



Future of
Humanity
Institute

UNIVERSITY OF OXFORD

Annual Report

01 October 2008 – 30 September 2009

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OUR PEOPLE

Research Staff

Professor Nick Bostrom.....Director
Dr Rebecca RoacheJames Martin Research Fellow
Dr Anders Sandberg.....James Martin Research Fellow

Research Associates (non salaried)

Professor Robin Hanson.....George Mason University
Dr Guy Kahane.....University of Oxford
Jason Gaverick Matheny.....Johns Hopkins University & IARPA
Dr Toby Ord.....University of Oxford

Administrative Staff

Rachel Gaminiratne.....James Martin Projects Officer
Nancy Patel.....James Martin Projects Officer

PUBLICATIONS

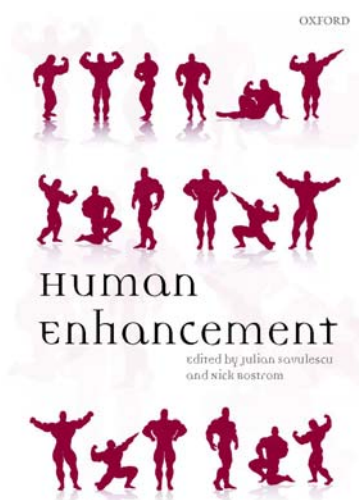
Summary

- 1 edited book
- Over 20 contributed book chapters
- Over 30 journal articles, including publications in *Analysis*, *The Journal of Medicine and Philosophy*, *American Journal of Bioethics*, and *Neuroethics*

Highlights

Probing the Improbable: Methodological Challenges for Risks with Low Probabilities and High Stakes

(2009, Oxford: FHI) - Co-written by Rafaela Hillerbrand, Toby Ord, and Anders Sandberg, this article explores important methodological problems which arise when assessing risks with very low probabilities and very high stakes, and concludes that the risks involved in the Large Hadron Collider are larger than the official estimates.



Human Enhancement

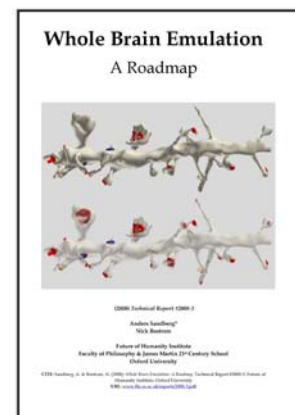
Nick Bostrom and Julian Savulescu (eds.)
(2009) Oxford: Oxford University Press

To what extent should we use technology to try to make better human beings? *Human Enhancement*, a 416-page book, seeks to discuss the ethical issues surrounding this crucial debate.

Original contributions from many of the world's leading ethicists and moral thinkers, including Peter Singer, Susumu Shimazono, Art Caplan, Ryuichi Ida and Michael Sandel, the text represents a wide range of perspectives, advocates and skeptics, enthusiasts and moderates. These are the arguments that will determine how humanity develops in the near future.

Whole Brain Emulation: A Technical Roadmap

(2008, Oxford: FHI) "Whole Brain Emulation: A Technical Roadmap" is an 83-page document (plus appendices and references) written by Anders Sandberg and Nick Bostrom analyzing a potential future transformative technology. The project that led to this document has involved a workshop organized by the FHI in May 2007 which were attended by some 20 leading technical experts from several related fields. The document represents a formidable engineering and research problem, yet one which appears to have a well-defined goal and could, it would seem, be achieved by extrapolations of current technology. This book is the first book to substantially review the technologies needed to scan, analyse and run emulations of complete brains. It analyses what we know about current technology and neuroscience, the research problems that have to be overcome (or would act as insurmountable obstacles) and ways of estimating future technological progress in the area.



Forthcoming/Under Review/In Preparation

Bostrom, N., 'Anthropic Shadow: Observation Selection Effects and Human Extinction Risks', in preparation

- Bostrom, N., 'Information Hazards: A Typology of Potential Harms from Knowledge', in preparation
- Bostrom, N., 'The Infinitarian Challenge to Aggregative Ethics', in preparation
- Bostrom, N., 'Existential Risks: Towards a Framework for Risk Assessment and Policy Analysis of Human Extinction Scenarios and Related Hazards', in preparation
- Bostrom, N., "Superintelligence", In What Will Change Everything, ed. John Brockman (New York: HarperCollins, 2010), in press
- Bostrom, N., 'Transhumanist Values', In J. Pierce and G. Randels (Eds.), *Bioethics in Contemporary Society: A Reader with Cases*, Oxford: Oxford University Press, forthcoming
- Bostrom, N., 'The Future of Human Evolution', *Bedeutung*, forthcoming
- Bostrom, N., Ord, T., 'Fundamental Moral Uncertainty', in preparation
- Bostrom, N., Roache, R., 'Smart Policy: Cognitive Enhancement and the Public Interest', In *Enhancing Human Capacities*, eds. Julian Savulescu, Ruud ter Muelen, and Guy Kahane (Oxford: Wiley-Blackwell, 2009)
- Circovic, M., Sandberg, A., Bostrom, N., Anthropic shadow: observation selection effects and human extinction risks, *Risk Analysis*, forthcoming
- Liao, M. S., Roache, R. and Sandberg, A., Human engineering solutions to climate change, *The Monist*, forthcoming
- Ord T, Hillerbrand R, Sandberg A. 'Probing the improbable: methodological challenges for risks with low probabilities and high stakes.' *Journal of Risk Research*, forthcoming
- Roache, R., 'Fission, cohabitation, and the concern for future survival', *Analysis*, forthcoming
- Roache, R., 'Bilking the Bilking Argument', *Analysis*, forthcoming
- Roache, R., Clarke, S., 'Bioconservatism, Bioliberalism, and Repugnance', *Monash Bioethics Review*, forthcoming
- Savulescu, J., Ter Meulen, R. and Kahane, G., (eds.), *Enhancing Humans*, (Oxford: Blackwells Publisher), forthcoming

