

## CURRICULUM VITAE

Julian Warner

June 2024

Julian Warner is Honorary Lecturer, Queen's Business School, Queen's University Belfast.

He was appointed to Queen's University in 1984 as a faculty member in library and information studies

After some initial publication in librarianship, he turned towards information science, in line with institutional movement towards information studies. Influenced by a predominantly scholarly, rather than professional, background the scholarly orientation, information science was understood as a discipline concerned with information and not as a technical sub-discipline of library and information science. He developed further competencies in logic, mathematics, and computation, integrating these with the existing background in the humanities.

Subsequent research and teaching continues to accord with institutional moves, specifically the absorption of information studies within management.

### Research and educational strategy

The strategy developed is to study of information topics of wide public interest, to fit in with the management institutional context. A humanistic and historically informed perspective on information and computational developments has been developed, from the late 1980s.

A corresponding publication strategy involves publishing on such topics within the disciplinary community of information science, as conference presentations and journal articles. Work is then synthesized into monographs, with the addition of significant further material, for publication with major scholarly publishers, to diffuse themes beyond information science.

Research themes and publications anticipated the call by Eric Schmidt, Chairman of Google to bring art and science back together for understanding and progressing computational technologies (Mac Taggart lecture, Edinburgh, August 2011), by some twenty years.

### Themes developed

The first monograph published, *From Writing to Computers* (London and New York: Routledge, 1994), responded to a call in the 1988 Panizzi lectures by D.F. McKenzie, to establish a 'unifying, intellectual principle' which would connect computing to books. The reception of the work

testified to its originality and interest, and to the clarity, intelligibility, accuracy, and comprehensiveness of the account given of the theory of computability.

Humanistic perspectives and understanding of computation were further synthesized in the late 1990s. In particular, a distinction of semantic from syntactic mental labor, between human labor directly motivated by meaning and computational transformations determined by pattern, was published in the early 21st century. Information science and other disciplines – information systems, business studies, marketing, linguistics, and computer science – have adopted the distinction as fundamentally significant.

Empirical application to two distinct subject areas further developed the understanding of semantic and syntactic labor. *Human Information Retrieval* (Cambridge, MA: MIT Press, 2010) made explicit use of the distinction and has been received as transformative for the study of information retrieval. *Copyright, Data and Creativity in the Digital Age: A Journey through Feist* (London and New York: Routledge, 2021) took the distinction as its implicit basis. Reviews have similarly recognized it as transformative. Interacting practice with theory has validated and significantly refined understandings of semantic and syntactic labor.

Students jointly studying computer science and management have tested theoretical distinctions. Students conducted empirical studies, of business contexts, and populate theoretical categories with their own examples for semantic and syntactic labor. Concepts developed have not broken down in interaction with c.2000 students, confirming their robustness. Conciseness, intelligibility, and potential for broad application of theories have been further revealed. In addition, students have commented on their integrative effect in linking computer science and management together.

Research themes have then been extensively empirically tested and dialogically tested and validated. Themes have been hammered out, refined, and burnished.

### Research and publication plans

The adoption of the distinction of semantic from syntactic labor and its further development make the time ripe for further dissemination, by book publication to reach management and wider public discourse.

Accordingly, a book, *Human and Computer: Semantic and Syntactic Labor*, has been developed. A proposal and draft manuscript of c.80,000 words was submitted to MIT Press, by invitation, for peer review, in December 2023. Comments received to date indicate that, '**what makes the proposed book really important** is that it offers a coherent antidote to the overwhelming imperialism of AI-based cognitive science', and, 'What seemed at first sight as a strange distinction and a debate which could have taken place sometime in the late 20th century, is

**right in the core of our near future** (Publisher’s review comments on sample draft, June 2023; emphases added).

A recent published comment further characterizes the distinction between semantic and syntactic labor as ‘**fundamental .... an area particularly ripe for conceptual development**’ (Buckland, M.K. (2024). Editorial: Festschrift Coda. *Journal of Documentation*. 80, 3, pp. 696-697; emphases added).

The proposed work is then particularly timely.

## Conclusion

Julian has then cumulatively developed a research, publication, and educational strategy, since the late 1980s. Information science and a number of other disciplines have commended the monographs published. Further publication, deliberately for dissemination, should ensure that themes reach ordinary discourse.

## PERSONAL DETAILS

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## EDUCATION

- 1984 MA Librarianship, University of Sheffield.
- 1984 D.Phil. English Language and Literature, Oxford University.
- 1979 MA 20th century English and American literature, University of Newcastle upon Tyne.
- 1977 BA Honours in English language and literature, First class, University of Newcastle upon Tyne.

## EMPLOYMENT

2021-	Honorary Lecturer, Queen's Management School.
1984-2021	Faculty member, The Queen's University of Belfast.
2009-2021	Management Subject Group, Queen's Management School.
2001-2009	Management Information Systems Division, School of Management.
1999-2001	Management Information Systems Division, School of Management and Economics.
1993-1999	Management Information Systems Division, School of Management.
1989-1993	Information Systems Division, School of Finance and Information.
1984-1989	Department of Library and Information Studies.
1982-1983	Trainee, The Library, University of York.
1973-1974	Research Assistant, United Glass Research and Development, St. Albans.

## VISITING POSITIONS

Jun-Aug 2006	Visiting Scholar, School of Library and Information Science, Indiana University. Teaching <i>L565 Computer Mediated Communication</i> .
Feb-Jun 2005	Visiting Scholar, Research Centre for Social Sciences, University of Edinburgh. Researching a labor theoretic approach to information retrieval, including the semantics of full text indexing.
Feb-Sept 2000	Visiting Scholar, Graduate School of Library and Science, University of Illinois at Urbana-Champaign. Developing perspectives on information technology.
1991-1992	Visiting Associate, School of Library and Information Studies, University of California at Berkeley. Writing a historical study of writing and computing.

