

Manuskript, erschienen in: Journal of Risk Research, vol. 3, Heft3/2000, S.219-22 (Copyright beim Verlag)

Marion Dreyer/Bernhard Gill

Germany: Continued 'elite precaution' alongside continued public opposition

Marion Dreyer and Bernhard Gill are at Institute of Sociology, University of Munich, Konradstrasse 6, D-80801 München, Germany. Tel: +49 89 2180 3222; Fax: +49 89 2180 2922; E-mail Dreyer: Marion.Dreyer@lrz.uni-muenchen.de; E-mail Gill: Bernhard.Gill@lrz.uni-muenchen.de

Manuskript, erschienen in: Journal of Risk Research, vol. 3, Heft3/2000, S.219-22 (Copyright beim Verlag)

Abstract

Germany is the EU member state with the most difficult marketing situation (besides Austria) as regards genetically modified (gm) crops and food. At the same time, it shows the least administrative effort to respond to the reasons for this situation - public suspicion and protest. Regulators advocate specific precaution-related measures, which, however, do not relate to the primary demands of critics and opponents. The administration's claim to prioritize scientific evidence over politics constructs the administration and the public as two separated worlds without real mediation. This contrasts with the ever growing demands for public participation. Participation in a broader sense, however, is not dependent on formal opportunities. In this conflict, NGOs bring up issues of democracy, transparency and precaution by means of public mobilization. An anticipated consumer boycott and, following from this, a commercial blockage of gm products are the effects of this strategy.

These dynamics can be analysed as political tensions brought about by a politico-administrative system which sticks to a legalistic-scientific approach when dealing with 'modernization risks'. At the level of formal politics, reflexive modernization occurs without 'reflexive politics', that is, without measures to overcome prognostic uncertainty by trust and participation.

Keywords:

reflexive modernization; precaution; gm crops and food; commercialisation; anticipated consumer boycott

Manuskript, erschienen in: Journal of Risk Research, vol. 3, Heft3/2000, S.219-22 (Copyright beim Verlag)

Introduction

In Germany, political debate about modern biotechnology is more than a decade old and is still characterized by its intensity and polarization. The recession after German reunification and the growing prominence of economic affairs in the early 1990s detracted attention somewhat from the biotechnology issue, at least in official circles. Outside the formal political arena, however, modern biotechnology remained a prominent issue. Widespread protests and formal objections by NGOs and local groups about field trials continued.

This essay is an analysis of the new stage that the biotechnology conflict has reached with the marketing of gm crops in the second half of the 1990s. First, the essay points out the tensions resulting from public opposition, on the one hand, and promotional policy of official politics, on the other. It then points out, that in this situation the regulators resort to a legalistic and scientific approach. Then, the essay analyses the effects of NGO politics upon the dynamics of commercialisation and the political strategy of the technology providers, the agro-chemical industry. Finally, it discusses the conflict dynamics in terms of the theory of reflexive modernization.

Public opposition

As in other EU-member states, commercialisation became a public issue in Germany when gm food threatened to reach the consumer markets. Public debate erupted with the imports from the USA of gm soyabean in the autumn of 1996. Above all, the refusal of the US agro-food system to segregate and label conventional and gm soyabean provoked massive criticism and attracted broad media coverage. Environmental NGOs accused the producer, the American biotechnology company Monsanto, of 'force-feeding' European consumers genetically modified soya.

The use of modern biotechnology in pharmaceutical production has gained somewhat in acceptance. By contrast, the public remains sceptical about the technology's use in agriculture and extremely critical of its use in food production (Hampel and Renn, 1998: 10-11; Hampel et al., 1998). Public opposition is voiced and mobilized by environmental organizations (and to a lesser extent consumer organizations). They demand comprehensive labelling as a prerequisite for free consumer choice concerning products deemed to be associated with ecological uncertainties and risks and possible health effects.

This market- and consumer-related strategy, designed to keep the market of GM products as restricted as possible, may be understood as a 'rational' response to a politico-administrative system which is (at the federal level) relatively closed to environmental pressure groups and increasingly shows a political bias in favor of commercialisation.

