

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.

## SENSE ABOUT SCIENCE

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### **Response to Nuffield Council on Bioethics: Emerging Biotechnologies consultation paper**

Dear Mr Finnegan

We do not work on any specific aspect of emerging technology, or how these fields should be regulated, and therefore are unable to respond in detail to this consultation. However, we have a number of observations based on our experience of public reaction to emerging technologies that may be relevant. These issues, which we have come across frequently in public discussion, will likely be very familiar to you. They suggest the broad principles we think are often forgotten in such debates.

Sense about Science is a UK-based charitable trust that equips people to make sense of science. We work with over 5,000 scientists, from Nobel prize winners to postdocs, to address misconceptions about controversial areas of science in public debate. Our activities and publications are used and shaped by community groups, civic bodies, patient organisations, information services, writers, publishers, educators, health services and many others.

#### **Public debates about emerging technologies**

We note that the emphasis of public debates – and in particular of media coverage – about controversial areas of science and medicine often lies on novelty being a dangerous thing. In fact, novelty is not inherently dangerous and new technologies may in reality reduce an existing hazard.

We have also seen that focusing attention on specific aspects of emerging research can distort public perception. For example, singling out GM as though it were a complete break from earlier research, rather than part of an evolving toolkit in plant breeding, created public misconception about the risk posed. In response to misconceptions in this area, we worked with the leading plant institutes in the UK to produce *Making Sense of GM* to explain what scientists are doing and why - reasoning which

had been almost impossible for anyone to find in the polemical GM row. In our experience, this type of intervention may be particularly valuable when communicating about emerging technologies as it equips people to sort through the noise surrounding an issue, and helps to reframe public debate.

### **Considering risks vs. benefits**

We have no specific comments on how to regulate emerging technologies, however, we feel it is important to consider, acknowledge, and share with the public the risks, benefits and also uncertainty inherent in an existing situation as well as those of new developments. We observe that the benefits of regulation for the public are frequently assumed rather than clarified, while consideration of the risks of failing to introduce new technologies is inconsistent. When the introduction of regulation is intended to be in the public interest, clear arguments for the benefits need to be made, and costs such as holding up valuable innovation need to be taken into account and openly discussed.

We note that public perception of the risks and benefits of emerging technologies are often affected by regulation. For instance, if the introduction of a regulatory framework aimed at addressing potential risks and reassuring the public is seen as proof of a risk, this can have the unintended consequence of raising public fears - as was the case in the GM debate.

Regulating an emerging technology on the basis of novelty - rather than a troubleshooting approach that asks 'What new questions does this pose?' - could place the focus on the wrong aspect of an issue, and has the potential to mislead or have directly harmful consequences. A particular issue was brought to our attention during discussions with synthetic biologists in the USA. It is possible that bacteria modified in order to make them safer - for example limiting how contagious they are - could be regulated more stringently having been modified than those which have not but pose a greater risk. Such regulation would fail to take into account the actual risk posed by a specific organism by regulating entirely on the basis of whether something is novel.

We would be happy to elaborate on any part of the response you think would be useful and look forward to hearing the Working Party report.

Yours sincerely

A handwritten signature in cursive script that reads "Leonor Sierra". The signature is written in dark ink and is positioned above the typed name and title.

Dr Leonor Sierra  
International Science and Policy Manager  
Sense About Science