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# Inquiring into Animal Enhancement: Model or Countermodel of Human Enhancement?

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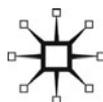
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Introduction, selection and editorial matter © Simone Bateman, Jean Gayon,  
Sylvie Allouche, Jérôme Goffette and Michela Marzano 2015  
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Softcover reprint of the hardcover 1st edition 2015 978-1-137-54246-5

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First published 2015 by  
PALGRAVE MACMILLAN

Palgrave Macmillan in the UK is an imprint of Macmillan Publishers Limited,  
registered in England, company number 785998, of Houndmills, Basingstoke,  
Hampshire RG21 6XS.

Palgrave Macmillan in the US is a division of St Martin's Press LLC,  
175 Fifth Avenue, New York, NY 10010.

Palgrave Macmillan is the global academic imprint of the above companies  
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ISBN: 978-1-137-54247-2 PDF

ISBN: 978-1-349-56352-4

A catalogue record for this book is available from the British Library.

A catalogue record for this book is available from the Library of Congress.

[www.palgrave.com/pivot](http://www.palgrave.com/pivot)

DOI: 10.1057/9781137542472

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## Series Editors' Introduction

Medicine, health care and the wider social meaning and management of health are undergoing major changes. In part this reflects developments in science and technology, which enable new forms of diagnosis, treatment and the delivery of health care. It also reflects changes in the locus of care and burden of responsibility for health. Today, genetics, informatics, imaging and integrative technologies, such as nanotechnology, are redefining our understanding of the body, health and disease; at the same time, health is no longer simply the domain of conventional medicine, nor the clinic. The 'birth of the clinic' heralded the process through which health and illness became increasingly subject to the surveillance of medicine. Although such surveillance is more complex, sophisticated and precise as seen in the search for 'predictive medicine', it is also more provisional, uncertain and risk laden.

At the same time, the social management of health itself is losing its anchorage in collective social relations and shared knowledge and practice, whether at the level of the local community or through state-funded socialised medicine. This individualisation of health is both culturally driven and state sponsored, as the promotion of 'self-care' demonstrates. The very technologies that redefine health are also the means through which this individualisation can occur – through 'e-health', diagnostic tests, and the commodification of restorative tissues, such as stem cells, cloned embryos and so on.

This series explores these processes within and beyond the conventional domain of 'the clinic', and asks whether

they amount to a qualitative shift in the social ordering and value of medicine and health. Locating technical developments in wider socio-economic and political processes, each book discusses and critiques recent developments within health technologies in specific areas, drawing on a range of analyses provided by the social sciences.

The series has already published thirteen books that have explored many of these issues, drawing on novel, critical and deeply informed research undertaken by their authors. In doing so, the books have shown how the boundaries between the three core dimensions that underpin the whole series – health, technology and society – are changing in fundamental ways. This latest addition to the series, like its companion volume, *Inquiring into Human Enhancement: Interdisciplinary and International Perspectives*, takes this reconfiguring of boundaries further, especially as it considers the relationships between humans and other animals, and the biomedical practices that sometimes cross species.

Like its companion volume, this short collection provides an extremely rich and strongly interdisciplinary interrogation of the concept of 'enhancement'. The contributors started from the assumption that they could learn more about human enhancement by examining long-standing practices of 'improving' animals. What emerged was a set of striking differences between the practices surrounding humans and other animals. Not least, animals are being modified largely in the service of human needs and priorities, with little consideration for the animals themselves. The term 'enhancement' may not be fully appropriate as animals are manipulated or engineered in order to improve their capacities to produce food for human consumption or to serve as models for experimentation in biomedical research. As with the companion volume, this book focuses on the practices and implications of enhancement for society now and in the future.

This book is in some ways a departure for the series, through its explicit focus on animals. Nonetheless it makes a major contribution to our understanding within the social sciences and humanities of the current and likely future developments not only in animal enhancement, but also what they might mean for human enhancement and the meaning of health.

As series Editors we are delighted to mark our entrance to the Palgrave Pivot series with this provocative volume that will attract international interest from scholars working across a number of disciplines. It will also be of great interest to researchers and practitioners in biomedical fields and in animal research.

*Andrew Webster and Sally Wyatt*

## Acknowledgements

The book you are about to read was initially part of a larger project: a series of workshops held in Paris, France, between 2009 and 2011 entitled ‘Human Enhancement – A Critical Inquiry.’ We brought together scholars from different countries and disciplinary environments, in an attempt to critically investigate the definition, scope and limits of this term, whose use has become so widespread that its meaning is often taken for granted. In the course of our inquiry, we devoted substantial attention to the enhancement of animals. However, because animal enhancement raises a number of complex issues, specific to these practices, a separate book on this subject seemed preferable to reducing animal enhancement to a mere prototype of the problems that human enhancement may encounter in the future. We are grateful to Palgrave Macmillan for having proposed and accepted to devote a separate book to the issues raised by animal enhancement, as a companion volume to the other book derived from our project: *Inquiring into Human Enhancement: Interdisciplinary and International Perspectives* (Basingstoke: Palgrave Macmillan, 2015).

