

A framework for teaching ethics to bioscience students: Ben Mepham

1. There are many different approaches to addressing ethical issues, but for bioscience students one that appeals to *principles* is generally helpful, in that a systematic, rational approach accords well with their scientific training. The aim is to stimulate authentic ethical deliberation, without, on the one hand, putting students off or, on the other, suggesting that ethics is either facile or too complicated. Experience suggests the following approach works for most students.
2. Western ethical traditions are often said to stem from two quite distinct modes of reasoning, both of which however are widely acknowledged, and thus contribute to the reasoning most people apply to ethical questions.
3. The *utilitarian* approach, most famously articulated by Bentham and Mill (18/19th century) aims to provide justification for actions by maximising ‘pleasure’ over ‘pain’, (or, in other formulations, ‘benefit’ or ‘preference’ over ‘cost’ or ‘harm’). This consequentialist approach often appeals to a scientific outlook because it appears to depend on a ‘hedonic calculus’. While it is obviously incumbent on us to behave responsibly, alert to the consequences of our actions, utilitarianism has several logical and logistical limitations.
4. The *deontological* approach advanced by Kant (18th century) stresses the importance of rights and duties, irrespective of consequences. Categorical imperatives are the bedrock principles of this approach, which Kant grounded in reason not emotion. Most people do recognise the force of some absolute principles (e.g. ‘murder is always wrong’) but difficulties arise when respect for different categorical imperatives is in conflict.
5. The ancient Greeks placed emphasis on virtues, of which *justice* remains critical in modern democratic society. Rawls, the US political theorist, saw ‘justice as fairness’ as the basis of modern democratic society.
6. All three approaches may be said to contribute to the *common morality*, which forms the basis of the implicit (or rarely articulated) norms informing ethical reasoning in Western society.
7. US biomedical ethicists, Beauchamp and Childress, devised an approach to resolving ethical issues in modern medicine by appeal to four *prima facie* principles derived from the common morality (itself based on the approaches outlined in 3-5, above). Of course, it may not be possible to respect all principles fully.
8. Mepham has adapted this approach to ethical issues arising from modern biotechnology, which (unlike the simplest types of medical issue) usually entail consideration of impacts on several interest groups, e.g. consumers, farmers, farm animals, biota (animal and plants in the environment).
9. By applying three principles, viz. respect for wellbeing (utilitarianism), autonomy (Kantianism), justice (Rawlsianism), to the interests of the different interest groups a table (Matrix) is produced, which facilitates ethical deliberation and analysis.

10. Some of the specifications of the principle may appear more problematical than others, but generally the approach has received support from those who have employed it in workshops on specific issues.

Respect for:	WELLBEING	AUTONOMY	JUSTICE
PEOPLE IN THE AGRICULTURAL AND FOOD INDUSTRIES	Satisfactory income and working conditions	Appropriate freedom of action	Fair trade laws and practices
CITIZENS	Food safety and acceptability Quality of life	Democratic, informed choice e.g. of food	Availability of affordable food
FARM ANIMALS	Animal welfare	Behavioural freedom	Intrinsic value
THE ECOSYSTEM	Conservation	Biodiversity	Sustainability

An Ethical Matrix

An Ethical Matrix showing, in twelve individual cells, the interpretation of respect for the principles of wellbeing, autonomy and justice in terms appropriate to the interests of people working in the agricultural and food industries, citizens, farm animals and the ecosystem, respectively.

12. The Matrix is a conceptual tool. It aims to facilitate ethical reasoning, rational debate and transparency, and to identify areas of agreement and disagreement.

13. In some formulations, the ways in which a principle (e.g. animal welfare, or biodiversity) is respected or infringed by a prospective practice (e.g. a biotechnology) can be 'scored' (by assigning, say, +1 or -2). But since the different principles are likely to have different 'weights', no simple calculus of ethical acceptability is possible.

14. In other formulations, the Matrix merely serves to structure analysis, and is not used to 'score'.

15. A computerised version of the Matrix will be demonstrated at the EURSAFE congress in Toulouse (March, 2003).