

This response was submitted to the consultation held by the Nuffield Council on Bioethics on Emerging biotechnologies between April 2011 and June 2011. The views expressed are solely those of the respondent(s) and not those of the Council.

Response to Nuffield Consultation on Emerging Biotechnologies

Please note: I have only answered those questions which I have encountered in my own work

Question 3

I believe that the emerging biotechnologies with the most profound ethical, legal and social implications are

i) technologies associated with regenerative medicine such as stem cells and tissue engineering. Technologies that promise to extend lifespan may have profound implications in already aging societies, with spiralling healthcare costs and questions about fair distribution of resources.

ii) GM crops and foods. Any biotechnology that promises to overcome the problems of food shortage in developing countries is to be welcomed. But governments and pharmaceutical firms need to ensure that these crops are safe, sustainable and, most of all, provided in a manner that complements and does not disrupt the agricultural infrastructure of the recipient countries or societies (as happened during the 1960-70s 'green revolution' in India)

Question 4

An obvious contemporary answer is research on adult stem cells and autologous transplantation (where patient's cells are grown into organs on a laboratory scaffold). Both these developments have been explicitly framed as solutions to pro-life unrest at the use of stem cells from early embryos.

Question 5

Organ transplantation offers a clear example of how cultural and geographical factors influence public rejection or acceptance of emerging biotechnologies. Several historians, anthropologists and sociologists have shown how public and professional responses to organ transplantation were shaped by differing social and geographical conditions. Although organ transplantation was initially controversial in Britain and the United States, due to a high failure rate and a prevailing suspicion of the medical profession (after Thalidomide, Tuskegee etc) it became more readily accepted from the 1980s onwards. In Japan and Germany, however, it remains far more contentious. In Japan, the heart is traditionally considered the seat of personal identity and many groups refuse to accept brain-death as the sole criterion for death. As a result, the removal of still-beating hearts from brain-dead patients is highly controversial and organ donation rates lag behind those elsewhere (see Margaret Lock's excellent book *Twice Dead*). In Germany, organ transplantation, and any research on patients or cadavers, is contentious due to ongoing discussion of Nazi experimentation on concentration camp inmates (see Linda Hogle's *Recovering the Nation's Body*). This historical legacy ensures that Germany also has more stringent regulation for embryo experiments and stem cells,

and is far less receptive to discussion of euthanasia than other European countries (evidenced by the negative reception to Peter Singer).

There are countless more examples I could give. Indeed, I believe it is very hard to find an instance where social, cultural and geographical factors have *not* influenced the development or reception of a new biotechnology.

Question 7

Several historians have shown how war provided good conditions for the development of certain surgical procedures (e.g., Roger Cooter). There is also good evidence that the conflict in Northern Ireland, and the prevalence of 'knee capping', provided a good environment for the development of new orthopaedic techniques between the 1960s and 1990s.

The civil rights emphasis on individual autonomy also provided a favourable backdrop for the development of reproductive technologies during the 1960s and 1970s, such as the Pill and IVF. Any opposition to these new biotechnologies could be overcome by claims that every woman had an inalienable right to control her own fertility or bear her own children (provided, in the latter case, that she was in a heterosexual relationship, or preferably married).

Question 9

I believe that social, cultural and geographical particularities have often been overlooked in debates surrounding the development of new biotechnologies, particularly how these factors determine what the major 'ethical' issues in different times and places. I am therefore glad that the Nuffield consultation is

soliciting views on the ways in which socio-cultural factors influence the development and reception of specific innovations.

Question 10

See my answer to Question 4 above, on how adult stem cells and autologous transplants have been framed (and perhaps developed) in response to unrest at the use of embryonic stem cells