The editors of these two volumes, who were also the organisers of these workshops, also wish to thank the Universities Paris 1 Panthéon-Sorbonne, Paris Descartes, and Paris Diderot for having financed this series of workshops. Without their generous support, we would have been unable to bring together scholars from such a wide variety of countries and disciplinary backgrounds in a concerted and constantly evolving research query on the enhancement of both humans and animals.

We also wish to thank the scholars who generously accepted our invitation to intervene, as speakers or as commentators, in our series of workshops: Gustaf Arrhenius, Bernadette Bensaude-Vincent, Florence Burgat, Pierre-Henri Castel, Christopher Coenen, Gary Comstock, Maxime Coulombe, Eric de Léséleuc, Sonia Desmoulin-Canselier, Françoise Dupeyron-Lafay, Selim Eskiizmirli, Anne Fagot-Largeault, Arianna Ferrari, Marc Fleurbaey, Jean-Paul Gaudillière, Alain Giami, Bertrand Jordan, Patrick Laure, Erik Malmqvist, Anne Marcellini, Jean-Noël Missa, Marika Moisseff, Brian Muñoz, Pascal Nouvel, Patrick Pajon, Isabelle Queval, Bernard Reber, David Rothman, Sheila Rothman, Brian Stableford, Ruud ter Meulen, Daniel Weinstock, Dan Wikler and Myriam Winance. Not all of them appear as authors in this or in the companion volume, but together with the persons who regularly took part in this series – too numerous to name here – they all contributed substantially to workshop discussions and ultimately influenced our conception of this publication project.

Last but not least, we would like to thank the heads of the collection ‘Health, Technology and Society’ at Palgrave Macmillan – Andrew Webster and Sally Wyatt – for having guided us through the editorial process. An equally warm expression of our appreciation goes to Harriet Barker, who proposed the publication of our project as two separate books, and to Holly Tyler and Dominic Walker, who assisted us through the complex phases of handling the publication of companion volumes, as well as to the numerous persons at Palgrave Macmillan who helped us produce this book. Most of all, we thank Andrew Webster for his unflinching support in helping us bring this publication project to fruition.

# Notes on Contributors

## Editors

The editors of this Pivot volume were involved in the preparation of a companion volume, published by Palgrave Macmillan, entitled *Inquiring into Human Enhancement: Interdisciplinary and International Perspectives*. Both volumes were derived from papers presented at a series of workshops on human enhancement held in Paris between 2009 and 2011.



**Sylvie Allouche**, PhD (Philosophy), has conducted research and taught in various European universities (Paris, Lyon, Budapest, Toulon, Bristol). She is an assistant professor (2014–15) in the Human Development Department and the General Biology Laboratory, Université Catholique de Lyon, France. Her research develops along two complementary directions: (1) the various philosophical issues raised by the prospect of engineering living organisms, with a special interest for human enhancement and geo-engineering; (2) the relations between philosophy and fiction, and more specifically science fiction and television series.

**Simone Bateman** is Emeritus Senior Researcher in Sociology at the Centre National pour la Recherche Scientifique (CNRS); she conducts her research activities at the Centre for Research on Medicine, Science, Health, and Society (CERMES3) in Paris, France. Most of her work concerns morally controversial medical and scientific practices, primarily in the area of reproduction and sexuality

(abortion, contraception, reproductive technology, neonatal intensive care), as well as other closely related practices (stem-cell research, genetic testing, experimentation on human subjects). Some of her work also concerns bioethics as a historically specific social phenomenon. She has published widely, mostly in French and English, on these topics, and has also participated in the production of reports for national and international institutions, notably a European Commission report on reproductive technology, Glover J. et al., *Fertility and the Family* (1989). She was a member of the French National Ethics Committee from 1992 to 1996.

**Jean Gayon** is Professor of Philosophy at Université Paris 1 Panthéon-Sorbonne, and the director of the Institute of History and Philosophy of Science and Techniques (IHPST). His work bears on the history of modern biology (evolutionary theory, genetics, biometry), philosophy of biology (concepts of species, gene, function, chance, model organism) and the history of philosophy of science. He has also published on some social and political aspects of life and health science, more especially eugenics, notion of race, conservation biology and human enhancement (list available at: <http://halshs.archives-ouvertes.fr/~gayon>). His works include a book on the history of selection theory (*Darwinism's Struggle for Survival*, 1998), 20 collective books and 270 articles or book chapters. Gayon is a member of the German National Academy of Science 'Leopoldina', the International Academy of History of Science, the International Institute of Philosophy, the International Academy of Philosophy of Science and Academia Europaea.

**Jérôme Goffette** is Associate Professor of Philosophy of Medicine at the Université Claude Bernard Lyon 1 and a member of the University's research unit on *Science and Society: History, Education, and Practices*. His research focuses primarily on anthropotechnics and human enhancement, a topic on which he has written more than 20 articles, as well as a book: *Naissance de l'anthropotechnie* (Birth of anthropotechnics) (2006). His second area of research concerns the body and its imaginary. Among other publications on this topic, he co-edited a collective volume with Lauric Guillaud entitled *L'imaginaire médical dans le fantastique et la science-fiction* (Medical imagination in fantastic and science fiction) (2010); and with Jonathan Simon, 'The Internal Environment: Claude Bernard's Concept and Its Representation in *Fantastic Voyage* (R. Fleisher)', in Landers M. and Muñoz B. (eds), *Anatomy and the Organization of Knowledge, 1500–1850* (2012, pp. 187–205).

