

Joanna J. Bryson

Department of Computer Science
University of Bath
Bath BA2 7AY
United Kingdom

email: J.J.Bryson@bath.ac.uk
web: <http://www.cs.bath.ac.uk/~jjb>
phone: +44 (1225) 38 3934
updated: January 3, 2012

Education

PH.D. IN COMPUTER SCIENCE June 2001
THE MASSACHUSETTS INSTITUTE OF TECHNOLOGY

Dissertation Title: Intelligence by Design: Principles of Modularity and Coordination
for Engineering Complex Adaptive Agents

Courses Include: Principles of Computing Systems, Embodiment and Cognition,
Computer Architecture, Artificial Intelligence, Theory of Computation

M.PHIL. IN PSYCHOLOGY January 2000
THE UNIVERSITY OF EDINBURGH

Dissertation Title: The Study of Sequential and Hierarchical Organization of Behavior
via Artificial Mechanisms of Action Selection

M.SC. IN ARTIFICIAL INTELLIGENCE November 1992
THE UNIVERSITY OF EDINBURGH

Dissertation Title: The Subsumption Strategy Development of a Music Modelling System

Courses Include: Knowledge Representation and Inference, Intelligent Sensing and
Control, Neural Networks, Software for Parallel Architectures, Expert Systems

B.A. IN BEHAVIORAL SCIENCE June 1986
THE COLLEGE OF THE UNIVERSITY OF CHICAGO

Courses Include: Human Information Processing, Perception, Human Interaction,
Developmental Neuropsychology, Ethology

Employment

DEPARTMENT OF COMPUTER SCIENCE University of Bath, England
Bath is a small, research-oriented university founded in 1969. In 2011 it was ranked the fifth-best university in the UK by the *Sunday Times*. The Computer Science Department was established in 2000 having previously been a group in the Mathematics Department. The 2008 Research Assessment Exercise (RAE) ranked Bath's computer science third in the UK for research outcomes. Organized the AI Research Group (the fourth research group in Bath Computer Science) and Seminar Series; founded Artificial Models of Natural Intelligence. Member of the Centres for Biomimetic Engineering, the Centre for Mathematical Biology, and the Bath Institute of Complex Systems.

LECTURER B (*US: Assist. Prof.*) October 2002 – August 2010;

READER (*US: Assoc. Prof. with tenure*) September 2010 – *present*

PRIMATE COGNITIVE NEUROSCIENCE LABORATORY Harvard University, Cambridge USA
Postdoctoral Fellow with Prof. Marc D. Hauser, working on modeling specialized learning in primates and its applications to safe learning in software agents.

October 2001 – Sept 2002

COMPUTERS AND COGNITION GROUP Franklin W. Olin College of Engineering, USA
Visiting Postdoctoral Fellow with Prof. Lynn Andrea Stein, working on the interaction between autonomous agents and the semantic web in the context of DAML-S.
June 2001 – September 2001

HUMAN COMMUNICATION RESEARCH CENTER University of Edinburgh, Scotland
Research Assistant to Prof. Johanna Moore and Prof. Mark Steedman. Facilitate the transfer of Prof. Moore's research in automated planning, tutoring and dialog to Edinburgh. Investigated reactive and situated planning for natural language dialog systems, with application to tutoring.
Jan 1999 – March 2000

LEGO Boston, MA and Billund, Denmark
Consultation and research for the toy company, known for constructive and educational play. First employed with LEGO Futura in Boston, which developed technologically-oriented play concepts for the parent company. Later with the Special Project Unit Darwin at the corporate headquarters, developing a proprietary intelligent character architecture for virtual reality applications.
April 1995 – December 1995, February 1998 – December 1998

MARBLE ASSOCIATES, INC. Waltham, MA, USA
Senior Associate (1993) / Intern (1994) for a technology consulting agency. Primary assignment was a large-scale re-engineering effort for a technology manufacturer with 30,000 employees worldwide. Initially positioned in the "Core Object Support" team; responsible for the corporate software library, integrating other teams (e.g. order entry, tracking, product configuration) and interfacing with the corporate databases and other legacy systems. After three months, made Technical Project Lead. Also served as AI expert; engaged in business development.
January 1993 – August 1993, Summer 1994

A M INVESTORS Chicago, IL, USA
Project Leader for automating the exchange-floor staff. Delivered a real-time trading support system with a 20-minute maximum downtime.
September 1988 – July 1991

LAWRENCE I. SCHULMAN & CO. / FIRST OPTIONS OF CHICAGO Chicago, IL, USA
Sole technical employee in the unit, responsible for providing custom trading and bookkeeping tools for the proprietary trading unit of the world's largest options clearing firm.
July 1986 – September 1988

Visiting Positions

MANNHEIMER ZENTRUM FÜR EUROPÄISCHE SOZIALFORSCHUNG University Mannheim
Visiting Research Fellow at Mannheim's Centre for Social Science Research.
January 2011 – *present*

DEPARTMENT OF ANTHROPOLOGY Oxford University
Visiting Research Fellow. Participated in *Explaining Religion* with Prof. Harvey Whitehouse.
February 2010 – December 2010

THE KONRAD LORENZ INSTITUTE FOR EVOLUTION AND COGNITION RESEARCH Vienna
Resident Faculty and Hans Przibram Fellow. Funded by the institute, with partial sabbatical support from Bath. Topic: "Factors Limiting the Biological Evolution of Cultural Evolution".
August 2007 – August 2009

METHODS AND DATA INSTITUTE University of Nottingham
Visiting Research Fellow. Attended courses on quantitative research methods in the social sciences, gave lectures on agent-based modelling.
September 2007 – July 2009

Journal Articles and Reviewed Commentary

- Philipp Rohlfshagen and Joanna J. Bryson, “Flexible Latching: A Biologically-Inspired Mechanism for Improving the Management of Homeostatic Goals”, *Cognitive Computation*, **2**(3):230–241, 2010.
- Joanna J. Bryson “Why Robot Nannies Probably Won’t Do Much Psychological Damage”, invited and reviewed commentary on Noel Sharkey and Amanda Sharkey, “The crying shame of robot nannies: an ethical appraisal”, *Interaction Studies*, **11**(2):196–200, June 2010.
- Joanna J. Bryson and Emmanuel A. R. Tanguy “Simplifying the Design of Human-Like Behaviour: Emotions as Durative Dynamic State for Action Selection”, *International Journal of Synthetic Emotions*, **1**(1):30–50, January 2010.
- Joanna J. Bryson “Building Persons is a Choice”, invited and reviewed commentary on Anne Foerst, “Robots and Theology”, *Erwägen Wissen Ethik*, **20**(2):195–197, November 2009 .
- Joanna J. Bryson “Representations Underlying Social Learning and Cultural Evolution” *Interaction Studies*, **10**(1):77–100, March 2009.
- Joanna J. Bryson “Embodiment versus Memetics”, *Mind & Society*, **7**(1):77–94, June 2008.
- Joanna J. Bryson, Yasushi Ando and Hagen Lehmann “Agent-based modelling as scientific method: a case study analysing primate social behaviour”, *Philosophical Transactions of the Royal Society, B — Biology*, **362**(1485):1685–1698, September 2007.
- Mark A. Wood and Joanna J. Bryson, “Skill Acquisition Through Program-Level Imitation in a Real-Time Domain”, *IEEE Transactions on Systems, Man and Cybernetics Part B—Cybernetics*, **37**(2):272–285, April 2007.
- Joanna J. Bryson and Jonathan C. S. Leong “Primate Errors in Transitive ‘Inference’” *Animal Cognition*, **10**(1):1–15, January 2007.
- Emmanuel Tanguy, Philip Willis and Joanna J. Bryson “A Dynamic Emotion Representation Model Within a Facial Animation System”, *The International Journal of Humanoid Robotics*, **3**(3):293–300, 2006.
- Joanna J. Bryson, “The Attentional Spotlight”, *Minds and Machines*, **16**(1):21–28, September 2006.
- Joanna J. Bryson, “Language isn’t Quite *That* Special”, commentary on Carruthers in *Behavioral and Brain Sciences* **25** (6): 679–680, 2002.
- Joanna J. Bryson, David Martin, Sheila I. McIlraith and Lynn Andrea Stein “Toward Behavioral Intelligence in the Semantic Web” in *IEEE Computer* **35**(11): 48–54, 2002.
- Joanna J. Bryson, “Intelligent Control Requires More Structure than the Theory of Event Coding Provides”, commentary on Hommel et al. in *Behavioral and Brain Sciences*, **24**(5): 878–879, 2001.
- Joanna J. Bryson and Kristinn R. Thórisson, “Dragons, Bats & Evil Knights: A Three-Layer Design Approach to Character-Based Creative Play”, *Virtual Reality*, **5**(2): 57–71, 2000.
- Joanna J. Bryson, “Cross-Paradigm Analysis of Autonomous Agent Architecture”, *Journal of Experimental and Theoretical Artificial Intelligence* **12**(2):165–190, 2000.
- Joanna J. Bryson and Will Lowe, “Cognition without Representational Redescription”, commentary on Ballard et al. in *Behavioral and Brain Sciences*, **20**(4):743–744, 1997.