## AWARDS & PRIZES

2021	Distinguished Member, Association for Information Science & Technology.
2002	Fellowship of the Institute of Information Scientists for services to the information profession and to the Institute.

## RESEARCH

### Principal publications

#### Authored books

- 2025 *Restoring Human Autonomy over the Computer: Semantic and Syntactic Labor*. Complete draft manuscript and proposal submitted to MIT Press, December 2023.

A manuscript of 80,000 words was submitted to MIT Press, in December 2023 in complete, although draft, form. MIT Press have asked for comments, from four reviewers. The current rate of further revision, from draft to final submission form, promises completion in November 2024, with publication 2025.

- 2021 *Copyright, Data and Creativity in the Digital Age: A Journey through Feist* (Routledge Research in Intellectual Property). London and New York: Routledge. x, 178p. Issued in paperback, 2023.
- 2010 *Human Information Retrieval* (History and Foundations of Information Science Series). Cambridge, MA: MIT Press. viii, 189p.
- 2004 *Humanizing Information Technology*. Lanham, MD: Scarecrow Press. ix, 145p.
- 2001 *Information, Knowledge, Text*. Lanham, MD: Scarecrow Press. x, 151p.
- 1994 *From Writing to Computers*. London and New York: Routledge. xi, 159p. A Japanese language version was published in 1999 (and was selected and summarized by Microsoft Japan as a recommended reading).

#### Articles in refereed journals

- 2023 The spectrum of semantic and syntactic labour. *Journal of Documentation*. 80, 3, pp.649-664. DOI: <https://doi.org/10.1108/JD-03-2023-0057>.
- 2019 When might human indexing be strongly justified. *Proceedings from the Document Academy*. 6, 1, Article 5. DOI: <https://doi.org/10.35492/docam/6/1/5>.
- 2013 Creativity for Feist. *Journal of the American Society for Information Science and Technology*. 64, 6, 1173-1192.
- 2010 The absence of creativity in Feist and the computational process. *Journal of the American Society for Information Science and Technology*. 61, 11, 2324-2336.
- 2010 So mechanical or routine: the not original in Feist. *Journal of the American Society for Information Science and Technology*. 61, 4, 820-834.
- 2008 Organs of the human brain, created by the human hand? The social epistemology of information technology. *Journal of Documentation*. 64, 5, 738-759.
- 2008 A labor theoretic approach to information retrieval. *Journal of the American Society for Information Science and Technology*. 59, 5, 731-741.

- 2007 Description and search labor for information retrieval. *Journal of the American Society for Information Science and Technology*. 58, 12, 1783-1790.
- 2007 Selection power and selection labor for information retrieval. *Journal of the American Society for Information Science and Technology*. 58, 7, 915-923.
- 2007 Analogies between linguistics and information theory. *Journal of the American Society for Information Science and Technology*. 58, 3, 309-321.
- 2007 Linguistics and information theory: analytic advantages. *Journal of the American Society for Information Science and Technology*. 58, 2, 275-285.
- 2005 An information dynamic: technologies for the reproduction of written utterances. *Aslib Proceedings*. 57, 5, 412-423.
- 2005 Labor in information systems. *Annual Review of Information Science and Technology*. 39, 551-573.
- 2004 Meta- and object-language for information retrieval research: proposal for a distinction. *Aslib Proceedings*. 56, 2, 112-117.
- 2003 Information and redundancy in the legend of Theseus. *Journal of Documentation*. 59, 5, 540-557.
- 2003 Modelling the diffusion of specialised knowledge. *Aslib Proceedings*. 55, 1-2, 75-83.
- 2002 Forms of labour in information systems. *Information Research*. 7, 4. Available at: <http://InformationR.net/ir/7-4/paper135.html>
- 2001 W(h)ither information science?/! *Library Quarterly*. 71, 2, 243-255.
- 2000 A critical review of the application of citation studies to the Research Assessment Exercises. *Journal of Information Science*. 26, 6, 453-460.
- 2000 What should we understand by information technology (and some hints at other issues)? *Aslib Proceedings*. 52, 9, 350-370.
- 2000 In the catalogue ye go for men: evaluation criteria for information retrieval systems. *Aslib Proceedings*. 52, 2, 76-82.
- 1999 An information view of history. *Journal of the American Society for Information Science*. 50, 12, 1125-1126.
- 1999 Information society or cash nexus? A study of the United States as a copyright haven. *Journal of the American Society for Information Science*. 50, 5, 461-470.
- 1997 The public reception of the Research Assessment Exercise 1996. *Aslib Proceedings*. 49, 10, 263-276.
- 1997 Studying writing. *Journal of Documentation*. 53, 2, 226-237.
- 1996 Y. Lindholm-Romantschuk and J. Warner. The role of monographs in scholarly communication: an empirical study of philosophy, sociology and economics. *Journal of Documentation*. 52, 4, 389-404.
- 1993 Writing and literary work in copyright: a binational and historical analysis. *Journal of the American Society for Information Science*. 44, 6, 1993, pp.307-321.
- 1992 A note on the literal intelligence of computers and documents. *Journal of Documentation*. 47, 2, 167-190.

- 1990 Writing, literary work and document in United Kingdom copyright. *Journal of Information Science*. 16, 5, 1990, pp.279-289.
- 1990 Semiotics, information science, documents and computers. *Journal of Documentation*. 46, 1, 16-32.
- 1989 Communication: A comment on British Library microform publications and their bibliographic control. *Journal of Librarianship*. 21, 3, 200-201.
- 1988 British Library microform publications and their bibliographic control. *Journal of Librarianship*. 20, 3, 159-180.

#### Articles in refereed conference proceedings

- 1992 Retrieval performance tests in relation to online bibliographic searching. In: Deborah Shaw editor. *ASIS '92: Celebrating Change: Information Management on the Move* (Proceedings of the 55th ASIS Annual Meeting, Pittsburgh, PA, 26-29 October 1992). Medford, NJ: Learned Information for the American Society for Information Science. pp.231-241.
- 1991 Writing, programs, computers and logic. In: K. P. Jones editor. *Informatics 11: The Structuring of Information* (Proceedings of a conference held at the University of York, 20-22 March 1991). London: Aslib. pp.109-145.