Manuskript, erschienen in: Journal of Risk Research, vol. 3, Heft3/2000, S.219-22 (Copyright beim Verlag)

While the public, through opinion surveys (see European Commission, 1997) and protest activities, expresses continued scepticism about modern biotechnology, both big political parties have since the 1990s increasingly expressed their general support for the new technology on the grounds of its allegedly high economic potential. The linkage to economic issues is typically designed as a 'rhetorical upgrading' of the technology in general and not as an endorsement for specific applications such as gm crops and food. Indeed, it would be difficult to make a link, for example, between gm oilseed rape and national competitiveness.

The Christian Democratic Union and the Social Democratic Party see modern biotechnology as a key technology comparable to microelectronics and information and communication technologies. In the face of the competitive pressures of a globalizing economy, and ever-growing unemployment, the economic framing of modern biotechnology is directed at presenting the public a *Hoffnungsträger*, in the sense of a promising tool for innovation, a stable job market and the maintenance of international competitiveness. The portrayal of modern biotechnology as a powerful weapon in the global struggle over jobs and markets is basically wishful thinking (Dolata, 1997). This approach has continued under the new government coalition, formed by the Social Democratic Party and the Green Party (from 1982 to 1998, the German government was a coalition between the Christian Democrats and the Liberals). It forms part of the long-standing prominent debate about Germany as a business location as it has been fostered in the 1990s by German re-unification, economic recession, and growing unemployment.

The regulatory approach of the Health Ministry and the Genetics/Genetic Engineering Department of the Robert Koch-Institut (RKI), which is assigned the role of the national Competent Authority (CA) for the approval of GMO releases, has to be seen against the background of this mainly positive attitude of official politics towards commercial biotechnology. (As regards gm food, responsibility is shared between RKI and the food safety agency of the Health Ministry, BgVV, but so far, Germany lacks any practical experience in acting as a rapporteur for genetically modified food products.)

'Elite precaution'

The official policy approach of the RKI is to keep out of, and remain uninfluenced by, public debate. This attitude of political independence is typical of the German administration in environmental conflicts, at least as far as the federal level is concerned. Administrative decisions are officially justified as being based on the law and supposedly 'objective' scientific expertise, not on political influence, mediation and compromise (Gill, 1996).

As far as the RKI's basic approach, not necessarily its decision making, is concerned, however, political bias is indicated in so far as the German CA participates in the *Gesprächskreis Grüne Gentechnik* ('talks circle on Green Genetic Engineering') which may be described as a broad-based lobby group including mainly actors with a vested interest in commercial crop and food

Manuskript, erschienen in: Journal of Risk Research, vol. 3, Heft3/2000, S.219-22 (Copyright beim Verlag)

biotechnology (see below). The Federal Environmental Agency (UBA), which devotes more attention to ecological issues and has less influence than the RKI in the approval procedure, does not form part of the initiative; nor are environmental, consumer and other NGOs members.

The institutional tensions between the RKI and UBA as regards environmental precaution, which could open up opportunities for influence of environmental pressure groups, are not aired publicly but occur internally, behind closed doors. Although the UBA is less reluctant than the RKI to become involved in public debate, it avoids open criticism of RKI's position or that of other administrative bodies involved in the approval procedures.

Generally, inter-ministerial communication and co-operation appears to work well. The question of whether and how to organize a combined evaluation of herbicide-tolerant crops and complementary herbicides, for example, has been settled by an inter-ministerial agreement among the RKI, UBA, BgVV, the Federal Biological Research Centre for Agriculture and Forestry (BBA), and the Federal Office for Plant Varieties (BSA). It seems reasonable to assume that internal understanding among the administrative bodies involved in the approval procedures closes rather than opens possibilities for public influence. Inter-ministerial communication and co-operation closes regulatory gaps which otherwise could give NGOs the opportunity to intervene. The debate is internal, not open to public scrutiny.

While it is difficult to judge whether opposition and protest really has no influence at all on the RKI's market approval statements and decisions, there is no obvious accommodation of public suspicion and protest. The CA interprets the Deliberate Release Directive as requiring assessment only of narrowly-defined 'adverse effects'. It regards present agricultural practices as a normative baseline for evaluating environmental effects of gm crops. In the RKI's view, the products which have already been decided on, have no plausible effects which would worsen the present situation. As a result the CA, for example, judged that it would be acceptable if glufosinate became ineffective for controlling weeds in oilseed rape. The CA regards the development of resistance as a classic agronomic-economic problem, not as statutorily defined environmental harm. By contrast, NGOs request evidence that a gm crop would provide an environmental improvement over the present situation and would not preclude any potential options for sustainable agriculture.