Edited Books, Proceedings and Special Issues

- Anil K. Seth, Tony J. Prescott, Joanna J. Bryson (eds.), *Modelling Natural Action Selection*, Cambridge University Press, 2012 (available since November 2011).
- Tony J. Prescott, Joanna J. Bryson, and Anil K. Seth (eds.), “Introduction. Modelling Natural Action Selection”, *Philosophical Transactions of the Royal Society B* **362**(1485):1521–1529, Sept 2007.
- Ivana Čače and Joanna J. Bryson (eds.), *Interdisciplinary Description of Complex Systems* **5**(2), “Theme Issue on Poverty and Human Development”, October 2007.

Joanna J. Bryson (ed.), “Mechanisms of Action Selection: Introduction to the Special Issue,” *Adaptive Behavior* **10**(1):5–8, January 2007.

Joanna J. Bryson, Tony J. Prescott and Anil K. Seth (eds.), *Modelling Natural Action Selection: Proceedings of an International Workshop*, AISB, Sussex UK, 2005.

Reviewed Archival Conference Papers and Book Chapters

Anil K. Seth and Joanna J. Bryson, “Natural Action Selection, Modeling”, in *Encyclopedia of the Mind*, H. Pashler (ed.), Sage, submitted for publication.

Joanna J. Bryson “The Role of Stability in Cultural Evolution: Innovation and Conformity in Implicit Knowledge Discovery”, in *Integrating Cultures: Formal Models and Agent-Based Simulations*, Virginia Dignum, Frank Dignum, Jacques Ferber, and Tiberiu Stratulat (eds), Springer, Berlin 2012 *in press*.

Joanna J. Bryson “Structuring Intelligence: The Role of Hierarchy, Modularity and Learning in Generating Intelligent Behaviour”, in *The Complex Mind*, David McFarland, Keith Stenning and Margaret McGonigle (eds.), *in press*.

Joanna J. Bryson and Philip P. Kime, “Just an Artifact: Why Machines are Perceived as Moral Agents”, *The Twenty-Second International Joint Conference on Artificial Intelligence (IJCAI)*, Barcelona, Spain, pp. 1641–1646, Morgan Kaufmann, 2011.

Gideon M. Gluckmann and Joanna J. Bryson, “An Agent-Based Model of the Effects of a Primate Social Structure on the Speed of Natural Selection”, in *Evolutionary Computation and Multi-Agent Systems and Simulation (ECoMASS)*, Bill Rand and Forrest Stonedahl (eds.), Dublin 2011.

Joanna J. Bryson “A Role for Consciousness in Action Selection”, in *Proceedings of the AISB 2011 Symposium: Machine Consciousness*, Ron Chrisley, Rob Clowes and Steve Torrance (eds.), York, April 2011.

John Grey and Joanna J. Bryson “Procedural Quests: A Focus for Agent Interaction in Role-Playing-Games”, in *Proceedings of the AISB 2011 Symposium: AI & Games*, Daniela Romano and David Moffat, (eds.), York, April 2011.

Jakub Gemrot, Cyril Brom, Joanna Bryson and Michal Bida, “How to compare usability of techniques for the specification of virtual agents behavior? An experimental pilot study with human subjects”, in *Proceedings of the AAMAS 2011 Workshop on the uses of Agents for Education, Games and Simulations*, Taipei, M. Beer, C. Brom, V-W Soo and F. Dignum (eds.) May 2011.

Joanna J. Bryson “Crude, Cheesy, Second-Rate Consciousness”, in *From Brains to Systems: 2010 Conference on Brain-Inspired Cognitive Systems (BICS)*, 14pp, Madrid, 14–16 July 2010.

Joanna J. Bryson, “Cultural Ratcheting Results Primarily from Semantic Compression”, in *Proceedings of the Evolution of Language 2010*, A. D. M. Smith, M. Schouwstra, B. de Boer and K. Smith (eds.), World Scientific, pp. 50–57, Utrecht, April 2010.

Joanna J. Bryson, “Robots Should Be Slaves”, in *Close Engagements with Artificial Companions: Key social, psychological, ethical and design issues*, Yorick Wilks (ed.), pp. 63–74, John Benjamins, Amsterdam, 2010.

Joanna J. Bryson and Petra Kaczensky, “Exploring Knowledge Dissemination as a Selective Force for Aggregation: Preliminary Results from Modelling Wild Asiatic Asses”, Simon Powers (ed.), *Levels of Selection and Individuality in Evolution: Conceptual Issues and the Role of Artificial Life Models*, a workshop at The Tenth European Conference on Artificial Life (ECAL '09), Budapest, 14 September 2009.

Joanna J. Bryson, “Age-Related Inhibition and Learning Effects: Evidence from Transitive Performance”, in *Proceedings of the 31st Annual Meeting of the Cognitive Science Society (CogSci 2009)* pp. 3040–3045, July 2009.

Joanna J. Bryson, “Crude, Cheesy, Second-Rate Consciousness”, *The Second AISB Symposium Computing and Philosophy*, Mark Bishop (ed), pp. 10–15, Edinburgh UK, April 2009.

- Avri Bilovich and Joanna J. Bryson, “Detecting the Evolution of Semantics and Individual Beliefs Through Statistical Analysis of Language Use”, *Proceedings of the Fall AAAI Symposium on Naturally-Inspired Artificial Intelligence*, J. Beal, P. Bello, N. Cassimatis, M. Coen and P. Winston (eds), pp. 21–26, Washington DC, October 2008.
- Joanna J. Bryson, “The Role of Modularity in Stabilizing Cultural Evolution: Conformity and Innovation in an Agent-Based Model”, *Proceedings of the Fall AAAI Symposium on Adaptive Agents in Cultural Contexts (AACC '08)*, A. Davis and J. Ludwig (eds), pp. 8–17, Arlington VA, October 2008.
- Philipp Rohlfshagen and Joanna J. Bryson, “Improved Animal-Like Maintenance of Homeostatic Goals via Flexible Latching”, *Proceedings of the AAAI Fall Symposium on Biologically Inspired Cognitive Architectures*, A. Samsonovich (ed), pp. 153–160, Arlington VA, October 2008.
- Joanna J. Bryson, “The Impact of Durative State on Action Selection”, *Proceedings of the AAAI Spring Symposium on Emotion, Personality, and Social Behavior*, I. Horswill, E. Hudlicka, C. Lisetti and J. Velasquez (eds), pp. 2–9 March 2008.
- Steven Butler and Joanna J. Bryson “Effects of Mass Media and Opinion Exchange on Extremist Group Formation”, in *The Proceedings of the Fourth Conference of the European Social Simulation Society (ESSA '07)*, Toulouse, France, pp. 455–465 2007.
- Joanna J. Bryson, “Representational Requirements for Evolving Cultural Evolution”, invited and reviewed target article (and responses) in *interdisciplines* Web conference, *Adaptation and Representation* 28 May 2007.
- Emmanuel Tanguy, Philip Willis and Joanna J. Bryson, “Emotions as Durative Dynamic State for Action Selection”, in *The Twentieth International Joint Conference on Artificial Intelligence (IJCAI)*, Hyderabad, India, pp. 1537–1542, Morgan Kaufmann 2007.
- Mark A. Wood and Joanna J. Bryson, “Representations for Learning Action Selection from Real-Time Observation of Task Experts”, in *The Twentieth International Joint Conference on Artificial Intelligence (IJCAI)*, Hyderabad, India, pp. 641–646, Morgan Kaufmann 2007.
- Cyril Brom, Jakub Gemrot, Michal Bída, Ondrej Burkert, Sam J. Partington and Joanna J. Bryson, “POSH Tools for Game Agent Development by Students and Non-Programmers”, in *The Ninth International Computer Games Conference: AI, Mobile, Educational and Serious Games*, Dublin, Ireland, pp. 126–133, University of Wolverhampton 2006.
- Ivana Čače and Joanna J. Bryson, “Agent Based Modelling of Communication Costs: Why Information can be Free”, in *Emergence and Evolution of Linguistic Communication* C. Lyon, C. L. Nehaniv and A. Cangelosi, eds., pp. 305–322, Springer 2007.
- Joanna J. Bryson, Tristan J. Caulfield and Jan Drugowitsch, “Integrating Life-Like Action Selection into Cycle-Based Agent Simulation Environments”, in *Proceedings of Agent 2005: Generative Social Processes, Models, and Mechanisms*, Michael North, David L. Sallach and Charles Macal eds., pp. 67–81, Argonne National Laboratory 2006.
- Samuel J. Partington and Joanna J. Bryson, “The Behavior Oriented Design of an Unreal Tournament Character”, *The Fifth International Working Conference on Intelligent Virtual Agents*, T. Panayiotopoulos, J. Gratch, R. Aylett, D. Ballin, P. Olivier and T. Rist, eds., pp. 466–477, Springer, 2005.
- Paula M. Ellis and Joanna J. Bryson, “The Significance of Textures for Affective Interfaces”, *The Fifth International Working Conference on Intelligent Virtual Agents*, T. Panayiotopoulos, J. Gratch, R. Aylett, D. Ballin, P. Olivier and T. Rist, eds., pp. 394–404, Springer, 2005.
- Hagen Lehmann, JingJing Wang and Joanna J. Bryson, “Tolerance and Sexual Attraction in Despotic Societies: A Replication and Analysis of Hemelrijk (2002)”, in *Modelling Natural Action Selection: Proceedings of an International Workshop*, J. J. Bryson, T. J. Prescott and A. K. Seth, eds., pp. 135–142, AISB, Sussex UK, 2005.
- Joanna J. Bryson and Mark A. Wood, “Learning Discretely: Behaviour and Organisation in Social Learning”, in *Third International Symposium on Imitation in Animals and Artifacts*, Y. Demiris ed., pp. 30–37, AISB, 2005.

