

CURRICULUM VITAE

Nick Chater

Latest update: 8 May 2006

Post (from 1 Oct 05): Professor of Cognitive and Decision Sciences
Department of Psychology
University College London

Date of birth: 8 July 1965

Academic Qualifications

M.A. Hons (1st class) Experimental Psychology
University of Cambridge, 1986

PhD. Cognitive Science/Psychology
University of Edinburgh, 1989

Previous Appointments Held

Summer 1989 Short-term research fellow,
Research Initiative in Pattern Recognition

1989-1990 Lecturer in Psychology
University College, London

1990-1994 Lecturer in Psychology
University of Edinburgh

1994-1996 Lecturer in Experimental Psychology
University of Oxford

1996- Professor of Psychology
University of Warwick

Editorial Experience

1998- Editorial board member, *Trends in Cognitive Sciences*
2001- Associate Editor, *Cognitive Science*
2003-5 Editorial board member, *Psychological Review*
2005- Associate Editor, *Psychological Review*

International conference organization

Rational Models of Cognition, Warwick University, 1996.

Co-organizer (with Mike Oaksford).

Perspectives on Imitation: From Neuroscience to Social Science, 2002, Royaumont Abbey, France. Co-organizer (with Susan Hurley).

The probabilistic mind, University College London, 2006.

Co-organizer (with Mike Oaksford).

Research

Awards

- 1995 BPS Cognitive Psychology Award (with Mike Oaksford).
1996 Spearman Medal
British Psychology Society Annual prize for psychological research.
1997 4th Experimental Psychology Society Prize
Experimental Psychology Society annual prize for psychological research.
- 2006-2009 Leverhulme Major Research Fellowship on the topic Fundamental Principles of Cognition.

Grants

- 1992-1995 Chater, N. Double dissociation in distributed systems. Joint Councils Initiative in Cognitive Science, £69K.
- 1992-1994 Shillcock, R., Chater, N. & Levy, J. Connectionist models of spoken word recognition in continuous speech. ESRC, £57K.
- 1994 Chater, N. A Bayesian account of inductive reasoning: Returning to the abstract selection task. British Academy, £3K
- 1994-1995 Shillcock, R., Chater, N. & Levy, J. Connectionist models of spoken word recognition: The role of prosody. ESRC, £30K.
- 1995 Chater, N. Are people rational? British Academy, £4K.
- 1995-1996 Shillcock, R. & Chater, N. Neglect dyslexia: Computational and experimental investigations. MRC, £35K.
- 1995-1996 Oaksford, M. & Chater, N. Probabilistic models of reasoning: The case of conditional inference. ESRC, £28K.
- 1995-1997 Chater, N. & Redington, M. What is learned in artificial grammar learning? ESRC, £60K.

- 1998-1999 Pothos, E. & Chater, N. Modelling categorization with information gain. ESRC, 39K.
- 1998-2001 Brown, G. D. A., Solity, J., Chater, N. & Rippon, G. From cognitive model to classroom: Applying new learning theory to educational practice. Leverhulme Trust, £200K.
- 2000-2003 Chater, N. et al. Infrastructure funding for Institute for Applied Cognitive Science. £950K to build and equip new laboratories. Funded by the Joint Infrastructure Fund: ESRC/Wellcome Trust.
- 1999-2004 Chater, N. Basic mechanisms of learning and memory. European Commission £110K. (network principal investigator, Robert French, University of Liege)
- 2001-2005 Chater, N. Multiple cue integration in language acquisition. Human Frontiers Science Program (October 2001 - October 2005), \$150K (network principal investigator, Morten Christiansen, Cornell University)
- 2002-2003 Chater, N. Consumer decision making. 20K. Institute of Actuaries.
- 2002-2007 Chater, N., Solity, J. & Brown, G. Principles of Instruction: Applying cognitive science to the classroom. Leverhulme Trust, £470K.
- 2002-2004 Chater, N., Hodges, S. & Nudd, G. The cognitive science of financial e-advice. ESRC/Department of Trade and Industry £260K.
- 2004- HSBC Fellowship in Consumer Decision Making. Research contract, funding post-doctoral position and research assistant. £97K
- 2004-2005 ESRC Post-doctoral fellowship to Jose Quesada, with Nick Chater as mentor (£28K).
- 2005-2008 Salmon, M., Chater, N., Hodges, S. Ooman, R. & Davies, G. Financial markets and complexity: Uncertainty, heterogeneous micro agents and aggregate outcomes. Warwick component of European Commission Sixth Framework. Warwick component, including co-ordinators overheads 500K Euros.
- 2005-2006 Roberts, M. & Chater, N. Lexical fine-tuning of grammatical structure. ESRC, 45K (RES-000-22-1120).
- 2006 Conference support for *Probabilistic models of cognition* conference, London, June, 2006. Gatsby Charitable Foundation, 15.5K.

2006-2008 2 year EU Marie Curie Post-doctoral fellowship to Dario Taraborelli, with Nick Chater as mentor.

2006-2009 3 year Leverhulme Trust Senior Research Fellowship.

Commercial research

2002- Co-founder, and Research Director, Decision Technology Ltd, a University of Warwick spin-out company, working with large corporate clients (www.dectech.org).

PUBLICATIONS
2006/in press

Book

Oaksford, M. & Chater, N. (2006/in press). *Bayesian Rationality*. Oxford: Oxford University Press.

Journal special issue

Chater, N., Tenenbaum, J. & Yuille, A. (2006/in press) (Eds.) Probabilistic models of cognition. Special Issue. *Trends in Cognitive Sciences*.

Journal articles

Chater, N. & Manning, C. (2006). Probabilistic models of language processing and acquisition. *Trends in Cognitive Sciences*.

