools and notions for program construction*, Cambridge University Press, 1982, pp. 377-398.

‘Building programs as they run’, *Program Technology*, Infotech, 1982, pp. 131-138.

‘Why does software die?’, in *Software Maintenance*, IEEE, 1983, pp. 279-286. (Later reprinted in a subsequent book: *Software Restructuring* (Arnold).)

‘Developments in software technology’, in *Software technology in the eighties*, BCS, 1983, pp. 39-42.

(with D. J. Barnes, J. D. Bovey, H. P. Siemon) ‘Some UNIX tools to exploit a workstation’, in *Integrated project support environments*, Peter Peregrinus, 1985, pp. 68-75.

‘Viewing documents on a screen’, in *CD ROM: the new papyrus*, Microsoft Press, 1986, pp. 175-184.

‘A simple mechanism for authorship of dynamic documents’, in *Text processing and document manipulation*, Cambridge University Press, 1986, pp. 34-42.

‘On-line documentation’, in *Techniques for computer graphics*, Springer-Verlag, 1986, pp. 455-468.

‘Presenting documents on workstation screens’, in *Workstations and publication systems*, Springer-Verlag, 1987, pp. 122-128.

‘Turning ideas into products: the Guide system’, in *Proceedings of HYPERTEXT 87*, Univ. of North Carolina, 1987, pp. 33-40.

‘Hypertext: the way forward’, in *Document manipulation and typography*, Cambridge University Press, 1988, pp. 183-191.

‘Astazioni di alto livello e ricerca dei dati’, in P. Paolini (Ed.) *Navigare con gli Ipertesti*, Mondadori, Milan, 1989, pp. 59-60.

‘Hypertext: dreams and reality’, in H. Brown (Ed.) *Hypermedia/hypertext and object-oriented databases*, Chapman and Hall, 1991, pp. 33-54.

‘Assessing the quality of hypertext documents’, in Rizk *et al* (Ed.) *Hypertext: concepts, systems and applications*, Cambridge University Press, 1990, pp. 1-12.

(with R. E. Jones) ‘Marking EP coursework using electronic submission’, in André (Ed.) *Teaching electronic publishing*, *BIGRE*, **79**, Rennes, 1992, pp. 36-45. (Also published in special issue of *EP—odd*, **6, 2** (1992), pp. 73-78.)

‘UNIX GUIDE: lessons from ten years’ development’, in Lucarella *et al* (Ed.) *Proceedings of the ACM conference on hypertext*, Milan, ACM Press, New York, 1992, pp. 63-70.

‘Adding networking to hypertext: can it be done transparently?’, in Guimaraes *et al* (Ed.) *ECHT94 Proceedings*, Edinburgh, ACM Press, New York, 1994, pp. 51-58.

‘Taking a stroll down Babel Street’. in A. Davison (Ed.) *Humour the computer*, MIT Press, Cambridge, Mass., 1995, pp. 165-168. (ISBN 0262540754)

‘Building novel software: the researcher and the market-place’, in Milner, R. and Wand, I. (Eds.) *Computing tomorrow: future directions in computer science*, Cambridge University Press, 1996, pp. 21-32. (ISBN 0521460859)

Foreword to Strang, W., Simpson, V. B. and Slater, D. (Eds.) *Hypermedia at work*, University of Kent at Canterbury, 1995.

‘Some lessons for location-aware applications’, in C. Johnson (Ed.) *Proceedings of first workshop on HCI for mobile devices*, Glasgow, 1998, pp. 58-63.

(with N. Davies. M. Smith and P. Steggles) ‘Towards a better understanding of context and context-awareness’, (panel statements), *Handheld and Ubiquitous Computing*, (H.-W. Gellersen, Ed.), Springer, Berlin, 1999, pp. 304-307. (ISBN 3-540-66550-1)

(with G.J.F. Jones) ‘Information access for context-aware appliances’, *Proceedings of ACM SIGIR 2000*, Athens, Greece, 2000, ACM Press, pp. 382-5.

Further contributions to *Encyclopedia of Computer Science*, (A. Ralston *et al*, Ed.), Grove Dictionaries, New York, 2000, pp. 1066-8, 1633-5.

(with Heather Brown, Les Carr, Wendy Hall, Wendy Milne and Luc Moreau) ‘A link-oriented comparison of of hyperdocuments and programs’, *Preliminary Proceedings of Digital Documents and Electronic Publishing 2000 (DDEP00)*, Eds. A. Bruggemann-Klein and P. R. King, pp. 1−10, 2000. (Also to be Published in Springer-Verlag LNCS, 2001.)