- Ivana Čače and Joanna J. Bryson, “Why Information can be Free”, in *Second International Symposium on the Emergence and Evolution of Linguistic Communication (EELC'05)*, A. Cangelosi and C. L. Nehaniv eds. pp. 17–22, AISB, 2005.
- Joanna J. Bryson, “Modularity and Specialized Learning: Reexamining Behavior-Based Artificial Intelligence”, in *The Proceedings of The Third International Conference on Development and Learning (ICDL'04): Developing Social Brains*, J. Triesch and T. Jebara, eds., pp. 309–316, UCSD Institute for Neural Computation, 2004.
- Joanna J. Bryson, “Evidence of Modularity from Primate Errors during Task Learning”, in *The Ninth Neural Computation and Psychology Workshop (NCPW9)*, A. Cangelosi, G. Bugmann and R. Borisyuk eds., pp. 301–310, World Scientific, 2005.
- Joanna J. Bryson, “Action Selection and Individuation in Agent Based Modelling”, in *Proceedings of Agent 2003: Challenges of Social Simulation*, David L. Sallach and Charles Macal eds., pp. 317–330, Argonne National Laboratory, 2003.
- Joanna J. Bryson, “Modular Representations of Cognitive Phenomena in AI, Psychology and Neuroscience”, in *Visions of Mind*, Darryl Davis ed., pp. 66–89, Idea Group, London, 2005.
- Bruce Edmonds and Joanna J. Bryson, “The Insufficiency of Formal Design Methods — The Necessity of an Experimental Approach for the Understanding and Control of Complex MAS.”, *The Third International Joint Conference on Autonomous Agents and Multi Agent Systems (AAMAS 2004)*, pp. 936–943.
- Mark Wood, Jonathan C. S. Leong and Joanna J. Bryson, “ACT-R is almost a Model of Primate Task Learning: Experiments in Modelling Transitive Inference”, in *Proceedings of the 26th Annual Meeting of the Cognitive Science Society (CogSci 2004)*, pp. 1470–1475.
- Emmanuel Tanguy, Philip Willis and Joanna J. Bryson, “A Layered Dynamic Emotion Representation for the Creation of Complex Facial Expressions”, *Intelligent Virtual Agents 2003*, pp. 101–105. Springer, 2003.
- Joanna J. Bryson “The Behavior-Oriented Design of Modular Agent Intelligence”, *Agent Technologies, Infrastructures, Tools, and Applications for e-Services*, R. Kowalszyk, J. P. Müller, H. Tianfield and R. Unland, eds., pp. 61–76, Springer, 2003.
- Joanna J. Bryson, David Martin, Sheila I. McIlraith and Lynn Andrea Stein, “Agent-Based Composite Services in DAML-S: The Behavior-Oriented Design of an Intelligent Semantic Web”, in *Web Intelligence*, N. Zhong, J. Liu and Y. Yao, eds., pp. 37–58, Springer, 2003.
- Joanna J. Bryson, “Where Should Complexity Go? Cooperation in Complex Agents with Minimal Communication”, *Innovative Concepts for Agent-Based Systems*, W. Truszkowski, C. Rouff and M. Hinchey, eds., pp. 298–313, Springer, 2003.
- Joanna J. Bryson and Jessica C. Flack, “Action Selection for an Artificial-Life Model of Social Behavior in Non-Human Primates”, *Proceedings of the International Workshop on Self-Organization and Evolution of Social Behaviour*, C. Hemelrijk ed., pp. 42–45, 2002.
- Joanna J. Bryson and Marc D. Hauser, “What Monkeys See and Don't Do: Agent Models of Safe Learning in Primates”, *Proceedings of the AAAI Symposium on Safe Learning Agents*, M. Barley and H. W. Guesgen, eds., AAAI Press March 2002.
- Joanna J. Bryson, “Embodiment vs. Memetics: Does Language Need a Physical Plant?” in *Developmental Embodied Cognition (DECO-2001)*, R. Pfeifer and G. Westermann, eds.; Edinburgh, July 2001.
- Joanna J. Bryson and Lynn Andrea Stein, “Modularity and Design in Reactive Intelligence”, in *The Seventeenth International Joint Conference on Artificial Intelligence (IJCAI)*, Seattle WA, pp. 1115–1120, Morgan Kaufmann, 2001.
- Joanna J. Bryson and Lynn Andrea Stein, “Modularity and Specialized Learning: Mapping Between Agent Architectures and Brain Organization”, in *The Second International Workshop on Emergent Neural Computational Architectures Based on Neuroscience*, S. Wermter, J. Austin and D. Willshaw, eds.; Springer, Berlin, pp. 98–113, 2001.
- Joanna J. Bryson, “Hierarchy and Sequence vs. Full Parallelism in Action Selection”, *Simulation of Adaptive Behavior 6*, Paris, 2000 pp. 147–156 (originally in *Intelligent Virtual Agents 2*, ed. Daniel Ballin, 1999.)

- Joanna J. Bryson and Lynn Andrea Stein, “Modularity and Specialized Learning in the Organization of Behaviour”, in *Connectionist Models of Learning, Development and Evolution: The Sixth Neural Computation and Psychology Workshop (NCPW6)*, eds. Robert French and Jacques Sougné, pp. 53–62, Springer, 2001.
- Joanna J. Bryson, Will Lowe and Lynn Andrea Stein, “Hypothesis Testing for Complex Agents”, *NIST Workshop on Performance Metrics for Intelligent Systems*, Washington, DC; eds. Alex M. Meystel and Elena R. Messina, pp. 233–240, 2000.
- Joanna J. Bryson and Lynn Andrea Stein, “Architectures and Idioms: Making Progress in Agent Design”, *The Seventh International Workshop on Agent Theories, Architectures and Languages (ATAL)*, Boston, eds. C. Castelfranchi and Y. Lespérance, pp. 73–88, Springer 2000.
- Joanna Bryson, “Making Modularity Work: Combining Memory Systems and Intelligent Processes in a Dialog Agent”, *AISB’00 Symposium on Designing a Functioning Mind*, ed. Aaron Sloman, pp. 21–30; Birmingham UK, 2000.
- Joanna Bryson, “A Proposal for the Humanoid Agent-builders League (HAL)”, *AISB’00 Symposium on Artificial Intelligence, Ethics and (Quasi-)Human Rights*, ed. John Barnden, pp. 1–6; Birmingham UK, 2000. (Abstract also appeared in the AISB Quarterly No. 104, Summer/Autumn 2000, ed. Blay Whitby)
- Joanna Bryson, “Creativity by Design: A Behaviour-Based Approach to Creating Creative Play”, *AISB’99 Symposium on Creativity in Entertainment and Visual Art*, ed. Frank Nack, Edinburgh, 1999.
- Joanna Bryson and Phil Kime, “Just Another Artifact: Ethics and the Empirical Experience of AI”, *Fifteenth International Congress on Cybernetics*, pp. 385–390, Namur, 1998.
- Joanna Bryson and Brendan McGonigle, “Agent Architecture as Object Oriented Design”, *The Fourth International Workshop on Agent Theories, Architectures and Languages (ATAL97)*, pp. 15–30, ed. Munindar P. Singh, Springer-Verlag, Providence, 1998.
- Joanna Bryson, “The Design of Learning for an Artifact”, *The AISB Workshop on Learning in Robots and Animals*, ed. Noel Sharkey et. al., Brighton UK, 1996.
- Joanna Bryson, “The Reactive Accompanist: Adaptation and Behavior Decomposition in a Music System”, *The Biology and Technology of Intelligent Autonomous Agents*, pp. 365–376, ed. Luc Steels. Springer, Trento, 1995.
- Joanna Bryson, Alan Smaill, Geraint Wiggins, “The Reactive Accompanist: Applying Subsumption Architecture To Software Design”, University of Edinburgh Department of Artificial Intelligence Research Paper 606, 1992.