#### Book chapters

- 2018 Feeding two wolves: the human and the computational in document analysis. In: W. M. El Hadi editor. *Fondements épistémologiques et théoriques de la science de l'information-documentation* (Actes du 11e colloque ISKO France 2017). London: ISTE Editions. pp.349-357.
- 2017 Mr. Micawber anticipates Feist: transformations of mental labour. In: A. Pablé editor. *Critical Humanist Perspectives. The Integrational Turn in Philosophy of Language and Communication*. London and New York: Routledge. pp.173-188.
- 2008 Materializing communication concepts: linearity and surface in linguistics and information theory. In: P. Turner, S. Turner, and E. Davenport editors. *Exploration of Space, Technology, and Spatiality: Interdisciplinary Perspectives*. Hershey, New York: Information Science Reference Press. pp.196-213.
- 2005 Escape from surface and linearity. In: P. Turner and E. Davenport editors. *Spaces, Spatiality and Technology* (The Kluwer International Series on Computer Supported Cooperative Work, Vol. 5). Berlin: Springer, 2005. pp.129-138.

### Articles in other journals

- 2017 J. Warner, F. Ibekwe-SanJuan, I. Peters, N. Windfeld Lund, and M. Buckland. Tomato tomahto: European perspectives on information science. *Bulletin of the Association for Information Science and Technology*. 43, 3, 45-48.
- 2005 The Athens of the North: changing conceptions of democracy. *Bulletin of the American Society for Information Science and Technology*. 32, 1, 27-28.
- 2003 Citation analysis and research assessment in the United Kingdom. *Bulletin of the American Society for Information Science and Technology*. 30, 1, 26-27.
- 2003 Shouting fire on a crowded Internet. *Bulletin of the American Society for Information Science and Technology*. 29, 5, 22-24.
- 2001 Epilogue: A summary of the day's discussions [Report on a Symposium on Teaching the Information Society, Napier University, May 2001]. *Education for Information*. 19, 3, 259-261.
- 2000 Opinion: research assessment and citation analysis. *The Scientist*. 14, 21, p.39.
- 1994 Is there an origin to graphic communication? *Managing Information*. 1, 2, 32-34.
- 1988 Confess and be hanged, or, *Public Library Statistics*. Link. 40, 10-15.

### Articles in other conference proceedings

- 1998 Copyright in history. In: A. Adair and J. Warner editors. *Public information in private spaces* (Proceedings of the 33rd Annual Joint Conference of the Library Association of Ireland and Library Association (Northern Ireland Branch, Letterkenny 22-24 April 1997). Dublin and Belfast: Library Association of Ireland and Library Association: Northern Ireland Branch. pp.81-83.

### Edited and published works

- 1998 A. Adair and J. Warner editors. *Public Information in Private Spaces* (Proceedings of the 33rd Annual Joint Conference of the Library Association of Ireland and Library Association, Northern Ireland Branch, Letterkenny 22-24 April 1997). Dublin and Belfast: Library Association of Ireland and Library Association, Northern Ireland Branch. 111p.
- 1988 C. M. Fhearaigh. *Leagh Leat: A List of Story Books in the Irish Language for Young People*. Edited by Julian Warner. Belfast: Department of Information Studies, Queen's University of Belfast.
- 1988 B. Donnelly. *Handle with Care! A Resource List on Child Abuse*. Edited by Julian Warner. Belfast: Department of Information Studies, Queen's University of Belfast.

## Book reviews

Reviews have been published in the following journals.

*Journal of the American Society for Information Science and Technology*

*Journal of the American Society for Information Science*

*Journal of Documentation*

*Information Processing and Management*

*Library Quarterly*

*Inform*

*Library Association Record*

*An Leabharlann. The Irish Library*

*Times Higher Education Supplement*

## Conference and seminar presentations given

- 2019 When might human indexing be strongly justified. *Of Documents and Data. Annual Meeting of the Document Academy*, Ingémédia Department, University of Toulon, France, June.
- 2017 Feeding two wolves: the human and the computational in document analysis. *Epistemological and theoretical foundations of Information – documentation science: a tribute to Francophone pioneers. 11th Biennial Conference of the French ISKO Chapter*, Paris, July.
- 2016 The whole earth girded by telegraph cables: European influences on information science. *Annual Meeting of the Association for Information Science and Technology*, Copenhagen, October.
- 2014 Integrating theory and practice. *Annual Meeting of the Association for Information Science and Technology*, Seattle, November.
- 2014 Into the briar patch: analogies to semantic and syntactic mental labour in the *Feist* decision. *Integrationism and Humanism*. Oberägeri, Central Switzerland, June.
- 2013 Transcending epistemological duality. *Annual Meeting of the Association for Information Science and Technology*. Montreal, November.
- 2013 Crossing the boundaries in information science: a perspective from Northern Ireland. *Annual Meeting of the Association for Information Science and Technology*. Montreal, November.
- 2011 Research questions in information science. *Annual Meeting of the American Society for Information Science and Technology*. New Orleans, October.
- 2011 A non-computable semantics. *Integrationism 2.0, A conference sponsored by The International Association for the Integrational Study of Language and Communication and The Department of English, The University of Birmingham*. Birmingham, July.