Book Chapters

- Bostrom, N., (2009), 'The Future of Humanity', In J. K. B. Olsen, E. Selinger and S. Riis Aldershot (Eds.), *New Waves in Philosophy of Technology*, Palgrave Macmillan, 186-216
- Bostrom, N., (2009), 'Transhumanist Values', In D. M. Kaplan (Ed.), *Readings in the Philosophy of Technology*, New York: Rowman and Littlefield Publishers.
- Bostrom, N., (2009), 'Brain-Boosters', In P. Healey and S. Rayner (Eds.), *Unnatural Selection: The Challenges of Engineering Tomorrow's People*, London: Sterling, 129-141
- Bostrom, N., (2009), 'Transhumanist Values', In J. Pierce and G. Randels (Eds.), *Bioethics in Contemporary Society: A Reader with Cases*, Oxford: Oxford University Press.
- Bostrom, N., Sandberg, A., (2009), 'The Wisdom of Nature: An Evolutionary Heuristic

- for Human Enhancement', In J. Savulescu and N. Bostrom (Eds.), *Human Enhancement*, Oxford: Oxford University Press, 375-416
- Bostrom, N., (2009), 'How to Enhance Human Beings', In M. Brockman (Ed.), *What's Next: Dispatches on the Future of Science: Original Essays from A New Generation of Scientists*, Vintage: 25-39.
- Bostrom, N., (2008), 'Everything', In J. Brockman (Ed.), *What Have You Changed Your Mind About?*, New York: Harper Collins
- Bostrom, N., (2008), 'How to Enhance Human Beings', In M. Brockman (Ed.), *The New Stars of Science*, e-book edition, Random House
- Bostrom, N., (2008), 'Enhancement and Dignity', In *Human Dignity and Bioethics: Essays Commissioned by the President's Council on Bioethics*, President's Council on Bioethics: Washington, D.C.: 2008, 173-207
- Bostrom, N., (2008), 'Letter from Utopia', In S. Marsen (Ed.), *Becoming More Than Human: Technology and the Post-Human Condition*.
- Bostrom, N., (2008), 'Human Enhancement: Improving Evolution's Work', In M. Brockman (Ed.), *The New Stars of Science*.
- Hanson, R., (2009), 'Enhancing Our Truth Orientation', In J. Savulescu and N. Bostrom (Eds.), *Human Enhancement*, Oxford: Oxford University Press.
- Hanson, R., (2008), 'The Rapacious Hardscrapple Frontier', In D. Broderick (Ed.), *Year Million: Science at the Far Edge of Knowledge*, Atlas Books, 168-192.
- Hillerbrand, R. and Sandberg, A., (2009), 'Who trusts the watchmen?' In Ben Dyer (ed.) *Supervillains and Philosophy*, Open Court, Chicago, 103-111
- Kahane, G. and Savulescu, J., (2009), 'The Welfarist Account of Disability', In A. Cureton and K. Brownlee (Eds.), *Disability and Disadvantage*, Oxford: Oxford University Press

Journal Articles

- Bostrom, N. and Sandberg, A., (2009), 'Cognitive Enhancement: Methods, Ethics, Regulatory Challenges', *Science and Engineering Ethics*, 15 (3): 311-341
- Bostrom, N., (2009), 'Pascal's Mugging', *Analysis*, 69 (3): 443-445
- Bostrom, N., (2009), 'The Simulation Argument: Some Explanations', *Analysis*, 69 (3): 458-461
- Hanson, R., Ledyard, J. and Ishikida, T., (2009), 'An Experimental Test of Combinatorial Information Markets', *Journal of Economic Behavior and Organization*, 69: 182-189
- Hanson, R., (2008), 'Making Sense of Medical Paternalism', *Medical Hypotheses*, 70 (5): 910-913
- Hanson, R., (2008), 'Showing That You Care: The Evolution of Health Altruism', *Medical Hypotheses*, 70
- Hanson, R., (2008), 'Insider Trading and Prediction Markets', *Journal of Law, Economics, and Policy*, 4 (2): 449-463