Other Reviewed Presentations

- “Internet memory and life after death” reviewed talk and abstract in *Death & Dying in the Digital Age*, Bath, UK 25–26 June 2011.
- “The interplay between cognition and secondary replicators: Could memetics explain human uniqueness?”, reviewed talk and abstract in *Current challenges and applications of comparative cognition (CompCog II)* Prague, 25–27 May 2011.
- “The Impact on Organisms of Transmitting Secondary Replicator Systems”, with Sam P. Brown, reviewed abstract and talk, *The European Human Behaviour Association Conference*, Gießen, Germany 24–26 March 2011.
- “The Scientific Application of Agent-Based Modelling; The Impact on Organisms of Transmitting Secondary Replicator Systems”, solicited talks for the workshop *Microbial Evolution: Modeling and Experimental Techniques*, e-Science Institute, University of Edinburgh, 11–13 January 2011.
- “Social Simulation and Explaining Religion”, talk in the *The Explaining Religion Project (EXREL): How Do Religions Evolve?* symposium of *Religion, a Human Phenomena: The XXth Quinquennial World Congress of the International Association for the History of Religions*. Toronto, Canada, 17 August 2010.

- “Determinants of the Size of Social Species’ Culture” talk and reviewed abstract, *Complexity and Nonlinear Phenomena in Biological Systems*, a one-day meeting organised by the Nonlinear and Complex Physics Group of the Institute of Physics (UK), Bath, 20 May 2010.
- Marios N. Richards and Joanna J. Bryson, “Comparing individuality to phenotypic plasticity in facilitating evolution”, talk and reviewed abstract, *Individual Specialisation: The Association for the Study of Animal Behaviour’s Winter Meeting*, London, 3–4 November 2009.
- Joanna J. Bryson, “Information Dissemination as an Explanation of Troop-Level Aggregation in Fission-Fusion Species with Varied Party Composition”, talk and reviewed abstract *Vertebrate Models of Social Evolution*, Adelboden, Switzerland; 16–18 August 2009.
- Joanna J. Bryson, “Information Dissemination as an Explanation of Troop-Level Aggregation in Fission-Fusion Species with Varied Party Composition”, talk and reviewed abstract *The Third Congress of the European Federation for Primatology*, Zürich, Switzerland; 12–15 August 2009; abstract in *Folia Primatologica*, **80**(2):111.
- Hagen Lehmann and Joanna J. Bryson, “A Unified Account of The Primate Tolerance Spectrum”, talk and reviewed abstract *The Third Congress of the European Federation for Primatology*, Zürich, Switzerland 12–15 August 2009; abstract in *Folia Primatologica*, **80**(2):124.
- Joanna J. Bryson, “Shared Information as an Explanation of Troop-Level Aggregation in Fission-Fusion Species with Varied Party Composition”, talk and reviewed abstract *Multiply Structured Populations in Biology*, Bath UK, 1–3 July 2009.
- Joanna J. Bryson, “What Limits the Biological Evolution of Cultural Evolution?” reviewed abstract and talk presented to *Social Genes, Social Brains and Social Minds*, Budapest 13–15 May 2009.
- Joanna J. Bryson, “Selection for variation: Evolutionary processes affecting dominance, social structure and female mate choice”, reviewed abstract and poster presented to *The European Human Behaviour Association Conference*, St. Andrews, UK, 6–8 April 2009, abstract booklet p. 29.
- Robert A. Jenks, Julia Lehmann and Joanna J. Bryson, “A model of factors generating fission-fusion social dynamics”, reviewed abstract and poster presented to *The European Human Behaviour Association Conference*, St. Andrews, UK, 6–8 April 2009, abstract booklet p. 36.
- Marios Richards and Joanna J. Bryson, “Does learning accelerate evolution?”, reviewed abstract and poster presented to *The European Human Behaviour Association Conference*, St. Andrews, UK 6–8 April 2009, abstract booklet p. 46.
- Hagen Lehmann and Joanna J. Bryson, “Evolutionary Determinates of Social Structure in Macaque Troops”, reviewed abstract and talk presented to *The International Primatological Society’s XXII Congress*, Edinburgh, UK 8 August 2008.
- “What Limits the Biological Evolution of Cultural Accumulation?”, reviewed abstract and poster presented to *The International Primatological Society’s XXII Congress*, Edinburgh, UK 4 August 2008.
- “Information can be free: Implications for recent developments in the evolution of altruism”, *The Sixth Göttinger Freilandtage: Primate Behavior and Human Universals* reviewed abstract and presentation, Göttingen Germany, 11–14 December 2007.
- “Hierarchical organization of intelligence: Ethology and AI perspectives”, The NIPS workshop on *Hierarchical Organization of Behavior: Computational, Psychological and Neural Perspectives*, solicited and reviewed extended abstract and presentation, Vancouver, Canada, 7–8 December 2007.
- “Robots Should Be Slaves”, solicited and reviewed extended abstract and presentation for the Oxford e-Horizons forum *Artificial Companions in Society: Perspectives on the Present and Future*, Oxford University, 26 October 2007.
- Panel participant, *Humans and Humanoids — Perspectives in Cognition and Robotics*, The Research Institute for Cognition and Robots — CoR-University of Bielefeld, 9 October 2007.

- Hagen Lehmann and Joanna J. Bryson, “The Socio-Ecological Model of Female Social Relationships in the Genus *Macaca*: An Agent Based Approach”, reviewed abstract and talk, presented at the biannual meeting of the European Federation for Primatology, 3 September 2007.
- “The Adaptive Advantage of Knowledge Transmission”, reviewed abstract and talk presented to *Evolution of Language 5*, Rome, Italy, 14 April 2006.
- “Embodiment vs. Memetics”, reviewed abstract and talk for *Post-Cognitive Psychology*, Glasgow, UK, August 2005.
- “Learning Action Selection from Observation of Humans in Unreal Tournament” talk at Southwest Regional Meeting on Mathematics, Computation and Biology, University of Western England, Bristol UK, 24 June 2005.
- “Representations Underlying Social Learning”, reviewed abstract and poster presented at Animal Social Learning, St. Andrews, UK, 15–18 June 2005.
- “Artificial Intelligence Models of Primate Intelligence” talk at Southwest Regional Meeting on Mathematics, Computation and Biology, University of Bristol, UK, 21 June 2004.
- “Language Needs 2nd Order Representations and A Rich Memetic Substrate”, reviewed abstract and talk presented to *Evolution of Language 5*, Leipzig, Germany, 1 April 2004.
- “The Relationship Between AI Architectures and Neuroscience”, presentation to *Workshop on Grand Challenge 5: Architecture of Brain and Mind*, De Montfort University, Leicester, 5 January 2004.
- “Artificial Emotions”, presented with Dylan Evans to *Foresight Cognitive Systems Interaction Conference*, Bristol UK, 3 September 2003.
- “Modular models of social agents: Modelling the emergence of Macaque social structure”, reviewed abstract and talk *Agent-Based Social Simulation Special Interest Group Meeting*, Barcelona, Spain 3 February 2003.
- “Modelling Tolerance: An agent-based model of conflict resolution”, talk at the workshop on *Computer-Aided Methods for International Conflict Resolution and Prevention*, Austrian Research Institute for Artificial Intelligence (ÖFAI), Vienna, Austria, 26 October 2002.
- “Representing Cognitive Phenomena in Biological Systems”, invited talk and paper for the *Theoretical Fundamentals of Intelligent Systems* Workshop of the Joint Conference on Information Sciences, A. Meystel ed., Washington DC, 11 March 2002.
- Joanna J. Bryson, Keith Decker, Scott DeLoach, Michael Huhns and Michael Wooldridge, “Agent Development Tools”, chapter and invited panel *The Seventh International Workshop on Agent Theories, Architectures and Languages (ATAL)*, Boston, eds. C. Castelfranchi and Y. Lespérance, pp. 331–338, Springer 2000.
- Joanna Bryson, “Primitive Parallax and Parallax Primitives”, *The Third European Conference on Artificial Life*, June 1995. Poster and abstract.