- 2011 Information science in Europe. *Paper given as part of a panel, Europeanisation of information science, Internationales Symposium der Informationswissenschaft (ISSI 2011)*, Hildesheim, Germany, March.
- 2011 Copyright in the global mobile environment. *ASIS&T European Workshop 2011 (AEW 2011)*. Cork, Ireland, June.
- 2010 A modicum of creativity after Feist. *Paper given at the University of North Carolina and the in the Information in Society Speaker Series, Graduate School of Library and Information Science, University of Illinois at Urbana-Champaign*, August.
- 2009 Creativity in Feist. *Information Access Seminar, School of Information, University of California at Berkeley*, September.
- 2008 The political economy of information retrieval. *Doctoral Colloquium, Palmer School of Library & Information Science*, April.
- 2006 Forms of mental labor in the Feist judgment. *Annual Meeting of the American Society for Information Science and Technology, Austin, Texas*. November.
- 2004 Operations on a line: analogies between linguistics and information theory. *Space, Spatiality and Technology, Napier University*. December.
- 2004 A labor theoretic approach to information retrieval. *Annual Meeting of the American Society for Information Science and Technology*. Providence, Rhode Island, November.
- 2004 An information dynamic: technologies for the reproduction of written utterances. *Understanding Sociotechnical Action, Napier University*. June.
- 2003 Escape from surface and linearity. *Space, Spatiality and Technologies, Napier University*. December.
- 2003 Shouting fire on a crowded Internet: freedom of expression in electronic environments. *Annual Meeting of the American Society for Information Science and Technology*. Long Beach, California, October.
- 2003 Organs of the human brain, created by the human hand? The social epistemology of information technology. *Annual Meeting of the American Society for Information Science and Technology*. Long Beach, California, October.
- 2002 Modelling the diffusion of specialised knowledge. *CIBER (Centre for Information Behaviour and the Evaluation of Research, City University)*. Bedford, England, July.
- 2001 J. Warner and C. Cox. As sharp as a pen: direct semantic ratification in oral, written, and electronic communication. *Annual Meeting of the American Society for Information Science*. Washington, November.
- 2000 Meta- and object-language in information retrieval research. *Canadian Association for Information Science Annual Meeting*. Edmonton, Alberta, May.
- 2000 Not the exact words ... : writing, computing, and exactness. *Computer Science as a Human Science: The Cultural Impact of Computerization: The 1999-2000 Sawyer Seminar at the University of Chicago*. January.
- 1999 What should we understand by information technology (and some hints at other questions)? *Annual Meeting of the American Society for Information Science*. Washington, November.

- 1996 Iconic and notational models for formal logic and automata theory. *Seminar organized by the German equivalent to the British Computer Society (paper given by invitation)*. Dagstuhl, Germany, February
- 1995 Writing, computing, and exactness. *Annual Meeting of the American Society for Information Science*. Chicago, October.
- 1994 Shannon, Weaver, and the Minotaur: redundancy in language and information systems. *Annual Meeting of the American Society for Information Science, Arlington, Virginia*. October.
- 1994 A look at BUBL in the context of networked communication. *IV Annual Conference of Librarians and Documentalists*. Gijon, Spain, October.
- 1992 Retrieval performance tests in relation to online bibliographic searching. *Annual Meeting of the American Society for Information Science*. Pittsburgh, October.
- 1991 Writing, programs, computers and logic. *Informatics 11: The Structuring of Information*. University of York, March.

## Impact of research

### *Copyright*

The book and articles (Warner, 2021; 2013) on the decision of the Supreme Court of the United States in *Feist v. Rural* (1991) have the potential to be significant for information policy at a global level. They give a simple, compelling, and practically implementable interpretation of a highly significant copyright judgment.

Intellectual property literature has begun to cite the book, published in an intellectual property series (Warner, 2021). Overall, while the Feist decision does not directly dictate the originality of text prompts, it underscores the importance of creativity in copyright law.<sup>33</sup>

Mazzi, F. (2024). Authorship in artificial intelligence-generated works: Exploring originality in text prompts and artificial intelligence outputs through philosophical foundations of copyright and collage protection. *The Journal of World Intellectual Property*. 2024, 1-18. <https://doi.org/10.1111/jwip.12310>

Review, in information science journals, were strongly positive.

The Feist decision put copyright in the digital age; Warner's study yields new insights into the decision ... persuasively makes the case for his inexorable conclusions ... Similar to the methods used by courts, Warner's careful, granular analysis of the meaning of words, and their definitions, are applied to the level and amount of creativity ... leads to further discernment on the characteristics of algorithmic processes. The thorough analysis of the terms and phrases in Feist, fully explicated, culminate in a positive interpretation of creativity, that is fully applicable to the digital environment ... the book follows a sound, replicable methodology; indeed, the findings are coherent and yield a deeply satisfying and

practical interpretation. ... Readers are availed of an excellent application of a specific skill set that blends knowledge of language, literature, and information systems. Owen, V. (2021). Review of Warner, Julian. Copyright, data and creativity in the digital age: A journey through Feist. *Journal of the Association for Information Science and Technology*. 72, pp.1211–1214.

explor[es] the concept of creativity with utmost diligence ... I was captivated to the extent that I have recommended the book to some of the law students, who I know, as an example of creative and entertaining analysis, which nevertheless is serious and professional ... very clear, logical and persuasive ... by far the most entertaining and useful text on legal issues that has explained ... copyright and its basis to me more than any other text. Maceviciute, E. (2021). Review of Warner, Julian. *Copyright, data and creativity in the digital age: a journey through Feist*. Routledge, 2021. *Information Research*, 26(1), review no. R708. Available at <http://www.informationr.net/ir/reviews/revs708.html> [Accessed 19 March 2021].

Preceding articles and comments intimated the significance of Warner (2013).

Perhaps more useful to the American western classical music community may be an understanding of what does *not* constitute creative choice in a court of law. In his analysis of *Feist*, Warner concludes that '[t]he absence of creativity is manifested in a routine selection, coordination, and arrangement produced by an automatic mechanical procedure.' If this understanding of the *Feist* ruling were to become legal trend in the United States, the filling in of missing bass figures would be less likely to qualify as creative work in an American court. Y. H. Sim. *Copyrighting critical editions: the law versus the musical public*. M.A. in Music History: University of Wisconsin-Madison, 2011, pp.46-47.

Good read. I enjoyed your article over this morning's coffee. I particularly liked the tables as it set out your logic so clearly. R. D. Clifford, UMass School of Law, comments received March 2015.