Chater, N., Tenenbaum, J. B. & Yuille, A. (2006). Probabilistic models of cognition: Conceptual foundations. *Trends in Cognitive Sciences*.

Chater, N., Tenenbaum, J. B. & Yuille, A. (2006). Probabilistic models of cognition: Where next? *Trends in Cognitive Sciences*.

Ellefsen, M. R., Shapiro, L. R., & Chater, N. (2006). Asymmetrical switch costs in children. *Cognitive Development*, 21, 108-130.

Monaghan, P. Chater, N. & Christiansen, M. (in press). The differential role of phonological and distributional cues in grammatical categorisation. *Cognition*.

Neath, I., Brown, G.D.A., McCormack, T., Chater, N., & Freeman, R. (2006). Distinctiveness models of memory and absolute identification: Evidence for local, not global, effects. *Quarterly Journal of Experimental Psychology*, 59, 121-135.

Pothos, E., Chater, N. & Ziori, E. (2006). Does stimulus appearance affect learning? *American Journal of Psychology*. 119, 277-301.

Stewart, N., Chater, N. & Brown, G. D. A. (2006). Decision by sampling. *Cognitive Psychology*. 53, 1-26.

Vlaev, I. & Chater, N. (2006). Game Relativity: How Context Influences Strategic Decision Making. *Journal of Experimental Psychology: Learning, Memory & Cognition*, 32, 131-149.

Refereed conference proceedings

Christiansen, M., Reali, F. & Chater, N. (2006). The Baldwin effect works for functional, but not arbitrary, features of language. In *Sixth International Conference on the Evolution of Language* (8 pages).

Poletiek, F. & Chater, N.

Otto, P. E., et al COGNITIVE SCIENCE PROCEEDINGS

2005

Books

Hurley, S. & Chater, N. (2005). (Eds.). *Perspectives on imitation: From neuroscience to social science. Volume 1. Mechanisms of imitation and imitation in animals*. Cambridge, MA: MIT Press.

Hurley, S. & Chater, N. (2005). (Eds.). *Perspectives on imitation: From neuroscience to social science. Volume 2. Imitation, human development and culture*. Cambridge, MA: MIT Press.

Journal articles

- Onnis, L., Monaghan, P., Chater, N. & Richmond, K. (2005). Phonology impacts segmentation and generalization in speech processing. *Journal of Memory and Language*, 53, 225-237.
- Pothos, E. M. & Chater, N. (2005). Unsupervised categorization and category learning. *Quarterly Journal of Experimental Psychology: Series A*, 58, 733-752.
- Stewart, N., Brown, G. D. A. & Chater, N. (2005). Absolute identification by relative judgment. *Psychological Review*, 112, 881-911.

Book chapters

- Chater, N. (2005). Rational analysis of language processing. *Encyclopedia of Language and Linguistics*. Elsevier.
- Chater, N. (2005). A minimum description length principle for perception. In M. Pitt & I. Myung (Eds.) *Advances in minimum description length: Theory and applications*. Cambridge, MA: MIT Press.
- Chater, N. (2005). Mendelian and Darwinian views of memes and cultural change. In S. Hurley & N. Chater (Eds.) *Perspectives on imitation: From neuroscience to social science* (vol 2). Cambridge, MA: MIT Press.
- Chater, N. & Oaksford, M. (in press). Mental mechanisms: Speculations on human causal learning and reasoning. In K. Fiedler & P. Juslin (Eds.) *In the beginning there is a sample: Information sampling as a key to understanding adaptive cognition*. Cambridge: Cambridge University Press.
- Hurley, S. & Chater, N. (2005). Introduction: The importance of imitation. In S. Hurley & N. Chater (Eds.) *Perspectives on imitation: From neuroscience to social science* (vol 1). Cambridge, MA: MIT Press.
- Juslin, P., Fiedler, K., Kareev, Y., Chater, N. & Martignon, L. (in press). Less is more in contingency assessment – or is it? In K. Fiedler & P. Juslin (Eds.) *In the beginning there is a sample: Information sampling as a key to understanding adaptive cognition*. Cambridge: Cambridge University Press.
- Onnis, L., Christiansen, M. & Chater, N. (in press). Connectionist models of human language processing. *Encyclopedia of Language and Linguistics*. Elsevier.
- Roberts, M., Onnis, L., & Chater, N. (2005). Language Acquisition and Language Evolution: Two puzzles for the price of one. To appear in, M. Tallerman (Ed.) *Prerequisites for the evolution of language*, Oxford: Oxford University Press.

2004

Journal articles

- Chater, N. (2004). What can be learned from positive data? Insights from an ‘ideal learner.’ *Journal of Child Language*, 31, 915-918.
- Chater, N. & Pickering, M. (2004). Why science and belief-desire explanation do not overlap. *Facta Philosophica*, 5, 335-353.
- Olivers, C. N. L., Chater, N. & Watson, D. G. (2004). Holography does not account for goodness: A critique of van der Helm and Leeuwenberg (1996). *Psychological Review*, 111, 242-260.
- Pothos, E., Chater, N. & Stewart, A. J. (2004). Information about the logical structure of a category affects generalization. *British Journal of Psychology*, 95, 371-386.

Book chapters

Chater, N., Heit, E. & Oaksford, M. (2004). Reasoning. In K. Lamberts & R. Goldstone (eds.) *Handbook of Cognition* (pp. 297-320). London: Sage Publications.

Chater, N., & Oaksford, M. (2004). Rationality, rational analysis and human reasoning. In K. Manktelow & M. C. Chung (Ed.), *Reasoning: History and philosophy*. Hove, Sussex: Psychology Press.

