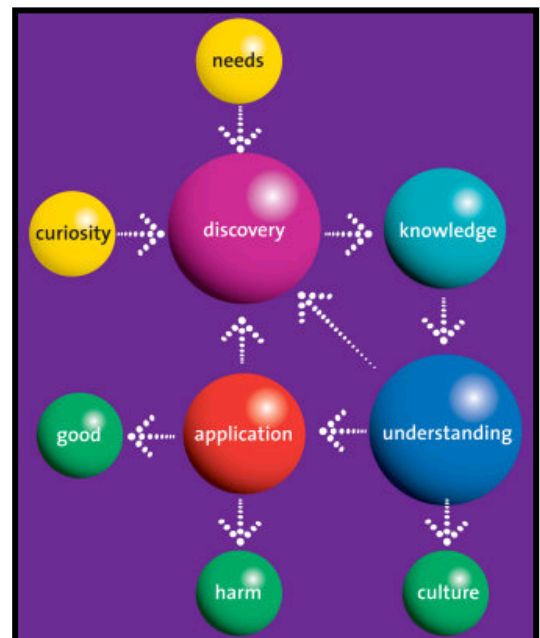


'Science Ethics'

An emerging field of academic inquiry reflecting the truly interdisciplinary (and global) nature and impact of scientific research

A paper in development by: John Coggon, Amel Alghrani, Sarah Chan, John Harris, Catherine Rhodes, Catherine Spanswick and John Sulston, of the Institute for Science, Ethics and Innovation, The University of Manchester.

Corresponding author: John Coggon (john.coggon@manchester.ac.uk)



‘Science Ethics’¹

An emerging field of academic inquiry reflecting the truly interdisciplinary (and global) nature and impact of scientific research

Practical philosophy, particularly that described as ‘applied ethics’, is frequently divided into niche specialties. These tend to develop in response to new phenomena or technical possibilities (eg ‘nanoethics’, ‘neuroethics’), areas of activity that had previously received little sustained critical attention (eg ‘medical ethics’, ‘sports ethics’), or as sub-specialities within wider categories (eg within ‘bioethics’ we find ‘genethics’, ‘public health ethics’). These areas of academic inquiry exist in parallel with, and both inform and are informed by, professional ethics and governance, best conceived as (formal and informal) regulatory structures, rather than philosophical theory.

Theorists may find various motivations for developing a new field of ethical study. These include pragmatic concerns about limiting the scope or application of particular norms; the matching of ethics to more widely recognised categories of behaviour or activity; special attention to particular benefits/harms of specific practices; the distinct roles possessed by certain members of society; the desirability of systematic ethical attention in regard to a particular matter of social, political, or professional importance.

We believe that it is time now to recognise and develop the field of *Science Ethics*. Whilst, as we will describe, this is a limited field of ethics, it runs counter to most new subsets of practical philosophy by *broadening* the scope and range of practical philosophical analysis.

The roots of *Science Ethics* may be found in bioethics, which is defined as “the study of ethical, social, legal, philosophical and other related issues arising in health care and the biological sciences”.² However, there are two problems with bioethics.

First, there is a widely perceived conflation of ‘bioethics’ and ‘medical ethics’, suggesting that the range of concerns is limited to a fairly narrow band of activity, ignoring many issues bearing on life and the environment, and species other than humans. Some analysts have sought to overcome this contraction by defining the field of ‘Life Science Ethics’, defined as “the normative evaluation of human actions affecting living things.”³ We recognise and respect Life Science Ethics as representative of the complete face of bioethics, and welcome the call for wider analysis. Yet even this better conceived field—wherein ‘bioethics’ assumes its full significance—is insufficient.

¹ Building on earlier work from iSEI, including: Harris J, “Scientific research is a moral duty,” *Journal of Medical Ethics* (2005) 31:242-248; Chan SW & Harris J, “Free riders and pious sons: why science research remains obligatory,” *Bioethics* (2009) 23(3): 161-71; Chan S, Sulston J & Harris J, “Science and the social contract: On the purposes, uses and abuses of science,” in: Cockell M, Billotte J, Darbellay F & Waldvogel F (eds), “Common Knowledge: The Challenge of Transdisciplinarity”, *EPFL Press*, Lausanne (2010) 45-59; Zee YK, Chan SW, Harris J & Jayson G, “The ethical and scientific case for Phase IIC clinical trials,” *Lancet Oncology* (2010) 11(5): 410-1; Chan S, Zee Y-K, Jayson G & Harris J, “‘Risky’ research and participants’ interests: the case of Phase 2c clinical trials,” *Clinical Ethics* (2011) 6(2): 91-96.

² This is the definition provided in Article 2 of the constitution of the International Association of Bioethics, available at <http://bioethics-international.org/iab-2.0/constitution/iabconstitution.pdf>.