Previous work on the relation of intellectual property to underlying economic conditions (Warner, 1999, Information society or cash nexus? A study of the United States as a copyright haven. *Journal of the American Society for Information Science*. 50, 5, 1999, 461-470) has influenced government policy discussions.

The change over time in U.S. attitudes toward the IP laws of other countries is widely ascribed to the change in U.S. status in the 20th century to a major producer of IP content (Warner, 1999). Committee on Intellectual Property Rights and the Emerging Information Infrastructure. *The Digital Dilemma: Intellectual Property in the Information Age*. National Academy Press: Washington, D.C., 2000.

### *Research evaluation*

Warner's own critique of the application of citation data to research evaluation concluded that, 'citation analysis can ... be employed as one element used to inform judgment of research quality, with judgment underdetermined by any single element.' (Warner, 2000, p.457).

The conclusion uniquely anticipated the central recommendation of the subsequent official review of research assessment.

Any system of research assessment designed to identify the best research must be based upon the judgement of experts, who may, if they choose, employ performance indicators to inform their judgement.' *Review of Research Assessment*. Report by Sir Gareth Roberts to the UK funding bodies. Issued for consultation May 2003.

The perspective has been increasingly embodied in subsequent research evaluation practice. The conclusion of the article was cited in a HEFCE report.

Although peer judgments are commonly used in such cases, quantitative indicators may sometimes aid the decision making: 'to inform, but not to determine, judgments of research quality' (Warner, 2000, p. 453). Wouters, P. et al. (2015). *The Metric Tide: Literature Review (Supplementary Report I to the Independent Review of the Role of Metrics in Research Assessment and Management)*. HEFCE.

### *Semantic and syntactic labor*

The distinction of semantic from syntactic mental labor was published in 2002 and 2005, with subsequent supplementary developments (Warner, 2002, 2005, 2010, 2023). Information science immediately recognized the significance of the distinction. Marketing, business studies, management information systems, and computer science have since adopted it as a fundamental explanatory construct. Linguistics has also incorporated the distinction.

#### Information science

Labor can be categorized as following rules (procedural) or as requiring judgments (arbitrary). We may imagine this to be a spectrum, but here, again for simplicity, we follow Julian Warner's 'labor-theoretic' approach in which he distinguishes just two categories: semantic (arbitrary) labor and syntactic (procedural, algorithmic) labor (Warner, 2010, 2021). M.K. Buckland and W. de Fremery. Context, relevance, and labor. *Journal of the Association for Information Science and Technology*. 73, 9, 2022, pp.1199-1361 (p.1274).

The standard use of *ARIST* [*Annual Review of Information Science and Technology*], keeping up with one's specialty, is occasionally transcended by a chapter so illuminating that anyone could benefit by reading it. ... In volume 39, Julian Warner's analysis of information systems in terms of labour notes that technology is the product of the 'dead labor' of inventors and machine makers. He also makes and

elaborates a distinction between semantic labor (mainly concerned with meaning) and syntactic labour (mainly procedures, often algorithmic and more easily delegated to machines). It is not clear where this analysis will lead, but it illuminates the whole field in a new way. M. Buckland. Review of Annual Review of Information Science and Technology. *Journal of Documentation*. 62, 1, 2006, pp.154-156 (pp.155-156).

#### Management information systems

A. Greenhill, G. Fletcher. Laboring online: are there 'new' labor processes within virtual game worlds? *Journal of the Association for Information Systems*, 14, 11, 2013, pp.672-693, adopts the distinction of semantic from syntactic labor, as its theoretical basis.

#### Business studies

The distinction is cited in, A. Heinze. Crowd outsourcing. *Ignited: the future issue* (Salford Business School). 2, 2015, pp.6-7 (p.6).

#### Marketing

The distinction between syntactic and semantic labor offers a clear explanation as to why and when this contribution [from direct human labour in business organizations] will be required. G. Fletcher and A. Christov. Future users, content and marketing. In A. Heinze, G. Fletcher, T. Rashid, and A. Cruz editors. *Digital and Social Media Marketing: A Results-driven Approach*. London: Routledge, 2017. pp.301-316 (p.315).

#### Computer science

We simply do not believe that using Google ... is an activity that requires skill, knowledge, technique – any sort of understanding of *how it works*. In Julian Warner's ... model of information retrieval, this dissonance results from a failure to appreciate the human mental labor required by users of search engines, upon whose brains the semantic labor ... rests. M. Feinberg. *Everyday Adventures with Unruly Data*. Cambridge, MA: MIT Press, 2022 (p.31).

#### Linguistics

The agentive aspect of communication, even that involving supposed fixed codes in the sphere of language, is what is emphasized in Warner's idea of human semantic labour ... In his persuasive argument, Warner sees the possibility of a humanistic reassertion of semantic autonomy in the face of syntactic sovereignty. P. Cobley. Discussion: integrationism, antihumanism and the suprasubjective. In A. Pablé editor. *Critical Humanist Perspectives. The Integrational Turn in Philosophy of Language and Communication*. London and New York: Routledge, 2017, pp.267-284 (p.270).

### *Information retrieval*

Information science and other literatures have taken *Human Information Retrieval* (Cambridge, MA: MIT Press, 2010) (Warner, 2010) as transformative for information retrieval research.

Sometimes we merely give the search engine false credit for work that we, the users, are actually performing (Warner, 2009). M. Feinberg. *Everyday Adventures with Unruly Data*. Cambridge, MA: MIT Press, 2022 (p.50).

Warner's labor-theoretic approach draws attention to the dramatic cost implications of the type of labor deployed. ... [the] distinction between semantic labor and syntactic labor is useful. The former requires a great deal of energy since it is contingent upon fashioning a context that facilitates relevance judgments. The latter requires an initial investment in description but can be mechanized because it is based upon a previously defined context and set of rules for making relevance judgments. W. de Fremery and M.K. Buckland. Context, relevance, and labor. *Journal of the Association for Information Science and Technology*. 73, 2022, pp.1268–1278 (p.1275).