Refereed conference proceedings

Onnis, L., Monaghan, P., Christiansen, M. H. & Chater, N. (2004). Variability is the spice of learning, and a crucial ingredient for detecting and generalizing in nonadjacent dependencies. In *Proceedings of the 26th Annual Conference of the Cognitive Science Society*. Erlbaum: Mahwah, NJ.

Consultancy

Consumer Understanding of Risk Report, Institute of Actuaries, November, 2004 (Academic research conducted by Nick Chater and Ivo Vlaev).

2003

Journal articles

Chater, N. (2003). How much can we learn from double dissociations? *Cortex*, 39, 167-169.

Chater, N., Oaksford, M., Nakisa, R. & Redington, M. (2003). Fast, frugal and rational: How rational norms explain behavior. *Organizational Behavior and Human Decision Processes*, 90, 63-86.

Chater, N. & Vitányi, P. (2003). The generalized universal law of generalization. *Journal of Mathematical Psychology*, 47, 346-369.

Hahn, U., Chater, N. & Richardson, L. B. C. (2003). Similarity as transformation. *Cognition*, 87, 1-32.

Oaksford, M. & Chater, N. (2003). Computational levels and conditional inference: Reply to Schroyens and Schaeken (2003). *Journal of Experimental Psychology: Learning, Memory & Cognition*, 29, 150-156.

Oaksford, M., & Chater, N. (2003). Conditional probability and the cognitive science of conditional reasoning. *Mind & Language*, 18, 359-379.

Oaksford, M., & Chater, N. (2003). Optimal data selection: Revision, review and re-evaluation. *Psychonomic Bulletin & Review*, 10, 289-318.

Oaksford, M., & Chater, N. (2003). Modelling probabilistic effects in conditional inference: Validating search or conditional probability? *Psychologica*, 32, 217-242.

Stewart, N., Chater, N., Stott, H. P., & Reimers, S. (2003). Prospect relativity: How choice options influence decision under risk. *Journal of Experimental Psychology: General*, 132, 23-46.

Book chapters

Brown, G. D. A. & Chater, N. (2003). Connectionist models of children's reading. In T. Nunes & P. E. Bryant (eds.). (pp. 67-89). *Handbook of Children's Literacy*. Dordrecht: Kluwer.

Chater, N. & Christiansen, M. (2003). Speech processing: Psycholinguistics. In M. A. Arbib (Ed.) *The handbook of brain theory and neural networks* (pp. 1068-1071). Cambridge, MA: MIT Press.

- Chater, N. & Oaksford (2003) Rational models of cognition. In L. Nadel (Ed.) *Encyclopedia of Cognitive Science, Vol 3* (pp. 826-829). London: Macmillan Press.
- Christiansen, M. & Chater, N. (2003). Constituency and recursion in language. In M. A. Arbib (Ed.) *The handbook of brain theory and neural networks* (pp. 267-271). Cambridge, MA: MIT Press.
- Oaksford, M., & Chater, N. (2003). Probabilities and pragmatics in conditional inference: Suppression and order effects. In D. Hardman, & L. Macchi (Eds.), *Reasoning and Decision Making* (pp. 95-122). London: Wiley.

Refereed conference proceedings

- Monaghan, P., Chater, N. & Christiansen, M. (2003). Inequality between the classes: Phonological and distributional typicality as predictors of lexical processing. In R. Alterman & D. Kirsh (Eds.). *Proceedings of the 23rd Annual Conference of the Cognitive Science Society* (6 pages).
- Monaghan, P., Gonitzke, M. & Chater, N. (2003). Two wrongs make a right: Learnability and word-order consistency. In R. Alterman & D. Kirsh (Eds.). *Proceedings of the 23rd Annual Conference of the Cognitive Science Society* (6 pages).
- Moore, S. & Chater, N. (2003). The Influence of Affect on Risky Behavior: From the Lab to Real World Financial Behavior. In R. Alterman & D. Kirsh (Eds.). *Proceedings of the 23rd Annual Conference of the Cognitive Science Society* (6 pages).
- Onnis, L., Christiansen, M., Chater, N. & Gomez, R. (2003). Reduction of Uncertainty in Human Sequential Learning: Evidence from Artificial Grammar Learning. In R. Alterman & D. Kirsh (Eds.). *Proceedings of the 23rd Annual Conference of the Cognitive Science Society* (6 pages).
- Reimers, S., Stewart, N. & Chater, N. (2003). Choice set options affect the valuation of risky prospects. In R. Alterman & D. Kirsh (Eds.). *Proceedings of the 23rd Annual Conference of the Cognitive Science Society* (6 pages).
- Stewart, N. & Chater, N. (2003). No Unified Scales for Perceptual Magnitudes: Evidence from Loudness. In R. Alterman & D. Kirsh (Eds.). *Proceedings of the 23rd Annual Conference of the Cognitive Science Society* (6 pages).
- Vlaev, I. & Chater, N. (2003). Effects of Sequential Context on Judgments and Decisions in Prisoner's Dilemma Game. In R. Alterman & D. Kirsh (Eds.). *Proceedings of the 23rd Annual Conference of the Cognitive Science Society* (6 pages).

Commentary

- Vlaev, I. & Chater, N. (2003). Toward a cognitive game theory. *Behavioral and Brain Sciences*, 26, 178-179.

- Chater, N. & Vitányi, P. (2002). Simplicity: A unifying principle in cognitive science? *Trends in Cognitive Sciences*, **7**, 19-22.
- French, R. M. & Chater, N. (2002). Using noise to compute error surfaces in connectionist networks: A novel method to reduce catastrophic forgetting. *Neural Computation*, **14**, 1755-1769.
- Oaksford, M., Roberts, L. & Chater, N. (2002). Relative informativeness of quantifiers used in syllogistic reasoning. *Memory and Cognition*, **30**, 138-149.
- Pothos, E. & Chater, N. (2002). A simplicity principle in unsupervised human categorization. *Cognitive Science*, **26**, 303-343.
- Stewart, N., Brown, G. D. A., & Chater, N. (2002). Sequence effects in categorization of simple perceptual stimuli. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, **28**, 3-11.
- Stewart, N., & Chater, N. (2002). The effect of category variability in perceptual categorization. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, **28**, 893-907.