The RKI's 'precautionary approach' thus basically differs from that of its critics in that it bases its decisions on a rather narrow interpretation of the relevant Directive, which excludes the broader environmental concerns underlying the concepts of sustainable agriculture and biodiversity. At the same time, it advocates specific precaution-related measures. These measures are not based on the Deliberate Release Directive but take the form of general, and basically optional, advice.

They include, first, the establishment of a gene register. (On the initiative of RKI, the possibility to establish such a register was included in EC Decision 97/35, amending Directive 90/220 and requiring labelling of all gm seeds as genetically modified.) The register is planned as a collection

Manuskript, erschienen in: Journal of Risk Research, vol. 3, Heft3/2000, S.219-22 (Copyright beim Verlag)

of information on transgenes released into the general 'gene pool'. The main idea behind it is that unintended and unpredictable interactions between different genetic modifications could cause the loss of the special use of a gm product or even reproduce hazards which the original genetic modification was to remove (for example, by re-activation of the production of an unwanted substance such as an allergen). The information provided by the gene register is meant to provide the basis for a technology use which takes these possible interactions into account (interview, RKI 16.10.98).

The same idea of risk precaution and preservation of product use is behind the RKI's second measure, advising applicants to restrict gene inserts to 'genes of interest' (interview, RKI 15.04.98). Limiting inserted genes to those which are essential to the intended transformation reduces the probability of interactions, which will increase with the number of genes introduced into the general gene pool.

A third measure is market stage monitoring. In the RKI's view, the knowledge gained from this measure could serve as a basis for future risk assessments and more complex approval decisions. For this reason, the RKI advocates market stage monitoring for herbicide-tolerant oilseed rape. The crop's hybridization capacity provides a special opportunity to detect readily measurable effects of a single-gene trait and thus facilitated 'learning for the future' (Buhk, 1997: 12). While NGOs cite inadvertent hybridization as a risk, the German CA welcomes such an effect as beneficial for advancing scientific knowledge.

It is possible that these three precaution-related measures are linked to domestic pressures. However, they do not relate to the primary demands of critics and opponents. Labelling, for example, is not a special concern of the RKI. It considers comprehensive labelling to be an EU measure that is not scientifically grounded but 'merely' responds to political constraints. Perhaps the measures are more closely linked to precaution-related debates at EU level than to domestic debates. It seems reasonable to assume that the Article 21 committee, which provides the forum of national representation in the EU approval procedure, is used by national CAs as an opportunity to gain a reputation for science-based precaution, whether related to safety or economic advantage.

NGO politics

Environmental NGOs, opposed to gm crops and food, face a lack of access to political and administrative decision-making and a technology-friendly voting behavior of the approval authority. They react to this situation with a strategic choice: the decision to concentrate on a market- and consumer-oriented policy that resorts to expressive and antagonistic forms of protest.

Environmental organizations and local groups continue in their attempts to delay or obstruct field trials by formal objections and protest actions. The recent increase in the number of field trials,

Manuskript, erschienen in: Journal of Risk Research, vol. 3, Heft3/2000, S.219-22 (Copyright beim Verlag)

however, has importantly lowered the effectiveness of this protest strategy. This development together with the US exports of gm soya and widespread public opposition to gm food have induced environmental NGOs such as the German Federation for Environment and Nature Conservation (BUND) to focus on the food market in their struggle against the use of agricultural and food biotechnology. Greenpeace entered the biotechnology debate only since gm crops used for food production have reached the market stage. With Greenpeace the opponent side has gained support by an influential, very professionally working environmental organization which has run an extensive campaign against the commercialisation of gm soya.

The environmental organizations Greenpeace and BUND are probably the NGOs most actively involved in this market-focused phase of the biotechnology conflict. Expectedly, consumer organizations do play a role. They are, however, much less broadly and intensively involved than environmental organizations. This may be explained by the following traditional characteristics of German consumer NGOs. Typically, they are politically moderate, semi-public organizations (most of them receive public funds), which aim at increasing the individual consumer's utility rather than protecting and advancing public goods such as environmental integrity. Further, they usually engage more actively in consumer risk debates in which there is evidence rather than uncertainty about negative effects.