Invited Talks

- “Cognition and Ecology: What Nature Tells Us About Autonomy”, *Department of Informatics*, University of Edinburgh, 12 December 2011.
- “Understanding Cultural Variation in Social Behaviour: A Simulation-Based Approach to Anthropology”, *Department of Computer Engineering*, Koç University, Istanbul, 2 December 2011.
- “Memory, Action and Expectation — The Means and Extent to Which You and Your Society Construct Your Self”, invited talk and network participant, *The Future of Memory*, The Memory Network, London, 29–30 October 2011.
- “Space, Time and Information: Modelling the Ecology of Cultural Species”, invited talk at *Modelling Ecological Environments and Agents: Understanding the Past and Predicting the Future* Hominid Dispersals Research Group, McGill and Montreal Universities, 24–26 October 2011.

“Cognition and Ecology: What Nature Tells Us About Autonomy”, *Centre for Research in Cognitive Science (COGS)*, University of Sussex, 20 October 2011.

Plenary “Cognition and Ecology: What Nature Tells Us About Autonomy”, *Autonomous Activity in the Real World: The Fifth EUCogII Members Conference*, Groningen, 10 October 2011.

“Evolution and information: The biology of social learning.” *Evolution@Bath&Bristol*, Bath, 26th September 2011.

Plenary: “Why We Share Information: The Evolution of Social Behaviour”, *IJCAI 2011 Workshop on Agents Learning Interactively from Human Teachers (ALIHT)*, Barcelona, 16–17 July 2011.

“Sharing Information: The Adaptive Value of Social Behaviour”, The Learning Algorithms and Systems Laboratory (LASA, Prof. Aude Billard), École Polytechnique Fédérale de Lausanne (EPFL), Switzerland, 15 June 2011.

Jason Leake and Joanna J. Bryson “Can you indict a robot”, invited poster presentation for *Emerging technologies: are the risks being neglected?* London 21 May 2011.

“Why Information Can Be Free: The Evolutionary Origins of Collective Intelligence”, Human Dynamics Laboratory (Alex Pentland), The Media Laboratory, Massachusetts Institute of Technology (MIT), 17 May 2011.

“Modelling the evolution of social behaviour: Can sharing valuable information be adaptive?”, Ecology and Evolution Group (Prof. Torben Dabelsteen), Department of Biology, University of Copenhagen, 13 May 2011.

“The Utility of Human Social Motivations: Biology, Individuality, and Culture”, Department of Computing (Eduardo Alonso), City University London, 28 February 2011.

“Modelling social evolution: The role of space & time in the evolution of co-operation”, Human Evolutionary Ecology Group (Prof. Ruth Mace), Department of Anthropology, University College of London, 25 January 2011.

“The Utility of Human Social Motivations: Biology, Individuality, and Culture”, School of Computing and Mathematics (James Borg), Keele University, UK, 17 November 2010.

“The scientific application of agent-based modelling: From biology to anthropology”, The Department of Software and Computer Science Education (Cyril Brom), Charles University, Prague, 19 November 2010.

“The scientific application of agent-based modelling: From biology to anthropology”, invited talk at the *Interdisciplinary Workshop on Society, Culture and Language*, Plymouth, 11-13 November 2010.

“The Role of Cognition in Cognitive Systems: From Robots to Primatology”, invited talk for *IEEE Robotics and Automation Chapter (UKRI): The first UK Symposium on Cognitive Robotics and Learning*, Manchester, 20 October 2010.

“Who is Responsible? Ethics with Robots”, invited talk in the *Social human-robot interaction and ethics* symposium of *Active Ageing — Smart Solutions: The Ambient Assisted Living Forum 2010*, Odense, Denmark, 16 September 2010.

“The Biological Basis of Human Social Motivations: Selective Pressure for Culture and Individuality”, Faculty of Social Sciences, Carl von Ossietzky Universität Oldenburg, 31 May 2010.

“Must Cognitive Robots Experience the Terrible Twos? Sensory-Motor Learning & Cognition”, invited twenty-minute response to and one-hour discussion of Linda B. Smith’s plenary, “Grounding Learning in Sensory Motor Dynamics”, *Development of Cognition in Artificial Agents*, EUCogII member’s meeting, Zürich, January 29 2010.

Joanna J. Bryson and Will Lowe, “Agent-Based Modelling for Social Science: Modelling & Cultural Evolution”, invited presentation to *The Second EXREL (Explaining Religion) Project Conference*, Centre for Anthropology and Mind, Oxford, UK; 17–19 August 2009.

Invited participant in *Integrating Cultures: Models, Simulations and Applications*, including presentation “A Computation-Enabled Biological Perspective on Cultural Variation”, The Lorentz Center, Leiden, 6–9 April 2009.

- Plenary:** “Adaptive & Computational Explanations for The Pervasiveness of Social Learning and Altruistic Communication”, at *Organisation, Cooperation and Emergence in Social Learning Agents*, a workshop at The Tenth European Conference on Artificial Life (ECAL '09), Budapest, 15 September 2009.
- “Adaptive Trade-Offs Concerning Cognition and Culture”, Oxford University, Department of Experimental Psychology, 16 June; also Oxford University, Centre for Anthropology & Mind, 17 June 2009.
- “Understanding Human Social Motivations: Modeling the Evolution of Cognition and Culture”, Central European University, Department of Philosophy, Budapest 2 June 2009.
- “Time for AI”, The Austrian Institute for Artificial Intelligence (ÖFAI), Vienna, 14 May 2009.
- “Evolving Origins of Behaviour: Imitation, Culture and Cognition”, University of Sussex, Brighton UK, 6 May 2009.
- “What limits the biological evolution of cultural evolution?”, Institute of Ecology and Evolution, Bern University, 25 February 2009.
- Two talks (in a small one-day workshop): “Time for AI” and “Why information can be free: The evolution of altruistic communication and its impact on social learning”, Department of Computer Science, Charles University Prague, 30 January 2009.
- “Time for AI: Emotions, Goals, Turn Taking (and more) for Intelligent Actors”, Games AI & Avatars: Industry/Academia Workshop, Bradford UK, 12 January 2009.
- “The Role of Cognition in Cognitive Systems”, AI Lab, Department of Informatics, University of Zürich, 9 December 2008.
- “Why information can be free: The evolution of altruistic communication and its impact on social learning”, Department of Behavioural Biology, University of Utrecht, 18 November 2008.
- “Why information can be free: The evolution of altruistic communication and its impact on social learning”, The Konrad Lorenz Institute for Ethology, Wilhelminenberg Seminar, 12 November 2008.
- “The Role of Cognition in Cognitive Systems” *Modelling Cognitive Behaviour*, Avon Gorge Hotel, Bristol UK, 10 October 2008.
- “The Role of Cognition in Cognitive Systems” School of Computer Science, University of Birmingham, 9 October 2008.
- Joanna J. Bryson, “Crude, Cheesy, Second-Rate Consciousness”, invited statement discussing Daniel C. Dennett, *The Second Vienna Conference on Consciousness (2008): The Brain and its Self*, Vienna, Austria, 26 September 2008.
- “What limits the biological evolution of cultural evolution? Modularity in evolution and learning”, School of Computer Science, The University of Birmingham, 13 June 2008.
- “What limits the biological evolution of cultural evolution? Modularity in evolution and learning”, School of Computer Science, The University of Nottingham, 11 June 2008.
- “What limits the biological evolution of cultural evolution? Modularity in evolution and learning”, Centre for Policy Modelling, Manchester Metropolitan University, 10 June 2008.
- “What limits the biological evolution of cultural evolution? Modularity in evolution and learning”, The Konrad Lorenz Institute for Evolution and Cognition Research, Vienna, 5 June 2008.
- “State Requirements for Action Selection”, Center for Connected Learning and Computer-Based Modeling, Northwestern University, 3 April 2008.
- “Conflict and Collaboration: Modeling Primate Social Behavior”, Centre for Complexity Science, Imperial College London, 15 January 2008.
- “A Primer on AI for Domestic Robots: Does Thinking Help?” Centre for Non-Linear Mechanics, University of Bath, 20 November 2007
- “Cognition (and Robots)”, *Humans and Humanoids — Perspectives in Cognition and Robotics*, The Research Institute for Cognition and Robots — CoR-Lab, University of Bielefeld, 9 October 2007.