(with G.J.F. Jones) ‘Exploiting contextual change in context-aware retrieval’, *Proceedings of the 17th ACM Symposium on Applied Computing (SAC 2002)*, Madrid, ACM Press, New York, pp. 650-656, 2002.

(with G.J.F. Jones) ‘Challenges and opportunities for context-aware retrieval on mobile devices’, *SIGIR workshop on Mobile Personal Information Retrieval*, Tampere, Finland, pp. 47-56, 2002.

(with G.J.F. Jones) ‘Context-aware retrieval for pervasive computing environments’, in Mattern & Naghshineh (eds.) *Pervasive 2002*, Zurich, (short paper), pp. 10-27, 2002.

Main articles

‘Note on the proof on the non-existence of phrase structure grammar for Algol 60’, *Comm. ACM* **6, 3** (March 1963), p. 105.

(with M. G. Shoffner) ‘A suggested method of making further use of strings in Algol 60’, *Comm. ACM* **6, 4** (April 1963) pp. 169-171.

‘The ML/I macro processor’, *Comm. ACM* **10, 10** (Oct. 1967), pp. 618-623.

‘Using a macro processor to aid software implementation’, *Computer J.* **12, 4** (Nov. 1969), pp. 327-331.

‘The Kent On-line System’, *Software—Practice and Experience* **1, 3** (July 1971), pp. 269-277.

‘Effective use of batch and on-line facilities for introductory programming course’, *Computer Bulletin* **15, 10** (Oct. 1971), pp. 370-372.

‘SCAN — a simple conversational programming language for text analysis’, *Computers and the Humanities* **6, 4** (March 1972), pp. 223-227.

‘Re-creation of source code from reverse Polish notation’, *Software—Practice and Experience* **2, 3** (July 1972), pp. 275-278.

‘Levels of language for portable software’, *Comm. ACM* **15, 12** (Dec. 1972), pp. 1059-1062.

‘UNRAVEL — a programming language to put intelligence into dumps’, *Computer J.* **16, 1** (Feb. 1973), pp. 10-12.

‘A practical usage of outer and inner syntax’, *Computer J.* **16, 2** (May 1973), pp. 122-123.

‘Writing software in Algol’, *Software—Practice and Experience* **4, 2** (April 1974), pp. 139-144.

‘Programming and documenting software projects’, *Computing Surveys* **6, 4** (Dec. 1974), pp. 213-220.

‘Throw-away compiling’, *Software—Practice and Experience* **6, 2** (July 1976), pp. 423-434.

‘More on the re-creation of source code from Reverse Polish‘, *Software—Practice and Experience* **7, 5** (Oct. 1977), pp. 545-551.

‘Software methods for virtual storage of executable code’, *Computer J.* **22, 1** (Feb. 1979), pp. 50-52.

‘Macros without tears’, *Software—Practice and Experience* **9, 6** (June 1979), pp. 435-437.

‘SUPERMAC — a macro facility that can be added to existing compilers’, *Software—Practice and Experience* **10, 6** (June 1980), pp. 431-434.

‘Dynamic program building’, *Software—Practice and Experience* **11, 8** (Aug. 1981), pp. 831-844.

(with M. D. Roberts) ‘String-processing chip designed in VLSI’, *IEE Journal of Computers and Digital Techniques* **127**, (Nov. 1981), pp. 245-249.

‘ “My system gives excellent error messages” — or does it?’, *Software—Practice and Experience* **12, 1** (Jan. 1982), pp. 91-94.

‘Error messages: the neglected area of the man/machine interface?’, *Comm. ACM* **26, 4** (Apr. 1983), pp. 246-249.

(with J. A. Ogden) ‘The SUPERMAC macro processor in Pascal’, *Software—Practice and Experience* **13, 4** (Apr. 1983), pp. 295-304.

‘Interviews in Babel Street’, *Comm. ACM* **27, 4** (Apr. 1984), pp. 352-355. (Also reprinted in several other publications, under titles such as *Humour in Computing*.)

‘Embedded macro processors’, *Computer J.* **27, 4** (Nov. 1984), pp. 348-353.

‘Dynamic documentation’, *Software—Practice and Experience* **16, 3** (March 1986), pp. 291-299.