Not surprisingly, the most actively involved consumer organization is the *Verbraucher Initiative* (VI) which is financially independent and generally engaged in broader risk/uncertainty politics. Its main objective in the conflict at issue is consumer information and free consumer choice. Food safety is not a major concern; the key concern is transparency.

While consumer organizations act only low level on the issue of gm food safety, this issue forms an integral part of the uncertainty/risk politics of environmental NGOs. A BUND publication on gm food, for example, states that "food is becoming Russian roulette with the fork especially for allergic persons" (BUND, 1996: 1; translation by the authors). From the outset of the biotechnology controversy, the protest of environmental NGOs was not exclusively based on environmental issues. It is part of their general strategy to deal with environmentally relevant issues in amalgamation with further concerns associated with the environment: such as concerns for human and animal health, ethics, or global inequalities. Accordingly, in the debate on gm crops and food environmental and health concerns are tied into an argumentative package.

The objective of environmental NGOs is more far-reaching than that of the *Verbraucher Initiative*. The policy of BUND and Greenpeace is designed to keep gm food as widely as possible from the German market and, finally, prevent cultivation of gm crops. A key activity for this objective is the struggle for a comprehensive labelling policy. Comprehensive labelling is the basic prerequisite for informed consumer choice and the establishment of a market for non-gm foods. Because informed consumer choice is the major concern of consumer organizations,

Manuskript, erschienen in: Journal of Risk Research, vol. 3, Heft3/2000, S.219-22 (Copyright beim Verlag)

environmental and consumer NGOs have lobbied for strict labelling at federal and EU-level in a joint effort.

At *Länder* level, (in Bavaria and Lower Saxony), church and environmental NGOs initiated a referendum (*Volksbegehren*) on the provision of a statutory basis for 'negative' (non-gm) labelling. In view of the seemingly dilatory policy at EU level concerning the implementation of regulations on mandatory 'positive' labelling, and the labelling gaps left by the EU Novel Food Regulation, the NGOs wanted additional regulatory initiatives at national/*Länder* level for a voluntary labelling scheme for foods produced *without* genetic engineering. The pressure that the *Länder* initiatives have brought to bear on the federal government has since resulted in a federal regulation concerning the voluntary labelling of such foods. It defines strict labelling criteria, based on the gm process rather than on detectability criteria, and is welcomed by the initiators of the referendum (FoEE, 1998b, p.5). Consumer organizations did not openly support this initiative. The *Verbraucher Initiative*, for example, sees a main problem in deciding whether products were 'contaminated' deliberately or accidentally with gm resources.

In the efforts of BUND and Greenpeace at keeping gm food from the market, activities directed at public opinion formation play a major role. These activities initially are aimed at convincing consumers not to buy gm food. The policy of public mobilization and opinion formation builds mainly on expressive, publicity-oriented, confrontational forms of protest. Examples of such symbolic events are the BUND Germany tour with a giant inflatable "monster tomato" (BUND, 1996), the occupation of the Unilever building in Hamburg by Greenpeace activists and the organization's more recent 'field actions' concerning the growing of Bt maize by the Swiss company Novartis in Germany. One of the two fields which Greenpeace activists detected was marked with a huge banner (of 400 square metres) carrying an 'X' as a symbol of genetic engineering and the label 'Beware, genetically manipulated'. The maize plants in the other field were mown down and tipped in front of an incinerator belonging to Novartis in Basel (Riewenherm, 1998: 129).

The second pillar of the policy of public mobilization is information provision. A key activity is here the so-called 'Greenpeace-Einkaufsnetz' (Greenpeace-shopping net), a 'join in campaign' which the environmental organization started in March 1996. In the context of this information campaign, Greenpeace provides interested groups and individuals with a list of retailers and producers who - according to their own information - do not use gm soyabean or who advocate the labelling of products produced from gm soyabean. The campaign was meant to allow 'informed purchase' before the EU-labelling regulations entered into force. Moreover, Greenpeace regularly orders analyses of different food products in order to obtain information about the diffusion of gm soyabean in food production. The Internet serves as one medium to publicise this kind of information.