Warner's (2010) differentiation between IR [information retrieval] as query transformation versus KO [knowledge organization] as providing 'selection power' seems important and is taken as the point of departure ... in both this and a following article. ... Warner's two approaches (query transformation and selection power) may be useful as fundamental precepts on which to base an understanding of the role of KO in the electronic world ... the perspective provided by Warner (2010) could be the way out of the crisis. B. Hjørland. Classical databases and knowledge organization: a case for Boolean retrieval and human decision making during searches. *Journal of the Association for Information Science and Technology*. 66, 2015, pp.1559-1575 (pp.1561, 1562, 1570).

Warner's language-informed account of 'human information retrieval' is an innovative approach. As well as being a novel application of a structural linguistic concept to current information scientific problems it enables one to question the traditional assumptions of the IR community, for example the dogma of the 'query transformation' (Warner, 2010, p. 3) ... Warner has discovered new ways of applying linguistic concepts and language-related analogies and thus opened up new approaches to IR [information retrieval] research. V. Engerer. Exploring interdisciplinary relationships between linguistics and information retrieval from the 1960s to today. *Journal of the Association for Information Science and Technology*. 68, 2017, pp.660–680.

Full-text searching is now ubiquitous and while this has reduced the salience of the conflict between controlled and uncontrolled vocabulary and changed the focus of the debate, it has given rise to new questions and problems (Warner, 2007; Warner, 2010). V. Engerer. Control and syntagmatization: Vocabulary requirements in information retrieval thesauri and natural language lexicons. *Journal of the Association for Information Science and Technology*, 68, 2017, pp.1480–1490.

Importantly, as Warner points out, this computer science paradigm in information retrieval can be juxtaposed to an alternative understanding of information retrieval in librarianship whose history is much longer, yet which today has become far less influential than the positivist view of algorithmic

search. N. Kerssens. When search engines stopped being human: menu interfaces and the rise of the ideological nature of algorithmic search. *Internet Histories*. 2017.

## Reviews

Julian Warner makes a hitting yet poignant and thought-provoking remark right at the onset of his book ... academics and other professionals have given more attention to the practical understanding of information retrieval than to a full theoretical account. ... The book is straightforward ... simple and illustrative. ... the book combines Warner's excellent grasp of the information technology and web search along with his ability to humanise and personalise web content. Warner emphasises that information is not just about information technology and indexing and computation but also about people, mental labour and literature. A. Venkatraman. *Information World Review*. 20 Apr 2010.

This lucid book ... This is a difficult but well written and extremely relevant book, which contains a thorough academic treatment of HIR [human information retrieval] from the perspective of a labor theoretic approach. There are many historical analogies used within the text, which help to explain the origins of the study of human information retrieval. It manages to bridge the gap between practical and theoretical aspects of HIR in a coherent and meaningful fashion. ... Researchers in HIR will find this an invaluable and thought provoking resource. Advanced undergraduate students and postgraduate students pursuing modules or a course in information resources management will also find much of relevance to their study. S. Fitz-Gerald. *International Journal of Information Management*. 30, 2, 2010, pp.180-181.

This book ... presents a very clear theoretical approach to the subject ... The high level abstractions and theory are exemplified by actual examples from the library and information practice and internet, mostly information retrieval applications for full-text. This closeness to the real world and examples taken not only from the modern information retrieval systems but also from earlier means of accessing information stored in various ways (including human brain) is an exceptionally attractive feature of the proposed approach. ... I would recommend the book to be acquired by all information science departments as a good theoretical introduction, not only to information retrieval as such, but also as a more general approach to an explanation of one of the most significant components of several information professions: description and search labour. E. Maceviciute. *Information Research*. 15(3), 2010, review no. R383, 2010.

The approach is marvellously materialist. ... [the book] offers examples which illustrate searching on words and phrases using the theoretical model – and what examples! The use of an example drawn from 'Horse Feathers' as illustration is to be highly commended! ... This is an extremely interesting book. Truly scholarly and theoretical, it draws from a range of disciplines, including information science, philosophy, linguistics and communication science. Warner draws all these seemingly disparate strands into an elegant and coherent whole, demonstrating that there are similarities, analogies, things to be learned from delving wide. There are many other treasures in this book, which is a valuable theoretical contribution to the literature of information retrieval. P. Rafferty. *Journal of Librarianship and Information Science*. 43, 2011, pp.60-61.

*Human Information Retrieval* presents its readers with an interesting perspective on IR that well repays study. ... the labor-theoretic approach ... is structurally elegant and has the potential to be a very useful model for 'macroscopic' thinking about the design and evaluation of IR systems. ... a genuinely illuminating account of IR as a human phenomenon. T. M. Dousa. *College & Research Libraries*. 71, 5, 2010, pp.496-498.

this theoretical, scholarly, and inspiring work that balances practical and theoretical aspects of human IR [information retrieval] ... its depth, value, and originality should not be neglected ... a useful contribution to the IR literature. A. Isfandyari-Moghaddam. *Library Resources & Technical Services*. 56, 2012, p.215.

### *Historical perspectives on information technologies*

A number of publications developed a historical perspective on information technologies.

*Humanizing Information Technology*. Lanham, MD: Scarecrow Press, 2004. ix, 145p.

Julian Warner, whose often unique approach to issues involving information science is colored by the palette of the field of economics ... presents eight insightful essays providing a humanistic, essentially Marxian perspective on today's information technology ... the time taken for careful review and examination of these essays will be rewarded with some exceptional insights. V. L. Gregory. *Library Resources and Technical Services*. 49, 1, 2005, pp.5960.

Information and redundancy in the legend of Theseus. *Journal of Documentation*. 59, 5, 2003, pp.540-557.