Book chapters

- Chater, N. & Oaksford, M. (2002). The rational analysis of human cognition. In J. L. Bermúdez & A. Millar (Eds.), *Reason and Nature: Essays in the theory of rationality* (pp. 135-174). Oxford: Oxford University Press.
- Redington, M. & Chater, N. (2002). Knowledge Representation and Transfer in Artificial Grammar Learning. In R. French and A. Cleeremans (Eds.), *Implicit Learning and Consciousness*. Hove, East Sussex: Psychology Press.
- Oaksford, M., & Chater, N. (2002). Commonsense reasoning, logic and human rationality. In R. Elio (Ed.), *Commonsense reasoning and rationality*. Oxford: Oxford University Press.

Refereed conference proceedings

- Onnis, Roberts, & Chater (2002). Simplicity: A cure for overregularizations in language acquisition? *Proceedings of the 24th Conference of the Cognitive Science Society*. (pp.720-725). Mahwah, NJ: Lawrence Erlbaum.

Commentary

- Chater, N. (2002). Is LF really a linguistic level? *Behavioral and Brain Sciences*, **25**.

Consultancy

- Sustainability pays*. Forum for the Future and Co-operative Insurance, July, 2002 (advisor on consumer research).

2001

Book

- M.H. Christiansen & N. Chater (Eds.) (2001), *Connectionist psycholinguistics*. Westport, CT: Ablex.

Journal articles

- Christiansen, M.H. & Chater, N. (2001). Connectionist psycholinguistics: Capturing the empirical data. *Trends in Cognitive Sciences*, **5**, 82-88.
- Maylor, E. A., Chater, N., & Brown, G. D. A. (2001). Scale invariance in the retrieval of retrospective and prospective memories. *Psychonomic Bulletin & Review*, **8**, 162-167.

- Maylor, E. A., Chater, N., & Jones, G. V. (2001). Searching for two things at once: Evidence of exclusivity in semantic and autobiographical memory retrieval. *Memory & Cognition*, **29**, 1185-1195.
- Chater, N., & Oaksford, M. (2001). Human rationality and the psychology of reasoning: Where do we go from here? *British Journal of Psychology*, **92**, 193-216.
- Oaksford, M., & Chater, N. (2001). The probabilistic approach to human reasoning. *Trends in Cognitive Sciences*. **5**, 349-357.

Book chapters

- Christiansen, M.H. & Chater, N. (2001). Connectionist psycholinguistics in perspective. In M.H. Christiansen & N. Chater (Eds.), *Connectionist psycholinguistics* (pp. 19-75). Westport, CT: Ablex.
- Christiansen, M.H. & Chater, N. (2001). Connectionist psycholinguistics: The very idea. In M.H. Christiansen & N. Chater (Eds.), *Connectionist psycholinguistics* (pp. 1-15). Westport, CT: Ablex.
- Christiansen, M.H. & Chater, N. (2001). Finite models of infinite language: A connectionist approach to recursion. In M.H. Christiansen & N. Chater (Eds.), *Connectionist psycholinguistics* (pp. 138-176). Westport, CT: Ablex.
- Pothos, E.M. & Chater, N. (2001) Categorization by simplicity: A minimum description length approach to unsupervised clustering. In Hahn, U. & Ramscar, M. (Eds). *Similarity and categorization*. (pp. 51-72). Oxford: Oxford University Press.
- Shillcock, R.C., Cairns, P., Chater, N. & Levy, J. (2001). Statistical and connectionist modelling of the development of speech segmentation. In P. Broeder and J. Murre (Eds.) *Models of language acquisition: inductive and deductive approaches*. Elsevier, Cambridge MA.

Refereed conference proceedings

- Hahn, U., Richardson, L.B. & Chater, N., (2001). Similarity: A transformational approach. In *Proceedings of the 23rd Annual Conference of the Cognitive Science Society*, pp. 393-398.
- Pothos, E. & Chater, N. (2001) Category learning without labels-A simplicity approach. In *Proceedings of the 23rd Annual Meeting of the Cognitive Science Society*, pp. 774-779.
- Stewart, N., Chater, N. & Stott, H. (2001). Context affects risky choice. In *Proceedings of the 23rd Annual Conference of the Cognitive Science Society*, pp. 982-987.

Commentary

- Chater, N. (1999) How smart can simple heuristics be? Open peer commentary on Todd, P.M. and Gigerenzer, G. Precis of simple heuristics that make us smart. *Behavioural and Brain Sciences*, **23**, 745-746.
- Chater, N, Vitanyi, P. M. B. & Stewart, N. (2001). Universal generalization and universal inter-item confusability. *Behavioral and Brain Sciences*, **24**, 559-660.

Consultancy

- The future regulation of UK savings and investment: Targeting the savings gap*. Oliver, Wyman & Company, September, 2001 (advisor on consumer research).

2000

Journal articles

- Chater, N. (2000) The logic of human learning. *Nature*, **407**, 572-573.
- Chater, N. (2000). Contrary views: A review of "On the contrary" by Paul and Patricia Churchland. *Studies in History and Philosophy of Biological and Biomedical Sciences*, **31**, 615-627.
- Chater, N., & Oaksford, M. (2000). The rational analysis of mind and behaviour. *Synthese*, **122**, 93-131.
- Oaksford, M., Chater, N., & Larkin, J. (2000). Probabilities and polarity biases in conditional inference. *Journal of Experimental Psychology: Learning, Memory & Cognition*, **26**, 883-899.