**Michela Marzano** is Professor of Philosophy at the Université Paris Descartes where she conducts research on applied ethics. Her work bears on moral norms and values (autonomy, consent, dignity), bioethics (euthanasia, use of human embryos, allocation of scarce health resources) and sexual ethics (fidelity, pornography, rape). Her works include: *G.E. Moore's Ethics. Good as Intrinsic Value* (2004); *Dictionnaire du corps* (ed., 2007); *Dictionnaire de la violence* (ed., 2011).

## Contributors

**Florence Burgat** is a senior researcher in Philosophy at the Institut National de la Recherche Agronomique (INRA), and a statutory member of the CNRS – École Normale Supérieure research unit ‘Husserl Archives’. Her research interests focus primarily on phenomenological approaches to animal life and the animal condition in industrial societies, and she has also co-hosted a research seminar at the ‘Husserl Archives’ on the theme of the animal agent. She is co-editor in chief of the *Revue Semestrielle de Droit Animalier*, published by the University of Limoges. Her latest works are *Liberté et inquiétude de la vie animale* (2006); *Penser le comportement animal. Contribution à une critique du réductionnisme* (edited volume) (2010); *Une autre existence. La condition animale* (2012); *Ahimsa. Violence et non-violence envers les animaux en Inde* (2014); *La cause des animaux. Pour un destin commun* (2015).

**Gary Comstock** is Professor of Philosophy at North Carolina State University where he conducts research on ethical questions in the biological sciences. His most recent book is *Research Ethics: A Philosophical Guide to the Responsible Conduct of Research* (2013). Of his earlier book *Vexing Nature? On the Ethical Case against Agricultural Biotechnology* (2000), one critic wrote that the volume was a watershed in the discussion of genetically modified foods. Another declared that Comstock’s nuanced treatment of the issue was ‘virtually unprecedented in applied philosophy’. Comstock was ASC Fellow of the National Humanities Center (2007–09) and serves as editor in chief of two online scholarly communities: *On the Human* and *Open Seminar in Research Ethics*. Comstock edited *Life Science Ethics* (2002, 2010) and *Is There a Moral Obligation to Save the Family Farm?* (1987).

**Sonia Desmoulin-Canselier** has a PhD in Private and Criminal Law (2005) from the Université Paris 1 Panthéon-Sorbonne. Since 2007, she is a researcher at the Centre National de la Recherche Scientifique (CNRS) and conducts her research activities at the CNRS-Université Paris I Research Unit on Comparative Law, in the team working on ‘Law, Science, and Techniques’; she is also a contractual lecturer at the Université Paris 1 Panthéon-Sorbonne. She studies the relationships between science and law, that is, not only the legal framework for scientific and technical activities, but also the mutual influences between scientific knowledge and technical progress, on the one hand, and legal rules, on the other. Her main works deal with animal law (animal legal status, animal health and animal experimentation), with legal issues linked to emergent technologies (biotechnologies, nanotechnologies and neurosciences) and with legal theory (definitions, categories, interactions between scientific language and legal language etc.).

**Arianna Ferrari**, philosopher, is head of the research area ‘Innovation Processes and Impacts of Technology’ at the Institute for Technology Assessment and System Analysis (ITSA) at the Karlsruhe Institute of Technology in Germany. Her research interests focus primarily on the interface between ethics and politics of emerging technologies (in particular in the life sciences), human/animal studies and philosophy of technology. She co-edited the first technology assessment study on animal enhancement commissioned by the Swiss Federal Ethics Committee on Non-Human Biotechnology (ECNH) (Ferrari et al., *Animal Enhancement. Neue technische Möglichkeiten und ethische Fragen*) and has published in different journals on topics concerning animal experiments, animal ethics and human and animal enhancement. She recently co-edited the first handbook on human/animal relationships in German (Ferrari A. and Petrus K. *Lexikon der Mensch-Tier-Beziehungen*, Transcript, Bielefeld, in press) and is currently working on a project on *in vitro* meat, funded by the German Ministry of Education.

**Jean-Paul Gaudillière** is a senior researcher at the Institut National de la Santé et de la Recherche Médicale (INSERM), and director of the Centre for Research on Medicine, Science, Health, and Society (CERMES3) in Paris, France. His research was first focused on the molecularisation of biology during the 20th century and later on the reconfiguration of medical research after the Second World War. He is the author of several edited volumes on these issues and of *Inventer la Biomedicine* (2002).

He is working on the history of biological drugs before the advent of gene-based technology, with strong interests in the dynamics of knowledge production, clinical work and market construction. He has recently coordinated *Drug Trajectories* (Studies in History and Philosophy of the Biological and Biomedical Sciences, 2005) and *How Pharmaceuticals Became Patentable* (History and Technology, 2008).