- Kahane, G., (2009), 'Pain, Dislike, and Experience', *Utilitas*, 21 (3)
- Kahane, G., Skene, L., Wilkinson, D. and Savulescu, J., (2009), 'Neuroimaging and the Withdrawal of Life-Sustaining Treatment from Patients in the Vegetative State', *Medical Law Review*, 17 (2)
- Kahane, G., and Savulescu, J., (2009), 'The Moral Obligation to Create Children with the Best Chance of the Best Life', *Bioethics*, 23 (5): 274-290
- Kahane, G. and Savulescu, J., (2009), 'Brain-Damaged Patients and the Moral Significance of Consciousness', *The Journal of Medicine and Philosophy*, 33 (1)
- Kahane, G., Wilkinson, D., and Savulescu, J., (2008), 'Neglected Personhood' and Neglected Questions: Remarks on the Moral Significance of Consciousness', *American Journal of Bioethics: Neuroscience*, 8 (9): 31 - 33
- Kahane, G., Wiech, K., Farias, M., Shackel, N., Tiede, W. and Tracey, I., (2008), 'An Fmri Study Measuring Analgesia Enhanced by Religion as a Belief System', *Pain*, 139 (2): 467-476
- Matheny, J. G., (2009), 'Developing Drugs and Vaccines for Infectious Diseases', *Clinical Pharmacology and Therapeutics*, 85 (6): 571-572
- Matheny, J. G., Cirkovic, M. M. and Sandberg, A., (2008), 'How Can We Reduce the Risk of Human Extinction?' *Bulletin of the Atomic Scientists*, September
- Matheny, J. G., Mair, M. and Smith, B., (2008), 'Biodefense: How Costly and How Likely to Succeed?' *Nature Biotechnology*, 26 (9): 981-983
- Ord T, Kieu TD. (2009), 'Using biased coins as oracles.' *International Journal of Unconventional Computing*, 5: 253–65.
- Ord T. (2008), 'The scourge: moral implications of natural embryo loss.' *American Journal of Bioethics*, 8(7): 12–19.
- Ord T. (2008), 'Response to open peer commentaries on "The scourge: moral implications of natural embryo loss."' *American Journal of Bioethics*, 8(7): W1–W3.
- Roache, R., (2008), 'Ethics, Speculation, and Values', *Nanoethics*, 2: 317-327
- Roache, R., (2008), 'Enhancement and Cheating', *EXPOSITIONS: Interdisciplinary Studies in the Humanities*, 2 (2): 153-156

OUR EVENTS

Cognitive Enhancement

27 – 28 June 2009, St Hilda's College, Oxford

FHI held a workshop and symposium on the economics and social impact of widespread weak cognition enhancement. The workshop was a small and tightly focused event, with participants invited from a few relevant disciplines. This workshop was followed by a larger symposium on cognitive enhancement and related ethical and policy issues, which took place on the following day. Cognitive

ability clearly plays a major part in individual life outcomes and the functioning of societies as wholes. It is strongly linked to education, human capital, health and economic gains in complex feedback loops. If methods of cognitive enhancement (through biological interventions, new training methods etc) become available, how large an impact would they have? It appears likely that weak but pervasive improvements in cognition could have significant effects on a societal level. The goal of the workshop was to estimate the size and type of such impacts.

“Uncertainty, Lags and Nonlinearity: Challenges to governance in a turbulent world”

7 May 2009, Oxford

This was a special event co-hosted by the Future of Humanity Institute and the Oxford Institute for Ethics, Law and Armed Conflict (ELAC). Professor Tad Homer-Dixon, of the University of Waterloo holds the Centre for International Governance Innovation Chair of Global Systems at the Balsillie School of International Affairs in Waterloo, Canada, and is a Professor in the Centre for Environment and Business in the Faculty of Environment. Recently, his research has focused on threats to global security in the 21st century and on how societies adapt to complex economic, ecological, and technological change. His work is highly interdisciplinary, drawing on political science, economics, environmental studies, geography, cognitive science, social psychology, and complex systems theory. Professor Nick Bostrom acted as a respondent to the talk, which then opened up the floor for a 30 minute session for questions and further discussion.

Global Catastrophic Risks

7 – 10 December 2008, Boston

Jason Gaverick Matheny assisted with the Organized Society for Risk Analysis symposium covering a range of topics in catastrophic risks, including nuclear winter simulations, runaway greenhouse effects, probability estimation, and risk perception.

“Governance, Inequality and Biotechnological Advancement”

9 December 2008, Oxford

This informal workshop, jointly held by the Programme of Ethics of the New Biosciences & The Future of Humanity Institute, examined how the recent explosion in technology, and particularly biotechnology, has increased inequality globally. Scientific development and technology have proved difficult to regulate, but without informed policy decisions now on their use, technologies that have the power to improve the condition of the human race could in fact cause further division and harm. This workshop, led by Professor Dan Brock (Harvard University) and Professor Allen Buchanan (Duke University), examined whether and how we can develop governance across international boundaries to ensure the new knowledge

we are gaining today improves the future for everyone.

MEDIA

Summary

FHI staff and associates have done more than 70 media appearances in the last academic year, including interviews for The History Channel, The Independent, TIME, CNN International, New York Magazine, BBC Radio, and Guardian.

Highlights

Nick Bostrom

Time Magazine, Interviewed about the ethical debate surrounding human enhancement, ([html](#)), 09 September 2009

Zeit Wissen, Interviewed about global catastrophic risks, 2009

Mladina, Interviewed about existential risks, the simulation argument, human enhancement, and the future of human evolution

Forbes, Interview, 'When Will Computers Be Smarter Than Us?', 22 June 2009

Weekensavisen (Danish weekly), Interviewed about the future of human evolution

MSN (online gateway), Interviewed about human evolution and other modes of change on the human condition, ([html](#)), 12 February 2009

Wired, Interviewed about malfunctioning consumer gadgets and perceptions about Murphy's law, 2009

Search Magazine, Interviewed about observation selection effects and cosmological multiverse theories, ([html](#)), July-August 2009

BBC Radio Oxford, Interviewed about lifestyle drugs and diet pills, 21 April 2009

The Today Program (UK Radio 4), Interviewed about lifestyle drugs and diet pills, 2009