Manuskript, erschienen in: Journal of Risk Research, vol. 3, Heft3/2000, S.219-22 (Copyright beim Verlag)

Besides public mobilization, Greenpeace and BUND pursue a policy of persuasion as regards intermediaries and retailers. It seeks to convince these economic actors of the ecological advantages and economic opportunities of selling non-gm food. Part of this policy is to trace and provide information about suppliers of non-gm raw material worldwide.

The commercialisation climate thus is characterized by NGO watchdog activities, carrying the risk of stigmatization of any gm product appearing in the shops and also the respective company, and a low consumer acceptance of these products repeatedly displayed in public opinion surveys. These circumstances have brought significant pressure to bear on actors with a vested interest in commercialization. The agro-food industry and the retail sector have responded to the hostile marketing situation in economic as well as political terms. Economically, the deterrent effects of public non-acceptance, NGO watchdog activities and strict labelling regulations have provoked a 'policy of avoidance' as regards gm raw material and products. Politically, the response to the critical situation includes an intensification of public relations, a special effort to comply with the relevant regulations, and the attempt to join forces in a broad-based lobby group.

Blockage of marketing

Apparently, the retail sector and the food industry consider it highly likely that the negative public attitudes revealed by surveys, and NGO mobilization, will translate into a far-reaching refusal by consumers to buy gm products and/or more generally the products of those retailers and enterprises selling such products.

Neither before the EC labelling Regulation 1139/98 for gm soya and maize came into force in September 1998, nor shortly after this date, could products labelled as gm be found on supermarket shelves. Spot-checks for gm soya ordered by Greenpeace, as well as spot-checks carried out by the responsible *Länder* control agencies, have shown that products containing modified soya are so far only of peripheral importance on the German market. The reason is that large parts of the retail sector, the economic sector closest to the individual consumer and thus more directly confronted with consumer demands, seeks supplies of non-gm products.

The pressure that the retail sector brings to bear on its suppliers in turn has induced the food industry, itself open to the risk of stigmatization and boycott, to avoid the use of gm material as far as possible. To avoid GM soya, it has resorted to using conventional soya still in store, supply contracts for non-gm raw material, and modified recipes (for example, substituting soyabean oil by rape or sunflower oil). In food industry circles, it seems to be generally felt that the first to market gm products will have to pay the price of a loss in sales and negative public attention. The general view is: 'nobody wants to be the first'. Nestlé Germany did announce that it would take the risk of the 'first-mover-disadvantage' and market its first product labelled gm in September

Manuskript, erschienen in: Journal of Risk Research, vol. 3, Heft3/2000, S.219-22 (Copyright beim Verlag)

1998 (a chocolate bar called 'Butterfinger' made with genetically modified maize). However, so far it seems to be only service stations which sell the product.

In sum, the anticipated consumer refusal and the defensive attitude of food retailers, who act, so to speak, as the 'final gate' to the consumer market, has brought about a 'quasi blockage' of the marketing of gm food in Germany (see Behrens *et al.*, 1997: 101).

Policy of accomodation and joining forces

One way in which the technology providers, the agro-chemical industry, have reacted to this blockage is by an increase in the effort directed at public relations.

A more indirect way in which they have sought to improve the commercial climate is by strict compliance with regulatory demands and administrative advice. This 'policy of accomodation' contrasts with the deregulatory pressures of the mid-1990s (Gill, 1996). Such pressures still exist, but they have lost in importance. Interviews with representatives of industry and administration suggest that the agro-chemical industry now acknowledges a greater dependence on regulatory procedures as a means to gain public acceptance. Apparently, it puts considerable effort into comprehensive compliance with regulatory demands as well as into accomodation of administrative advice which goes beyond obligatory requirements. AgrEvo, for example, on request of the Directorate General (DG) 24 (Consumer Issues) of the European Commission complemented its application documents for gm oilseed rape with a proposal for a monitoring programme. As an AgrEvo representative puts it: 'As an applicant one clutches at every straw' (interview, AgrEvo 20.04.98).

Further, the problems of venturing into commercialization has induced the technology providers to join forces with the other economic sectors involved to institutionalize the sharing of information and co-ordination of lobbying activity. On the initiative of Novartis, the *Gesprächskreis Grüne Gentechnik* (GGG) was founded in February 1997. The 'talks circle', which sees itself as a confidential expert group (interview, GGG 08.04.98), may be described as a broad-based lobby group with the support of the German CA.

