

Sensitive Technologies and European Public Ethics – STEPE Second Periodic Report (reporting period months 19-44)

Publishable Summary

1. Summary description of the project context and the main objectives

Past developments in the domain of modern biotechnology have shown that the consideration of public concerns is a key contribution to sustainable technology development. Such concerns are likely to not only be based on scientific understandings of risks but also to involve ethical issues and value judgements about "*how we want to live*". This is especially likely with sensitive technologies in the life sciences such as embryonic stem cell research, nanotechnology and synthetic biology. The objective of the STEPE project is to investigate these broader public concerns - which we conceptualise as "public ethics". The project is innovative in contributing to the *early identification of potentially controversial technological developments and to the understanding of the related issues of public ethics*, by systematically considering both the views of key stakeholders in technological, political and societal life and the perceptions of European citizens in 25 European member states.

As a key data source, the triennial Eurobarometer survey on Biotechnology and the Life Sciences is one key resource. The 2005 survey, for example, received wide coverage and produced findings that were noted by the European Parliament and the European Commission. The 2010 wave of the survey that will be produced and analysed by the STEPE project integrates current emerging issues in order to guarantee an up-to-date social observatory in the continuously changing field of the life sciences.

2. Description of the work performed and the main results achieved

The objectives for the reporting period were as follows:

- a. Produce a step change in the exploitation of European public opinion data by demonstrating that modern statistical analysis can produce better quality information from survey data and by showing social researchers how this can be achieved in practice (WP4)*

Over the years Eurobarometer reports have generated considerable attention and influenced policy. Standard procedures that document top-line percentages for each Member State are valuable. However, analyses that go beyond raw percentages are important but rarely done. WP4 aimed to produce a step change in the exploitation of European public opinion data by demonstrating that modern statistical analysis can produce better quality information from survey data and by showing social researchers how this can be achieved in practice. A user guide on statistical methodologies for cross-national comparisons was developed and published on the STEPE website. In this guide, statistical methods for scale construction, segmentation and multi-level modelling were used in order to: (a) examine whether the survey questions operate comparably across different countries; (b) assess ways of segmenting Europeans and (c) European Member States; and (d) analyse how values and attitudes are affected by the multi-level systems in which they occur.

- b. Analyse the data of the 2010 Eurobarometer Survey on the Life Sciences and Sensitive Technologies, identifying general patterns and trends in relation to sensitive technologies in all European member states (WP5)*

Tables of descriptive statistics were produced and the analyses conducted were then integrated into the report "Europeans and Biotechnology in 2010: Winds of change?". The 2010 Eurobarometer survey on the Life Sciences and Biotechnology, based on representative samples from 32 European countries, hints at a new era in the relations between science and society. We see less criticism of technology based on distrust in government and industry; more enthusiasm for novel technologies and a more sophisticated appraisal of what technologies offer in terms of benefits, safety and sustainability. Europeans want regulation in the public interest and a voice in such regulation when social values are at stake; we highlight an emerging European landscape of social value differences that shape people's views of technologies.

- c. Integrate the analyses and systematically consider contextualising background information (WP6)*

The aim of WP6 was to integrate the analyses conducted in WP4 and WP5 and to systematically consider contextualising background information. Such contextualisation gives insights into European and national developments that provide the background for a more valid interpretation of the survey data. The report 'Sensitive technologies and European Public Ethics: 40 years of modern biotechnology' was produced and published on the project's website. The report starts discussing the development in and around biotechnology from its beginnings in the mid-1970s. The public's concerns in relation to biotechnology are reviewed in relation to trust in the system, as well as the properties of the products and the processes applied. The Eurobarometer surveys on biotechnology give some insights into public imaginaries that go beyond frequently heard opinions about what 'the public' thinks. Importantly, 'the public' is not the homogenous entity many assume when talking about 'public opinion'.

- d. Communicate the goals and results of the project to the wide community of actors interested in STEPE activities (WP7)*

The aim of WP7 was to communicate the goals and results of the project to the wide community of actors interested in STEPE activities. A website (stepe.eu) presenting detailed information about the project was developed and updated on a regular basis. Papers have been presented at European conferences and published in different journals.

3. Description of the expected final results and their potential impacts and use

Through publications in academic journals, conference presentations and participation in workshops the STEPE project has:

- a. Raised the profile of the concept of public ethics in scientific and technological innovation; explained the bases of public ethics and the ways in which these inform public perceptions, and pointed to the nature of innovations that are more likely to achieve public acceptance. We have shown that the public are not irrational or suffering deficits, but rather that their perceptions of science emerge, in part, from a background of ethical issues related to equity, responsibility and social values. Thus a technology is assessed through a number of perspective that include benefits and risks, distributional issues,

values and the ways in which public policies for science deal with these issues. In so doing the STEPE project provides support for decision makers at all policy levels, scientists and innovators to adopt a more dynamic and inclusive approach to the governance of the science and society relationship as envisaged in the concept of Responsible Research and Innovation.

- b. Set a higher bar for standards and ambitions in the conduct and analysis of comparative quantitative research in the social sciences. Our accessible technical reports explain how to achieve best practice by integrating an interdisciplinary and multi-method approach that simultaneously follows the highest standards in applying social research methods and in ensuring validity of the interpretation. Academic publications arising from the STEPE project have shown the benefits of using state of the art developments in statistical comparative analysis for the fuller exploitation of Eurobarometer survey data, yielding greater value for money from the considerable resources directed towards the assessment of public opinion. In this regard the methodological and analytic lessons of the STEPE project are of central relevance to commissioning of all new Eurobarometer surveys
- c. The series of Eurobarometer surveys on the Life Sciences and Biotechnology have had a considerable impact over the last decade. The reports have been widely consulted in European and National contexts by policy makers, people in industry and science, civil society organisations and academics. Articles presenting the key findings from earlier surveys have been published in Science, Nature, Nature Biotechnology, Nature Materials, Public Understanding of Science and other academic journals. The 2010 Eurobarometer survey has built upon and sustained this high visibility with academic papers directed towards the social scientific community, scientists and public officials. In particular papers in Nature, Nature Biotechnology, Nature Review Genetics and the European Journal of Human Genetics focusing on cisgenics, stem cell research and biobanks, have featured in discussions and debates in a number of EU member states.