Nuffield Council on Bioethics: Emerging biotechnologies - response form 2

Please feel free to answer as many or as few questions as you wish. There is no limit to the length of each answer.

Emerging technologies

1. How would you define an 'emerging technology' and an 'emerging biotechnology'? How have these terms been used by others?

Emerging technology is defined as a new technology in a various fields, such as electronics, energy, materials, biology and medicine, whereas emerging biotechnology is defined as a new technology in the restricted field of biology and medicine.

2. Do you think that there are features that are essential or common to emerging biotechnologies? (If so, please indicate what you think these are.)

Applicability to human welfare, such as production of medicine, bioenergy, or food

3. What currently emerging biotechnologies do you consider have the most important implications ethically, socially and legally?

Personal genome sequencing

Cultural, international and historical context

4. Are there examples where social, cultural and geographical factors have influenced the development of emerging biotechnologies (either in the past or currently)?

Venture capitalism in the USA, especially silicon valley, promoted the development of emerging biotechnologies.

5. Are there examples where social, cultural and geographical factors have influenced public acceptance or rejection of emerging biotechnologies?

Due to Japanese view of life and death, spread of organ transplantation from brain dead donor was delayed in Japan.

6. Are there examples where internationalisation or globalisation of research, markets and regulation have influenced the development of emerging biotechnologies?

Deregulation policy promoted the development or application of emerging biotechnologies in Singapore.

7. How have political traditions (such as liberal democracy) and political conditions (e.g. war) influenced the emergence of biotechnologies?

Liberal democracy facilitated emergence of biotechnology for human welfare, whereas war facilitated emergence of biotechnology for human destruction.

Ethical, policy and public engagement issues

8. Are there ethical or policy issues that are common to most or many emerging biotechnologies? Are there ethical or policy issues that are specific to emerging biotechnologies? Which of these, if any, are the most important?

Human rights

9. Do you think that some social and ethical themes are commonly overlooked in discussions about emerging biotechnologies? If so, what are they?

No. I think that human rights are properly defended in discussions about emerging biotechnologies.

10. What evidence is there that ethical, social and policy issues have affected decisions in (i) setting research priorities, (ii) setting priorities for technological development, and (iii) deploying emerging biotechnologies, in either the public or private sector?

Research using embryonic stem cells were prohibited in USA due to religious reson.

11. What ethical principles should be taken into account when considering emerging biotechnologies? Are any of these specific to emerging biotechnologies? Which are the most important?

Justice and right

12. Who should bear responsibility for decision making at each stage of the development of an emerging biotechnology? Is there a clear chain of accountability if a risk of adverse effects is realised?

Government

13. What roles have 'risk' and 'precaution' played in policy decisions concerning emerging biotechnologies?

Human cloning technology was prohibited.

14. To what extent is it possible or desirable to regulate emerging biotechnologies via a single framework as opposed to individually or in small clusters?

Because emerging biotechnologies occur in a various fields, it is desirable to regulate emerging biotechnologies individually or in small clusters.

15. What role should public opinion play in the development of policy around emerging biotechnologies?

Gathering various kinds of opinions for policy making

16. What public engagement activities are, or are not, particularly valuable with respect to emerging biotechnologies? How should we evaluate public engagement activities?

Workshops and lectures are valuable to enlighten people that emerging biotechnologies are useful to improve human welfare.

17. Is there something unique about emerging biotechnologies, relative to other complex areas of government policy making, that requires special kinds of public engagement outside the normal democratic channels?

Direct connection to life and death