History Channel (TV documentary), Interviewed about the idea of a technological singularity and about threats to human survival, 2009

'*The Moral Maze*', BBC Radio 4, Participated as one of the witnesses in a debate centering on the moral questions surrounding the choice of some older women to travel abroad for fertility treatment, ([html](#)), 10 June 2009

O Estado de São Paulo (Brazilian newspaper), Interviewed about the past, present, and future of the Internet and its consequences for the human condition, 2009

Swedish Radio, Interviewed about the simulation argument, 2009

The Independent (UK newspaper), Interviewed about enhancement in swimming sports, 2009

BBC (internal training video), Interviewed about transhumanism, human enhancement ethics, the future, and global catastrophic risks, 2009

TIME Magazine, Interviewed about changing attitudes to childhood, aging, and death, 12 March 2009

Philosophie Magazine, Interviewed about life extension and its potential social consequences, 2009

Superinteressante, Interviewed about the meaning and implications of increasing longevity, 2009

Independent television documentary project, Background interview for proposed television series on global catastrophic risks, 2008

The Independent, Interviewed for a section on visionaries, 2008

Epoca, Interviewed about global catastrophic risks, existential risks, the great filter, the singularity, transhumanism, and human enhancement ethics, 2008

Utne Reader, Interviewed about my work and the Future of Humanity Institute upon being named one of the "50 visionaries who are changing the world" featured in the 150-year anniversary issue of the magazine, ([html](#)), 2008

Bon Magazine, Interviewed about the science and ethics of life extension, 2008

'*The Moral Maze*', BBC Radio 4, Participated as an expert witness on the issue of performance enhancing drugs in sport and of human enhancement ethics, 2008

Discovery Channel, Interviewed about the future of machine intelligence and about the existential risks associated with superintelligence, 2008

New Scientist, Interviewed about current issues in bioethics, 2008

CNN.com, Interviewed about human enhancement ethics, the singularity, and existential risks, 2008

US News & World Report, Interviewed about human evolution, gene therapy, and human enhancement, 2008

Earth and Sky, Syndicated radio show. Interviewed about the science of global catastrophic risks, and about transhumanism, 2008

Rebecca Roache

BBC News Magazine, 'The Ethics of Keeping a Child from its Parents', commissioned article, co-authored with Barbro Björkman, ([html](#)), 16 February 2009

Oxford Magazine, 'Has the University Missed the Point in the Debate about Animal Research?' January 2009

3sat (Germany), Kulturzeit, filmed giving a lecture on speculation in ethics, November 2008

Anders Sandberg

Bayerische Rundfunk, Radio interview about internet censorship, 4 September 2009

Nyhetsmorgon TV4, Television interview about life extension, 10 July 2009

- Superinteressante*, Interview by Joao Cinquepalmi on the neuropsychology of life extension, 6 July 2009
- New Scientist*, Interviewed by Lynda Geddes about military enhancement, ([html](#)), 20 May 2009
- Asterisk*, Interviewed by Mathilde Weirsøe for article on "Mere end godt", 1 May 2009
- Waldemar Ingdahl*, Video interview for "99 was our 68", 27 April 2009
- Cosmos*, Interviewed by Emma Young on memory editing, 27 April 2009
- Project Cyborg*, Video interview for "Människan år 2009", ([html](#)), 27 April 2009
- Wired Italy Magazine*, Interview, 23 April 2009
- DN*, Interviewed by Johanna Koljonen about the neuroscience and ethics of Dollhouse, 19 April 2009
- Wired Magazine*, Interviewed by Brandon Keim on memory editing, "The Messy Future of Memory-Editing Drugs" ([html](#)), 10 April 2009
- Wired Magazine*, Interviewed by Brandon Keim on science fiction about memory editing, "Before Memory Science, There Was Science Fiction" ([html](#)), 10 April 2009
- Hälsa 3.0, IF*, Interview about the future of health, ([html](#)), April 2009
- Time Magazine*, Interviewed by Catherine Mayer for article on Amortality, ([html](#)), 25 February 2009
- PS! Magazine*, Interview with Åsa Bolmstedt on life extension, 16 February 2009
- Student radio*, Interview with Annabel Slater, Imperial College, about large hadron collider risks, 15 February 2009
- Göran Persson*, Television interview on life extension on Fredrik Skavlan's show (SVT1) together with former Swedish Prime Minister, 16 January 2009
- South China Morning Post*, Interviewed by Yojana Sharma on cognition enhancing drugs, 13 January 2009
- BBC Radio Ulster*, Sunday Sequence, 2 December 2008
- FastForward Radio*, Interview by *Kropp och Själ* (P1 Swedish Radio), radio interview about life extension, 16 November 2008
- If* (Swedish Insurance Company), Interviewed by Tobias Hammar on the future of health for publication, 4 November 2008
- ABC*, 'Should We Be Erasing Memories', contribution with Matthew Liao and Julian Savulescu, 3 November 2008
- Sunday Times*, Interviewed by Brendan Montague on brain stimulation, 24 October 2008

Guy Kahane

- Wellcome Trust* website, 'Caution urged over fMRI for life or death decisions', August 2009
- Prospect Magazine*, 156, Interviewed by David Edmonds on 'Philosophy's Great Experiment' ([html](#)), 01 March 2009
- Guardian*, Interviewed with Wiech, K., Farias, M., Shackel, N., Tiede, W. and Tracey, I.,