Commentary

- Chater, N. (1999) How smart can simple heuristics be? Open peer commentary on Todd, P.M. and Gigerenzer, G. Precis of simple heuristics that make us smart. *Behavioural and Brain Sciences*, **23**, 745-746.

Book chapters

- Chater, N. & Christiansen, M. (in press). Connectionist and natural language processing. In S. Garrod & M. Pickering (Eds.) *Language Processing* (pp. 233-279) Hove, England: Psychology Press.
- Oaksford, M. & Chater, N. (in press). Commonsense reasoning, logic and human rationality. In R. Elio (Ed.), *Commonsense reasoning and rationality*. Oxford: Oxford University Press.

1999

Edited Journal Special Issue

- Christiansen, M.H., Chater, N. & Seidenberg, M.S. (Eds.) (1999). Connectionist models of human language processing: Progress and prospects. Special issue of *Cognitive Science*, **23**(4), 415-634.

Journal articles

- Chater, N. (1999). The search for simplicity: A fundamental cognitive principle? *Quarterly Journal of Experimental Psychology*, **52A**, 273-302.
- Chater, N. & Brown, G. D. A. (1999). Scale invariance as a unifying psychological principle. *Cognition*, **69**, B17-B24.
- Chater, N. & Oaksford, M. (1999). The probability heuristics model of syllogistic reasoning. *Cognitive Psychology*, **38**, 191-258.
- Chater, N. & Oaksford, M. (1999). Ten years of the rational analysis of cognition. *Trends in Cognitive Sciences*, **3**, 57-65.
- Chater, N., & Oaksford, M. (1999). Information gain vs. decision-theoretic approaches to data selection: Response to Klauer. *Psychological Review*, **106**, 223-227.
- Chater, N. & Redington, M. (1999) Connectionism, theories of learning, and syntax acquisition. *Journal of Child Language*, **26**, 226-232.
- Oaksford, M., Chater, N., & Grainger, R. (1999). Probabilistic effects in data selection. *Thinking & Reasoning*, **5**, 193-243.
- Christiansen, M.H. & Chater, N. (1999). Connectionist natural language processing: The state of the art. *Cognitive Science*, **23**, 417-437.
- Christiansen, M.H. & Chater, N. (1999). Toward a connectionist model of recursion in human linguistic performance. *Cognitive Science*, **23**, 157-205.

Commentary

- Chater, N. (1999) Why biological neuroscience cannot replace psychology. Open peer commentary on Gold, I. and Stoljar, D. A neuron doctrine in the philosophy of neuroscience. *Behavioural and Brain Sciences*, **22**, 834.

1998

Books

- Oaksford, M. & Chater, N. (1998). *Rationality in an uncertain world*. Psychology Press: Hove, England.
- Oaksford, M. & Chater, N. (Eds) (1998). *Rational models of cognition*. Oxford University Press: Oxford, England.

Journal articles

- Hahn, U. & Chater, N. (1998). Understanding similarity: A joint project for psychology, case-based reasoning, and law. *Artificial Intelligence Review*, **12**, 393-427.
- Hahn, U. & Chater, N. (1998). Similarity and Rules: Distinct? Exhaustive? Empirically distinguishable? *Cognition*, **65**, 197-230.
- Redington, M. & Chater, N. (1998). Connectionist and statistical approaches to language acquisition: A distributional perspective. *Language and Cognitive Processes*, **13**, 129-191.
- Redington, M., Chater, N., & Finch, S. (1998). Distributional information: A powerful cue for acquiring syntactic categories. *Cognitive Science*, **22**, 425-469.

Book chapters

- Chater, N., Crocker, M. J., & Pickering, M. J. (1998). The rational analysis of inquiry: The case of parsing. . In M. Oaksford & N. Chater (Eds.), *Rational models of cognition* (pp. 441-468). Oxford: Oxford University Press.
- Oaksford, M., & Chater, N. (1998). An introduction to rational models of cognition. In M. Oaksford & N. Chater (Eds.), *Rational models of cognition* (pp. 1-18). Oxford: Oxford University Press.

Oaksford, M., & Chater, N. (1998). A revised rational analysis of the selection task: Exceptions and sequential sampling. In M. Oaksford & N. Chater (Eds.), *Rational models of cognition* (pp. 372-398). Oxford: Oxford University Press.

Refereed conference proceedings

Hahn, U., and Chater, N. (1998) On following rules: When is behavior rule-guided. In *Proceedings of the 20th Annual Conference of the Cognitive Science Society*. Mahwah, NJ: Erlbaum.

Pothos, E. M. & Chater, N. (1998). Rational Categories. *Twentieth Annual Conference of the Cognitive Science Society*.

Pothos, E. M. & Chater, N. (1998). Generality of the Abstraction Mechanisms in Artificial Grammar Learning. *Twentieth Annual Conference of the Cognitive Science Society*.

Commentaries

Hahn, U., & Chater, N. (1998). Real-world categories don't allow uniform feature spaces - not just across categories but within categories also. Open peer commentary on Schyns, P.G., Goldstone, R.L., & Thibaut, J. The development of features in object concepts. *Behavioural and Brain Sciences*, **21**, 28.

Hahn, U., & Chater, N. (1998). The notion of distal similarity is ill-defined. Open peer commentary on Edelman, S. Representation is representation of similarities. *Behavioural and Brain Sciences*, **21**, 474.