- “Action Selection for Human-Like Intelligence”, Lionhead Studios, Guildford, UK 2 July 2007.
- Plenary:** “AI Architectures (or State Requirements for Human-like Action Selection)” *Network Meeting on Cognitive Architectures*, The European Network for the Advancement of Artificial Cognitive Systems, Munich Airport, 29 June 2007.
- “Why Information Can Be Free”, Department of Psychology, University of Chicago, 10 April 2007.
- “Action Selection for Human-Like Intelligence”, Center for Technology & Social Behavior, Northwestern University, 4 April 2007.
- “Semantics from Memetics”, Centre for Cognitive Neuroscience and Cognitive Systems, University of Kent, 14 March 2007.
- “Evolving Cultural Evolution”, The Konrad Lorenz Institute for Evolution and Cognition Research, Vienna, 12 March 2007.
- “Embodiment vs. Memetics”, Department of Philosophy, Universiteit Utrecht, 26 September 2006.
- “Agency and Spaces: A Proposal for Behavior-Oriented Design of Intelligent Environments”, invited presentation for *HCI and Cognitive Modelling in Ubiquitous Knowledge Discovery* Barcelona, Spain 20 April 2006. Also participated in the same group’s meeting in Berlin, 23 September 2006.
- “Action Selection as Intelligent Systems Integration”, Google, Mountain View, CA, 15 August 2006.
- “Intelligence by Design”, Joanneum Research, Graz, Austria, 4 July 2006.
- “Intelligence by Design”, Boeing Phantom Works, Seattle, 7 June 2006.
- “Conflicts & Collaboration: Modelling of the Evolution of Primate Social Behaviour”, Department of Psychology, University of Sheffield, 12 May 2006.
- “Intelligence by Design”, Centre for Interactive Intelligent Systems, University of Plymouth, UK, 28 April 2006.
- “Intelligence by Design”, Department of Software and Computer Science, Univerzita Karlov (Charles University), Prague, 14 January 2006.
- “Intelligence by Design”, School of Computer and Communication Sciences, EPFL, Lausanne, Switzerland, 18 November 2005.
- “Conflicts & Collaboration: Agent-Based Modelling of Primate Social Behaviour”, Artificial Intelligence Lab, Department of Informatics, University of Zurich, 15 November 2005.
- “Conflict and Collaboration: Modeling Primate Social Behavior”, Northwestern Institute of Complex Systems (NICO), Northwestern University, 18 October 2005.
- “Modularity, specialization, and an innate bias for reason”, Department of Physiology, Northwestern University, 17 October 2005.
- “Building and Organising Heterogenous Modular Intelligent Systems: Intelligence by Design”, Bath Institute of Complex Systems, 9 May 2005.
- “Emotions as Durative State for Action Selection”, invited panel presentation at *AISB: Motivational and Emotional Roots of Cognition and Action*, Hatfield, UK, April 2005.
- “Complex or Complicated? Agent-Based Models of Primate Societies”, Middlesex University (London), 9 February 2005.
- “Humanoid Faces for Assistive Ambient Intelligent Technology”, Bath Institute of Medical Engineering, Royal United Hospital, UK, 7 February 2005.
- “Humanoid Faces for Assistive Ambient Intelligent Technology”, The Institute for Learning and Research Technology, University of Bristol, UK, 18 November 2004.
- “Humanoid Faces for Assistive Ambient Intelligent Technology”, Institute for Ageing and Health, University of Newcastle, UK, 22 September 2004.
- Invited lecture series:** “Reactive and Behavior-Based AI”, “Consciousness is Easy but Learning is Hard”, “Intelligence by Design”, Electronics and Telecommunications Research Institute (ETRI), South Korea, 16–18 August 2004.

- “Intelligence by Design”, Korea Advanced Institute of Science and Technology (KAIST), 18 August 2004.
- “Reactive and Behavior-Based AI” and “Intelligence by Design”, School of Electrical and Computer Sciences, Hanyang University, South Korea, 19 August 2004.
- “Intelligence by Design”, Department of Computer Science, University of Hertsfordshire, 20 April, 2004.
- “Modularity, specialization, and an innate bias for reason”, Department of Computer Science, University of Birmingham, 26 January 2004.
- “Conflict Resolution in Monkeys, Agents and Modules”, Institute of Informatics, Humboldt University, 16 December 2003.
- “Intelligence by Design”, Department of Computer Science, University College Dublin, 23 June 2003.
- “Conflict Resolution in Monkeys, Agents and Modules” Department of Computer Science, University of Nottingham, 15 May 2003.
- “Modularity, specialization, and an innate bias for reason”, Centre for Mathematical Biology, University of Bath 30 April 2003.
- “Modularity, specialization, and an innate bias for reason”, Division of Informatics Programme of Reasoning Seminar, University of Edinburgh 2 August 2002.
- “Modularity in Artificial and Natural Intelligence”, Computer Science Department at the University of Vermont, 26 February 2002
- “Intelligence by Design: Principles of Modularity and Coordination for Engineering Complex Adaptive Agents”, BBN, Cambridge MA, 16 October, 2001
- “Simple Heuristics in Complex Agents”, Adaptive Behavior and Cognition Group, The Max Planck Institute of Human Development, Berlin, 28 August 2001.
- “Intelligence by Design: Principles of Modularity and Coordination for Engineering Complex Adaptive Agents”, Cambridge Basic Research (Nissan), 23 April, 2001
- “Making Modularity Work: Progress in Complete Agent Architectures”, Oberlin College, Department of Computer Science, 3 November, 2000
- “Intelligence by Design: Specialized Learning and Behavior-Based AI” Machine Learning Research Group, The University of Bristol; 30 May, 1999
- “What’s Wrong with Behavior-Based AI (and How to Fix It)” University of Aarhus (Denmark), Department of Computer Science; 26 May, 1998
- “Dynamic Cognitive Architectures and Artificial Intelligence”, Glasgow Caledonian University, Department of Psychology; 18 October, 1996
- “What’s Wrong with Behavior-Based AI (and How to Fix It)” University of Wales, Aberystwyth; Department of Computer Science; 25 July, 1996
- “What’s Wrong with Behavior-Based AI (and How to Fix It)” Free University of Brussels, Artificial Intelligence Laboratory; 20 June, 1996
- “What’s Wrong with Behavior-Based AI (and How to Fix It)” University of Zurich, Artificial Intelligence Laboratory; 18 June, 1996
- “The Human-Computer Interface — Applications in AI”, Living Neurons on Silicon Group, University of Edinburgh 15 May, 1996
- “When Robots Hum Along: Music meets Behavior-Based AI” AI and Music Group, University of Edinburgh; 8 May, 1996
- “Complex Behavior in Reactive, Behavior-Based Systems” Robot and Vision Group, University of Edinburgh; June, 1995
- “The Humanoid Project (or What’s Happening at MIT)”, Computer Science Department, Trinity College, Dublin; 25 March 1994

- Joanna J. Bryson, “Internet memory and life after death”, in *Bereavement Care* **30**(?), 2012 *in press*.
- Joanna J. Bryson “The Making of the EPSRC Principles of Robotics”, in *The AISB Quarterly*, Spring 2012 *in press*.
- “The Ethics of Conscious Robots”, *Cardiff Skeptics in the Pub*, 19 March 2012.
- “The Ethics of Conscious Robots”, *Bath Skeptics in the Pub*, 6 December 2011.
- “Thinking on Robot Thought”, *BathCamp* (local technology-oriented monthly networking event), 2 November 2011.
- “Do We Need Emotional Robots?”, *General University Lecture Programme*, University of Bath, 2 March 2011.
- “The Ethics of Robotics”, *Southampton Science Café*, with Alan Winfield, 30 November 2010.
- Margaret Boden, Joanna Bryson, Darwin Caldwell, Kerstin Dautenhahn, Lilian Edwards, Sarah Kember, Paul Newman, Vivienne Parry, Geoff Pegman, Tom Rodden, Tom Sorell, Mick Wallis, Blay Whitby, and Alan Winfield, **EPSRC Policy Statement**, *Principles of Robotics*, April 2011, see the [EPSRC website](#).
- Invited participant (expert in AI ethics and social impact) in the UKs Engineering and Physical Sciences Research Council (EPSRC) Robotics Retreat, New Forest, UK, 29 September – 1 October 2010.
- Joanna J. Bryson, “The Need for Cognitive Systems in Medical Care”, *CyberTherapy & Rehabilitation Magazine* **3**(3):35–36, 2010.
- “Cognitive and Behavioural Robotics”, *The Austrian Association for Innovative Computer Science — Summer Robotics Course*, Technical University of Vienna, 4 August 2009.
- Joanna J. Bryson, “Adaptive Trade-Offs Concerning Cognition and Culture”, talk presented at *Hot Topics in Cognitive Science*, Grünau, Austria, 12–13 June 2009.
- “Agent Based Modelling for Science: The Evolution of Cultural Evolution”, Lecture for PhD students in *The European Science Foundation Network for the Evolution of Social Cognition (CompCog)*, Department of Cognitive Biology, University of Vienna, 23 September 2008.
- “Consciousness is Easy but Learning is Hard: The Computational Complexity of Cognition”, guest talk for the Hot Topics in Cognitive Science student symposium, The Konrad Lorenz Research Station, Grünau, 20 June 2008.
- “Can we build artificial intelligence — and should we?”, public talk and discussion at the Bath Science Café, *The Raven* (public house), Bath, UK. 14 January 2008.
- Quoted several times in Michael Balter, “Why We’re Different: Probing the Gap Between Apes and Humans”, *Science*, **319**(5862):404–405, 25 January, 2008.
- Cyril Brom and Joanna J. Bryson, “Action Selection for Intelligent Systems”, white paper for *The European Network for the Advancement of Artificial Cognitive Systems*, 7 August 2006. This was originally developed as the Wikipedia articles “Action selection” and “Reactive planning”.
- “Robot Emotions”, invited presentation and panel participation for *The Cambridge Robot Project*, Cambridge, UK. 25 May 2006.
- Joanna J. Bryson, “Funding: Income is already dependent on outcome”, correspondence about a British funding controversy, *Nature*, **441**:690 8 June, 2006.
- As a promotion for the Cambridge Robot Project, interviewed on the BBC’s *Digital Planet* about the future of AI, broadcast 22 May 2006.
- “Developing Modular Intelligent Systems”, four-hour tutorial with laboratories, *European Agent-based Systems Summer School (EASSS)*, Utrecht, July 2005.
- Joanna J. Bryson, “Consciousness is Easy but Learning is Hard”, invited article, *The Philosophers’ Magazine*, (28):70–72, Autumn 2004.
- Joanna J. Bryson, Emmanuel Tanguy and Phil J. Willis, “The Role of Emotions in Modular Intelligent Control”, in *The AISB Quarterly*, Summer 2004.