'An Fmri Study Measuring Analgesia Enhanced by Religion as a Belief System' ([html](#)), 01 October 2008

Jason Gaverick Matheny

CNN International, Interviewed about the future of agriculture, 2009

CBC, 'Quirks & Quarks', Interviewed about future agricultural biotechnologies, 2009

Wired Magazine, Interviewed about future agricultural biotechnologies ([html](#)), 23 February 2009

New York Magazine, Interviewed about future agricultural biotechnologies ([html](#)), 11 January 2009

Discover Magazine, Interviewed about future agricultural biotechnologies ([html](#)), 22 October 2008

Grist, Interviewed about future agricultural biotechnologies ([html](#)), 2008

Toby Ord

New Scientist, 'How do we know the LHC really is safe?', an article examining the analysis of methodological problems which arise when assessing risks with low probabilities and very high stakes ([html](#)), 27 January 2009

TEACHING

James Martin Advanced Research Seminar

The FHI has organized the James Martin Advanced Research Seminars (co-sponsored with the Programme on the Ethics of the New Biosciences) and has run weekly since the launch of the Institute. The seminar is attended by post-docs and Oxford graduate students from philosophy and other disciplines and has attracted speakers from around the world.

This last academic year included presentations from a number of international universities, including speakers from Monash University, London Business School, The Hull York Medical School, University College London, University of Liege, Aarhus University, Dartmouth College and Uppsala University. As well as presentations from researchers within FHI, Uehiro & BEP, we were also fortunate to have a selection of speakers present from other departments within the University, such as the Department of Experimental Psychology, Centre for Evidence-Based Medicine, Institute of Cognitive and Evolutionary Anthropology and the Centre for Functional MRI of the Brain.

Supervision

Dr Rebecca Roache supervised two second-year PPE students from Mansfield College, Emma Baddeley and Duncan Lugton, for the Ethics course. She also ran a revision class for six third-year PPE students, who were also studying PPE at Mansfield.

Dr Guy Kahane has undertaken numerous teaching roles during the last academic year: he acted as an Assessor for the Medical Ethics option (BPhil/MSt in Philosophy), supervised Ms Caroline Marim (doctoral candidate from the Universidade Federal do Rio de Janeiro, Brazil), and along with Dr S. Matthew Liao jointly held a "Moral Intuitions: Philosophy, Science and Ethics" seminar during weeks 1 to 5 of Hilary Term.

Mentoring

Nick Bostrom is a fellow at St Cross College and actively participates in the Senior Mentoring Scheme. He monitored the academic progress and student welfare of Thomas Birkett, Caroline Dahl, Merit Hietanen, and Shannon Keiley, and met with each of them regularly throughout the three terms.

INVITED CONFERENCES, PRESENTATIONS & LECTURES

International Society for Research on Emotion Conference

06 August 2009 – Dr Kahane visited the University of Leuven (Belgium) to attend this conference where he presented a talk on 'Emotion in Moral Judgment'.

Ars Electronica Festival 2009

05 September 2009 – Dr Sandberg gave a talk on "Cloud Superintelligence" at the Ars Electronica Festival 2009 in Linz, Austria.

Human Nature and Self Design Conference

01 August 2009 – Dr Sandberg was an invited speaker at the International Conference by the Research Training Group Bioethics at the Interdepartmental Centre for Ethics in the Sciences and Humanities of the University of Tübingen. Sandberg gave a talk on the "ethical assessment of neuromodulation techniques: their differences and commonalities".

University of Bonn, Germany

31 July 2009 – Dr Sandberg presented on "The ultimate limits of progress" at a Bonn graduate workshop. Dr Kahane visited the University of Bonn in October 2008 and gave two talks at *The Ethical and Philosophical Implications of Neuroscience*, 'Moral Theory and the Neuroscience of Morality' and 'Evolutionary Debunking Arguments'.

16th Biennial Conference of the Society for Philosophy and Technology

08-10 July 2009 - Nick Bostrom delivered a keynote speech "Global Risks and Emerging Technologies" at the *16th Biennial Conference of the Society for Philosophy and Technology*, in Twente, Netherlands. The conference focused on the increasing convergence and social implications of information technology, biotechnology, nanotechnology, and cognitive technologies, and explored the philosophical, social and ethical aspects of these converging technologies.

Guardian Active Summit

01 July 2009 - Nick Bostrom delivered an opening keynote presentation at the *Guardian Active Summit* in London, UK. This year's summit, 'Politics, Economics, Technology and Society – Building a better future through the internet' asked a very thought-provoking question: 'How are technologies and humans guiding the evolution of the internet? What form is this evolution taking? And does it have an end point?' This exclusive one-day summit provided a unique gathering for leaders working across all sectors to share, debate, and create strategies for answering some of the world's biggest questions.

UK Clinical Ethics Network Conference

30 June 2009 - The UK Clinical Ethics Network 9th Annual Conference took place at St Hugh's College, Oxford. The conference, 'Capacity, Responsibility, and Authenticity' included a combination of presentations and case discussions covering a range of ethical and legal issues of relevance to everyday clinical care as well as a look to the future. Two of FHI's members were invited to give presentations: Dr Guy Kahane, "Neuroscience of moral judgement" and Dr Anders Sandberg, "Enhancing cognition and mood".

2009 World Science Festival, New York City

Nick Bostrom was invited to participate in two events at this year's *World Science Festival*, an annual celebration of science that brings together great minds in science, business, government, and the arts. Declared "a new cultural institution" by The New York Times and "unspeakably cool" by Time Out New York, the event attracted over 160,000 people to the Festival's 39 events at 17+ venues located throughout New York City.

