

Monday February 14; 9.30 – 12.15 hrs.

Introduction: course outline and organisation Dr te Molder

Ethics of technology: from technology push to co-evolution of technology and society

Professor Korthals

First, three basic ethical approaches and their implications for genomics development will be discussed. Utilitarianism, the first one, emphasises the calculation of costs and benefits of this new development, with the aim to increase the greatest happiness of all. Deontology, the second one, stresses the rights of all involved, and is more disposed to draw red lines for genomics. The third, the deliberative approach, is concerned with deliberations and consultations among all involved and is in favour of encouraging not only technological but ethical development as well. No innovation without consultation! Secondly, the implications of the co-evolution model of technology and ethics will be analyzed, and applied to global issues of plant and food genomics. It turns out that we need new regulation and management systems of these innovations. Finally a five step scheme of solving ethical problems with genomics will be presented and discussed, which will of use in constructing future scenarios.

Literature

Keulartz, J., M. Korthals, & T. Swierstra (2001) You only live twice. Ethical deficiencies in dealing with genomics. *NWO essay*.

Shorett, J. , P. Rabinow & P. Billings (2003) The changing norms of the life sciences, *Nature Biotechnology*, 21, 123-125.

Keulartz, J., M. Schermer, M. Korthals & T. Swierstra (2004) Ethics in a technological culture. A programmatic proposal for a pragmatist approach, *Science, Technology and Human Values*, 29, 1, 3-29.

Tuesday February 15th; 9.30 – 12.15 hrs.

Expert-non-expert interaction in genomics: about reluctant citizens and united experts?

Dr te Molder and Dr Gutteling

Experts will play a crucial role in the upcoming debate on genomics. However, the trend for leaving communication about new technologies to communication specialists, science journalists and such like has, to a large extent, made their role invisible. All too eagerly experts refer to the information officer when it concerns controversies within sciences involved or uncertainties over the consequences of a particular technology. In the case of genomics, the pressure is on the experts to avoid associations with the loaded debate on genetic modifications whenever possible. We will discuss the possible consequences of this strategy, and the ways in which it corresponds with wider assumptions about the relationship between experts and laypeople. It is proposed to design new conceptualisations of experts and expertise so as to improve current expert-non-expert interaction.

Literature

Molder, H.F.M. te & J. Gutteling (2003) The issue of food genomics: about reluctant citizens and united experts. In R. van Est, L. Hanssen & O. Crapels (Eds). *Genes for*

your food: food for your genes: Societal issues and dilemmas in food genomics (117-131). The Hague: Rathenau Institute. Working document 92.

Cook, G., Pieri, E. & P. Robbins (2004) The scientists think and the public feels: Expert perceptions of the discourse of GM food. *Discourse and Society*, 15, 433-449.

Marris, C., Wynne, B., Simmons, P. & S. Weldon (2001) *PABE* [Public Perceptions of Agricultural Biotechnologies in Europe] *final report, summary* (pp.1-7). Research project funded by EC-DG12.

Wednesday February 16; 9.30 – 12.15 hrs.

Technology development and assessment in the field of genomics

Dr Gremmen

Technology assessment is a multidisciplinary approach aiming in general to assess the societal consequences of an innovation. It includes a stakeholder analysis and integrates results from different fields, like economics, law, sociology, and ethics. To predict the societal fate of genomics is difficult because it still is in its infancy. However, this situation also allows for an early embedding of genomics in society. More recent kinds of technology assessment, i.e. constructive technology assessment (CTA) and participatory technology assessment (PTA), were developed for this purpose. In this part of the course CTA en PTA will be explained and applied to genomics research.

Literature

Gremmen, B. *Genomics and TA* (working document)

Parts from Rip, A. et al. (1995) *Managing Technology in Society: The approach of Constructive Technology Assessment*. London: Pinter.

Recommended:

Gibbons, M. et al. (1994) *The new production of knowledge: The dynamics of science and research in contemporary societies*. London: Sage.

Grin, J. et al. (1996) *Interactive technology assessment: a guide*. The Hague: Rathenau Institute.

Thursday February 17; 9.30 – 12.15 hrs.

Consumer behaviour and risk communication: the case of genomics

Professor Frewer and dr Casimir

The purposeful application of knowledge can increase safety, sustainability and more insight in ecological systems. However, the development of new technologies always involves uncertainty, since we do not know what the future will bring, or what the long-term effects of new products are. The voice of citizens and consumers is underrepresented because of a systematic information backlog compared to producers. The result of the genomics development could be a medicalisation of the consumer: for every person a personalized diet, five different diets within one household; the main cook (the housewife?) as the one who is guarding the health of her family members. These and other scenarios will be critically discussed and tested for their future relevance.

Literature

Rowe, G. and Frewer, L.J. (2004) Evaluating public participation exercises: A research agenda. *Science, Technology, & Human Values*, 29, 512-556.

Recommended:

Casimir, G. J. and C. E. Dutilh (2003) Sustainability: a gender studies perspective. *International Journal of Consumer Studies*, 27, 316-325.

Casimir, G. J. and H. Moerbeek (2004) Gender differences in consumers' acceptance of genetically modified foods. *International Journal of Consumer Studies*. (in progress)

L. Frewer, J. Lassen, B. Kettlitz, J. Scholderer, V. Beekman, K.G. Berdahl (2004) *Societal aspects of genetically modified foods. Food and Chemical Toxicology* 42 (7, special issue *Entransfood*) 1181-1193.

All afternoons (February 14 –17th; 13.30 – 16.30 hrs.)

Group assignment 'Future scenarios in genomics'

In the afternoons, students start working on a case study involving a future scenario for a specific area in genomics research. The aim of this part of the course is to further *integrate natural and social science expertise*. Insights from the morning lectures will be applied and elaborated. A list of possible topics for future scenarios from which students are free to choose will be provided at the start.

Friday February 18; no programme

Monday February 21; 9.30 –12.15 hrs.

Stakeholder and public assessments of genomics--participation from technology design to commercialization

Guest lecture by Professor Edna Einsiedel (University of Calgary - Canada)

Professor Einsiedel is University Professor and Professor of Communication Studies.

Her research interests lie in the area of genomics and biotechnology in the public sphere, in which field she is widely known. More generally, she is interested in the role of controversy in technology innovation and social studies of technology design and assessment.

Tuesday February 22nd –Thursday February 24th

Students start writing an individual essay on a topic (preferably) related to their own genomics research domain, and drawing in particular on the literature used in one of the 5 morning lectures.

Friday February 25

The future genomics society: a public hearing.

Students will use their future scenarios as input for a public hearing with genomics experts on recent and future developments in different areas of genomics research. Contributions to the expert panel will be made by Prof. Michael Müller and dr. Harry Wichers (to be confirmed).