Warner's (2003) eccentric but inventive article juxtaposed the Greek legend of Theseus (an ancient, mythical hero), and the modern information theory by Shannon and Weaver. ... Despite the unlikely combination, a 'high degree of correspondence between the two independent formulations' was detected. J. Kari and J. Hartel. Information and higher things in life: addressing the pleasurable and the profound in information science. *Journal of the American Society for Information Science and Technology*. 58, 2007, pp.1131-1147.

*Information, Knowledge, Text*. Lanham, MD: Scarecrow Press, 2001. X, 151p.

Warner has written a very thoughtful and well-informed book that definitely deserves attention. His historical exposition of writing and the computer, and the connection between these, as information technologies that shape human activities is enlightening. Warner has an ability to show that the most congealed tools for communication have a history that is worth exploring, and that this can shed light on some common understandings of information technology. Thus, Warner succeeds in offering a reflexive response to developments in information technology. J. Andersen. *Journal of the American Society for Information Science and Technology*. 53, 8, pp.690-691.

Few authors are as able or as eager to draw on the classics of literature, philosophy, theology, and science as Warner does here, refreshingly and entertainingly. ... [the] detailed historical account, culminating in an analysis of recent legal classifications of computer programs as literary works, is a tour de force ... a timely compilation of the work of one of the field's more interesting theorists. J. Furner. *The Library Quarterly*. 72, 4, 2002, pp.507-509.

His approach is thorough, academic, credible ... the chapters do provide a coherent collection. Students of information science should be enlightened and intrigued. T. Schneiter. *College and Research Libraries*. 64, 2, 2003, pp.168-169.

*From Writing to Computers*. London and New York: Routledge, 1994. xi, 159p.

Julian Warner eloquently encapsulates the aim of this book in his concluding chapter when he states 'This book has been concerned with relating the new to the more familiar, particularly with connecting computers to documents.' ... Realizing the possible complexity of the subject he is tackling, Warner is at pains constantly to introduce and summarize his materials. The overall effect is of a successful steering through a possible minefield of unexplained theories and abstract hypotheses. ... Warner's explanations are sound and can be readily understood.

... On the whole, an extremely useful and thought-provoking book. S. Lee. *Computers & Texts*. 8, December 1994, p.16.

An overarching consideration of the relation between writing and computers in a synthesis which is both intellectually stimulating and original. ... An excellent addition to any collection on computing, communication, library or information studies, and a recommended read for anyone with even the most general interest in semiotics, computing, writing or intelligence. D. Ellis. *Program*. 29, 1, 1995, pp.104-105.

Warner has written a concise, densely written, thought-provoking study of the relationship between writing and computers. ... the broad and clear analysis of writing and language, and of automata theory, [and] formal logic ... is well worth reading. H.D. Warner. *Choice*. 32, 6, February 1995, p.968.

this intriguing book by Julian Warner ... what is presented here provides an interestingly offbeat view of one aspect of computing. P. Willett. *Computer Journal*. 39, 3, 1996, p.253.

## Research grants

HUWY (Hub Websites for Youth Participation), European Commission Information Society and Media Directorate-General, EP-08-01-011 HUWY, 1 January 2009-31 March 2011 (Principal Investigator for Queen's University Belfast, 1 January 2010), Award Amount €120,999.18 / £78,862.00.

The project involved the supervision of a full time research assistant.

## Journal editorial boards

- 2017-            *Education for Information*  
 2012-            *Library & Information History*  
 2011-            *LIBER Quarterly*  
 2008-2013      *Journal of the American Society for Information Science and Technology*

## Conference committees

- 2004-2024      *Annual Meetings of the Association for Information Science and Technology, 2004-2022.*  
 2013            *ASIS&T European Workshop (AEW 2013). Turku/Åbo, Finland.*  
 2012            *History of ASIS&T and Information Science and Technology Worldwide.*  
 2012            *3rd International Symposium on Information Management in a Changing World (IMCW2012), Ankara, Turkey, 2012.*

## Refereeing

Articles have been refereed for the following journals.

*Journal of the Association for Information Systems*  
*Annual Review of Information Science and Technology*  
*Information Processing & Management*  
*Information Research*  
*Journal of the American Society for Information Science and Technology*  
*Journal of Documentation*  
*Knowledge Organization*  
*Library Quarterly*  
*Journal of Information Science*

Proposals for sessions and papers have been reviewed for the following conferences:

*International Symposium of Information Science, Potsdam, 2013.*  
*Annual Meetings of the American Society for Information Science and Technology, 2004-2023.*  
*Conference on the History and Heritage of Scientific and Technical Information Systems (sponsored by the American Society for Information Science and Technology and the Chemical Heritage Foundation), 1998 and 2002.*  
*Information Architecture Summits, 2007-2009.*

Grant and fellowship proposals have been reviewed for the following bodies.

*Arts and Humanities Research Council*

*Arts and Humanities Research Board*

*Canada Council Killam Research Fellowship*

*Government of Ireland Post-Graduate Scholarship Scheme*

*Social Sciences and Humanities Research Council of Canada (SSHRC)*

Book proposals have been reviewed for the following publishers.

*MIT Press*

*Ashgate Publishing*

*University College Dublin Press*

*Pearson Education*

## EDUCATION

Teaching was strongly research informed and evaluated well by students. Courses brought humanities and social science perspectives to information issues, for students taking management and computer science.

Courses were taught to students majoring in Management, Business Information Technology, Business Economics, and Economics. Instructional modules developed are innovative and are increasingly represented in journal and monographic publications.

### Dissertation supervision

**2000-2021** An extensive range of Masters and PhD dissertations have been successfully supervised, as first and second supervisor.

Masters programmes for supervision included MSc Management, MSc Marketing, MSc Human Resource Management, and MSc Sustainability.

### Modules taught

Specific modules taught, with some student evaluative comments, include.

**2010-2021** *Information Systems in Organizations*), BSc Business Information Technology, Level 3.

- A tremendous educational experience.
- Integrates management and computer science.
- Tutorial tasks help with assignments and meetings to discuss assignments are very helpful.
- Clearly enthusiastic about his work and thoroughly enjoys teaching it.
- The relevant examples and the relation to the real world were helpful.
- He wanted to hear our views and encouraged discussions.