³ Gary L Comstock (ed), *Life Science Ethics*, (Wiley-Blackwell, 2002), p. xv.

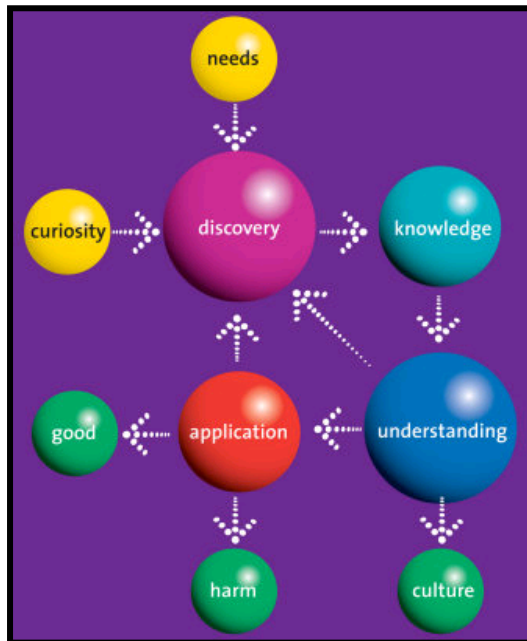
The second problem with bioethics is therefore that even where it encompasses matters relating to all forms of life, it fails to account suitably for ethics beyond the life sciences. The delineation of a field is found in its emphases as well as the work undertaken within it.

We therefore suggest that *Science Ethics* is an area of practical philosophy that demands critical attention in its own right. Practical responses to questions of life and death, harm and welfare, sustainability and containable costs, are simply not limited to understanding and innovations produced in the life sciences. As a field of inquiry, *Science Ethics* is concerned with the study and understanding of scientifically sound responses to matters of social and ethical importance and concern, and imperatives to direct scientific inquiry to specific research or analysis. *Science is both contained and constrained by Science Ethics, and the primary source of knowledge and understanding in the development of practical ethical norms.*

The development of *Science Ethics* presents the opportunity for enriched analyses, and also grand challenges in research and education. It demands the constant re-evaluation of questions of governance and resourcing across science; the exploration and articulation of limits to, and imperatives in, scientific inquiry; and importantly, the development of ethics curricula across science degrees. Ethics should be seen as an important and rightful part of the practices of science; not a formal and unwelcome regulatory bar or bureaucratic bore. Through the coordinated development of *Science Ethics*, the next generations of scientists will have rich understandings of the ethics of what they do, and be positioned to contextualise their work and study in a system of social responsibility.

For some time it has been accepted that science cannot be conducted simply in accordance with its own internal norms.⁴ Whilst good science is not anarchic, there may be good reasons either to limit scientific pursuits, or to advance particular areas of scientific inquiry. The imperatives to develop systematic, defensible, rigorous, ethical argument in relation to science are compelling. By presenting the case for *Science Ethics*, we align ourselves with others from across disciplines who share our concerns, and invite a wide school of critical theorists to join us in this crucial enterprise.

⁴ See eg Hans Jonas, "Freedom of Scientific Inquiry and the Public Interest," *Hastings Center Report* (1976) 6:4, 15-17; Sissela Bok, "Freedom and Risk," *Daedalus* (1978) 107:2, 115-127; Harvey Brooks, "The Problem of Research Priorities," (1978) *Daedalus* 107:2, 171-190; Mary M Cheh, "Government Control of Private Ideas—Striking a Balance Between Scientific Freedom and National Security," *Jurimetrics Journal* (1982) 23, 1-32; Peter Singer, "Ethics and the Limits of Scientific Freedom," *Monist* (1996) 79:2, 218-229; Heather E Douglas, "The Moral Responsibilities of Scientists (Tensions between Autonomy and Responsibility)," *American Philosophical Quarterly* (2003) 41:1, 59-68; Giordano S, Coggon J & Cappato M Eds. "Scientific Freedom". *Bloomsbury Academic* (2012).



The Institute for Science, Ethics and Innovation (iSEI) was established at The University of Manchester with the mission to observe and analyse the role and responsibilities of 21st Century science and innovation and to evaluate possible or desirable changes, towards building a better future for humanity.

Chair: Professor John Sulston

Director: Professor John Harris

Deputy Director: Sarah Chan

Contact:

Institute for Science, Ethics and Innovation

The University of Manchester

2.11 Williamson Building

Oxford Road

Manchester

M13 9PL

Email: Catherine.Spanswick@manchester.ac.uk or isei@manchester.ac.uk

Tel: 0161 275 7074

Web: www.manchester.ac.uk/isei



The University of Manchester
Institute for Science Ethics and Innovation