Hahn, U., & Chater, N. (1998). What *is* the dynamical hypothesis? Open peer commentary on van Gelder, T. The dynamical hypothesis in cognitive science. *Behavioural and Brain Sciences*, **21**, 633.

1997

Journal articles

Cairns, P., Shillcock, R. C., Chater, N., & Levy, J. (1997). Bootstrapping word boundaries: A bottom-up corpus-based approach to speech segmentation. *Cognitive Psychology*, **33**, 111-153.

Chater, N. (1997). Simplicity and the mind. *The Psychologist*, November, 1997, 495-498.

Chater, N. & Pickering, M. (1997). Two projects for understanding the mind: A response to Morris and Richardson. *Minds and Machines*, **7**, 553-569.

Oaksford, M., Chater, N., Grainger, R. & Larkin, J. (1997). Optimal data selection in the reduced array selection task (RAST). *Journal of Experimental Psychology: Learning, Memory and Cognition*, **23**, 441-458.

Redington, M. & Chater, N. (1997). Probabilistic and distributional approaches to language acquisition. *Trends in Cognitive Sciences*, **1**, 273-281.

Book chapters

Hahn, U. & Chater, N. (1997). Concepts and similarity. In K. Lamberts & D. Shanks (Eds.). *Knowledge, concepts and categories*, (pp. 43-92). Hove, England: Psychology Press.

Commentary

Chater, N. (1997) What is the type-1/type-2 distinction? Open peer commentary on Clark, A. & Thornton, C. Trading spaces; computation, representation and the limits of uninformed learning. *Behavioural and Brain Sciences*, **20**, 68-69.

Refereed conference proceedings

- Chater, N. and Hahn, U. (1997) Representational Distortion, Similarity and the Universal Law of Generalization. In *Proceedings of the International Interdisciplinary Workshop on Similarity and Categorization*. University of Edinburgh.
- Chater, N., Redington, M., Nakisa, R. & Oaksford, M. (1997). Rationality the fast and frugal way. In M. G. Shafto and P. Langley (Eds.), *Proceedings of the Nineteenth Annual Conference of the Cognitive Science Society*, (pp. 96-101). Mahwah, NJ: Erlbaum.
- Pothos, E. M. & Chater, N. (1997). Classification and Prior Assumptions about Category “Shape”: New Evidence Concerning Prototype and Exemplar Theories of Categorization. In M. G. Shafto and P. Langley (Eds.), *Proceedings of the Nineteenth Annual Conference of the Cognitive Science Society*, 620-625, LEA: Mahwah, NJ.
- Shillcock, R.C., Cairns, P., Chater, N. & Levy, J. (1997). The development of a speech segmentation strategy for English: An example of an emergent critical period effect. In A. Sorace, C. Heycock & R. Shillcock (Eds.) *Proceedings of the GALA '97 conference on “Language Acquisition: Knowledge Representation and Processing”*, University of Edinburgh, 388-392.

1996

Journal articles

- Chater, N. (1996). Reconciling simplicity and likelihood principles in perceptual organization. *Psychological Review*, **103**, 566-581.
- Chater, N. & Oaksford, M. (1996). Deontic reasoning, modules and innateness: A second look. *Mind and Language*, **11**, 191-202.
- Oaksford, M., & Chater, N. (1996). Rational explanation of the selection task. *Psychological Review*, **103**, 381-391.
- Redington, M. & Chater, N. (1996). Transfer in artificial grammar learning: A reevaluation. *Journal of Experimental Psychology: General*. **125**, 123-138.

Book chapters

- Chater, N. & Oaksford, M. (1996). The falsity of folk theories: Implications for psychology and philosophy. In W. O'Donahue & R. F. Kitchener (Eds.) *The philosophy of psychology*. London: Sage.

Refereed conference proceedings

- Hahn, U., Chater, N. and Henley, R. (1996). Weighting in Similarity Judgements: an investigation of the “MAX Hypothesis”. In G. W. Cottrell (Ed.), *Proceedings of the 18th Annual Conference of the Cognitive Science Society*, Mahwah, NJ: Erlbaum.
- Redington, M. & Chater, N. (1996). Randomly changing transfer in artificial grammar learning. In G. W. Cottrell (Ed.), *Proceedings of the 18th Annual Conference of the Cognitive Science Society* (p. 829-834). Mahwah, NJ: Erlbaum.
- Redington, M., Friend, M. & Chater, N. (1996). Confidence judgements, performance, and practice, in artificial grammar learning. In G. W. Cottrell (Ed.), *Proceedings of the 18th Annual Conference of the Cognitive Science Society* (pp. 649-654). Mahwah, NJ: Erlbaum.

Commentaries

- Bullinaria, J.A. & Chater, N. (1996). Double Dissociation, Modularity and Distributed Organization. *Behavioral and Brain Sciences*, **19**, 632-632.

1995

Journal articles

- Bullinaria, J. A., & Chater, N. (1995). Connectionist modelling: Implications for neuropsychology. *Language and Cognitive Processes*, **10**, 227-64.
- Oaksford, M., & Chater, N. (1995). Information gain explains relevance which explains the selection task. *Cognition*, **57**, 97-108.
- Oaksford, M., & Chater, N. (1995). Two and three stage models of deontic reasoning. *Thinking & Reasoning*, **1**, 350-357.
- Oaksford, M., & Chater, N. (1995). Theories of reasoning and the computational explanation of everyday inference. *Thinking & Reasoning*, **1**, 121-152.
- Pickering, M. & Chater, N. (1995). Why cognitive science is not formalized folk psychology. *Minds and Machines*, **5**, 309-337.