(with J. D. Bovey) ‘Interactive document display and its use in information retrieval’, *Journal of Documentation* **43, 2** (June 1987), pp. 125-137.

(with M. T. Russell) ‘Converting help systems to hypertext’, *Software—Practice and Experience* **18,2** (Feb. 1988), pp. 163-5.

‘Linking and searching within hypertext’, *EP—odd*, **1, 1** (Apr. 1988), pp. 45-53.

‘A hypertext system for UNIX’, *Computing Systems*, **2, 1** (Winter 1989), pp. 37-53.

‘Do we need maps to navigate around hypertext documents?’, *EP—odd*, **2, 2** (Jul. 1989), pp. 91-100.

‘Higher level hypertext facilities: procedures with arguments’, *Hypermedia*, **3**, **2**, (1991), pp. 91-100.

‘Using logical objects to control hypertext appearance’, *EP—odd*, **4**, **2**, (1991), pp. 109-117.

‘Hypertext in action: some results from an application’, *Information Services & Use*, **12** (1992), pp. 41-54.

(with Mik Lamming and 6 others) ‘The design of a human memory prosthesis’, *Computer Journal*, **37**, 3 (June 1994), pp. 153-163.

‘Creating educational hyperdocuments: is it economic?’, *Innovation in Education and Training International*, **32**, 3 (1995), pp. 202-208. (Keynote address: *Hypertext at Work*) (ISSN 13558005)

(with H. Brown) ‘Embedded or separate hypertext mark-up: is it an issue?’, *EP—odd*, **8**, **1**, (1995), pp. 1-13.

‘The stick-e document: a framework for creating context-aware applications’, Proceedings of *EP ’96*, Palo Alto, Sept 96, published in *EP—odd*, **8**, **2**, pp. 259-272. (ISSN 0894 3982)

(with J. D. Bovey and X. Chen) ‘Context-aware Applications: from the Laboratory to the Marketplace’, *IEEE Personal Communications*, 4, 5, (1997), pp. 58-64. (ISSN 1070 9916)

‘Triggering information by context’, *Personal Technologies*, 2, 1, (1988), pp. 18-27. (ISSN 0949 2054)

(with J. Pascoe and N. S. Ryan) ‘Context-aware: the dawn of sentient computing’, *GPS World*, **9**, 9, pp. 23-30. (ISSN 1048 5104)

(supervised work:) J. Pascoe, D.R. Morse and N.S. Ryan, ‘HCI issues in fieldwork environments’, *ACM TOCHI*, **7**, 3, pp. 417-437, 2000. (ISSN 1073 0516)

(with G.J.F. Jones) ‘Context-aware retrieval: exploring a new environment for information retrieval and information filtering’, *Personal and Ubiquitous Computing*, **5**, *4* (2001), pp. 253-263. (ISSN 1617 4909)

(Invited paper for the 2002 issue of NRHM) ‘From information retrieval to hypertext linking’, *New Review of Hypermedia and Multimedia*, Vol. 8, pp. 1-?, 2002.

Contribution to University finances

I have been responsible, via projects I have led and participated in, for contributing over £750,000 to the University of Kent Computing Laboratory Academic Development Fund. This money has come mainly from software royalties and sales. The fund is used to support extra posts, to attract distinguished visitors, and to fund speculative research.

Research: past to future

My research has always been centred round building innovative software, and, for a short period, hardware. It has ranged through macro processors, operating systems, compilers, VLSI and hypertext. After a period with Xerox in 1993 I became interested in new potential applications for mobile devices. I have been working in this area since, and have just been a party to a large EPSRC bid for an Interdisciplinary Research Collaboration in this area. The recent achievement of which I am most proud is to involve my UKC colleagues in this field: when we started these colleagues had had limited research success, but now they are leading the work. Since this research is currently successful and presents many challenges (in a wide variety of fields), I plan to continue it in the future.

Other activities

Teaching may not be directly relevant for future posts, but I have consistently got good evaluations from students — last year I was even singled out for praise on the Staff/Student Liaison Committee. I have always tried to innovate: an initiative this year was a new series of seminars on ‘Starting your own computing company’; this achieved record attendances, and has generated a high level of interest throughout the university.

I have had some past success in writing popular and research computing books, and a series of humorous articles for *Computer Weekly*. I plan to return to this activity, though in my own time — that is one reason I am interested in a part-time job.