Infinite Worlds: A Journey through Parallel Universes

13 June 2009 - The multiverse hypothesis, suggesting that our universe is but one of perhaps infinitely many, speaks to the very nature of reality. Nick Bostrom joined physicist Brian Greene, Nobel Laureate David Gross and cosmologist Andrei Linde as they discussed and debated this controversial implication of forefront research and explored its potential for redefining the cosmic order.

Battlestar Galactica: Cyborgs on the Horizon

12 June 2009 - Cast members from *Battlestar Galactica* joined leading roboticists to explore scientifically, philosophically, and ethically the approaching frontier where intelligent machines are commonplace and cybernetic technology enhances human capabilities. The event featured sneak previews from the forthcoming *Battlestar* special *The Plan*, as well as live appearances by some of the show's star 'cylons'.

Hay-on-Wye Philosophy Festival

31 May 2009 – Dr Anders Sandberg discussed "Future Culture" with Phil Hutchinson and Joe Kerr in "How the light gets in" at the Hay-on-Wye philosophy festival, the UK's first ever philosophy and music festival.

European Commission Conference

22 April 2009 – Dr Anders Sandberg gave a talk ("Ethics of brain implants") at the "Bridging the gap between the brain and machine" session at the *European Future Technologies Conference and Exhibition* in Prague. More than 700 scientists, policy-makers, industry representatives and science journalists convened over 3 days to discuss today's frontier science, tomorrow's technologies and the impact of both on tomorrow's society.

Oxford-Mount Sinai Consortium on Bioethics

30 March–01 April 2009 – Dr Guy Kahane travelled to New York, where he presented 'The Neuroscience of Moral Judgment: Empirical Findings and Possible Ethical Implications' at the *Oxford-Mount Sinai Consortium on Bioethics*, Mount Sinai School of Medicine.

Conference on Human Enhancement and Nanotechnology

28-29 March 2009 – Dr Rebecca Roache took part in Western Michigan University's conference on *Human Enhancement and Nanotechnology* and gave a talk on 'Ethics, Speculation, and Values'. The conference focused on the ethical, social, and related issues that arise in the application of nanotechnology to human enhancement.

University of Oslo

March 2009 - Guy Kahane made several presentations during his visit to the University of Oslo in March. He spoke at the *Language and Rationality Seminar* ('The Normative Knowledge Argument'), *Centre for the Study of Mind in Nature Colloquium* ('Neuroimaging Moral Judgment'), and at the *Moral Philosophy Club* ('Evolutionary Debunking Arguments').

Royal Society and the International Council for the Life Sciences

19 February 2009 - Nick Bostrom presented 'Issues in Assessment Techniques for Biological Risk' at the Developing New Approaches to Biological Risk Assessment, organized by the *Royal Society and the International Council for the Life Sciences* in London.

The Triple Helix, Cambridge

19 January 2009 – Dr Anders Sandberg was invited to attend a talk/panel discussion on cognition enhancement organized by The Triple Helix, a student society which seeks to explore the interdisciplinary issues surrounding science. Dr Sandberg gave a talk entitled: "Cognitive Enhancement: Hope or Dope?"

Episteme Research Group, University of Geneva

4 -5 December 2008 – Dr Kahane (with Timothy Chan) attended the *Workshop of Judgement, Assertion and Norms* at the University of Geneva, where they presented a talk entitled 'The Trouble with Being Sincere (with Timothy Chan)'.

Extrobritannia Debate

22 November 2008 – Dr Sandberg was invited to this monthly public debate where he discussed 'Emulating Brains: Silicon Dreams or the Next Big Thing?' The idea of creating a faithful copy of a human brain has been a popular philosophical thought experiment and science fiction plot for decades. How close are we to actually doing it, how could it be done, and what would the consequences be? This talk traced trends in computing, neuroscience, lab automaton and microscopy to show how

whole brain emulation could become feasible in the mid term future. The lecture took place at Birkbeck College, London.

Convergence08

15–16 November 2008 - Anders Sandberg was invited to speak at *Convergence08*, which took place in Mountain View, California. The event examined the world-changing possibilities of nanotech and the life-changing promises of biotech. It is the premier forum for debate and exploration of cogtech ethics, and ground zero of the past and future infotech revolution. Dr Sandberg's talks included 'Cheap Superintelligence' and 'Whole Brain Emulation: Challenges and Timescales'.

Global Catastrophic Risks: Building a Resilient Civilization

14 November 2008 - Anders Sandberg gave a talk at the seminar on *Global Catastrophic Risks: Building a Resilient Civilization*, organized by the Institute for Ethics and Emerging Technologies, the Center for Responsible Nanotechnology and the Lifeboat Foundation. The event, held in Mountain View, California, was a day-long seminar on threats to the future of humanity, natural and man-made, and the proactive steps we can take to reduce these risks and build a more resilient civilization. Anders was the first presenter to speak that day, and his topic was 'Global Catastrophic Risks: An Overview, and Caution about Risk Assessments'.

The Artificial Intelligence Debate

24 October 2008 - Dr Anders Sandberg was invited to be a panel participant at 'The Artificial Intelligence Debate' at the University of Surrey. The event asked the following questions: When will your computer think for itself? Will developing A.I. benefit mankind or be a step towards the nightmare future scenario of many science fiction writers? In fact, is it possible that a computer could ever be conscious?