Book chapters

- Abu-Bakar, M. & Chater, N. (1995). Time-warping tasks and recurrent neural nets. In J.P. Levy, D. Bairaktaris, J.A. Bullinaria, & P. Cairns (Eds.), *Connectionist models of memory and language* (pp. 269-289). London: UCL Press.
- Chater, N. (1995). Neural networks: The new statistical models of mind. In J.P. Levy, D. Bairaktaris, J.A. Bullinaria, & P. Cairns (Eds.), *Connectionist models of memory and language* (pp. 207-227). London: UCL Press.
- Finch, S., Chater, N., & Redington, M. (1995). Acquiring syntactic information from distributional statistics. In J. P. Levy, D. Bairaktaris, J. A. Bullinaria & P. Cairns (Eds.), *Connectionist models of memory and language* (pp. 229-242). London: UCL Press.
- Chater, N. & Christiansen, M. (1995). The connectionist psycholinguistics of speech processing. In M. Arbib (Ed.) *Handbook of Brain Theory and Neural Networks*.
- Christiansen, M. & Chater, N. (1995). Constituency and recursion in connectionist networks. In M. Arbib (Ed.) *Handbook of Brain Theory and Neural Networks*.

Refereed conference proceedings

- Redington, M., Chater, N., Huang, C., Chang, L.-P., Finch, S., & Chen, K. (1995). The universality of simple distributional methods: Identifying syntactic categories in Chinese. In *Proceedings of the Cognitive Science of Natural Language Processing, Dublin, 1995*.
- Shillcock, R.C., Hicks, J., Cairns, P., Chater, N. & Levy, J., P. (1995). Phonological reduction, assimilation, intra-word information structure, and the evolution of the lexicon of English: Why fast speech isn't confusing. In *Proceedings of the Seventeenth Annual Conference of the Cognitive Science Society, 1995*, pp. 233-238.

1994

Journal articles

- Chater, N. & Heyes, C. (1994). Animal concepts: Content and discontent. *Mind and Language*, **9**, 209-246.
- Christiansen, M. & Chater, N. (1994). Generalization and connectionist language learning. *Mind and Language*, **9**, 273-287.
- Oaksford, M. & Chater, N. (1994). A rational analysis of the selection task as optimal data selection. *Psychological Review*, **101**, 608-631.

Oaksford, M., & Chater, N. (1994). Another look at eliminative and enumerative behaviour in a conceptual task. *European Journal of Cognitive Psychology*, **6**, 149-169.

Commentaries

Chater, N. (1994). Modularity, interaction and connectionist neuropsychology. *Behavioural and Brain Sciences*, **17**, 66-67.

Book chapters

Chater, N. (1994). Information theory. *Encyclopedia of language and linguistics*, Volume 3 (pp. 1685-1687). Cambridge: Cambridge University Press.

Chater, N. & Conkey, P. (1994). Sequence processing with recurrent neural networks. In G. D. A. Brown & M. Oaksford (Eds.), *Neurodynamics and psychology* (pp. 269-294). London: Academic Press.

Finch, S., & Chater, N. (1994). Learning syntactic categories: a statistical approach. In M. Oaksford & G.D.A. Brown (Eds.), *Neurodynamics and psychology* (pp. 294-321). London: Academic Press.

Oaksford, M. & Chater, N. (1994). The probabilistic retreat from biases: Implications for man-machine communication? In M. Brouwer-Janse & T. Hetherington (Eds.) *Basics of man-machine communication in the design of educational systems*. Berlin: Springer-Verlag.

Refereed conference proceedings

Abu-Bakar, M. & Chater, N. (1994). Distribution and frequency: Modelling the effects of speaking rate on category boundaries using a recurrent neural network. In A. Ram, & K. Eiselt (Eds.), *Proceedings of the 16th Annual Conference of Cognitive Science Society* (pp. 3-8). Hillsdale, N.J.: Lawrence Erlbaum Associates.

Cairns, P., Shillock, R., Chater, & Levy, J. (1994). Lexical segmentation: the role of sequential statistics in supervised and un-supervised models. In A. Ram, & K. Eiselt (Eds.), *Proceedings of the 16th Annual Conference of Cognitive Science Society* (pp. 136-141). Hillsdale, N.J.: Lawrence Erlbaum Associates.

Cairns, P., Shillcock, R.C., Chater, N., Levy, J. (1994). Modelling the acquisition of lexical segmentation. In *Proceedings of the 26th Child Language Research Forum, 1994*; CSLI, Stanford CA. University of Chicago Press.

Finch, S. & Chater, N. (1994). Distributional bootstrapping: From word class to proto-sentence. In A. Ram and K. Eiselt (Eds.). *Proceedings of the 16th Annual Conference of the Cognitive Science Society* (pp. 301-306). Hillsdale, NJ: Erlbaum.

Redington, M., & Chater, N. (1994). The guessing game: A paradigm for artificial grammar learning. In A. Ram and K. Eiselt (Eds.). *Proceedings of the Sixteenth Annual Conference of the Cognitive Science Society* (pp. 745-749). Hillsdale, NJ: Erlbaum.

1993

Journal articles

Abu-Bakar, M. & Chater, N. (1993). Studying the effects of speaking rate and syllable structure on phonetic perception using recurrent neural networks. *Irish Journal of Psychology*, **14**, 410-425.

Chater, N. & Oaksford, M. (1993a). Logicism, mental models and everyday reasoning. *Mind & Language*. **8**, 72-89.

Chater, N. & Oaksford, M. (1993b). Holism and eclecticism in the theory of concepts. *European Journal of Cognitive Psychology*, **5**, 173-182.

Commentaries

Chater, N. (1993). Categorization, theories and folk psychology. *Behavioural & Brain Sciences*, **16**, 37.

Chater, N. (1993). Mental models and non-monotonic reasoning. *Behavioural & Brain Sciences*, **16**, 340-341.