“Why Make Monkeys?”, talk for Cybersalon, the Museum of Science, London. 27 May 2004.

“Intelligence by Design” talk for the *It's In Your Head*, a UK National artists' initiative, Generator Studios, Dundee, Scotland. 11 August, 1999.

Major Research Grants

- 2010–2011 *United States Air Force Office of Scientific Research* Air Force Material Command, USAF grant number FA8655-10-1-3050, “Understanding Cultural Variation in Antisocial Punishment”, with Benedikt Herrmann, co-author and co-PI. Two postdocs, two investigators, one part-time programmer, three years initially awarded, \$925,204, of which \$289,265.65 delivered.
- 2008 *euCognition* “Cognitive Systems Outreach through Book and Webpage” euCognition Network Action 044–3 (€46,220), and 2008 *euCognition* “Cognitive Systems Outreach through HE Curriculum” euCognition Network Action 0044–4 (€25,518). Two postdocs (one part time) for nine months, €71,738.
- 2005–2008, *The Engineering and Physical Sciences Research Council (EPSRC)*, Grant GR/S79299/01 (AIBACS), “The Impact of Durable Variable state on the Design and Control of Action Selection”. Emmanuel Tanguy, co-author and named researcher. One PhD student, one research assistant £127,328.
- 2001–2002, *US National Science Foundation* Grant EIA-0132707, “Primate-Inspired Specialized Learning in an Agent Architecture: Safe, Robust, Adaptive Action Selection”, with Marc D. Hauser co-author and PI. One research assistant (self), \$79,215.

Other Funding

- 2010–2015 *Czech Science Foundation* “PlanEx: Bridging Planning and Execution”, Roman Barták **PI**, Cyril Brom and Pavel Surynek co-PIs, Bryson named as an “International Co-operator”, (Kč4,355,000).
- 2010 *EPSRC* Vacation Bursary, “Dynamic planning for teachable robotics”, Kingsely Jarrett, named researcher (One undergraduate student for ten weeks, £2500).
- 2006 *euCognition* “Action Selection for Cognitive Systems”, (a network action travel grant that brought Cyril Brom to Bath from Charles University, Prague, €1,300).
- 2005–2006 *Boeing Aerospace*, “Development of Graphical IDE for pyPOSH”, (contract for programming and six months support, \$15,000).
- 2005 *The Nuffield Foundation* Undergraduate Research Bursary, “Understanding the Adaptive Advantage to Costly Communication”. Avri Bilovich, named researcher. (One undergraduate student for six weeks, £940).
- 2005 *Biotechnology and Biological Sciences Research Council (BBSRC)*, Conference funding for “Modeling Natural Action Selection”. Workshop coorganized with Tony Prescott, Anil Seth (£2500).
- 2005–2006, *British Council* Alliance: Franco-British Partnership Programme, “Origins of Egalitarianism: Improving our understanding primate society through modelling two organizational norms for various species of Macaque”, with Bernard Thierry, Centre d’Ecologie et Physiologie Energétiques) (Travel only, £800).

Research Visits

Visits of at least one week for the purpose of collaboration and/or knowledge exchange, not otherwise covered under conference papers, working or visiting positions.

The Human Dynamics Laboratory, Media Laboratory, MIT, Cambridge MA. Visiting Sandy Pentland’s group 17–19 May 2011.

Equipe d’Ethologie des Primates, Louis Pasteur University Strasbourg, France. Visiting (with Hagen Lehmann) Bernard Thierry (CNRS), discussing models of macaque social behaviour. Visit funded by the British Council. 1 week, July 2005.

Electronics and Telecommunications Research Institute (ETRI), South Korea, with visits to local universities (see **Invited Talks**, above). Invited to discuss intelligent robotics. 1 week, August 2004.

Stanford AI Laboratory and Stanford Research Institute (SRI). Work funded by DAML on the semantic web with Jerry Hobbs and Sheila McIlraith. 2 weeks, July 2001.

Vrije Universiteit Brussel (VUB) AI Laboratory. Visiting (with Will Lowe) Luc Steels and his students, discussing behavior-based AI, statistical NLP and the evolution of language. *2 weeks, January 1998.*

Research Assistants and Fellows

- Dr. Simon T. Powers, Research Officer (modelling) May–September 2011, Cultural Variation in Antisocial Punishment.
- Dr. Pablo Lucas, Research Officer (modelling) October 2010–March 2011, Cultural Variation in Antisocial Punishment.
- Dr. Karolina Sylwester, Research Officer (human subjects) 2010–2011, Cultural Variation in Antisocial Punishment.
- James Mitchell, Research Programmer 2010–2011, Cultural Variation in Antisocial Punishment.
- Dr. Etienne Roesch, Visiting Research Fellow 2010–2011.
- Dr. Dylan Evans, Outreach Officer 2008, European Cognitive Systems Outreach through website and higher education curriculum.
- Dr. Veronical Sundstedt, Outreach Officer 2008, European Cognitive Systems Outreach through website and higher education curriculum.
- Philipp Rohlfshagen, Research Officer 2007, Integrating durative state (emotions and drives) with dynamic planning and modular AI control.
- Dr. Emmanuel Tanguy, Research Officer 2005–2006. Emotions, action selection and facial animation systems.
- Tristan Caulfield, Research Officer 2005. Integrating POSH dynamic planning with conventional agent-based modelling systems.
- Ivana Čače, Visiting Research Student 2004 (6 months, Utrecht). Evolution of communication.
- Dr. Will Lowe, Visiting Research Fellow 2002–*present* (visiting from Harvard (2002–2006), Nottingham (2006–2009), Maastricht (2009–2010), Mannheim (2010–*present*)). Computational linguistics, research methods in the social sciences, modelling social and political identity of parties, nations and individuals.

Research Students

PHD STUDENTS

- Bidan Huang, topic: Learning Modules for Cognitive Robotics (Bath, started October 2010)
- Gideon Gluckman, topic: The Impact of Primate Social Structure on Biological Evolution (Bath, started October 2010)
- Dominic Mitchell, topic: Public Language as an Adaptive Trait (Bath, started October 2010)
- Daniel Taylor, topic: Social Modularity and the Evolution of Culture (Bath, started October 2010)
- Marios Richards, topic: Impact of ontogenetic learning on phylogenetic evolution (Bath, started October 2008).
- Hagen Lehmann, *On the Applicability of Agent Based Modelling in Behavioural Ecology* (Bath, January 2005 – September 2009).
- Mark Wood, *An Agent-Independent Task Learning Framework* (Bath, October 2003 – July 2008).
- Emmanuel Tanguy, *Emotions: The Art of Communication Applied to Virtual Actors* (Bath, second supervisor with Prof. Phil Willis first supervisor, October 2002 – June 2006).
- PhD Committee for Jan Drugowitsch (Bath, 2007), Joost Broekens (Leiden, 2007), Andrew Carnell (Bath 2008), Carl O'Dwyer (Bath).

MSC DISSERTATION STUDENTS

2010: John Grey†, Jason Leake†, *Bath Mathematics*: Daniel Taylor.

2008: *Bath Mathematics*: Marios Richards.

2007: Jonathan Baillie Strong.

2006: Alastair Fletcher†, Yifan Jiang. *Utrecht Philosophy*: Ivana Čače†.

2005: Yasushi Ando†, Andrew Beggs†, Steven Couzens, Matthew Thomas†, Bouri Zhang.

2004: Paula Ellis†, Liu Wenxin, Chia-Hua (Annette) Tsou, Wang Jinxu.

2003: Andy Kwong†, Nur Haifa Muhd Fathil, Jing Jing (Andrea) Wang†, Peter Duncan Wright.