The RKI is one participant of the co-operative endeavour which includes major associations of the crop/feed/food marketing chain, one of the biggest food enterprises, and the major technology providers. While Monsanto initially did not participate, the company now takes an active part in the group (interview, GGG 08.04.98). Presumably, its participation has been used as an opportunity to bring the company 'into line' with the more sensitive European/German approach to commercialization.

The overall aims of the group are to discuss issues of introducing, processing and selling genetically modified crops, to exchange information, experience and opinions (especially about

Manuskript, erschienen in: Journal of Risk Research, vol. 3, Heft3/2000, S.219-22 (Copyright beim Verlag)

commercial practices and supply sources) and to come to joint lobbying positions on the basis of this exchange.

Extensive public relations, the policy of regulatory accomodation, and the co-operative endeavour in lobbying indicate: The new NGO strategies have brought great pressure to bear on the technology providers.

Discussion and conclusion

According to the theory of reflexive modernization (Beck 1986), modern societies are confronted with a new kind of hazards which are not conceivable with the human sense, not clearly definable and not insurable. As a response, regulations have been established in the field of modern biotechnology since the 1970s which for the first time in history tries to operate with an open search horizon. The aim is to foresee and avoid negative effects which have still to be defined within the process of regulation itself (Gill 1998, 1999). This regulation was also implemented in Germany but into a traditional administrative setting with a science-based legalistic approach. This approach does not take into consideration that perceptions of 'risk' and 'safety' depend on participation and trust and that the absence of risks can never be positively proven (Gill 1996).

As a consequence, Germany appears as the EU member state with the most difficult marketing situation (besides Austria) and the least administrative effort to respond to the reasons for this situation - public suspicion and protest. The administration's claim to prioritize scientific evidence over politics constructs the administration and the public as two separated worlds without real mediation.

This contrasts with the ever growing demands for participation from NGOs, local groups, and citizens, who want to have a say in political decisions about contested technology. However, participation in a broader sense is not dependent on formal opportunities. In this conflict, environmental organizations bring up issues of democracy, transparency and precaution by means of public mobilization, and this policy has some effect. Corresponding to the low consumer acceptance, it has led to an 'anticipated' consumer boycott and commercial blockage. This, in turn, has led the technology providers, the agrochemical industry, to revise their political strategies in the biotechnology conflict. They increasingly have come to identify obedience to administrative measures as a means to gain public trust and acceptance.

Thus, in Germany reflexive modernization takes place without reflexive politics. The need for precaution is strongly accepted within society - in terms of a more far reaching cognitive anticipation of potential consequences. But none of the opposing parties admits - publicly - the necessarily involved uncertainties of far reaching anticipation.

Manuskript, erschienen in: Journal of Risk Research, vol. 3, Heft3/2000, S.219-22 (Copyright beim Verlag)

Additionally, economic and environmental discourses seldom meet. The resonance of the sustainability discourse, for example, is rather low. Therefore, economic and environmental interests are mostly seen as contradiction - little effort is made to search for synergies between the two aims. Correspondingly, the conflict manifests itself in form of contradictory certainties (of 'no risk' versus 'risk') and non-negotiable values ('growth' versus 'nature'). In this situation, the administration, bound to a certain degree by the German tradition of the '*Rechtsstaat*', mainly resorts to 'science' and 'law' to portray its decisions as a-political and neutral. It avoids both to openly defend its political discretion and try to mediate between the conflicting positions.

Even the Technology Assessment which the Social Research Unit *Wissenschaftszentrum Berlin* (WZB) carried out from 1991 to 1994 as regards herbicide tolerant gm crops - the most ambitious attempt to establish participatory procedures, so far - was mostly dedicated and restricted to the search for truth (van den Daele, 1996; Saretzki, 1996). This seems to be in contrast especially with countries like Denmark and the Netherlands. Here, the conflict is more strongly dominated by the rhetorics of contradictory *uncertainties*. These allow for more participation and compromise based on the insight that negative consequences of present decisions will and can only be accepted when they are discussed openly and under representation of those who have to bear the potential damages. This does not mean that reflexive politics are necessarily more critical of biotechnology. Instead, it means that the decisions are more responsive to the real fears and wishes of the people.