The Nature Debate 1: Enhancing the Brain

13 October 2008 - Nick Bostrom was selected by *Nature* to sit on a panel of experts that debated the risks, benefits and extent of how far research can extend our mental and physical abilities. The first of the two panel events focused on research currently underway that is extending the human brain: from intelligence and emotional tolerance, to sleep needs, memory power and more. The debate posed questions such as: What are the risks and benefits to the individual and to society of these developments? Would you boost your brain power? Why, when and why not? Should doctors, scientists, students, teachers or soldiers use such aids?

Oxford Presentations

Professor Nick Bostrom spoke about 'Future of Humanity Issues' at the *Balliol College Graduate Luncheon Discussion* on February 12, 2009, and took part in a panel debate entitled 'End of the World', at the *Oxford Union* on November 22, 2008.

Dr Rebecca Roache has made a number of presentations at the James Martin 21st Century School Advanced Research Seminar, including: 'Governance and the Yuck Factor' (with Dr Steve Clarke, March 2009), and 'Creating Green Dwarves: Should we Engineer Humans to Counteract Climate Change?' (with Dr Matthew Liao and Dr Anders Sandberg, November 2008). One of her presentations, 'Ethics, Speculation, and Values' (November 2008), was filmed for the programme *Kulturzeit*, to be broadcast on the German TV channel 3sat.

Dr Guy Kahane has given numerous talks at various functions around the university. He spoke at the *UK Clinical Ethics Network Conference* held at St Hugh's College in June, made two presentations at the *James Martin Advanced Research Seminars*, and also took part in the *Carnegie Uehiro Oxford Conference on Medical Ethics* in December.

CONSULTATION & ADVICE

Professor Nick Bostrom and Jason Gaverick Matheny have provided advice to various government departments, private firms, and organizations. Bostrom consulted for Booz Allen on global risk and on risk assessment methods in June; he advised the Cushing Academy on the development of a curriculum for the 21st century, with a focus on developing modules for teaching meta-cognitive skills; and has worked with the Public Service Division for the Prime Minister's Office of Singapore. By invitation, Bostrom offered advice and suggestion on the stakeholder consultation process "Regulating Nanotechnologies in the EU and the US: Towards Effectiveness and Convergence", and he sat on panel advising on how the Princess of Thailand's Miracle of Life Foundation can achieve its aim of identifying talented children from disadvantaged background and giving opportunities to achieve their potential. Bostrom has also worked with Horizon Scanning, an initiative supported by and aimed at informing the UK Minister of Education about opportunities and challenges in education and biology.

Matheny advised the U.S. Army on potential threats from non-states equipped with biological weapons at the Future Operational Environment, U.S. Army Training and Doctrine Command in 2009, and advised the Army on risks from existing and emerging biotechnologies at the Biometrics and Personnel Protection Study Group in 2008. He has also worked with the Office of Net Assessment, and advised the U.S. Defense Department on potential risks from emerging bio-, neuro-, and nano-technologies in 2008 (Future Warfare 20XX). Anders Sandberg is a member of the Scientific Advisory Panel which advised on the scientific content of the Explore-at-Bristol brain exhibit.

AWARDS & HONOURS

Eugene R. Gannon Award for the Continued Pursuit of Human Advancement

Nick Bostrom has been selected as one of three finalists for the 2009 Gannon Award for his work on existential risk and human enhancement under the award's criteria of integrity, ingenuity, professional recognition, and significance to the future of humanity. The winner will receive a cash prize for a charity or scholarship of their choice. Visit the Gannon Award website for further information. Bostrom, N., Fellow (University of St Gallen & World Demographic Association),

2009 World Technology Awards

Nick Bostrom was recently nominated for the 2009 World Technology Award for policy (category winner President Paul Kagame, Republic of Rwanda). The results were announced on 16 July at the Time & Life Building in NYC at the conclusion of the two-day World Technology Summit. The Award winners and finalists "are those individuals and companies/organizations (in 10 categories) who are -- in the opinion of the WTN Fellows and Founding Members, through Awards voting process -- doing the innovative work of "the greatest likely long-term significance" in their fields. They are those creating the 21st century."

Wellcome Trust University Award

Dr Guy Kahane has received a University Award from the Wellcome Trust that will establish a permanent University Lecturership in Practical Ethics at the Philosophy Faculty at Oxford, and fund a five year research project entitled 'Well-being, consciousness and moral decision-making'.

British Academy Postdoctoral Fellowship

Toby Ord's award will provide funding for three years to pursue a major research topic, 'Moral Uncertainty': the study of how we are to act when we are uncertain about the relevant moral issues. According to the BA website, the aim of the awards is "to offer opportunities for outstanding early career researchers to strengthen their experience of research and teaching". The BA Fellowship is held in conjunction with a Junior Research Fellowship at Balliol College.

University of Oxford Humanities Division Merit Award

Dr Rebecca Roache was awarded this honour in 2008 & 2009, and Dr Guy Kahane in 2008.

"What's Next? Dispatches on the Future of Science"

Nick Bostrom was invited to contribute an essay for the new book project, "What's

Next?". The book was published in May 2009 by Vintage Books, and foreign rights (to date) have been acquired by S. Fisher Verlag (Germany), RBA Libros (Spain), and Het Spektrum (The Netherlands). Edited by Max Brockman, who says "to come up with an invitation list appropriate to the goals of the book I asked a number of leading third culture scientists/authors to recommend the top young people in their respective fields (i.e. "who, among the young generation of scientists is most likely to turn out to be the next James Watson/Stephen Jay Gould/Martin Rees?").