**2010-2021** *Information Policy*, BSc Business Information Technology, Level 3.

- Outstanding educational experience.
- The module was delivered with great passion.
- Good interactive tutorials.
- Opportunity to review assignments with lecturer.
- Liked the module, really well taught.
- Actively helped students and explained things extremely well during both lectures and tutorials.
- One of the best, if not the best, module and lecturer during my time here.

- The lecture notes were very informative and the lectures very helpful.
  - Gives a great insight into the foundations of information policy.
- 2017 *Information Systems*, BA Business and Management Studies, part-time.
  - Very engaging, enjoyable classes, gets students involved.
  - Weekly class tasks really helped.
- 2016 *Managing Activities 2*, BA Business and Management Studies, part-time.
  - The lecturer was well informed, well read, and interesting. Thanks.
- 2014-2015 *Managing Information and Technology*, Executive MBA.
  - The knowledge gap within the Qualitrol business for the mechanization of semantic to syntactic labour has now been acknowledged and will be considered at the start of future kaizen [development] activity, drawing upon the learnings made in the module.
- 2014-2015 *Organisation Design and Development (Information Systems component)*, MSc Human Resource Management.
- 2008-2010 *Management Information Systems*, BSc Business Information Technology and BSc Business Management, Level 1.
  - Insight into information systems.
  - Learning the different aspects of management information systems.
  - It highlights areas that we think we understand, but examines them closely and can actually show many other meanings to the most simple of areas associated with information in business.
  - Clear what we were studying, good real life examples.
- 2001-2008 *Communicating Electronically*, BSc Management Information Systems, Level 2.
  - It provided me with a lot of insight into information retrieval, electronic, written and oral communication, and the theory behind the transmission of messages and information.
  - Most interesting module taken.
- 2000-2008 *Information Policy*, BSc Management Information Systems, Level 3.
- 1998-2001 *Modelling the diffusion of specialized knowledge*, MSc Science Communication.
- 1993-2000 *Understanding Information*, BSc Information Management, Level 3.
- 1989-2000 *Information Resources*, MSc in Information Management.
- 1989-1993 *Information Sources*, BSc Information Management, Level 3.
- 1984-1989 *Bibliography and Reference Work*, Diploma in Librarianship.
- 1984-1989 *Bibliography and Reference Work*, Bachelor of Library Studies.
- 1984-1989 *Subject Area Studies*, Diploma in Librarianship.
- 1984-1989 *Subject Area Studies*, Bachelor of Library Studies, Level 3.

## MANAGERIAL RESPONSIBILITIES AT QUEEN'S UNIVERSITY BELFAST

2018-2021	Advisor of Studies, 3rd year BSc Business and Management.
2017-2021	Peer mentor coordinator.
2011-2021	Chair of the School Research Ethics Committee.
2011-2015	Programme Coordinator for MSc Sustainability.
2010-2021	Library representative.
2010-2011	Disability Officer.
2008-2009	Director, Information Systems Group.
2005	Tenure Review, School of Library and Information Science, Indiana University.
2001-2009	Advisor of Studies, BSc Management Information Systems.
1996-1999	Director of Research, School of Management.
1994-2000	Secretary (1994-1998) and Chair (1999-2000) of the General Board of Studies, a forum for discussion across the university.
1993-2021	Chairing research student vivas and differentiations.
1993-1996	Secretary to the Board of Examiners, Management and Information Systems Division.
1992-1993	Postgraduate admissions.
1986-1987	Student placement officer.

## PROFESSIONAL INVOLVEMENT

### *Arts and Humanities Research Council*

2008-2014	Member of Peer Review College.
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### *Association for Information Science & Technology*

2021-2023	Best Information Science Book Award Juror
2010-2011	Chair of the Special Interest Group, History and Foundations of Information Science.
2010-2011	Award of Merit Juror.
2009-2010	Chair of the International Relations Committee.
2008-2010	Chair of the John Wiley Best JASIST Paper Award.
2008	Co-chair of a taskforce to review the <i>Annual Review of Information Science and Technology</i> and select a new editor.
2007-2009	Member of the Executive Committee.
2006-2009	Director at Large (first non-North American appointee to this level).
2005-2016	Member of the Advisory Board to the <i>Bulletin of the American Society for Information Science and Technology</i> .
2005-2006	International Liaison (Europe).
2005-2006	Chair of the Special Interest Group History and Foundations of Information Science.

- 2004-2005 Chair, Constitution and Bylaws Committee.
- 2002-2006 Member, Constitution and Bylaws Committee.
- 2002-2005 International Liaison.
- 2000 1999-2000 Juror for the ISI Dissertation Scholarship.
- 2000 Chair of the Special Interest Group, History and Foundations of Information Science.
- 1993-1994 Chair of the European Chapter.

#### ***Institute of Information Scientists***

- 1997-2000 Member of the Management Committee.
- 1998-2000 Convenor of the Publications Committee.
- 1998-2000 Council representative to the United Kingdom Online Users Group, 1998–2000.
- 1994-2000 Corporate member representative to Council.

#### ***Aslib: The Association for Information Management***

- 1996-1998 Council member.

#### ***Library Association***

- 1996-1997 Chair of the North-South Liaison Committee (of the Library Association Northern Ireland Branch and the Library Association of Ireland).
- 1995-1997 Chair of the Library Association Northern Ireland Branch.
- 1995-1998 Member of the North-South Liaison Committee.
- 1987-1988 Chair of the Association of Assistant Librarians, Northern Ireland Branch.
- 1985-1991 Committee member of the Association of Assistant Librarians, Northern Ireland Branch.

#### ***University and College Union***

- 2004-2015 Treasurer, Queen's University Belfast.
- 2001-2004 Committee Member, Queen's University Belfast.