Here, even the new coalition government will probably not change so much. The coalition contract comprises a vague idea of changing the administrative structure of the Competent Authority, and within the Health Ministry a Green head of department seeks to implement more political accountability for this main regulatory body. But against these efforts of the Greens stands the dominant mood of the Social Democrats. 'Traditionalists' and 'Neo-Liberalists' resort to conventional modernization in seeing genetic engineering without much differentiation as a 'key technology' to provide national wealth and jobs. They see 'green romance' as a typical German manifestation of a cultural lag to allegedly more modern societies.

The present turmoils in biotechnology policy in France and the United Kingdom, however, seem to show that this critical stance is not a peculiarity of German speaking countries. Furthermore, consumer demand and agricultural development in Europe indicate that organic farming has a more realistic potential to create new jobs than modern biotechnology. The question is, which path modern societies actually are taking - the path of high technology and conventional modernization or the path of postindustrial culturalisation and reflexive modernization. Governments and other actors can steer the direction only to a minimal degree.

Manuskript, erschienen in: Journal of Risk Research, vol. 3, Heft3/2000, S.219-22 (Copyright beim Verlag)

References

Beck, U. (1986) *Risikogesellschaft - Auf dem Weg in eine andere Moderne*. Frankfurt/M., Suhrkamp.

Behrens, M. *et al.* (1997) *Gen food. Einführung und Verbreitung, Konflikte und Gestaltungsmöglichkeiten*. Berlin, Sigma.

Buhk, H.-J. (1997) 'Künftige Anforderungen an die landwirtschaftliche Praxis und der erforderliche Regelungsbedarf zur Nutzung der Gentechnik und zur Risikovorsorge', in F.D.P.-Fraktion im Schleswig-Holsteinischen Landtag (ed), *Gentechnik in der Landwirtschaft. Chancen und Nutzen (Dokumentation der Anhörung der F.D.P.-Fraktion im Schleswig-Holsteinischen Landtag)*. Kiel, F.D.P., pp. 8-13.

BUND (1996) *BUNDruf*, No.1.

Dolata, U. (1997) 'Rekombinante Geschäfte', *Gen-Ethischer Informationsdienst*, Vol.13, No.118, 14-17.

European Commission (1997) *Europeans and Modern Opinions about Biotechnology: Eurobarometer 46.1*. Brussels, Directorate General XII, Science, Research and Development.

FoEE (1998a) *Biotech Mailout*, Vol.4, No.7.

FoEE (1998b) *Biotech Mailout*, Vol.4, No.5.

Gill, B. (1996) 'Germany: splicing genes, splitting society', *Science & Public Policy*, Vol.23, No.3, 175-182.

Gill, B. (1998) 'Ungewißheit, administrative Entscheidung und Demokratie - die neuen Anforderungen durch die Gentechnik', *Oesterreichische Zeitschrift für Politikwissenschaft*, Vol.27, 29-45.

Gill, B. (1999) 'Reflexive Modernisierung und technisch-industriell erzeugte Umweltprobleme. Ein Rekonstruktionsversuch in präzisierender Absicht', *Zeitschrift für Soziologie*, Vol.28, No.3.

Hampel, J. & O. Renn (eds) (1998) *Kurzfassung der Ergebnisse des Verbundprojekts "Chancen und Risiken der Gentechnik aus Sicht der Öffentlichkeit"*. Stuttgart, Akademie für Technikfolgenabschätzung in Baden-Württemberg.

Manuskript, erschienen in: Journal of Risk Research, vol. 3, Heft3/2000, S.219-22 (Copyright beim Verlag)

Hampel, J. *et al.* (1998) 'Germany', in Durant J. *et al.* (eds), *Biotechnology in the Public Sphere. A European Sourcebook*. London, Science Museum, pp. 63-76.

Riewenherm, S. (1998) 'Miss Simmental und andere Geschichten', *Gen-ethischer Informationsdienst*, Vol.14, No.129, 10-11.

Saretzki, T. (1996) 'Verhandelte Diskurse?', in Prittwitz, V.v. (ed), *Verhandeln oder Argumentieren*. Opladen, Leske + Budrich, pp. 135-167.

van den Daele, W. (1996) 'Objektives Wissen als politische Ressource: Experten und Gegenexperten im Diskurs', in van den Daele, W. & Neidhardt, F. (eds), *Kommunikation und Entscheidung*, WZB-Jahrbuch. Berlin, Sigma, pp. 297-326.