MEMBERSHIPS

Professor Bostrom was recently invited to join the *Global Ethics Observatory Network* (www.unesco.org/shs/ethics/geobs) which consists of several databases of experts in the following fields: ethics, ethics institutions (research centres, national commissions and committees), ethics teaching programs and a database of legislation, guidelines and regulations relating to ethics. Bostrom sits on the Advisory Board for the following: *The Nanoethics Group*, the *Foundational Questions in Physics and Cosmology Institute* (FQ(x)I), *Betterhumans* magazine, *Cosmist* magazine, *Singularity Institute for Artificial Intelligence*, *Linguistic and Philosophical Investigations*, *Review of Contemporary Philosophy*, and *Analysis and Metaphysics*, and sits on the Editorial Board for: *Publications of the Astronomical Observator* and the *Journal of Evolution and Technology*.

Dr Anders Sandberg, Dr Rebecca Roache, and Toby Ord are all members of the Lifeboat Foundation's Ethics Advisory Board, which is dedicated to the investigation and avoidance of global catastrophic threats. Dr Roache is enrolled with the Royal Institution's Science Media Centre's database of academics and scientists willing to talk to the media, and is a member of Oxford's Philosophy Faculty's I.T. Committee. Dr Guy Kahane is a member of the European Neuroscience and Society Network of The Neuroethics Society.

WEB



Less Wrong (<http://lesswrong.com>) was established as a sister site to the very successful *Overcoming Bias* blog, both of which are sponsored by the FHI. As Eliezer Yudkowsky, the blogs Editor puts it: Less wrong "is devoted to refining the art of human rationality - the art of thinking. The new math and science deserves to be applied to our daily lives, and heard in our public voices". *Less Wrong* has had over 512,765 visitors to the site, 507,789 page views, and nearly 2,500 visits per day.



Overcoming Bias (www.overcomingbias.com) began in November 2006 as a group blog on the general theme of how to move our beliefs closer to reality, in the face of our natural biases such as overconfidence

and wishful thinking, and our bias to believe we have corrected for such biases, when we have done no such thing. The blog has attracted more than 3 million visitors, has over 6 million page views, and draws more than 2300 visitors per day.

Practical Ethics in the News

www.practicaethicsnews.com The Future of Humanity Institute, together with the Program on the Ethics of the New Biosciences and the Oxford Uehiro Centre, established an internet service in November 2007 to provide a daily ethical analysis of the news. The forum attracted over 116,000 visitors in the last academic year, it has a readership of over 200 people daily, and reached its 100 000th reader in January 2009. The site has been linked from CNN.com and *The Guardian's* Bad Science column where it has frequently been cited as an example of good science. It is also linked from a number of Philosophy related blogs, including the Singer Institute blog, Leeds University, Glasgow University and social networking site groups devoted to Ethics. It allows us to reach a far wider audience than standard publications and to engage with topical issues, as well as with commentators.

New Website



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- Archive Events
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Future of Humanity Institute

4 September 2009

Vacancy: Postdoctoral Research Fellowship in Interdisciplinary Science or Philosophy

Applications are invited for a fixed-term Research Fellowship at the Future of Humanity Institute. The Fellowship is available for two years from the date of appointment.

The successful candidate will be expected to: develop and implement an independent program of research related to one or more of the Institute's focus areas; provide research assistance to the Institute's director, Professor Nick Bostrom; and to participate in examining and administrative duties for the Faculty of Philosophy as required.

More information available [here](#).

30 July 2007

Latest FHI publication from Nick Bostrom and Anders Sandberg

Bostrom, N. and Sandberg, A., (2009), 'Cognitive Enhancement: Methods, Ethics, Regulatory Challenges', *Science and Engineering Ethics*, Vol: 15 (3) / September, pp. 211-241

Printer Friendly Version

Latest News RSS feed



The Future of Humanity Institute launched a re-designed website this past March. It has a fresh new appearance that is easier to navigate and is more user friendly.

APPLICATIONS IN PROGRESS

Sciences and the Virtues

An application, jointly made by Dr Rebecca Roache, Professor Roger Crisp and Dr Barbro Fröding, 'The Good Life in an Information Society: A New Account of the Epistemic Virtues' is under consideration and was one of only 4% of applications to reach the second round.

AXA Research Fund

FHI's (with Julian Savulescu) proposal to seek funding to establish a permanent chair in 'Global Risks and Opportunities' has been selected to be the one Oxford proposal sent to AXA under its Endowed Chair Program. The purpose of the AXA Fund is to promote the understanding and prevention of major risks in the world by supporting cutting edge scientific research. Results are announced on 30 October 2009.

Epictetus Proposal

FHI's Researchers are contributing in a cluster of proposals for a research project on well-being and mental health. Proposals include the following: Enhancement and Flourishing, Wisdom, and Well-being and Truth. Application is currently undergoing revision.

FUNDRAISING

At the present time, approximately half of our budget comes from the University's James Martin 21st Century School, and approximately half comes from a few visionary philanthropists. The following donations were received during the last academic year:

Philanthropist #1:	£161,308
Philanthropist #2:	£9,392
Philanthropist #3:	£13,435
Bright Horizons Foundation:	£46,072
Other donations:	£780