Book chapters

Oaksford, M., & Chater, N. (1993). Reasoning theories and bounded rationality. In K. I. Manktelow, & D. E. Over (Eds.), *Rationality*, (pp. 31-60). London: Routledge.

Refereed conference proceedings

Abu-Bakar, M., & Chater, N. (1993). Processing time-warped sequences using recurrent neural networks: Modelling rate-dependent factors in speech perception. In *Proceedings of the 15th Annual Conference of the Cognitive Science Society* (pp. 191-197). Hillsdale, New Jersey: Lawrence Erlbaum Associates.

Bullinaria, J. A. & Chater, N. (1993). Double dissociation in artificial neural networks: Implications for neuropsychology. In *Proceedings of the 15th Annual Conference of the Cognitive Science Society* (pp. 283-288). Hillsdale, New Jersey: Lawrence Erlbaum Associates.

Christiansen, M., & Chater, N. (1993). Symbol grounding - the emperor's new theory of meaning? In *Proceedings of the 15th Annual Conference of the Cognitive Science Society* (pp. 155-160). Hillsdale, NJ: Lawrence Erlbaum Associates.

Redington, M., Chater, N. & Finch, S. (1993). Distributional information and the acquisition of linguistic categories: A statistical approach. In *Proceedings of the 15th Annual Conference of the Cognitive Science Society* (pp. 848-853). Hillsdale, NJ: Erlbaum.

1992

Journal articles

Christiansen, M., & Chater, N. (1992). Connectionism, learning and meaning. *Connection Science*, **4**, 227-252.

Oaksford, M. & Chater, N. (1992). Bounded rationality in taking risks and drawing inferences. *Theory & Psychology*, **2**, 225-230.

Refereed conference proceedings

Chater, N. & Conkey, P. (1992). Finding linguistic structure with recurrent neural networks. In *Proceedings of the 14th Annual Conference of the Cognitive Science Society* (pp. 402-407). Hillsdale, New Jersey: Lawrence Erlbaum.

Finch, S., & Chater, N. (1992). Bootstrapping syntactic categories using statistical methods. *Proceedings of the 1st SHOE Workshop on Statistical Methods in Natural Language* (pp. 229-235). ITK Proceedings 92/1, Institute for Language Technology and AI, Tilburg University, The Netherlands.

Finch, S., & Chater, N. (1992). Learning syntactic categories using a neural network. In *Proceedings of the 14th Annual Conference of the Cognitive Science Society* (pp. 820-825). Hillsdale, New Jersey: Lawrence Erlbaum.

Shillcock, R.C., Levy, J.P., Lindsey, G., Chater, N. (1992). A psycholinguistic model of the early stages of spoken word recognition. Paper presented at the 25th

International Congress of Psychology, Brussels, July 1992. Abstract published in *International Journal of Psychology*, **27**.

Shillcock, R.C., Lindsey, G., Levy, J. & Chater, N. (1992). A phonologically motivated input representation for the modelling of auditory word perception in continuous speech. In *Proceedings of the 14th Annual Conference of the Cognitive Science Society* (pp. 408-413). Hillsdale, New Jersey: Lawrence Erlbaum.

1991

Journal articles

Finch, S. & Chater, N. (1991). A hybrid approach to the automatic learning of linguistic categories. *Artificial Intelligence Society of Britain Quarterly*, **78**, 16-24.

Oaksford, M., & Chater, N. (1991). Against logicist cognitive science. *Mind & Language*. **6**, 1-38.

Commentaries

Chater, N. (1991). Connectionism and classical computation. *Behavioural & Brain Sciences*, **14**, 493-494.

Chater, N. (1991). Network and direct methods of maximizing harmony. *Behavioural & Brain Sciences*, **14**, 740-742.

Refereed conference proceedings

- Chater, N. & Ganis, G. (1991). Double dissociation and isolable cognitive processes. *Proceedings of the 13th Annual Cognitive Science Society Conference* (pp.668-672). Hillsdale, New Jersey: Lawrence Erlbaum.
- Ganis, G. & Chater, N. (1991). Double dissociation and isolable cognitive processes. *Proceedings of the 13th Annual Cognitive Science Society Conference* (pp.714-718). Hillsdale, New Jersey: Lawrence Erlbaum.
- Levy, J., Shillcock, R.C. & Chater, N. (1991). Connectionist modelling of phonotactic constraints in word recognition. *Proceedings of the International Joint Conference on Neural Networks* (pp. 101–106). Singapore, 1991.
- Shillcock, R.C., Levy, J., & Chater, N. (1991). A connectionist model of auditory word recognition in continuous speech. *Proceedings of the 13th Annual Cognitive Science Society Conference* (pp.340-345). Hillsdale, New Jersey: Lawrence Erlbaum.

1990

Journal articles

- Chater, N. & Lyon, K. & Myers, T. (1990) Why are conjunctive categories overextended? *Journal of Experimental Psychology: Learning, Memory and Cognition*. **16**, 497-508.
- Chater, N., & Oaksford, M.R., (1990), Autonomy, Implementation and Cognitive Architecture: A Reply to Fodor and Pylyshyn, *Cognition* **34**, 93-107.
- Oaksford, M., Chater, N., & Stenning, K. (1990). Connectionism, classical cognitive science and experimental psychology. *AI & Society*, **4**, 73-90 (Also in A. Clark, & R. Lutz (Eds.) (1992). *Connectionism in context* (pp. 57-74). Berlin: Springer-Verlag).

Book chapters

- Lyon, K. & Chater, N. (1990). Localist and globalist theories of concepts. In K. Gilhooly, R. Logie, M. Keane & G. Erdos (Eds.) *Lines of thinking*, Vol 1 (pp. 41-56). Chichester: Wiley.