FINAL YEAR UNDERGRADUATE HONOURS STUDENTS:

2011: David Greenhill, Jack Kenyon†, Matthew Robinson, Michael Tremante†.

2010: James Bickerton†, Thomas Fletcher†*.

2009: Robert Jenks†*.

2007: Ayesha Begum, Mary Estall†, Thomas Peach†, Bowen Sun.

2006: Christos Bechlivanidis†, Avri Bilovich†*, Steve Butler†, Steve Gray, David Jennings.

2005: Abeer Almoawdah, Chris Knight, Sam Partington†*, Meri Williams†*.

2004: Tristan Caulfield†, Joanna Julie Church, Robert Holbrook, Emily K. F. Korvin, Philip J. Richards, Stephen M. Richards.

2003: Natalia Boutureira Bello†, Jia Lin, John Edward Mann†, David Robert Pratt, Ping Wong.

†indicates first-class honours for undergraduate dissertations, distinctions for MScs. * indicates a department prize (aprox. 3 available for aprox. 100 undergraduates per year.)

Teaching

THE DEPARTMENT OF COMPUTER SCIENCE

University of Bath

Postgraduate teaching: Intelligent Control and Cognitive Systems (Spring 2011–*present*), Research Project Preparation (Spring 2003–7), Database Systems (Fall 2003–6). Undergraduate teaching: Intelligent Control and Cognitive Systems (Spring 2011–*present*), Programming 1b (Spring 2010–*present*), Systems Engineering (Fall 2009, Spring 2010), Programming II (Spring 2004–7), Database Systems (Fall 2003–6). Research supervision: see above. Passed Bath's mandatory ILT-certified lecturer training course in 2004.

February 2003 – *present*

THE DEPARTMENT OF PSYCHOLOGY

University of Edinburgh

Part-time undergraduate lecturer for the Department of Psychology. Courses: The Biological Basis of Behavior (1st year students, 3 terms); Cognitive Psychology (3rd year students, 1 term); 1st–4th year honours tutorials.

Jan 1996 – Dec 1997

THE DEPARTMENT OF ELECTRICAL ENGINEERING AND COMPUTER SCIENCE

MIT

Teaching Assistant for 3 terms. Teaching assistants work 30 hours a week at MIT with considerable responsibility. Courses: The Structure and Interpretation of Computer Programs (6.001) (1st year students, 2 terms); Artificial Intelligence (6.034) (3rd year students, 1 term).

Sept 1994 – Dec 1995

THE DEPARTMENT OF COMPUTER SCIENCE

University of Chicago

Course Tutor for both undergraduate and postgraduate computer science courses.

Sept 1983 – June 1987

Administration

THE DEPARTMENT OF COMPUTER SCIENCE University of Bath
Current: Department Research Team / AI Group Leader 2011–*present*; University Senate (elected representative of the Academic Assembly) 2010–2013. AI Seminar Series 2003–*present*;
Previous: Industrial Placements Tutor 2009–2011; Faculty of Science Board of Studies 2006–2007; Computer Science Department Convener for the Natural Sciences Degree Programme 2004–2007; Department Teaching Committee 2005–2007; Staff-Student Liaison Committee 2005–2007; Library Committee 2003–2007;

Professional Activities

External Advisory Committee member for the University of California, Los Angeles (UCLA) Human Complex Systems Program (2008–*present*).

Executive Committee Member for the European Network for the Advancement of Artificial Cognitive Systems (euCognition, 2007–2008).

Associate Editor for *Adaptive Behavior* (2002–*present*); Editorial board for *The International Journal of Synthetic Emotions* (2008–*present*); Editorial board for *Journal of Mind Theory* (2008–*present*); Editorial Board of *Web Intelligence and Agent Systems* (2002–2004).

Additional journal reviews for: Animal Behaviour; Artificial General Intelligence; Behavior; Biological Theory; Evolution and Human Behaviour; IEEE Systems, Man and Cybernetics, B; IEEE Transactions on Evolutionary Computation; IEEE Transactions on Robotics; Interaction Studies; Journal of Artificial Societies and Social Simulation; Journal of the Royal Society Interface; Neurocomputing; Proceedings of the Royal Society, B: Biological Sciences; PLoS Computational Biology; PLoS ONE.

Member of the UK's Engineering and Physical Sciences Research Council (EPSRC) College.
Note: Appointment follows peer nomination plus selection. The college is the review board of the UK research council in charge of (among other things) computer sciences and artificial intelligence. (2006–present).

Additional grant reviews for: the USA's National Science Foundation (NSF) and Air Force Office of Research (USAFOR); The United Kingdom's Economic and Social Research Council (ESRC) and their Biotechnology and Biological Sciences Research Council (BBSRC), The Vienna Science and Technology Fund (WWTF, Cognitive Science Call) and The Leverhulme Trust.

Scientific and technical reviews for the European Commission:

Project reviewer:

- *RobotCub*: €8.5 million, 5-year, 16-university EU FW6 Information Society Technologies (IST) Cognitive Systems (2005–2010).
- *Integrating Cognition, Emotion and Autonomy (ICEA)*: €8.08 million, 4-year, 10-partner EU FW6 IST Cognitive Systems (2007).
- *Responsive Artificial Situated Cognitive Agents Living and Learning on the Internet (RASCALLI)*: €1.6 million, 3-year, 6-partner EU FW6 IST Cognitive Systems (2007–2009).
- *EUropean RObotics research Network (EURON)*: €3.34 million EU FW6 4-year IST Network of Excellence (2007).

Proposal evaluations for Advanced Robotic Systems (June 2006); for Cognitive Systems (June 2007); Cognitive Systems and Robotics (May 2009).

Organizing Committee for: The Third Southwest Regional Meeting on Mathematics, Computation and Biology (2007, Bath), Modeling Natural Action Selection (Workshop at IJCAI 2005, Edinburgh).

Program or Scientific Committee for: The International Joint Conference on Artificial Intelligence (IJCAI 2009,2011); IEEE Congress on Evolutionary Computation, special session on Evolutionary Robotics (2009); Intelligent Virtual Agents 3–7 (2001, 2003, 2005, 2006, 2007); Simulation of Adaptive Behavior 7–11 (2002, 2004, 2006, 2008, 2010); IEEE CEC 2009

Special Session on Evolutionary Robotics; Artificial Life XI (2008); Learning and Adaptive Behavior in Robotic Systems (LAB-RS 2008); Agent cognitive ability and orders of emergence (at AISB 2008); Attention in Cognitive Systems (at IJCAI 2007), Modular Construction of Human-Like Intelligence (at AAI 2005); Toward Social Mechanisms of Android Science (at Cognitive Science 2005); Socially Inspired Computing (at AISB 2005); Motivational and Emotional Roots of Cognition and Action (at AISB 2005); Autonomous Agents and Multi-Agent Systems 4 (2005); Robotics and Neurobiology (at IWINAC 2005); Intelligent Agent Technology, 2003, 2004; Niche Autonomous Robots (at The 14th International FLAIRS Conference), 2001; Autonomy Control: Lessons from the Emotional (at the 15th European Meeting on Cybernetics and Systems Research), 2000.

Additional Reviews for: Evolution of Language (2008, 2010); Cognitive Science (2000, 2004–7, 2009); Neural Computation and Psychology 9 (2004); Imitation in Animals and Artifacts 3 (at AISB 2005); International Workshop on Biologically-Inspired Machine Learning (1999), AAI (1994).

PhD External Examiner for Nottingham, Elizabeth Gordon (Computer Science, 2004); Hertfordshire, David Jacobs (Computer Science, 2005); University of London, Goldsmiths College, Tak-Shing Thomas Chan (Computer Science, 2007). Internal examiner for Bath: Gina Raihani (Psychology, 2007); Andrew Carnell (Computer Science, 2008); Florian Schanda (Computer Science, 2010). *Note: UK PhDs are awarded after protracted viva voce examinations conducted by one external and one internal examiner.*

Member of The Society for the Study of Artificial Intelligence and the Simulation of Adaptive Behaviour (1996–*present*), Cognitive Science (1998–*present*, off and on), The European Social Simulation Association (2003–*present*), Association for the Study of Animal Behaviour (2004–*present*), The International Primatological Society (2007–2009), The European Human Behavior & Evolution Association (2008–*present*).

Invited member of the EPSRC Biologically-Inspired Robotics Network (BIRO-net, 2003–2006), the European Network for the Advancement of Artificial Cognitive Systems (euCognition, 2006–*present*); the European Science Foundation Network for The Evolution of Social Cognition (CompCog, 2008–*present*); the EPSRC Research Network on AI and Games Technology (2007–*present*).

Member of the Bath Centre for Biomimetic and Natural Technologies, the Bath Centre for Mathematical Biology, and the Bath Institute of Complex Systems.

Moderator of the international mailing list autonomous-robots October 1997–June 2001.